H & V News

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Nobody handles air better than Bahco.

The Bahco ABC range of air handling units more than meet today's exacting requirements for minimum energy consumption. There are 9 units in the range, all providing complete flexibility. The infinite number of layout possibilities with Bahco ABC helps to solve the problems created by limited plant space. We have a 12 page colour brochure on these air handling units. With true Swedish efficiency, it illustrates and describes the range in detail including a section on how Bahco Heat Recovery Section can cut air treatment costs dramatically.

BAHCO

Air Curtains · Air Handling Units · Space Heaters
Also (Bahco Tools Ltd) · Adjustable Wrenches · Screwdrivers · Spanners · Hydraulic Tools · Engineers' & Electronic Pliers

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Sole Irish Agents CLIMAVENT LTD. 29 North Brunswick Street, Dublin 7. Phone: 776615 Telex: 31718
ON THE LIGHTER SIDE

A very successful technical evening was held by the Irish Branch of the Chartered Institution of Building Services on Thursday January 22nd last in Dublin. Recent low energy lighting developments were outlined by Mr. Michael Moloney the ESB Lighting Specialist in a paper which was well received by a record attendance of some seventy people. The attendance was representative of the Universities, Colleges, Lighting Manufacturers, Contractors and Consultants. Messrs Robin Aldworth and Andrew Ramsey, Chairman and Secretary respectively of the CIBS lighting division also attended.

Mr. Moloney dealt with the following four major lighting developments: Lamp Technology Advances, Improvements in luminaire design, Practical task lighting systems, and Control systems permitting better use of Daylight.

In developing these points the author explained in an interesting manner how lighting loadings had tumbled from 50W/m² to a possible 8W/m² as a direct result of research done in recent years.

Mr. Aldworth in summation of the evening congratulated the Branch on a most successful and enjoyable presentation.

TRANSPORT FRIDGE SEMINAR

New and proposed E.E.C. legislation on the transportation of fresh and frozen foods was the central theme of a seminar held in Dublin, organised jointly by Cross Refrigeration Limited and Transfrig Limited. Entitled "The Effects of E.E.C. Legislation on Transport Refrigeration in the Irish Context", the seminar was attended by managers in the food, haulage and related industries. It covered wide ranging topics such as current legislation for international transport, the present French and British standards and the history and development of transport refrigeration. It also included a slide presentation on eutectic units.

Cross Refrigeration, who specialise in the supply and installation of commercial and industrial refrigeration equipment from offices in Dublin, Cork and Limerick, are now sole distributors of the Transfrig range of equipment in Ireland. Transfrig Limited, of Gosport, are leading refrigeration engineers and equipment manufacturers, specializing in transport refrigeration. They are the only U.K. manufacturers of originally designed equipment.

Details of the Transfrig range of refrigerated transport equipment were also announced at the seminar, where Transfrig were represented by their Technical Director, Trevor Stacey and Export Manager, Roger Davy. Jim Keating (Managing Director) and Dermot Walsh (Marketing Director) headed the Cross team at the seminar.

PARKRAY PROMOTION WINNER

Gary Stewart of Messrs. G. & T. Garton in Inchicore, Dublin, was the lucky winner of a promotion for dealers organised by Instaheat Limited and held during the months June to October, 1980. The competition was open to dealers who purchased a Parkray appliance from Instaheat and Gary Stewart now finds himself the recipient of an attractive week-end for two in London with all expenses paid.
New Irish Fan Co.

Declan Fehilly like many at that time left his native Bray in the 1950’s and settled down in Britain where he became an engineer and worked successfully there for 24 years. Then he heard of an offer he could not refuse which was an incentive scheme offered by the IDA for Irish engineers in the UK to return to Ireland and set up small engineering businesses here. This all happened in late 1979 and the business he chose was the business he knew well and that was the manufacture of fan equipment.

“I wanted to put something back into the country and create some employment” he says, adding that the major attraction was the help both financial and advisory offered by the IDA.

The help has extended to a dramatic rescue, when, with £76,000 worth of equipment already under shipment to Dublin from the UK, the deal Mr Fehilly had worked out to rent a factory for his enterprise fell through, and he found himself without premises.

