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Irish H & V News

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* Burns all types of fuel — Antricite, Coal, Turf, Logs, Coke & Oil.
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Now available in Dublin from
Chadwicks
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Also available countrywide through any of Chadwicks 9 Provincial Branches
Cover Story

The solid fuel boom has caused a number of problems least of all the supply of coal to the domestic market. We look at the history of the CDL "the Heat’s On" campaign and its effect on deliveries. What will happen next? See page 2

Sanitary Ware/ Instruments and Controls

Juliette Hellman of the Council of British Ceramic Sanitary Ware Manufactures reviews the product trends and the importance of the Irish Market to UK manufacturers. An article from Danfoss looks at the importance of the thermostatic radiator valve.

Company Profile

BSS Ireland Ltd are one of the longest and best established companies in the H and V business. Our reporter talks to Brendan Stack, Divisional Managing Director of BSS about the development of the company and the service it offers.

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Distribution — That's the one word that can sum up the problems of the coal industry in Ireland. Most publicity has centered in recent months on the inability of Coal Distributors Ltd to keep up with the demand for coal in the domestic market. They have explained that they simply have not enough transport to complete deliveries. CDL distribute about 1/3 of the Republic's coal and in the summer months of this year had an increase of over 30% in coal sales.

The campaign to enter the central heating market started in early 1976 at a time when coal sales were dropping even after the 1973 oil crisis and it seemed very optimistic to expect even a small share of the heating market. So it was no accident when earlier this year oil supplies again became short that CDL said "The heat's on" which had a double meaning in the nicest possible marketing way, firstly that householders would have heat for the coming winter from coal, and secondly CDL were taking on the giant oil companies through Coal Information Service. Knowing that the oil shortage was political in the short term at least and had been caused by Middle East oil hawks, looking for higher prices, CDL put everything into an advertising campaign including regular radio and television commercials aimed at getting the maximum effect in the shortest possible time.

Everything seemed to be going well as the public were told that 50,000 Irish homes now had coal central heating and that it was costing them practically nothing above the cost of running one fire. Then during the summer the problems started with deliveries, CDL said they were unable to handle the orders so they looked for contract delivery services, which did not appear to work out as the problems continued until CDL had to stop taking orders to try and catch up on deliveries, even though coal could still be got from local distributors. Deliveries from CDL have got worse and worse and now even if you could order coal you would not get delivery until after the new year.

Many factors have come into play with these delivery problems, no one could have expected the government to give a grant to convert to solid fuel and CDL themselves decided early in the summer to advise people to order early for the coming winter, which they did in vast quantities, but whatever the reasons many problems have arisen in the wake of "the heat's on campaign. The absolute panic that the public experienced was similar to the panic at the petrol pumps and nothing appeared to be able to stop the demand for coal. But two things can and will, firstly availability and secondly price. Will the inability of CDL to deliver be followed by a price rise due no doubt to increased costs, whatever they may be? and will the Irish public suffer at the hands of Irish hawks?
Take me to your Leader

Should he be in search of air conditioning and refrigeration equipment, he'd be taken straight to Walker Air Conditioning.

Because Walker Air Conditioning — your local Carlyle distributor — is the leading air conditioning equipment supplier in Ireland, in Scotland and in northernmost England; and because Carlyle, with over 4000 different products, is itself the world's biggest and best-selling range of air conditioning and refrigeration equipment.

For top quality products backed by top quality pre- and after-sales service throughout Ireland, in Scotland and in northernmost England, make straight for the leader: Walker Air Conditioning.

Walker Air Conditioning Limited

Dublin: Finglas Road, Dublin 11 Phone: Dublin 300844 Telex: 4862
Belfast: 9a Cherryhill Road, Dundonald, Belfast BT16 0JH
Phone: Dundonald 5235 Telex: 747681
Glasgow: Washington Road, Unit 10B, Abbotsinch Industrial Estate
Paisley PA3 4ET Phone: Glasgow 887 0551 Telex: 779406
DANGEROUS FIREPLACES

Mr. Geoffrey Cronin, Chairman, Fire Prevention Council, recently warned householders of the serious dangers to life and property from fireplaces which have not been used before or have been out of use for some time. "With the current accent on energy saving and home heating problems" he said, "during the coming winter many householders will revert to, or start to use, open fires". The Fire Prevention Council believes that there are hazards from open fires and advises people:

(a) to make sure their chimneys are clear of birds nests, soot and any other debris which might go on fire;
(b) to check on all brick pointing in their fireplaces, particularly older fireplaces;
(c) to use a spark guard on all open fires.

In cases where householders install back boilers in their fireplaces, Mr. Cronin strongly advises using competent workmanship and warned against slipshod cheap installation work which could lead to fires and explosions this winter.

"A very high proportion of Fire Brigade time and effort is involved in dealing with chimney fire outbreaks each year. The Fire Brigade service has recorded over 10,000 chimney fire calls annually in recent years. In addition, chimney fires are a potential serious danger to householders' lives and homes.

Chimney fires generate financial and human costs which the community has to pay for but which could be very much reduced with care and foresight by all of us", Mr. Cronin said.

The Fire Prevention Council, formed in 1978, comprises representatives of the Department of the Environment and of the Insurance Enterprises representatives of the Department of the Environment. Its purpose is to increase awareness of the hazards of fire, to propagate measures to prevent fire in all forms throughout the country as well as making suitable recommendations to the Minister for the Environment on the subject of fire prevention.

For further information: Mr. Geoffrey Cronin, 9/10 Dawson Street, Dublin 2. Tel: 776881.

IRISH FOR PEAT SURVEY IN BURUNDI

The Minister for Foreign Affairs, Mr. Michael O'Dennedy, T.D., announced the departure of a three man team of experts from Bord na Mona to undertake an in-depth survey of the peat resources in Burundi. The team is funded under the Government's Bilateral Aid Programme and altogether will spend about three months in Burundi. Its members are Mr. Justin McCarthy, Engineer Surveyor, Mr. Thomas Higgins, Surveyor and Mr. Michael Peeney, Surveyor.

At an ANCO Training Centre at the Shannon Industrial Estate an instructor supervises a trainee in the art of overhead pipe welding using Terns Arc welding plants supplied by IIG. Last year there was an 86% placement rate for welders trained by ANCO at Shannon.
ANOTHER ONE UP TO NUMBER ONE

Powrmatic have done it again. Not content with creating the best range of industrial air heating there is, they've gone one step further with a brand new range of 8 unit heaters offering heat output from 60,000 - 320,000 Btu's.

There's the GUH 60, 80, 100, 140, 160, 190, 240 & 330.

All units can be specified either axial fan for freeblowing or centrifugal fan for ducted applications. The resulting 16 model variants offer a comprehensive choice for practically all suspended or wall mounted installations.

So ask for our literature and you can be one up too.
**PMPA INTO OIL**

The PMPA is going into the petrol and oil business in a joint venture with businessman Mr. Tom Roche. The new firm, Flight Oil Company (Ireland) Ltd. is owned 51 p.c. by the family interests of Mr. Roche and Drogheda coal importer Mr. Paddy Monahan.

There must now be speculation that the PMPA will retail the new company's petrol at its garages.

Flight's 6,000 ton capacity tank farm will start construction next month on the same 15 acre site used by Flogas, which started last year as the country's third liquid petroleum gas company and its owners include Mr. Roche and Mr. Monahan. Other than common directors Flight and Flogas are not connected, said a spokesman.

No information was given by the company on the value of its investment or where Flight is to get its products, which will include petrol, gas oil and central heating oil.

Flight is expected to sell up to 6,000 tons a month — still a tiny fraction of national consumption.

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**DIESEL OIL FROM GULF**

Following negotiations between the Minister for Industry, Commerce and Energy, Mr. Desmond O'Malley, T.D., and the Gulf Oil Company, arrangements have now been concluded between the Irish National Petroleum Corporation and Gulf for delivery of approximately 10m. gallons of diesel oil to the Irish market over the next two months.

The negotiations were commenced some months ago, with a view to improving the overall supply position here for diesel oil. Distribution of the oil will be effected in the normal way through existing oil marketing companies who have undertaken to purchase specified quantities from the INPC to be put into the market over and above their own expected availabilities.

While this transaction will not radically alter the overall petroleum situation in this country it will add a useful increment in the immediate future to the available supplies of diesel which, in Ireland and elsewhere, has been the product presenting the most difficult consumer problem. The additional supplies represented by this agreement will, of course, be followed in due course by the further additional supplies negotiated by the Minister in Iraq recently.

Following discussions between Gulf Oil Terminals (Ireland) Ltd., and Government Departments concerned the company is proceeding with arrangements to transship a quantity of crude oil from the terminal at Whiddy Island. These arrangements are subject to the observance of navigational and safety requirements and to any necessary clearance with the Tribunal of Inquiry. This does not affect the long-standing arrangement under which Gulf is maintaining one million barrels of crude oil in storage at Whiddy, this quantity being part of the oil stocks maintained in compliance with this country's obligations under EEC and International Energy Agency requirements.

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**MACFARLANE WINS ITT AWARD**

For the first time ever the ITT Reznor Award for distribution performance has been won by an Irish company, P. & D. Macfarlane Ltd. The award, presented by the European Division of the international giant ITT, is made annually to the distributor of Reznor heating and ventilating products who is considered to have made the greatest contribution to developing sales measured against all other European distributors.

Mr. Dugald Macfarlane, seen in our picture showing the award to Mr. John Rosborough is (left) Dugald Macfarlane.

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P. & D. Macfarlane Ltd. is a Belfast-based company that has been working for twenty years in the traditional industrial heating and ventilating market in the North. In recent years the company has expanded its activities and now operates on an all-Ireland basis selling and servicing a range of air conditioning, heating, ventilating and combustion products. It is also involved in contacts within Continental European, Mediterranean and Middle Eastern countries.

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**The Lost Pillar**

No, Nelson is not standing on this flue, the picture shows three 30 metre high Selkirk Metalbestos stainless steel chimney vents Golden Cross House in the Strand, London, Lord Nelson stands on his column in the background.
They are not new... ..but different

As one of the country's largest shell boiler manufacturers we have established a sound reputation for quality and reliability in design and workmanship.

The European and Windsor shell boiler ranges are offered for steam or hot water applications and, as part of our continuous research and development programme, both types of boiler embody unrivalled design standards including the following differences:

- Low furnace combustion intensities—as low as 0.746 Kw/Cu.M (90,000 Btu/Cu. ft/hr.).
- Low furnace exit temperatures.
- Low pressure losses.
- Low H.P. consumptions and consequently lower electricity bills.
- Good access both internally and externally.

Great emphasis is placed upon our flexibility and willingness to meet our customers individual requirements. Once installed, back-up service by fully trained and qualified staff ensures efficiency and fuel saving is maintained. Send today for literature on full range.

B & E Boilers Ltd
B & E Boilers Ltd.,
Department IHVN
Easthampstead Road,
Bracknell,
Berkshire, RG12 1NP.
Tel: Bracknell (0344) 21341
Telex No.: 847520

A MEMBER OF THE RICHARDSONS WESTGARTH GROUP

The European Steam Boiler

Published by ARROW@DIT, 1979
John Burke, Speidel & Partners, Leeson Close, Dublin, with his prize of a two week holiday in Greece.

SAVE ENERGY BY INSULATING

The current drive to conserve energy is encouraging many companies to take stock of their heating requirements and the proper insulation of their premises. Effective insulation can cut heating bills dramatically. The Institute of Industrial Research and Standards estimate that proper insulation of a business premises, warehouse or factory can save anything from 2,000 to 32,000 gallons of heating fuel in a year, depending on the size and the use made of the premises. The official energy conservation campaign which will be launched shortly by the Department of Industry, Commerce and Energy will generate considerable interest in insulation. In order to meet the anticipated demand from the business world for insulation services Sheffield Insulations (Ireland) Ltd., announced recently the establishment of a new Contracts Division. This new division will be managed and equipped to tackle a wide range of insulation problems and will operate nationwide. Sheffield Insulations (Ireland) Ltd., is the largest stockist and distributor of insulation material in Ireland. It holds agencies in this country for a wide range of insulation products from manufacturers throughout the world.

Up until now the company also offered architects and building engineers a comprehensive free technical advise service. When its new Contracts Division is fully operational it will be able to offer this advisory service to business and industrial concerns.

While Sheffield’s Contracts Division will be based at the company’s headquarters in Dublin enquiries from the Munster area can be taken at the company’s new sales office at 11 South Mall, Cork. From September similar facilities will be available in Connought when Sheffield open another sales office in Cathedral House, Galway.

Malone Oil

Capital Oil Supplies, a new firm, has been set up to take over the distribution of oil supplies to customers of Malone Oil Products, the company which was wound up several months ago following a lengthy dispute.

A spokesman for the firm said that they were in a position to deliver 1,000 litres of home heating oil to all the former Malone Oil customers in Dublin and the surrounding area and letters have been sent out by Irish Shell informing customers of the situation.

INDUSTRIAL GRANTS

Energy conservation grants of up to 33 one-third per cent are provided by the Department of Industry, Commerce and Energy to manufacturing and service industry and hotels towards the cost of engaging consultants to carry out fuel efficiency surveys, including surveys to advise on the installation of boiler instrumentation, with a view to saving fuel. Service industries include such as laundries and bakeries.

The Industrial Development Authority also provides energy conservation grants for manufacturing industries.

Grants of 25% in nondesignated areas are available towards approved capital expenditure on machinery, equipment, instrumentation and building modifications which will reduce usage in production, processing and space heating in factories.

Grants of up to 50% to a maximum of £50,000, are available from the I.D.A. towards labour and materials, costs of research and development projects by manufacturing firms, involving a significant technical input aimed at conserving energy in the firm’s own process, or products that could be used by other firms to conserve energy in their processes.
The International Energy Agency, which is comprised of 20 Member States including Ireland, has designated October, 1979 as international energy conservation month. The month will focus attention on the need for energy conservation, having as its objectives:

(i) to provide an international focus for national effort in energy conservation;
(ii) to underline the extent to which States are co-operating to conserve energy, and
(iii) to give States the opportunity to plan energy conservation events for the month.

The Department of Industry Commerce and Energy, in conjunction with the Institute for Industrial Research and Standards, will hold a Conference on Energy Conservation in the dairy industry on 23rd and 24th October in Dublin and experts from this country, Britain and the Netherlands will contribute papers. A special stamp will be issued during the month. Letters posted during September and October will be franked with the "Conserve Energy" logo. A publicity campaign is being planned. A panel of speakers is being arranged for the month to talk on ways of reducing energy consumption to interested Associations such as residents/tenants groups. Some other events planned for October are as follows:

Institute for Industrial Research and Standards:
(i) a series of one-day courses for boiler men and plant engineers on efficient boiler operation (September/October)
(ii) the October issue of the magazine "Technology Ireland" will be devoted to energy.

National Board for Science and Technology:
In conjunction with EEC, an International Conference on Energy Systems Analysis (9th to 11th October); will deal with aspects of conservation.

Press Corps Itinerary (15th/16th October):
Showing samples of energy conservation in various concerns in Dublin and Cork.

E.S.B.
(i) a display of, and advice on, insulation at their Fleet St. showrooms, Dublin;
(ii) schoolchildren competition, in parts of Co. Louth.

Foras Taluntais/IFA:
Conference on production costs and energy for glasshouses (10th October).

