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BS News

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et al.: BS News

BSNews

MECHANICAL & ELECTRICAL BUILDING SERVICES

FEBRUARY 2004

AIR MOVEMENT
& AIR QUALITY



Danfoss Motorised Control Valves

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READERSHIP DATA

Irish Building Services News (formerly Irish H&V News) is Ireland's only dedicated Building Services magazine providing coverage of heating, ventilating, air conditioning, refrigeration, sanitaryware, plumbing, maintenance, energy and environmental industries. It is the only publication catering exclusively for these industries and its circulation includes members of the following:- Chartered Institution of Building Services Engineers (CIBSE); The Mechanical Engineering & Building Services Contractors' Association (MEBSCA); The Association of Consulting Engineers of Ireland (ACEI); The Mechanical Engineering Contractors' Association; The Institute of Domestic Heating Engineers (IDHE); The Institute of Plumbing; The Register of Environmental & Gas Installers of Ireland; The Irish Home Builders Association (IHBA); Builders Merchants/Trade Supply Outlets; Irish Property & Facilities Managers Association.

In addition, Irish Building Services News circulates to independent building services contractors and key executives in industry. Government, Semi-State and local authority bodies. Essentially, our circulation is virtually saturation coverage of all those with an interest and/or involvement in the building services industry.

Your Future ... What Are You Going To Do About It?

Despite being faced with a plethora of new and impending regulations, legislation, employment conditions, health and safety issues, etc, the building services sector has no input into the formulation of these developments. Other construction industry sectors are continuously lobbying the authorities to protect their sectoral interests. They are known to have a voice and are invited to comment on, and contribute to, the formulation of policy governing the industry.

Some of the larger mechanical and electrical contractors do have an element of representation through the CIF but, when you look at the sector as a whole, building services is undoubtedly the Cinderella of the construction industry.

Nonetheless, and almost despite itself, building services continues not merely to survive, but to prosper. Think then what the benefits would be if the sector was properly represented at the table where policy decisions are being made.

On the domestic front, REGII is the most recent initiative aimed at taking the bull by the horns. Flushed with a modicum of success to date, it is to hold an open meeting to capitalise on the momentum already generated, at a date and venue yet to be decided.

Those from the non-domestic sector — be they installers, consultants or product suppliers — are also welcome. It might even lead to the establishment of a more all-embracing, services sector, representative body.

If interested in attending such a meeting, please email: bsnews@pressline.ie with your name, title, company name, address, etc, or Tel: 01 - 288 5001.

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High-Temperature Liquid Level Switch



Manotherm has introduced the new high-temperature version of Gems Sensors' LS-7 Series side-mounted liquid level switches for use in small vessels where top or bottom switch mounting is not practical.

Constructed in Versaplast, a material manufactured by Gems, the new models handle temperatures up to +150°F - which is 50% more than other plastic switches in the LS-7 range. Versaplast is compatible with water, oils and chemicals. The switches are ideal for high volume use in small tanks, including food processing, medical

equipment, engine oils and water purifiers. This LS-7 is also an ideal replacement for stainless steel units.

Competitively-priced and durable, the Versaplast LS-7 provides accurate and repeatable switching for high, low or intermediate level sensing. Mounting is through half inch BSP ports. The full range of operating temperatures is -40°C to +150°C with pressures up to 7-bar at 20°C.

Contact: Bob Gilbert, Noel Walsh or Robert Gilbert, Manotherm. Tel: 01 - 452 2355; email: manotherm@eircom.net

Legionnaires' Disease Seminars

Recent outbreaks of Legionnaire's Disease in England, Ireland and France continue to highlight the importance of preventative measures. Consultant Mike Knight has already run a number of training seminars on the subject and the programme for 2004 is now in place.

The seminars will be comprehensive, including a history of the disease with actual case studies; route of infection; risk assessment; management and control requirements; hot and cold water systems; residential accommodation; cooling towers; cleaning and disinfection.

The presentations will include input from the NDSC document entitled: "The Management of Legionnaires' Disease in Ireland", as well as the ACOF and Guidance Document L8 produced by the HSC in UK.

Course presenter is Dr John Alvey, is currently Chairman and a Fellow of the Water Management Society, as well as being an expert on the subject and an experienced risk assessor.

Venues and dates are as follows:— Cork on 23 March; Galway on 24 March; Sligo/Donegal (Bundoran) on 25 March; Antrim and Dublin to be announced.

Cost is €225 delegate, to cover lunch and training material.

Contact: Mike Knight. Tel: 0044 7966 196383; mikhknight@blueyonder.co.uk

Job Index Bodes Well For Further Growth

The Bank of Ireland Business Banking Job Index for December shows a significant increase in the number of construction jobs advertised over the same month last year. The December figures, which are the lowest in the index due to seasonal factors, represent good news for the construction sector which appears to be gearing up for a busy year. The figures also reflect the market experience of Bank of Ireland's business banking activity which has seen strong lending activity throughout 2003 and which has already a healthy pipeline for 2004. The Job Index measures job advertisements in the

national daily and Sunday newspapers. In terms of sectoral movements year on year, the construction sector has seen a 29% increase in the number of jobs advertised.

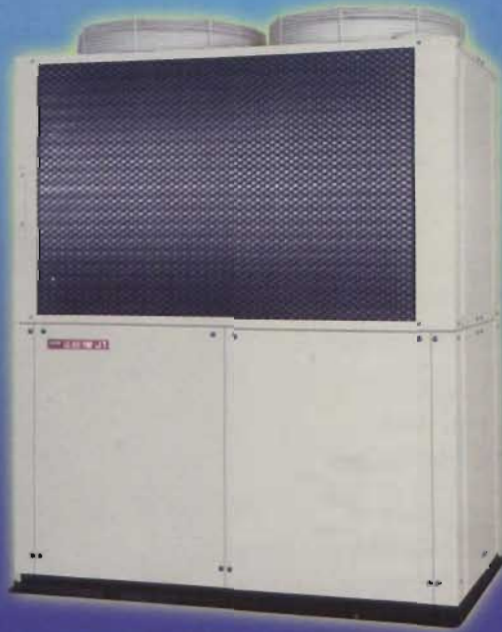
Commenting on the findings of the Job Index, Tom Comerford, Director, Bank of Ireland Business Banking said: "Business funding demand levels continue to reflect this increased confidence and we are expecting a very positive start to 2004. A strong performer throughout all of 2003 was the construction sector, and this was evidenced both in the Job Index and also in strong lending activity by ourselves."

2004

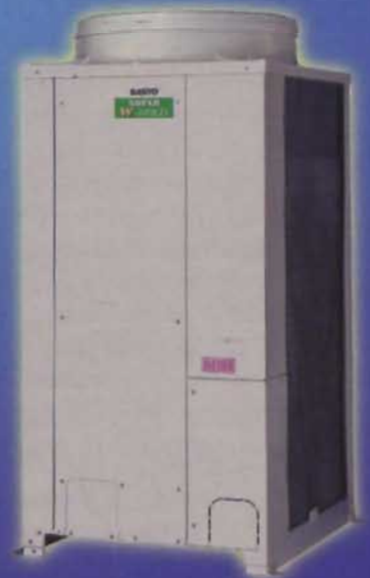
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It Has Never Been Easier to Get to PHEX

Keep up with the latest developments in the domestic heating and plumbing industry and visit one of the Ireland's best regional plumbing and heating exhibitions – PHEX.

Firstly, decide which regional PHEX exhibition you want to visit. This year there are events in Belfast at the Kings Hall Conference Centre on 5 April 2004 (evening 6pm to 9.30pm) and on 6 April 2004 (lunch 11am – 3.00 pm); and in Dublin at the Red Cow Conference Complex on 7 April (evening 6pm to 9.30pm); and on 8 April 2004 (lunch 11am to 3pm).

Secondly, decide whether you want to go by yourself or with a group. If you want to make your own way there simply complete a pre-registration ticket (enclosed with this issue) and send off (postage paid) for your entry ticket and your free buffet voucher. This will ease your entrance to your

chosen venue.

If you want to go with a party then either contact your nearest builder's merchant to join their coach party – all the main merchant groups are participating in the exhibition, as well as many of the independents.

Alternatively, if you know 12 or more people interested in going contact PHEX direct and they will provide a coach free of charge. All will be pre-registered.

Exhibitors at PHEX will present the latest developments in energy efficiency and design, and will be available to discuss particular needs and requirements.

A free buffet lunch and drink is available to all visitors pre-registering, and for the evening visitors there is a chance to win spot prizes at the PHEX Ireland Roulette evening.

We look forward to seeing you there!
Contact: Maxine at Phex.
Tel: 0044 1977 612020.

**Free Admission Ticket Enclosed
With This Issue of BSNews**



PHEX

the Plumbing & Heating Exhibition

PAT Testing Training

PA Training (Irl) has introduced a 1-day training course aimed at maintenance managers, administrators and other staff charged with undertaking and recording the inspection and testing of portable electrical appliances. SI 188 of 2001 (Health & Safety Legislation) requires all employers to ensure that electrical appliances remain safe for the use of their employees. To do this periodic testing should be carried out and results kept for inspection by the HSA for five years. The conformance to SI 188 is not only being increasingly monitored by the HSA but many insurance companies and standards authorities are insisting that PAT testing is carried out.

Contact: Anne Griffin, PA Testing (Irl).
Tel: 01 - 465 9487; email: info@patesting.ie

Ardline Aircon Online

Ardline Aircon, the dedicated distribution company responsible for the supply of the vast Hitachi range of air conditioning products throughout Ireland, has gone online.

Full details of its entire product portfolio, along with the extensive support programmes provided, can now be accessed on www.ardlineaircon.ie

Lennox Ireland Address



Following last's month's report on the impending opening of the new, dedicated, Lennox Ireland operation, Pat Byrne tells us that the company is now operational with offices at 3A Avonbeg Industrial Estate, Longmile Road, Dublin 12.

Contact: Pat Byrne.
Tel: 01 - 429 9703; Fax: 01 - 429 9706;
Mobile: 087 984 7696;
email: p.byrne@lennoxind.com

NB: Landlines operational from 1 March 2004.

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Win a Sanyo Hi-fi Reader competition

Enter our reader competition and you could win a fantastic Hi-fi in our prize draw. Simply answer the questions and complete the details, copy and fax back to **BSNews** on 01 288 6966.



February 2004 competition

- 1) In which city is a district called Roppongi?
a) Milan b) Paris c) Tokyo
- 2) Who are the Manufacturers of Austin MacHale's new Sanyo sponsored WRC car?
a) Citroen b) Ford c) Peugeot
- 3) What is the only Irish side left in the Heineken cup?
a) Leinster b) Munster c) Ulster
- 4) What does Sanyo mean in Japanese?
a) 3 diamonds b) 3 wise men
c) 3 oceans
- 5) Where in Ireland was a brand new Marina recently demolished?
a) Kenmare b) Kinsale c) Bantry

Name: _____

Company: _____

Address: _____

Postcode: _____

Email: _____

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**Fax back to BSNews
on 01 288 6966**

Rule: Competition
open to anyone over
the age of 16.

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SANYO
AIR CONDITIONERS



POSITION: CONTRACTS MANAGER

Glow Heating Ltd, a mechanical services specialist operating in the Irish market for over 30 years, is looking for an experienced individual to fill the position of Contracts Manager. The company's range of activities includes commercial, industrial and process installations in all areas of the mechanical services sector.

The successful candidate will be a team player keen to work in a dynamic environment. He/she must be able to work independently and have experience in project management, from commencement of a project through to completion.

Salary will be in line with experience.
CVs to Glow Heating Ltd at info@glowheating.com,
or Tel: 01 - 462 6556.

POSITION: RADIATOR SALES AGENT

Autron Products Ltd — one of the UK's leading manufacturers of LST radiators — seeks a sales agent. Range includes domestic and light commercial systems. Plan is to expand sales into Ireland by targeting distributors, smaller contractors, consulting engineers, etc.

Contact: Trevor Burr/Richard Jacobs.
Tel: 0044 1787 473964 or email: sales@autron.co.uk

Heiton Acquires Paddy Power & Co

Heiton Group plc has acquired Paddy Power & Co, a Waterford-based plumbing and heating products specialist. In the year ended 31 December 2003 Paddy Power generated turnover of €8 million and its estimated net assets were €1.0 million at that date.

The company was founded in 1986 and is the largest plumbing, heating and drainage merchant in the South East. Located at Kilbarry just outside Waterford City, it supplies residential and commercial heating and plumbing materials from purpose-built facilities.

It has a recently-developed showroom offering a wide choice of bathrooms, showers and heating equipment. Employing 21 people, the company is managed by Paddy Power, who will continue to run the business over the medium term. All staff are being retained.

Contact: Leo Martin, Group Chief Executive, Heiton Group plc. Tel : 01 - 403 4000.

Air Conditioning – Fault Diagnosis & Maintenance

Fault diagnosis and maintenance for air conditioning systems is the theme of a 2-day intensive training course being held under the auspices of Refrigeration Technology Skillnet next month. Venue is Linenhall, DIT, Bolton Street, Dublin 1 and the date is Wednesday/Thursday, 10/11 March 2004. Course fee is €150 per delegate, to also cover coffee breaks and lunch.

This 2-day course has been designed for recently-qualified engineers and installation engineers, to provide them with the knowledge necessary to confidently approach a range of different air conditioning plant and to carry out effective fault diagnosis, repair and service. Aim is to:—

- To remind participants of the basic principles of air conditioning;
- To provide an overview of systems, regardless of make;
- To explain the purpose of the most common system components;
- To provide an understanding of heat pump systems and technology;
- To provide the knowledge necessary to make a logical selection of equipment;
- To teach and encourage good housekeeping practice in relation to the environment and personal safety;
- To demonstrate the benefits of logging parameters and keeping records.

Air Conditioning – Electrical Fault Diagnosis

This 2-day course is also part of the Refrigeration Technology Skillnet programme. The aim is to improve the ability of engineers to accurately identify the nature of ac breakdowns caused by electrical faults, and to rectify them. It will focus directly on the electrical systems that are specific to refrigeration and air conditioning systems.

Venue is Linenhall, DIT, Bolton Street, Dublin 1 and the date is Thursday/Friday, 18/19 March 2004. Course fee is €150 per delegate, to also cover coffee breaks and lunch.

The course will combine theory with practice and much of the participants' time will be spent in the workshop. They will gain hands-on practical experience of:—

- (a) distinguishing between an electrical and circuitry failure and a refrigeration mechanical fault;
- (b) locating electrical faults within refrigeration and air conditioning systems;
- (c) Rectifying those faults with due regard to safety and the environment.

Essentially, it will provide participants with basic electrical skills, a basic knowledge of circuitry; a systematic method of locating faults; and the correct procedures to rectify them.

Thermo Air PCU - 600 Ceiling Void Air Heater

The new PCU-600 ceiling void air heater was recently unveiled by Thermo Air Ireland. Because of its height of only 290mm, the PC can be easily installed into the ceiling void. It offers both heating and cooling and will give a nominal duty of 15kW.

Together with the air distribution kit — consisting of discharge grilles

(and optional return air grilles), plenums and flexible ducts — this heating and cooling system can be quickly fitted.

It is very user-friendly as it can be accessed for installation or maintenance from either side.

Due to its very recent arrival on the market information was limited as we went to press.



However, next month's issue of *BSNews* will include full technical and design details on the product.

Contact: Michael Burns, Thermo Air Ireland.
Tel: 059 913 1646;
email
mike@thermoair.com

Samsung Gets Straight A's

To further strengthen the scope and flexibility of the ac solutions it provides, Walkair Ltd has added Samsung's wide range of splits and high-quality multi-splits to its already-extensive portfolio. This high-profile name sits very comfortably with the company's existing stable of market-leading brands.

"The changing face of the marketplace — coupled with the demand for an ever-increasing number of options — means that we need to provide our dealers with a comprehensive range of applications solutions", says Vincent Mahony of Walkair. "The addition of Samsung to our current product line-up gives us the means to do just that.

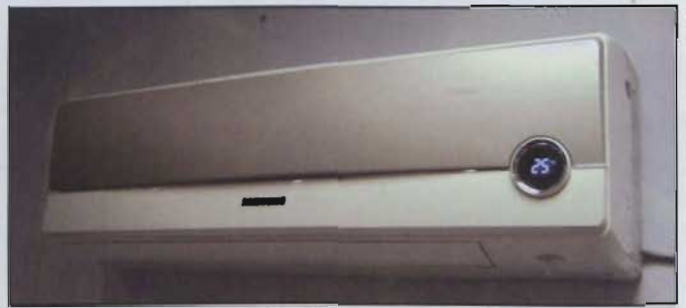


Samsung cassettes fit neatly into lowered ceiling spaces

"Our traditional route to the marketplace is through our dealer network and Samsung will now strengthen that partnership by providing our dealers with greater flexibility which in turn will lead to greater market penetration and more satisfied clients".

With its slim size and lightweight design, a Samsung cassette air conditioner can be installed just about anywhere with ease. The cassette can fit neatly into lowered ceiling spaces and the stylish design of the indoor unit — with its naturally curved lines — will blend into any interior. For easy installation, many features have been enhanced such as: bracket and hook for easy suspension of the unit, easy access electrical box, and an internal drain pump.

