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The Energy Conservation and District Heating Association of Ireland recently held their AGM and a report on the progress of the Association was given by their chairman Peter Byrne. The following are some extracts from the report.

"The Association was founded in December 1974, and I have just completed my fourth year as your Chairman. It is with some considerable regret that, notwithstanding all of our promotional efforts, coupled with very substantial publicity via the media over the years, we have not succeeded in having even a pilot group heating, or combined heat and power scheme established or in course of construction. As a result, I consider that many good opportunities for Energy Conservation have been lost to the nation and people who have taken up residence in new housing estates, both public and private, have lost the advantage of a cheap and convenient system of home heating, especially in regard to the medium and long term future. The most important event of the year took place in early October, the E.E.C. Energy Conservation month. Here we must again thank His Excellency, the Danish ambassador, Mr. G. F. K. Harholl, who followed on the visit to Denmark last year by sponsoring a one day symposium on District Heating in Trinity College.

One of the years most interesting papers entitled — "The Environment Impact of Coal Usage in the Residential Sector" — was presented to the Association by Professor J.J. Walsh last April. The paper outlined possible measures to deal with the worsening smoke and sulphur dioxide pollution levels with the greater usage of coal-firing particularly in the Dublin Housing Estates.

At a meeting of the Executive Committee on 9th July, 1979, a sub-committee was set-up to prepare a design and estimate of costs for backfitting an existing housing estate at present being fed from a central oil storage tank to a central coal-fired boiler installation. The area chosen was Chalfont and Sonesta housing estates, comprising 314 houses and a new school, at Malahide Co. Dublin. The study is not yet completed but it is estimated that the order of costs would be less than £2,000 per house.

In response to two separate requests, technical information on District Heating and CHAP schemes were sent to the I.D.A. I made an approach to the National Building Agency for an opportunity to make a presentation on District Heating and a discussion took place with the M.D., Mr. D. Foley, on 9th April, 1980.

The apathy towards the supply of energy in the medium to long term future shown by the public and the majority of their politicians is to be deplored. The outlook in regard to the supply of suitable fuels and at reasonable import prices is very uncertain and I feel that not enough is being done to make the public and their representative aware of the very urgent need for energy conservation, including the District Heating Option. If we are to go slow in the introduction of nuclear energy then it is obvious that we must move very fast in the introduction of the alternatives, and I consider that District Heating and CHAP schemes offer very strong alternative medium to long term options.

My great fear in facing the future for domestic heating, is that the high grade, or quality coals will not be available, rather it will be the low grades, which would not be suitable for even the open fireplace. In this scenario, I am firmly convinced that apart from the many advantages which group district & CHAP schemes can offer, this prospect of being able to burn any grade of coal which will be available in a central boiler in the housing estate will be the most impressive argument in favour of the establishment of the group and district schemes.

I consider that Combined Heat and Power (CHAP) schemes can offer one of the best powerful options for energy conservation. All fuels could be used to generate electricity in addition to supplying heat."

---

**HEVAC LTD TO RE-ORGANISE**

The Lister Group recently announced that they have re-organised their subsidiary company Hevac Ltd, with a view to consolidating and expanding their prominent position in the market as a leading supplier of industrial, commercial and residential heating equipment. Due to this development they will move within the nex 2/3 months to the larger premises of the Groups complex in Ballymount, Clondalkin, Co Dublin, but at the moment will be trading as usual from their Lomand Ave, Fairview premises. In line with this rationalisation the air conditioning division will cease to operate.

Mr Tom Scott, who has been with the group for many years, has been appointed General Manager, Brendan Bracken becomes General Sales Manager for Hevac’s entire activities and is supported by Frank Loughran who takes over the company internal sales.

The products handled by the company’s industrial and domestic divisions will of course continue to be marketed as at present and will in fact be expanded by the addition of fluidised bed combustion and solid fuel handling equipment.
The responsibility of being best means innovating with a purpose.

And sometimes that means continuing development work well beyond just getting the insulation right. With pipes and ducts for instance, the finish which goes on to the insulation is a critical factor in its performance. So we have spent the last two years developing a finish we know to be quite unique. One which matches today's demanding standards.

It's called Fibreglass Class 'O' and is now available on FRS 950 pipe insulation and on Flexible and Rigid Duct insulation. For indoor services, away from the risk of mechanical abuse, it offers this range of unmatched benefits:

- It meets the requirements of a Class 'O' surface as laid down in Building Regulation E15 1976.
- It achieves Class 1 spread of flame when tested in accordance with BS 476: Part 7:1971.
- As a vapour barrier, it prevents condensation on chilled pipes and ducts without further treatment.
- It requires no decoration and the white surface can be cleaned with water or mild solvents.
- Unlike canvas, it is not subject to rot or ageing.

Class 'O' is an innovation that pays off in three ways - simpler specification for the consultant, simpler stocking for the merchant and contractor, and simpler application for the operative. Class 'O' provides in a single finish all that's needed for hot and cold pipes and ducts, in both exposed and concealed environments. And that cuts time, trouble and costs for everybody.

A good example of innovating with a purpose - by a company that accepts the responsibility of being best.

FIBREGLASS
the best way to say insulation

Fibreglass Limited Insulation Division 21 Merrion Square North Dublin 2 A subsidiary of Pilkington Brothers Limited
NEWSDESK

At the Pumps Services sponsored BTU Golfing Society were (left to right) Brian Farrell, Pumps Services; Peter Johnston, BTU G.S. Captain; Joe O’Reilly and Jim Minogue of Pump Services and Eddie Egan, BTU G.S.

The next BTU Golfing Societies outing in Howth GC is to be changed from Thursday 24th to Tuesday 22nd of July.

Some of the happy winners at the BTU golfing society outing.

PEOPLE

Leading French automatic control company, Crouzet, is spearheading its plan to expand marketing operations in Ireland with the appointment of its first regional sales manager for the Republic and Northern Ireland. He is Mr. Jack Clarke who has just joined Crouzet Limited from TCM.

Mr. Clarke is located at 14 Greenmount Lawns, Terenure, Dublin 6, telephone: Dublin 905443, telex: 33206.

Tony Smith has been appointed as Sales Executive of Thermplant Ltd for the South Leinster area.

WAVIN PLAN £8m INVESTMENT

Wavin Pipes Ltd., has commenced a 5-year development plan involving an investment of £8 million in its operation at Balbriggan, Co. Dublin. It is also planning investment in its company in Northern Ireland, and Wavin Ferdia. This was announced by Mr Roland Oliemans, managing director, at the Pipe Progress Seminar for engineers, sponsored by Wavin at New Jury’s Hotel, Dublin, recently.

The investment will be in product development, distribution and warehousing, and new technology. Already two micro-processor controlled injection moulding machines have been installed.

Referring to the economic climate and the impact of new technology, he said, “Our conviction in relation to job security was demonstrated two years ago when we committed our company to a policy of no-redundancies and no lay-offs. Some thought this commitment unwise, and economic circumstances have made it a difficult commitment, but it was rightly based on our confidence in our policies, our planning and the quality of our people. The introduction of new technology will give job satisfaction and job security. Marrying these will be a test of management”.

Mr. Christy Cooke, (left), President of the Dublin United Golf Societies presenting the D.U.G.S.A. cup to Michael McGinley, Captain of the Unidare team. Unidare beat the Agricultural Institute 2-1 at the Hermitage in the final of Ireland’s premier golf societies competition.

Expoclima Twinned

Following this year’s successful HEVAC in which over 500 companies took part, the organisers, Industrial and Trade Fairs Limited, announced the dates for the next event in the series as: 24-28 May, 1982, National Exhibition Centre, Birmingham, England.

Expoclima will be twinned with HEVAC in 1982 making the event even more comprehensive than before and will offer a most cost effective way of making new contacts and demonstrating products and services. Demand for space is likely to be extremely heavy due to the twinning of the shows.
The "COALMISER" Shell boiler range is offered in single and twin furnace designs for steam or hot water duties up to 13600 kg (30,000 lb/hr)/7620 kW (30,000,000 Btu/hr).