The IDA found him his present building at Cherry Orchard Industrial Estate in eight days, the equipment was moved in, and his new company was born.

Three weeks later he was shipping a load of twenty industrial fans to Britain.

Britain will be his main market, as it is the one he knows best. He has set up a marketing and warehousing operation there, with a team of sales representatives and an office staff and he divides his time between Ireland and Britain keeping an eye on both operations.

His export target is £1 million by 1983 and then he hopes to be employing 70 people. At the moment there are 16 people working on the shop floor and five in administration.

His family are as keen on the move home as he is, although, because two of his children are at university, and one is still at school, he has postponed setting up a home here for a year so to allow them to finish their courses.

Declan Fehilly’s company is Industrial Fan & Blower Co (Ireland) Ltd, Unit 42 Cherry Orchard Industrial Estate, Dublin 10. (Tel: 268299/268292/268220).

Two of the new centrifugal fan range from Industrial Fan and Blower Co. (Ireland) Ltd.

HOT NEWS.

Taney Distributors,
Unit 4,
Riversdale Industrial Estate,
Bluebell Avenue,
Dublin 12
Tel: 508120
Telex: 24147

Having been appointed distributors for the Rayburn range of heating appliances which includes the new Rayburn 80, as illustrated.

Pat Gaffney, Managing Director or Andrew Kavanagh, Heating Manager are just a phone call away.

LOW OVERHEADS.

Irish Agents
IRELAND
DAN CHAMBERS Ltd.,
57/56 North Brunswick Street,
Dublin 7
Tel: 720671/720648/720655
BELFAST
ENVIRONMENTAL SUPPLY Co.,
BELFAST 54429

One look at the European roof units tells you they’re keeping a low profile.

One look at the specification tells you they’re cut above the competition.

To start with, strong, light gauge aluminium cover that’s maintenance-free and corrosion resistant. And all powered by the superb Euroseries axial flow power unit that integrates the precision made aluminium impeller and external rotor motor for silent, vibration-free running.

Our units suit the demand for units that come in the two largest sizes – 800mm and 1000mm and are packed in a one carton ready for action.

Fans come in a separate carton so installation is fast and simple, and incidental work does not assume the two largest models because you’ll be hard pressed to manhandle them on site.

You can’t ask for more than that. Get the low down on Europak today.
**CIBS Programme for Remainder of 1980/81 Season**

**Saturday 7 February**
Visit to Allied Irish Banks' Headquarters, Ballsbridge

**Thursday 19 February**
One Day Symposium on Practical Energy Conservation Strategies, at the IHVEX/ILECTRA, RDS, DUBLIN

**Thursday 26 March**
Building Automation Systems, by G. Curran

**Thursday 9 April**
Annual General Meeting and Annual Student Awards

**Friday 15 May**
Golf Outing and Ladies' Evening at the Hermitage Golf Club

Meetings will be held at the Institution of Engineers of Ireland, 22 Clyde Road, Dublin, 18.00 for 18.30 unless otherwise stated.

Further details can be had from the Hon. Secretary, M. D. Buckley MCIBS, e/o Walker Air Conditioning Ltd., Dublin Industrial Estate, Finglas Road, Dublin 11. Telephone: 300844/307421 (office) 884147 (home).

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**Hitachi Chemical Co. Ltd.**

U.K. importers/sole distributors of solar heating collectors and devices for industrial and domestic application require stocking dealers throughout the Republic of Ireland. This is a superb low investment opportunity to acquire county/area franchises in the growth market of energy conservation with the products of one of the world's leading manufacturers in this field.

Enquiries are welcome from genuine firms and business houses allied to the heating, plumbing, ventilating, air conditioning and building professions who have an existing organisation capable of marketing/installing and providing first class after sales service behind this world brand name product.

Write in first instance to the Marketing Manager.

Riomay Heating Ltd.
1a Whip-Ma-Whop-Ma-Gate, The Shambles, York.
Y01 2BL.