Samsung air conditioners offer cleaner cooling than hitherto thought possible, the components used in the units (including the filters) having been moulded with a unique anti-bacterial formula, which prevents proliferation of fungi and bacteria within the unit. This helps to keep the unit clean and to



From the Samsung Bionizer Series ... contact Walkair

block odours from developing.

The units also have a "long-life" filter that doesn't require maintenance for up to 1000 hours, and an easy access grille which allows for easy cleaning and maintenance.

Samsung invests considerable sums in research and development, seeking to identify problem-solving solutions to deal with all eventualities. A recent breakthrough in relation to high-wall systems has been to do with anions. According to Samsung, vast quantities of anions are generated in nature, for example in forests or by waterfalls. Anions are powerfully refreshing, both physically and mentally, but they are in short supply in urban and built-up areas because of air pollution from many sources. Consequently, Samsung air conditioners are now equipped with an ozone-free anion generator (1.25 billion anions per second) to fill the room with anions.

The full range of Samsung air conditioners is now available from Walkair

Ltd and caters for a very broad range of applications. It includes splits, multi-splits, and floor-standing models. All are designed for maximum performance while, at the same time, being extremely energy efficient. Indeed, Samsung high-wall air conditioners are accredited with Energy Label A, the highest possible ranking, in the energy-labelling system now being applied by the EU, according to Vincent Mahony of Walkair.

Under this system all air conditioners are ranked in descending order from A to G according to their energy-saving performance. The classification is based on the energy efficiency ratio (EER) which is the ratio of the cooling capacity (Btu per hour) to energy input (watt). Samsung air conditioners' EER is 11.00 and thus the Energy Label A rating.

Contact: Vincent Mahony, Walkair.
Tel: 01 - 456 8070;
email: vmahony@walkair.ie

Trane Replacement Units

Trane, the world market leader in chillers for commercial and industrial applications, has announced changes to its RTHC range with the introduction of the new RTHD range, particularly adapted for the replacement and refurbishment market.

With the unit dimensions designed down to the nearest millimetre, the majority of models can pass through standard-size double doors. As it comprises fitted sub-assemblies, the RTHD is easily dismantled and re-assembled in the event of access difficulties.

With its LonMark® compatibility, the RTHD is easily integrated into any building automation

system and, with the new "CH530" control, it offers improved performance.

On Trane Helirotor™ screw compressors and, in particular on the RTHD range, this compressor provides a high output, thanks to its "direct drive" technology, its low speed rotation and optimised screw profiles. The RTHD's innovative heat transfer technology is exceptionally efficient with the use of high-performance heat exchange surfaces and an entirely innovative refrigerant distribution system exclusive to Trane.

The Adaptive Control™ microprocessor makes the RTHD an "intelligent" machine operating safely, under

extreme conditions where other chillers would systematically shut down.

Contact: Maria

Furlong, Trane Ireland.

Tel: 01 460 6030;

e-mail:

Maria_Furlong@trane.com



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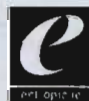
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Toshiba — Combining Economy, Ecology and Aesthetics

The Digital Inverter from Toshiba combines economy and ecology in a smart body. It offers state-of-the-art technology, exceptional energy savings, high performance, easy installation and flexible control. The latest digital inverter technology ensures smooth start-up and capacity control for optimum comfort. A choice of indoor units includes cassettes, ducted, under-ceiling, wall-mounted and low-wall units.

Now the standard Digital Inverter range has been complemented by the new Super Digital Inverter models with even higher energy efficiency ratings and enhanced technological innovations. These include:—

- Superior COP with significant savings in energy consumption, compared to units with traditional fixed speed;
- High-performance operation, using digital inverter control

systems;

- Designed for use with non-ozone depleting refrigerant R410A;
- Compact, space-saving design — the weight up to 35% lower than comparable models;
- Easy installation and maintenance;
- Precise capacity control at all conditions;
- Quiet operation with automatic quiet mode;
- Performance tuning for optimised comfort;
- The innovative inverter technology ensures precise temperature control;
- The same outdoor unit is compatible with a choice of indoor units;
- Increased energy efficiency resulting in superior energy labels;
- New fan motor design and fan blade shape for improved performance;
- New enhanced compressor design;
- Extended pipe runs for increased installation flexibility;
- More/smaller control steps for more accurate



The Super Digital Inverter units offer extended pipe lengths for further installation flexibility, as well as reduced sound levels.

- Outdoor unit sound levels further reduced for whisper-quiet operation.

The Digital Inverter uses the latest inverter technology, ensuring high power and high efficiency. Inverter control, assisted by PAM (pulse amplitude modulation), increases compressor frequency to rapidly reach the desired temperature. Once the temperature has been reached, the inverter control uses PWM (pulse width modulation) to adjust the compressor speed and efficiently maintain precise temperature control without excessive power consumption (available for size 560/561 — the other three sizes use digital inverter technology).

By adopting this innovative inverter technology, the Toshiba Digital Inverter offers remarkable energy savings, efficient economical operation, and superior comfort. This makes it ideal for offices, shops, restaurants and other light commercial facilities.

In conventional units, the compressor switches off once the set temperature is reached, and on again after the temperature drops. During the time it takes for the unit to switch on and off the room temperature can fluctuate greatly.

With the Digital Inverter compressor power is reduced once the desired temperature has been reached, and

operation continues at a reduced state to maintain a stable room temperature with minimal fluctuations. This also results in significantly reduced noise levels.

The Digital Inverter's powerful yet super-efficient inverter technology features energy-saving operation that reduces the annual power consumption by up to 40%. The variable compressor power levels maintain even room temperature control, so that little energy is wasted. Without the surging on and shutting off of the conventional units, the Toshiba Digital Inverter can operate as low as 1.5 kW, saving a considerable amount of energy.

All this results in minimum power input levels and a superior COP (Coefficient of Performance) for all Toshiba Digital Inverter models.

The Toshiba Digital Inverter uses the environmentally safe, non-ozone depleting refrigerant R410A. This is a near-azeotropic blend of R32 (50%) and R125 (50%). It is acknowledged as the most energy-efficient, environmentally friendly refrigerant available for smaller residential and light commercial products. Because of its high operating pressures it exhibits excellent heat transfer performance.

Contact: Derek Phelan, GT Phelan.
Tel: 01 - 286 4377;
email: gtphelan@eircom.net



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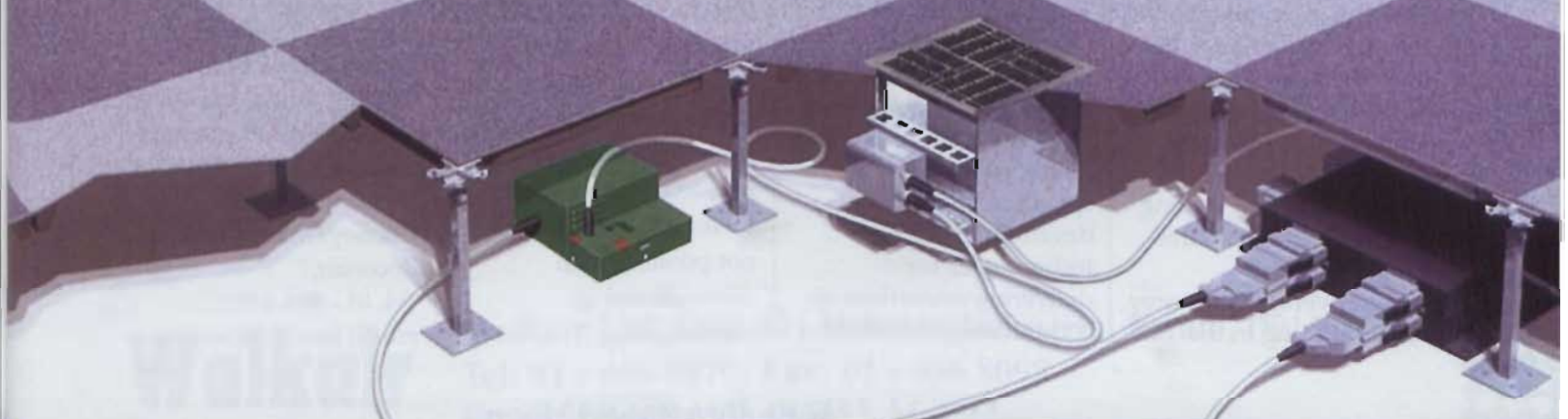
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The latest generation of underfloor air conditioning systems can help developers slash construction costs by up to 15% and allow designers to satisfy the demands of the "Accelerating Change" concept as proposed by Sir John Egan, the leading construction specialist, according to Brian Cooney of Reconair.

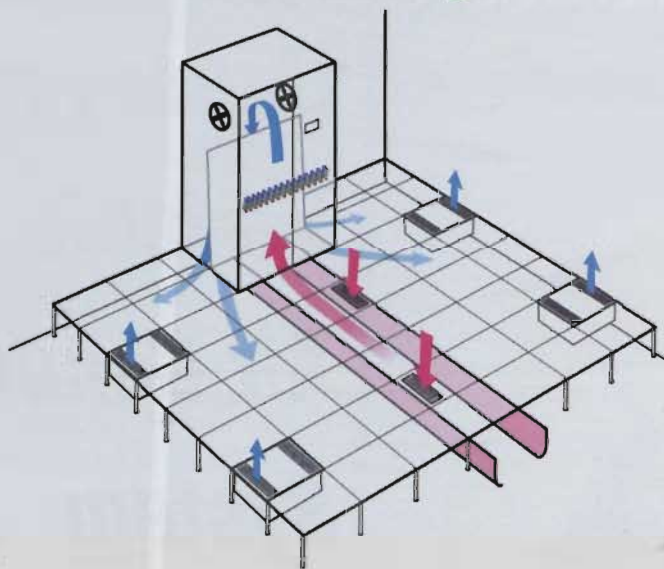
Clients are constantly being told that they need to look beyond the lowest cost bid and commit themselves to integrated construction teams and innovative designs. But really it can't be down to the end user to force change in the industry, it must be members of the supply chain who make sure they offer workable alternatives. Otherwise, price is often the only measure clients can use to differentiate between competing designs.

The construction industry's Strategic Forum is well aware of this fact and its latest report; "Accelerating Change" bears this out. Clients must be able to see significant "cradle to grave" savings in a solution if they are to make a credible case to whoever holds the purse strings for their project, according to Cooney.

Air conditioning is growing in popularity among developers, who now see it as a "must have" to guarantee good rental income. So, how can we use the need for more mechanical cooling and heating to help the client cut costs?

The average ten-storey office building in the

'Developers Go Underfloor for Massive Savings'



measures around 40 metres (or 50m if VAV type air conditioning is installed), but if underfloor air conditioning is applied instead of traditional services that height is reduced to 35.5m without the occupant losing any usable space.

This has a significant knock-on effect on construction costs because the complete building envelope is reduced bringing equipment sizes and construction materials down in proportion. It also cuts the time from initial design to completion, so allowing developers to get a faster return on their investment.

Flexible solutions

Denco, one of the leading ac players and for whom Reconair is the appointed distributor, is spearheading development of new technologies for delivering underfloor air conditioning to both new

and refurbished buildings.

Denco's "Officecool" underfloor system offers total design flexibility, as there are no horizontal pipes, ducts or cables to allow for, and no wet installations under the floor or in the ceiling to worry about.

Energy costs are also reduced because of the use of control technology that closely matches output to demand – a major consideration for users at a time when energy-usage levies are in the offing.

Occupants enjoy total flexibility of use with an underfloor system. Fan tiles can be moved within minutes to suit new layouts, or if an occupant feels uncomfortable – users have a level of personal control over their local environment not possible with conventional air conditioning.

How does it work?

A zone air-handling unit provides conditioned air to the floor void and constantly monitors and controls temperature and humidity, while also providing high-grade filtration. Intelligent underfloor air terminals draw air from the plenum for distribution around the workspace via neatly-recessed floor grilles, while onboard temperature sensors control automatic damper operation during cooling/heating or recycle modes. Air returns to the zone unit, either through the office space or through the floor void.

Temperature is the most common source of complaints from office staff, but humidity levels are the real cause of discomfort, particularly where large numbers of VDUs are in operation. Health & Safety legislation recognises this fact. Because the Officecool Zone Unit is designed around Denco's close control technology; temperature and humidity is accurately controlled.

"With the industry under greater pressure than ever to deliver efficiency gains in the wake of all manner of reports", says Brian Cooney, "these improved solutions could not have come at a better time."

Contact: Brian Cooney/Mark Cooney, Reconair.
 Tel: 01 - 864 4397;
 email: hvac@reconair.ie

Panasonic

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Walkair

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Tel: 01 - 456 8070; Fax: 01 - 456 8098
Email: sales@walkair.ie

Another Innovative Heat Recovery Concept from Systemair

Systemair, designer and manufacturer of the proven Rotovox packaged heat recovery system, has just introduced its latest innovative development to the concept, which is called Topvex. The Swedish-based ventilation specialist — with a dedicated, wholly-owned Irish office — has concentrated on developing viable heat recovery systems because of the growing economic and environmental concerns with regard to energy usage within buildings.

When the Swedish design team sat down to develop the latest addition to its product offering, the following design criteria were set out:— The new unit was to be applicable for light commercial and retail applications; it was to be a compact, easy to install and simple to use; it had to incorporate a high-

efficiency rotary wheel heat recovery unit with low running costs. The result of their extensive efforts was Topvex, a unit which encompasses all of the target criteria and then goes a step further.

Fresh air alternative for small premises —

Topvex 1000R and 1500R are designed for schools, daycare centres, shops, and small office developments where there is often a problem with poor ventilation and a lack of space. In order to ensure clean supply air, the Topvex has EU7 bag filters fitted as standard; *Top connection saves space —* Topvex is produced with top connection as standard. This top connection saves floor space which makes it ideal for placing into an existing building, or into a building where space for equipment is at a premium;

Topvex is delivered ready to go — Topvex is delivered complete with control system; high-efficiency rotary wheel (approximately 80% efficiency); re-heater battery; either LPHW or electric heating coil; electric wiring; and filters.

Ease of installation and maintenance —

Topvex units are built with the installation contractor and service people in mind. The unit has a user-friendly control system with all functions controlled from a control panel which is simple to use. All components are side withdrawable (including the rotary wheel). The fans are direct-driven plug fans which are low noise, energy-saving and maintenance-free.

Total package

Topvex is delivered complete with control system, rotating wheel, re-heater battery, electric wiring and filters. All units are factory tested before being dispatched.

After ducting and electrical connection, set

the required air flow and the timer — the unit is operating!

User-friendly control —

All functions are controlled from a control panel which is very simple to use. The menus are self explaining. The manual is basically needed only for installation.

The unit can be controlled from one or several separate control panels mounted on a wall. The control panel is elegant and easy to use, with buttons for setting air flow and air temperature.

A warning lamp indicates when it is time to change the filter.

In summation, Topvex is a packaged heat recovery unit with top-duct connection suitable for internal use only. It has been designed in conformity with EN1886: 1988, ventilation for building-air handling units — Mechanical Performance.

Contact: Mark Russell, Systemair.

Tel: 01 - 862 4544;

Mobile: 086 389 1218;

email: maru@systemair.ie



Topvex is the latest innovative development in Systemair's revolutionary Rotovox packaged heat recovery system. Apart from excellent performance efficiencies, Topvex is extremely quiet in operation, even at low RPM.

Free Selection Programme

A new electronic selection programme is now available from Systemair. This is probably the most comprehensive selection programme on the market and provides quick selections for all of Systemair's basic product range including:—

- Fans and Accessories;
- High Temperature Smoke Fans;
- Heat Recovery Units;
- Air Terminal Devices;
- Electrical Accessories;
- Air Curtains.

For your free copy contact:

Anne Forrest, Systemair. Tel: 01 - 8624544;

email: anfo@systemair.ie

3D Air Sales (Ireland) Ltd,

Unit 8, Greenhills Business Centre,

Greenhills Industrial Estate, Tallaght, Dublin 24.