This range of coal-fired boiler plant embodies unrivalled design features and quality of construction for firing a wide range of fuel using current firing techniques including sprinkler, chain grate and coking bed devices.

The larger "COALMISER TWIN" embodies an "original" design concept in wet back construction enabling one half of the boiler to be shut down, avoiding stress and increasing turn down capability.

The entire "COALMISER" range includes as standard:—

★ large furnace proportions
★ low overall heat transfer
★ large diameter smoke tubes
★ low gas side pressure losses
★ smaller electrical motors and reduced noise levels
★ automatic de-ashing
★ total gas and water side access including unique fully adjustable hinged front and rear doors
★ large steam space volumes for quick response to varying load demands
★ unique internal water circulation to avoid stratification and thermal shock on hot water boilers.

Fully automatic matched fuel feed and ash removal systems are offered to provide complete boilerhouse schemes.

B & E Boilers Ltd
Easthampstead Road
Bracknell, Berkshire
England RG12 1NP
Tel.Bracknell (0344) 21341
Telex. 847520

Other products in the B & E range include the European steam and hot water boiler for duties up to 16300 kg (36,000 lb/hr)/12500 kW (36,000,000 Btu/hr) and the Windsor steam and hot water boiler for duties up to 5400 kg (11905 lb/hr)/3600 kW (12,280,000 Btu/hr).

Both ranges are suitable for gas or oil firing.

A member of the Richardson's Westgarth Group

Published by ARROW@DIT, 1980
ARMITAGE SHANKS CHOSEN

The sanitaryware chosen for the new Letterkenny and Tralee hospitals is from the Armitage Shanks of Arklow special hospital range. Armitage Shanks is unique in providing full ranges for specialist needs. For hospitals, these extend from post mortem tables through the range to baby baths. The company, in fact, gives a total specialist sanitaryware service, including special units and fittings for laboratories, the handicapped, marine applications, and anti-vandal ware, to mention but a few. Its comprehensive Catalogue 2000 is a must for architects and consulting engineers and all concerned with the specification of sanitaryware and fittings.

Safety on Gas Leaks

Over five hundred safety cards and stickers have been produced and distributed by the Dublin Gas Company to local authorities, excavator companies, and county engineers. The stickers are designed to give directions to excavator operators, foremen or charge hands involved in road works what to do in the event of a fractured gas mains or gas escape.

On discovery of a gas escape, the instructions state that a person should inform the Gas Company immediately, warn occupants of nearby houses and evacuate them if necessary, ensure that the gas is not ignited by smoking or a lighted match, safety permitting, allow gas to continue to burn if ignited, and finally, lift sewers covers to allow gas to escape from them.

NEW HELIOS RANGE

GKN Autoparts Ireland Ltd, has recently appointed, as agents and distributors for the Helios range of toilet, duct and wall fans, accessories, and an extensive range of industrial fans, to complement their range of Veni-Axia products.

First for Pioneer Radiant Products Ltd.

Irish manufacturing industry scored another first recently when Pioneer Radiant Products Limited, Kenmare, Co. Kerry who manufacture a full range of Gas fired Infra-Red heaters from 30,000 to 160,000 Btu' were awarded first prize for their exhibition at the recently held Kerrindex 80 show. The awards were presented by Mr. Tom McEllistrim, Minister of State.

Gas fired Infra-Red heaters from 30,000 to 160,000 Btu's were awarded first prize for their exhibition at the recently held Kerrindex 80 show. The awards were presented by Mr. Tom McEllistrim, Minister of State.

£40,000 Contract

A welder at C.A. Parson's Howth factory works inside the 16' diameter, 33' long cylinder which will house the shaft and blades of a new section of the Irish Sugar Company's plant in Carlow. Work on the 45 ton mild steel structure, part of which was constructed in West Germany, was begun two months ago in a contract worth £40,000, and completion is expected in a few week's time.

FIRST FOR PIONEER

RADIANT PRODUCTS LTD.

GKN Autoparts Ireland Ltd, Camac Close, Inchicore, Dublin 8, Phone (01) 781700 Telex 30830.

Pictured with Mr. Tommy McEllistrim, Minister of State, and Mr. M. Quinn, President Tralee Chamber of Commerce, Mr. Adrian Ryan, Pioneer Radiant Products, Kenmare, (centre); Tadhg O'Driscoll, Kingdom Tubes, and George McDonald, Period Plaster Craft, (right).
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Since the first IhVex in the early 70’s there has never been a more appropriate time than now for an exhibition serving the Building Services Industry as IhVex so comprehensively does.

Dramatic changes have occurred in the type of fuel being used for generating heat and electricity. With an increasingly realistic view being taken of the life of oil supply, manufacturers of heating, air conditioning, refrigeration and allied equipment have concentrated on energy conservation methods and solid fuel burning appliances.

IhVex ’81 offers the first opportunity for the industry in Ireland to look at and discuss the many new types of equipment and systems that will be necessary for its survival in the future within the context of a major exhibition.

Many questions are being asked of the future — has fluidised bed combustion been fully developed? Has the heat pump a future in Ireland? Will the change over to solid fuel in domestic heating cause massive air pollution?

These and the many other questions raised can only be answered by the manufacturers and IhVex offers a perfect setting to put the facts to the entire Building Services Industry.

Venue
Simmonscourt Exhibition Complex,
Royal Dublin Society,
Ballsbridge, Dublin 4.

Dates
Tuesday February 17,
Wednesday February 18,
& Thursday February 19, 1981.

For full exhibition details contact:
Irish Trade & Technical
Exhibitions Ltd.
5/7 Main Street, Blackrock,
Co. Dublin, Ireland.
Telephone: (01) 885001
Fluid Dynamics of Blackrock Co. Dublin have concluded a technical cooperation agreement with one of the leading sewage effluent treatment plant manufacturing companies in France.

Under the agreement, Fluid Dynamics will manufacture and build sewage and effluent treatment plants concentrating on the smaller end of the market, towns and villages of up to 1,000 persons as well as for hotels and campsites.

With particular emphasis on compact, economical and flexible package schemes the Company will encourage the use of Butyl rubber sheet as a liner as opposed to the more traditional concrete basin wherever possible. The use of these sheets with a guaranteed life of 10 years has the effect of reducing costs by up to 50% on a small project.

Fluid Dynamics was founded in 1973 for the purpose of manufacturing and exporting water treatment equipment which it now does to ten countries. This year it is building a new factory on the Sandyford Industrial Estate in South County Dublin and extending the range it offers from the original Colloid-A-Tron hard water treatment equipment to include Levis Water Filters (manufacturing rights acquired in 1979) and also a full range of Domestic and Industrial water filters and water softeners as well as the contract manufacture of effluent treatment plants for the food processing industry.

GRENCO - CROSS LINK

In order to extend its present range of services to include large-scale industrial ammonia refrigeration installations, Cross Refrigeration Limited has entered into an association with GRENCO of Holland, one of Europe's leading ammonia installation contractors. Through the association, Cross will operate jointly with GRENCO on such large contracts as ice-plants, ice-rinks, marine refrigeration and specialised industrial projects. As part of the agreement, Cross will have full access to GRENCO's technical expertise in this field and will also use their specialised equipment.

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1. A malleable iron I-beam handle - one piece construction gives greater strength and durability.
2. Lifetime guarantee: If the housing breaks or distorts we replace it free.
3. Ten sizes to choose from 6" to 60", 1/2" to 8" pipe capacity.
4. Replaceable heel and hook jaws made of hardened tool steel, heat treated on teeth to give durable wear - on hook jaw neck to prevent spreading - on adjustment worm to prevent flare.
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6. Adjustment nut heat treated to prevent jamming and flare.
7. Capacity of pipe wrench is always larger than a stellon type wrench (size for size) because of superior design and construction.
9. Every wrench is work-tested before shipment.
10. Enlarged handle end for better gripping.