Royal Institute of the Architects of Ireland:
Associated with UCD in a mid-career course for architects on energy conservation (3rd/4th October).

Junior Chambers of Ireland:
The theme of their National Convention in October, 1979 is "Energy - sources and alternatives".

Offaly Committee of Agriculture:

Longford Committee of Agriculture: will give talks on home heating.

District Heating and Energy Conservation Association of Ireland:
Symposium on district heating, public waste disposal, building insulation; October 8th, 1979 at Trinity College.
NEW MANUFACTURING CONCERN

Enfield Electrical Engineering Ltd, Rathmolyon, Co Meath is a recently formed manufacturing company engaged in the production of switchgear and control panels for both the home and export markets. Conceived initially in April of last year by Benny Barrett, who is now managing director, and John Corcoran, the company began production last October and now employs 15 people.

The premises in Rathmolyon, comprise an old Catholic church which was extensively renovated to provide the required office space and storage facilities. In addition, there is approximately one acre of land and a small wood adjacent to the building.

The design estimator is Jim Rice while Sales Manager Neil Keane, a specialist in prefabricated busbar trunking, controls the marketing. Neil operates from the Rathmolyon head office by Jim occupies the firm's Dublin base in Walkinstown (Tel: 503336).  

Over the last few months we have obtained a number of telephone calls from people within the domestic heating industry who have come up against problems in their day to day business but feel that there is no one prepared to take action. The following is a selection of these problems and we hope that the various institutes and organizations within the industry will take note and do something about the problems.

1. With the boom in solid fuel central heating the old problem of cowboy installers has arisen again, what ever happened to standards and registration? HIRS, IDHE etc., please note.

2. Lack of installation knowledge, on behalf of the installers, of solid fuel appliances, CIS and various distributors and agents please note, more training courses are needed.

3. Little or no development of home fuels like anthracite which is available from a number of local mines also the use of closed stove units, which are far more efficient than open fires, should be better promoted.

4. Why is there no home manufacturer of a solid fuel cooker/central heating unit? Waterford Ironfounders please note.

If you can see other problems like these in the H&V trade please contact the IHVN Newsdesk.

BRENNAN — VES STOCKIST

Latest expansion news from Ventilating Equipment Supply Co. of Andover is the appointment of Brennan Airconditioning Ltd, 60 Cookstown Industrial Estate, Tallaght, Co. Dublin, to stock the VES ranges of small air handling units, duct-mounted centrifugal fans and glass fibre roof extract units.

Announcing this appointment, David L. Peters of VES points out that Brennan Airconditioning currently stock no competitive products. The VES line complements the Brennan range, which includes automatic controls and refrigeration equipment.

CONTROL NEWS FROM TCS

A new range of electrical equipment manufactured by Lovato of Bergamo, Italy has now become available on the Irish market through Temperature Control Services Limited of Tallaght, who are representatives for Lovato in Ireland. Included in the range is a wide variety of items such as starters, relays, lights and push-buttons.

Contract news is that Temperature Control Services Limited has supplied five heating and air conditioning control panels to the new Marks and Spencer store currently under construction in Dublin. Controls manufactured by Staefa of Switzerland were used by TCS who act as Staefa agents in Ireland. In this contract TCS was working in conjunction with mechanical contractors Andrew Weatherfoil of Slough.

TCS who specialize in the supply, manufacture, installation and commissioning of air conditioning control systems are based at Airton Close, Airton Road, Tallaght (Telephone: 512634/512944).
NEW CRUDE OIL SUPPLIES FOR IRELAND

On his return from Baghdad, the Minister for Industry, Commerce and Energy, Mr. Desmond O’Malley, T.D. announced that he had concluded an agreement in principle with the Iraqi Minister of Oil, Mr. Tayeh Abdul Karin, for the supply, from early next year of 10,000 tonnes per annum (500,000 barrels per annum) of crude oil each year to Ireland.

The detailed contract which will be between the Iraqi National Oil Co. and the new Irish National Petroleum Corporation. The INPC will arrange for the lifting, transportation and refining of the Iraqi crude oil and the subsequent supply of refined products to Ireland.

This is the first arrangement of its kind under which crude oil will be supplied to Ireland by a producing country on a direct Government-to-Government basis. The Minister said that he himself and the INPC would continue to examine the possibility of further such direct deals.

Mr. O’Malley said that, as a result of talks which he also had had with the Iraqi Ministers of Trade, Agriculture and Health, the matter of cooperation and exchanges in those areas and in technology generally would be developed. Mr. O’Malley announced that representatives of Coras Tráchtála will visit the Baghdad International Fair in October and that an Irish trade delegation will travel to Iraq before the end of the year.

WALKER GROWS AND GROWS

Walker Air Conditioning Limited, the exclusive Carlyle air conditioning and refrigeration equipment distributor throughout Ireland and Scotland, has launched into the refrigeration components business by acquiring the assets of HRP Ireland Limited, a subsidiary of the London based HRP Sales Limited. HRP is the largest wholesaler of refrigeration and air conditioning components in the U.K. and Ireland holding many important distribution agencies. These include Isceon refrigerant, DWM Copeland condensing units, Myson coolers and condensers, Teddington thermostats and expansion valves, KMP driers, Imperial Gould Servicing Tools, Aspera compressors and condensing units, Watsco line valves, LEC condensing units and compressors, Ranco controls, Danfoss compressors and condensing units, Armaflex insulation, Yorkshire Imperial copper tube and Sabroe components.

Walker has formed a new division, HRP Walker, which will commence trading initially from the existing HRP premises at Harmonstown Road, Artane, Dublin 5 on 3rd September, with unchanged phone numbers, namely 336046 and 316056. New premises will be constructed shortly to enable larger stocks to be held and the service to the trade improved. In addition, Walker is opening an HRP Walker division at its Dundonald premises to supply the same range of goods to the trade in the North. Previously HRP supplied Northern Ireland from its Glasgow premises and so the new arrangement will be highly beneficial to the trade introducing local stock availability where none existed previously.

Walker Air Conditioning Limited, a member of the Jeffer­son Smurfit Group, is the dominant equipment company in the air conditioning trade in Ireland. Besides the coveted Carlyle franchise in Ireland and Scotland; the company is the Vokes filtration equipment distributor in Ireland; the sole distributor throughout the UK and Ireland for Condair, the biggest selling brand of steam humidification equipment in the world; and, the distributor for Girdlestone Pumps in Ireland.

"We are delighted to have concluded this agreement with Walker" commented Kingsley Curtis, Managing Director of HRP Sales Limited, "because it will ensure that our customers receive the best possible local back-up for our goods in the market." "The HRP business slots in happily alongside our other activities" commented Walker Managing Director, Jim Anderson. "It complements our Carlyle business and is the type of distribu­tive operation in which my management team has particular expertise. It is my conviction," he added, "that by increasing stocks, and by putting in strong proven local management, we will be able to give an even better service to the trade than before."

Up date details of the Walker organization in Ireland a mini directory is published below.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
<th>Telephone No.</th>
<th>Telex</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRP Walker (A Division of Walker Air Conditioning Ltd.)</td>
<td>Harmonstown Road, Artane, Dublin 5.</td>
<td>336056</td>
<td></td>
<td>Myson, Copeland, Teddington, ISCEON Refrigerant, Armaflex, Ranco, LEC, Yorkshire copper tubes and fittings.</td>
</tr>
<tr>
<td>HRP Walker (A Division of Walker Air Conditioning (UK) Ltd.)</td>
<td>9a Cherryhill Road, Dundonald, Belfast BT16 0JH.</td>
<td>Dundonald 5234</td>
<td>747681</td>
<td>Myson, Copeland, Teddington, ISCEON Refrigerant, Armaflex, Ranco, LEC, Yorkshire Copper tubes and fittings.</td>
</tr>
<tr>
<td>Walker Air Conditioning Ltd.</td>
<td>Dublin Industrial Estate, Finglas Road, Dublin 11.</td>
<td>300844</td>
<td>4862</td>
<td>Carlyle, Vokes Filters, Girdlestone Pumps, Plascon Humidifiers.</td>
</tr>
<tr>
<td>Walker Air Conditioning (UK) Ltd.</td>
<td>9a Cherryhill Road, Dundonald, Belfast BT16 0JH.</td>
<td>Dundonald 5234</td>
<td>747681</td>
<td>Carlyle, Vokes Filters, Girdlestone Pumps, Plascon Humidifiers.</td>
</tr>
</tbody>
</table>

Our thanks to Jim Anderson, Managing Director, Walker Air Conditioning Ltd., who supplied the above information.
There has always been a strong family tradition at BSS. Founded initially in the UK in the early 1920's by John Waudby, the company was built on a foundation of "dealing with customers in a warm, friendly and personal manner". And when they decided to open their first branch in Belfast in 1955, and in Dublin a year later, it was left to Charles Fitzsimons, who was their representative here at the time, to establish and continue BSS' policy in this country.

According to Brendan Stack, BSS Ireland Ltd.'s Managing Director, "Originally the company started off in a lovely old Georgian house in Leeson Park, and Charlie built a small 4,000 sq ft. warehouse at the back. He ran the business totally by himself, with his wife acting as secretary and two men working in despatch".

As the business grew, so did the problem of storage space. Planning permission, Fitzsimmons realised, would never be given for any extension in Leeson Park, and in 1973 the company acquired their present premises at White Heather Industrial Estate at the South Circular Road. "Here we have approximately 12,500 sq ft of warehouse accommodation and 1,500 sq feet of office space" Stack says. "It is a modern purpose built factory and it enables us to offer to our customers such brands as Myson Copperad, Sir W.H. Bailey Ltd; Dura-pipe Ltd; Flamco of Holland; United Air Coil Ltd; Meccafrance Ltd of France; Northvale engineering, which is a wholly owned subsidiary of the BSS group.

Back-up facilities are second to none," Stack stresses and be it from Dublin, Cork, Waterford or Kilkenny, all orders are handled quickly and efficiently. "If a query comes in by way of the telephone", he relates, "Our telephone sales clerks will immediately check the customers credit rating. If everything is OK, they will then give a verbal quote for the order, plus the approximate delivery time, and passed it to the warehouse for processing and dispatching. Meanwhile, our eight company reps are out on the road visiting the customers and attending to their needs. They are also able to give verbal quotations, answer technical queries, take orders and to generally liaise with the customers and the head office. They are the front men of our business".

**TECHNICAL TRAINING**

Naturally, this calls for specialist in the field, and Stack believes that the company's training scheme ensures that only the best possible personnel are picked for this very important aspect of the business. "All our reps are technically trained" he says. "They are all in a position to advise prospective customers on the proper usage. They can help them evaluate what they need; they can also advise them on the installation. And, if there is a problem after a sale, they return to the customer to make every effort, to correct the situation to their fullest requirements - regardless if it's an installation or a product fault. Sometimes, however, it's just the wrong usage. The customer sends for an order, installs it himself, and rings us to say it won't work. We then discover that he has bought the wrong equipment or installed it incorrectly. We would always prefer that the customer sought our fullest professional technical advice at all times. After all we know our own equipment best" he adds.

BSS claim that they are known throughout the trade as the "professional distributors". Stack acknowledges the compliment and feels it's because of their technical know-how and expert staff training.

Internal training within B.S.S. is a priority. Surprisingly, some of the reps and most of the telephone sales clerks started their days as warehousemen.
John Brophy Assistant Managing Director with Tom O'Connor.

Brendan Coghlan, Commercial Manager.

John Rowden.

Tony Carroll.

John Quinn.

Brendan Stack, would be the first to admit that the success of the group here is due to the team effort by all those employed in BSS. He pays particular praise, however, to the co-operation that exists between his group in the Republic and the sister company in the North. "We have regular meetings and four of us make up the management board for the Irish market: my Assistant Manager here, John Brophy and my two colleagues from the North, Terry Munro, Managing Director, and fellow Director, Jack Lewers. Also included on the board, and representing the parent company, are Group A view of the BSS premises with some of the transport in the foreground.
Managing Director, Robert Sellick, and Group Financial Director, Basil Cole."

CORK BASE

With the growth of BSS in the Republic, there was a need for a base in Cork. "We were finding it increasingly difficult to maintain our high standard of service from Dublin for that particular area", Stack explains. "It therefore was decided that rather than start from the bottom, it would be easier to acquire an established company with a good reputation in the area". Pulvertaft Ltd., part of the Metal Products Group, was brought in 1975, and Paddy Byrne, who was the Commercial Manager of the BSS concern in Dublin, was appointed General Manager with Michael Quinlan as Sales Manager. The company trade from Batchelors Quay, Cork City.

SUBSIDIARY

Yet another development and diversification for BSS was the creation of another subsidiary, BSS Safety Services. This, according to Stack, came about with the introduction of the 1977 Safety and Health acts concerning compulsory legislation for employees in industry. "We felt at that time that there was a need for a company to service the industry and that the business was going to expand. Luckily for us, we managed to acquire the agency for one of the largest suppliers in the world, Protecor P.T.Y. of Australia and growth has been nothing short of phenomenal."

THE EXPERTS

That seems to be the name of the game for BSS, phenomenal success every time they have set their sights on new horizons. Its a success story that has come about because of expert personnel, expert training, expert back-up service and, finally, expert equipment to offer to an increasingly discerning industry.

Following his appointment by the Department of Commerce as Governor of the Northern Ireland Energy Managers Group, Mr. F.R. McBride has been elected Chairman of the Group.

Mr. McBride is Chief Fuel Technologist of John Kelly Ltd, a Director of I.E.S. Industrial (Ireland) Ltd. and Hon Secretary of the N.I. Section of the Institute of Energy, in addition to which he sits on the Committees of other professional bodies and advisory committees.

The other members elected to form the Committee were:
- Mr. J. Frazer (Frazer & Naughton);
- Mr. R. Cooper (Ulster Currs Assoce);
- Mr. R. Orchard (Isaac Andrews & Co);
- Mr. R. Jordan (Esso Petroleum Co. Ltd);
- Mr. F. Ennis (Lurgan Boxmaking Ltd);
- Mr. Z. Lorenc (Du Pont Ltd);
- Mr. R. Patterson (Short & Harlands Ltd).

The first meeting of the Group recently held in Lisburn was used to explain to members the various grants available to industry for energy conservation.

Thorn Heating Ltd. must have felt very pleased when their sponsorship of the second golf outing organised this year by the N.I. Section of the Institution of Domestic Heating Engineers was rewarded with a record attendance of over 60 playing members and guests.

The importance Thorn attached to the occasion was evident, which included Ed Martin, Northern Sales Manager, Philip Johnston, N.I. Area Manager in addition to Andy Gallagher, Eric White, Miller Greer, Alan Crawford and Guy Edwards.

To mark the Thorn Heating tenth anniversary and their long association with this golf outing, Thorn presented all present with a tie with the emblem Thorn/I.D.H.E.N. Ireland '79.

Following their day in the sun, members and guests adjourned to the clubhouse of the Royal Belfast Golf Club on the shores of Belfast Lough for an excellent evening meal, following which Philip Johnston presented prizes to the following:


The next golf dates of the I.D.H.E.N. Ireland '79.

The Annual General Meeting of the Institute of Energy (N.I. Section) was held in the Clambrassil Hotel, Belfast. The Chairman Mr. Monaghan reported on a successful year, stating that with so many associations running meetings the Section's policy of holding joint meetings had proved to be the correct one.

