PROJECT PROFILE
FROM BALLINA

PRODUCT REVIEWS
• Insulation
• Radiators
Just 6 of the many good reasons for dealing with Walker for air conditioning & refrigeration plant

1. We supply Carlyle equipment, the air conditioning and refrigeration world leader both in product and system choice as well as quality.

2. Whilst competitors have mushroomed and collapsed month by month, we have grown year by year since 1964 as Carlyle’s sole distributor in Ireland.

3. We have the largest team of service engineers in the industry by far.

4. We have more stocks of spares and equipment in Dublin than all our competitors hold between them.

5. Our staff have over a million manhours of air conditioning engineering expertise between them.

6. And last, but by no means least, we are backed by the massive Jefferson Smurfit Group. Your guarantee of stability.

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the air conditioning leader
Despite a fall-off in membership in recent times, the Energy Conservation & District Heating Association of Ireland (formerly the District Heating Association of Ireland) still retains the same enthusiasm for the concept of district heating as when the Association was first founded though the founding member, Peter Byrne, expresses his disappointment that no scheme has been established in this country (page 19).

Future for District Heating?

Putting particular emphasis on the growing consumer demand for domestic central heating. The key to their success, according to Managing Director Raymond Flynn, lies in their ability to accurately predict the changing sales patterns and trends within the industry and the speed with which they can adapt to meet these new requirements (page 24).

Gas Agreement

Kenny International, a subsidiary of J A Kenny & Partners who have offices in Dublin, Cork and Galway, recently signed a collaboration agreement with Gasunie Engineering to pool engineering services concerned with natural gas systems in Ireland (page 5).

Taking Advantage of ‘Free Cooling’

On being appointed mechanical and electrical designers for the Hollister Overseas factory in Ballina, Co Mayo, O’Sullivan & Jacob found that the client wished the basic services to be similar to those in a plant then under construction in the USA. However, having pointed out that Ireland’s climate and energy costs required a different approach, Robert Jacob, the partner in charge, received approval to design a system based on first principles (page 8).

Key to Success

Despite a fall-off in membership in recent times, the Energy Conservation & District Heating Association of Ireland (formerly the District Heating Association of Ireland) still retains the same enthusiasm for the concept of district heating as when the Association was first founded though the founding member, Peter Byrne, expresses his disappointment that no scheme has been established in this country (page 19).

CONTENTS

Newsdesk .......................................................... 3
People ........................................................... 7
Project Profile: Hollister Overseas Factory, Ballina .... 8
Product Review: Insulation .................................. 11
IHVN Interview: Peter Byrne, Chairman of the Energy Conservation & District Heating Association of Ireland ........................................ 19
Northern Ireland Review .................................... 21
Company Profile: Clyde Systems ......................... 24
Product Review: Radiators .................................. 26
New Products .................................................. 34
ARE PLEASED TO ANNOUNCE THEIR APPOINTMENT AS SOLE IRISH AGENTS FOR NU-WAY BENSON'S COMPLETE RANGE OF AIR HEATERS INCLUDING THE WH 88 VERTICAL OIL FIRED MODEL

For Further Information Contact Brendan Bracken or Tony Smith. Lomond Avenue, Fairview, Dublin 3. Phone: 373796 Grams: HEVAC. Telex: 5827. Offices also at Cork and Belfast.
New Insulation Standards Adequate?

Although the recent introduction of improved insulation standards for grant-aided houses has received a cautious welcome from various sectors of the building industry, Owen Lewis, Director in Architecture, UCD who has in the past repeatedly called for greater standards, claims that similar action is now long overdue on other building types.

The Government's statement on the matter announced by Mr. Sylvester Barrett, Minister for the Environment, outlined a new specification for grant type houses costing less than £10,000 and those which qualify for the £1,000 new-house grants as and from the 25th August.

This was considered necessary, according to the statement, in order to bring previous specifications up-to-date, to recognise modern products and building techniques, to comply with the Governments metricalisation programme and to clarify the specification as much as possible for the guidance of persons building new houses.

While the Department pointed out that their structural requirements remain largely unaltered, they do emphasise that improved insulation standards are now provided for. These standards relate to the whole building – external walls, roofs, ground floors and external parts of intermediate floors – but only the standards for roofs and ground floors will be required immediately. The standards for the remaining elements will become obligatory when National Building Regulations are introduced or on 1 July 1979, whichever is the earlier.

Owen Lewis, who complained in these columns last November that the majority of houses were being built in the State without proper insulation, told IHVN that the introduction of thermal insulation standards to grant-type houses in Ireland should be welcomed, late in the day though it may be.

"Local authority and NBA houses are being built to the standards since 1976", he says, "and, while there have been recommendations for privately built housing, recent statements by CIF spokesmen have regrettably only served to emphasise the necessity for mandatory controls.

"I have two reservations about the Minister's statement" Mr. Lewis continues, "firstly, there could be a further delay in implementation of the regulations unless the National Building Regulations are introduced within the next few months, and the chances of this I suspect are slight. Therefore standards for external walls and for the whole of a building might not become mandatory until July 1979. The emphasis should be on improving the walls in new housing since this element is particularly difficult and expensive to insulate later."

"My second point of regret about the Minister's statement is that, after such a long delay, the standards of insulation now to be required can only be seen as an interim standard, merely a first step towards those standards necessary to provide a decent internal environment in contemporary circumstances".

Heating Distributors Open Showrooms

Heating Distributors Ltd have recently completed and opened an extension to their new showrooms in Richmond Road, Dublin, where both the trade and public can view what the company regards as one of the most extensive ranges of heating equipment in the country.

Apart from the wide range of oil and solid fuel central heating boilers, and the comprehensive series of domestic and industrial chimney systems, Heating Distributors are also introducing a new range of Saunier Duval electric and gas water heaters.

The Saunier Duval electric storage water heaters are said to be energy saving, clean, noiseless units.

The tank is made from a steel coated internally with a protective layer of mineral-synthetic products giving optimum resistance to corrosion. This coating is neutral from both the chemical viewpoint and as regards electrolytic action. It is of excellent hardness and homogeneity and guaranteed free of calcium silicate. The glazed surface penetrates any capillary penetration.

A view of the Dunsley section of the new showroom recently completed by Heating Distributors.
of the tubing. This unit will serve three purposes: protecting the tank against excess pressure; acting as a stopcock; and acting as a draincock for the water-heater.

The showrooms are open each day from 9 am to 5.30 pm with a break of 1 hour between 1 and 2 pm.

Nu-Way Benson Goes to Hevac

John A Hoey, the newly-appointed chief executive of Hevac Ltd, told IHVN recently that his company have now appointed sole Irish agents for the Nu-Way Benson range of equipment with capacities extending from 200,000 Btu up to 1.28 million Btus.

One of the features of the range is the vertical oil-fired air-heater, Model WH 88, which is arranged for on/off operation with a control system fitted complying with BSS 799. This fully automatic system incorporates a photo-cell flame failure device. Manual reset overheat protection together with a warning light is provided. The fan and limit control ensure that no cold air is blown on start up. An override switch is fitted to give continuous operation for summer cooling.

The combustion chamber is made from high quality heat resisting stainless steel with a large surface area and volume to ensure long life and low surface temperature. It incorporates a pressure relief door and flame viewing window.

The heat exchanger is constructed, designed to give maximum heating surface with lowest possible resistance to gas flow. The combustion chamber and heat exchanger are flexibly mounted to prevent distortion.

Warm air is provided by a centrifugal fan at the base of the unit and discharged through four nozzle outlets, each louvered, and capable of rotation giving full control of air distribution. Units for ducted installation are provided with a flange outlet.

Lennox Appoint C & F

Lennox Industries Ltd have appointed C & F Ltd, exclusive distributors of all Lennox heating, ventilating and air conditioning equipment in the South of Ireland.

C & F, whose managing director is John C Duignan, have already started marketing the range, which covers both domestic and commercial appliances. Gas-fired and oil-fired units are included, together with others using hot-water coils or electrical resistance heating, and the range is completed with several sizes of gas-fired water storage heaters, and with the Lima range of aluminium and stainless steel grilles and diffusers.

Lennox will place considerable emphasis on their new series of modular heating and ventilating units which have been designed and sized to cover most commercial applications. Each unit is factory assembled and tested and this, together with the use of state control systems, ensures that on-site work and installation time are minimised.

In particular, following the acceptance and success of their heat pumps in the USA and in several European countries, Lennox will be promoting this energy-saving concept for all suitable applications in Ireland.

A concentrated marketing campaign embracing sales promotion, direct mail plus display advertising has already begun and C & F will feature a Lennox unit on their stand number 55 in the Main Hall, RDS during the IBAC ‘78 Building Exhibition, which will be held from 3-8 October.

To ensure that consulting engineers, developers and all relevant specifiers are fully au fait with the current comprehensive product range from Lennox a full product launch will be staged in Dublin, in the very near future.

Clyde Perpetual Trophy Results

On what could be considered a summer day, for this year, one of the largest turnouts of the season took place at the Dun Laoghaire Golf course for the Clyde Perpetual Trophy.

A goodly crowd of supporters managed to keep the 19th hole very busy and after all the players had returned their cards, a most enjoyable meal was held in the club house with entertainment supplied by David Beggs.

All present were loud in their praise for Raymond Flynn of Clyde Systems who sponsored the days outings and later presented the prizes to the winners, which were as follows:

Outright Winner - Noel Stapleton, Clonmel, Noel Stapleton Ltd, (13), 40 points.

Class 1 - 1st: Tony Jennings, Hon. Secretary, Slade Valley, (8), 35 points; 2nd: Tony Delaney, Contractor, (5), 35 points.


Class 3 - 1st: Michael McDonagh, Leo Lyne & Co, (22), 34 points; 2nd: John Lamont & Burke & Co Ltd, (16), 33 points.


1st nine - Paddy Walsh, John D Doherty Ltd, (17), 22 points.

2nd nine - Des O’Gorman, Des O’Gorman Ltd, (17), 17 points.

Special prize for Best Score Overall for Par 3’s: Kevin Fox, Benny Lynch Ltd.

Coolair Awards

Some £100,000 worth of specialised air conditioning equipment for use in operating theatres in Dublin and provincial hospitals has been supplied by Coolair Ltd., one of the companies within the Cork-based Cross Group.

Many of the installations involved the supply of equipment to maintain clean air with stable temperature and humidity conditions for the Charnley Operating Unit which has become world famous for its success rate in orthopaedic sur-
New Industry for Cork

The Minister for Industry, Commerce and Energy, Desmond O’Malley, TD announced recently that the IDA has concluded negotiations with Ridge Tool Company of Ohio for the location of a new industry in Cork to manufacture pipe working tools and equipment for the international market.