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**Meet the energy team - Carlyle from Walker -**

- The unbeatable range of energy miser heat pumps
- Heat reclaim chillers with multi-compressors for even lower running costs
- Moduline VAY systems with inherent self-balancing savings
- 50 DF chiller, the boss of the Modupac VAY system
- Unikal computer programme analysis to assist you in selection of the most energy efficient system

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**THERMPLANT IN CORK**

Thermplant (Ireland) Ltd have announced the opening of their new offices in Cork and the appointment of Mr. Noel Howard as Manager for Munster. Thermplant (Ireland) specialises in the fields of industrial boilers, energy and waste heat recovery, coal handling and firing and gas control and regulation equipment. Mr. John Hoey, Managing Director of Thermplant commented that with this new office in Cork, Thermplant would be in a position to offer a quicker and better service to industry in the Munster area. With energy costs playing such an important role in industries very survival, it is imperative to be able to offer quick, effective service on a local basis. Mr. Howard has had a number of years experience in the industrial heating and energy fields before joining Thermplant (Ireland).

The address in Cork is Thermplant (Ireland) Limited, Kilcoolsbail, Glanmire, Co. Cork. Tel: (021) 822224. Telex: 32360.
In line with Bentone Verken’s reputation as one of Europe’s leading oil burner manufacturers constant development and research is being undertaken to meet the varying requirements of the heating industry.

Two problem areas have come to the fore in recent years — the smallest and the largest ranges. Both problems have the same cause, the variable oil quality on the European market. This is not just a question of waxing in cold weather, of which we are all familiar, but a variation in specific gravity and viscosity on various markets.

To overcome the 50,000—100,000 Btu/hr difficulties pump pressures are now being raised to force atomisation through the nozzle. These pressures can be as high as 180 or 200 p.s.i., which causes more noise and wear, and also increases the throughput of oil to boilers which then have to be operating on full output whereas many users would normally want to use about 60% of their boiler capacity. Using the Bentone FCF2 nozzle sizes can drop to 0.5 with a pressure of 100 p.s.i. (the maximum pressure allowed is 130 p.s.i.). With this nozzle size pressure and the atomisation and combustion are perfect giving a high CO2 and, as the boiler is being fired at somewhat below its max rating, a much lower stack temperature. Modern boilers with their slight over-pressure and small combustion chambers are particularly suitable for such installations although there is a dual fuel 114,000 Btu boiler in Dublin firing for the last three months at 12/4% CO2 and 165°C net with a 55 U.S. gallon nozzle at 120 p.s.i. Modifications for burners back to 1973 are available.

The increase in heavier oil viscosities and from the companies find the disappearance of the 200 second grade creates a need for more sophisticated larger burners.

Bentone heavy oil burners can now fire up to 1250 see oil. New preheaters of 100% output and volume, larger solenoids, redesigned nozzle assemblies and gaskets, preheats in fuel pumps and recirculating impulse relays to avoid any possibility of internal line have been introduced.

Pumping units with preheaters, double filters and auxiliary automatic change over pumps are also available. Further information from Precision Heating Equipment Ltd., Santry, Dublin.

Our photographer took the accompanying picture on a recent assignment to the Sandyford Industrial Estate, Dublin where the changing times in the heating trade were very obvious. It is interesting to note how long ago this picture would have shown an oil fired air heater but now the picture shows an atmospheric gas fired heater with an atmospheric burner on LP Gas (Propane). Many new factories now choose LPG as they fear they may be let down on oil supplies and LPG can also be used by the companies fleet of cars and vans.

Other advantages of using LPG include the fact that it is a very clean fuel and is simple to operate. Having praised LPG that does not mean that oil is no longer an acceptable fuel as there are many who feel that the market will remain stable for some time to come and oil will be easily available though at a premium price.

For those interested the picture is one of a Powermatic CA 300 gas fired air heater supplied by HCD Ferguson and installed by Murray Bros. Building Services Contractors.

CHANGING TIMES

FLUE FAILURE AND FLUE STRUCTURES

Premature failure of some flue linings during the past few years has emphasized the need for more rigorous design procedures, more comprehensive inspections, and the introduction of quality control.

To provide up-to-date guidance on these and other aspects of the problem, BSI has now published a new code of practice, namely BS 5854 Flues and flue structures in buildings.

BS 5854 presents the latest information on current lining materials and makes recommendations for the design and construction of flue linings and structures that serve boilers and air heaters burning solid, liquid or gaseous fuels and having outputs of 45 kW and above. Linings are considered from a structural viewpoint (e.g. when subjected to self-weight, wind and thermal loading).