Tel: 01 - 462 7570 Fax: 01 - 462 7611

email: micclan1@eircom.net www.3dair.co.uk

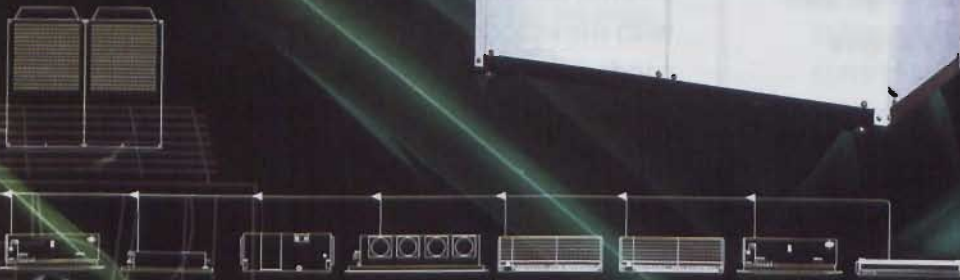
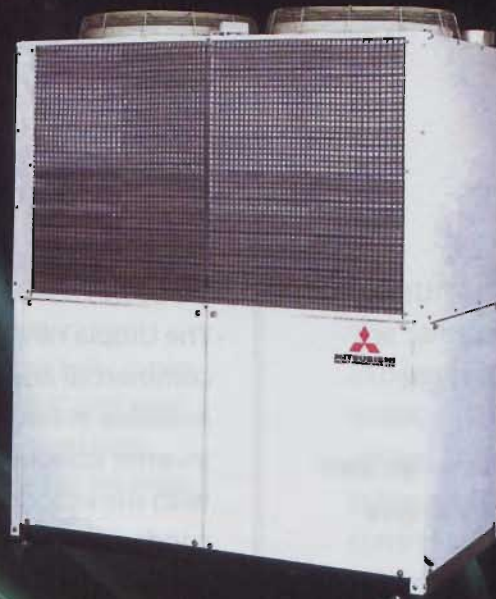


ACR NEWS
PRODUCT DISTRIBUTOR
OF THE YEAR 2003

www.3dair.co.uk

GHP Gas Engine Powered VRF Systems

Variable Capacity Cooling / Heat Pump Systems



VRF (variable refrigerant flow) systems are normally powered by electric driven compressors with an INVERTER for variable speed control.

The GHP is a VRF system, which has the compressor powered by an engine using natural gas as the input fuel.

This means that large cooling / heating systems can be installed in buildings which have a limited electricity supply. The GHP requires some electrical power for the fans and controls, but this is minimal compared to the power requirements of a conventional VRF, Chiller, or other type of system.

In winter, the heating performance is maintained in very cold ambient conditions, because the waste heat from the engine is utilised as a secondary heat source to enhance the output of the heat pump.

3D AIR SALES Ltd - Distributors of MITSUBISHI Split Systems, VRF Systems, and GHP in the UK and Republic of Ireland.



BREATHE EASY

QUALITY AIR CONDITIONING NATIONWIDE



ROOM AIR
CONDITIONERS

RAC

Hitachi offers an extensive range of Room Air Conditioning Units suitable for domestic and light commercial applications.

Available as single or multi combination, this range uses R410a refrigerant and DC inverter technology to give sector leading efficiency ratings



UTOPIA
SYSTEMS

UTOPIA

The Utopia range is suitable for large domestic, commercial and Industrial applications. The range is available in both fixed speed and high efficiency DC Inverter options as single splits or multi combination. With the introduction of the exclusive ducted condensing unit it is the most comprehensive range available.



**WHATEVER YOUR COMMERCIAL OR DOMESTIC
AIR CONDITIONING REQUIREMENTS ARDLINE
AIRCON HAS A COMPLETE TAILORED SOLUTION**

HITACHI
Inspire the Next



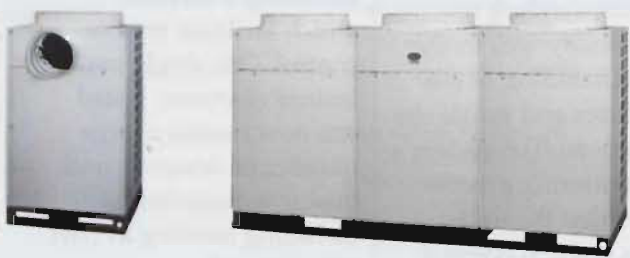
ARDLINE
AIRCON



SET FREE
VRF

SET-FREE MIN PSG/FXG

Set free is Hitachi's Variable refrigerant flow range featuring the unique 3,4, & 5 HP units in the mini range and from 8HP to 30HP in both the 2 pipe FSG and heat recovery FXG range. Using Hitachi's renowned high pressure scroll compressors and leading edge inverter technology class leading efficiency is achieved



CHILLERS

SAMURAI

The samurai range of water chillers are available in both cooling only and heat pump up to 1030Kw. The range is now available as both air cooled and water cooled. Using Hitachi's high pressure screw compressor and fully modulating control system unrivalled efficiency figures are achieved at partial load conditions.



Ardline Aircon is a dynamic nationwide distribution network that brings together the specialised air conditioning experience and expertise of Ireland's leading refrigeration and air conditioning companies.

To this it has added the acknowledged excellence of a world-leader in climate control technology and manufacturing – Hitachi Air Conditioning.

Choose the Carrier XPower Inverter Factor

Carrier is the world's largest air conditioning manufacturer with over 100 years of expertise designing innovative system solutions for residential, commercial and industrial applications. Since its invention by Willis Carrier, the product line now includes chillers from 5 kW to 5.3 MW; along with a range of complementary fan coil units, dry coolers and the Aquasmart control system. Additionally, Carrier's direct expansion ranges include mobile air conditioners; energy-efficient split systems and an extensive range of packaged units.

As distributors for Ireland, Core Air Conditioning brings this vast range of quality air movement products to the Irish marketplace. However, it is not merely a matter of providing quality products but rather of applying the engineering expertise of Core personnel to devising the most appropriate solution for each particular application using the vast choice of units and systems available. As the pioneering founders of modern-day air conditioning, Carrier has always been to the forefront in introducing innovative product and technology applications and the latest breakthrough, Carrier

XPower inverter, is a typical case in point. Ideal for light commercial applications such as shops, restaurants, medium-sized offices, etc, XPower is the ultimate in inverter technology.

There were four principal aspirations when XPower was being designed — optimum comfort; low life-cycle cost; reliability; and environmental. That these have been achieved is evidenced by the dramatic results of hundreds of tests run in different worldwide installations for thousands of hours. XPower inverter operates with an extremely high efficiency ratio. Lower energy consumption is thereby assured, together with considerable reductions in running costs. Typical annual reductions to date have been of the order of 40%.

Comfort levels achieved have also been impressive. Even the most demanding of applications have seen consistent levels of highly-efficient, even, filtered, clean, healthy air delivered with the minimum of noise levels. Because of X Power's continuous operation, the system is much quieter compared to traditional fixed-speed systems.

In addition, the outdoor units feature a series of technological innovations designed to



Carrier XPower ... top performance, maximum flexibility ... from Core Air Conditioning

considerably reduce the remaining noise level. These include a fully-insulated compressor; twin-rotatory cylinder shaft; component vibration suppression; and brushless DC compressor motor. XPower is claimed to operate below 60dBA for 85% of the time.

Quality of performance and reliability has also been impressive, XPower products standing up exceptionally well to the most demanding of test procedures and actual site applications. The system's self-monitoring process ensures that the units always work in optimal conditions.

Finally, there is the critical area of environment care. Protecting the environment and reducing pollution is a fundamental concern for the entire industry and so Carrier uses R-410A ecological refrigerant in XPower to help preserve

planetary resources while still delivering maximum energy savings.

The advantages of R-410A is that it is chlorine-free; its ozone depletion potential is zero; it is non-toxic; non-flammable; and provides up to 15% efficiency increase compared to alternative HFC or HCFC refrigerants.

All of these features are complemented by a choice of Carrier electronic interfaces which facilitate remote control. One single, multi-feature electronic board can now handle a large number of domestic and business capabilities, including running as part of a network.

Moreover, Carrier controls are fully compatible with current legislation, particularly for electro magnetic compatibility (immunity and emissions).

Contact: Austin McDermot, Core Air Conditioning.
 Tel: 01 - 409 8912;
 email: infor@coreac.com

Ventilation of Car Parks Using Dirivent-Nozzle Technology



Whatever your requirements, Fläkt Woods (Ireland) can provide Local Expertise with Strong Global Back-up.

Fläkt Woods is a world leader in the technology of air movement. Our knowledge and experience of ventilation applications is now being applied to more innovative

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Cut the Noise and Live Longer



Some of the range of motorized control valves available from Danfoss Ireland

Danfoss is claiming real progress with its latest range of motorised control valves. It has cut noise levels, improved control performance and prolonged lifetime. It has also extended the range to cover virtually every application, whatever type and layout.

This latest range of motorised control valves from Danfoss is the result of dedicated development and close cooperation with customers in the design process. The series meets increasingly-tougher demands on performance, with added features and compact design to cover heating and cooling, terminal/zone and steam applications.

Control capabilities included in the range are based on split characteristic. This combines the advantages of linear and exponential characteristics, which means that the most

difficult requirements of district heating systems are met while still providing instantaneous hot water. This is made possible by stabilising control of the valve at the critical closing position. A variety of systems were tested during the development phase, so Danfoss can recommend the best combination of actuator and control valve for any application.

Danfoss has invested significantly in research on noise emission and is setting new standards on the market. For the range of motorised control valves Danfoss optimised actuator and valve operations by improving motor and gear technology, as well as gear design. Customers have noticed the difference.

The series has kept its characteristically easy operation and installation. The threaded coupling between the actuator and valve make

it easy to connect and coupling allows for rotations, so that cable entry can be positioned as required. The actuator automatically adjusts to the end-position of the valve when the power is switched on, and the position indicator displays the movement and position of the valve. The range's compactness also caters for pre-manufactured units, and installations in confined spaces.

To avoid overheating special safety precautions may be necessary in systems with high supply temperatures. The safety function activates in case of power supply failure, or if the safety thermostat cuts off the power. It closes the valve within a certain time limit.

Additionally, wear and tear is reduced when the motorised control valve operates in a system together with Danfoss' ECL Comfort controller and differential pressure controls. A motor protection function is enclosed in the ECL Comfort controller. By means of settings in the controller, the actuator and valve are protected against hunting, which prolongs the lifetime.

Contact: Brian F. Maguire and Bill Carbery, Danfoss Ireland.
 Tel: 01- 626 8111;
 email: marketing@danfoss.ie

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Vent-Axia. air conditioning

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email: dublin@aerventgroup.com

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Cork Office

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Tel: 021 - 432 0203 Fax: 021 - 432 0210

email: cork@aerventgroup.com

GHP Gas Powered VRF Systems from 3D Air Sales

3D Air Sales Ireland Ltd — distributor for Mitsubishi Heavy Industries in Ireland — has announced the launch of GHP — a variable refrigerant multi system for commercial buildings.

The GHP has gas as its primary power source, accounting for 90% of the total power input requirement, and the remaining 10% being the electrical supply for the fans, and controls. The gas engine is very similar to a car engine, with spark plugs, valves and cylinders, and has an automatic throttling device which provides speed control, dependent on the combined demand from the connected indoor units.

There are two major advantages of GHP compared to conventional electric VRF systems:—

- Enhanced heat pump performance at low

ambient temperatures, due to waste heat from the engine being utilised to maintain 100% performance, down to -15°C ambient;

- Ideal for buildings which have very limited electrical power supply, a 56kW GHP unit requires only 1.18kW of power input.

The GHP is approximately 45% more efficient than a condensing boiler (at 80% efficiency), says Michael Clancy of 3D Air Sales. This means running costs in heating operation are also much lower compared to both boilers and conventional VRF systems.

Technical Features and Benefits of GHP:

- Low carbon emissions;
- Factory commissioned outdoor unit;
- Indoor units and

control systems identical to conventional Mitsubishi VRF systems;

- Connection of up to 20 indoor units;
- Pipework layout identical to VRF systems;
- BMS compatible: Trend, Satchwell, etc.

Performance — Cooling & Heating:

- High-efficiency cooling up to 56kW;
- Continuous performance — Defrost cycle is eliminated;
- Fast warm up, and enhanced performance heating up to 67kW*;
- Heating performance is maintained in ambient temperature down to -15°C

Commercial Buildings

The GHP operates in the same way as a VRF 2-pipe system, i.e., all on cooling, or all on heating. GHP systems are installed mainly in commercial buildings, and it is quite common to see multiple installations in office buildings and large retail stores.

Mitsubishi Heavy Industries has now developed the Mk4 GHP which is CE marked, and has the service interval extended to 8,000 hours of operation, which equates to two years based on 75 hours per week.

Application

Power supplies to commercial buildings are very often inadequate. Electrically powered systems, eg VRF, chillers, etc, require a substantial power supply, which is not available in, or near, the building. The cost of installing new power supplies can vary from €5,000 to €100,000.

GHP uses approximately 10% of the power of a conventional electric VRF system. Where the supply in a building is limited, the available power can be made available for the building user, for lighting, lifts, IT, and office equipment.

Design & Installation

The design of the layout of indoor units, internal refrigerant piping, branch joints, etc, is almost identical to a conventional VRF 2-pipe system. 3D Air Sales Ireland provides assistance with design, applications, technical specifications, pipework schematics, and control interface with BMS systems.

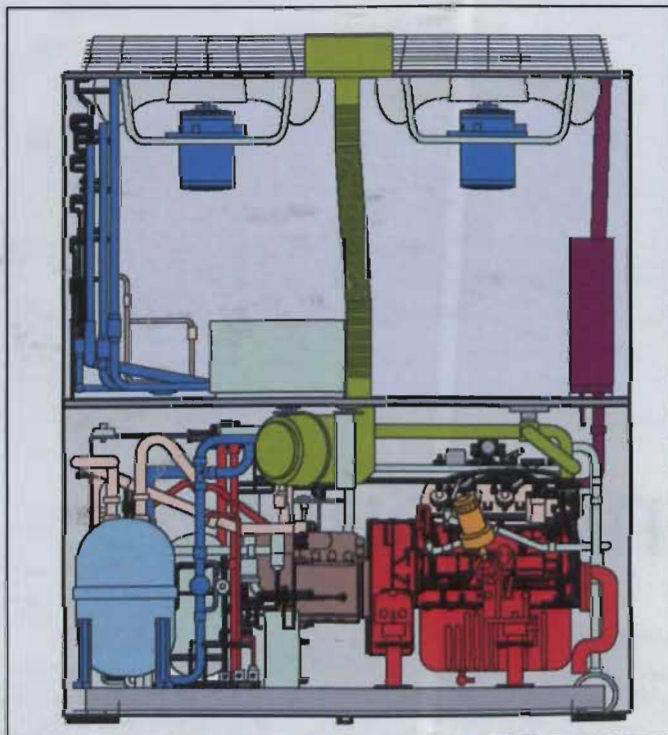
Running Costs

Running costs for gas consumption in heating mode are approximately 30% less than for a condensing boiler, and 30% less compared to a conventional electric VRF system (kW per kW).

In cooling mode the GHP running costs are approximately 15% lower than electric VRF systems. The actual figures depend on local gas and electricity tariffs.

(*The heat pump performance is enhanced by utilising the waste heat from the engine. The engine coolant is circulated through a heat exchanger to transfer waste heat energy into the refrigerant, thus increasing the co-efficient performance of the heat pump operation. Due to the fact that there is a constant source of heat energy from the engine, the normal defrost function of conventional systems is eliminated, so there is no shut-down period for defrosting. This also reduces warm up time from a cold start.)

Contact: Michael Clancy, 3D Air Sales Ireland.
Tel: 01 - 462 7570
email: micclan@eircom.net



A cut-away of the GHP gas powered VRF system available from 3D Air Sales

The fresh air alternative for small premises Topvex 1000R, 1500R



We make it simpler for the installer

We produce our Topvex units with top connection as standard. The unit saves floor space and is easy to place in existing premises. The installation is very simple, after

ducting and electrical connection of the Topvex, just set the required airflow and the timer – come back when it is time to change the filter!



Systemair • Unit 02, Furry Park, Santry, Dublin 9 • Tel: 01 - 862 4544 • Fax: 01 - 862 8030

FOHN

Cabinet heater



- **CAPACITY:** 30 KW – 1,000 KW
- **MEDIUM:** Natural Gas, Propane, Oil
- **BURNER:** Mark Burner / Burner from other manufacturers
- **AIR OUTLET:** Free blowing

- **AIR SUPPLY:** Ducted
Fresh air intake
Recirculation
- **OPERATION:** On / Off system
High / Low System
Modulating system 10:1 (only gas)
- **COMBINATIONS:** In combination with cooling systems
Modules
- **COMBUSTION CHAMBER:** Steel
- **HEAT EXCHANGER:** Stainless steel heat exchanger

PRODUCT APPLICATION:

Factories • Engineering Plants • Abattoirs • Cardboard Factories
Paper Factories • Workshops • Garages • Warehouses • Shops
Aeroplane Hangars • Showrooms • Hotels • Cash & Carry
Gymnasiums • Dressings Rooms • Exhibition Halls

CALFLO

Gas-fired



- **CAPACITY:**
- **MEDIUM:**
- **AIR OUTLET:**
- **OPERATION:**

PRODUCT

Process Industry • Factories •
Abattoirs • Cardboard Factories •

INFRA/INFRA MONO

Gas-fired rack



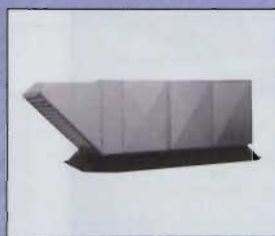
- **CAPACITY:**
- **MEDIUM:**
- **OPERATION:**

PRODUCT

Factories • Engineering Plants
Warehouses • Aeroplane Hangars
Gymnasiums • Exhibition Halls

GS / GC / ROOF TOP

Unit air heater



- **CAPACITY:** 20 KW – 95 KW
- **MEDIUM:** Natural gas
Propane
- **VENTILATORS:** Axial fan(s)
Centrifugal fan(s)
- **AIR OUTLET:** Free blow (axial)
- **AIR SUPPLY:** Recirculation
Ducted (centrifugal)
Fresh air intake (centrifugal)
- **OPERATION:** On / Off system
Modulating system
- **HEAT EXCHANGER:** Corrosion resistant heat exchanger
(10 years warranty)

Developing high efficiency unit, finished in 2004.