Ridge Tool plans to start production in a factory on an IDA site at Mahon Peninsula. Their operation will include metal machining, heat treatment, painting, boring and grinding. Initial assembly activities are scheduled to commence in September while metal machining is planned to commence in December.

A number of employees are already been recruited and are undergoing training. Completion of the first phase of the project is expected to bring employment in excess of 250 by 1982.

Briefly

1st OFFSHORE GAS: The Minister for Industry, Commerce and Energy Desmond O’Malley, TD, has been informed by Bord Gais Eireann that they have commenced receipt of natural gas from Marathon for commissioning of the 30 mile pipeline system from Inch to Cork City and later for transmission to ESB and NET also for commissioning purposes. There will be a formal ceremony to mark the receipt of gas in commercial quantities sometime in October, 1978.

ENGINEERING IRELAND: The second Engineering Ireland Exhibition will take place next month from 27-30 September at the Burlington Hotel, Dublin. Over 70 exhibitors representing over 150 suppliers will be exhibiting production equipment, processes and services in the following categories: electrical equipment; welding; pneumatics; hydraulics; instrumentation; machine tools and metal forming equipment; precision engineering and fabrication.

MIDLAND INT: Two leading executives from the purchasing division of Littlewoods, the major UK mail order company, recently visited the Ballaughlease headquarters of Midland International Ltd. Littlewoods, one of the leading British mail order companies, marketing flair bathroom products, currently purchase products worth £5m annually from Midland International. Under a direct despatch agreement, these are processed at a rate of 600 units per day through Midland’s UK subsidiary, MI Plastics Ltd of Liverpool.

GLOWTHERM: The ‘Silentair’ people, Electra Air Conditioning Services Ltd, have appointed Glowtherm Ltd Dublin as their dealer for Eire. Ben Kearney and Sean Carroll, Glowtherm Directors, formed the company four years ago and intend to supply ‘Silentair’ air conditioning units as a stock item.

TRU-FLOW: Tru-Flow Ltd have moved to new premises and are now operating from Unit D1, Chapelizod Industrial Estate, Chapelizod, Dublin 20, (Tel: 363984).

WATERMISER: Watermisser recently received a contract from Jacobs International Ltd of Dublin, for the supply and installation of induced draught cooling tower at R V Chemicals Ltd Widnes, Cheshire. Another order recently received by Watermisser Ltd is one for the supply of three GRP towers for installation at Dun Laoghaire plant of Becton Dickinson Ltd. The order was placed by Leo Lynch & Co and the consultant engineer was Surveyor Homan Associates.

DELTAL: AWS Delta Ltd have been appointed agents for Skimovex BV, the Utrecht based member of the Ballast Nedam Group in the Netherlands. The agency agreement incorporates the exclusive sales and marketing rights in the UK and Eire, for Skimovex BV’s patented products and processes. The range of products includes the Inverto coalescing-filter which has operated successfully on a commercial scale with produced water to give separable oil content of sufficient quality for re-injection back into the reservoir. Details from T W Gray, AWS Delta Ltd, Loudwater House, London Road, Loudwater, High Wycombe, Bucks.

Another Well Plugged

Esso Exploration and Production Ireland Inc. and Marathon Petroleum Ireland Ltd have announced that the 48/24-2 well in the Celtic Sea which began drilling operations on July 10, 1978, will be plugged and abandoned.

The well, which was drilled to a total depth of 7,363 ft, encountered non-commercial shows of hydrocarbons in reservoir sands scattered over a 5,000 foot interval. Encouragement created by shows of oil and gas recorded during the early stages of the drilling operations was not supported by the final evaluation of the well which included logging, coring and extensive formation testing.

Esso/Marathon added that they would use the information obtained from this well in further studies of the Celtic Sea.

Agent Sought

Oertli is one of the leading oil and gas burner manufacturers in Europe. The company, founded in 1929, has been growing over the last 50 years from a small importing business to a strong inter...
The best double act in the business.

Two great performers from the Ridgid Work Saver Range—the RIDGID 500 and RIDGID 535.

When there's cutting, threading and reaming to be done, these tough, fast-working money savers will happily tackle all you've got to give them. And these days you'll find them very price competitive too. So go for the best. Ask for Ridgid.

**RIDGID 535**

Pipe and Bolt Threading Machine. Built to famous RIDGID quality standards for efficient production threading of pipe, conduit or rod, at the job site or in the shop. Features include patented Speed Chuck, Automatic Recirculating Oil System, integral safety foot switch. Capacity: 1/8" through 2" pipe or conduit 3/4" through 2" rod. Also powers geared threaders.

**RIDGID 300**

Power Drive with patented Speed Chuck provides lightweight portable pipe, conduit and rod working capability through 2". Heavy duty motor, recessed reversible switch and integral safety foot switch. Equipped with low-cost RIDGID accessories (Carriage Cutter, Reamer and Die Head), it offers you complete threading machine, speed and ease. Full capacity 3/8" through 2" pipe and 1/2" through 2" rod. Up to 6" pipe using RIDGID Geared Threaders and Close-Coupled Drive.

Send for complete, fully illustrated RIDGID catalogue.

Ridge Tool (UK) Limited, Royston Road, Baldock, Herts. Tel: 0462 893421.
Government Favours Nuclear Power

The recent publication, "Energy-Ireland", by the Department of Industry, Commerce and Energy places strong emphasis on the need for Ireland to go nuclear in the 1980s. A decision to this effect is expected to be made by the Government after the summer recess. The booklet contains 12 chapters dealing with all aspects of Ireland's energy needs for the next decade and has a foreword by the Minister concerned, Desmond O'Malley.

While the emphasis may be on the need for nuclear and coal fired stations to supply the country's electricity requirements, the publication also discusses other alternatives. Dealing with conservation, the publication states that while it may be difficult to quantify exactly what contribution can be made by conservation, it is clear that there is, as of now, a considerable scope in Ireland for reduced energy consumption. "A barrel of oil saved is as useful as a barrel of oil produced" it states.

In the concluding chapter the publication points out that coal, fired and nuclear-powered energy appear as the only realistic alternatives now available towards meeting the future demands of Ireland's electricity requirements. "If electricity demand is greater than predicted in the 1980s, further generating plant requirements could be best met by additional coal or by nuclear units or both, depending on circumstances; no new power stations to be fired by imported oil should be built".

Agreement Approval

Bartol's polypropylene anti-siphon bottle trap, manufactured in 32 mm and 38 mm sizes, has now been awarded an Agreement Certificate (number 78/562). The Barvac trap allows the plumbing systems designer or installer complete freedom to place appliances wherever required within a building, without the risk of siphoning the trap seal. It also eliminates the need for vents or oversize pipes normally employed to prevent self-siphonage, thus allowing a more economical and aesthetic installation.

PEOPLE

J. Mayhew has been appointed to the board of Robert Martin Proprietary Limited, a newly formed division within the Robert Martin Security Group offering static guards, radio patrol, control room and keyholding security services. He is a TCD arts graduate and previously worked with Group 4 Security in Britain and Purolater Services Ltd.

There are four new directors at Bord Gais Eireann. Two other directors from the existing board stay on for a further period.

The new directors are Mr. Richard Moylan, a Cork solicitor; Mr. Sean O'Sullivan, former Bord Gais chief executive; Mr. George Coleman, accountant; and Mr. John Bourke, a director of Allied Irish Investment Bank, Mr. J. K. O'Leary and Mr. Bryan Foley stay on as members of the board.

Hymo-Lift Ltd. of Northampton, manufacturers of hydraulic scissor lift tables, work access platforms and materials handling equipment, have announced the following Board appointments:

Jim Williamson, previously Sales Director, becomes Managing Director. Sven Leijonmarck, Swedish founder of the Hymo Group and previously Managing Director of Hymo-Lift, becomes Executive Group Chairman with special responsibilities for inter-group co-ordination and the acquisition and development of overseas subsidiaries.
This month's project profile takes us to Ballina, Co. Mayo, to look at the services installed in the Hollister Overseas factory and examine the thinking behind the particular system chosen.

The Hollister Overseas factory, located at Ballina, produces disposable medical products. The process requires an environment having high standards of cleanliness combined with year-round control of temperature and relative humidity within close limits. The factory has an area of approximately 16,000 sq m and is fully air conditioned.

The client suggested that the basic engineering services should be similar to those of a plant then under construction for them in Virginia, USA. However, it was pointed out that the much less extreme climate of Ireland and the higher energy costs here required a completely new appraisal of the problem, based on first principles.

A fact which is not sufficiently appreciated is that, in Ireland, for most of the year, air temperature is about 10 degrees C, with relative humidity near saturation. (A typical
off-coil condition in an air conditioning plant). For most of the year, therefore, "free cooling" is available if the air conditioning system is designed to take advantage of it.

In a plant like Hollister, enclosed in a well insulated building and having substantial heat gains from machinery and lighting, neither heating nor cooling is required for substantial periods of the year. In these circumstances, declared internal conditions are maintained by simply mixing outside and recirculated air in correct proportions by an adiabatic control system.

Only when conditions cannot be maintained by "free cooling" followed by re-heat from lighting and process heat, has energy to be used in boilers or central chilling plant. The change-over is automatically made by the control system.

In addition to the full utilisation of heat from lighting and other sources, heat is recovered from the cooling system of the injection moulding machines and utilised in heating the main plant. The combined savings in the original energy budget which were achieved by the combination of air conditioning design and heat recovery were of the order of £120,000 per annum.

The manufacturing area is served by three main air conditioning plants located in mezzanine plant rooms which also accommodate two 275 ton screw type refrigeration compressors. Heat is generated by three automatic oil fired boilers, any two of which can carry the full load in design conditions. The changeover from full air conditioning to background heat at night and week-ends is effected automatically by clock-switch.

The consulting engineers were also responsible for the design of the client's compressed air, chilled water and power distribution systems. Other mechanical services include a comprehensive automatic sprinkler system designed to FM standards. Water for fire fighting is drawn from the river Moy which forms one boundary of the site. From this point, water is pumped to the factory by two 290 HP automatic diesel pumps to serve the sprinkler system and the fire fighting ring main which encircles the plant.

Electricity is purchased at 10,000 volts from a new 38 kV transformer station on the site and is transformed to 380/220 volts in Hollister's own sub-station accommodating 3-1000 KVA transformers.

Power is distributed throughout the factory area by means of two independent busbar systems, one providing 380/220 volts and the other 240/120 volts 60 cycles supplied by motor generator sets for client's special...
Experience in plant operation has proved that the declared conditions of temperature and relative humidity have been maintained throughout the manufacturing area well within the energy budget agreed. This has been established by the client’s own energy cost control system.

On the completion of the contract, a three day seminar was organised for the briefing of the plant production and maintenance engineers. At this seminar, the design intent was explained by the design engineers and discussed in depth with those taking over responsibility for plant operation and maintenance.