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https://arrow.dit.ie/bsn/vol19/iss7/1
DOI: 10.21427/D7811D
The Energy Managers' Association (Eastern Region) was launched recently at IIRS. It is the first of four regional Associations to be established under the auspices of the National Energy Conservation Programme set by IIRS last year and sponsored by the Department of Energy. Membership of the Association is free and open to those responsible for the use of energy in industrial and commercial enterprises, local authorities, health and educational establishments and public buildings. Membership application forms will be sent shortly to all relevant organisations in the region.

The aims of the Association are:
- To provide a forum for the exchange of development of ideas on energy use management.
- To provide information and technical support for managerial, technical and supervisory staff.
- To promote the establishment of on-going energy conservation programme in every industrial and commercial enterprise in the country.

Meetings of the Eastern Regional Energy Manager's Association will be held at various venues including Athlone, Carlow, Dublin and Dundalk. Likely topics of discussion include the efficient use of fuel, steam, electricity and availability and use of alternative fuels.

A committee representative of the major energy users in the Eastern Region has been set up under the Chairmanship of Dr. J.C. McVeigh, Group Operations Research Officer of the Irish Sugar Company. The Association of Consulting Engineers, The Institution of Engineers of Ireland, the CII, the CIF, and ICTU each have representatives on the committee.

The Southern Branch was also launched recently at the Regional Technical College, Cork. A committee representative of the major energy users in the Region has been set up under the Chairmanship of Mr. A. O'Grady, Chief Engineer, Mitchelstown Creameries. The Association of Consulting Engineers, The Institution of Engineers of Ireland, CII, CIF and ICTU each have representatives on the committee.

A new departure for Chloride Shires is their diversification into designing and manufacturing a stylish new range of brassware, including taps, mixers and fittings, which considerably enhances Shires bathrooms furniture.

Da Vinci is the name chosen by the large sanitary ware manufacturer for these brand new Italian water fittings, which have just been introduced on the Irish market. The complete collection of Da Vinci accessories embraces a bath/shower mixer; both bath and basin taps; monobloc single holebasin mixer in addition to bidet fittings. The range is available at leading builders and plumbers' merchants throughout the country and of course, readily available ex-Dublin stock, from Chloride Shires Ireland Ltd.
MYSON MICRONAIR
PACKAGED UNITS

Working on the operating principle of recycled air, the recently launched Myson Micronair electrostatics can be suspended above areas such as welding areas, collecting contaminated air and discharging cleaned air back into the workshop area.

This leaves welders and other operatives free to move around, saving on valuable floor space and expensive permanent ductwork. Micronair electrostatics are mobile, by mounting a unit on wheels, and connecting fixed or flexible extension arms, the units can be moved anywhere to reach awkward places in a workshop or factory.

The Micronair system contains no replaceable filter elements, simply a collector cell requiring periodic cleaning. A variety of wash cleaning systems are available.

i) Easy hand cleaning for light-duty application
ii) Simple add on wash section - operated by a simple valve connected to warm water supplied at the correct temperature and pressure.
iii) Timer added to (ii) - making the whole wash cycle a push button operation which can be controlled from a central station.
iv) Clock control - providing automatic control cleaning of units.

Adding a wash system will normally reduce maintenance to a once or twice yearly maintenance check dependent on application.

The most important part of the Micronair electrostatic air filter is the specially designed electrostatic cell with an all important 7.9mm plate gap, which, particularly with high load applications, significantly reduces cleaning time.

For extra high load applications, a wide cell spacing - 9.5mm - is available.

A special optional extra feature found only on the Micronair electrostatic air filters, is automatic oiling (applied with the wash or detergent applicators) which can be added to assist cleaning operations and for cell protection.

Further information from Finheat Ltd, 34 Watling St, Dublin 8, Tel: 778109 Telex 30751.

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12 IHVN News, July 1980

https://arrow.dit.ie/bsn/vol19/iss7/1
DOI: 10.21427/D7811D
Jacobs International Limited recently announced the award of $97 million contract to Voest Alpine, Austria, a mechanical engineering and construction company. The contract is for the construction of a refinery for Jacobs' Dead Sea Potash Project in the Hashemite Kingdom of Jordan and is the major mechanical contract for the Arab Potash Project.

Mr. John Buehler, Managing Director of Jacobs' International Limited, said that Jacobs International, as a prime contractor, is responsible for the design, engineering and construction management of the $425 million project which will recover in excess of 1.2 million tons of potash annually from Dead Sea brine. In addition, Jacobs has a seven year operations, maintenance and start-up services agreement for the project.

"The recovery project will involve four major phases with construction of a power plant, and a sophisticated potash processing plant located nearby. With the award of this potash refinery erection contract, all contracts for the project have been placed. When completed, the evaporation system will serve as one of the largest applications of solar energy use undertaken to date", a Jacobs spokesman said.

Working on the erection of the refinery facilities is scheduled to begin about March 1980 and construction is to continue for two years.

The Arab Potash Project is being handled from Jacobs' International headquarters in Dublin. The company, a wholly owned subsidiary of Jacobs Engineering Group in the U.S., provides single source responsibility/turnkey consulting, engineering, design, architectural, construction, construction management and related technological services to industry worldwide.

COOLAIR'S NEW DAIKIN UNITS

A new range of Daikin heat pump packaged air conditioners, in three model variations, has been launched by Coolair Limited on the Irish market. The range comprises the UH, FRY/CRY and EFHY/ERY model types, each using a 50HZ power supply. The UH model is designed to convert heat from outdoor sources to warm air discharging to indoor space. Conversely, a reversible refrigeration cycle also allows a cooling operation. The FRY + CRY models are designed for heating and cooling operations by a change-over switch. The FRY units are packaged floor standing types for indoor installation and are matched to the CRY air cooled condenser units. The EFHY unit is a ceiling mounted direct blow unit ideal for heating and cooling offices and shops with quiet operation. It is linked with the ERY air cooled condenser unit, designed for outdoor heat pump application.

NEW ALPHA SERIES

FROM ROYAL DOULTON

Following its successful debut at Interbuilt last year, Royal Doulton Sanitaryware is now launching the luxury Alpha Series. This new suite combining an outstanding and unusual design with a unique colour range, comprises wall-hung washbasin, WC and bidet offering a streamlined look to the bathroom. This streamlined effect with ducted plumbing, concealed cistern and piping is becoming increasingly popular. Besides its striking appearance, it is also more hygienic, and the improved access at floor level makes cleaning easier.

The Alpha washbasin, 700mm x 560mm offers a large bowl area and a gently curving sides, and takes the latest single hole mixer tap and pop-up waste. The wall-hung WC, 680mm x 375mm, has a concealed low-flushing cistern. The wall-hung bidet, 700mm x 400mm will take a parabolic spray mixer.
Boilers Manufactured from 1,000 to 5,000 lbs per hour
Stockists & Suppliers of boilers up to 65,000 lbs per hour
suitable for burning Oil, Gas, Turf, Coal and other
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AIR CONDITIONING ECONOMICS

by Bernard Hough FCIBS

The following is the second part of a paper published in the April issue and continues on the theme of economics in air conditioning and looks at the fact that buildings are for people and must be set out to match their needs and expectations.

It seems wrong that we should allow it to become necessary for staff to have to walk out or people to faint before attention is given to the need to provide comfortable conditions.

The benefits of air-conditioning include some which are obvious and some which are perhaps not so obvious but which may have major importance to management and those who are concerned with the design of building.

The obvious benefits relate to comfort and not just for the sheer pleasure of comfort but because when we have a job to do we can do it better when we are comfortable and less well when we become more and more uncomfortable.

No one can work at peak efficiency if they are too hot or cold, too stuffy or sweaty, or irritated by drafts and smells. They will become lethargic, irritable, or stop working altogether, and often, if the conditions persist, stay away from work and look for employment where conditions are better, thus increasing staff turnover.

These situations create a bad business and a bad business costs money.

Air-conditioning can help provide a better climate for business. It can help make people more alert so that errors are fewer and output greater. It can promote their wellbeing so that staff relations are better, employees work at greater efficiency, they have more incentive to stay and to join. And absenteeism is likely to be less. All this means recruitment costs are also reduced.

Additional benefits in relation to shop, pubs, clubs and restaurants are about the customer. The customer is certainly happier in air-conditioned comfort.