The following Committee were elected for the incoming year:
Over the last few months there has been an outbreak of new work, most of it requiring considerable M & E design and what is more encouraging there is more in the pipe line.

Examples include what can only be described as at least four major industrial projects, two large hospital contracts, and a number of government projects.

Industry has also awakened, with a number of re-boiler contracts plus dozens of companies requiring surveys to assist them in making a decision as to whether they should switch from oil.

A lot of the work now in circulation is also good in the fact that it is of a long term nature and with a bit of luck could become on going for some time.

It is also pleasing to note that those brave souls who in some cases gave up senior partnerships to go it alone are also benefiting from the prosperity.

*******

William & Shaw the well known firm of consulting engineers have moved from Windsor Avenue, Belfast to new offices at Agar House, Ballymahinch Road, Carryduff, Co. Down. The offices, purpose built for their own use in addition to providing modern working facilities for their staff also provide ample car parking in a practically rural environment.

*******

Hoylake Metal Fabrications Ltd have moved into their new factory at Sydenham Road, Belfast.

The factory which has been designed to meet their special requirements will mean that they will be able to undertake not only a larger volume of work but also manufacture considerably larger units.

We are informed that the Heat & Power Equipment Exhibition to be held at Balmoral during the first week in October is now sold out with a waiting list for last minute cancellations.

We also believe that Dr. Simmonds the President of the Institute of Energy has indicated that he wishes to be present at the opening, and indication of the high reputation this Exhibition is building up for itself across the water.

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have over the last few months installed peat and wood burning stoves.

A number of continental models have recently come on the Ulster market and spare that peat and wood burning stoves. arly when using peat.

bituminous coal.

stokers for many years, and in the last era, their name was synonymous with coal firing using automatic means.

Automatic Stockers:

Heating Controls & Devices Ltd have also announced that they have been appointed all Ireland agents for Joshua Bigwood and Son Ltd of Wolverhampton, manufacturers of a complete range of Underfeed Coal Stokers.

Bigwoods have been manufacturing stokers for many years, and in the last coal era, their name was synonymous with coal firing using automatic means.

The range of stokers includes hopper types, bunkers to furnace types and the bunker traversing type.

They are designed to comply with the Clean Air Act and to burn the low cost bituminous coal.

All stokers are fitted with starter and re-kindling control, working temperature and high limit temperature control and automatic re-set timer.

*****

Heating Controls & Devices are also N.I. Agents for the De Dietrich range of boilers and also the Parkinson Cowan G.W.B. Boilers which in addition to their oil and gas fired range also includes the coal fired range of steam and hot water boilers with their unique Vekos top entry solid fuel firing system.

*****

The announcement by Bord na Mona that it is going to stop supplies of peat fuel to its distributors in Northern Ireland, will come as a blow to the many people who

continue to attract attention. Two more have been announced for the autumn.

The Institute of Training Managers will mount a one day Seminar — The Place of Management in Energy Conservation — to be held in the Dunadry Inn, Antrim on Wednesday 17th October. Details available from the Hon. Secretary of the Institute — R. Dean Esq. - Telephone Belfast 63244.

"Energy Saving in the Dyeing & Processing of Textiles" is the subject matter of a Dept of Commerce, sponsored Seminar to be held in the Culloden Hotel on the 23rd October. Details from J. Moore - Telephone Lisburn 5161.

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Cawoods the large fuel distributors with branches throughout the Province, have announced that Mr. John Kane has been appointed Assistant Managing Director of Cawood Fuels. Mr. Kane was previously General Manager and Director.

******

Sermet (N.I.) Ltd have been appointed sole agents for Northern Ireland for Alfa Laval Ltd (Engineering Division).

Alfa Laval is an International Company who manufacture an extensive range of plate heat exchangers and separators for the Shipbuilding and Power Generation Industries. These products are also extensively used in General Engineering for purification of lubrication and cutting oils and heat recovery from waste oils, solvents and associated products.

Sermet have now opened a company in the Republic of Ireland under the name of Sermet (Dublin) Ltd. The range of products which they handle will be similar to those in Belfast, namely Water Treatment Plant, Air Handling Equipment, Roof Ventilation Units, Tubes, Valves and Fittings.

They will also represent the well-known company of Rycroft Calorifiers Ltd for Heat Exchangers and Calorifiers, the British Rototherm Co Ltd for Thermometers, Pressure Gauges and Temperature Controllers.
The Thorn oil boiler’s got nothing on it for garages and outhouses.

Now the highly successful range of Thorn oil boilers can be a real working proposition in those more out-of-the-way places. Garages and outhouses have now come within the range of Thorn oil heating simply by removing our boiler’s smart outer casing. Leaving you with the highly efficient inner workings.

The only thing that’s cheapened is the price.

There’s a Riello burner. Which speaks for itself. A performance that’s as impressive as the conventionally-cased model. All providing lots of warmth and lashings of hot water.

And the nice thing about it is you don’t have to make a performance out of putting it all together.

The electrical centre’s easy to connect. The maintenance is easy too. Just once a year.

And you’ve got the total backing of Thorn service and after-sales. With spares readily available here in Ireland.

Get yourself warmed to Thorn.

The Thorn range of oil boilers are fully-automatic pressure-jet units with outputs up to 120,000 Btu/h.
Fluidised Bed Combustion

Following the recent increase in the use of coal in industrial boilers due to uncertain oil supplies, several boiler manufacturers have again considered the manufacture of boilers using fluidised bed combustion. The experience of two manufacturers in translating theory into hardware is related below, starting with Northern Engineering Industries by Paul Butler.

Three years development work at Northern Engineering Industries costing over £300,000 is expected to culminate in the middle of next year in the launch of coal-fired fluid-bed shell boilers by Thompson Cochran, an NEI subsidiary.

The application of fluid bed combustion to commercial boilers has taken much longer than many imagined in the 1960s because of the practical difficulties of converting a fairly simple theoretical concept into hardware which works.

NEI was a relative latecomer to the fluid-bed business, but three years ago it decided to concentrate work on getting fluid-beds into shell boilers rather than water-tube boilers. It felt applications on water-tube boilers were not as clear-cut as for shell boilers.

NEI also had an enthusiastic subsidiary—Glasgow-based Thompson Cochran—which holds a strong position in the shell boiler market and was willing to finance work on fluid beds.

Initial work has been carried out at the Advanced Technology Division of Clarke Chapman in Gateshead on two rigs to study coal injection, bed start-up, ash removal and bed control. This is expected to be completed by the end of this year, and development work is now being concentrated at Derby in the engineering development department of NEI-Mechanical Engineering under Dr Les Brearley.

Cold modelling and laboratory work is carried out at Derby, but construction of working boilers is at Thompson Cochran’s Annan factory. It was a Annan that a 3,000 lb/h coal-fired chain-gate shell boiler was converted to a fluid bed two years ago in the first stage of a demonstration that results from the Gateshead rigs could be translated to real-life hardware.

Brearley said that outputs from the converted boiler with the fluid bed were ‘significantly greater’ than those which could be achieved with conventional firing.

The next step is the construction of a much larger boiler — purpose-built to house a fluid bed — and this is under way at Annan. It is planned to start up the boiler in late autumn this year.

‘It is going to be possible with a given size of fluid-bed boiler to achieve the output of an oil-fired unit,’ Brearley said. ‘The work with a converted boiler has given us the confidence to design and construct a boiler which is physically the same size as an oil-fired boiler with similar output.

Modifications

The prototype under construction is a modified boiler of the Coalmaster type rated for 10,000 lb/h output on chain grate firing, but capable of 15,000 lb/h with a fluid bed.

The bed itself measures 1.2 x 3.46 m and is arranged as a twin bed — one 1.2 x 1.8 m and the other 1.2 x 1.66 m — with separate combustion air supplies if turndown ratios of more than 3:1 are required.

The bed material is 1 mm size particles of alumina. This is unusual — most fluid-bed combustors use sand — but was deliberately chosen for a shallow bed only 6 in

NEI's fluid-bed shell boiler, showing the method of bed/ash recirculation. The double bed is used only when turndown ratios of greater than 3:1 are required. The coal feed and solids recirculation systems shown are conceptual.
Published by ARROW@DIT, 1979

Because the density of alumina is relatively high, and the particles are large, it enables NEI to get more air into the bed than would be possible with sand without elutriating the bed material into the gas stream.

The higher the combustion air flow through the bed the more fuel can be burnt and the alumina bed solution has satisfied one of NEI's requirements for its boiler - high bed heat release ratings. It is expected that up to 50 lb/h/ft² of coal can be burnt on the 15,000 lb/h prototype boiler, equivalent to a heat release rate of nearly 600,000 Btu/h/ft².

The air distributor is a turret plate with air in turrets. Holes in the turrets are drilled about ⅜ in above the plate so that a ⅛ in thick layer of unfluidised alumina particles thermally insulates the plate from the high bed temperatures. It means that the plate can be made in inexpensive mild steel.

Air supply

Pressure drop across the plate is about 6 in wg, roughly equal to the drop through the bed. Total pressure drop through the whole boiler is around 18 in wg. One detail on the boiler which has yet to be resolved is whether the air supply will be forced or balanced draught.

The prototype will be able to operate with either arrangement. The advantage of forced draught is that it does away with the need for problematical induced draught fans. However it has the drawback that it is necessary to cope with the problems of a pressurised feed hopper.

"We shall use forced draught provided it is satisfactory," said Brearley. "This is our design choice, but we are not totally committed to it."

Another design feature still being investigated is coal feed to the hopper. It may be either pneumatic using Polymat's dense-phase conveying system or a mechanical method.

Thompson Cochran will probably offer its customers a choice of coal feed system. It is felt that with a single boiler a mechanical feed arrangement will probably be cheaper, but that pneumatic conveying will work out less expensive in a boilerhouse with multiple units.

Distribution

Coal feed on to the fluid bed is via a rotary or vibratory feed device and a sprinkler or spreader stoker to throw the coal to around half-way down the bed. Bed turbulence then ensures rapid distribution of coal.

The method of ash removal is one aspect of NEI's fluid bed technology which differs strongly from conventional techniques. Ash is normally removed by extracting bed material together with the ash, but NEI's technique is to elutriate the ash in the gas stream, carry it right through the boiler, and remove it in cyclones.

The alumina bed material - a good abrasive - is of assistance here. It tends to grind up the ash to a very small particle size, making it easy to elutriate.

Ash particles which are too large or heavy to be carried through in the gas stream fall into a hopper at the back of the boiler from where they are recycled to the coal feed point.

At first glance to recycle ash to the bed does not seem a good idea, but Brearley points out that it permits recycling of unburnt carbon in the large ash particles which can amount to 2-4% of fuel supply to the boiler.

Besides giving this increase in thermal efficiency it also enables any bed material which might be carried over in the gas stream to be returned to the bed. It also means there is only one ash collection point - under the cyclones.

Temperatures

Bed operating temperature is aimed to be around 850°C. First order control of the temperature is by varying excess air - normally about 40%, for coal - with fuel flow-rate at the second order control.

Runaway temperatures are avoided by control of the fuel/air ratio and Brearley's view is that injection of water into the fluid bed as a control technique is an unnecessary refinement.

Boiler start-up is with natural gas introduced in nozzles under the bed plate turrets. Here the gas is premixed with air and ignited over the bed. NEI claims that start-up from cold can be achieved in 15 minutes, after which time coal feeding can begin. This rapid start-up time is partly achieved because of the low thermal inertia of the shallow bed used.

However, this low thermal inertia is a disadvantage when turning the bed right down. It is thought that the bed could be slumped for about 20 minutes and retain enough heat to be turned up again without auxiliary gas firing.

Maximum turndown ratio is about 3 : 1 on a single bed, but this can be increased to 5 : 1 or 6 : 1 if twin beds are fitted. Thermal efficiency is comparable with conventionally-fired boilers at around 80% with exit gas temperature about 60°C above saturation.

Market strategy

NEI's strategy will be to market the new shell boiler as a means of burning some of the cheapest fuels available. It is easily capable of handling the lowest grades of coal costing perhaps only two-thirds of best grades.

The only restriction on the coal being burned is that maximum lump size is around 1½ in and that there should not be too great a proportion of fines. It will be able to burn fuels normally unsuitable because of calorific value or ash content for conventional chaingrate stoking.

NEI is evaluating a wide variety of fuels that the new boilers might be asked to burn. One of these is the pelletised fuel made from waste by a process developed at Warren Spring Laboratory. Tests have been 'very successful', partly because of the uniform particle size and because the fuel is easy to feed on to the bed.

Although detailed costings have not yet been worked out, the capital cost of the new boiler is expected to be comparable with conventional coal-fired boilers of similar size. Complete coal boilers are currently about three times as expensive as oil-fired units, mainly because of the extra cost of coal storage and handling facilities.

But the cheap-fuel feature of the fluid-bed type of Coalmaster will be an attractive alternative to both oil- and coal-fired conventional boilers, NEI believes.

Compactness

Because of the 50% higher heat release attainable on a fluid-bed boiler of similar physical dimensions to a conventional unit, NEI's technology means that coal-fired shell boilers producing 50,000-60,000 lb/h steam will be manufactured and transported in one piece. The previous maximum of around 40,000 lb/h was due to road transport size limitations.

With a control system giving full automatic start-up, Thompson Cochran will be concentrating its marketing activities on new boilers rather than retrofits of existing coal-fired units. One snag with retrofits is that heat transfer surfaces in existing coal-fired boilers are almost certain to be inadequate for the increased heat release rates possible with the fluid bed.

One of the first contracts Thompson Cochran is bidding for with the new boiler is on the coal industry's home ground. The National Coal Board is planning to install three 5 million Btu/h coal-burning fluid-bed boilers at Wistow mine surface facility on the new Selby coalfield.

These boilers will be producing hot water at around 60 lbf/in² for heating and washing and will burn 19-38 mm coal mined at Selby of the same grade as is sent to the Central Electricity Generating Board. They will also be capable of firing with methane from the colliery gas collection system and will have provision for conversion to conventional firing, a requirement which will not, it is hoped, be put into practice.
Fluidised Bed Combustion

From Danks

Danks of Netherton Ltd. has a licence for fluidised bed technology from Combustion Systems Ltd. This embodies the most extensive and advanced research and development work currently available that is based on more than ten years work carried out at the National Coal Board’s Laboratories at Leatherhead and Stoke Orchard as well as extended field trials on prototype equipment.

In practice, there are two basic types of fluidised bed, namely, the deep bed and the shallow bed. In the former, the fluidised depth is about 3-6 feet and the fuel is fed into the bed at several points either from the bottom or side surfaces and burnt within the bed. In the latter the fluidised depth is about 6-12 inches and the solid fuel, usually a selected coal such as singles, is fed onto the surface from a single point and is distributed and burnt on the surface by the fluidised movement of the bed. The high convection and heat transfer characteristics ensure that the bed becomes uniformly heated even though the coal is burnt on the surface.

Considerable research and development with up to prototype plant size has been undertaken on both types of bed, in the U.K. principally by the National Coal Board and its associates. Generally, work on deep fluidised bed combustors has been directed towards large high pressure steam plant for power generation (water tube boilers) and work on shallow fluidised beds towards shell type steam and hot water boilers and air heaters for process and heating applications.