BS 5854 also outlines the design area requiring collaboration between the structural engineer and the building services engineer and provides the necessary design criteria, suggested procedures and methods of design and construction as well as guidance on the selection of suitable materials.

Typical examples and calculations are given for demonstration purposes but do not preclude other methods of computing satisfactory designs. References in the code to the ‘chimney height memorandum’ relate to the HSMO publication ‘Chimney heights’. Second edition of the 1956 Clean Air Act memorandum which deals with the calculation of chimney heights likely to be suitable for most solid or liquid fuel appliances.

Copies of BS 5854 may be obtained from BSI Sales Department, 101 Fentonville Road, London N1 9ND. Price £19.50 (BSI Subscribing Members £9.75 Sterling).

Abbeyleafe Water Scheme

A £1 million project for Limerick County Council, to construct a water supply scheme for Abbeyleafe, begins on January 5th. Main contractors are McIlvory (Civil Engineering) Ltd., who will construct a new intake, treatments works, reservoir, and main pipeline.

The scheme will take 15 months to complete, and will employ 30 local people during construction. Consulting engineers are Partners, Messrs. M.C. O’Sullivan, of Cork.

IRISH PARTNER

An international group with a highly successful manufacturing and sales record in Ireland (our Irish sales were extensive last year) seeks an arrangement with a suitable company with a heating and ventilating background to work together towards a profitable conclusion. If you are the principal of a company, or a specialist agent, seeking to extend your operations with the co-operation of a successful manufacturer please contact us. We will supply you with full and confidential information prior to a meeting in Dublin.

Devine Fleming & Associates Ltd.,
Campaign House, 22 Kingsley Park Terrace, Northampton NN2 7BG.

News

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The latest in the coal business chase to become the "real alternative" to CDL. I believe it is Tony O'Reilly of Heinz tinned foods fame, the story in the trade is that he is going to use the ill-fated dock facilities of Guinness at Alexander Basin in Dublin to unload the beans, sorry I mean coal, or maybe I could have been right first time if he decides to take in anthracite which uses such names as beans, peas and nuts to describe grades and sizes of the fuel, anyway the story seems to be a strong one and who knows it may even prove to be true.

BELT AND BRACES

In a recent press release from the long established coal manufacturers O'H. Ltd it lists a certain John Kelly Ltd of Belfast as a stockist and distributor for their product in Northern Ireland. Could there be two John Kelly Ltd's at 23 Station Road, Belfast or is it one and the same company who have recently taken over the entire Aerocowt operation. Is this a case of wearing a belt as well as braces?
PIEPWORK AND DRAINAGE

PIEPWORK AND DRAINAGE

In common with the building industry in general, manufacturers of pipework and drainage have experienced a considerable downturn in business over the past year but developments in pipe sizes and accessories are still taking place.

The small diameter market particularly has gone through a valley period, with private housing schemes all but at a standstill, although local authority housing schemes have continued together with some land drainage. However, the serious slump in farming incomes over the past two years have inevitably taken their toll on agricultural investment programmes.

The large diameter sector has also suffered with civil engineering projects not so much being cancelled as deferred. Drawings are done and are simply awaiting the green light for them to be sent out to tender.

Some are hoping that the recently announced estimates for the public services

Plastics

The impact of PVC piping systems in the building and construction industry since the 1950s has been dramatic and contributed beneficially to the industry in terms of cost, labour saving and versatility. An early pioneer in PVC pipe manufacture, Wavin Pipes, also made the important decision to develop and manufacture its own pipe fittings so that today it is the only Irish manufacturer offering complete pipe systems and manufacturing 95 per cent of its own fittings.

These durable, light and easy to install pipe systems cover a full range of applications including watermains, sewer pipes, ducting, land drainage, soil and waste pipes, domestic plumbing and other special applications. It was in fact the availability of Wavin’s PVC watermain that made the rapid expansion of group water supply schemes possible. Wavin of course also manufactures a high and low density polyethylene piping systems.

The good chemical resistance of PVC pipes, its resistance to corrosion, light weight, easy jointing, smooth bore and therefore less resistance to flow of water, and longitudinal flexibility give PVC a unique combination of advantages, in addition to its low energy content in comparison with other piping materials.