The lectures and discussions were illustrated with slides, films and overhead projection of diagrams and design data in which representatives of the contractors and suppliers of key equipment participated.

The architects of the project were Peter Legge Associates; Structural engineers – De Leuw, Chadwick, O’Héocha; Project manager – JJ Balance Management Consultants; Quantity Surveyor – Stanney Coggin; and Builders – O’Connor & Bailey Ltd.

Mechanical and electrical design team – O’Sullivan & Jacob (Partner in charge, Robert Jacob); Project engineers – Eamon O’Brien, John Britchfield.

Mechanical and electrical sub-contractors and suppliers –
Mechanical and air conditioning: Climate Engineering Ltd.; Electrical: MF Kent Ltd.; Sprinkler system: Mather & Platt Ltd.; Substation and HT switchgear: ESB; Air handling plant: Trane (Ireland) Ltd.; Refrigeration compressors: Atmos; Air compressors: Atlas Copco; PABX system: LM Ericsson; Fire detection: Chubb Fire Security; Air conditioning controls: Johnson Controls; Lt switchgear: Hughes & Coyle; and Lighting fittings: ACEC (Ireland) Ltd.
Onus on All Professions to Ensure Proper Standards

Patrick Minogue, Research Officer in the Construction Division of An Foras Forbartha, examines the effects of increasing insulation standards on energy conservation and average internal temperature and the implications for thermal comfort and efficiency of heating systems.

The rapid rise in fuel prices which took place in 1973/4 sparked off a worldwide preoccupation with energy conservation. Initial analyses in the area quickly established that buildings were one of the largest energy users and that insulation was one of the key ways by which energy consumption in buildings could be reduced. The question of appropriate insulation levels became a matter of interest for the Government, professions and public alike.

Today the impact of those prices rises has been considerably eroded by inflation and the amount of public discussion has decreased. Yet, despite the current situation of an oil glut on world markets, there is a general conviction that supplies of oil will be limited before the end of this century and this will lead to price rises for fuel generally.

Thus, energy conservation remains a matter of high priority.

A paper summarising information from ten countries, presented at a CIB energy symposium in April 1976, reached the conclusion that at least 40% of the primary energy used in these countries is used in buildings. Work at An Foras Forbartha suggested that the proportion of primary energy used in buildings in this country is well over 40% and probably approaches 50%. By far the largest proportion of this energy is used for space heating. A report published by An Foras Forbartha identified a number of measures which can make a significant contribution towards the reduction of this consumption. Chief among those within the direct control of the building designer or user, is insulation of buildings.

Of course, there are many other factors that affect energy consumption in buildings, eg ventilation/infiltration rates, thermal capacity, shape and orientation of the building, heating system and use pattern of the building. However, insulation remains a key energy conserving measure and in many cases is one of the most easily applied measures.

So far we have considered insulation in the context of energy conservation since this is the context in which it is most frequently discussed. However, the results of insulation will generally be two-fold, a reduction in energy consumption and an increase in average internal temperature. In some situations there may also be a reduction in the efficiency of the heating system due to a reduction of the load placed on it.

The degree to which energy consumption is reduced or average internal temperature increased depends on a number of factors. The thermal capacity of the structure and the heating system, and the response limitations of the heating system will tend to ensure that there will be some increase in average internal temperatures. This will be very little for well-designed, well-controlled systems, but probably quite significant for intermittently-used systems with limited controls. An additional important factor in
TABLE 1
Improvement of insulation levels in new buildings, expressed as U-values (W/m²°C)
adapted from a table prepared by the European Insulation Manufacturers Association (EURIMA)

<table>
<thead>
<tr>
<th>Structural Element</th>
<th>Period</th>
<th>Denmark</th>
<th>France</th>
<th>Federal Germany</th>
<th>Netherlands</th>
<th>Italy</th>
<th>Norway</th>
<th>Sweden</th>
<th>United Kingdom</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall</td>
<td>Before Oct. 1973</td>
<td>0.42</td>
<td>1.57</td>
<td>1.57</td>
<td>1.67</td>
<td>1.39</td>
<td>0.58</td>
<td>0.58</td>
<td>1.70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mid-1976</td>
<td>0.36</td>
<td>0.70</td>
<td>0.81</td>
<td>0.68</td>
<td>1.39</td>
<td>0.63</td>
<td>0.35</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Window</td>
<td>Before Oct. 1973</td>
<td>3.00</td>
<td>5.23</td>
<td>5.21</td>
<td>5.00</td>
<td>6.05</td>
<td>3.14</td>
<td>3.10</td>
<td>5.68</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Mid-1976</td>
<td>3.90</td>
<td>3.40</td>
<td>3.49</td>
<td>5.00</td>
<td>6.05</td>
<td>2.79</td>
<td>3.10</td>
<td>5.68</td>
<td>5.68</td>
</tr>
<tr>
<td>Roof</td>
<td>Before Oct. 1973</td>
<td>0.37</td>
<td>2.91</td>
<td>0.81</td>
<td>0.97</td>
<td>2.03</td>
<td>0.47</td>
<td>0.47</td>
<td>1.42</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Mid-1976</td>
<td>0.27</td>
<td>0.55</td>
<td>0.69</td>
<td>0.68</td>
<td>2.03</td>
<td>0.33</td>
<td>0.25</td>
<td>0.60</td>
<td>0.4</td>
</tr>
<tr>
<td>Floor</td>
<td>Before Oct. 1973</td>
<td>0.55</td>
<td>2.33</td>
<td>1.01</td>
<td>0.97</td>
<td>1.47</td>
<td>0.70</td>
<td>0.47</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mid-1976</td>
<td>0.51</td>
<td>0.80</td>
<td>0.83</td>
<td>0.97</td>
<td>1.47</td>
<td>0.35</td>
<td>0.40</td>
<td>1.00</td>
<td>0.6</td>
</tr>
</tbody>
</table>


Thermal insulation is generally considered as an appropriate area for the application of building regulations, and minimum insulation standards are incorporated in the building codes of most countries. In general, these standards have been revised so as to make them more stringent since 1973. Table 1 gives an indication of typical standards for various elements.

NOT STRINGENT

Since 1976, complex standards based on energy use per unit volume of buildings have been introduced in Italy, while Denmark and Sweden have further tightened their standards. As far as Ireland is concerned, the standards outlined in Table 1 are those included in the draft Building Regulations. It is clear that these are not particularly stringent by international standards. More important, they apply only to housing and are not mandatory at present. They are, however, being applied in public authority housing. It is regrettable that these regulations have not been implemented for all housing.

Some 100,000 houses have been built since 1973, and a high proportion of these are relatively poorly insulated. Continuation of this practice is storing up problems for the future both for the individual house-owner and for the nation as a whole. For non-domestic buildings the insulation levels accepted in Britain and about to be incorporated in British building regulations serve as a guide to minimum levels of insulation for different building types. These are summarised in Table 2.

Failure to act at the official level places

TABLE 2
Proposed insulation levels for non-domestic buildings to be incorporated in British building regulations

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Maximum U-value W/m²°C</th>
<th>Maximum percentage of single glazing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>External walls</td>
<td>Roofs</td>
</tr>
<tr>
<td>Institutional and Residential (other than dwellings)</td>
<td>0.6</td>
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Versatile.
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or in clusters.
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applied over existing insulation.
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the onus on the professions and builders involved to provide adequately insulated buildings and to publicise the need for improvements on current practice.

From the point of view of the building industry three problem areas can be isolated. Initially there is the problem of deciding the most economic levels of thermal insulation for the various elements. The most commonly used method for this purpose — cost-effectiveness analysis — is relatively straight-forward and well-documented. The valuation of increased internal temperature discussed above is a particular problem that must be tackled. The future real price of energy must also be considered. Current estimates suggest that for the coming decade real energy prices will at least remain constant and may rise by up to 3% per annum. Secondly, there is the problem that increased insulation levels will interact with other aspects of building performance and may, in fact, reduce performance in other areas. Most critical of these is the increased chance of detrimental interstitial condensation with some insulation arrangements. Thus greater care is needed at the design stage to ensure that this does not happen, and vapour barriers or vapour checks may need to be used.

Particular attention must also be paid to the dealing of insulation arrangements so as to ensure that problems do not arise such as ingress of moisture or cold bridge problems. This leads to the third problem area and perhaps the most critical one, in the short term at least. The Irish building industry has no tradition in the area of insulation techniques. Thus, while insulation does not introduce any new or sophisticated technology to the industry, building workers have no experience on which to draw, and therefore may have little understanding of critical factors with regard to insulation practice. Poorly installed insulation or vapour barriers may cause more problems than they solve.

IDENTIFYING FAULTS

A particular difficulty with control in this area is that insulation is generally quickly covered up and it is difficult to identify faults thereafter unless they show themselves in the form of acute problems in the operation of the building. A thermographic survey is the only comprehensive way of checking the adequacy of insulation of a constructed building, but this is an extremely costly process.

Despite the problems discussed in the preceding section there is little doubt that insulation is here to stay. The draft Building Regulations give a guide to appropriate levels for new housing, although some improvement on these may be worthwhile. In the absence of any guide to levels for other buildings in the draft regulations, the levels for different building types accepted in Britain and about to be incorporated in their building regulations, should be seen as minimum levels for these buildings. Current projections regarding the future availability and price of fuels, together with official inaction in the area of building thermal insulation, place the onus on all involved in the building industry to ensure that buildings can efficiently maintain an adequate thermal environment in the future.

References


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16 Irish Heating and Ventilating News, August 1978
Special Niche for Askeaton Company

Southern Chemicals a wholly Irish-owned company based in Askeaton, Co Limerick, manufactures Aerobord which, due to the design and technical back up provided by the company, has secured for itself, a special niche in the insulation market.

As the developers of polystyrene processing in Ireland 20 years ago, Southern Chemicals, with its considerable technological leadership, has not been slow to react to market requirements. The oil crisis created a greater awareness of the role of insulation and Southern Chemicals was quick to harness this opportunity with the introduction of the Aerotie system.

Basically this consists of fitting tongued and grooved Aerobord into the cavity of both domestic and industrial buildings. The Aerobord is fixed into place with a patented tie made of polypropylene which incorporates a drip point and ensures that no water gets to the inner cavity leaf.

The Aerotie system has lived up fully to its claim that it will cover its capital cost in fuel savings over two years and it is now becoming a standard inclusion whenever cavity wall construction is used.

Further information is available from Southern Chemicals Ltd, Askeaton, Co Limerick, (Tel: 061 92103).

This West Cork County Council cottage had its severe dampness problem completely eliminated by the use of the Southern Chemicals Aerodry system on the external walls.
The 1976 UK Building Regulations emphasised the need to prevent fire spread in cavities and so stipulated a general requirement for sub division of cavities by cavity barriers and encouraged the use of surfaces which are rated at Class 0.