PRODUCT APPLICATION:

Factories • Engineering Plants • Abattoirs • Cardboard Factories
Paper Factories • Workshops • Garages • Warehouses • Shops
Aeroplane Hangars • Showrooms • Hotels • Cash & Carry
Gymnasiums • Dressings Rooms • Exhibition Halls • Pub's, Bar's & Restaurants

RADIANT PIQUE



- **CAPACITY:**
- **MEDIUM:**
- **OPERATION:**

PRODUCT

Workshops • Warehouses
Gymnasiums • Exhibition Halls

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make up air unit



65 KW – 1,200 KW (+)
 Natural Gas, Propane
 3,000 m³/h - 100,000 m³/h (+)
 On / Off system
 Modulating system

APPLICATION:

Engineering Plants • Spray Cabinets
 Paper Factories • Garages • Exhibition Halls

INFRA AQUA

Water radiant panels



- CAPACITY:

Project Related

PRODUCT APPLICATION:

Offices • Factories • Abattoirs • Workshops • Garages • Warehouses
 Aeroplane Hangars • Showrooms/Hotel • Shops • Cash & Carry
 Gymnasiums • Dressings Rooms • Exhibition Halls • Churches

INFRA LINE

tub radiant heating



13 KW – 100 KW
 Natural Gas, Propane
 On / Off system
 High/Low system

APPLICATION:

• Abattoirs • Workshops • Garages
 • Shops • Cash & Carry
 • Cargo Platform • Grandstand

TANNER / DOOR CURTAINS

Warm water unit air heaters



- CAPACITY:

8 KW – 115 KW

- MEDIUM:

Hot Water, Steam

Thermal Oil

- HEAT EXCHANGER:

Copper / Aluminium

Steel (galvanized)

PRODUCT APPLICATION:

Factories • Engineering Plants • Abattoirs • Workshops • Garages
 Warehouses • Aeroplane Hangars • Showrooms • Shops
 Cash & Carry • Gymnasiums • Dressing Rooms • Exhibition Halls

KLIMAT

Air handling units



- APPLICATIONS:

Heating • Cooling • Filtering
 (De) Humidification • Ventilation
 Recirculation • Heat recovery

PRODUCT APPLICATION:

Offices • Factories • Spray Cabinets • Abattoirs • Workshops • Garages
 Warehouses • Aeroplane Hangars • Showrooms • Hotels • Shops • Cash & Carry
 Gymnasiums • Dressing Rooms • Churches • Pub's, Bar's & Restaurants

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Good Air Conditioning Requires Good Pumps



The Grundfos TP/LM range of pumps are suitable for both heating and air conditioning systems

Modern air-conditioning and climate control systems involve substantial liquid flows. This means they require pumps with capacity to match – pumps that also save energy, are extremely reliable and efficient, and can easily be fitted with advanced control systems.

Grundfos TP in-line pumps meet these exact needs and this makes them perfect for air-conditioning systems – as well as for all the other applications where

Lifecycle costs are important.

Unparalleled in both scope and depth, big or small, Grundfos TP covers it all. To help specifiers and contractors select the most appropriate pump for a particular air conditioning system, Grundfos suggest the following questions should be asked:—

- Where do you get the best ideas for new designs for air conditioning systems?
- What kind of pumps are the best to use in cooling and air conditioning?
- What kind of parameters influence the load on air-conditioning systems – and the pumps used in these?
- How do you achieve the best balance between constant flow on the supply side and variable flow on the user side?
- What is the best way to ensure the best possible balance and maximum flexibility in the air-conditioning systems you work with?
- Where can you get rapid, accurate information about pump specifications, operations and maintenance?
- How many pumps can be installed in

parallel?
 — How do you optimise the life-cycle costs of pumps used in air-conditioning systems?
 — How do you best introduce the benefits of speed control in the air-conditioning systems you provide?
 “Grundfos personnel have the answer to all of these questions” says Gordon Barry of Grundfos Ireland. “That is why we have become an important force in the world of air conditioning systems. The comfort factor has become vitally important in recent years, be it in the workplace, hotels, commercial buildings and homes. For the companies that have to supply those air-conditioning systems, commercial success and profitability can depend heavily on the efficiency and reliability of the circulation pumps that move the chilled water around.

“The Grundfos TP range is perfect for this task, especially since it is accompanied by a correspondingly-wide range of control strategies. All Grundfos TP pumps are available with electronic speed control that automatically adjusts pump output to match current conditions. This means that energy consumption is always kept to the absolute minimum.

By automatically adjusting their own

speed, Grundfos TP pumps are able to regulate the pressure to match system conditions perfectly. Electronic speed control is available fully integrated into Grundfos TP pumps up to 22kW. Separate variable frequency drives (VFDs) are available for all other sizes.

Self-adjusting pumps

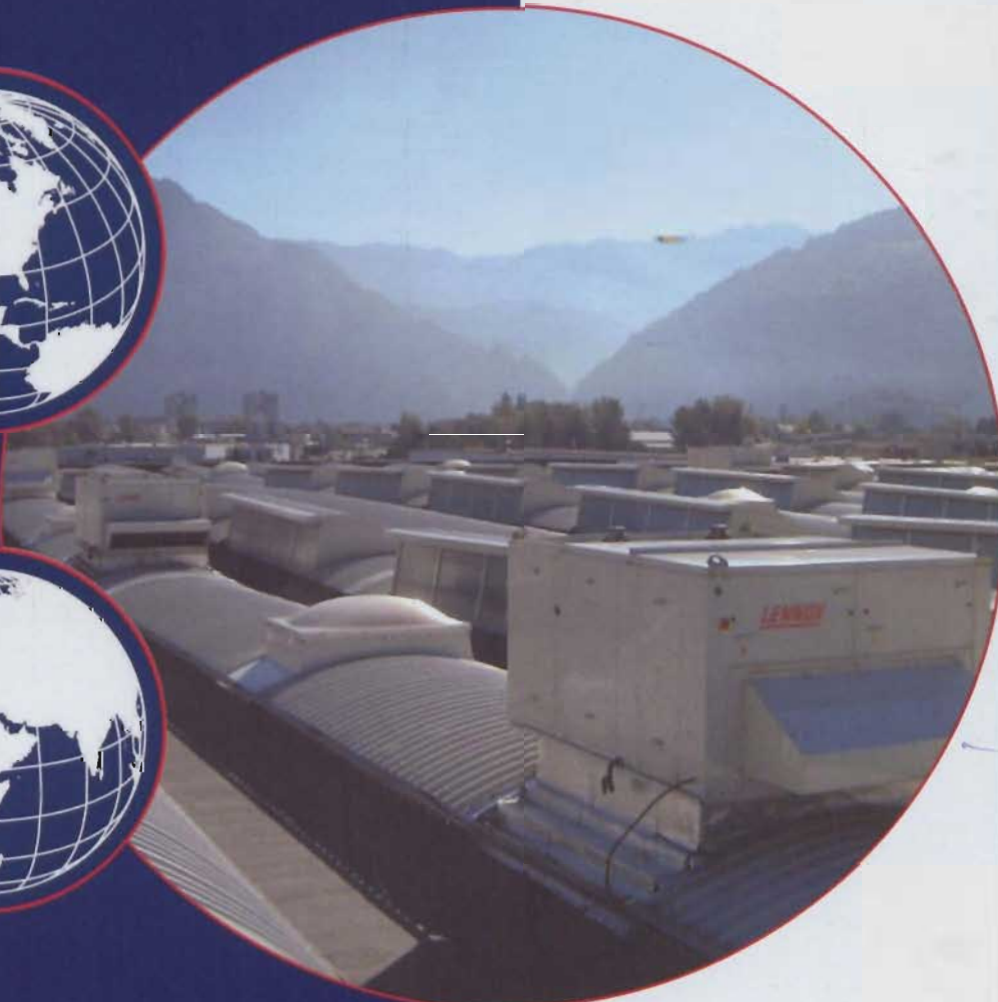
“The range is also being extended with the significant new option of an AUTO mode that automatically programmes the pump to operate within an optimised performance range. The pump then adjusts itself to always separate at its optimal duty point within this range, while responding to fluctuations in day-to-day demand. This maximises efficiency and reduces power consumption to levels that were previously unachievable.

“With Grundfos TP units, speed control configurations are available right across the board, giving access to the control strategies needed in any pumps in the air conditioning system. State-of-the-art air-conditioning systems require state-of-the-art circulation pumps – and the Grundfos TP range delivers in full.

Contact: Gordon Barry, Grundfos Ireland. Tel: 01 - 295 4926; email: gbarry@grundfos.com

AIR CONDITIONING
VENTILATION
REFRIGERATION

Lennox Ireland



PROVIDING SOLUTIONS

GLOBAL SYSTEM

LENNOX®

Sleeping Giant Awakes!

Lennox Industries, one of the world's leading providers of climate control solutions, has opened a wholly-owned Irish office with Pat Byrne as Sales Director, Ireland. Pat has extensive experience in the air conditioning sector and has worked with international brand-leaders — both in Ireland and abroad — throughout his entire career.

Lennox is a leading provider of climate control solutions with net sales of over €4.2 billion. Established in 1895 in Iowa, USA, by Dave Lennox, the company still bears the founders name and is a truly global enterprise with approximately 20,000 employees worldwide.

The core of its trade consists of the production of central air conditioning and air handling systems, all of which are manufactured in accordance with ISO 9001-accredited systems. All products are tested and rated in accordance with the Eurovent Certification programme and are designed to perform on refrigerant gases which comply with all current and anticipated legislative requirements.

“Our intention” says Byrne, “is to harness the enormous strength this represents for the betterment of clients in Ireland. Lennox has had a presence in the Irish marketplace for many years but now, with a dedicated Irish Branch office, we can focus our strengths more strategically and provide an improved quality service through our distributors ACT in Dublin, Montgomery in Belfast and MIM in Derry. They will continue to supply our unitary products such as rooftops, small chillers, split systems and portables.

“Meanwhile, the Lennox range of applied products and close control Datacool units will be handled directly by this office.

“For some time Lennox has maintained a steady, solid presence in Ireland ... now the sleeping giant has awoken”.

Dynamic Interactive Design

Ongoing investment in research and development results in new, innovative and technologically-advanced solutions continuously coming on stream. The objective is not merely to provide quality products and services to meet today's needs, but to anticipate future requirements and develop appropriate solutions to satisfy them. “Because we are thoroughly familiar with the operations of our customers and are prepared to listen carefully to them, we can provide products and services which fully meet their immediate requirements, as well as developing solutions for their future needs”, says Byrne.



Proactive Support Systems

Innovative, technologically-advanced products are only part of the answer. Equally important is the application of experience, technical expertise and system design capability to those products in devising the most appropriate systems solution for any given situation.

Lennox has enormous strengths in this respect, through the personnel in its Irish office, its distributors, and its sister-offices throughout the world. Direct line communication means that all this can be accessed in a matter of minutes and put at the disposal of the consulting engineer designing the project. This close liaison with specifiers and clients underpins the strength of the service provided.

“Logistics is also much improved. The more streamlined order processing system will ensure product arrives on site precisely where and when required, thereby making for quicker and more efficient installation and commissioning.

Innovative Products

Lennox designs and manufactures a broad range of products for the heating, ventilation, air conditioning and refrigeration markets. Included are liquid chillers from 10kW to 1500kW; central air handling units; and terminals such as fan coil units or chilled water cassettes.

Nor is the range static. It is all the time evolving and incorporating additional benefits and features identified through constant customer liaison. It includes:—

- Liquid chillers, air/water cooled (cooling or reversible);
- Rooftop — independent roof-mounted units;
- Air handling plants;
- Packaged direct-expansion systems and remote-mounted packages;
- Packaged heating and hot water systems;
- Terminal units — fan coil units; ceiling boxes; air handling units; air conditioning units;
- Precision air conditioning cabinets;
- Telecom units.



LENNOX®

Lennox Ireland



LENNOX IRELAND

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 from 1 March
 2004. Please use
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 in the interim*

Entropic Care For Indoor Clean Air

Commitment to innovative technologies, an excellent understanding of the principles of energy efficient ventilation systems, and a close partnership with its internationally-recognised and respected Scandinavian manufacturers have been key factors in the growth of Entropic Ltd. in recent years. Quality, price and customer loyalty are the hallmarks of its success to date.

Working closely with specifiers, installers, end-users and developers, Entropic provides technically excellent solutions that ensure the highest levels of energy efficiency and reduce the total cost of ownership.

Entropic's advanced selection and modelling software has enabled specifiers to reduce significantly the duration of the design phase of projects.

Through a close working relationship with the technical teams at both Halton and PM-Luft, Entropic has successfully introduced technologies such as Capture Jet™ Kitchen Ventilation - being up to 50% more efficient than existing systems, resulting in smaller ductwork and savings in capital plant, Cooled Beams, Displacement Ventilation, Variable Air Volume and Ventilation Energy Recovery Systems with integrated controls and up to 85% energy recovery, to a wide selection of high profile projects throughout the country.

Halton is an international group of companies specialising in developing and manufacturing indoor climate products and solutions.

Halton products include Diffusers, Grilles and terminal devices,



The PM-LUFT Compact Air complete air handling unit available from Entropic

Smoke and Fire dampers, VAV and Balancing dampers, Commercial Kitchen Ventilation and Cooled Beams.

Established in Finland in 1969, Halton now has over 800 employees, and a high level of market penetration globally. Halton has focused clearly on indoor climate solutions. This has led to the development of Demand Based Indoors; a concept specifically developed to balance indoor climate quality with energy efficiency during a building's life cycle. With this system, the aim is to use the defined requirements of an indoor system to select the optimal type of ventilation system, such as displacement, mixing, VAV, cooled beams, etc.

One of the most exciting technical developments from Halton is Capture Ray™, a system that eliminates grease and odours from the kitchen extract system, removing the need for expensive ducts to be run to roof level on high buildings, and enabling the heat from the cooking process to be

recovered and used to heat other parts of the building.

PM-LUFT, from Sweden, is also a long established (since 1952) market leader in its field, specialising in air handling units and ventilation energy recovery systems. Advanced design and selection software enables engineers to generate detailed models, technical specifications, and even 3-D CAD drawings effortlessly, and automatically produce full Life Cycle Cost reports for various options of AHUs.

PM-LUFT's solutions cover all kinds of air treatment for indoor comfort ventilation. The systems are renowned for their innovation, reliability and high performance. Apart from the standard range, units can also be customised for particular applications.

Contact: Michael Geraghty, Willie Geraghty or Declan Sweeney, Entropic Limited.
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email: info@entropic.ie



The Halton Capture Ray system exposes cooking effluent to UV light, which breaks down grease molecules into smaller harmless molecules

When Demand Is Tough Stulz Has The Answer

Walkair Ltd distributes the complete range of Stulz air conditioning solutions which are designed specifically for telecom cabins, base stations, switching centres and other demanding applications.

Clients are now also demanding more and more technical features from their ac units, such as advanced alarm management; free cooling; emergency ventilation; monitoring of humidity levels; intelligent sound management; intelligent refrigerant pressure management; as well as ease of installation.

Stulz has developed a number of models to meet these demands, including Wall Air, Tel Air and Split Air. Both Wall and Tel Air are complete packaged units which require no external refrigerant pipework, and can easily be installed by any competent fitter and electrician, although commissioning should always be carried out by a precision air conditioning engineer trained on Stulz equipment.

The Wall Air units are suitable for outdoor

application, with no space required in the space to be conditioned. Cooling capacities range from 3.8 to 20.8 kw. Air is supplied and returned via two openings cut into the cabin wall.

The Tel Air units are installed within the conditioned space. Cooling capacities range from 3.8 to 11.1 kw.

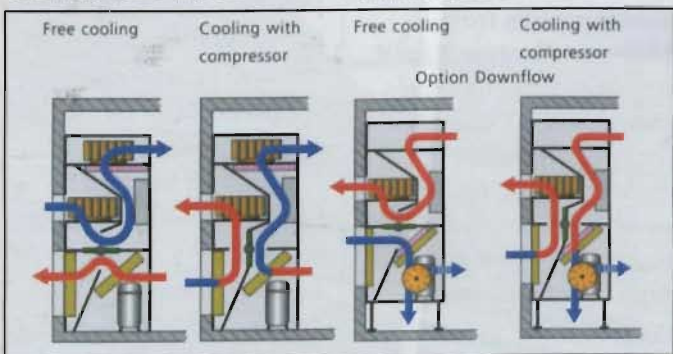
The Split Air units comprise internal and external matched units. Cooling capacities range from 3.8 to 11.1kw. All units are designed for 24/365 operation.

Features include:—

- C1010 microprocessor control;
- Free cooling;
- Proportional and enthalpy control of air damper to give free cooling;
- Nine volt-free individual and programmable alarm contacts;
- Intelligent pressure management of refrigerant circuit;
- Intelligent noise management;
- DC battery-powered emergency ventilation.

Contact: Vincent Mahony, Walkair.