Wavin’s dominant position in servicing the construction industry has been maintained through a constant up-dating of production and its introduction of new products to meet the industry’s needs. The company that was first to develop a plastic gulley trap and access junction has also kept ahead in other areas. Recently, it has researched and developed further products which it has added to its expanding range.

Wavin’s Research Department has come up with a revolutionary new polyvinylchloride pipe. Combining structural and material dynamics, a series of cylindrical holes run longitudinally throughout the pipe wall. The result is a strong pipe of uniform stiffness and with better shock resistance. It is jointed in the normal way and consequently leak-proof. It is lighter and therefore easier to handle, and is up to 15% cheaper. It is undoubtedly the pipe of the future. Wavinol has been widely tested and used, and also has the French Avis Technic and Agrément SP certificate and the Dutch KOMO certificate.

Wavinol polyvinylchloride pipe.

Whatever the conditions, from unstable soil, peat, heavy clay, rocky to firm natural soil, Wavin has the system to carry out effective drainage. The new Wavinol coil comes in continuous 200 metre coils and can be used with automated continuous moving or push on joints for plastic systems and the various quick-jointing systems for asbestos cement, clay and cast iron pipes resulting in selection being more than ever based on material price and long-term performance rather than installation ease and cost.

Some months ago, the Marley technical design team, knowing the problems of builders working to schedule and faced with the task of matching waste shafts of various sizes to a trap which more often than not...
The advantages of UNIDARE/TERRAIN solvent weld

Strength
Solvent weld is not a glue. It welds. And that means the joint is as strong as any other part of the system. Unlike rubber ring jointing it is virtually stress free.

Simplicity
Solvent weld means a soil stack can be pre-assembled. That means there is little on-site fixing to do. And that leads to speed and efficiency.

Fewer fittings
Six fittings and solvent weld can build a soil stack. That cuts down on fittings. And that simplifies the plumber's work.

Ease
Apart from fewer fittings, the job's much easier. Simply cut, clean, coat and assemble. And the job's done.

Compact
Solvent welded fittings are compact. And that means more space for the plumber when he's in a tight spot.

Versatile
There is a whole range of Terrain fittings to choose from. So a solvent welded stack is both economic and versatile.

Safety
Terrain solvent welded stacks provide controlled expansion. They're quiet too. So once the plumber's fixed it he can forget it.

Professional
Terrain themselves use solvent weld on their prefabricated stacks. 20 years' experience has shown them that it provides the best all round system. And it's well accepted by the specifier, installer and customer. Solvent weld is a professional technique. Work with solvent weld and be with the professionals!
Concrete Pipes Ltd., supply products for the complete range of underground pipework from land drainage, domestic drainage as well as main drainage and sewerage systems. In addition to the main works at Naas there are plants at Mungret, Co. Limerick, and Ballisodare, Co. Sligo.

Flexible joint pipes with (G) tear shaped joint rings are manufactured up to 1800mm to comply with BS 556, together with jointing olls, splays, channels, bends and saddles.

In addition to street gullys and deep manholes, Concrete Pipes supply the Davron range of precast concrete manholes, house inspection chambers, and septic tanks as well as the Davron long length flexible pipe jointing equipment.

Further details from Concrete Pipes Ltd., Maudlin Works, Naas, Co. Kildare, (Tel: 045 9355).

Vitrified Clay

Flemings Fireclays Ltd., the manufacturers of Irish vitrified clay sewer pipes, have now increased the range of diameters available. In conjunction with the Hepworth group of England, who are the largest vitrified clay pipe manufacturers in the world, they are now able to supply pipes up to 800mm in diameter. In the very near future the range will be extended to include 900mm and 1000mm diameter pipes.

These large diameter pipes are available in lengths of up to 3 metres which is a far distant cry from the days of the one yard lengths of earthen ware pipes. The large diameter pipes comply in all respects with the test requirements of BS 665 and Part 540 1971 and the flexible joints meet all the functional requirements of BS 665 and Part 540 2.72. The whole range is in all respects capable of satisfying the relevant requirements of BS Cold of Practice 1956. The range of diameters now available is 100, 150, 225, 300, 400, 600, 700 and 800mm.