Accordingly, Fibreglass have extended the range of facings available on flexible duct insulation to include a Class 0 Facing, which satisfies sections E14 and E15 of the Building Regulations. This means that cavity barriers are only required every 20 metres rather than eight metres.

The new facing is a glass fibre reinforced aluminium foil/kraft laminated on which is baked a white lacquered polyester coating. In addition, the Class 0 Facing is not only a vapour barrier but, because it is a visually attractive product, it is being specified in exposed areas where Class 0 is not a requirement.

Fibreglass flexible duct insulation Class 0 Faced is the only duct insulation fulfilling the Class 0 requirement. Used in conjunction with FRS 950 pipe insulation glass cloth faced, which also provides a Class 0 finish, this new duct insulation provides a valuable contribution to fire safety.

Fibreglass has also increased its products. Over the years there has been a continued policy of product evaluation in the light of technological advances in glass fibreisation, binder chemistry, moulding techniques, and, most important of all, market requirements.

Following the oil crisis in 1973, there was an obvious necessity for industry to think in terms of specifying economically justifiable thicknesses of insulation for pipework and plant and accordingly updated insulation specifications began to appear.

Whereas in previous years insulation thicknesses had often been datum specific­ations as low as 25 mm, they were now increased up to 100 mm thick. This in itself did not present any great problem because in nested form Fibreglass Rigid Sections FRS 950 had long been available as standard up to 100mm thick. In practice, however, nested sections meant double layer work on site and with increasing labour costs to the contractor it became evident that nested sections for thicknesses over 50 mm were not matching the needs of the trade.

As a result, Fibreglass have designed and invested in new plant to produce FRS 950 pipe insulations as single layer semi-circular sections up to 610 mm od x 100 mm thick.

Further information is available from John Corbett, Area Manager, Fibreglass Ltd, 21 Merrion Square North, Dublin 2, (Tel: 767060).

Close by the site of the Royal Castle of Chateauneuf-sur-Loire, one of the homes of Louis VI and other French monarchs, a 750,000 cu ft cold store is to be built with O'Gorman insulation. Christian Salvesen Ltd, who with 13 cold stores are the UK's largest cold store operator, have awarded the Chateauneuf insulation contract to W H O'Gorman Manufacturing Ltd.

O'Gorman's insulation system, which provides swift and economic construction, has been used to build cold stores through-
out the British Isles and overseas. The company has carried out various insulation contracts for Salvesen, including a 1.2 million cu ft cold store at Borehamwood, Herts, and is currently working on a store of similar size which is being constructed alongside.

The O’Gorman system is based on a unique insulation panel which the company produces at its factory at Chandlers Ford, Hampshire. The panel consists of a high density polystyrene bead board or SP grade Styrofoam extruded polystyrene board – used in the Salvesen insulation – sandwiched between tough, pre-stressed steel skins.

The panels are made to a 1200 mm (4 ft.) wide module and can be produced to any length desired. Light in weight, structurally strong, they reduce greatly the amount of steel framework needed: each panel of up to 12 metres (40 ft.) long need no support, vertically or horizontally, except at each end when used in ceiling construction. Core thicknesses are from 50 mm (2 in.) to 250 mm (10 in.), according to insulation requirements.

The steel skins are available in a variety of colours and finishes, including weatherproofing, making no exterior cladding necessary. The special protective coating on the steel surface also eliminates the need for maintenance or redecoration. The insulation work at Chateauneuf is expected to begin in September.

Recent installations carried out by W H O’Gorman in Ireland include cold stores at Alpha Foods Ltd, Carrickmacross; Cahir Meat Packers Ltd, Co Tipperary; J Lyons & Sons Ltd, Longford and North Connaught Farmers’ Co-operatives Ltd, Sligo and on each of these insulation installations the O’Gorman system was used by the client.

At the present time, discussions are underway for the supply and erection of storage facilities in excess of 300,000 cu ft involving clients in the beef, frozen foods, and chemical industries.

Further enquiries should be addressed to W H O’Gorman (Ireland) Ltd, Unit 13, Dublin Industrial Estate, Dublin 11, (Tel: 300977).

Wide Ranges Stocked by Sheffield

Sheffield Insulations (Ireland) Ltd, a wholly-owned subsidiary of the Sheffield Insulating Group originally founded in 1957, is one of Ireland’s largest stockists and distributors of insulation products, with premises in Dublin.

In recent years, with the emphasis on energy conservation, both architects and engineers are becoming more aware of the need to specify and supply residential and commercial buildings with all forms of insulation. These include roof, wall and floor insulations, fire protective insulating materials, and thermal insulation – both duct and pipe.

Sheffield Insulations (Ireland) Ltd is able to supply the retail outlets and the building contractors with all these forms of insulation, as their Dublin depot carries a varied and comprehensive range of materials including many leading brandnames from all the major insulation manufacturers.

Among many, Sheffield Insulations are agents for the entire range of Fibreglass products. Crown 75 has been specially developed to meet the needs of roof insul-
For concrete insulation, Sheffield Insulations stocks Dupre Vermiculite.
Sheffield Insulations (Ireland) Ltd's service is supported by a full technical sales team to advise on the different specifications, and a country-wide delivery network. Further information is available from Sheffield Insulations (Ireland) Ltd, 1-11 Upper Grand Canal Street, Dublin 4, (Tel: 689099).

**Eupopair Fiberglas**

Fiberglas Duct System offers many performance features: 1) It delivers air efficiently without any air loss through the seams or joints. 2) The built-in thermal insulation with assured thickness protects against heat loss or gain for lower cost performance. 3) The tough flame-retardant vapor barrier eliminates sweating from condensation, assures fire-safety and resists damage.

It is used in heating, cooling or dual-temperature service in all types of Standard Duty (SD) and Heavy Duty (HD) high performance installations operating at velocities up to 2400 fpm and 2" static pressure.

There are two specially engineered board products, from which rectangular ducts are fabricated, to meet size and static pressure requirements comparable to various gauges of sheet metal.

Fiberglas Duct System is manufactured from resin bonded fibrous glass in rigid boards for fabrication or rectangular ducts, and in pre-moulded round sections ready to be installed. The boards and round sections are furnished with an integral factory-applied vapor barrier.

The vapor barrier on the boards is reinforced with strong Fiberglas fibers for strength at the joints and corners.

Further information is available from Europair (Ireland) Ltd, Europair House 3 Ardee Road, Rathmines, Dublin 6, (Tel: 975747).

**Insulduct from Moy**

Moy Insulation, the Co Tipperary based manufacturer of glass fibre insulation, has recently introduced Insulduct, a range of rolls for duct wrapping applications.

Insulduct is manufactured in a variety of standard thicknesses and densities - 25 mm, 40 mm, 50 mm etc. and standard product is faced with reinforced aluminium foil. The product meets the necessary standards for non-combustibility, flame spread etc.

Finishes of attractive white vinyl-coated aluminium foils are also available, also a silver-grey pvc, and special facings are available to request.

MOY are also offering a range of higher density slabs of various thicknesses for the cladding of heat exchangers, calorifiers, precipitators and other items of plant. These slabs can also be supplied faced as required.

Further information is available from Moy Insulation Ltd, Ardlimnna, Clonmel, Co. Tipperary, (Tel: 052 21122).
Peter Byrne
Chairman, Energy Conservation and District Heating Association of Ireland.

When the UK branch of the District Heating Association first approached Peter Byrne about the possibility of setting up a branch in the Republic he had no hesitation in agreeing but preferred to establish an Irish association with its own identity. So with the help of a few interested friends, Peter did form an ad-hoc committee in 1974. Today, as he enters his third year as chairman of the Irish branch of the Association, his enthusiasm for the concept of commercial district heating and energy conservation has not diminished.

Just recently, the executive committee decided to incorporate "Energy Conservation" into its title because they were aware that, in the past, energy conservation had always been one of their fundamental interests and in accordance with the request of the Minister for Industry, Commerce & Energy for informed debate on Energy problems in the coming decade, as outlined in the recently published "Energy Ireland" discussion document, the Association are preparing to submit their own proposals for energy conservation which, according to Peter, will be significant and helpful.

It was Peter's firm belief and commitment to the concept of district heating and energy conservation which played a major factor in helping him make up his mind in accepting the ESB's "early retirement scheme" and to this end Peter believes that he can now devote more time in helping the Association achieve their objectives.

As a youth, Peter first became interested in engineering through his hobby as a radio ham and he admits also to being strongly influenced by a boyhood friend who also decided on an engineering career. He graduated from UCD in 1941 with an honours BE degree in mechanical and electrical engineering and a BSc degree in mechanical technology. Before joining the ESB in 1946 he undertook temporary work with Bord na Mona, Irish Alcohol Factories Ltd, Liffey Dock Yard and also for a time a teaching post in Kevin Street College of Technology.

It was when he joined the ESB that he decided to specialise in electrical engineering and immediately he was involved in the designing of all electrical equipment for the power stations. Eventually he reached the position of Design Development Engineer and was responsible for specifying the largest single item of electrical equipment that was ever purchased in Ireland - the 250mw alternator for the Tarbert station.

In his last two years with the ESB he was involved closely with the Civil Works Department in the establishment of small hydro schemes and it is recognised by his fellow colleagues in the ESB that it was

"To put in open fireplaces in these times is going back rather than forward - it is a convenient short-term political solution."
mainly through his efforts that a 600KW set was commissioned at Parteen Weir on the River Shannon.

It was, however, at a meeting organised by the IEE for the delivery of a paper entitled “Towards the Energy Policy for the Development of Electricity in Ireland” that his interest in the possibilities of district and group heating schemes was aroused. “At this meeting we were told that by the 1980’s Ireland would be 80% dependent on oil imports and it struck me at the time that there was no mention of using district heating. “My interests were really geared to district heating after this and from then on I made a special study of the problem and wrote several articles for both newspapers and trade periodicals.”

It was Peter’s prolific writing on the subject that drew the attention of the UK branch of the DHA and they approached him with the intention of setting up a branch in the Republic. Peter gathered a few people together and an ad-hoc committee was formed but they in turn then decided that instead of forming a branch with the UK, that in fact they should form their own national DHA.

The first meeting of the DHAi, as it was then called, was held in 22 Clyde Road, Dublin and Peter pays tribute to the assistance and help that the representatives from the UK gave them in the early days by coming over and seeing them through the initial teething problems.

Members of the DHAi were mainly drawn from consulting engineers, fuel interests and contractors and anybody according to Peter who was interested in the promotion of district heating. Representatives of ESB, Bord na Mona, Coal Distributors and one oil company were among the early members.