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email: sales@walkair.ie



Honeywell Fan Coil Controller



Honeywell's new T8078C modulating digital controller for HVAC installations introduces many new features that provide more efficient modulated control of heating and cooling, while being much easier to use and set up than all previous units. Its modern styling and high specification make it ideal for offices, hotels, leisure premises and public buildings.

The T8078C is designed for individual zone control of fan coil and air conditioning systems. Each unit provides a choice of six different applications and three control modes, enabling selection of the best control option for every job, while also minimising spares holdings. It can use either a remote temperature sensor or its built-in sensor. The T8078C provides P+I control, ensuring close temperature control under all operating conditions. Control modes and applications are easy to set using on-board switches.

The T8078C can be switched into an Energy Savings Mode by a local or central switch input. This maximises energy efficiency by changing the cooling and heating setpoints to user-defined setup/setback temperatures.

Commissioning is fast and simple due to inbuilt diagnostics and an automatic test sequence which pulses all the outputs in just 60 seconds. A diagnostic system provides constant feedback on what the controller is doing and alerts users to any problems by flashing an LED mounted inside the plastic cover. In addition, there is a diagnostic output that enables system information to be downloaded and displayed on a PC.

Contact: Honeywell Building Control Products.
Tel: 0044 1344 656443;
e-mail: HVACProductsUK@Honeywell.com



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www.reconair.ie

I.S. EN ISO 9002

Aervent Climate Control ... 'Naturally the Best'

Aervent Group is one of the leading air movement companies in the Irish marketplace with the diversity of its product portfolio complemented by the engineering experience and capabilities of its personnel. These combined strengths give it a distinct advantage when devising customised air movement solutions across a broad spectrum of industrial and commercial applications.

The portfolio of leading-brand names represented by Aervent is extensive and includes Vent-Axia, Roof Units, Holland Heating, Dunham Bush, Interklima, Systema, Air Diffusion, Strulik and Victoria.

Vent-Axia has been the market leader in ventilation products for many years, with a reputation for quality and reliability. The relatively recent launch of a

dedicated air conditioning range was the natural next step. From the outset the design brief focussed on the ozone depletion properties of refrigerants. Some time ago the worst offenders were banned, and R22 became the standard for air conditioners. This however will also be phased out, mainly by R407C, which is a more environment-friendly refrigerant, and is the standard refrigerant for the Vent-Axia range of air conditioning units.

All either have heat pump facilities as standard, or as an option, with all systems microprocessor controlled, both to provide optimum settings and to protect against abnormal operation. The controllers are versatile yet simple to operate, while the air conditioners will re-start automatically after a power cut, and retain their previous setting. The automatic re-start feature may be over-ridden for specialised applications.

The present range includes wall mounting, ceiling cassettes and floor/under ceiling split systems. With an extensive product development plan over the next 2/3-years, Vent-Axia — through its distributor Aervent Group — is aiming to be



Roof Units — Europak roof mounting sickle fan from Aervent Group

one of the leading suppliers of air conditioning equipment in Ireland.

Roof Units is another world-renowned brand in the Aervent portfolio. Ventilation schemes for industrial and larger commercial buildings are its specialty with the company acknowledged as the most comprehensive single source of non-residential fans in the HVAC sector.

Fully-integrated ranges of accessories and controllers complete the comprehensive range, ensuring that all specification and installation needs can be met.

The Roof Units product range includes:—

- Plate-cased or bifurcated axial fans;
- In-line centrifugal extract fans;
- Horizontal or vertical discharge roof extract fans;
- Twin fans;
- Energy-saving fans.

Taking all brands represented, the air movement segments Aervent caters for

includes air conditioning, fans, air handling units, fan coil units, unit heaters, and air terminal devices.

Additionally, there is Aervent's extensive range of own-manufactured and "off-the-shelf" products. Utilising its 35,000sq ft manufacturing and warehouse facility in Dublin, a rapid turnaround is guaranteed, from same-day delivery on stock items to a couple of days on manufactured product which may not be in stock.

Included are volume control dampers; air terminal devices; filters — panel, bag, HEPA and torrit; louvres; fire dampers certified to BS 476 part 20; spiral and flexible duct and accessories; flanging and accessories; suspension systems — channel, brackets, threaded rod and fixings; and mastic and sealants.

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email: jim.bollard@aerventgroup.com



Vent-Axia TuroboProp industrial fan from Aervent Group

THERMO AIR

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Quality designers and
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- ❖ Compact and modular AHUs
- ❖ Heat recovery equipment
- ❖ Heating ventilation equipment
and all fan types

*We at **Thermo Air** pride ourselves on
offering our customers the highest
level of service*



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The Cool Solution To Office Flexibility

An office building typically experiences a 40% "churn", or movement of staff, annually and this rate looks set to increase year on year. Consequently, the occupants of today's office are demanding that the building's interior components are flexible enough to facilitate regular re-arrangements of the working space and personnel. This not only applies to room partitions and furniture, but also to vital communication, electrical, and environmental comfort systems.

This growing need to provide office layout flexibility is rapidly becoming a major factor in commercial building design. However, flexibility alone is not enough, as the cost impact must be considered, both of the initial build and any future re-configuration. In addition, operationally a modern building needs to be energy-efficient and economic to run, while providing the optimum in occupant comfort.

One solution is to incorporate a raised access floor, using the void beneath as a pathway for the systems' components. Modern systems include "plug and play" connectors designed to achieve fast and simple relocation of the connected equipment without needing a skilled technician to carry out the work. This means that it is possible to change the office layout easily and at very low cost. It can also lead to reduced costs in

other building components, such as reduced size of HVAC equipment, elimination of drop ceilings, and reduction in overall building height and associated building costs.

York International, a world leader in HVAC technology, has developed the ideal underfloor air conditioning system. "FlexSys" is a variable air volume, convection-enhanced ventilation system that can be used within most raised floor space alongside power, data and communication networks and control cables.

FlexSys is a fully flexible system, which can be quickly adapted to satisfy staff relocation. Supply air terminals in the floor void can be simply moved, in situ with the floor tile, by unplugging control cables and re-connecting at a new location. All the power, control and BMS cable management systems use different types of connectors, avoiding any risk of cross over. There is no costly conventional ductwork to dismantle or replace, only insulated, flexible ducting around the perimeter that uses quick-release "snap" connectors. The re-arrangement requires no specialised personnel and causes no disruption to business.

Air terminals are offset in the floor tile, offering four positions to allow options for the siting of furniture and fittings. Floor grilles can be adjusted to one of 16



With York's FlexSys, air terminals are offset in the floor tile, offering four positions to allow options for the siting of furniture and fittings

different flow patterns to create a personal air envelope, providing cooled, filtered, fresh air to each occupant.

As part of its extensive testing procedure, York employed an independent mechanical and electrical consultant and a cost consultant to carry out an analysis of FlexSys and compare it to other established systems. They concentrated on the fan coil system, as this is the most commonly used air conditioning technology in the market. The results indicated that FlexSys offered lower installed costs, lower maintenance costs and lower running costs. The indoor air quality was shown to be far superior, while energy consumption was vastly reduced and, importantly, flexibility was so improved that it led to a 27% reduction in "churn" costs.

York undertook extensive testing at the independent Building Services Research and Information Association microclimate laboratory

at Bracknell to establish design parameters. At a design operating pressure of only 7 Pascals, it is probably the lowest operating pressure of any system presently on the market and consequently achieves very low noise levels in the occupied space. A comprehensive results document is available on request from York.

As a complete building air conditioning system, FlexSys meets the requirements of Government legislation (Part L2 of the Building Regulations) as well as those of the developer, architect, letting agent, engineering designer and building services contractor.

For the occupants of commercial buildings, FlexSys provides a versatile and economic solution to the problems of staff "churn", while ensuring a comfortable working environment to maximise staff efficiency and productivity.

Contact: Frank Doyle, York ACR.
Tel: 01 - 466 0177;
email: frank.doyle@ie.york.com

Committed to people. Committed to the future.

Enter a new era with Toshiba's comprehensive product range



G T Phelan installation at Beacon Court, Dublin

Toshiba's diverse range of Split and VRF air conditioning products is ideal for both residential and commercial applications. The energy-efficient range includes cooling only, heat pump and heat recovery products to suit any application.

Innovations for 2004 include the introduction of the new high-efficiency Super Digital Inverter split system and the superior new Super MMS VRF range. Both ranges use non-ozone depleting R410A refrigerant and offer exceptional benefits, including enhanced performance and increased energy efficiency.

Toshiba's comprehensive product range provides you and your customers with an even wider choice.

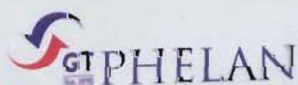
When you choose Toshiba you choose:

- Superior quality and reliability
- Unlimited flexibility
- Enhanced energy efficiency
- R410A and R407C optimised products
- Dedicated Projects Team
- 24-hour technical support
- Extensive control options
- Unique expertise
- Ultimate peace-of-mind



So, whatever the building, whatever the size, whatever the season - Toshiba can offer you the best solution.

Contact us today to ensure you are up-to-date on the Toshiba product range.



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Sanyo and MacHale – A Winning Partnership for 2004



After such a successful partnership in 2003, Sanyo Air Conditioners, as lead sponsor, will once again support Austin MacHale in his bid to win the Irish and British Rally Championships. The legendary Irish rally driver, who took second place in last year's Irish Championship and third in the British, believes his unique car will enable him to clinch both titles outright this year.

The 2003-specification Ford Focus RS WRC03 was recently unveiled at Moran's Red Cow Hotel at a launch hosted by John Steele, Commercial Director of motorsport specialist M-Sport Ltd, ending months of speculation. It is the only privateer current-specification Ford Focus World Rally Car in the whole of Europe and will be the only Ford Focus WRC03 competing in both championships.

The Managing Director of M-Sport, Malcolm Wilson, said: "It is great that the car will now get the chance to prove itself on the unique Irish surfaces...M-Sport will be working with Austin and his team to provide technical support for his programme this

season, and we are looking forward to seeing him set the championship pace."

The launch has already attracted a great deal of media coverage on TV3 and RTE, in specialist titles and national press, precisely the high profile that Sanyo's National Sales Manager, Barry Hennessy, was hoping to achieve.

As title sponsors the company enjoys great exposure. The Sanyo logo appears on the car itself, as well as on the team and drivers' attire, but Barry is keen to point out this sponsorship is a major commitment by Sanyo Air Conditioners in line with its commitment with the Irish air conditioning market.

"Rallying is a great sport and gives us a real opportunity to promote the benefits of air conditioning to a diverse audience. The sport's obvious links to innovation and technical excellence have a great synergy with our industry and the Sanyo brand itself, and we are thrilled to be able to continue our involvement this year."

"Hopefully, as the championships progress

there will be plenty of opportunities to enjoy some top motorsport first-hand," Barry concludes. "We could do with putting a bit of the drive and excitement back into air conditioning."

For the latest race reports visit www.britishrallying.com or www.irishrallying.com

As we went to press Sanyo Air Conditioners introduced the new range of SAP wall-mounted R410a units aimed at the domestic and small commercial market. The new units are produced at Sanyo's wholly-owned Chinese factory.

"This enables us to maintain the excellent quality standards that are expected of Sanyo while passing on considerable cost benefits to the customer," explains Barry Hennessy, National Sales Manager.

The new SAP units are available in both inverter and non-inverter alternatives. The Inverter model uses the latest in DC inverter technology and achieves COP of up to 3.6 and a Category A in the soon to be introduced energy labelling grades. The units are available

either as a cooling only option in two capacities (2.65Kw and 3.9kW) or heat pump in two capacities (3.9kW and 4.3kW).

The direct non-inverter alternative offers grade Category B energy efficiency and an even greater price benefit. The units are available either as a cooling only option in three capacities (2.4Kw, 2.65kW, 3.72kW), or heat pump in three capacities (2.75kW, 3.32kW, 4.20kW).

Until now Sanyo has built its market position on premium brand VRF technology, including the unique GHP product. The company has dubbed 2004 "The Year of Choice" and this launch represents the first of many planned to broaden the company's market presence.

"We believe in offering the customer choices", say Barry, "choice between refrigerants 407C and 410a; and the choice between power sources." gas and electricity.

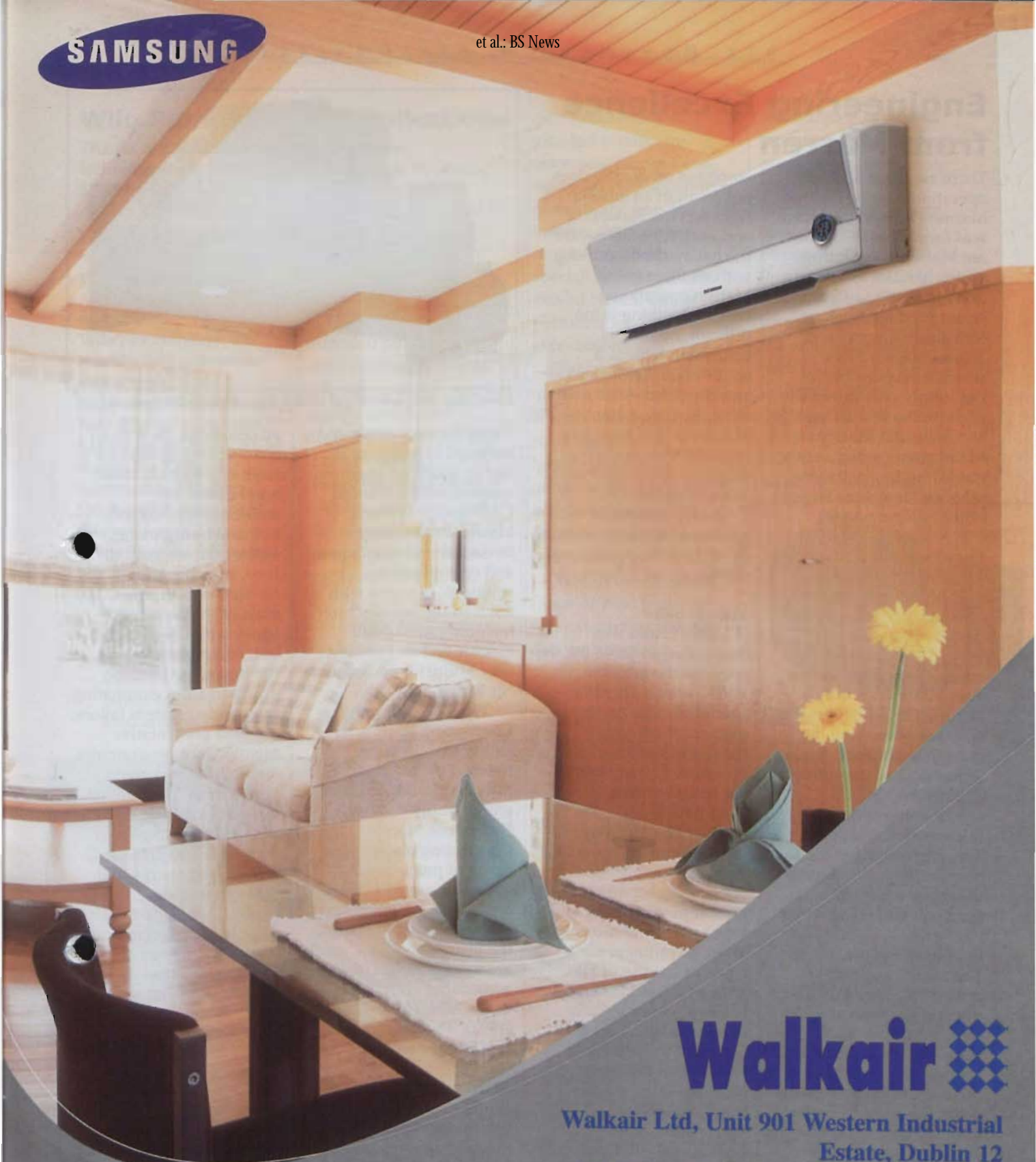
Contact: Barry Hennessy, Sanyo Air Conditioners.
 Tel: 01 - 456 8910; or visit www.sanyoaircon.com



Sanyo Air Conditioners introduced the new range of SAP wall-mounted R410a units

SAMSUNG

et al.: BS News



Walkair

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BIO nizer Series

Published by ARROW@TU Dublin, 2004



Engineering Excellence from Marren

There are three distinct operational centres within Marren Engineering which was formed in 1998. These are Marren Contracting, which handles the supply and installation of leading-brand products such as Mitsubishi Electric and Edpac; Marren Sales, which is responsible for the supply only of equally high-profile brands such as McQuay; and Marren Maintenance which, as the name implies, is the after-sales and maintenance arm of the company.

Engineering Excellence

What underpins each operational activity, and cements and strengthens their inter-trading, is adherence to a strict code of engineering excellence. Tom Marren is a fully-qualified building services engineer who, from the outset, emphasised the importance of providing engineered air conditioning and refrigeration solutions. This engineering ethos is now endemic throughout the entire company and dominates all its activities.