Danks of Netherton Ltd. is currently adapting the fluidised bed technology licensed from Combustion Systems Ltd. to its well established range of Metricoal shell boilers to a new range of water tube boilers which currently are fired by mechanical stokers. The metricoal range gives evaporation rates up to 27,000 lbs/hr. at pressures up to 300 p.s.i.g. and the water tube boiler range extends evaporation and pressures up to 45,000 lbs/hr. and 900 p.s.i.g.

The fluidised bed combustors for both ranges of boilers are potentially capable of giving reduced levels of emission of sulphur dioxide and nitrogen oxides, which will become more important as pollution laws are applied more strongly and fuel quality falls.

In a world where industry, as never before is making unparalleled demands for liquid organic fuels derived from hydrocarbon processing, the role of pumps and pump systems has taken on an increased significance.

Despite having been hit with staggering increases in production and distribution costs over the past ten years, and with apparent, though perhaps limited availability of coal and domestically produced peat, the demand for oil continues to rise. Even though nuclear energy continues to stare us in the face as the one logical alternative, current government policy and public opinion combined, contribute no more than to stave off its ultimate introduction into this country.

The entire subject of energy is of course, enormously complex, as well as confusing, but it does go to the very heart of our industry. After trying to digest all the arguments and counter-arguments, opinion is that between now and the end of this century at very least, we will be continuing to rely on liquid organic fuels as a basic source of energy. What is more, these fuels will be made available, no matter from where, and no matter at what cost, whether it be the Middle East, Offshore Europe, Africa, South America, or even Mexico, where now enormous crude deposits are being developed. As the value of liquid fuels continues to increase, the equipment for handling them will become more critical, and as the product becomes more expensive, the cost of equipment for transporting, storing and pumping, will become of secondary importance.

The following synopsis is intended as a guide to the commercial rotary positive displacement types on the market to-day. Let’s examine them.

BASIC TYPES:

There are four basic types in the single rotor pump class, and a further four basic types in the multiple rotor class.

Vane

In this type, the vane, or vanes, which may be in the form of blades, buckets, rollers, or slippers, co-operate with a cam to draw fluid into, and force it from the pump chamber. These pumps may be made with vanes in either the rotor or stator, and with radial hydraulic forces on the rotor, balanced or unbalanced. The vane-in-rotor pumps may be made with constant or variable displacement pumping elements. Fig. 2 illustrates a vane-in-rotor constant displacement unbalanced pump while fig 3 shows a vane-in-stator constant displacement unbalanced pump.

Piston

In this type, fluid is drawn in and forced out by pistons, which reciprocate within cylinders, with the valving accomplished by rotation of the pistons and cylinders relative to the ports. The cylinders may be axially or radially disposed, and arranged for either constant or variable displacement pumping. All types are made with multiple pistons, except that the constant displacement radial type may be either single or multiple piston. Fig. 4 illustrates an axial constant displacement piston pump.

Flexible Member

Here the fluid pumping and sealing action depends on the elasticity of the flexible member or members. The flexible member may be a tube, a vane, or a liner. See figs. 5, 6, and 7 respectively.
Lobes

With this type fluid is carried between rotor lobe surfaces from the inlet to the outlet. The rotor surfaces co-operate to provide continuous sealing. The rotors must be timed by separate means. Each rotor has one or more lobes. Figs. 8 and 9 illustrate a single and three-lobe pump respectively.

Gear

Here the fluid is carried between gear teeth, and displaced when they mesh. The surfaces of the rotors co-operate to provide continuous sealing, and either rotor is capable of driving the other.

External gear pumps have all gear rotors cut externally. These may have spur, helical, or herringbone gear teeth, and may use timing gears.

Internal gear pumps have one rotor with internally cut gear teeth meshing with an externally cut gear. Pumps of this class are made with or without a crescent shaped partition. Fig. 10 illustrates an external spur gear pump, and Figs 11 and 12 show internal gear pumps, with and without, the crescent shaped partition.

Circumferential Piston

In this type, fluid is carried from inlet to outlet in spaces between piston surfaces. There are no sealing contacts between rotor surfaces. In the external circumferential piston pump, the rotors must be timed by separate means, and each rotor may have one or more piston elements. In the internal circumferential piston pump timing is not required, and each rotor must have two or more piston elements. Fig. 13 is an external multiple piston type pump.

Screw (Single)

In one type, fluid is carried between rotor screw threads and is displaced axially as they mesh with internal threads on the stator. The rotor threads are eccentric to the axis of rotation, and this type is illustrated in Fig. 14. Another type of single screw pump is shown in Fig. 15. This type depends upon a plate wheel to seal the screw, so that there is no continuous cavity between the suction and discharge.

Screw (Multiple)

In this type, fluid is carried between rotor screw threads and is displaced axially as they mesh. Such pumps may be timed or untimed. Fig. 16 illustrated a timed screw pump; Fig. 17 an untimed screw pump.

* Mr O'Reilly is Sales Manager of Pump Services Ltd.
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<tr>
<th>Co. Name</th>
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<td>Alpha Controls Ltd</td>
<td>3-Ardee Road, Dublin 6</td>
<td>976004</td>
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<td>Bentley Instrument Company Ltd</td>
<td>4a Greenville Ave, Dublin 8</td>
<td>754280</td>
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<td>Brown-Boveri (Irl) Ltd</td>
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<td>C&amp;F Ltd</td>
<td>Glenside Ind. Est., Mill Lane, Dublin 20</td>
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<tr>
<td>CHS Ireland Ltd</td>
<td>36 Ardmore Park, Bray, Co Dublin</td>
<td>863948</td>
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<td>S W Carty &amp; Son Ltd</td>
<td>48a Robinhood Ind. Est., Clondalkin, Co. Dublin</td>
<td>508046</td>
<td>31055</td>
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<td>James J Doherty Ltd</td>
<td>36 Lr. Gardiner St. Dublin 1</td>
<td>747927</td>
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<td>Spirax Sarco</td>
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<tr>
<td>Dwell Controls Ltd</td>
<td>Cookstown Ind. Est., Tallaght, Co. Dublin Also at: 16 High St., Antrim BT14 AN</td>
<td>511144</td>
<td>4486</td>
<td>Sauter</td>
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<td>Enfield Electrical Engineering Ltd</td>
<td>Rathmolyon, Co. Meath</td>
<td>Rathmolyon 78</td>
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<td>Beaver House, Grove Rd. Dublin 6</td>
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<td>Frazer Ross Ltd.</td>
<td>59 Deerpark Rd. Dublin</td>
<td>971518</td>
<td>Dewraswitch</td>
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<tr>
<td>Gilroy Automation Ltd.</td>
<td>Ballybricken House, Ringaskiddy, Co. Cork</td>
<td>(021)</td>
<td>Delta</td>
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<tr>
<td>Hancock &amp; Co</td>
<td>133 Dublin Rd. Sutton, Co. Dublin</td>
<td>322651</td>
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<tr>
<td>Heating Controls &amp; Devices Ltd.</td>
<td>Brookhill Close, Tallaght, Co. Dublin Also at: 768 Upper Newtownards Rd. Belfast BT 160 TL</td>
<td>Dundonald 5110 747536</td>
<td>Most Leading Brands</td>
<td></td>
</tr>
<tr>
<td>Hevac Ltd</td>
<td>Lomand Ave. Dublin 3</td>
<td>373796</td>
<td>Smiths</td>
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<tr>
<td>Industrial Instruments Ltd</td>
<td>6 Herbert Place, Dublin 2</td>
<td>761691</td>
<td>Fischter + Porter, Wika, Ayo, Eil</td>
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<tr>
<td>M F Kent &amp; Co Ltd</td>
<td>Gortnaflour, Clonmel Co. Tipperary</td>
<td>(052) 22811</td>
<td>M. F. Kent</td>
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<tr>
<td>Klockner Moeller (lrl) Ltd</td>
<td>94b Lagan Rd. Dublin Ind. Est., Dublin 11</td>
<td>300400</td>
<td>Klockner Moeller</td>
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<tr>
<td>M.C.W. Ltd</td>
<td>10 Wynnefield Rd. Dublin 6</td>
<td>976729</td>
<td>Blakeborough, Brannan Moncreiff</td>
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<tr>
<td>McKenna Ireland Ltd</td>
<td>Ardee House, Blanchardstown, Co. Dublin</td>
<td>383337</td>
<td>Airflow</td>
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<tr>
<td>Manotherm Ltd</td>
<td>4 Walkinstown Rd. Dublin 12 Also at: 10 Knockbracken Park, Belfast BT6 OHL</td>
<td>504025 4467 645966</td>
<td>Penn, Reuger, Rustrak, Platon, Dwyer West Barksdale</td>
<td></td>
</tr>
<tr>
<td>Measurement Control &amp; Automation Ltd</td>
<td>5 Castle Park, Clondalkin, Co. Dublin Also at: Glengormley Northern Ireland</td>
<td>592182 3830 747805</td>
<td>Measurement Control &amp; Automation, Chessell, Uniloc, Eurotherm</td>
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<tr>
<td>Pace Engineering Ltd</td>
<td>74b Rathgar Rd. Dublin 6</td>
<td>979025</td>
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<tr>
<td>Process Control &amp; Automation Systems Ltd</td>
<td>Ind. Est. Strawhall, Carlow, Co. Carlow</td>
<td>(0503) 42377</td>
<td>Eckardt, Pcas</td>
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<tr>
<td>Roper Bros. Ltd</td>
<td>5 South Anne St. Dublin 2</td>
<td>777557</td>
<td>Venner</td>
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<tr>
<td>Rototherm Precision &amp; Instrument Co. Ltd.</td>
<td>16 Merchants Quay, Dublin 8</td>
<td>771708</td>
<td>Rototherm</td>
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</tr>
<tr>
<td>J.J. Sampson Ltd</td>
<td>12a Wexford St. Dublin 2</td>
<td>752317</td>
<td>Danfoss</td>
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<tr>
<td>Satchwell Control Systems Ltd</td>
<td>15-19 Hendrick St. Dublin 7</td>
<td>775413</td>
<td>Satchwell</td>
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<tr>
<td>Temperature Control Services Ltd</td>
<td>Airton Close, Airton Rd. Tallaght, Co. Dublin</td>
<td>512634 30641</td>
<td>Lovato, Staesa, Robert Shaw, Johnston</td>
<td></td>
</tr>
</tbody>
</table>

Index compiled from information received from companies and additional information from Suppliers would be welcome for the next issue of the Index on Instruments & Controls. Companies who supply instruments and control equipment and are not on this list are especially welcome to contact us.
Save Heat — Without Feeling It!

Saving energy is not a matter of fashion. With the oil crisis in memory and with high oil prices affecting us, it has become necessary to economize on heating. It seems natural simply to lower the temperature, for example, by four degrees in every room. It will on a rough estimate reduce the oil consumption by 20 per cent during the heating season, but — ! And there is but! A temperature reduction e.g. from 21° to 17° is close to the unpleasant, even though humans are arranged so that they will be able to adapt themselves to this situation too. The ideal would no doubt be successful saving efforts without reduced comfort. It may sound wrong, but let us take a look at the facts. It will then be seen that we can very well take a long step towards the goal: For example, there are 625 hours of sunshine during a heating season. During all that time the sun will supply considerable amounts of free heat through our windows. Television sets and room illumination are other sources which besides fulfilling a mission also develop an amount of heat which can be utilized, and then we have not mentioned the fact that every person emits a certain amount of body heat at all times which is felt especially when many persons are together in the same room. —

All of this heating which supplements the heating of our dwellings, free of charge.

Now, is this free heat made useful? In many instances, no! The only effect is too high an ambient temperature, for which we compensate by opening a window. In other cases, could be! As a matter of fact, the "clever" house owner may turn down the radiator heat before guests arrive or if the sun breaks through the clouds. But he is late! Either in turning down the heat or turning it on again if the visit was short or it was only a glimpse of sun for ten minutes. The result will be extremely varying temperatures in the room all day long. Additional insulation gives reduced fuel costs; that is beyond any doubt. But at the same time, the free heat promotes the tendency towards overtemperatures, and thus increases the need of turning up or down the radiator heat even more. What is wrong is that we are simply not arranged to act quickly enough. The regulation required must be done automatically in order to give a good result, — and we are now at the crux of the matter! The solution is obvious since the radiator will just have to be equipped with a radiator thermostat instead of manually operated valve.

A radiator thermostat has a built-in temperature sensor which constantly senses the temperature of the air in the room where it is fitted. If this temperature varies up or down, the heat supply to the radiator is correspondingly changed automatically. In other words — the free heat is used first, and only when it is necessary, is additional heat supplied by the radiator. We cannot come much closer to the ideal, can we? The cost of such radiator thermostats will have been recovered in just two heating seasons, which has been proved by examples like the following, among others:

"A complex of sixty terrace houses with a joint heating station had manually operated valves on the radiators in 1972/73. The oil consumption was 166,000 litres that year. In 1974/75 the valves were replaced by radiator thermostats, and the oil consumption fell to 130,000 litres. Degree days and varying oil prices taken into consideration, this change meant a 21% reduction of the oil consumption, and repayment of the initial costs in the course of two years".

The radiator thermostats also give another important advantage. The thermostat acts in the room where it is installed. It is self-contained and just has to be set for the temperature required. It means that not only can a constant room temperature be maintained. It is also possible to vary temperature conditions from room to room — and everybody knows that a pleasant living room temperature is not the same as a pleasant temperature in bed-rooms or nursery. Individual temperature regulation with radiator thermostats keeps the fuel consumption at a minimum.

This article was prepared by Danfoss and supplied by J. J. Sampson Ltd.
Contactors

Motor Starters & Timers

Electronic Thermostats & Humidity Controllers

R.T. Thermostats & Pressure Switches

Static Frequency Converter for Control of Speed of Standard Squirrel Cage Motors

Solenoid Valves ¼" to 4" B.S.P.

Thermostatic Valves for Water & Steam

Temperature & Pressure Transmitters

For Further Information Contact:
Sole Irish Agent.

J.J. Sampson & Son Ltd.
12a Wexford Street, Dublin 2 Phone: 752317
nological progress, and combine to maintain our reputation for products that are technically advanced, accurate, reliable and aesthetically pleasing. Great emphasis is given to the needs of the plant designer, the installer and the plant owner, each demanding that the products meet their requirements of flexibility, ease of installation and commissioning and finally reliability.

The range of pneumatic controls incorporate the same qualities as electronics: accuracy, reliability and flexibility and good practical common sense. It includes temperature, pressure, relative humidity controllers with indicating and recording facilities if required.

Bleed, relay and receiver controllers are available together with a wide range of valves and actuators for all duties. This presents a formidable array of equipment that enables us to undertake the largest and most complicated of systems.

Both electronic and pneumatic controls can be operated in conjunction with a variety of supervisory systems which not only provides alarm functions but incorporates set point adjustment and manual remote start facilities.

Brennan Controls Ltd. pre-sales and after-sales service offers a complete design, engineering, site supervision and commissioning and planned maintenance facilities.

Further technical information and prices may be obtained from Brennan Controls Ltd., 60 Cookstown Industrial Estate, Tallaght, Co. Dublin, (Tel: 514711).

Temperature Control Services Limited of Tallaght ranks as one of the leading Irish Companies engaged in the design, manufacture, installation, commissioning and servicing of heating, ventilating and air conditioning control systems. In the manufacture of control systems, TCS uses a wide variety of leading British and Continental control equipment. Included in this is the full Staefa Electronic Controls range from Switzerland, for which TCS is sole Irish Agent.