Peter has certain views as to why the oil companies were reluctant to join the association “I thinks its because most of their money is going into exploration and distribution although I know the aspect of what you mention. It is something that they

Building Services News, Vol. 17, Iss. 9 [1978], Art. 1 don’t want to get into, especially where they have to make long term contracts to supply the schemes. I have reason to believe that this is why they don’t show much interest in our Association”.

Jim Butler, a Dublin corporation mechanical engineer, was elected the first chairman of the Association at the inaugural meeting held in the College of Science when the ESB presented the first paper “A Desk Study of Dublin Heating”. Peter was elected chairman in 1976 and has just been elected for his third time. Peter Barry, who at that time was the Minister for Transport and Power, agreed to become the Associations patron and his successor Desmond O’Malley, the present Minister for Industry, Commerce and Energy, has agreed to continue as patron.

It was the Associations belief that their philosophy rested on the age old desire of an engineer attempting to achieve maximum use in resources, especially imported oil and coal plus our own native turf. “I could see clearly”, says Peter, “that there was great scope for efficient use of conservation of fuel in the promotion of group heating, district heating and more importantly a combined heat and power concept”.

Yet three years later Peter expresses his disappointment that not one scheme has managed to get off the ground and he cites apathy as one of the main reasons. “In the early days when we were having our monthly meetings, the attendances were quite good but recently I’m sorry to say they have tended to fall away”.

But it is the economists and the accountants who come in for criticism from Peter. “I think they have too much say in deciding whether a scheme should be allowed to go ahead or not. There should be more attention paid to the short-term future of fuels in comparison with the life span of a house.

“Houses built today are expected to last at least 60-100 years yet oil will no longer be available for domestic heating in 15-26 years time. Coal will be there for considerably longer but to maximise its efficient use it must be burnt in a communal scheme, such as group or district heating. To put in open fireplaces in these times is going back rather than forward — it is a convenient short-term political solution”.

Peter believes that the best alternative for the future is combined heat and power and he is highly critical of the “terrible waste” wherein some buildings are using oil solely for the use of generating heat whereas if a small machine, either diesel or gas turbine, were to be installed then they could also generate their own electricity. “That is the optimum and that is what we should be considering as much as we can,” he says. “It is also one of the factors that made us decide to change our name to the Energy Conservation & District Heating Association of Ireland.”

With the name change the committee also decided that, instead of having monthly meetings, they would concentrate their efforts towards a few large meetings throughout the year, that they would direct a lot of their efforts towards lobbying the Government and that they should also prepare a feasibility study on the possibility of using oil for an experimental group scheme.

To this end the committee is bringing Ernest Hasler, who is widely recognised in the UK as the founder of the District Heating Association, over to Ireland for their next meeting. Mr Hasler will present a paper entitled “Proposals for the Establishment of a National Heat Board”, something which Peter feels is a prerequisite for the establishment of similar schemes here in Ireland.

Peter readily accepts that the Ballymun scheme was not a success and the adverse publicity ensuing has made people sceptical of the concept. But he is hopeful that the Government will undertake a pilot scheme and with Ireland in the EEC, he believes that grants would be forthcoming in view of the fact that several successful schemes have been in operation in other European countries. “I believe that in the long term, this concept will pay off” he adds. “Social benefits are enormous. You can use it efficiently, it cleans up the environment, there is diversification in the use of fuels, it can be much cheaper in a properly designed scheme, it can offer a labour

safety method there are fewer fire risks and it leaves more room in the house”.

While Peter does not see the end of the fireplace entirely, especially within the Irish context, he does feel that one per house is sufficient. “But we must start now”, he says. “We have already lost valuable time and time is very important, especially with the 15/20 year limit I foresee for oil. I believe that people are not paying enough attention to this issue. Proof of that can be seen by the Government’s recent publication of the Green Paper on Energy when only five and a half pages dealt with the whole issue of conservation while 19
were devoted to nuclear energy. This indicated to me that the paper was written by non-technical people”.

Despite the many hills that Peter and the Association would appear to have to climb, they remain totally committed and convinced to the concept of combined power and heating and in the forthcoming year they intend to liaise closely with the Department of Industry, Commerce and Energy although no official meeting has yet been arranged. “In the past” Peter says, “we had two meetings with Mr Tully and one with Mr Barry.

Regular contact is maintained with the UK and the Northern Ireland branches of the DHA and papers are exchanged at various intervals with guest speakers reading lectures at different functions.

The Association has two forms of membership, ordinary at £10 per year and corporate at £30. Among the corporate members are such groups as An Taisce, The ESB, Coal Distributors, IIRS and Bord na Móna.

COMMITTEE

Chairman — Peter Byrne.
Vice-chairman — Jim Maher,
Coal Distributors Ltd.
Secretary — Lewis O’Donoghue,
J. A. Kenny & Partners.
Treasurer — Michael Higgins,
Cape Insulation.

Committee Members:
Jim Butler — Dublin Corporation; Frank Luny — Bord na Mona; Tony Conlon — Varming Mulcahy O’Reilly Associates; Owen Kenny — J. A. Kenny & Partners; Pearse McKenna — Group Design; Bill Lindsay — John Paul; Gerry Duggan — National Board of Science & Technology; and Pat Fleming — IIRS.

The announcement that a Northern Ireland Trade Centre is to be opened in Dublin, should be of interest to those firms that wish to expand their image into an all Ireland market. The centre at Leeson Street will provide Trade Show facilities, market research, mailing lists etc. in fact all the pro-

A model 28B (DW) CN heat regenerator has recently been delivered for installation at the new Carrickfergus Recreation Centre in Northern Ireland. The unit, similar to the one illustrated, has two separate rotors, each provided with their own drive, and the rotors are constructed from aluminium with removable heat transfer media. The two rotors are housed in a common steel clad frame providing the necessary ductwork connections.

The unit, which is one of the large range of CN heat recovery products, will recover heat from the extract ventilating system, which will then be recycled back for re-use. The volume of the air handled on this installation is 23,000 cfm and the unit has a pressure drop of 1.2” W.G. The DW series of CN Heat Regenerators provides a satisfactory answer where large air volumes have to be handled, or where multi ductwork connections are required to suit site conditions as was the case with the Carrickfergus Recreation Centre. Duct connections can be horizontal or vertical and there are six alternative methods of connecting up the ductwork to the twin rotor unit.

This and other technical information is available from the makers. Heat recovered in this way from extract ventilating plant also includes heat generated by the electrical lighting system and the occupants, and heat recovery has the effect of drastically reducing energy consumption and costs. The consulting engineers for the project were Murland & Partners, Belfast.
motional activities that are required for any one wishing to introduce a new product or expand their existing market.

Promoting the centre is the LP.R. Group which has a long experience with trade promotions both North and South.

Full details about this project are obtainable by ringing Belfast 668565 or Dublin 762626.

Henry R. Genn & Co., Finaghy, Belfast, will distribute the Flair bathroom products of Midland International Ltd.

In addition to splash backs, cabinets etc., the range to be distributed will include the new Flair C8/3 shower cabinet with its unique folding door.

I.E.S. Industrial (Ireland) Ltd., who recently became a member of the John Kelly Group have appointed Mr. Sean Halligan as Technical Representative for their southern activities. Mr. Halligan, formerly of Metal Products Ltd., will operate from the company's new office at 41 Dawson St, Dublin. I.E.S. have a wide range of technical agencies including, Drayton Castle, Babcock Controls, Funditor and many other well known products.

Managing Director of City Mechanical Services Ltd. of Belfast—Mr. Arthur Templeton has been elected Mayor of Newtownabbey.

Mr. Jack Dickson, who has been with Walter S. Mercer & Sons Ltd., electric and electric heating wholesalers, has been appointed a sales director for the company.

We often criticise heating contractors for lack of enterprise particularly as regards publicity, but this was not the case for AS Heating, Plumbing & Electrical Ltd., when they broke new ground for the trade, by entering a well decorated float in the recent Lord Mayor's Show, while now winning a prize they must be congratulated on their initiative.

Better luck next time!

Recent contracts for mechanical services which to say the least are 'different' include the award of the work at the New Independent Clinic to Vaughan Mechanical Services and the work of the restoration of the Belfast Opera House to Haypark Heating Co. Ltd.

First place in the Institute of Domestic Heating Engineers in the United Kingdom has gone to Terence Collins of Castlereagh, Belfast.

Mr. Collins, who works for Fuel Services Ltd. Airport Road, Belfast, received an award for his achievement at a recent council meeting of the Institute in London.

Do you fancy yourself as a designer of heating systems? If you do there is £2,000 to be won for designing solid fuel schemes suitable for a five person dwelling up to 80 sq. metres.

The Royal Institute of British Architects, together with the Solid Fuel Advisory Service, is combining to organise such a competition.

Application forms and details of the competition are available from the Solid Fuel Advisory Service. Heating the home in the 1980s, Hobart House, Grosvenor Place, London SW1.

Applications must be accompanied by a cheque for £2.

The Lord Mayor of Belfast, Alderman R. Stewart, was the chief guest at the display of the plastic range of goods manufactured by Bartol Plastics.

In addition to architects, surveyors, plumbing engineers etc the exhibition was attended by Mr. Richard Smith of Fordham Plastics, Mr. John Locke and Mr. John Howarth of Bartol Plastics.

British Steam Specialists Ltd distribute a wide range of engineering and heating products have announced changes in their Board of Directors. Among those appointed to the Board is Mr. Terry Monroe, Managing Director of BSS (Northern Ireland) and Area Manager in charge of the Scottish area.

The Department of Energy together with the Energy Division of the Department of Commerce, has issued details of a new

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C&F Limited Unit 1, Bridge Road, Chapelizod, Dublin 20. Phone 36-49-17
Energy Conservation scheme. Under the scheme industry will obtain substantiated grants for the renewal of boiler plants, insulation and any work which falls into the category of energy conservation.

In addition, grants are also payable to consultants who are approved and who design and administer such schemes on behalf of clients. This is a most generous scheme and should really encourage industry to look at their energy costs. Rarely does one get paid for saving money.

Details of the scheme for Northern Ireland are available from the Energy Division, Department of Commerce, Chichester Street, Belfast, and who knows, it may give a well-timed injection of work to the heavier end of heating and mechanical services trade.

Purex Engineering Services manufacturers of a patent injector system have appointed W H Gransden & Co Ltd agents for Northern Ireland.

Strebels, the manufacturers of cast iron sectional boilers ranging from 300,000 to 60,000 Btu/hr output, have appointed Harland Johnston & Co Ltd of Belfast, their Northern Ireland agents.

Mr G Usher Patton of Bangor has been appointed Sales Manager for all-Ireland for Thermalite Ltd.

Just come to hand the new edition of the Northern Ireland Section Institute of Fuel Year Book.

In an attractive blue cover, the Year Book contains a review of the general energy situation in the North. An innovation is the new pictorial section graphically illustrating the major contracts being carried out during the last year.