Qualified People

The result is utter professionalism. With 37 direct employees and 13 service vehicles on the road, Marren Contracting, Marren Sales and Marren Maintenance represent the cutting-edge of Ireland's building service sector. All employees are highly-qualified; undergo regular educational updates; work according to clearly-defined management structures; adhere to strict operational procedures; and carry out their duties in accordance with recognised Best Practice in respect of safety and environmental issues.

That said, this

emphasis on quality does not result in an austere, rigid service. Flexibility and even friendliness are the hallmarks of working with all three of the Marren operational centres. Nothing is too difficult, nothing is insurmountable ... a solution can be devised — and provided — no matter what the circumstances. Moreover, it is done in a cost-effective, energy-efficient, and environment-friendly manner.

A brief resume of the products/services provide by each of the operational centres are as follows:—

Marren Sales

□ Marren Sales was established to serve the needs of the heavier HVAC sector. This is a specialist niche market segment requiring particular skills and products. These Marren has in abundance, including:—

Chillers: The McQuay range of chillers covers all manner of applications offering higher efficiencies, greater performance, and lower noise emissions.

These advantages are a result of the use of HFC 134a which, additionally, is less environmentally harmful. Capacities go from 8kW to 10mW.

Products in the range include:—

- Scroll chillers;
- Reciprocal Chillers;
- Centrifugal Chillers;
- Screw Chillers;
- Absorption Chillers
- Air Handling Units;
- Fan Coil units;
- Water Sourced Heat Pumps;
- Controls.

Marren Contracting

Marren Engineering concentrates on large VRV engineered HVAC projects.



A McQuay dual centrifugal chiller from Marren Engineering

Using the experience and technical expertise of its highly-qualified engineers, coupled with advanced CAD design systems, Marren Engineering devises the most efficient and cost-effective solutions. It works with all the leading manufacturers, including Mitsubishi Electric and its Lossnay; City Multi; Mr Slim; and Mr Series.

What sets Marren Contracting apart is its ability to deliver the finished project on time, fully commissioned, and within budget.

□ **Controls:** Marren Contracting also offers a range of precision-designed controls. These are critical to ensure the optimum performance of the installed system and are manufactured in accordance with IS/ISO9001/EN29001 (1992). They also conform to CE requirements.

Marren Maintenance

While engineering excellence is the underlying theme with all Marren Engineering operations, perhaps it is most evident in the services provided by Marren Maintenance. Maintenance, and especially preventative maintenance, is essential to ensure that the many problems associated with system downtime are eliminated. This is true of

all situations, be it an air conditioning system for a large office block, small retail outlet, or environmental-critical manufacturing plants such as the pharmaceutical, food, brewing and electronics industries. The scale of the associated losses vary enormously but, relatively speaking, the impact is the same.

Apart from eliminating unexpected system failure, planned preventative maintenance programmes also get the maximum return from the installed system by way of better performance, improved comfort levels achieved, and greater energy and cost efficiencies.

□ **24-Hour Stand-By:** That said, the unexpected can also occur. In such instances Marren Maintenance has a rapid-response team who are on 24-hour standby.

Needless to say, Marren Maintenance is staffed by fully-qualified, highly-experienced engineers who, apart from technical expertise, are also trained in customer relations and are sympathetic and understanding when dealing with anxious and sometimes distressed clients.

Contact: Tom Marren, Marren Engineering.
Tel: 01 - 833 4144;
email: info@marrenengineering.ie
www.marrenengineering.ie

Wilo Pumps for AC Applications

Thanks to new motor technology, the Wilo-Stratos enables energy demand to be reduced by up to 80% in comparison with standard glandless pumps.

With this revolutionary technology, Wilo has delivered the world's first wet runner pump with ECM-technology for use in both Chilled water and LPHW applications. ECM stands for Electronic Commutated Motor (Motor with permanent magnet rotor). This motor design has the following advantages:

- Temperature range -10°C to +110°C for CHW and LPHW applications;
- Clearly improved motor efficiency at full load and part load

- operation;
- Improved hydraulic efficiency;
- Reducing annual energy consumption by up to 80 percent;
- Reducing size and weight.

Wilo also has a new extended range of single and twin-head glanded infinitely-variable speed pumps specifically designed to provide high levels of operating and energy efficiency along with low operating costs. The new Wilo IL-E, DL-E pumps complement the highly efficient IL, DL and BL fixed-speed range and feature bi-directional mechanical seals and IEC-standard motors.

Suitable for CHW and LPHW systems, these

new generations of glanded pumps are extremely efficient and versatile. With a cast-iron pump body, impeller and lantern, these pump ranges have been specially constructed to exceed typical pump performance expectations.

For instance, features include maintenance-free bi-directional mechanical seals, suitable for handling water at temperatures up to 140°C and for water/glycol mixtures to a minimum temperature of -10°C.

Within the extensive range of Wilo building services pumps there is also an automatic condensate pump unit. The packaged pump set is ideal for use with air

conditioning systems, fancoil units, refrigeration plant, evaporators, deep freezers and chilled display cabinets where condensate has to be disposed of. Capable of a flow rate of 370 L/Hr. and a discharge head of up to six metres, the unit has an integral collection tank volume of 1.5 litres.

Contact Wilo Engineering Ltd.
 Technical Sales Office :
 Tel: 01 - 426 0000;
 email: sales@wilo.ie



From the new Wilo Stratos range

Clean operation, clean benefits — that's Halton Capture Ray



Efficient Halton Capture Jet hoods are now available with Capture Ray ultraviolet technology. Scientifically proven results give added value in fire safety, running costs and the environment:

- Clean exhaust ducts and plenum
- Improved hygiene and fire safety
- Savings in operation and maintenance costs
- Environmentally friendly operation
- Comfortable working conditions



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 Maynooth
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 Web: www.entropic.ie

We Care for Indoor Air



Halton

www.halton.com

Hitachi Versatility From Ardline Aircon

Hitachi's Air Conditioning range is one of the most extensive available on the market with unit capacities ranging from 1kW up to the fully modulating Hitachi screw compressor chillers of over 1000kW. They are suitable for a variety of applications, from the domestic conservatory to the modern multi-storey office environment. The "sheer versatility" of the range is second to none, according to Damien Byrne of distributors Ardline Aircon, with every unit being characterised by quality design, quality build, quality performance and quality efficiency.

Significant investment in research and design, and manufacturing facilities, has seen a continuous stream of innovative products being brought to the marketplace to cater for commercial, light commercial, industrial, and domestic applications. These include the following:—

- The RAC range, which covers both fixed-

speed and inverter-drive split systems in both one-to-one and multi-zone applications.

Applicable to both domestic and light commercial needs;

- The Utopia range which offers a variety of air conditioning solutions suited to domestic, commercial and industrial applications such as conservatories, shops, offices and restaurants. Again available in both fixed-speed and inverter-drive versions;
- The set-free range of VRF systems is now the largest available in the market with outdoor units from 3hp to 30hp and an option of both 2-pipe and 3-pipe heat recovery;
- The Samurai range of water chillers are available in cooling only or heat pump version, and as air cooled or water cooled.

Hitachi's range of Set Free Variable Refrigerant Flow systems has grown tremendously in recent years, following significant investment in research and testing facilities at Hitachi's factories and laboratories in Barcelona, Spain.

One of the most exciting developments is the recently-introduced Mini Set-Free VRV range. Variable Refrigerant Flow (VRV) technology was developed to address

global concerns and the more complex operating conditions demanded by today's marketplace.

Ardline Aircon now offers an impressive choice of Hitachi VRF systems, the Set Free range incorporating heat pump and heat recovery versions with one of the largest capacity ranges available in the industry from 3HP to 30HP inclusive.

The newly-developed FSVG extension of the 2-pipe heat pump FSG range offers 3, 4 and 5HP capacities and the added benefits of the DC inverter technology, providing greater efficiency, higher COP ratings and consequently a shorter cost redemption period.

The outdoor units for the Mini Set-Free range are, as the name suggests, quite compact. In fact, they are 33% smaller than the standard 5HP Set Free outdoor unit, and are of horizontal discharge format. Exceptionally low sound levels are achieved through the combination of a DC-driven fan motor, new high-stream fan design, and the streamlined fan guard and casing.

CS-Net is Hitachi's computer control network system for the Set Free VRF and Utopia ranges.

The system is designed to run on Microsoft Windows and has the ability to control up to 16 outdoor units and 128 indoor units per interface. The flexibility of the Set Free system allows the internal data to be easily accessed and controlled by the user,

with features including temperature, mode and fan speed settings and groupings.

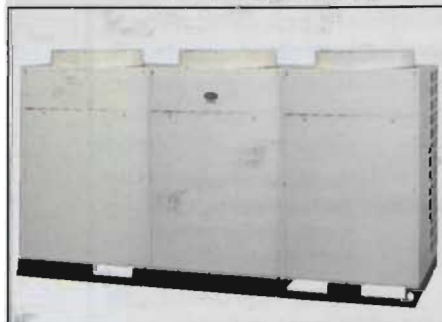
Moreover, it also has the ability to link to BMS systems through Harc/LonWorks interface.

Ardline Aircon has also just introduced Hitachi's ducted condensing unit. Manufactured in Barcelona, Spain and available for a number of years in that country, this product is now being offered to the rest of Europe as part of the Utopia split system range. The application for these units is where it is forbidden, or impossible, to place an outdoor unit outside a building due to planning restrictions or preservation orders.

The unit incorporates Hitachi's highly-reliable scroll compressor, centrifugal fan and Utopia series control, and can be used in conjunction with the Utopia indoor unit range. The new unit can be installed in indoor or outdoor locations and with four different inlet and outlet configurations (changeable in the field), it is adaptable to the most challenging of applications.

Comprehensive details on the entire product portfolio can be accessed via the company's new website at www.adrlineaircon.ie

Contact: Damien Byrne, Ardline Aircon.
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 Mobile: 086 819 2746;
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Hitachi Mini Set Free from Ardline Aircon brings VRF system benefits to small commercial applications and large homes

Panasonic Comfort Control From Walkair

Walkair has introduced a number of new Panasonic models in each of its product ranges, offering a total air conditioning solution covering everything from residential applications right through to large commercial and industrial installations.

To the forefront is the new Panasonic VRV multi-split system. This was designed in direct response to specifier demands for a sophisticated range incorporating a wide choice of models, design flexibility, energy-saving benefits and space-saving features.

There are two series of systems available — MX3 Series R410a inverter combination VRF heat pump system; and ME3 Series R410a inverter combination VRF heat recovery system.

For both systems there are 22 models of outdoor units available, ranging from 5hp to 48hp (13 to 155kw), with actual piping distance now

extended to 150m (equivalent length 175m).

There are three basic modules of outdoor unit available — 5hp; 8hp + 10hp; and 12hp, 14hp + 16hp. Combinations are extended up to 48hp for increased flexibility.

Panasonic has also decreased pipe sizing requirements — suction side by two sizes, and liquid side by one size (for 8hp or more), thus decreasing installation cost, etc.

All models are provided with an energy-saving feature ranked at the top level in the industry, with the average COP for the 10hp unit being the No. 1 in the industry at 3.25.

Another feature of the new range is space saving on outdoor units — approximately less 50% for the 16hp unit and 20% for 10hp. This of course also means reduced service space requirements and weights.

Further reliability is achieved by rotation

operation of compressors, and assured back-up to prevent systems from stopping — even if one of three compressors becomes faulty, the remaining compressors are available for emergency operation. In the case of models larger than 18hp, even if one outdoor unit becomes faulty, the remaining outdoor units are available for emergency operation.

With a total number of 65 indoor units available for connecting to the new UM3 range, Panasonic now has a myriad of potential solutions to meet any specifier demands.

Other notable systems in the Panasonic portfolio are:—

- The Urban Multi (UM) range which has a wide product line-up and unique heat recovery and combination heat pump technology. New is the KM2 series, a slim, wall-mounted type unit which can reduce installation area by 30%;

- The new M1 Series indoor Urban Split (US) range. This 4-way under-ceiling multi-air zone unit is ideal for use in buildings with no ceiling void and is capable of three different patterns of discharge direction. It is also available in the Urban Multi (UM) range (with connection box);

- There is also a 2 x 2 compact cassette unit for smaller rooms with 2.5-6kW of power, and a new Urban Split (US) outdoor series. This

R407C environment-friendly refrigerant heating and cooling CU-71 series is available for single-phase and 3-phase power supply types. This series benefits from a low starting current, which means reduced installation and running costs, as well as negating the need for an upgrade;

- A re-designed range of controls for the new Urban Split (US) and Urban Multi (UM) series of air conditioners, making operation even easier;

- Panasonic's RAC series room air conditioners provide wall mounted and floor or ceiling type air conditioners with high energy efficiency and low noise units for residential and light commercial use. Uses R410A refrigerant and benefits from many new features, including Panasonic's Catechin air purifying filter and triple deodorizing filter;

- Panasonic's FS flexi system series is intended for residential needs, with flexible common outdoor units and non-polar easy-to-wire control lines. Offering fast, flexible installation, this new series — using R407C refrigerant — is extremely versatile and can be used in many different ways and combinations.

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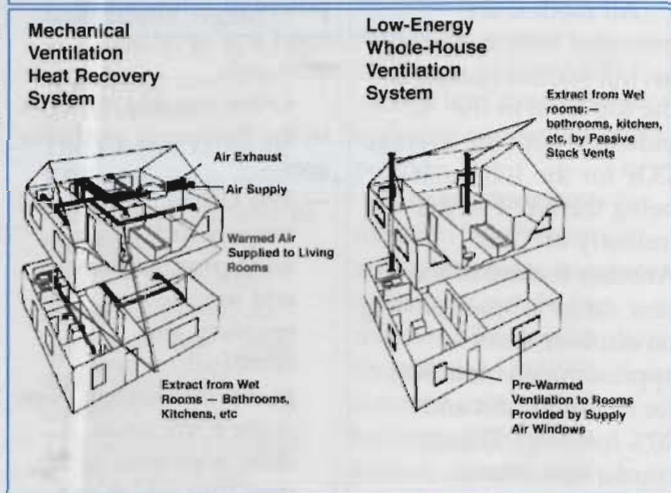
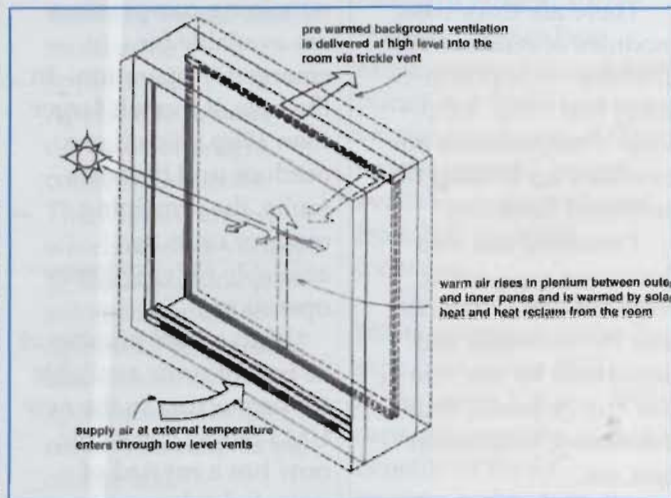
The new Panasonic VRV MX 3 Series from Walkair

Preliminary results from a European Commission-sponsored research project being carried out by scientists in Ireland, Poland, Denmark and the UK indicate that household fuel bills could be reduced by between 10% and 15% if homes were fitted with a new type of window ventilation system that has recently been developed by the University of Cambridge.

The study findings are particularly relevant in the light of the EU's ratification of the Kyoto Protocol and the commitment to reduce carbon dioxide emissions by 13% by 2010. Currently, energy generated for household heating purposes accounts for up to 20% of total annual CO₂ emissions/unit GDP in EU member states.

The findings are also relevant in the context of growing concerns about air quality in houses, and its implications for human health. Air quality has been found to be poor in many EU countries where national building regulations and codes prescribe sealed construction as an energy-saving measure. It is widely accepted by scientists and health experts that domestic condensation and the detrimental health impacts of poor air

Innovative Window Ventilation Reduces Household Fuel Bills



quality are partly due to the draught-sealing of properties.

The European Commission 5th Framework Programme research project — RDPCLEVS — which is due for completion in May 2004, aims to develop a robust energy-efficient ventilation system to counter the poor air quality that has been exacerbated by tighter modern construction techniques, coupled with increased draught-sealing of

buildings. The project is also aimed at addressing the inter-related problems of health, energy and comfort.

In order to establish the range of climates to which the system is most appropriate, the project field studies are being carried out in Denmark, Northern Ireland and Poland — locations that were chosen for their variation in terms of climate and geographical spread.

In each location, selected homes have

been fitted with an innovative low-energy, whole house ventilation system that has been developed by the University of Cambridge.

Among many benefits recorded to date, the new system improves energy efficiency (thereby reducing CO₂ emissions and generating lower fuel bills); it provides effective whole house ventilation; combats condensation and mould growth; reduces cold draughts; involves simple installation; and requires minimal maintenance.

The window ventilation system can be manufactured relatively inexpensively. If fitted during construction, for example, it would add as little as 10% to the overall window costs of a house/apartment. It is also suitable for retrofitting in older buildings where windows are being replaced.