If air-conditioning is known to be there or seen to be so because it’s advertised, then there is an added incentive to enter and to return. The customer tends to linger longer and the longer the shopper lingers the longer opportunity is there for the sales staff to sell and the customers to buy.

There is obviously less dirt infiltration so redecoration is less frequent, and because the atmosphere is cooler, when goods are handled or clothes tried on they are less likely to be soiled.

Air-conditioning can ensure in both new and existing buildings that where unsatisfactory conditions could make the use of a space difficult, it is possible, it can provide satisfactory environmental conditions for people to use the building.

This is always provided the building itself does not make it impossible.

Air-conditioning can help in the design and planning of space permitting the development of deep plan buildings which may make better use of the site and certainly enable all areas of the building to be usefully employed.

And finally, by careful design consideration, especially by using heat recovery air-conditioning techniques, can minimise the energy consumption and lower the operating costs through the entire life of the building.

Air-Conditioning Costs

Costs are difficult to predict. They depend on the size and complexity of the installation and the degree of environmental control required, and, of course, they rapidly become out of date because of inflation. However, economics do not relate to an actual cost but to the relationship of that particular cost to the other costs.

The building owner or user also needs to know the total costs in use, not just the running as well as the capital costs. Therefore I believe costs should be quoted in a way which can be understood by the potential customer.

I think all costs should include the capital cost, interest on capital, maintenance and running costs. These costs should then be related to a cost per working day. They can then be related to other costs of any operation.

The average capital cost of ventilation for example, seems to be about £15/m². This obviously increases if sophisticated filtration is added.

Air-conditioning can fall between £30/m² for simple unitary systems to £120/m² for the more complicated systems. Certain more specialised systems can be even more costly.

Normally the higher the capital cost the longer the operating life of the plant. Because of this factor the capital cost per annum will tend to balance out.

Averaging the number of people who would occupy a given space and the air-conditioning required for the same space then the probable cost of air-conditioning per person per annum is £60, including interest. Add to that sum, say, £50 per annum per person for running costs then the total costs for summer cooling and dehumidification will be about £110 per annum per person.

The cost benefit analysis of the Whitehall Development Group of the old Ministry of Public Buildings and Works (M.P.B.W.) in the report on open-planned offices suggested for air-conditioning that one and a half aerials, one and a half showers, and one and a half luncheon vouchers.

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In capital cost terms air-conditioning...
ZONE

ing is greater than efficient mechanical ventilation. Taking the previous figures on average it can be about double the cost.

You must remember, however, that the higher capital cost could easily be paid for by the increased efficiency because of the better conditions.

What, however, is the difference in energy consumption between an efficient controlled mechanical ventilation scheme in an average commercial building and a satisfactory energy-conserving air-conditioning system.

To make a comparison I propose to use a building which has been subject to an intensive study by the Electricity Council’s Environment Engineering Section.

The building is a normal “spec” built office block on the outskirts of Basingstoke. The double-glazing is about fifty per cent of the wall area and the floor plan is part cellular offices and part open plan.

Total floor space provides for 2922 m² of office accommodation arranged in four floors having two identical wings.

In the early stages of planning the Electricity Council’s Building Energy Estimated Program (B.E.E.P.) was used to evaluate the various building options and alternative air-conditioning systems.

Given the requirements of the developers, a unitary system of 225 air-conditioning units was selected to be installed to coincide with the building modules.

The building energy consumptions were monitored over a period of eighteen months. The maximum demands for heating, cooling, lighting, etc., were also recorded during the same period.

The recorded maximum demand for all the air-conditioning plant during the worst month was 104 kW. It would appear that the tenants were satisfied with the system and the conditions it maintained.

During the summer conditions it is believed that the design condition of 21°C, db 15°C wb with an outside condition of 28°C, db 19°C, wb. The total energy consumption was 118 kWh/m² per annum during the period measured. Air-conditioning represented about 20 kWh/m² per annum during the same period.

This system kept the conditions comfortably below the outside ambient while also reducing the high relative humidity providing the conditions required by the occupants.

If a ventilation system had been considered then the best conditions which could be expected would have been 3°C above the outside ambient temperature, with no reduction in relative humidity. Openable windows were not part of the building design and the probable fresh-air rate would have created distribution difficulties.

The total design heat gain of the building was calculated as 215 kWh. However, at 3°C above ambient only the solar, lighting, power and people sensible gains should be considered. The fan load and that of infiltration should be ignored and the transmission gain now becomes a heat loss.

Measurements taken in the building also suggest that the C.I.B.S. method of predicting solar gain tends to lead to an over-estimation of that gain.

The maximum demand recorded was for only partial occupation of the building and therefore an adjustment needs to be made for this, including a gain from the unoccupied offices.

The total volume of occupied offices was 5000 m³ having a calculated cooling load to be removed by ventilation of 103 kW.

The adjusted maximum demand at the peak hour of the air-conditioning units was 98 kW. This power is for units having a comparatively low coefficient of performance of less than 2 to 1; it would obviously be lower if more efficient units were used.

The air quantity and ventilation rate to remove 103 kW of heat and maintain an internal temperature of 3°C above ambient temperature would be

\[ \text{103} \times 1.2 \times 3 = 28.3 \text{m}^3/\text{s or 20.6 air changes} \]

The recommended fan power in kW to deal with this load, assuming a total supply and exhaust ductwork resistance of 1000 p.a.

\[ 28.6 \times 1000 \times 2 \times 1.25 \times 7.45 \text{ m}^3/\text{s} \times 750 = 71 \text{kW} \]

Making adjustments to remove fan heat, etc., the maximum power would be in the order of 86 kW.

It can be assumed that the ventilation would be required at least as long as the air-conditioning was required. Therefore the ventilation would have an energy consumption very similar to that of the air-conditioning system.

This, of course, presupposes that an energy efficient system in design and operation is selected for the building considered. Had there been openable windows than natural ventilation could be considered, but with present building trends reducing the floor-to-ceiling heights this becomes difficult to achieve in practice.

An air-change rate overall of 20 AC/h would mean double that in the area of the window, causing severe draughts and distribution problems.

If neither mechanical ventilation or air-conditioning was in stalled then the temperatures in the building would be excessive throughout a long period of the summer. Using C.I.B.S. admittance method the internal temperature would be between 16°C to 18.5°C above outside ambient.

In this case, with the building air-conditioned, a comfortable level was achieved with what would appear at least the near energy level to that of ventilation only, the extra capital cost being paid for by improved efficiency.

Carefully selected systems matching the building and the requirements of the occupiers will always prove to be economic in both money and energy terms.

It must be better to match these buildings with systems at the design stage rather than try to solve problems after the building is occupied, especially when the building will have a long life so that errors will last a long time.

To sum up it is about time a realistic view was taken of the cost-effectiveness of air-conditioning.

This must be based on up-to-date information about the costs of owning and operating an air-conditioned building in which the design has taken account of today's economics and energy prices, rather than buildings designed in the investment climate of yesterday's property booms and yesterday's energy prices.

Above all we must remember that buildings are for people and must be set out to match man's needs and expectations.

*Our thanks to Eric Farrow IDHE Chairman who supplied this paper.*

https://arrow.dit.ie/bsn/vol19/iss7/1
DOI: 10.21427/D7811D
every boiler manufacturer featuring a coal fired unit and indeed many stands devoted their entire exhibition to coal fired units. Old names like Riley, Hodgkenson and Ashwell Scott reappeared with their stokers while firms like Thompson-Cochran, Stone Platt & Vespers were introducing the more modern fluidised heat.

The absence of the oil companies indicated the change in the energy scene, whereas the National Coal Board had one of the largest stands in the hall.

It was pleasing to see so many Ulster representatives helping out on their principal's stands, George Stewart was on the Robey Stand, Sam Storey — Thompson Cochran, Jim McFadden — Glymwed, Douglas Gordon — Aerocowl, Peter Weston — Tomlison to mention but a few.