The most important section is of course the directory section giving details of "who makes and who sells what" to the heating and plumbing industry.

Copies of the publication are available on application to the Hon Secretary of the Section, F. R. McBride, 39 Old Hollywood Road, Belfast.

To mark the taking over of IES Industrial (Ireland) Ltd, 81 Rosseter Road, Belfast by John Kelly Ltd, the fuel importers and heating merchants, a reception was held in the Culloden Hotel. The directors of both companies were hosts to representatives of the consulting engineering profession and a member of senior public and government officials.

Published by ARROW@TU Dublin, 1978
Having survived one of the most difficult periods in the industry by diversifying their activities into the servicing sector, Raymond Flynn, Managing Director of Clyde Systems, forecasts a rewarding future for the company.

When the oil crisis hit hard at many industries dependent on its sources Clyde Systems, producers of combustion equipment, boilers, burners, incinerators and air-heaters, managed to survive because they had the foresight to diversify their activities into the servicing side of the business and also developed a burner at the time which utilised all waste disposal including oil waste from garages and heavy industry.

Today, happy that they have turned the corner, Managing Director Raymond Flynn forecasts a confident future for the company and with some of the most prestigious contracts under their belt it would seem that his predictions are no idle boast.

One has to go back to 1918 to discover that two Irish immigrants formed the original company, Clyde Fuel Systems, in Glasgow. Jones and Fitzgerald as they were known were in fact two shipyard workers who had the notion that oil burners were going to be the “in-thing” and their perception paid off handsomely in that by the time the second world war broke out they were the biggest manufacturers of oil burners in the UK and Ireland.

It was 1930 before Clyde decided to expand their interests to Ireland and they opened their first showrooms at Mount Street Crescent. Today, trading under the name of Clyde Systems, the company operates from the John F. Kennedy Industrial Estate, off the Naas Road.

HOUSEHOLD NAME

While initially dealing only in burners, Clyde decided to expand into the boiler market after the second world war and, with the introduction of Shell’s comprehensive campaign to create a market for domestic central heating in the early 1960s, Clyde established themselves as a household name with a reputation for efficient installation and a high standard of back-up guarantees and service.

Raymond Flynn, the present Managing Director, first joined Clyde as a salesman in 1965 having worked initially in Ireland for the Shell organisation. He was then appointed General Manager in 1967 and in 1969, along with two others — Jorgen Viholm, a Danish businessman and Malcolm Macnaughton — bought out the Irish rights of Clyde Systems.

This decision was primarily taken at that time because Raymond and his two associates had no confidence in British manufacturers competing with their European counterparts. “Another factor that made us decide to form our own company”, Raymond says, was because at that time Ireland was not a member of the EEC or EFTA and the Irish market was just a dumping ground. The British hadn’t the same problem because, being members of EFTA, they had an import duty on all EEC goods which protected them. Because we were in neither, we just became a dumping ground. The three of us realised that we had a good name, we had a big service organisation and that by making the company independent, we could purchase from the world market and at the same time retain the good name of Clyde”.

SURVIVING THE DEPRESSION

However, despite a couple of years of growth the company was rocked to its foundations by the oil crisis and it is a measure of Clyde’s tenacity that they managed to survive while all around them their competitors were disappearing. “Our servicing department literally kept us going and we were just about making our bread and butter and barely managing to hold on when at last the depression lifted” Raymond says.

The depression did have one desirable
effect according to Raymond, "prior to the slump of 1973, every plumber in the country was installing central heating and the standards were deplorable, consequently giving the industry a terrible reputation. But after the slump the "fly-by-nights" as we called them, virtually disappeared. "I believe that the public are conscious today of the importance of having central heating installed only by reputable dealers and tradesmen, not to mention the safety factor involved. The consumer is demanding, and I'm glad to say getting, higher standards of workmanship which has come about mainly because of our growing expertise" he said.

CONSUMER MARKET

Clyde Systems, as well as supplying the industrial sector of the central heating market, are turning their attention more and more to the growing consumer demand for domestic central heating and many large contracts have been placed with some of the more established house-builders.

In 1975 Clyde Systems successfully recognised the growing and environmental need for incineration to help alleviate the dumping and waste disposal problem. With the acquisition of new agencies, the company quickly won many prestigious orders including the currency firm of Delarue of Clonskeagh, all the Quinnsworth stores, the new complex at Belfield and Texaco in Cork. At present talks are taking place with the Dublin County Council for the installation of an incinerator that will recycle glass and metal.

The company's most recent marketing project is the installation of solid fuel burners into domestic homes and Raymond claims that this has been most successful, especially with the farming community as they have easy access to natural fuel around the farms.

With all this development and extra workload for Clyde Systems, it is no surprise to learn that the workforce has nearly doubled in the past few years. However, Malcolm Macnaughton a founder member of the company has now relinquished his share of the business and with Mr Viholm spending most of his time in his native Denmark, Raymond is effectively the only original link at senior level. However, Dermot O'Sullivan, who is in charge of the servicing organisation, has been appointed a director and the sales manager is Gerry Martin.

Raymond believes that his company offers all customers the best of service. All Clyde's equipment is commissioned by themselves and maintained for an initial period depending on the guarantee. At the end of that period the customer is given the option of taking out a service contract for a small premium and in return Clyde undertake to maintain the installed unit. "This benefits the heating contractor", claims Raymond, "in that it eliminates all after sales responsibility for him such as spare parts etc".

Sales patterns have also tended to change, especially in the past few years. Whereas in the past a contractor would have dealt with several merchants for supplies and held down several accounts, today he prefers to have just the one account and one source only for his raw materials. This, according to Raymond, has proved most beneficial to Clyde Systems.

Consultant engineers play a major part with the company's industrial market but on the domestic side there is direct liaison with the building contractor because, as Raymond explains, the average house buyer does not know one boiler from another and the requirements must always be to the letter.

Another factor that Clyde have taken into consideration, which once again shows their awareness of the marketing trends, is the need for a small boiler built inside the house instead of in the garage particularly with the proliferation of smaller terraced houses. To this end they have introduced the Clyde Ferroli oil-gas-fired units.

"It is important to note" says Raymond, "that boilers, burners etc have maintained their price from the fifties and the reason for this is simply mass production and this in turn has meant that the installation of these units is now within the easy range of the average 'Mr Citizen', whereas in the fifties it was usually only the schools, hospitals, institutions and wealthy people who could afford them. It was then a luxury item, not so today".

KEY TO SUCCESS

Proof of this changing trend is the fact that Clyde now have several outlets who promote their various units. Associated Hardware with 43 outlets head the list and other groups involved in this new marketing trend are Heiton McFerran and the Chadwick Group.

Clyde Systems success lies within their ability to keep one step ahead of the marketing trends and changes likely to occur and in their ability to meet these new requirements.
Thorn Radiators, tested to full MARC standards, combine a high output efficiency with good appearance. They are made from 18 s.w.g. steel and each individual radiator is pressure tested to 100 p.s.i. — twice the stipulated standard.

Radiators are manufactured in 15", 21" and 27" heights and in lengths of 21" to 117" — 74 sizes both single and double.

The Thorn Radiator has an elegant roll-top with no unsightly top weld, to collect dirt, cause damage to drying washing or indeed cause injury. It also has a clean line down the depth of the radiator with no bulging top and bottom manifold, and with no air restriction between the panels; this means a higher heat emission per square foot — on a long double, saving can be as much as 5 square footage with no manifold, weight is reduced, thus making handling easier.

Because the blank ends and air-cocks are factory fitted the edges are kept smooth, and the installer is saved time and effort in fixing them on site, and in addition removing the possibility of a bad fit producing leaks.

Fitting brackets are totally concealed and there is only one size of bracket for all radiator sizes giving a common fitting distance on each. The bracket has spring clips to hold the radiator firmly, yet allowing expansion and contraction to take place. The strap allows back and forward movement during installations.

The radiators are despatched in a hard white stove enamelled primer, which will resist finger-marks, and make subsequent gloss-painting easier.

Further details available from: Andy Gallagher, Belview, Mullingar, (Tel: 044-80104).

K-Type Range from Stelrad

The complete range of radiators manufactured by Stelrad starts with standard panel (P) radiators which are available in 12", 17", 23" and 29" heights, single or double panel, with outputs from 716 to 16415 Btu/h. High output convector (K) radiators are also available in single or double panel with outputs from 1225 to 25118 Btu/h and are available in 17", 23" and 29" heights.

An increasing requirement is for a high output radiator. This demand is met by the Stelrad range of K type convector panel radiators which provide the obvious advantage of higher output from a smaller panel size.

Further details available from: YHS (Mrs Alice Burnison), 13 North Howard Street, Belfast BT132AJ.

New Designs from Mectherm

The first product to be announced by Mectherm Ltd is the Mectherm, die-cast sectional radiator which combines clean, modern styling and improved finish with high heat outputs. Four models are currently available with sections ranging from 290 to 706 BTU. Each section is 80mm and the system comes complete with screw-on mounting brackets, plugs and air vents, etc.

A key feature of the system is that individual radiator sections can be quickly assembled to form a radiator panel of any given length. And, it is because of this flexibility in design that Mectherm are able to provide a totally new approach to market distribution to the benefit of stockists.

The sophisticated heat exchange characteristics of the radiator enables wall space mounting requirements to be reduced by up to two-thirds that of conventional panel radiator designs. In addition, surface temperatures of the sections are up to 11°C lower than the mean water temperature — a particularly important feature where children and old persons are concerned.

All models have been tested to the International Standard DIN 4704.

Further details are available from: Mectherm Ltd., Riverside Works, Nutty Lane, Shepperton, Middx. (Tel: Sunbury-On-Thames 87196).
RAVV Hot Water Control

RAVV Hot Water Control—A constant domestic hot water temperature within a range of 40-70°C (105-160°F) is achieved by using thermostatic element type RAVV. Keeping a cylinder temperature of max. 55°C (130°F) protects against scalding, furring and corrosion.

Setting can be locked to prevent tampering by children.

The valves must be mounted in the primary flow pipe to the cylinder with the sensor inserted into the cylinder secondary port through the top draw-off Tee-piece or clamped to the outside cylinder wall about half-way up.

RAVV Hot Water Control with KOVM 3-Port Valve Body. To avoid boiler corrosion during the summer period or to protect a low water content boiler, a given minimum circulating water volume can be achieved by inserting cylinder thermostat type RAVV combined with 3-port valve type KOVM with built-in by-pass. Type KOVM is available for ½ in BSP or 12 and 15 mm copper pipework connections.

RAVV Hot Water Control with RAV Valve Body. For pumped HWS primaries we suggest the combined use of the thermostatic element type RAVV and valve body type RAV-/8, angle or straight. The valves are available in a range of sizes including 3/8 in – 1 in BSP.