For more information visit website:

<http://erg.ucd.ie/rdpclevs>

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Honeywell CM Zone – ‘The Most Radical Heating Control Concept in 30 Years’

Honeywell has introduced a radical new heating control system which is claimed to be simple to install, yet enables homes and small commercial buildings to make significant energy savings while greatly improving comfort and convenience. Called CM Zone, it reduces fuel costs as energy is used only where and when needed to maintain a set temperature. It is suitable for new and existing heating installations.

CM Zone is cheap and simple to install because it uses wireless radio links to transmit 2-way temperature and control information between components throughout the home or building. It splits the heating system into separate zones and uses safe low-power radio links from a central unit to wireless controllers on every radiator valve, which adjust automatically and individually to deliver the desired temperature.

The controllers use

self-learning fuzzy logic to ensure heat is delivered only where and when energy is needed to maintain the temperature. Each radiator controller sends a wireless signal to a boiler controller which fires the boiler only when heat is called for, providing an energy-saving boiler interlock. CM Zone can adjust the temperature in each zone automatically during the day – and to a different time/temperature pattern for each day of the week if required – to save even more energy. There are up to six time/temperature settings per day for each heating zone.

In the simplest installations, CM Zone controls and automates two zones serving the bedrooms and the main living areas of a home, but zoning can be applied to individual rooms if required to maximise energy savings. Typically, higher temperatures are maintained in parts of the building occupied at



The central controller can be wall-mounted or free-standing (inset) with the radiator controller fitted as per normal thermostatic controls

that time of day, while other rooms are maintained at lower, more economic temperatures.

Each zone operates independently, so the system does not waste heat by pumping hot water needlessly to unoccupied parts of the home, where it may be doing no more than heating the pipes if there is no call for heat from the radiator controllers.

Time and temperature programming for the whole system is easily set on the central controller, located in the main living area. The preset temperatures and times can be simply overridden when

necessary. With CM Zone there's even an automatic open window detection function. If a room's windows are opened, its radiator controller closes the valve automatically. Honeywell says that CM Zone is the most fundamental development in central heating controls in three decades, despite the many advances in components such as thermostats, programmers and valves. Moreover, its modular design allows a system to be extended to meet future needs.

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www.honeywell.com/uk/homes.htm



It May Be Empty But It Still Requires Care!

The EBS recently moved out of its old premises and into new headquarters in Burlington Road, Dublin 4, with Milo Doyle, Head of Information Security, charged with the smooth moving all 400 staff into the new building. However, he was then presented with the challenge of maintaining the value of the old building prior to selling it, while at the same time minimising operational costs.

BSNews asked Vincent Hickey, Associate Director of Irish Estates, what he felt were the main issues that property owners needed to concern themselves with in situations like this.

There are four fundamental areas that require care and maintenance during the vacant period of a premises — the heating; drainage; security, life safety systems; and electrical services. All require constant monitoring and maintenance, “mothballing” the term sometimes used to describe the process.

Drainage systems

Some of the most troublesome areas of vacant premises are the roof outlets and drainage systems. These can build up with debris from high winds and vegetation growth resulting in the drain outlets being blocked and this eventually leads to damage to the internal finishes of the



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building.

It is always a good idea to look out for loose slates and tiles when clearing the roof drains. If the roof is of an asphalt or trocal type, inspections of the membrane and parapets should also be included for any evidence of punctures or cracks.

Water services to WCs and wash-hand basins should be turned on and run regularly to prevent the traps from drying out and causing foul odours. This can be carried out as part of the security patrols.

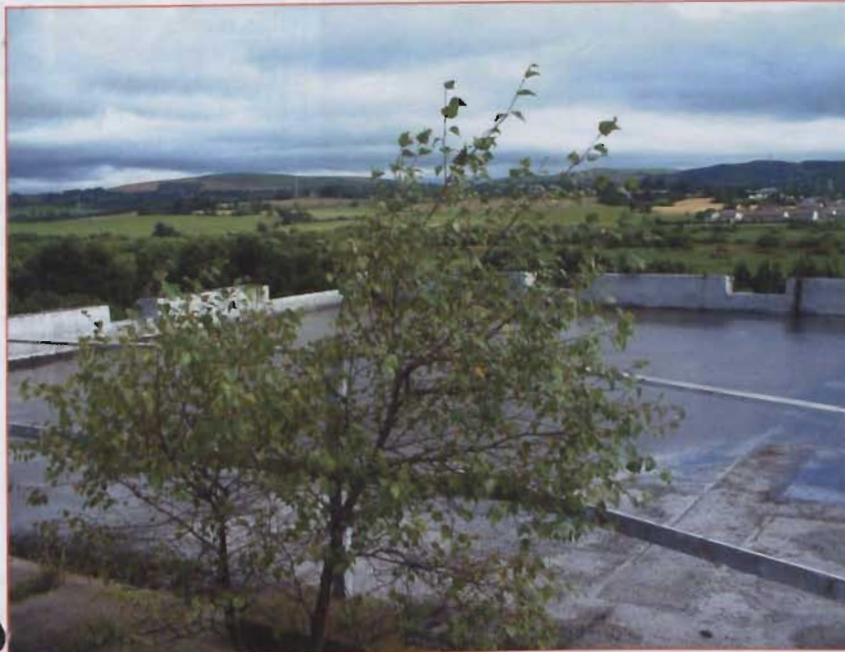
Security

Security, it goes without saying, is of paramount importance in an unoccupied building and, depending on the premises and its location, serious consideration should be given to re-routing surveillance systems to a 24-hour monitoring system. The accounts for telephone lines used for remote monitoring, i.e. digi-diallers, should continue to be paid until such time as this can be transferred to the new occupier's account.

Regular patrols should be in place and the patrolling guard should have a checklist of items to be inspected, including mechanical plant items.

It is imperative that checks are carried out on the external fire exits to ensure they are kept clear, and if the building is fitted with a fire hose reel, these should be tested to ensure that a water supply is available. Easy access to dry risers and hydrants must be maintained at all times. Letting agents, security, maintenance personnel and others who have access to the facility need to set the alarm and lock-up when they leave.

Other precautionary measures could include a reactive maintenance company being on standby so that any emergency break-ins or damage to glazing or the premises in general can be attended to without delay. We recommend that the reactive maintenance company is one which is familiar with the premises and



An example of ponding and vegetation to a neglected rooftop

capable of implementing the care and maintenance requirements with the other mothballing services.

Security Systems

From a safety and insurance aspect it is important that these, and any other warning systems, are serviced as a matter of course. In newly-completed buildings this will also ensure that warranties are extended on installations.

Heating

It may be tempting to turn off heating systems entirely. However, it is advisable to ensure that the heating comes on for short periods during the day to prevent warping or sagging to ceilings, particularly if they are mineral tiles. Lack of heat can result in dampness or condensation to core walls and of course freezing to water pipes. If trace heating is provided on water pipes, this system needs to be tested to ensure it is operating properly. Any circulation pumps,

particularly small types, should be started for short periods to prevent seizing. This is another check that can also be incorporated as part of the security patrol or the visits by the maintenance company.

Although consideration should be given to isolating water supplies entirely to prevent freezing to pipes, it should be borne in mind that your heating and fire fighting systems may require a continuous water supply.

Electricity

A review of your electricity should be carried out. However, when doing this owners need to ensure that the power supply to fire alarms or emergency lighting systems is not effected.

It is also worth noting that if the building is to be vacant for a long period, a review of the electricity tariff could be carried out. In many instances reverting to a General Purpose Tariff may be less expensive than paying a demand charge

when no demand is being incurred.

It is a good idea to take weekly or even monthly ESB meter readings, particularly if the building is not provided with a building management or optimiser system. Such systems can give an accurate indication of any plant that may running during the night or at other unusual times.

Pest control

It is while a building is left vacant that the need for pest control is at its highest. Pests in this instance can include everything from pigeons nesting in ventilation ducts to vermin coming in from the cold. The refuse area should have a good, in-depth, chemical clean after the premises have been vacated, and all old materials should be removed from site. A simple bait system with frequent inspections can act as an early warning detection of unwanted visitors.

Generally

Finally, it is not unusual for the simple tell-tale signs of a vacant premises to be overlooked. The build-up of posters and flyers, and the failure to notify postal services of the change of address, can all lead to advertising the fact that the building is vacant.

It is important that properties are maintained in optimal condition during vacant periods. By following the above few simple guidelines you can ensure that your building looks and operates at its best, without incurring unnecessary costs.

Systemair Swedish Swoop!

In the first of a programme of educationals for Irish consulting engineers, contractors and other specifiers, Niall Horgan of Systemair Ireland recently flew a small party of guests to visit the company's principal manufacturing base in Skinnskatteberg, Sweden.

The party — which was made up of representatives from Project Management; Martin Buckley & Associates; Hayes, Higgins Partnership; and Clarke & Associates — was welcomed by Gerald Engström, Systemair AB Group Managing Director, before participating in a seminar about new ventilation theories.

They also toured the factory and saw just how automated the entire manufacturing process is. Even the forklifts are automatic. The business schedule was completed with a tour of the research and development laboratories, a smoke test, and an opportunity to get a hands-on feel of components and products.

Essentially, the programme as presented demonstrated the company's commitment to identifying and solving current and projected end-user requirements, and illustrated how it is going about achieving that objective. Other senior Systemair AB personnel were

constantly on hand to facilitate Q&A sessions. It was very much a two-way process with ideas and opinions being shared and exchanged in formal business sessions and also, less-formally, over meals and social gatherings.

Systemair AB is the parent company of an international group which has 34 subsidiaries and other regular sales offices in more than 60 countries, including Ireland. It develops, produces and markets an extensive range of ventilation and heating products and is fully certified according to ISO 9001 and ISO 14000.

Systemair initially began in 1974 producing a range of circular duct fans but now, 30 years later, the portfolio includes centrifugal duct fans; air curtains; air terminal devices; heat recovery units; air handling units (0.5 m³/c to 55 m³/s); spray nozzle diffusers; multicone diffusers; grilles; volume control devices; axial fans; and bathroom fans.

Throughout that time the company has seen continuous growth,

achieved both organically and by acquisition, which has secured its competitive position within the marketplace.

Substantial reinvestment and a committed programme of research and development has also kept it at the forefront of new technology. During 2001 Systemair completed a new 1000 sq m laboratory which now conducts:—

- airflow measurements;
- acoustic measurements in a vibration-isolated room;
- efficiency measurements on heat exchangers;
- winding temperature measurements on motors;
- low velocity measurements on air terminal devices;
- heat effect measurements on heating products.

All measurements are performed in accordance with existing AMCA and ISO standards.

"We call our vision and the group's management style 'The Straight Way'", says Mark Russell. "We believe in taking the shortest route,

hence the straight way, to meet challenges and solve problems. For this reason we market our ventilation products under one brand and one profile. Wherever you are, you will recognise Systemair and know that the service level and product quality is the same.

"Our new administration system allows us to offer delivery in Ireland from our Dublin base within 24 hours, and from our central warehouse within 72 hours. In addition to delivering the right product at the right time, we emphasise the aesthetic expression our product gives. Our product development departments strive to design products that are innovative and exciting, while retaining high standards of quality.

"Quality has always had a high priority at Systemair. Demand from both customers and within our own organisation meant that we documented our quality system as early as 1993, and became ISO 9001 registered. The requirements of the standard allowed us to establish routines that provide our clients with the quality and support they expect.

"This continues to apply today, both to the quality of product and quality of service provided. In bringing visitors to the Skinnskatteberg plant in Sweden we aim to demonstrate our commitment to pursuing this objective, and to illustrate that they can specify Systemair with confidence".

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Another Side of ...

This Woods Definitely for Turning!

Paul Woods that is and no, we're not talking about Paul himself but rather his consuming passion for the craft of wood-turning. Paul is one of the elder statesmen and founder-members of modern-day consulting engineering in Ireland. As a respected industry figurehead he has been involved in all manner of prestigious projects and to this day he is still very active in the day-to-day running of McCarrick Woods, the company he joined in 1987.

He works with all wood types and is known to travel the length and breadth of the country to collect felled trees, be it from storm damage or site clearance.

All his life Paul has had an abiding passion for wood, its texture, shape, feel and beauty. This he inherited from his engineer father who worked extensively at wood-turning in his home workshop whenever time permitted. Indeed, his many siblings and their children are also immersed in the craft,

the common denominator being a very obvious and deeply-felt love of working with wood and drawing out its natural beauty in everyday, practical objects.

This is particularly evident when you see the fruits of their collective labour presented side-by-side at a single exhibition venue, which they now do annually, just leading up to Christmas. Last year was especially exciting as, in addition to wood products, it included other craftwork such a jewellery, and even some paintings, also by family members.

From the age of six or seven Paul was constantly at his father's side, watching, questioning and learning. He got no formal training ... nor did he study wood-turning academically. Everything he knows was gleaned from watching his father, and later his elder brother, turning out exquisite wood products, ranging from furniture pieces to delicate bowls.

This process of continuous development, experimentation, and constant sharing of knowledge and ideas is very much evident in the quality and finish of the work Paul turns out today, and the demand for his finished pieces. Over the years his work has always sold, first to friends, then to a wider circle of their friends as word spread. However, it was never — and is still not — a commercial venture. It is a labour of love, the money from sales helping to finance wood, tools and related equipment.

If you like the natural beauty of wood — and especially to see natural textures and shapes fashioned into exquisite yet practical products — then a wood-turning from Paul Woods is a must.



Paul Woods

Building Thermal Design

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"Building Thermal Design Using Spreadsheet Programs" was this year's topic at the Pat Benson Memorial Lecture held at the Bolton St, DIT, and presented by Louis Demetriou. The lecture demonstrated the capabilities of a spreadsheet program in predicting space temperatures and cooling loads for single and multi-zone spaces. In this short article it is only possible to address the topic in a qualitative manner and therefore the supporting theory behind the calculation methods will not be covered.

Currently, building thermal analysis is carried out using the CIBSE admittance method or commercial software packages. As many of us are aware, there can be significant differences in results between the CIBSE method and commercial packages. Although the CIBSE admittance method is based on the fundamentals of heat transfer, its calculations procedures are simplified for use on hand-held calculators. Where greater accuracy in manual methods is required, calculation procedures must be developed for use on more powerful types of calculator. Such calculators are already available in the form of spreadsheet programs.



Don Byrne, DIT with Kevin Tracey, CIBSE Chairman and Louis Demetriou, who presented the Pat Benson Memorial Lecture

Modelling building heat transfer

Mathematical modelling of building heat transfer processes is complex due to the many variables involved. All external and internal heat gains and their modes of heat transfer, convective or radiant, must be determined. Due to these heat gains, space surfaces transmit, store and retransmit from storage thermal energy to the space air volume by convection, and between surfaces by radiant exchange.

Convective gains have a direct influence on the space air volume while transmitted solar gains have a direct effect on space surfaces. Space surface and air temperature responses due to the heat gains must be accurately calculated. Plant is modelled and linked to the space model in order to predict heating and cooling loads. This

involves many complex mathematical calculations, which require simplification for use in the traditional manual methods.

Simplifications were probably justifiable in the past when only hand-held calculators were available. For greater accuracy, the link between manual method and calculator must be broken. A spreadsheet program contains the necessary functions and computational speed to carry out all the complex heat transfer calculations in a reasonable amount of time, without compromising accuracy.

Computing power of spreadsheet programs

Hand-held calculators contain approximately 80 mathematical functions. A spreadsheet cell has approximately 330 functions available to it. Each spreadsheet file

contains 230 columns, and 65,536 rows, summing to over 15 million cells; i.e., 15 million calculators linked together. This arsenal of computing power allows great potential for developing a manual method not compromised by simplifying the fundamentals. Although spreadsheet programs have been available for a number of years, their potential for carrying out vast numbers of complex engineering calculations within a fraction of a second seems to have eluded us.

Developing a spreadsheet-based manual method

The overall goal is to produce an accurate manual method, which can be used by the practising engineer. Some main pointers are:

- (1) Use an accurate thermal modelling

Using Spreadsheet Programs

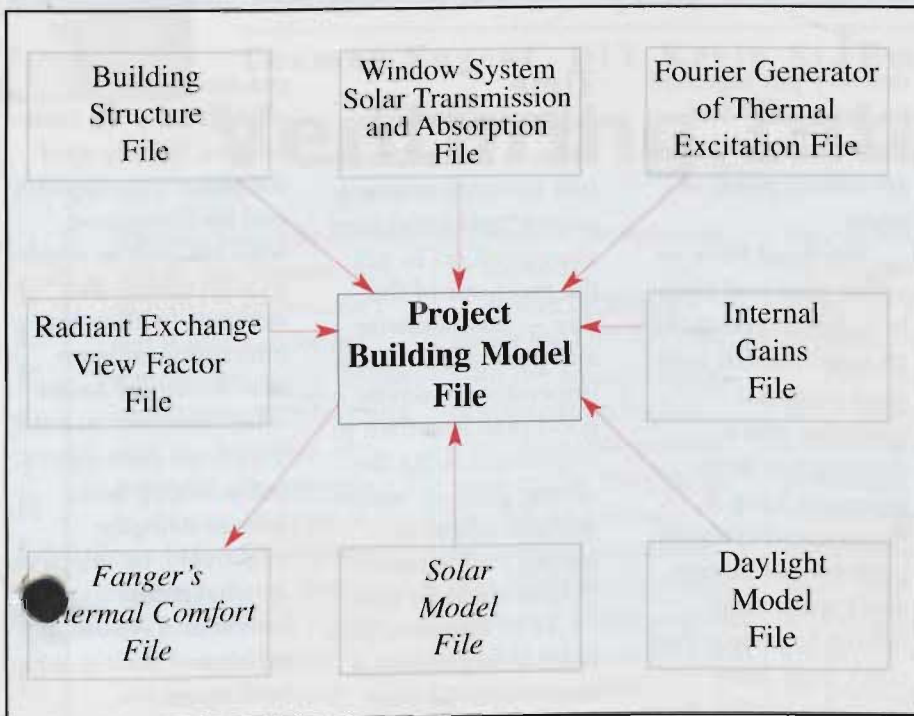


Figure 1: Supporting and optional files

- technique suitable for spreadsheet application;
- (2) Reduce mathematical processes to step-by-step calculation procedures;
 - (3) Organise the spreadsheet contents and spreadsheet files in order to reduce repetitiveness;
 - (4) Incorporate levels of complexity;
 - (5) Produce a user's manual;
 - (6) Ensure the method is teachable at undergraduate level.