Unfortunately the general recession seemed to be having its affect, as most people were of the opinion that business had been rather light but to be an exhibitor, you have to be an optimist so most people tended to look on the bright side.

Balmoral Show has never really been a place where one expects to see a wide representation of trade stands relative to the heating industry, but this year was different and no doubt will set the pattern for the smaller shows to follow. The attraction was the opportunity for those who are marketing the range of multi-fuel boilers and cookers to show their wares to a market which one supposes was the traditional market for the large kitchen type solid fuel cooker.

The cooker and boilers on show came from Spain, Austria, France, Italy, Australia & Sweden. Claims that they would operate efficiently on wood, straw, coal, compost and one or two suggested that we could even use L.P.G. or oil.

One or two companies were certainly very confident of their future markets at the same time quoting “up to the present sales” figures that were amazing. Maybe we are about to see a minor revolution in the kitchen with the return of a solid fuel cooker supplying at the same time limited heating.

Thorn Heating Ltd were the sponsors of the recent Institute of Domestic Heating Engineers Golf outing at Craigwood Golf Club on the shores of Belfast Lough. The prizes were presented by that popular and regular visitor to this island, Mr Ed. Martin, Northern Sales Manager of Thorn, while Philip Johnston, Area Manager, acted as starter for the fifty odd players. The Thorn Trophy was won by Mr Norman Dunn, Bill Price and M. McKinley were second and third. The Harcal Trophy went to past chairman Roy Best while the visitors prize went to John Footman.

A recent visitor to Belfast was Mr A.W. Forster, Chairman and Chief Executive of Esso Petroleum Co Ltd who addressed a meeting of prominent industrialists and commercial leaders.

In his speech, Mr Forster spoke of the difficulties being faced by the oil industry and the need for conservation and research into alternative fuels.

It was pleasing to hear such a prominent person, not attempting to gloss over the difficulties and uncertainties of his industry indeed suggesting to his customers that they may have to convert to other fuels.
The only thing that was certain about the radiator market in Ireland over the last year was that it was totally uncertain. This time last year doom and gloom were being replaced by boom and the marketing departments of the manufacturers were going crazy with orders way in excess of their factories capabilities. As the same thing was happening in the UK but for different reasons, (they had a gas boom, we had a solid fuel boom) the surplus could not be supplied from there. Deliveries from the continent were also very slow and the only people who did well out of the whole affair were merchants who had large stocks in their stores and orders placed well in advance. The same people are now suffering as the drop in the market after Christmas has caught many merchants overstocked with not only radiators but with every other type of heating product.

The future of the business is as unpredictable as the past and talk of lay-offs, short time etc are with us again, so it all hinges as someone said recently on the weather, so manufacturers consult the meteorology office.

BARLO
Barlo radiators are manufactured in accordance with BS 3528-74 from a high grade steel to a rolled top design. Each radiator is tested under water at 100 p.s.i. air pressure — twice the stipulated standard — and they are designed for closed circuit or indirect systems only.

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

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

Further information from: Barlo Heating Ltd.

VEHA
Veha of Wicklow continue to expand and improve on their broad service to the heating industry. Developments include, panel convector radiators, low level high output radiators and oil filled electric radiators.

The standard panel convector radiators have already proved successful. They are supplied in the same large range as Veha panel radiators, ie 11", 15", 19", 23" and 27" heights and in the standard lengths from 18" to 116" and in special overlengths up to 231".

The low line "V" radiator is a specially designed 6" high radiator providing high-output figures by the use of deep fins, providing space and output requirements where conventional radiators cannot be used.

Veha radiators are also available through stockists and also through their distribution centres at Cork and Galway.

Further information is available from Veha Ltd.

The following notes are based on material submitted by the companies concerned.

The S&P recessed model natural convector from Finheat.
Radiators & Convectors

RUNTAL

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

All Runtal products are custom made to customers’ requirements, a range of the most popular sizes is available as standard ex-stock. Special features are as follows:

1. They can be supplied to customers' exact requirements being available in lengths from 600mm to 6000mm in heights from 70mm to 980mm and in heat output from 100 to 20,000 watts.

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

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

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

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

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

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

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

Further details available from Runtalrad Ltd.

QUADRANT

The Buderus FKR radiators are designed, manufactured and tested in accordance with the German DIN specification 4720 and 4703/1. The standard radiator (HD 4) is designed for hot water systems having a maximum operating pressure of 414 N/m² (60 lbf/in²). Optionally available in hot water radiator (HD6) which is suitable for operating pressures up to 620 N/m² (90 lbf/in²). FKR radiators can also be supplied for use with steam and operate at pressures of 212 kN/m² (30 lbf/in²) or 414 kN/m² (60 lbf/in²), details of which can be provided upon request.

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

All radiators are coated with a primer and each is complete with screwed nipples, high temperature joint rings, flow and return bushings, sealing plug and vent plug (drilled ¼" BSP). A range of optional accessories is also available.

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

Two formed plates are assembled to make a single section and all are electrically welded together to form a group. Larger radiators are assembled by nipples at intervals. Each group is tested by compressed air under water to a specified limit before it leaves the works and carries a two-year guarantee when the working conditions are as follows: Normal execution, hot water to 230°F and 131 ft wg works test pres-
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<th>Address:</th>
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<td>White Heather Industrial Estate, 301 South Circular Rd, Dublin 8</td>
<td>781966</td>
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<td>Myson Copperad</td>
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<tr>
<td>Barlo Heating Ltd</td>
<td>Davis Rd, Clonmel, Co Tipperary Also at: J F Kennedy Ave, Dublin 12. Also available from stockists throughout the country.</td>
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<td>Barlo</td>
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<td>Ballentine &amp; Partners</td>
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<td>Thermalrad</td>
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<td>B.M. Heat Services</td>
<td>64 South St, Newtownards, Co Down</td>
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<td>Supplies Ltd</td>
<td>J F Kennedy Drive, Dublin 12</td>
<td>506618</td>
<td>31693</td>
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<td>Eurenco Co Sales Ltd</td>
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<td>Finheat Ltd</td>
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<td>Belview, Mullingar, Co Westmeath</td>
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<td>Lomond Avenue, Dublin 3</td>
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<td>Heating Controls &amp; Devices Ltd</td>
<td>6 Ballyoran Lane, Upper Newtownards Rd, Belfast BT15OTL</td>
<td>3274673</td>
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<td>Unicorn Works, Waringstown, Craigavon, Co Armagh BT66QB</td>
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<td>P J B Johnston</td>
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<td>Runtalrad Ltd</td>
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<td>Semret (NI) Ltd</td>
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<td>682531</td>
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<td>John R Taylor Ltd</td>
<td>Naas Rd, Dublin 12</td>
<td>783255</td>
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<td>Unidare Ltd</td>
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<td>Unimack Ltd, Dublin 2</td>
<td>76 Lr Mountown Rd, Dun Laoghaire, Co Dublin</td>
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<td>Thermalrad, Thermalpanel</td>
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LITERATURE

Building Services Maintenance

Regular maintenance of building services has become a necessity to be treated seriously, rather than just a day-to-day chore. Several factors have contributed to this — the increasing capital cost of services (up to 50% of the total cost of some buildings); rising energy costs; legislation such as the Health and Safety at Work Act; and occupants have become less tolerant of services failures which can result, not only in discomfort conditions, but in real monetary losses when production stops.

A new bibliography from BSRIA provides a ready reference to authoritative work on the subject, including case studies, general discussion documents, educational and training texts, legislation and Standards. Over four hundred literature reference are divided into twenty-one groups, covering maintenance management, computerised maintenance, planned preventive measures, cost in use, reliability, metrology, manuals, designing for maintenance and the maintenance of different types of building services plant.