Since the ancient times vitrified clay has been accepted as a material which neither time nor the elements could corrode. Archaeological expeditions have unearthed pipes buried in aggressive soils for thousands of years and yet in good condition as the day they were laid. Those were pipes of vitrified clay which had withstood the test of time. Today the durability of vitrified clay is unquestioned and its proven reliability places it on its own when it comes to choosing a material which is ideal for the conveyance of water and domestic effluents. This is confirmed in the construction scene of today where one can see clay pipes in constant use throughout the country whether it be a local authority housing contract or a vast complex chemical plant. The recently completed Wilton Hospital in Cork and the present Beaumont Hospital under construction have vitrified clay sewerage pipes installed.

Full technical literature in relation to clay pipes available on request from Flemings Fireclays Ltd., The Swan, Athy, Co. Kildare. (Tel: 0307 25513, Telex: 331005).

Plastics

Unidare, one of Ireland's largest manufacturing companies, markets Termain Treasures systems of both soil and waste and rainwater applications. The Terrain soil, waste, traps, manholes, pipes and connections are designed in conjunction with the relevant authorities to meet the requirements of the appropriate standards.

Josefise, the revolutionay multi-purpose one-piece gully trap which has been specifically designed in PVC to provide a fast, economical answer to the widest variety of on-site applications.

The complete one-piece gully, manufactured at the company's plant in Lucan, Co. Dublin, incorporates Boss upstands to suit waste, rainwater, and underground drainage pipes. The product incorporates a wide range of seated and socketed fittings for use with plain ended pipe and solvent welded or seal ring joints. The product is provided for expansion joints to accommodate thermal movements, and there are accessories for connection to all other materials... CI, GVC, and plastics below-ground drainage.

The Terrain half-round or square uPVC rainwater systems are designed for eficient disposal of surface water from all low and high rise domestic buildings. The system provides a wide range of spigot/socket fittings for use with plain ended pipe, and socketed gutter fittings for use with plain gutters. In addition, there is a range of fittings for connection to other materials. Both square and half-round rainwater systems are designed for on-site use.

Terrain also manufacture a wide range of floor and balcony outlets in uPVC. For further information contact, Lindaray Limited, Jamestown Road, Finglas, Dublin 11. (Tel: 771800).

Cast Iron

Cast iron underground drain pipes, soil pipes and fittings are today recognised worldwide as essential for the construction of all drainage and soil systems. Their accepted use beneath buildings, as well as on roads and on overflows are all designed to meet the requirements of the various specifications. Each system comprises a wide range of socketed fittings for use with plain ended pipe and solvent welded or seal ring joints. The system is provided for expansion joints to accommodate thermal movements, and there are accessories for connection to all other materials... CI, GVC, and plastics below-ground drainage.

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Heating Systems

W & L Engineering Ltd. direct fired air heaters from 26,000 kcal/h up to 1,000,000 kcal/h.

Product Systems

PV Direct fired air heaters from 26,000 kcal/h up to 1,000,000 kcal/h.

Unit Heaters

DV extract fans standard types for horizontal and vertical discharge. Unit heaters with various scan pipe gauges up to 256,000 kcal/h.

LH (The above products manufactured by Tim Taggart Ltd.)

PV Ductwork

Waste heat recovery up to 80%
HEAT RECOVERY
This is the second in a series of articles on the utilisation of heat from the high pressure side of a refrigeration system and was written by Ole Larsen B.Sc., who is an engineer with Danfoss Ltd.

UTILISATION OF HEAT FROM HIGH PRESSURE SIDE OF REFRIGERATION SYSTEMS

PART 2

Planning of heat recovery systems

Quite a number of heat recovery systems have been installed at the present time, both in the commercial sector (supermarkets, etc.) and in the industrial sector (e.g. slaughterhouses). However, it is not everywhere that the system works quite as intended, which is, as a rule, due to the fact that a sufficiently thorough analysis has not been made of the conditions which are of importance to the economy and sizing of the systems. The prerequisites of a heat recovery system are consumption of cold and consumption of heat. If these consumptions do not occur at the same time, there will also be a need for heat accumulation.