Major projects completed by TCS include the Smurfit Head Office complex at Clonskeagh, the new P.M.P.A. office development in Wolfe Tone Street and the Dairy Science Building at University College, Cork. TCS has also been involved abroad and has completed two major projects in Saudi Arabia.
Bentley Instrument Company was established by A Richardson and M Hynes on June 1964 as a manufacturing and servicing company to provide specialised instrument facilities to process instrument users within the chemical, power generation and brewing industries. During the intervening years the company has expanded the range of products offered by establishing distributor agreements with manufacturers that provide complimentary instruments or systems to already established lines. At present the range of products has wide applications within the H & V field, particularly with the recent trend towards the more accurate measurement and control requirements needed to help conserve energy and minimise environmental disturbances together with the provision of daily records of energy usage required to determine plant efficiencies and analyse running costs.

The Company is at present involved in supplying extensively metering systems employing the recent Vortex Shedding Meter manufactured by Neptune Eastech which is gaining worldwide recognition as the leader in its field. The scope of the Company covers energy conservation applications, supplying boilerhouse instrumentation, CO2, draught and stack temperature and smoke density control, with emphasis on after-sales service. The Neptune range of flow meter is well known in the Petroleum industry, providing exceptional accuracy in home heat deliveries to house-holders using oil burning central heating systems. The test and calibration facilities of the Company are approved by The Weights and Measures Department of Dublin Corporation. The test and calibration facilities hold good for a much wider application in industries covering the Brewing, Food Processing and Dairy applications. Recent expansion programme has enabled Bentley to service customers more effectively by increasing the range of instrument stocks.

Two of the more recent distributorship acquisitions, Messrs Synatel — manufacturers of a large range of Photo Electric Batch Control and Capacitance Level Systems, and the Bestobell Mobrey range of Magnetic Level Switches are proving very popular. The Company is at present undertaking a manufacturing programme of Hygienic Pneumatic Level Indicating and Control Systems for the Dairy and Brewing Industries. This complements our existing activities in engineering Batch Control and automatic process systems employing the well known Davy Load Cell Weighing Equipment and Drayton Pneumatic Controls.

An associate company, Bentley OPL Ireland Ltd., of the same address is currently engaged in Industrial Electrical and Instruments installations and the manufacture of Control and mimic panels.

Further information from Bentley Instruments Co. Ltd., 4A Greenville Ave., Dublin 8. Tel: 754280.
Randall

Building on the success of the 102 and 103 models in the GP 100 Series, Randall Electronics have extended their versatile and popular range by re-introducing the 151 model and introducing two new versions, the 105 and 106 designs.

Model 151 is a basic time switch, which is suitable for controlling all electrical loads up to 15 amps (3kW), one of its many applications being for electric immersion heater control.

Of the two new models, the 105 has been developed as a mini-programmer to provide a control for the new ACL mid-position valve. The control facilities offered are similar to those of the 102 model but the internal wiring has been modified to enable it to control this new valve.

Model 106, the other new time switch, has an optional priority feature, enabling it to control already well-established ‘priority’ systems such as the Honeywell W and Satchwell K plans. This model will eventually replace the 3022 unit giving similar control functions at a more competitive price.

Randall also claim to have made breakthrough for heating installers and servicemen by means of a fool-proof wiring system and guide to heating electrics.

Further information is available from Electrical Industrial Agencies Ltd, Beaver House, Grove Road, Dublin 6.

Midas

Midas Safety Systems Ltd is a recently formed, totally Irish owned company. Its primary function is the design, sale, installation and servicing of instruments for the detection of explosive and toxic gases. It can also supply instruments for minute leak detection such as the ‘Leakfinder’ which is used for quality control of freezers etc.

One of its latest additions is the ‘Haloteck’, which is designed as a service engineer’s instrument and has the advantage of being adjustable to ignore ‘background’ and is not affected by draughts etc.

Midas operate a consultancy service available without commitment to engineers etc., involved with the science of gas detection, and offers a selection of the most suitable equipment for a particular application.

The service department of Midas is, in their opinion, the most important aspect of the company. They are fully equipped to repair and service their complete range of equipment at their offices which eliminates the necessity of returning instruments to the manufacturer which increases the down time of instruments considerably.

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

Sangamo

The Sangamo 410 central heating/hot water programmer is available in eight forms for the automatic control of central and water heating installations, fan-controlled storage heaters, warm air system and zone control.

The forms comprise single and two-circuit units and incorporate a time switch dial with two “on” and two “off” levers and various manual knobs, giving maximum flexibility of control. A plug-in terminal plate facilitates installation of the units.

Information on these and other Sangamo products can be obtained from Irish Industrial Supplies Ltd., 26 Charles Lane, Dublin 1, (Tel: 740786).

Manotherm

There is no doubt that, somewhere in the wide world there is some company making the control instrument that you so urgently need. Equally, there is no doubt that, somewhere in the wide world there is some company carrying the control instrument you so urgently need, on the shelf, ready for instant use. The problem is, how do you, the user, discover the address of this company. Well you could consult trade directories, or catalogues from the major trade exhibitions, or you could consult the local experts.

One of the local experts is, without doubt, the firm of Manotherm Ltd. This is one of the longest established companies in the control instrumentation business, having been selling controls for nearly 20 years.

It’s easy to find Manotherm, they’re adjacent to Kilmartins and the Half-Way House, and they have a large illuminated sign which reads:— "Manotherm Limited — Temperature, Pressure, Humidity, Flow and Liquid Level Instruments." They also have what must be the largest thermometer in Ireland hanging above their door. It is 30” in diameter, and the pointer is over 12” long.

Manotherm’s sign gives an indication of the scope of their activities but it leaves a lot unsaid. They appear to cover every aspect of instrumentation, and they should be able to supply you with something to get you out of trouble in most cases.

Years ago, their directors decided that it was bad policy to accept orders from customers and then expect them to wait six, ten, fourteen weeks before the factories could supply. They decided to carry stocks, and attempt to supply the customers with goods straight off the shelves. This simple policy has succeeded and Manotherm’s storerooms are like an Aladdin’s Cave to the instrument engineer.

Some of the goods on display, and of particular interest to the heating and ventilating engineer are: pressure, vacuum, compound and altitude gauges in a wide variety of ranges; pressure, vacuum and altitude switches; Penn — Baso refrigeration controls; bimetallic, mercury-in-steel, and vapour pressure dial thermometers, again in a wide variety of ranges and dial sizes a complete range of Rustrak chart recorders.

Manotherm’s address is 4 Walkinstown Road, Dublin 12, (Tel: 504025/783387). They are also at 10 Knockbracken Park, Belfast BT6 OHL, (Tel: Belfast 649566).
Drayton

The TRV2 thermostatic radiator valve keeps the distinctive chrome-plated top and white bezel of its predecessor, but now has a much larger range of body sizes and patterns to suit more types of installations. Although its integral sensor is some 14% smaller than that of the original TRV, it contains a greater volume of liquid fill giving it greater sensitivity.

Special locking pins inside the bezel allow the TRV2 to be locked at a single temperature setting or limited to only part of its full setting range. There is also a frost protection setting which operates below 10 degrees C room temperature.

Valve bodies are available to fit 8, 10, 12 and 15 mm copper pipes and 3/4", 1/2" and 3/4" BSP iron pipes. The bodies are all available in straight or angle patterns and every one is supplied with a manual operating cap for initial protection during installation and for positive shut-off at all temperatures should the radiator be removed, for example, during decorating.

Gland sealing on the TRV2 is double-secure since a new, unique ethylene propylene sealing sac, working on the same principle as the well proven metal bellows seal of the previous model, is backed up by an additional conventional ‘O’ ring. As with the previous model, the TRV2 design takes into account conducted heat from the pipework and radiation from the adjacent radiator, so the valve may be mounted either vertically or horizontally at a top or bottom inlet.

Further information is available from CHS Ireland Ltd, 86 Ardmore Park, Bray, Co. Wicklow, (Tel: 863948).
INSTRUMENTS & CONTROLS

Satchwell

"Plug-In Duoflow System", designed for advances in the field of solar heating and has developed a new differential temperature controller for solar heating circulators. This offers a considerable saving of cost compared with previously available types and is a major contributor to the efficiency of solar systems, where differential control is essential.

Finally, for situations where a power failure demands that an actuator automatically drives to a safe position, Satchwell has designed an actuator with a self-contained recharging and is built for real reliability. It has a capability for about ten full-stroke operations before power restoration.

Information on all these products is obtainable from Satchwell Control Systems Ltd., 15-19 Hendrick Street, Dublin 7. (Tel: 775413).

Industrial Instruments

The new Avo Meter — Model No 10 — was designed to ensure overload protection, reliability, accuracy and safety.

The Model 10 is a robust general purpose multimeter for fault-finding, installation and laboratory work in the electrical and electronics industries and trades. Basic features are as follows:

- Electronically controlled overload protection and fuse protection means that repair bills and embarrassing delays will be reduced drastically; large easy to read mirror scale; very robust case designed to withstand the metre drop test; designed to withstand 250 V on any range; single range selector switch; and case and PCBs made of self-extinguishing materials.

Further information is available from Industrial Instruments Ltd, 6 Herbert Place, Dublin 2, (Tel: 761691).

Measurement Control & Automation

Measurement Control and Automation Ltd provide total capability in process control and instrumentation. The company offers a complete package to industry from an advisory or consultancy service to procurement, project management, installation, commissioning and after sales service. Equipment available ranges from a simple pressure gauge to a sophisticated microprocessor.

The company specialises in engineering, building and packaging individually tailored control systems for the control or automation of specific process, such systems include fully automatic and unmanned blending plants whose output is controlled by the demand, high speed automatic weighing and batching systems, temperature control and recording to within a quarter of one degree on cooling water systems, critical temperature rise and fall on pottery kilns and glazing ovens, temperature control for glass furnaces.

Further information is available from Measurement Control and Automation Ltd, 5 Castle Park, Clondalkin, Co. Dublin, (Tel: 512145).

Brannan

Brannan Thermometers manufacture a wide range of instruments and controls to serve the entire heating, ventilating and air conditioning industry.

Their mercury-in-steel thermometers come in two types, direct mounting rigid stem types generally available from stock and direct mounting capillary (remote reading type). For those with Brannans standard 100 mm pockets. The bimetal thermometers are vertical entry types with separate 50, 100 or 150 mm brass poskets screwed ½" BSP. The cases are black, finished with chrome bezels. The altitude gauges are available in various altitude ranges with a case finish to match the bimetal units.

There is also a range of horizontal and vertical combined altitude/temperature gauges for domestic and small-scale industrial hot water and central heating use. Each has an adjustable red pointer for showing the normal head of water. Cases are black, finished pressed aluminium.

In addition, Brannan manufactures a vaste range of cylindrical pipeline thermometers, max-mins and mains gauges; hygrometers for determining relative humidity; pocket test thermometers; and wall and room thermometers.

Among the really great advances in this field has been the Selective Ion Electrode technique will be held in Cork and Dublin during the month of October. Dates are, Cork 22nd-23rd October 1979 and Dublin 25th-26th October 1979. Practical demonstrations will form part of the Seminar.

Registration fee is £12.00 which includes documentation, mid-day meals etc. A 25% reduction is available to members of the Irish Section of the Instrument Society of America. Applications for the limited number of places available should be sent to: Selective Ion Seminar, Industrial Instruments Ltd., 6 Herbert Place, Dublin 2. Tel: Eoin O'Riain 761691 enclosing fee and stating day selected to attend.

In the air conditioning industry.
Cross Refrigeration Limited

People

Bill Hogg is well known in the heating and ventilating trade in Northern Ireland and is extending his activities with the Moducel range of Air Handling Equipment.

Bill is offering his expert advice and experience from 46 Ballynahatty Road, Shaw's Bridge, Belfast, Northern Ireland.

People

Bill Hogg Representing Moducel in Northern Ireland

Bill Hogg

In order to give a more specialist approach to the expanding sales of its Flair range of bathroom and household products, Midland International Limited of Bailieborough has appointed Mr Martin Davis as Product Manager, Bathroom and Home Improvement Products.

He joins Midland International with extensive experience in the Irish and British sales and marketing fields.

Eamonn A. Boland, Midland International Ltd.

Eamonn A. Boland

Obituary — Kenneth Reynolds

The sad news of the death of Ken Reynolds was received with great sorrow by his many friends. His associations with the heating and plumbing trades go back over thirty years and his name has long been associated with Ideal Standard and Pilkingtons.

Kind words have come from many sources amongst them were these from A.D. Kelly of Charles Kelly Ltd., Letterkenny, which typified the feeling of all who had the pleasure to meet Ken in business, "His business acumen and sales performance, intrigued us to the point of extreme admiration. Our dealings were of such a satisfactory nature, that Mr. Reynolds had only to present himself to our stores, when he immediately received an "open-sesame", and no closed defence."

Over the last year or so due to his illness Ken's son, Mark and daughter Julie, have been running the business and although they will continue to do so, his presence will be sadly missed by everyone.

IHVN and the trade wish to extend their condolences to his wife Olive, son Mark and daughters Julie and Jennifer.

Obituary - Kenneth Reynolds

Bill Hogg Representing Moducel in Northern Ireland

People

Cross Refrigeration Limited

Cross Refrigeration Limited is a leading Dublin and London company that provides comprehensive services for building services distribution systems, including ductwork, piping, and cable systems.

F.H. Biddle C-Pack

FH Biddle Ltd have produced new literature on their C-Pak low profile air handling units for ceiling void applications. Ideally suited where space is limited, the C-Pak unit comprises of 6 sections for each size of unit. These are bolted together to provide a composite unit suitable for various heating and ventilating applications or heating, ventilating and cooling applications. The trayed panels of the unit are fabricated from Zintec steel sheet. Available in 3 sizes with cooling capacities ranging from 0.31-1.42m³/sec.

Further information from Mr J McFadden, Sermet (NI) Ltd., 11 Lisburn Street, Hillsborough, Co. Down BT26 6AB, Tel: Hillsborough 682531 and Mr. P. McCormick, Uni-mack Ltd., James' Place East, Lower Baggot Street, Dublin 2. Tel: 789570/789057.

IHVN, September 1979
THE LAW AND
BUILDING SERVICES
DESIGN

SECTION V
Fire Protection and Safety
Part 2

(By Ben Costelloe)

This part deals with the Draft Building Regulations (1976) and the Fire Protection Standards of the Department of Local Government (1966). It considers structural fire precautions in so far as they are required for services; deals with fire protection for specific services and with fire protection as a service itself.

Structural Fire Precautions

N4(4) Where the floor area of a shop building exceeds 2000m² or the volume exceeds 7,000m³ then the floor must be subdivided with compartment walls. However if an automatic sprinkler system to B.S.C.P. 402.201 1952 is fitted then the floor and volume limit is twice this amount.

Automatic Fire Dampers

N8-(1) Every compartment wall and compartment floor shall be imperforate save for . . . (c) openings for ventilation ducts where the space surrounding the duct is fire-stopped and the duct is fitted with an automatic fire shutter where it passes through the wall or floor.

Insulated Chimneys and Appliance Ventilation Ducts.