For gravity HWS primaries we suggest the combined use of the thermostatic element type RAVV and valve body valve RAV-/2, angle or straight.

The valves are available in a range of sizes from ½ to 1 in BSP.

Danfoss thermostatic valves for hot water service control.

Runtal: for people who can’t wait to get their hands on a radiator.

The most advanced radiator in the world

Runtal have created radiators so advanced that they completely revolutionise our whole concept of radiators. Specify them for all your clients, be it for the home, commerce or industry. Choose from a complete range of radiators. There’s a Runtal radiator to meet every conceivable need. They’re easily maintained! They give more heat! And are immediately available from stock!

75% more heat

Most Runtal radiators, such as the HL, have unique Swiss-designed fins that dramatically increase the radiators output by up to 75% compared with conventional panel radiators of the same dimensions.

Immediate delivery

Runtal HL radiators, made from 1.5 mm gauge steel, in a wide range of sizes, all guaranteed for 5 years, are available from stock now! There’s no delay! Delivery from our depot is immediate!

For details use the coupon below or telephone us at (01) 694300.
RADIATORS

For further details contact: J. J. Sampson & Son Ltd., 12A Wexford Street, Dublin 2, (Tel: 752317/8).

Comprehensive Myson Range

Myson offers one of the most comprehensive ranges of products for this area of the heating market, including the following feature items:

Myson copperad fan convectors, free standing, extended and concealed type for steam and water; Myson copperad unit heaters for steam and water, both horizontal and downstream models; Myson copperad natural draught convectors for steam and water; Myson copperad raystrip, one tube to four tube for industrial radiant heating; Myson copperad sill-line perimeter heating for commercial and industrial use in two depths of casing 2 7/8" and 5 1/4", including the luxury Classic sill-line with aluminium grille.

Further information is available from BSS Ireland, White Heather Industrial Estate, 301 South Circular Road, Dublin 8, (Tel: 781966).

Biddle’s Slim Conrad

Suitable for use with low, medium or high pressure hot water from a two-pipe accelerated system, the Slim Conrad is available in 25 sizes, with top or front outlet. All models are only 52 mm deep.

The heater is made from hand aluminium sheet channel modules 50 mm wide, 50 mm deep and 380 mm or 480 mm high. The whole assembly is held together rigidly by a serpentised seamless copper coil hydraulic-

DANFOSS

Thermostatic Radiator Valves

Save up to 20% of fuel used in your central heating system with Danfoss radiator thermostats

For explanatory leaflet or further information contact:- Sole Irish Agents

J. J. SAMPSON & SON LTD.

12a Wexford Street, Dublin 2 Phone: 752317
ally and mechanically expanded into the modules. The bond is permanent and the resultant contact between coil and modules is such that maximum conductivity from the heating medium to the formed front panel is achieved.

Keyhole slots are provided at the back of the modules and the unit is suspended on either two or three wood screws depending on the length. The extreme lightness of the Slim Conrad — dry weight of 0.4 kg per 100 mm length for the 380 mm high model — means that it can be fixed to virtually any type of wall or partitioning, quickly and easily.

The very low water content of the Slim Conrad allows a rapid response to thermostatic controls, and emissions range from 360 w to 3405 w.

Further details available from: Unimack Ltd., James Place East, Lower Baggot Street, D 2, (Tel: 789570); and Sermet (N.I.) Ltd., 1A Warren Gardens, Lisburn, Co Antrim, (Tel: Lisburn 79233).

### Thermalpanel Development of Well-Known Thermalrad

Anglo-Nordic's high-heat-output domestic convector radiator comes in four simple parts - a louvered front panel, a pair of hanging brackets which act as side plates, and a bottom tray. The four parts form a cavity against the wall so that warm air rises and is replaced by cold air passing in through the louvres of the front panel.

The Thermalpanel has been developed from and is in addition to Anglo-Nordic's well-known Thermalrad which was introduced into the UK market about ten years ago and which has been widely specified by consulting engineers for use in commercial and industrial premises, in hospitals and in district heating schemes where the high efficiency of this form of heat emitter is particularly valuable.

The Thermalpanel is available in four heights. These are 366mm (14in), 516mm (20in), 616mm (24in) and 716mm (28in). The 516mm, 616mm and 716mm heights come in ten lengths made up of 6, 8, 10, 12, 14, 16, 18, 20, 22 and 26 sections (elements). The 366mm height is available in 10, 14, 18, 22 and 26 element lengths.

All 35 variations can be fitted with alternative brackets which hold the front panel either 85mm (3 2/8in) or 115mm (4 1/2 in) from the wall. The wider brackets increase the heat output by providing an increased "chimney effect" which aids convection. In this way the 35 standard sizes provide a choice of 70 heat outputs covering all normal needs.

Further information is available from: Wyse & Ballantine Ltd, 62 Woodbine Park, Raheny, Dublin 5, (Tel: 317553); and Ballentine Partners, Little Victoria Street, Belfast.

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**BARLO**

**FOR THE VERY BEST IN STEEL PANEL RADIATORS**

Published by ARROW@TU Dublin, 1978
Buderus Rads
Manufactured to Highest Standards

The Buderus FKR radiators are designed, manufactured and tested in accordance with the German DIN specification 4720 and 4703/1. The standard radiator (HD4) is designed for hot water systems having a maximum operating pressure of 414 kN/m² (60 lb/in²). Optionally available in hot water radiator (HD6) which is suitable for operating pressures up to 620 kN/m² (90 lb/in²).

FKR radiators can also be supplied for use with steam and operate at pressures of 212 kN/m² (30 lb/in²) or 414 kN/m² (60 lb/in²), details of which can be provided upon request.

Each section is tested at a pressure of 724 kN/m² (105 lb/in²) (HD4) or 1241 kN/m² (180 lb/in²) (HD6). The sections are then assembled and the test repeated. To avoid damage in transit, radiators are despatched with not more than 12 sections assembled. Final assembly and testing is carried out on site.

All radiators are coated with a primer and each is complete with screwed nipples, high temperature joint rings, flow and return bushings, sealing plug and vent plug (drilled 1/8” BSP). A range of optional accessories is also available.

The Buderus steel column Stabulo range of radiators is available in a variety of forms to suit both large and small rooms. They are already painted at the German works according to German specification to protect them from weathering in transport and on site.

Two formed plates are assembled to make a single section and all are electrically welded together to form a group. Larger radiators are assembled by nipples at intervals. Each group is tested by compressed air under water to a specified limit before it leaves the works and carries a two-year guarantee when the working conditions are as follows: Normal execution, hot water to 230 F and 131 ft wg works test pressure 103 Psig; High pressure execution, hot water to 284 F and 197 ft works test pressure 147 Psig.

Further information is available from Quadrant Engineers Ltd, Green Street East, Dublin 2, (Tel: 771411).

Barlo have shown a considerable increase in radiator sales over the past 12 months, and have significantly increased their penetration of the total radiator market.

Barlo radiators are manufactured in accordance with BS 3523/74, from a grade steel to a rolled-top design, that combines a pleasing appearance with no unsightly top weld to collect dirt or cause injury.

Each radiator is tested under water at 100 psi air pressure - twice the stipulated standard - and they are designed for closed circuit or indirect systems only.

Chrome plated air vents are factory fitted as standard, and each radiator goes through a six stage process employing specialised...
cleaning and degreasing acids, prior to applying a full anti-rust coat and immersion painting in satin-white stoved primer.

The stock range comes in heights of 16", 20", 24" and 28" with 113 sizes in standard panels. A stock range of 45 sizes in convector panels is also available, and this range will be expanded early in 1979.

Barlo radiators are shrink-wrapped in heavy gauge polythene, with cardboard ends to ensure they arrive with the customer in the same mint condition as they left the factory.

Further information is available from Barlo Heating Ltd, Davis Road, Clonmel, (Tel: 052-22822) and John F - Kennedy Estate, Dublin 12, (Tel: 01-504106).

Preventing Radiator Corrosion

There is no true 'average life' for modern central heating steel radiators, as some become perforated within four years while others last 14 years. As a result of corrosion, black oxide sludge settles at the bottom causing restrictions and a general reduction of heating and fuel efficiency. Oxide sludge is the most common cause of pump failure and boiler noises.

Hydrogen gas (sometimes mistaken for air) is released, as a by-product of the several corrosion processes, causing the water level to become depressed and resulting in poor circulation, unless frequently vented off.

Economical considerations are strongly in favour of corrosion prevention. This becomes more obvious when it is realised that the loss of about two grammes of steel, forming a 'pin-hole', can represent the loss of a 20 kg radiator from the installation. Corrosion prevention could be considered...
RADIATORS

a mild moral issue, when it is realised that
when it is realised that the manufacture of the replacement radiator requires more energy than the same radiator can consume during four winter heating seasons.

Details of domestic and industrial Central Heating Corrosion-Proofers are available from Industrial (Anti-Corrosion) Services, Britannica House, 214-224 High Street, Waltham Cross, Herts, England.

Versatility from Runtal

Runtal quality radiators and convectors offer a versatility and elegance otherwise unobtainable. They are constructed from flat oval tubing which gives Runtal products their distinctive and pleasing appearance. They are available as type H (basic panel), type HC (basic panel with convector plate at the back to increase heat emissions), type HL (basic panel with extra deep convector plate increasing heat emissions of the panel by up to 95%), type C convectors (with convector plate on both sides of the Panel), and type R modern elegant column radiators.

All Runtal products are custom made to customers' requirements, a range of the most popular sizes is available as standard ex-stock. Special features are as follows: (1) They can be supplied to customers' exact requirements being available in lengths from 600mm to 6000mm in heights from 70mm to 980mm and in heat output from 100 to 20,000 watts.

(2) In addition to the standard range a large variety of special types are available on application.

(3) Single panel high output HL type may be used to replace conventional double and treble panel radiators.

(4) Low water content gives a shorter heat-up time and a greater thermal response.

(5) Heavier wall thickness (1.5 mm) ensures a more durable product with longer life, allowing Runtal to offer a 5-year guarantee on its' radiators.

(6) These units may be connected in series using same end connections to eliminate pipework.

(7) For larger installations, larger units may be used reducing the number of heating units needed and thereby making for a faster, more economical installation.

(8) Due to the flexibility of construction modular sizes may be obtained giving a uniform appearance but varying heat outputs.

Further details available from Runtalrad Ltd., Beech Hill, Clonskeagh, Dublin 14, Tel: (01) 449 4242, E: rutrad@eircom.net. Vat No: IE860520451. 

DOI:10.21427/D7CTSS

Radiator Valves to Meet all Requirements from Peglers

Among the wide variety of plumbing products produced by Peglers is a range of radiator valves specifically designed to meet the various requirements of this wide market.