Building Services Maintenance by Stephen Loyd.
BSRIA Bibliography LB 108/80. (Price £7.50 sterling with order) is published by Building Services Research and Information Association, Old Brackness Lane, Brackness, Berkshire RG124AH England.

mV/mA Test Set
A portable mV/mA test set, which can be used by process instrumentation service engineers to check and calibrate electronic instruments such as three-term controllers, indicators and recorders etc., is described in a leaflet available from Industrial Instruments Ltd. The unit with both measure and provide an output of constant current signals. The input range is +0 to 199.9 mV or mA with an accuracy of 0.1% ± LSD and with a resolution of 100 microV/100 microA. The output, which is continuously variable using course and fine potentiometer controls, is 0 to 199.9 mV or mA. There is a 6V maximum drive capability on the current output range and current limiting to 200 mA in the event of a short circuit. The readout is a 3½ digit, 0.5 in dual polarity liquid crystal display.

For further information: Industrial Instruments Ltd., 6 Herbert Place, Dublin 2, (Tel: 01-761691).

New Data from Lennox
Lennox Industries Limited have published three useful new technical data leaflets for specifiers and installers. The publications cover their DSSI series heat pump single package rooftop units (50-61 kW cooling, 48-58 kW heating, with optional electric heat and hot water heat,) horizontal fan powered mixing damper boxes, series ZDB1 (nominal air volume range 110-655 1/s) and fan coil filter units series CH3 and CB10 (nominal cooling 7-18 kW, optional electric heat 7 kW-23 kW).

Further information from C&F Ltd, Glen'side Industrial Estate, Mill Lane, Palmerstown, Dublin 20, (Tel: 264917).

Heat Pipe Recovery Units
CN Heat Pipe Recovery Units, which recover energy normally discharged to the atmosphere in the form of air or gas, are fully described in a new leaflet containing detailed technical information.

The leaflet, together with technical information about other CN energy saving products can be obtained from: M C W Ltd, 10 Wynnfield Rd., Rathmines, Dublin 6, (Tel: 976729 Telex 30217).

Other Quadrant Products

* Buderus Boilers
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DOMESTIC: Duel fuel boilers 55,000 to 250,000 btu/h
Industrial: 300,000 to 5 million btu/h
Also full range of Francia Hoval steel panel radiators.

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"Rio" Domestic and Commercial oil fired boilers 60,000 - 604,000 btu/h
Rio Gas Boilers (Atmospheric Type) 60,000 - 400,000 btu/h

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“Rio” Domestic and Commercial oil fired boilers 60,000 - 604,000 btu/h
Rio Gas Boilers (Atmospheric Type) 60,000 - 400,000 btu/h

Schwank

Gas fired overhead infra-red heaters 26,000 to 140,000 btu/h. LPG or towns gas.

Also solid fuel handling equipment, fluidised bed boilers and incineration.

Contact Brendan Bracken or Frank Loughran at 376051 or N. Howard at (021) 509153.
Lomond Avenue, Fairview, Dublin 3. Phone: 376051/8, 374533, 379673; Telex: 5827
Cork Office — Anglesea Terrace, Cork. Phone: 021/509153 Telex: 8408
The new Vema ESC/2 system from Veha Ltd.

Veha

Veha Ltd, distributors in Ireland of the Vema range of domestic central-heating circulators, have a concept in pumping which is unique in the Irish market. Called the Vema ESC 20/23, it is an electronically controlled pump, the speed of which is governed by the temperature of the return water to the boiler and the room temperature. The "bald-on" kit (no cutting or draining of existing system) consists of the pump itself, a temperature sensor that clamps to the return pipe, a room temperature sensor, and a small control panel. The water temperature sensor via the control panel, speeds up or slows down the speed of the pump to maintain room temperature, which is also connected to the control panel. Among the advantages of the system are: a saving in electricity consumption; automatic adaptation of the pump to the hydraulic characteristics of the system and ease and economy of installation — costs compare more than favourably with those of a motorised valve system, and of course, there are no moving parts (apart from the pump) to go wrong. The system is suitable for installations having a requirement of up to 16 g.p.m., (4.5 m³/h) or up to 13 ft (4.1 m) static head loss. Details from Veha Ltd, or their depots at Cork, Galway and Dublin.

Wilo Werk GMBH & Co.

Wilo Werk GMBH & Co., Dortmund, West Germany are one of the leading manufacturers in Europe of circulating pumps for central heating. They also produce a wide range of industrial pumps for water circulation. Due to continued growth in the sales of their products it was necessary to expand their production facilities. Now, they have opened another factory in the Raheen Industrial Estate in Limerick, Wilo Pumps Ltd. for the manufacturing of the RS 25 range of pumps. Also in the same Industrial Estate in Limerick is a second Wilo company, Wilo Engineering Company. This company handles sales and marketing of all Wilo products in the Irish Republic. Wilo Engineering Company market a comprehensive range of circulating pumps, beginning with the small domestic RS 25 series, and right through their vast range up to 150 mm industrial pumps. Also among the Wilo range are bronze pumps for secondary water systems, as well as various twins and dual pumps. Wilo also supply complete control equipment for all twin pumps. Variations of basic pumps are also available to meet specific customer requirements.

Further information from: Wilo Engineering Company.

Myson

A major share of the pumps market has been captured by the 'Myson Unit Two' water circulating pump since its introduction, this universal two-speed pump for domestic central heating systems is the result of three years development by Myson engineers.

The 'Myson Unit Two' incorporates new 2-speed motor; new insulation standards; new bearing and air purging arrangements; new shaft and filter; new motor housing; new, easy to use, flow regulator; and the unique Myson screw-down clutch.

The pump, which meets BS No. 1394: Part 2: 1971 and holds BSI Certificate of Approval No. 6066, can handle almost any domestic system for a new installation, or for the replacement of a pump in an old system.

The 'Myson Unit Two' is economical, reliable, unobtrusive, easily installed and easily maintained.

Further information from: Myson Ireland Ltd.

SMC

Designed to comply with latest standards and trends in heating systems, the SMC "C" range complements other SMC products. Used in conjunction with the range of glandless pumps, SMC can now offer the building services and industrial engineers a comprehensive range for both heating and chilled water pump requirements.

IHVN News, July 1980 29
Features of the range include Compliance with BS 1349: Part 1; 1971 Grade 2, for power driven circulators; Flanges to BS 10 Table E as standard or metric, BS 4504 10 bar DIN available on request; Optional floor mounting support for larger pipeline pumps; Suitable for water temperatures up to 120 degrees C; Maximum working pressure 6 bar; Rotating assembly easily removed without disturbing pipe joints; and quiet running, robust construction. Substantial shaft proportions to prolong mechanical seal life.

The three units in the E range of circulators for industrial heating offer unique design features for the larger heating system. The design is based upon the disc motor, with hydraulic float action, producing maximum torque at start-up. The use of filled PTFE bearings and thrust washer, together with stainless steel shaft, ensures smooth and quiet running, minimal wear and long service under prolonged and arduous conditions.

Having no gland or mechanical seal, periodic renewal or replacement is eliminated. The disc motor design permits the use of a positively located joint ring to seal the hydraulic section of the pump. An incolloy shroud seals the winding and eliminates the possibility of leakage into the electric motor.

The disc motor provides both high starting torque and low starting current (only 125% of full load comparison with the much higher starting current of drum type motors) resulting in reduced electrical loading on cables and switch gear. No starter is required but to protect the external wiring a 3 amp fuse should be fitted in the supply.

The patented electric regulator built integrally into the pump, offers a choice of 4 positions enabling the circulation rate to be selected at will. This unique regulator is far simpler than the changing of impellers or pulleys as with other heating circulators. The regulator simplifies circuit balancing, can give increased output as building extensions are added and enables identical pumps to be used in a multi-zone heating system. Output tables indicate the regulator settings for each of the three pump sizes.

Details from John R. Taylor Ltd.
PUMPS AND CIRCULATORS

Pillinger

Pillinger, the water boosting pressurisation company, announces the launch of a complete range of building services pumps. With over 1,100 models to choose from it is believed to be one of ten most comprehensive ranges available. The pumps range from small centrifugal monobloc to sump, sewage and borehole pumps. Those of most interest to the h & v industry are the close coupled inline circulating pumps, which can be supplied for either horizontal or vertical mounting, with maximum flow rates of 36 L/s and heads up to 25.5 m. They should be able to satisfy most circulating needs in both chilled and hot water systems. Included in the range of circulators are belt driven pumps with a maximum flow rate of 53 L/s and heads up to 18m. These pumps are ideal where the exact duty is not known as the pump pulleys can be changed to vary the speed.