N8-(7) Where a chimney flue or appliance ventilation duct forms part of a compartment wall it shall be separated from any compartment adjoining that wall by non combustible construction which has a fire resistance not less than half that required of the compartment wall. (This regulation has implications more for the thermal insulation which may surround chimneys and ducts than for ducts themselves. Many widely used insulants are combustible as defined in B.S. 476 Part 4 1970 and will therefore be required to be surrounded by a concrete or equal veneer to satisfy this regulation).

Protected Shafts

N9(5)(7) Purpose built shafts acting as ventilation ducts or containing ventilation ducts shall have no openings other than those required for duct branches, (which shall be fitted with automatic fire dampers as described above). Access doors fitted in such shafts shall have a fire resistance of not less than one half hour as defined in B.S. 476 Part 8 1972. Such ventilation ducts . . . "shall not be constructed of, or lined with, any material which substantially increases such risks."

N9-(8) A protected shaft containing a lift "shall be ventilated to the external air by means of one or more permanent openings situated at the top of the shaft and having a total unobstructed area of not less than 0.1m² for each lift in the shaft. . . and shall not contain any pipe conveying gas or oil or any ventilating duct.

N9-(10) Where a protected shaft consists of a stairway it shall not contain any pipe conveying gas or oil or any ventilating duct.

N10 Every door in a fire compartment wall or a door in a protecting structure such as core walls and other protected shafts shall generally have the same period of fire resistance as the minimum required of the wall and be fitted with an automatic self closing device other than rising butt hinges.

N17 Oil Storage Tanks

Every oil tank having a capacity more than 2,000 litres shall be provided with an oil tight catch pit of sufficient size to receive and contain the total contents of the tank plus one tenth of its capacity.
Where such a tank is within or forms part of a building it shall be
(a) contained within a tank room or tank chamber which shall not contain any appliance and such room or chamber shall be adequately ventilated to the external air, either directly or by means of a duct.
(b) constructed with floors, walls and roofs of the following fire resistance
(i) 2 hours where the capacity of the tank exceeds 2,000 litres but does not exceed 3,400 litres
(ii) 4 hours where the capacity of the tank exceeds 3,400 litres.

Where an oil tank is located outside of a building the following regulations apply
(a) the side of the tank facing the building shall be no nearer to the building than the minimum distance set forth in column (2) of the following table unless the conditions set forth in column (3) are satisfied.
(b) the side of the tank facing the boundary shall be no nearer to the building than the minimum distance set forth in column (4) unless the condition set forth in column (5) are satisfied.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Capacity of tank (litres)</th>
<th>Minimum distance of tank from building containing appliance</th>
<th>Minimum distance of tank from boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8 m</td>
<td>Exceeding 2000 but not exceeding 3400</td>
<td>(a) The tank is underground, or (b) there is a screen wall, or (c) the external wall of the building is protected.</td>
<td>760 mm</td>
</tr>
<tr>
<td>6 m</td>
<td>Exceeding 3400</td>
<td>(a) The tank is underground, or (b) there is a screen wall, or (c) the external wall of the building is protected.</td>
<td>6 m</td>
</tr>
</tbody>
</table>

See Regulation N17(7) for details of screen walls, protection of external walls and underground tanks mentioned in this table.

N17(9) All drainage outlet valves and drainage outlet cocks of any tank to which the regulation applies, being a tank neither within or forming part of a building shall be capable of being locked.

Part Q. Access For Fire Appliances and Means of Assistance to the Fire Brigade

Dry Riser

24-(1) Every building... (other than temporary buildings) the floor of any storey of which is more than 13m above the adjoining ground shall be provided with an internal fire main or mains.

The landing valves on each floor shall be so arranged that no part of any storey is more than 61m from the valve, measured along a route suitable for a hose. At least one outlet shall be located at roof level. No landing valve shall be more than 4.5m distant from the entrance on that storey to the fire left.

Inlet Breeches Tee to Riser

"The fire main shall be provided with two suitable instantaneous male inlet connectors"

"The inlet to the fire main shall be sited outside the building on an external wall not more than 900mm above ground level and not more than 12.2m from the vertical run of the rising fire main" and "the inlet shall be electrically earthed and shall be housed in a suitable glass fronted wall box".

Wet Risers

In every building the topmost floor of which is more than 61m above the adjoining ground the internal fire main shall be permanently charged with water and shall comply with section 8.4 of B.S.C.P.3 ch IV Part 2: 1968

Hydrants

Q5-(1) "Every building... which has a floor area on any storey of more than 1,000m² shall be provided with one or more ground hydrants located at a distance of not more than 46m from the building and so situated that no part of the area covered by the building at ground level is at a greater distance than 61m from a hydrant, any such distance being measured along a route which is suitable for a hose."

Q6(1) "Every building, any storey of which has a floor level more than 18m above the adjoining ground level shall be provided with at least one lift serving every storey and complying with the following:

(a) the area of the platform of the lift shall be not less than 1.4m² and the lift shall be capable of carrying a load of not less than 600 kg.

(b) the lift shall be fitted with a control system incorporating a fire switch provided at ground level, housed in a glass fronted box clearly marked "Fire Switch" and which will enable fire men to take overriding control of the lift.

(4) The electrical supply to the lift shall be provided by an independent circuit.

Foam Inlets to Boiler Rooms and Fuel Storage

Q7-(1) Every room housing boilers above 45kW output or oil tanks with a capacity above 2000 litres shall be provided with foam inlets if the floor area of such a room is above 46m² and is wholly below ground or accessible from within the building only. One foam inlet shall be provided for every 46m² of floor area.

(2) "The foam inlets shall be sited on external walls of the building not more than 900mm above ground level, shall be at least 3m horizontally from any opening to the room or chamber and shall be fitted in each case with a suitable 63.5mm instantaneous male coupling"

(3) "The pipe from the inlet coupling shall be metal piping having an internal diameter of 76.2mm and shall be without acute bends and shall not exceed 10m in length to the point of discharge of the foam."
(4) The point of discharge of the foam shall be approximately 900mm above floor level or 150mm above catchpit level whichever is the higher.

Q8(4) Electrical Isolation

An electrical isolator shall offer to disconnect all electrical services to the building with the exception of those to fire lifts and pumps or other equipment required for fire fighting purposes. The isolator shall be labelled, housed in a fire resisting enclosure, and if activated automatically by a remote control switch then wiring between control switch and isolator shall be in a fire proof installation.

Sprinkler Systems for Car Parks

Q9-(1) Any part of the basement storey of a building which is used for the parking of motor vehicles shall be provided with a suitable automatic sprinkler system.

*****

Fire Protection Standards (Dept of Local Government 1967).

Unlike the building regulation, which of necessity have a legal style and are therefore difficult to understand at first reading, this document is a standard and is very straightforward. It is easy to find the information required from the paragraph headings.

The area covered by both documents, however, overlaps and I have included here only those standards which are not directly referred to in the building regulations.

11. Exits

(a) "In multi storey buildings exits from floors should be based on a unit width of at least 21 inches (525mm) of suitable exit per 100 persons accommodated. Permanent exit ways from multi storey buildings (e.g. internal stairways, fire escape stairways etc) should be so located that at least one is available within 100 feet (30m) at the most, measured along the line of travel from the exit door of every room."

(b) "Every room at ground floor level with a floor space of 2,000 square feet 184m² or more should have at least two exits; but in such cases a French window (i.e. a large casement window etc) should be so located that at least one is available within 100 feet (30m) at the most, measured along the line of travel from the exit door of every room."

(d) Artificial lighting should be available at all times to illuminate exit routes. The practice of cutting of lighting at the main switch at night is condemned.

12 Secondary Lighting

"Emergency lighting facilities to provide exit illumination in the event of failure of normal artificial lighting should be provided in all cases where large numbers of persons may be exposed to a fire hazard, such as escape routes in public halls, places of assembly, or dormitory buildings such as schools, hospitals or similar institutions where sleeping accommodation is provided for more than 100 persons. This secondary lighting should be sufficient to provide illumination to facilitate evacuation of the building in an emergency should the general lighting fail, and could be supplied from a source independent of the general supply, such as trickle-charged batteries or unit battery operated devices. When not required to be permanently kept on, it should incorporate an approved arrangement for automatic switching-in when the general lighting fails."

Fire Alarm Systems

Fire alarm systems should be installed in all buildings where an extensive night fire risk to life is present. Automatic systems should be installed in existing buildings which do not comply with the structural standards set out in this document. Such systems, should, where possible repeat at the nearest Fire Brigade Headquarters.

34. Hydraulic Hose Reels

"The rubber hose should be 3/4 inch (20mm) internal diameter best quality two braid non-kink type fitted with a shut off nozzle of 3/16 inch (4.5mm) or 1/4 inch (6mm) internal diameter. Hose should be supplied by rising mains of not less than 1 1/2 inch (40mm) internal diameter or may be connected to internal fire means where such are provided. A screw-down valve should be fitted on the supply pipe in close proximity to the reel. The effective operation the mains pressure at connection of the hose to the main on the top floor of the building should be not less than 15 lbs per square inch (105kPa) residual pressure with a minimum flow of 5 gallons per minute. Reels should be installed at such position as to cover adequately all points on each floor."

35. Distribution of Extinguishers

"The normal scale of distribution of water type extinguishers for the general protection of buildings is one extinguisher of 2 gallon (9 litre) capacity (or the equivalent) for every 2,250 square feet (207 m²) of floor area or part thereof, with not less than two extinguishers on any storey and the maximum travel distance to nearest extinguisher limited to 100 feet (30m).

"Extinguishers of the Foam, Carbon Dioxide, Dry Powder or Vaporising Liquid type where required for protection against special risks, should be provided in addition to equipment for the general protection of the building. The scale of distribution of these types of extinguishers will depend upon the area involved and the quantity and distribution of flammable liquids present or the apparatus comprising an electrical risk."

Catch pit of sufficient size to receive and contain the total contents of the tank plus one tenth of its capacity. Where such a tank is within or forms part of a building it shall be enclosed, and if activated automatically by a remote control switch then wiring between, control switch and isolator shall be in a fire proof installation.

When an oil tank is located outside of a building the following regulations apply

(a) the side of the tank facing the building shall be no nearer to the building than the minimum distance set forth in column (2) of the following table unless the conditions set forth in column (3) are satisfied.

(b) the side of the tank facing the boundary shall be no nearer to the building than the minimum distance set forth in column (4) unless the conditions set forth in column (5) are satisfied.
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NEW PRODUCTS

O’GORMAN’S NEW INSULATION PANEL

W H O’Gorman Manufacturing Limited are introducing a unique 12in-thick insulation panel using SP grade Styrofoam as the core. Use of the panel will lead to major economies in cold store construction costs — and in energy conservation. For a 1,000,000 cu ft store, energy savings could be as high as £7,500 a year — equal to more than £1 per hour on the basis of refrigeration plant operating at the norm of 18 hours per day, seven days per week.

O’Gorman panels consist of SP grade Styrofoam extruded polystyrene board sandwiched between pre-stressed steel skins. If required, the core can be of high density polystyrene bead board. A special protective coating applied to the steel surface is weather-resistant and obviates the need for maintenance and redecoration. Thus no additional cladding is needed, internally or externally. The panels are available in a choice of colours. They are manufactured to a 4ft (1220mm) wide module. Different core thicknesses can be provided, from 2in (50mm) up to the new 12in (300mm), depending on insulation needs. The panels can be made to any length, the only practical limitation being transportable size.

O’Gorman panels have exceptional structural stability. Even panels of up to 40ft (12 metres) long need no support vertically or horizontally, other than at each end when used in ceiling construction. Thus there is a great reduction in the amount of structural steelwork required. This, plus the elimination of cladding, leads to economies in materials and, equally if not more important, major savings in construction time.

This in turn leads to a further advantage: for it means that new cold stores or refrigerated food processing plants can be brought on stream much more quickly and so start making their contribution to the user’s business that much earlier.

NEW TO IRELAND

A Complete Range of Condensers and Coolers
From West Germany’s Largest Manufacturer

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Co. Dublin.
Telephone: 508011 Telex: 4818.
Energy Savings with New Heat Exchanger

The new Horal Plate Heat Exchangers offer a major step down the road to realistic energy savings in a society which spends 60% of its energy consumption on heating. Dramatic and realistic savings of up to 70% in the cost of ventilation and air conditioning plants can result from the heat recovery from exhaust air, using this type of heat exchanger.

The basis of the Horal device is simplicity of design — the cross stream principle with no moving parts. Ease of system design and virtually maintenance free in service these exchangers allow the design engineer to bring a sophisticated principle into simple, low cost installations. This concept opens up a vast range of applications in both the public and private sectors where pressures on capital and operating budgets are increasing daily. Hospitals, factory offices, schools, hotels and restaurants are obvious examples, but the list can be extensive on the drawing boards of any mechanical engineer, architect and designer.

These Horal heat exchangers are the first of this type into a market desperately seeking simple and cost effective energy savings and their early success could presage an avalanche of new applications. Made by G.O. Hovalwerke A.E. of Switzerland full details, technical specifications and installation advice are available from P. & D. Macfarlane Ltd., 53 Ridgeway Street, Belfast. (0232) 667968. Telex 74219.

VAPAC EXTEND THEIR RANGE

The new extended range of the renowned Vapac Humidifiers is now available in Ireland from Brennan Airconditioning Limited. It was generally felt that the largest model, V60, having an output of 60 Kgs/hr. of vapour was too small for many applications. The range has now been extended up to, V90, with an output of 90 Kgs/hr. The middle of the range has also been bridged by the introduction of the V45 having an output of 45 Kgs/hr.

B.A.C. can now offer Humidifiers with outputs from 2 Kgs/hr. to 90 Kgs/hr. All units can be supplied with fully modulating proportional control and can be controlled from any external potentiometer of 135 Ohms to 10K. The control mode of any existing unit can be changed by merely unplugging one printed circuit and plugging in another.

For full details contact: Brennan Airconditioning Limited, 60 Cookstown Industrial Estate, Tallaght, Co. Dublin. Tel: 514711 or 514008.

Westinghouse Heat Pump

Reconair Ltd of Coolock, sole distributors of Westinghouse air conditioning equipment in the Republic of Ireland have recently announced the newest addition to the Westinghouse range of heat pumps.

The unit, called the Westinghouse T.P.B. temperature has the facility of increasing waste water temperatures from 35°C to 104°C using a modified version of the well known Westinghouse P.B. chiller.

The T.P.B. unit, utilises compound refrigerants and two compressors to achieve the rise in temperature and units with a heat output of 187 KW and a co-efficient of performance of 4.77 to 1 are available.

For further information on Westinghouse products please contact: Reconair Ltd., Unit 4A Coolock Industrial Est. Dublin 5. Tel: 470611/470113/470209. Telex: 31356.
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The world's most popular pipe wrench.
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New Warm Air Heater From Nu-Way Benson

Nu-way Benson Ltd. announce the introduction of the
WH117/150/175 Industrial/Commercial air heater, it
is a triple duty model producing 400,000/500,000/600,000
BTU's/Hr. oil, natural gas or LPG fired and replaces the
GS40/50 model. Installation can be vertical, horizontal or
reverse flow, for ducted or nozzle discharge and

High/Low oil burner will be a
standard feature on the
WH150/175. Each heater is
backed by a Ten Year Warrant for combustion chamber
and heat exchanger assembly. In common with all heaters in
the range the WH117/150/175
is manufactured with a stainless
steel combustion chamber.

Nu-Way Benson are represented by Hevac Ltd.