At the top end of the Pegler range is the Belmont thermostatic radiator valve. Available in straight or angled pattern, the valve is precisely calibrated to give automatic temperature control from 10 degrees up to 28 degrees on a scale from 1 to 7.

Backed by nearly 80 years of Pegler manufacturing expertise, the Terrier and Belmont radiator valves have proved their reliability during many years service. Fully conforming to BS2767, both valves are available in chrome plate or matt brass finish in angled or straight patterns with glands that can be repacked without draining the radiator.

Complementing these valves is the Belmont GL radiator valve. Manufactured to the same high standards as the Terrier and Belmont valves, the Belmont GL has the additional feature of a unique metal bellows seal to replace the convenient gland and packing, thus creating a permanent leakproof seal.

Further information is available from McGregor & Manning Ltd, Unit 31, Connswater Industrial Estate, Belfast BT4 3AL. Tel: Belfast 53329.
Wide Selection from EKCO Heating

Ekco Heating & Appliances are offering a wide selection of portable and wall mounted convectors, wall mounted radiant fan and tubular heaters for the coming season. There is also a new portable convector and wall mounted radiant heater among the products on offer, both of which reflect the high standard of design customarily associated with Ekco heaters.

As the new 1800W PC 96 portable convector is reversible and finished on one side in dark brown and in honey on the other, it can be used to complement most décors. Only 4" wide, its compact styling is another advantage. Other portable 2 KW convectors in the domestic range are finished in woodgrain and honey, and in a smart contemporary brown and honey.

The new 2 KW wall mounted WMR 18 heater is attractively styled with brown trim and woodgrain panels on either side of the radiant bars. In addition, the popular 2 KW WMC slim-line convector with radiant front panel is now available in brown and gold as well as white - emphasising the use of contemporary colours.

With fan heaters currently the most sought after type of electric heating, Ekco offers a choice of four with 'fine furniture' look and dark brown trim. All have adjustable feet and are compactly designed with the premier 3 KW thermostatically controlled model featuring three heat control, cool air, two speed fan, on/off switches and carrying handles.

For those difficult to heat areas, such as airing cupboards, lofts, corridors, hallways and greenhouses, the Ekco range of tubular heaters provides a safe and economic answer. Available in lengths of 0.31 m (1') - 2.44 m (8') each length comes complete with brackets and cord anchorage.

Further information is available from Unidare Ltd, Finglas, Dublin 11, (Tel: 771801).

New Ranges from A. Bell

A Bell & Co have been appointed the sole agents and distributors in this country for Hurseal oil filled electric radiators.

The idea of oil filled electric radiators dates back to the 1930's, but it was not until about 1945 that this form of electric heating became commercially viable - Hurseal being the pioneers in the UK market. Today, the company offers one of the most comprehensive ranges available, be it for the home, commercial premises or industrial installations.

All Hurseal's are made of 18 gauge steel and are optimum oil filled to ensure additional heat (up to as much as 15 or 20 minutes) once the radiator has been unplugged.

Finishes are either high gloss stove enamel or, in the instance of the 130 watt towel rack, chrome. Each of the radiator products carries a five year guarantee which covers the shell, the element, and the thermostat.

Of special interest to commercial and industrial users are Hurseal's flameproof panel type, oil filled radiators which have been especially designed for use in hazardous conditions. A dust-proof model is also available on request.

Further information is available from A. Bell & Co (Fire) Ltd, rear 136 Botanic Road, Dublin 9, (Tel: 301777).
NEW PRODUCTS

Midas Introduce New Detector

Following the successful launch at the HEVAC exhibition, AI Industrial announce the latest addition to their comprehensive range of industrial gas leak detectors.

The Haloteck is sensitive to refrigerant and other halogenated gases down to 1/10th oz per year. It is a lightweight, hand-held detector with a flexible probe, designed specifically for use by all refrigeration and heating and ventilating engineers. The battery operated Haloteck has only one control, with no warm-up time, enabling it to be put into service immediately.

It incorporates its own check leak and a special feature of the unit is the completely new design of sensor tip, giving rapid response and eliminating the problem of draughts. A leak is indicated by an audible tone increasing in frequency, the pitch of the tone being proportional to the size of leak.

Further information is available from Midas Safety Systems Ltd, 10 Tivoli Terrace North, Dublin 12, (Tel: 805521).

Nu-Flo Extractor Fans

Nu-Flo fans Ltd have introduced a range of extractor fans which finally dispense with “hobson’s choice” when it comes to specifying a window fan. No more round holes, ugly shapes or unsightly wiring; just a neat attractive aluminium styling the size of a pelmet at the top of a window — nothing to blot out or mar the view.

The anodised brushed satin aluminium finish is easy to clean and easy on the eye. Nu-Flor fans are available for window lengths of from 16” to 6’ and are suitable for office, lounge, toilet, restaurant, kitchen or any room that needs a fan.

Further details are available from Dan Chambers Ltd, 3 Echlin Street, (off James’s Street), Dublin 8, (Tel: 720448).

Avo Scope A101

Industrial Instruments Ltd, the “instrument people”, have announced a further addition to their range of test and measuring instruments — the new Avo Scope A101 general purpose oscilloscope.

This instrument features: DC to 10 MHz band width; dual channels; 100 mV/CM sensitivity; overload protection to 400V; trace location; 5% accuracy; and a sweep speed down to 200 micro sec/CM.

The instrument is intended for general laboratory and field use, and has a particular application in educational and training laboratories and is supplied complete with mains lead, BNC coaxial connectors and operation instructions.

Further details are available from Industrial Instruments Ltd, 3 Herbert Place, Dublin 2, (Tel: 761691).

New ULSwitch from Dwyer

Compact and explosion-proof, the new UL listed pressure switch from Dwyer Instruments will serve in Class I Group C and D, Class II Groups E, F, G and Class III hazardous atmospheres. Said to be much smaller and lighter than previous units, model 1950 is 5 1/8” diameter by 3 3/8” deep and weighs 3 1/4 lbs. For outdoor installations, the housing is completely weatherproof.

The set point adjustment screw for the diaphragm actuated switch is conveniently located on anodized cast aluminium housing. A moisture drain plug is at bottom. Removal of the front plate provides access to SPDT switch for NO or NC electrical hookup.

Electrical data: 15A; 125, 250, 480 V AC. Temperature range is -40 degrees to 140 degrees Fahrenheit. Six models of set point ranges from .01” to .15” WC to 4.0” to 20” WC.

Details from Manotherm Ltd, The Control Centre, 4 Walkinstown Road, Dublin 12, (Tel: 504025).

The battery operated A I Industrial Haloteck recently introduced by Midas Safety Systems.
IhVex 79 represents a unique opportunity to promote to the entire Irish heating, ventilating, air conditioning, refrigeration and environmental trade. With this one-stop specialised buying exhibition the third IhVex breaks new ground with a major development, for the 79 event will broaden its industrial content: special emphasis on refrigeration will greatly increase the Exhibition's significance. Energy saving will be given special emphasis and will be reflected in the presentation of pump development, advanced insulation materials and techniques, heat recovery systems and controls for energy optimisation. Yet again IhVex will provide the forum for the maintenance of growth and development of the industry it has served with such success.

BIGGER VENUE!

Reflecting its increased scope and significance IhVex 79 is moving to a much larger venue in Dublin's newest and most advanced exhibition complex—the Royal Dublin Society's Simmonscourt Pavilion. Here IhVex 79 exhibitors will have a setting which will allow them to capitalise to the full on their exhibition investment. As organisers of a number of highly successful trade and public exhibitions in this new complex, ITTDEX will be bringing their wide experience to bear on IhVex 79. Not least is the high level of presentation which the modern Simmonscourt facility allows and where ITTDEX employs a number of special features including a unique bar/viewing area. IhVex 79 will also have available a full-size theatre style auditorium which immediately adjoins the exhibition area and the extensive restaurant facilities for its VIP Luncheon Scheme.

VENUE
The R.D.S. Simmonscourt Exhibition Complex which allows a full choice of sites to suit every possible need. Full car-parking facilities are available.

DATES
Tuesday April 3, Wednesday April 4 Thursday April 5 and Friday April 6 '79

OPEN TIMES
Tues/Thur/Fri 11.00 hrs – 18.00 hrs Wednesday: 11.00 hrs – 21.00 hrs

ADMISSION
Trade Visitors only.

FOR FURTHER DETAILS
CONTACT: JOHN BUTTERLY
IRISH TRADE & TECHNICAL EXHIBITIONS LTD., 11 ELY PLACE, DUBLIN 2. Tel: (01)763385 Telex: 30840 ITEX EI.
Pullen Pumps Limited, Surrey, have introduced a range of packaged pumping units to supply wet riser fire fighting systems in high rise buildings. The units are custom-built from standard components to match the requirements of particular installations and supplied on a compact framework ready for simple installation and commissioning.

The pumps incorporated in the Pullen packaged units are sized to cater for three hoses operating at any one time, whilst also maintaining the maximum hose running pressure at the highest hydrant. Pullen type 'K' pumps are used in these units, horizontally mounted to facilitate maintenance by means of Pullen's 'back pull-out' concept.

In addition to the pumps, a membrane tank has been incorporated to provide a positive energy source for the system when the pumps are at rest, and to provide a small reserve of water to prevent pump operation due to any slight system leakage. Together with all necessary pipework, valves, flow switches and automatic electrical controls, all components are now grouped into one

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**NEW PRODUCTS**

**Pullen Introduce New Wet Riser Systems**

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And all Pipeline and Steam Equipment.

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**AND FOR YOUR EMPLOYEES PROTECTION**

"Protector" Helmets, Welding Shields, Goggles, Ear Muffs, Glasses, Gloves, Respirators – Ex Stock

Also Available From Pulvertaft Ltd., Bachelor's Quay, Cork.

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**Building Services News, Vol. 17, Iss. 9 [1978], Art. 1**

DOI: 10.21427/D7CT5S
Central Heating is still very cheap to run even with today’s rising fuel prices when you have a TARM combination central heating boiler. TARM boilers are so designed that simply, opening one door and closing another you can switch from oil to solid fuel heating. The TARM has proven that you can heat your house for as little as 50p per 24 hour day, based on average 1200 sq ft house in Dublin. The Tarm is completely automatic as the heat-increases the dampers close, thereby controlling the rate of burning and the amount of fuel used. TARM have a boiler to suit everybody, from the tiny F.T.C. to the wonderful O.T. type. The FTC is 34 inches high, by approx. 20 inches square will fit in any boiler house or back of garage, can be put in a kitchen. One stoking lasts all night, average stoking every 6 hours.

DO YOU KNOW?

TARM BOILERS BURN TURF, COAL, LOGS, SAWDUST, OIL, GAS, PAPER, RUBBISH ETC.

FTC

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