Spreadsheets have many advantages due to their capacity to store and re-use information. **Figure 1**, file organisation (point 3 above) illustrates such advantages:—

The building model file is created for each new project. At the lowest level of complexity, the

project may involve the thermal modelling of a single zone. Supporting files are permanent files that can be revised with additional information. The files are used to calculate U-values, surface view factors, window solar transmission, thermal admittances and transmittances, etc, which are needed in the project building model to compute heat flows and temperatures.

Supporting files are created by the spreadsheet user or installed from disks provided with the manual. Only the building model file needs to be developed for a new project. If adaptable, previous building models may be copied and modified to suit new projects.

Figure 1 also illustrates the idea of optional files (Italic

script). Optional files contain other types of mathematical model that can be linked to the thermal model. Plant sizing, duct sizing and psychrometrics are examples of other optional files. Spreadsheet files evolve and grow with each project and the level of complexity is limited only by computer power and user capability. For instance, convective cooling, mechanical ventilation with night-time cooling, chilled ceiling with conventional or displacement ventilation, and natural ventilation via window openings were some of the spreadsheet examples demonstrated at the Pat Benson Memorial Lecture.

Is the method practicable?

There is little gain in developing a tool for the practising engineer, which is too complex or time consuming to use. Building heat transfer is a third year subject on the building services engineering degree course at Bolton St. The fundamentals of building heat transfer and some of the theory behind the thermal modelling technique used in the proposed spreadsheet method are covered.

The CIBSE admittance method is also covered. The theory required to set-up a single zone thermal model, based on the proposed method, could be taught within the time taken to teach the CIBSE method, the ability to use a spreadsheet program being a prerequisite. In the long term, a comprehensive manual would be essential. The contents should include the fundamentals underpinning the method, descriptions of the calculation procedures, guidelines on file organisation, advance spreadsheet techniques, tutorials with examples of varying complexity. Is the method practicable? The signs are positive.

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Register of Environmental Gas Installers



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Appliances Can Be Faulty Too!

Over the past few months feedback from REGII members has proved that call-backs can often be down to faulty appliances and fittings, and not just faulty workmanship. How many installers have lost time, money and reputation due to installing faulty appliances?

Manufacturers rightly complain when installation faults cost them money but, what about a system of redress when the installer suffers because of a faulty appliance.

'Sincerity ... Fake It and You've Got It Made!'

It was Dan Schorr of the *Herald Tribune* who came up with the immortal line: "The most important factor in business is sincerity and, once you can fake it, you've got it made." Cynical it may be but, it is a simple fact of life that people prefer to do business with people they like, who they feel they can trust and get on with. In fact, market research has found that non-verbal body language is a more important influence on how people feel about you than the words spoken and the tone of

delivery put together! So, remember that from the word go you are selling peace of mind.

You must have an action plan and stick to it. When you make an appointment with your potential customer and a meeting has been arranged, keep it. Buyers, and certainly professional buyers, don't waste time talking to people they don't think have anything to offer them. The very fact they are meeting you, therefore, means they believe — or at least hope — you have something of interest to them.

So, when you've arranged an appointment, you are starting from a positive position. But that is all it is ... a starting point. Sales are never made in a vacuum. They are invariably the result of a well thought out logical action plan. Important factors when making a plan include:—

- Preparation;
- The opening;
- Identification of customer needs;
- Presentation of your product and service;
- Dealing with objections;
- Closing the sale;
- Customer care.

Time Management

There is an inextricable link between business success and good time management. To get the most out of the day — businesswise and personally — it is imperative to devise a good plan and then to implement it. As the saying goes — "vision without action is merely hallucination". This is certainly true.

To be effective, you need to begin with a macro view of your job and life goals which you subdivide into key areas such as marketing; new business; work procedures; personal development, etc. Use a single page for each heading, which will form the basis for "To Do" lists under the relevant topic.

Next, list the activities requiring attention by topic, by whom, and when the activity should be completed. The use of a diary is essential. Pre-planning the prioritised "to do" lists, on a daily and weekly basis, and scheduling them into the diary for attention will ensure that items are flagged and get appropriate attention. That may sound fairly basic or obvious, but it's surprising just how much more can be achieved through this disciplined approach. Putting it into

practice is undoubtedly the hard bit. You have to spot the major time stealers and be disciplined, with yourself as much as with others. Be selective in allowing interruptions; learn how to say no; know when and how to cut telephone calls short ... but politely!; learn how to delegate effectively; be selective in what meetings to attend and ensure that when you do it is time well spent.

The benefits of better time-management include:—

- Reduced stress;
- Increased effectiveness;
- Better able to distinguish between the essential and non-essential;
- You save time;
- Life ceases to be a round of fire fighting;
- Improves relationships and effectiveness;
- More time to be creative;
- More effective delegation;
- Better balance between work and private life.

Self-discipline and organisation are critical to time management. You have to set goals and targets and respond to them in an adult way. If you find it hard you need to think seriously about your motivation.





Society of
Light and Lighting



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Venturing Into The Web

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The working title for this article was Stumbling into the Web because I felt it was a more apt description of my efforts to incorporate e learning into my teaching. My personal absolution is that I was 45 years of age before a computer arrived on my desk, and even then I still hoped that I could reach retirement without having to engage with the fearful monster.

No matter how I tried to ignore it, I grudgingly realised the powerful teaching aid it could be, if only for producing legible course notes. Therefore, I struggled to overcome my fears and to tolerate the embarrassment of slowly learning computer skills that my children appeared to have intuitively.

While I was struggling with my personal demons, the DIT recognised the potential of internet technology, in teaching and learning, and was developing policies for its implementation.

Being the largest third level institution in Ireland these policies did not only impinge on me but will do so on the future of higher education in Ireland. An outline of the organisation will help to

explain its prominence in the sector.

It was established under the DIT Act 1992, with the amalgamation of six existing higher education colleges that were run by the City of Dublin Vocational Education Committee. It is publicly funded and caters for 22,000 students (10,000 whole-time, 7,000 part-time, 4,000 apprentices, 1,000 research and short courses) and has an academic staff of 1,150 (including whole-time and part-time). It is currently spread across 38 sites in Dublin but is due to move into a new state-of-the-art campus in Grangegorman, within five years.

The objectives of the DIT are clearly spelled out in its Strategic Plan 2001-2015. The objective, most relevant to this article, is "enhancing a learner-centred environment incorporating E-learning and distance learning". A new internal Learning & Teaching Technology team was formed with the goal of having 50% of all courses using e-learning within three years. This was to be achieved by promotion of awareness and staff training. The good news is that through the hard work of the team and

the response of the staff the original targets were achieved in half the projected time.

From participating in introductory courses on e-learning I knew the benefits of web-based virtual learning environments. I also knew that it would take a lot of effort for me to transform from a "stand up performer" to a "pen friend" and still achieve student learning. It was only when I was scheduled to teach a part-time class, doing a Certificate Course in Electrical Services Design, that I realised it was time for me to bite the bullet and try to apply a blend of e-learning and traditional lectures.

One of the fascinating things about my venturing into the web was the effect that it had on my own teaching techniques and strategy. The first change was the format of the course notes. Originally they were in black and white for consistency of photocopying but they had to be changed to glorious technicolour, for visual impact on the monitor.

The next change was to modernise my lecturing technique to complement the

student's adoption of 21st century learning technology. To this end I tried applying some animation in PowerPoint presentations. With the application of new teaching technologies I began to feel so empowered that I even tried playing Mozart (on CD) during lectures, to achieve the "Mozart Effect". This is the beneficial effect that listening to Mozart has on ones spatial temporal skills, the ability to perceive a construction from looking at drawings.

To ensure that I was not just indulging my own fantasies I tried to survey the student's attitudes, on completion of the module. The results were very heartening and encouraged me to try to develop wider application of these new technologies. To give the *BSNews* readers an opportunity to experience e-learning, my colleagues and I are producing a sample distance learning class, that should be available to you in next month's issue. (How quickly one adapts to the magazine market and securing serial readership!)

Industrial Lighting – Total Lifetime Costs Assessment Essential

By Mr Ole Hoem
Glamox ASA,
Norway

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When investing in new lighting, thought should be given to total lifetime costs, and not just the purchase cost of the luminaires. Thus, in addition to the purchase cost, the other parameters to consider are:-

- Efficiency in terms of the quantity of luminaires needed for an installation;
- Running costs in terms of electricity usage;
- Installation costs;
- Maintenance costs over the expected lifetime of the installation.

As a guide, the cost breakdown in Scandinavia for industrial lighting is:-

- 50% operating costs;
- 25% maintenance costs;
- 14% capital costs;
- 11% investment costs.

Things which affect energy and maintenance costs are:-

Energy consumption
Use luminaries with high light efficiency in order to use less units for a given illuminance (lux);



Kevin Tracey, CIBSE Chairman with Ole Hoem, Glamox, Norway and Gerard Keating, CIBSE Committee and Homan O'Brien Associates

Lifetime of light source

Use lamps with long lifetime to reduce maintenance costs. Note that many industrial units have high ceilings/ mounting heights;

Maintenance ability
Make sure that it is easy to change lamps and easy to replace faulty / broken parts;

Temperature
The ambient temperature can decide the lifetime of internal components. If it is 25°C at floor level, it is higher at ceiling level;

Chemical and corrosion resistance
This is of particular importance in some industrial processes;

Disruption of production

See if it is possible to undertake maintenance without stopping factory production.

Solidity
Luminaire should be of a solid design and high build quality. Total lifetime cost is affected by all the aforementioned.

Ambient temperature and lifetime of internal components
Ta25C (approved ambient temperature surrounding luminaire) is to be considered standard if there is no label to the contrary. In industry, more often than not, the ambient temperature at the

luminaire will be higher than this. Therefore, internal components will have a shorter lifetime than that for which they were designed. However, luminaries with higher ambient temperature rating are readily available.

Where temperatures are higher than the approved rating, the lifetime of internal components will be reduced. This is of particular concern with electronic ballasts, electronic battery chargers and emergency batteries.

The lifetime for electronic ballasts is 50,000 hours if the luminaire-approved



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ambient temperature rating is not exceeded. However, it will be reduced by 50% if the temperature is increased by 10°C.

This reduction in life also applies to battery chargers and batteries.

Conventional (magnetic) ballasts have a lifetime of 86 000 hours where the luminaire-approved ambient temperature rating is not exceeded.

For longer lifetime and reduced maintenance costs luminaries suitable for the environment should be used.

Corrosion resistance

Many industrial locations and processes give rise to corrosive atmospheres surrounding the luminaries. Care must be taken in choosing suitable materials to build the luminaries to withstand corrosive influences where they exist. Any plastics used should be capable of withstanding the particular corrosive elements. Likewise, metals such as stainless steel, acid-resistant steel, or aluminium, should be considered.

Alternatively, the metal may be protected with a coating of zinc or aluzinc and suitable paint finish.

Dust and water/liquid ingress may also need to be considered. Where this is the case luminaries with an ingress protection class will need to be used. The typical rating of IP65 may not be sufficient. Short lifetimes can result from use of inappropriate materials.

Selection of correct protection class (IP rating)

IP65: dust-protected and water jetproof. The "jet" protection test is done with a hose which gives 12.5 litres per minute through a 6.3mm diameter nozzle at a distance of 2.5 metres. The water jet is turned against the luminaire from all angles for a minimum of three minutes.

The dust protection test is done in a sealed chamber with a vacuum inside the luminaire and with talcum powder in the circulating air for several hours;

IP66: dust-protected and water jetproof. The "jet" protection test is done with a hose which gives 100 litres per minute through a 12.5mm diameter nozzle at a distance of 2.5 metres. The water jet is turned against the luminaire from all angles for a minimum of three minutes.

The dust protection is the same as for IP65; **IP67:** watertight under water one metre below the surface for a period of 30 minutes. The dust protection is the same as for IP65; If high pressure jets are to be used for cleaning the luminaries then specify protection class IP66. Both IP65 and IP67 are not designed to withstand the pressure.

Installation of luminaries

Installation costs are important and so luminaries should be easy to mechanically fix to ceilings or suspension devices. They also should be straightforward to connect electrically. All parts necessary for their installation should be available, as far as is practicable, in one package;

Maintenance of luminaries

– High maintenance costs are often caused by poor design features.

At high mounting heights it is particularly important to have luminaries which are designed for easy maintenance. Attachments such as diffusers and reflectors should be easy to remove.

Lamps should be easy to replace. Rather than working at heights to replace control gear, it is preferable to have easily-removable gear trays.

Individual luminaries should be capable of isolation from the electricity mains without the need to disconnect a batch of units; thus causing severe loss of light;

Conclusion

From the foregoing, it can be seen that much careful thought has to be given to specifying the parameters of the luminaries. The original purchase price is only a small part of the story. Buying the cheapest initially is likely to turn out to be the most expensive in the long run.

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Heard it on the grapevine ...

LNG MOTORING — The development of the liquified natural gas **vehicle** market has traditionally been hampered by the lack of a refuelling network. However, this has now been addressed in the UK with the building and commissioning of **six retail outlets** for LNG on routes between London and Edinburgh, and Bristol and Glasgow. These sites are now being complemented by a further four motorway facilities. Natural gas is said to be the **cleanest propulsion** fuel available today. Even allowing for differing engine efficiencies and energy densities, natural gas fuel costs are up to **30% less** than diesel's.

CHINA NOT SO FRAGILE — As China's **trillion-dollar** economy continues to grow at a phenomenal rate, construction output in the country — and especially in **Beijing** — grows in tandem. The demand for **branded** sanitaryware, heating, air conditioning and energy-efficient products is **incredible**. Enterprising product and service providers should at least **investigate** the market potential.

MINIMUM WAGE — The National Minimum Wage (NMW) has increased from €6.35 to €7 as and from 1 February 2004. The concept of a minimum wage is all very laudable but, when you consider the **actual rate** against those of the majority of our EU member partners, we are fast pricing ourselves out of business on the export front while **weakening** our ability to sustain competition from abroad on the home market.

CONGRATULATIONS CATHY — Earlier this month Cathy Ryan gave birth to her first child, a bouncing **baby boy**. Pat Byrne of Lennox Industries tells me that Cathy and baby are both doing well.

BUÔN MA THUẬT — This village in the Dak Lak province in the central highlands of **Vietnam** has had its water supply and sewage system revamped as part of a Danish aid programme using **Grundfos** pumps. Streets are covered in waste, both solid and liquid, with **toilet waste** being piped directly from houses into open gutters. However, this new project has helped **clean up** the situation.

Oh For The Good Old Days!



Gerry Ross and Paddy Clonan pictured at the CIBSE weekend in the Nuremore Hotel in the mid-1980s. It was an occasion of golf, squash tournaments, snooker competition, mischief-making, pranks, and late-night excursions into clubs in nearby Carrickmacross. Oh for the good old days when the order of the day was good, harmless, **clean fun!**

€1 BILLION WIND FLUTTER — With a weekly energy bill of **€100 million** and rising, Ireland is undoubtedly one of the most fuel import-dependent economies in the world. Noxious emissions and fuel supply stability are also a major headache.


Paul Kellett of SEI believes that wind energy is the answer to all our problems. He maintains that Ireland has one of Europe's **best wind** regimes but that we have been slow to harness it. Nonetheless, he points to a growing realisation of **wind energy potential** and estimates that by 2010 it will represent a **€1 billion** industry in this country.


SANYO HI-FI WINNER — Gary McKeown of VMRA was the lucky winner of the January **BSNews/Sanyo** Reader Competition. The questions were just that bit trickier with a number of you obviously not too knowledgeable when it comes to Formula 1. A state-of-the-art Sanyo hi-fi system is on its way to you Gary.


PIAB TO REDUCE PREMIUMS? — Now that the **PIAB Act, 2003** has been published and will shortly be signed into law by the President, the scale of **personal injury** awards will hopefully be reduced. That in turn should help **reduce insurance** costs and ease the burden of **exorbitant premiums** on businesses. That is the theory at least ... let's see what happens in practice!


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