New Warm air heater from Nu-Way Benson.
NEW PRODUCTS

AQUASEAL
HOLDOVER
COMPOUND

This is a black, mineral filled, hot poured bitumen compound for use in certain types of refrigeration plant. By acting as a (negative) heat sink — it has excellent thermal properties which enables heat to dissipate quickly to the pipelines. The overall result being a reduction in the cycling of the cooling equipment. Aquaseal Holdover Compound considerably reduces the running costs of refrigerated cabinets. Provided it is not exposed to high temperatures during use, it has good slump resistance also. Application is simple. The Compound is broken into lumps the size of a fist, and a small quantity placed into a heating bucket; as these melt, add further pieces. Heat to 150°C, and pour into the required section and allow to set. To clean, if necessary, use white spirit or paraffin. The recommended service temperature is -40°C to 35°C. Thermal Conductivity 0.5 Watts/M°C. Supplied in 18 kg cartons which is sufficient for 1.2 m² x 1 cm thick.

Full details from R.S. Sales Ltd., Hevac House, Creighton Street, Dublin 2. Tel: 719522/719342.

COOLAIR
INTRODUCE
UWA SERIES

A new series of air cooled packaged water chillers, manufactured by the Japanese company Daikin, has been introduced on the Irish market by Coolair Limited of Tallaght. In combination with Daikin Fan Coil Units and Air Handling Units the new UWA series is ideal for a wide variety of air conditioning applications. It replaces the need for two separate plantroom and roof-top installations by combining all functions in a single unit. Units are available in 6 models with cooling capacities ranging from 90, to 258,000 kcal per hour. Easily and economically installed, the UWA Series is operative up to 52°C of outdoor temperature and has accurate capacity control from full load to minimum load. Main components include the compressor, evaporator, condenser, condenser fan and fan motor. In addition the units are equipped with a number of safety devices to ensure the safest possible operation.
NEW PRODUCTS
NEW W-S PACKAGED DEAL

The Worthington-Simpson air package set is a quality engineered complete air supply system that is compact and ready to run, only requiring installation on a level firm foundation and connection to an electrical supply to provide a steady continuous flow of compressed air. These systems are available in two sizes — 78 and 114 C.F.M.F.A.D. (37 and 54 l/sec. F.A.D.) and are ideal for the small and medium user who requires air at 70-200 P.S.I.G. (4.8 — 13.8 bar.) At the centre of the package is an ‘AWT’ type two-stage air cooled reciprocating compressor with intercooler and combined aftercooler which is cooled by an axial flow fan for maximum heat dissipation and high efficiency. The unit is driven through a flexible coupling from a totally enclosed fan cooled squirrel cage motor.

A filter/silencer fitted with dry paper disposable element is installed, guaranteeing a high degree of filtration of the air intake. A centralised control panel comprising an automatic star/delta starter — pre-wired to the motor with isolator, ‘mains on’ light, and hours run meter. Also a dual air load system for selection of either continuous running with inlet valve unloading, or stop/start for intermittent demand, by pressure switch.

Safety valves are installed on the intercooler, aftercooler and air receiver. As an optional feature, the set can be enclosed by an acoustic canopy constructed in British Steel ‘Colour Coat’ sheeting, having a plastic surface finish for ease of cleaning and resistance to abrasion. With the acoustic canopy fitted the transmitted noise level is reduced to an average of 78 dB(A) at I metre.

Further information is available from: Worthington Simpson Ltd., 6 Waterloo Road, Dublin 4. Tel: 684779.

NEW SMITHS TIME CONTROLLERS

Smiths Industries through their distributors Hevac Ltd recently launched their new Time Controller and Immersion Heater Time Switch on the Irish market.

The Time Controller controls the widest range of automatic appliances, automatically and instantly. Life can become much more comfortable with a Time Controller, because you can programme your heater to warm the room up before you get up or come home from work. In fact, the Time Controller can be used for any number of domestic appliances that are normally found in the normal home. The Time Controller can also protect you house while you are out by switching a light on after dark to warn off unwelcome intruders.

The new Immersion Heater Time Switch has been specially designed for controlling immersion heaters in a more efficient way. The cost of electricity on a 3 kW immersion heater is 9p in every hour. With a properly lagged tank, of course, the immersion does not use 9p in every hour, it is only using that sort of money when it is heating the tank and striving to maintain the tank at your desired temperature level. The arguments for leaving an immersion heater on all night must be questionable when you equate them to the modern costs of electrical energy. If you say are in bed from 11.00 pm to 7.00 am then you have an 8 hour period to effect an economy. If your immersion heater say is on for eight and a half minutes in every hour to top up the tank, then this eight and a half minutes is costing you 9p for every night that you go to bed leaving the immersion heater on. The same costs occur if most of the family are out during the day and therefore it is not difficult to see saving of well over 50p in any working week. With a Time Switch costing approximately £15.00 then it pays for itself in about 30 weeks for a typical installation as discussed above. The need to save energy alone must make the case for fitting an Immersion Heater Time Switch as a viable proposition, but it is good to think that not only is it saving real energy, it is also saving for itself and giving the user the benefits of practical saving product.

Cap Smiths Immersion Heater time switch.
## COMPANIES SUPPLYING SANITARY WARE

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Index compiled from information received from suppliers. Please notify us on any omission so we can correct it in the next issue of the index.
THE CERAMIC STORY

Last year's review of bathroom design introduced the Irish Bathroom Manufacturers Association and their products. This year, IHVN invited Juliette Hellman of the Council of British Ceramic Sanitaryware Manufacturers to review product trends and the importance of the Irish market to UK manufacturers.

Over the past decade, the image of the bathroom has changed more dramatically than at any other time in the history of hygiene. A room once thought of purely in functional terms, used of necessity and quickly vacated, has now become a room to take pride in. Today people spend more time in the bathroom than ever before -- it's very much the "in" thing today -- a place where anyone is happy to linger or show to their guests. The modern generation view the bathroom quite differently to their grandparents and, what's more, they now have opportunities which were not available to the former generation.

But what motivates people to want a better bathroom? It is not just because it's the in thing to possess an exciting room that is the envy of one's friends, but a genuine desire to put away the old image and to create something of one's own which gives pleasure each time it is used. The family start to grow up and washing problems change. As people become more affluent they become less content with the conditions of yesteryear. Perhaps it is when the boss is coming to dinner or when the wishes to impress a special house guest that the average householder suddenly becomes aware of what their bathroom really looks like and immediately they are ashamed of it. The dreadful old loo with its high level cistern, the noise from which wakes the whole household when it is used in the night. That bath which has done valiant service but has seen better days and that wash basin which is long since past its best.

Today's requirements are not confined to the bathroom itself. The desire to expand washing facilities goes much further; that second bathroom, that shower room and the much desired bathroom ensuite to the master bedroom are all high on the priority list of wants by the modern householder. An important point to consider is whether there is enough space for all the appliances chosen to be fitted into the bathroom with sufficient activity space to use them. If not, what about converting a little used spare room into a bigger (or second) bathroom?

Glossy magazines and the daily press are full of illustrated articles bursting with suggestions as to how that scruffy bathroom can be transformed into a room fit for a President.

There is no denying that people seem able to find the cash today for what they want. What is wanted is to ensure that some, at any rate, of this available money is spent on the home in general and the bathroom in particular.

To keep pace with the modern trend, British Ceramic Sanitaryware Manufacturers market an extensive variety of shapes and colours to suit every taste. In the past few years the pastel shades have been giving way to stronger, brighter colours, but it will be interesting to see whether one or two new colours move slightly away from these very deep shades.

Two trends apparent are the growing popularity of the bidet and the ever-increasing demand for shower units.

What of the bidet? In the UK, sales have increased 250% in ten years, export sales are also multiplying and the bidet is here to stay. Gone is the embarrassment of talking about this very personal appliance. The wider acceptability of the bidet can be put down to the increased overseas holidays which people take today. Once people found what a useful appliance for complete personal hygiene the bidet is, they are determined to fit one into their own home, but here difficulties often arise. If it wasn't for lack of space in so many bathrooms in modern homes, bidet sales would have risen even more. However, this extra appliance can sometimes be fitted in by re-designing the lay-out of the bathroom. The Council of British Ceramic Sanitaryware Manufacturers produce a small booklet entitled "Why a Bidet?" giving the many uses of it.

The shower unit too is increasingly desired by families to whom it provides another appliance to help with that early morning rush. Whether located in the bathroom itself or in the corner of a bed.
planning a new bathroom. From selecting fixtures of the right size to fit in the space available to the final decision of whether their choice really meets the needs of the family.

The leaflet also helps to dispel some of the misconceptions about cleaning ceramic sanitaryware — cleaning depends very much on how often it is used, but in normal use a daily wipe with a cloth and mild detergent, followed by a rinse and polish with a soft cloth is all that is necessary. Regular cleaning also prevents that unsightly build up of insoluble lime found in hard water areas.

In all cases, however, care should be taken to follow the manufacturer's instructions — using twice the recommended quantity of the cleaner doesn't help, in fact it can do positive harm.

Last year, the UK exported over £2.25 million of ceramic sanitaryware to the Republic of Ireland and it is therefore a traditional and very important market. Value Added Tax at 20% carries a higher rate than in the UK yet despite this the goods are keenly priced. Trends seem to differ little from the UK market, though perhaps the deeper colours have been slower to take on. Whether the potential customer is building a house or improving a present one, there should be something to suit every taste and almost every pocket.

Magnum

Designed and manufactured by Metlex Industries Ltd, Magnum comprises a range of modular fitted bathroom furniture which, similar in concept to the fitted kitchen, enables literally any size of bathroom to be furnished wall-to-wall — a particularly useful feature in small bathrooms where space is limited.

Even the traditionally obtrusive WC and bidet have been designed to merge with the other units so that, when closed, an invaluable low line surface is created on which you can lounge, sit or even change the baby.

Metlex also claim to have incorporated a number of features into each of the different units available which, as far as they are aware, are not collectively offered in any other range of furniture on the market.

Even the bidet is of a reverse position design with the controls at the front for natural, comfortable seating. Other units, include a WC, multi-layout vaityary system, a corner unit (which is ideal for housing dirty linen and the like), and

Ideal Standard

The Michelangelo, the new bath bearing the same name as Ideal-Standard's Michelangelo suite of Italian-designed vitreous china bathroom furniture, was designed by John Beauchamp, who also created the best-selling Brasilia bath for Ideal-Standard. The new bath, featuring a raised wrap-round back-rest, has been designed, however, to complement not only the Michelangelo bathroom furniture, but all co-ordinated vitreous china bathroom suites from Ideal-Standard. The Michelangelo bath is 1700mm x 800mm luxury width combined with a standard length which makes it suitable for installation in the vast majority of bathrooms.

The new bath can be supplied with centre tapholes or without tapholes, and has a pair of cast brass handgrips which

Vogue's bath and built in washbasin.

Three colour schemes are available: olive and stone, chocolate and cream, and blue and white.

Metlex are represented in Ireland by the following: Livinstyle of Bangor, Co. Down and Switzers of Dublin.
SANITARYWARE

are fitted on shelves along the sides of the bath, a feature which Beauchamp also designed so successfully into the Brasilia bath. Attractive design-coordinated front and end panels are available in matching colours in high impact polystyrene.

Particular attention has been paid to matching the Michelangelo bath and panels to Ideal-Standard's ceramic bathroom furniture colours in which it is available — Sorrento Blue, Bali Brown, Harvest, Avocado, Pampas, White, Penthouse Blue and Penthouse Red.

Ideal Standard products are available from K.M. Reynolds Ltd., 13 Bath Avenue, Dublin 4, Tel: 685079.

Chloride Shires Ireland

Chloride Shires Ireland Ltd. report that reaction to their Siphonic Suites — the Balmoral, comprising a Balmoral basin and pedestal, siphonic WC suite and Balmoral Bidet, together with a Symphony bath and Samson shower tray, besides their latest stylish suite — the Allegro 5-piece bathroom suite has been most encouraging. Of course the new Allegro design is available for most Builders and Plumbers Merchants in Shires two newest colours, Harmony Brown and Harmony Green and both these strong, eye-catching colours have been enthusiastically received by the industry throughout Ireland.

In addition, the recently launched range of Harmony Taps and Fittings admirably complement and enhance the Shires Harmony colours on their various products. The new Taps and Fittings really emphasise the fully matching integrated design of the Allegro suite when presented in either the Harmony Green or Brown hues. The important design feature, namely the wide circular shower area of the Allegro bath together with its anti-slip base has proved a valuable bonus for the very young and the elderly when bathing. Chloride Shires Ireland are ideally
placed to offer an extensive selection of no less than five Acrylic Baths, from the captivating corner bath - Eros, with its elegant design, the practical, reliable Symphony, Arean and Melody baths, to the newest addition to Shires repertoire — the stylish Allegro. Furthermore, there is a choice of eleven matching colours when specifying acrylic baths from Shires Ireland. In fact, the Arena model features a styled twin grip combined with spaciousness, the Symphony bath is large and luxurious, while offering ample shelf room cleverly designed and the Melody is the model which is available with or without handgrips and is available at an attractive 'budget' price.

If the trade seek the latest modern designs in Shower Trays Shires have their Samson design available and it is more suitable for use with enclosure systems. The Soho Shower Bath, a mini bath plus shower all in one is the ideal solution to many a situation where space is a priority.

The newest arrival in Shires Ireland stable is the Columbia de-luxury Shower Enclosure. This unit gives 'total flexibility' as it allows one to change from the privacy of a closed shower to that of an open bath and this is achieved in seconds — with the assistance of the Columbia's silent Glide-a-matic door system. Each door has its own nylon rollers which slide on the smooth, silent nylon tracks and in fact, these panels can fold down by means of the functionally designed integral door bars.

The Columbia Shower Enclosure will fit most standard baths, or alternatively, it can easily be fitted into an alcove, or in left or right hand corner situations. It is made with top quality tempered glass doors and there is a precision fit to it's screens.

Chloride Shires are known for their fast ex-Dublin stock service which covers the country and their fashionable yet practical product ranges can be viewed at most Builders and Plumbers Merchants throughout Ireland.

Copies of Shires latest Bathroom Book are available free — from Chloride Shires Ireland Ltd., Newtown Industrial Estate, Coolock, Dublin 5, Telephone: 471514.

Paramount

The Paramount range of luxury baths from Fordham offers an unparalleled selection of distinctively shaped baths. There are five designs in the range, and two of the designs are available in two sizes, making a total of seven different baths. All are manufactured from 5mm fully colour pigmented acrylic sheet, a material that has proved itself ideal for bath manufacture.

The baths are manufactured in a range of 19 colours, including Penthouse colours, and provision is made on most of the baths for positioning all taps and controls to suit individual requirements.

At present, there are basically two kinds of toilet suite, the standard cistern and pan, connected by a visible flushpipe, or the more attractive, but bulky and expensive close-coupled suite, either syphonic or washdown. The Fordham Combination Suite is a third type, which combines the best technical and aesthetic qualities of the two previous types, at an attractive price.