More details from: G W Monson & Sons Ltd (NI) and Pillinger Ireland Ltd.

Euro Pumps

Euro Pumps see themselves as moving very nicely in the market at present. In spite of the fact that the total market is becoming depressed they feel their overall share has increased and thus are reasonably happy that they are still on the correct course.

Apart from consolidating their leading position in the domestic market, they have become well known in the mechanical services field with the complete range of 'Euramo' products including the larger 'C1000/C2000' glandless circulators; the 'LRB/JRB' single and twin glanded pump-sets and the 'PM' range of monobloc end suction pumps.

Undoubtedly, the success that Euro Pumps are enjoying is due in the main to the fact that the Euramo range is of such high quality, which gives total reliability and super-silent operation. A further contributing factor is that a wide range of stocks are kept in both Cork and Dublin for immediate off-the-shelf deliveries in most cases.

Euro Pumps Ltd also act for Pressman (Pressurisation) Ltd who are manufacturers of the most comprehensive range of pressurisation units for heating systems and general purpose cold water boosting equipment in Europe. These fully packaged sets are competitively priced and built to the highest specification and standard of finish possible. Delivery periods on this equipment are very fashionable and can be programmed to meet almost any requirements.

Zwicky Engineering Ltd have recently appointed Euro Pumps Ltd as their sole stockist/distributor for the complete range of Zwicky uniplex and biplex filters, Zwicky controlled pressure reducing/regulating valves and the complete range of Viking rotary gear pumps. This helps Euro Pumps Ltd to further their ambitions with the mechanical services sector inasmuch as the Zwicky equipment fills in probably the only gap in the Euramo/Pressman range, namely on the oil handling side. The 'Pumpex' duplicate gear pump set should be of particular interest for oil handling and storage 'on-site'.

With the acquisition of the Zwicky representation this brings Euro Pumps Ltd yet another step nearer their goal of becoming the specialist pump supplier to the h & v trade. A full 24 hour service is available for the equipment handled.

As with the Euramo and Pressman equipment the Zwicky name is also widely known and respected and all in all with these three 'aces' at their disposal Euro Pumps Ltd look forward confidently to another year where they should once more increase their share of the market - whilst still giving the customer the service for which they are becoming renowned. For further details contact Jim Blatherwick at Dublin 876448 or Don Lauhoff at Cork 43822.

EURO PUMPS

Euro Pumps Limited
are the sole distributors in Eire for the complete range of Pressman pressurisation units for heating systems.

Pressman (Pressurisation) Co. Ltd. are manufacturers of the most comprehensive range of pressurised water-boosting equipment in Europe.

EURO PUMPS

Euro Pumps Limited
Greystones, Co. Wicklow.
Tel: Dublin 876448
Cork Office: Tel: 41388 & 43603.
Packaged Sets
The Crane S-range has been developed into two complementary ranges of packaged glandless pump sets specifically designed for projects requiring a duty and standby pumping facility. The Twin S and DCS S-range have been designed to comprehensively accommodate all types of system requirements in a fully automatic, compact, versatile and reliable package that is as easy to install as a single pump and which therefore offers considerable savings in on-site installation costs. The non-return flap valve, housed in the delivery manifold, automatically and positively closes-off flow to the non-operational leg of the set at any time due to pressure imparted to it from the operational pump. An operator, having changed over from duty to standby, can no longer forget to re-open valves thus unbalancing the system. When both pumps are operated simultaneously the flap valve automatically takes up a central position in the manifold.

For further information on Crane Pumps contact Pump Services Ltd, Dublin, Belfast and Cork.

H. R. Holfeld
H. R. Holfeld offer the Holpak packaged cold water and hose reel booster sets, a complete range of Grundfos single and twin 3-speed industrial heating circulators, jet-pak booster system for flats, small hotels etc., Grundfos boiler feed and submersible borehole pumps, Homa and Unistar sump pumps, Calpeda centrifugal pumps, Loewe twin floor-mounting heating pump and Grundfos in-line heating pumps in single and twin versions up to 100mm pipe size.

Finheat Ltd., have recently launched the Baric range of pressurisation units and sealed system for heating systems.

SERIES IPS
Baric IPS series pressurisation units are of compact design and eliminate the need for a nitrogen cushion vessel and associated controls. Complete packaged construction factory assembled, tested and piped for minimum site installation. The units are equipped with quiet running, duplicate pumps operating in sequence. Internally coated spill tank is suitably sized to accommodate the system expansion and a plastic ball blanket reduces water contact with the atmosphere. Integral controls require a 3 phase, 50Hz, 4 wire supply to an interlocked isolator. Run & trip lamps, selector switches and low pressure alarm lamp are standard features. Outgoing terminals are provided for 'fail safe' low pressure boiler interlock to lock out the boiler in the event of a low pressure condition occurring.

SERIES MV & MVS
To save valuable plant room space and site installation time Baric pumps offer fully packaged, factory tested sealed system comprising expansion vessel and auto-make up set pre-piped and electrically wired, all mounted on a strongly constructed steel baseplate. A single system pipework connection is required and cold water mains supply to the pump break tank. The electric supply is single phase, 50Hz and the unit can be equipped with pump starter and 'Fail Safe' controls. Multiple vessel systems are available. The Baric packaged MVS series combines the advantages of series MY and additionally included duplicate duty and standby pumps, factory wired composite control panel with auto-pump changeover, indication lamps and facia mounted pressure gauge. Low pressure 'Fail Safe' controls are standard and high pressure is optional. Electrical supply is single phase, 50Hz.
SIGMA PUMPS

G.M.R. SERIES

C.Z.M. SERIES

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C N SERIES

C SERIES

Full Range Available From

Reconair Ltd.

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Telephone: (01) 470611 - 470209 - 470113 Telex: 31356

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<td>4A Greenville Ave, Dublin 8. Also 16 Belmont Rd, Belfast</td>
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<td>Pump Services Ltd also at Pump Services (NI) Ltd, and Cork</td>
<td>Willbrook Rd, Dublin 14 56 Distillery St, Belfast BT125BJ</td>
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<td>Crane; Wilden; ABS Speck; Blackman; Ibex; Tuthill.</td>
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More and More you can see GRUNDFOS Circulator Pumps — but you never hear them!

GRUNDFOS Multi-Speed. A range of Commercial Heating Pumps that combine flexibility with economy. The Pump Performance is matched to the System Heatload by Automatic or Manual Control of Pump Speed.

The Pumps are designed for the simplest or most advanced Systems, where reliability, efficiency and power saving are needed. GRUNDFOS Multi-Speed has all the answers.

Complete Range of Single and Twin Pumps available Ex Stock Dublin.
**Domestic Circulating Pumps**

* Vema pumps have over the past number of years built up a reputation for dependability and value which is second to none.
* They come with a choice of isolating valves to suit either copper or G.B.
* All models have variable head and flow and have a self-protected single-phase motor which gives long life and silent running.

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Cork 021-504268/506553
Galway 091-61549
Blackenberg Ltd have recently moved to new premises in the Baldoyle Industrial Estate. The new stores and offices are a symbol of the rapid development of this new company only formed in 1978 and is solely owned by Bill Black and his wife. The main areas of operation of the company are the sales and service of

Dantherm products, Perkins industrial steam and hot water boilers and the sales and hire of reconditioned boilers and air heaters. The company also offers a maintenance service on an annual contract basis and have at present four service engineers.

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All our roof units with the exception of the two largest sizes - 800mm and 1000mm - arrive pre-assembled and packed in one carton ready for action. Fans come in a separate carton so installation is fast and simple. Incidentally, we don't assemble the two largest models because we'd be hard pressed to man-handle them on site. Europak roof units are the best you can buy. They're made to a new design in fibreglass with an advanced shape and a lower profile. And each one is powered by our superb Euroseries axial flow rotor motor. A unique concept that gives silent, vibration-free running and greater efficiency.
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Telephone Brierley Hill (0994) 74062
Telex 335696 RUNITS G

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NEW PRODUCTS

The new pH meter from ILL.