Fordham Combination Suites utilise a standard slim cistern with a specially designed washdown pan and special flush-bend. The cistern is screwed to the wall in the usual way, and connected to the pan by the flushbend. The pan itself butts up to the cistern leaving the flushbend neatly out of sight. It thus offers the advantages of a standard washdown pan and cistern, but with the more attractive appearance of a close-coupled suite. Two versions are available, the "Florentina Collection". The original and attractive headworks of this range are characterised by a distinctive "bark" style and a texture reminiscent of high fashion jewellery. All the taps and controls are precision engineered to the highest standards, and conform to BS 1010. The range is available in both gold and chromium plated finishes.

Further information is available from Sanitary Equipment Ltd, Sunbury Industrial Estate, Ballymount Road, Walkinstown, Dublin 12. (Tel: 509922).
Choose the elegance of IRLIN bathroom fittings

The Irlin beautifully balanced range includes: ½” & ¾” Basin and Bath Pillartaps, ¾” Highlyne Sink Taps, ½” Pillar Sink Mixer Sets ¾” Bath Mixers with shower attachments. Available in chromium plated finish including handles. They can also be obtained in gold finish. Surprisingly, they are keenly priced.

Irlin fittings are made fully in Ireland by Sanbra Fyffe and are available from leading building and plumbing merchants everywhere.

Sanbra Fyffe, Ltd., Conex Works, Santry Avenue, Dublin 9. Telephone 379291 (10 lines) Telex 5325
**RCC Engineering**

RCC Engineering Ltd now produce the widest range of coloured baths in Europe with 18 different colours from the basic white to the luxurious mink. Sizes of baths vary from the 5ft 1in Artisan, the 5ft 7in Richmond, the 5ft 7in or 6ft Ailinn and the luxury Sheelin. Other products in the range includes the Elf shower tray and the Toronto shower bath.

Further information from: RCC Engineering Ltd., Bailieborough, Co. Cavan. Tel: (042) 65275.

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**Lotus**

The Aquarius bath, with flawless uncluttered lines in silk-smooth acrylic, adds to it's aesthetic features, a distinctive patterned slip-resistant base.

The slim contours and delicate curves of the washbasin, bidet and WC are each characterised by the gleaming ceramic glaze that is the hallmark of all Lotus products.

The suite is available in a wide range of fashion colours, including the exclusive Lotus Burgundy and Jade.

Lotus is available from: Heiton McFerran Ltd., Tara Street, Dublin 2. Tel: 772931.

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**Armitage Shanks**

Armitage Shanks launched a number of new designs and colours for the sanitary ware market in the last year or so, the three new pastel colours are Caspian, a greeny blue; Sable, a warm grey; and Pompadour, an exciting warm pink.

These colours are available in the Kensington suite with the super luxury Ver­mount bath (1900 x 1000 mm); the Hawaii corner bath and the Sheraton 2 (1700 x 800 mm).

Other items included the new Luxaware one-piece Valancia vanity top on the new range of flat back boxes and the new Arklow self-rimming vanity basin which was displayed in Sepia for the first time.

Also revealed were new developments in horizontal outlet closets which meet the required British Standard (a feature which will be applicable to all Armitage Shanks suites by June next year). This offers many advantages, the most important being reduced stock-holding and demand flexibility since it does away with the need to stock P/S or turn trap pans. Also new to the market is the super luxury Mayfair suite.

Further information is available from Armitage Shanks (Irl) Ltd., South Quay, Arklow, Co. Wicklow, (Tel: 0402 2415).

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**K.M. Reynolds Plumbing**

K.M. Reynolds Limited, announce plans to concentrate more on the distribution of plumbing and ancillary products. As a result of this they have been rationalizing their position within the hardware field to cope with the rapid expansion they have experienced in plumbing over the last few years. Plans are now well advanced for a move to a new warehouse, encompassing showrooms and offices; which will enable them to consolidate their position further.

K.M. Reynolds Limited are the Agents and Sole Distributors for such names as: Ideal Standard; Pilkington Tiles Limited; Du Bois & Co Limited; Omega Plastics Limited; Ekco Plastics Limited; ONI Metalworks Limited; and Olfa Seats Limited.

K.M. Reynolds Limited, sole distributors in the Republic of Ireland for Omega Products also announced the introduction of the new shower tray, which is a foam-free multi-purpose tray which will cater for fixments from 28" to 31". This should be welcome news from the fixers and merchants alike.

Further information from: K.M. Reynolds Ltd., Bath Avenue, Dublin 4. Tel: 685079.
K M Reynolds bringing you
Bathroom furniture, fittings and fixtures.

K M Reynolds are agents for **Ideal Standard** which include the Michelangelo range of quality bathroom furniture. A choice of floor standing and wall mounted wash basins, toilets and bidets. The Michelangelo suite can be matched with a choice of Ideal Standard baths available in the same colour range. The Jetline range of brassware basin mixers in one piece and three piece designs, available in both swivel and fixed spout form, come in a choice of chromium plate or Karatclad hard gold plate.

K M Reynolds are also agents for **Pilkington’s** who lead the field in the manufacture of plain and patterned tiles that co-ordinate beautifully with bathrooms by Ideal Standard and many other leading makes and styles of sanitary ware.

K M Reynolds are stockists and distributors for a wide range of bathroom fittings and fixtures. **Koralle** shower enclosures are made up of a variety of well designed and finished units. Corner Showers, Shower Sliding Doors for Baths, Wing Doors, Shower Fixed Panels and Shower Folding Screens.

**Omega** luxury shower cubicles easy to assemble satin anodised, heavy duty aluminium frames moulded polystyrene in a range of twelve bathroom colours. Other fittings include, Vanity Bars, Bathroom Cabinets, Bath Panels, Mirrors, Splash Backs and other matching accessories.

**Cascade** showers and shower rails with a complete range of high quality patterned and plain nylon shower curtains.

**EKCO** quality plastic Toilet Seats and Cisterns in the following colours: - Sepia, Avocado, Green, Sun King, Bali Brown and Sorrento Blue.

The **Ofia** is a range of toilet seats known as “the unbreakables” with a choice of wood and decorated finishes.

We stock a complete range of plastic traps and push fit waste fittings by **DuBois**.

For further information please contact
**SANITARYWARE**

**Midland International**

Midland International Limited of Bailieborough, manufactures and distributes the 'Flair' range of shower, bathroom and home improvements products. Manufactured in a wide selection of matching sanitaryware colours the 'Flair' range includes shower cubicles, cabinets, bath bars, bath shelves, bath panels and splashbacks. 

More recently Flair introduced a modular shower cubicle system, where one or two side panels and a folding door can be bought individually or in combination to suit any application and an oval bath shower enclosure to fit around the bath when space in the bathroom prevents a separate shower cubicle. In addition a new range of household tidy products has been introduced, the most recent of which is the TU1 Toilet Tidy Unit. It consists of a toilet roll dispenser and a storage cabinet with two concealed shelves, one for a spare toilet roll and one for disinfectants and cleansing liquids.

Further information from Midland International Ltd., Bailieborough, Co. Cavan. Tel: Bailieborough 82, Telex: 33810 MIL.

**Twyfords**

Twyfords Bathrooms offer a unique and comprehensive choice of bathroom equipment. It includes not only the usual ceramic washbasins, WC suites and bidets, but also steel and acrylic baths, including a corner bath, a complete range of luxury supply fittings for basins, bidets, baths and showers, and Coloramour shower enclosures and bath screens in laminated glass.

Washbasins in an assortment of shapes and sizes, both for fixing on pedestals, as vanity units, or for fixing on wall brackets, are offered in the range of nine colours plus white. Top of the range is the Radiante washbasin with its unique motif of flutes round the edge and its circular bowl. This particular basin has been an enormous success in the Middle East markets.

For those who require maximum bowl area and a big basin, the Athena (1710 mm x 535 mm) is the answer. The Arcadia washbasin in two sizes, the Viking in two sizes and the Sola in three sizes, are all made of Vitreous Enameled Pressed Steel. The Sola basin well into its second million of sales.

Bidets are available in a variety of designs. The most popular in the UK market is the bidet with heated flushing rim and ascending spray. This is available in two designs, Radiante and Clairmont. Twyfords' Aztec bidet fitting is unique in that the spray cannot be submerged by foul water as the waste is automatically opened when the spray is switched on.

The Caravelle bidet is a rimless pattern with overedge supply above the spillover level and, of course, this can be installed without having any special plumbing requirements.

Elegant and versatile, Coloramour shower screens and cubicles are unique to Twyfords Bathrooms' range. They are available in eight colours and the complement the full colour range of Twyfords' sanitaryware, including the newest fashion colours of Harvest and Sepia. The coloured laminated glass comprises an inner sheet of plain glass and an outer sheet of Cotswold patterned glass bonded together by a plastic laminate.

Also from Twyfords is the singlehole mixer tap. One of the first of its type to be approved by the water authorities, it combines luxury with efficiency. Elegant lines, hand finished body and ease of cleaning make it an attractive attribute to cloakroom or bathroom.

Suitable for most single-hole washbasins, it is available either chromium or gold plated. The 10 mm inlet tubes allow it to be used with either high or low pressure water supply, and in this respect, it is the only one of its type available.

Further information is available from Twyfords' Irish representative John Usher, 173 Ballyroan Road, Dublin 14. Tel: 902260.

**Carron**

Carron Company manufactures products with a quality which is endorsed by over 200 years of experience. Established designs are available from the firm, some of which are detailed here.

The Mallard: A beautiful porcelain enamelled bath with contoured lines, designed for relaxing — with its gentle sloping arms rests and spacious dimensions. Manufactured in durable cast iron or acrylic and available in four colours, plus Penthouse range.

The Swallow: Supplied in both 66" and 72" lengths in cast iron, acrylic, and vitreous enamelled pressed steel. Being available in three materials and 14 colours, it caters for all price possibilities.

Carron Steelyne Range: Lowline, Standard and Swallow cost cutting baths for local authorities and for the individual with the Swallow's grace and style, it is possible to offer a twingrip coloured bath for less than the conventional Standard white in cast iron. Their weight makes for easy handling and speedy installation.

Further information is available from the Carron Company, Roebuck Hall, Roebuck Road, Dublin 14, (Tel: 982976).

**Sanbra Fyffe**

Most of the Deltaflow taps conform to BS 5412, 1972 which includes far more 'performance' requirements than the previous standard BS 1010, 1942. Features of design include the lubricated non rising spindle mechanism from which water is excluded while closing friction is virtually eliminated by the PTFE thrust washer. The new Deltaflow 'performance' ranges which have emerged from BS 5412 are the economical Fairline, the Alterna which will be popular with the large scale housing projects, and the Superspa which offers a wide variety of fittings and finishes.
Michelangelo is from the drawing board of Paolo Tilche of Milan, and the U.K. ceramics plant of Ideal Standard. The result of Anglo-Italian co-operation — a quality range of design related bathroom furniture which shows awareness of the times.

Michelangelo by Ideal-Standard is an extensive range of wash basins, toilets and bidets. You have the choice of floor standing or wall mounted toilets and bidets and a choice of size of washbasin — 63cm, 70cm or a full metre in width. You can see the possibilities of Sorrento Blue (illustrated). Alternative colours are Bali Brown, Harvest, Penthouse Red, Penthouse Blue and also White. All with chromium or gold plated fittings.

The Italians have a word for it: Magnifico.
SANITARYWARE

The new Deltaflow catalogue is called the Deltaflow File. This is a very colourful and clearly presented catalogue which gives details of the dimensions and characteristics of all the fittings in the range.

Sanbra Fyffe, who have been making fittings for bathrooms, kitchens etc. for many years in Dublin, also market the Guaranteed Irish Saflo fittings which incorporate a diaphragm principle of operation which is a very distinct feature and is the first of its kind in Ireland.

As well as sealing off the entire headwork it combines the function of a normal tap washer.

The result of this is that "O" rings and their often tricky replacement are eliminated as are the conventional glands and their periodic adjustment. Therefore, Saflo taps are very easy to maintain.

Saflo taps, light and positive in action, are manufactured to comply with the new exacting BS5412 which replaces the old BS 1010. The new BS5412 lays down stringent mechanical and hydraulic performance requirements and Saflo comply with these in every respect.

Saflo taps are available from Sanbra Fyffe Ltd, Conex Works, Santry Avenue, Dublin 9, (Tel: 379291). Telex: 5325.

Meynell

Meynell Valves Ltd, has announced details of a new concept in design and accuracy of water mixing valves to be known as the Meynell Magishower.

It is operated by means of a simple electronic device and can be switched on by the user placing a hand or foot over two small beams of light in a little box which may be installed flush fitting into the floor or wall. By placing a hand or foot over the beams they are effectively joined together and a circuit is completed which will activate a solenoid which operates the Magishower — water then flows from the Safemix thermostatic shower or Blendamix.

Magishower is a further break-through in water mixing valves incorporating the best in engineering and electronic design technology. It is considered to be virtually vandal-proof and the economy of hot water and fuel saving which it gives are one of its main advantages.

There is a special time setter or breaker which will normally be set for 30 seconds, after which time, the shower will shut off until a hand or foot is placed over the beams again. It is probably the most tested shower unit which has ever been designed and incorporates the principles of a successful installation at the Empire Swimming Pool, Edinburgh, which has now been in use virtually trouble free for many years.

Further information is available from Ballentine & Partners, 62 The Mount, Mount Pottinger, Belfast BT 54ND and Wyse & Ballentine Ltd, 62 Woodbine Park, Raheny, Dublin 5, (Tel: 317553).

Dockrells

Dockrells of Ballymount has an unrivalled selection of bathroom suites, fittings and accessories from all the leading manufacturers at competitive prices.

They cater for the ever increasing popularity of showers with a wide range of shower trays, cubicles and rails, and a large display of manual and thermostatic valves to suit all requirements is on permanent view in their showrooms. The modern colours and designs of bathroom cabinets, mirrors, towel rails etc are also shown.

There is ample car parking space within yards of the showrooms and, as well as being open Monday to Friday, they also open on Saturday mornings.

Further information is available from Thomas Dockrell Sons & Co Ltd, Ballymount Cross, Clondalkin, Co Dublin, (Tel: 500822).

Rodney Bishop

The classic design of the Emerald luxury models features generous bowl sizes and a special drainer pattern. Carefully made from quality stainless steel, these units are designed to fit all popular makes of fitted kitchens.

Emerald also does an economic range, offering an attractive and functional design featuring the narrow ribbed drainer style. Another range is the luxury insets which comprises five models in the following sizes:— single bowl 450 by 390mm; double bowl 925 by 442mm; single bowl, single drainer 935 by 485mm; single bowl, double drainer 1392 by 485mm; and double bowl, single drainer 1392 by 485mm.

Further information is available from Rodney Bishop Ltd, 200A Rathfarnham Road, Dublin 6, Tel: 904131.
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  1"x¾
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        1"x¾x¾
      1"x1"x¾
  ¾x¼x¾
  ¾x¾x¾
B72  ½      ¾
      1"
    ¾"x¾
  ¾"x¾
B42  ¼x½
        1"x½
      1"x¾
B12  ½Fx½
      ¾Fx¾
  1"Fx1"
  ½Fx¾
  ¾Fx½
B16  ½x½
      ¾x¾
    1"x1"
B30  ½x¾x¾F
      ¾x¾x¾F
    1"x1"x1"F
  ¾x¾xF
  ¾x¾xF
B471 ½      ¾
         1"
B78  ½      ¾
         1"
B17  ½Fx½
      ¾Fx¾
  1"Fx1"
  ½Fx¾
  ¾Fx½
B84  ¾x¾Fx¾
         1"Fx¾
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