Panel Mounted PH Meter/Controller

A new panel mounted pH meter has been introduced by EIL Analytical Instruments, the water analysis specialists of Kent Industrial Measurements (a Brown Boveri Kent Company) represented in Ireland by I.I.L. the instrument people.

The Model 9160 pH meter incorporates a linear motor indicator and provides accurate measurement of pH and redox (ORP) signals. Standard instruments are scaled 0-14pH and 0.800mV, but alternative ranges with spans of 8 or 10pH may be produced to order. The linear motor driven indicator has a scale length of 13cm for ease of reading, and this provides a discrimination of 0.1pH (or 5mV) on the standard scale.

Model 9160 can be combined with any of EIL's wide range of electrode systems to suit different applications. Used with the 2867 electrode system, the unit will provide simple on/off control of, for example, effluent treatment, together with an output to a chart recorder. Proportional dosing control from the output signal of the meter might be supplemented by high and low alarms signifying abnormal deviation from the control band.

Myson Launches Eurofan

Myson Fans Limited, a Myson Group company, announces the introduction of the Myson Eurofan. With the Myson Eurofan, any foot mounted motor manufactured anywhere in the world (to metric standard) can be fitted to the fan, enabling the user to standardise on complete plant installation and to facilitate replacement.

The range of Eurofans covers 10 diameters from 305 to 1905mm (12 to 75") and fan performances range from 300 to 300,000 m³/hr. Static pressures of up to 510mm (5.10K N/m²) can be achieved with multi-staging.

Fans can be supplied for handling mildly corrosive atmospheres by protecting them with an epoxy (polyamide) paint which has resistance to corrosive fumes.

For further information: Ventac & Co Ltd, Grand Canal Quay, Dublin 2, (Tel: 713499 Telex: 5307).

DANFOSS THERMOSTATS FOR MICROBORE

The Residential Heating Division of Danfoss announce the introduction of two new versions of their popular RAVL radiator thermostat to meet the increasing demands for installation in both new and existing microbore heating systems, and to help overcome the three main reasons for the reluctance of the installer to fit radiator thermostats into microbore systems, i.e. the problem of adapting standard 15mm valves, to the smaller tube sizes and the resulting appearance (when making opposite end connections), the absence of a twin entry radiator thermostat, and the non-availability of the few products meeting the installers requirements, from his local stockists.

Danfoss have taken steps to rectify this situation by introducing a twin entry version of their popular RAVL radiator thermostat with twin inlets for 10mm copper tube and a ½in BSP connection to the radiator. Known as the RAVL 15/6.7 it can be fitted with either the standard RAVL built-in or remote sensors, thus ensuring that Danfoss quality and accuracy is maintained, the latter being essential for fuel economy.

Further information from J J Sampson & Son Ltd, 12A Wexford St, Dublin 2, (Tel: 752317).

One of the Europak range of cased axial fans, with controller by Roof Units Ltd from Dan Chambers Ltd.
NEW PRODUCTS

New Class 1 Combustion Control

The new Class 1 combustion control solenoid valve ranges, Type SA, now available from ITT Controls, MacLaren Division, covers fast opening and step slow opening models with adjustable flows. Sizes cover, 1/4, 1, 1½ and 2 BSPP sizes in four operating modes, which meets the majority of requirements for control of main gas in commercial and industrial power and atmospheric gas burner applications.

The Class 1 valves are suitable for forced and induced gas burners and burner trains and in each category a range of standard sizes is available giving air flows from 9.8 m³/h (346 ft³/h) to 75 m³/h (2649 ft³/h) at 2.5 mbar (1 in wg). The solenoid coil is internally dc rectified for noiseless and trouble-free operation and, when energized, pushes the plunger and valve disc against a return spring, opening the valve.

The spindle runs in a PTFE bearing and is protected from contamination by a diaphragm. An integral filter is also fitted to protect the valve seat disc and other downstream items of plant.

Further information from: C & F Ltd, Glenside Industrial Estate, Mill Lane, Palmerstown, Dublin 20, (Tel: 364917).

J.J. Range of Fire Ventilators

J.J. Ventilation (International) Limited, the industrial and commercial ventilation specialists, announce the introduction of new equipment and the re-designing of some products in the company's existing range.

Two of the new items of equipment have been developed in response to the growing demand from industry for purpose designed fire ventilation systems and they complement the existing J.J. natural exhaust/fire Louvred Ventilator which has been successfully tested at the Fire Insurers Research Organisation (FIRTO) testing centre at Borehamwood, in the UK.

The J.J. 'DF' Ventilator is also designed for natural air exhaust/fire applications and incorporates fully controllable lateral dampers for day to day ventilation. When planned as a component part of the energy conservation ventilation scheme, the 'DF' ventilator provides extraction without the need for additional power.

The J.J. 'SF' Ventilator is a roof mounting fire/smoke ventilator providing a large free area of exhaust.
The design and control of systems is a job for a man who can think in both financial and physical terms and who understands the implications of what he is proposing in relation to his company. In controlling the running of his contracts, he must use the base tender figures and quantities included in the make-up of his original price.

Ordering the correct materials and recruiting the required labour will be automatic but to ensure that the contract achieves a profit he must monitor his costs as they occur and take the necessary steps to correct any difference shown. Costs on contracts should be shown individually and, depending on the size of the job, this simple exercise can be done and easily controlled using the example shown in Figure 1.

In this example you can see from month to month your costs in both labour and material accumulating and, by examining your actual costings with your original tender figures, you can tell at a glance the stage of a contract to the given date. This control also gives warning if your labour costs are out of line with your tender and enables you to correct the situation while the contract is in progress. Without this you could in fact be losing money on the contract without knowing, only to find out at the end of the job when it is too late.

The same applies to the material costings which could be over the tender amount allowed, and with this control you can calculate what percentage of the contract has been completed on the material and estimate the value of material needed to complete the job. If it is too high or too low you can take the necessary action to cut your losses or increase your profits.

Again the amount of time consumed in implementing this control is minimal compared with the amount of time you will spend trying to find out what went wrong if disaster occurs.

Your claims, cash and

<table>
<thead>
<tr>
<th>Date</th>
<th>Labour</th>
<th>Material</th>
<th>Profit</th>
<th>Labour</th>
<th>Material</th>
<th>Extras</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 79</td>
<td>7,000</td>
<td>11,000</td>
<td>2,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

**Figure 1 ORIGINAL TENDER**

**ACTUAL COSTS INCURRED**

<table>
<thead>
<tr>
<th>Date</th>
<th>Claims</th>
<th>Cash</th>
<th>Labour</th>
<th>Material</th>
<th>Total</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>4,000</td>
<td>-</td>
<td>1,000</td>
<td>2,000</td>
<td>3,000</td>
<td>-</td>
</tr>
<tr>
<td>Aug.</td>
<td>6,000</td>
<td>-</td>
<td>3,000</td>
<td>5,000</td>
<td>8,000</td>
<td>-</td>
</tr>
<tr>
<td>Sept.</td>
<td>10,000</td>
<td>4,000</td>
<td>1,000</td>
<td>6,000</td>
<td>10,000</td>
<td>-</td>
</tr>
<tr>
<td>Oct.</td>
<td>7,000</td>
<td>6,000</td>
<td>2,000</td>
<td>4,000</td>
<td>6,000</td>
<td>-</td>
</tr>
<tr>
<td>Nov.</td>
<td>17,000</td>
<td>10,000</td>
<td>6,000</td>
<td>10,000</td>
<td>16,000</td>
<td>-</td>
</tr>
<tr>
<td>Dec.</td>
<td>6,000</td>
<td>6,000</td>
<td>1,000</td>
<td>1,000</td>
<td>2,000</td>
<td>-</td>
</tr>
<tr>
<td>Totals</td>
<td>23,000</td>
<td>23,000</td>
<td>7,000</td>
<td>12,000</td>
<td>19,000</td>
<td>-</td>
</tr>
</tbody>
</table>
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