4.1 Refrigeration system condenser output

The condenser output, and hence the refrigeration system condenser output on the cold output of the refrigeration system, is necessary to assume that part of the input will be converted into heat in the electric motor and emitted to the surroundings. From a purely practical view of the point, the power supplied to the refrigeration system can be put at 0.7 times the input from the mains supply.

A curve showing the condenser output relative to the outdoor temperature can be traced for every single refrigeration system on the basis of the analysis. The curve can be, for example, as shown in fig. 9. However, the load will in many instances fluctuate so much that it will be more correct to make a curve for maximum load and one for minimum load respectively of the refrigeration system (fig. 10).

The output of the refrigeration system fans depends on the operating period of the evaporator.

The heat supplied through open doors depends on the following factors:
- The positions of the doors (leading into the open or to other rooms).
- For how long a time the doors are open.
- Whether special precautions have been taken to prevent an excessive air change; for example, in the form of air curtains or revolving doors.
- The output of the refrigeration system fans depend on the operating period of the evaporator and will, therefore, usually be lowest in winter.
- The heat emitted by lighting, electric motors, persons, etc., will often be limited to normal daytime working hours, and it can be in some cases be dependent on the time of the year.

As regards the heat from cooled provisions, it may also be subject to large variations both within the 24 hours of the day and within the year.

An example which can be mentioned is a slaughterhouse with maximum load in the daytime and early in the evening, while the load decreases heavily late in the night when the cooling of the meat is almost completed, but on an annual basis, the variations are not very large. If, on the other hand, it is a matter of cooling and freezing of typical seasonal goods such as berries, fruit, and other vegetable products, large variations may occur in these systems on an annual basis.

The input from the electric compressor motor depends on the operating time of the refrigeration system, and on the pressure conditions in the system. Normally, the input will, therefore, be lowest in winter.

To determine the power supplied, it is necessary to assume that part of the input will be converted into heat in the electric motor and emitted to the surroundings. From a purely practical view of the point, the power supplied to the refrigeration system can be put at 0.7 times the input from the mains supply.

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The need for room heating increases when the outdoor temperature falls, e.g. as shown in fig. 12, while the consumption of hot water is, normally, independent of the outdoor temperature (fig. 13).

Similarly, there will also be variations within the single 24 hours, which is, normally, not taken into account in the case of room heating; however, with the exception of cases where night set-back of the room temperature is used. On the other hand, it can be necessary in the case of water heating to examine the variations within the 24 hours in order to determine the size of an accumulation tank if required.

4.2 Heat consumption analysis

If it is desired to analyse the heat recovery possibilities in the refrigeration system, it will, of course, also be necessary to analyse the heat consumption, no matter whether it is for room heating, water heating or process heating of one kind or the other. Only then will it be possible to determine the type of system which will give the proper combination of maximum heat recovery and optimum economy.
District Heating the Northern Ireland District Heating Association gave an audio visual presentation to the City Council in the Belfast City Hall. Speakers at the presentation included R. T. Sayer, Chairman of the D.H.A. Management Council, W. R. Orchard of the D.H.A. Technical Committee and Jack Birch, Chairman of the D.H.A. Parliamentary and Local Government Committee also present was Frank Cogan, Chairman of the N.I. Branch of the D.H.P.

Instead of holding their Annual Dinner in Queen's University Great Hall, the Institution of Mechanical Engineers decided this year to try the less academic atmosphere of the Culloden Hotel.

The dinner, held in the Culloden Hotel, had its usual maximum support with all sections of the trade being represented. Guests included architects, leaders of industry and of course a large cross-section of local and Government officials.

The "official" party included the President of the Master Plumbers Association, the President of the R.S.U.A. and the Chairman of the Institute of Energy.

Guest speaker was Mr Walter Love, the well-known B.B.C. presenter.

More than 50 representatives of the heating trade, including merchants and contractors, joined together to enjoy the delights of Jersey in the Channel Islands as the guests of Thorn Heating Ltd.

Continuing the promotion of the "Panda" range of boilers which has helped Thorn obtain 20% of the Northern Ireland market, the trip was organised locally by the Philip Johnston area manager and the party was hosted by Mr J. Sweet (Managing Director).

Other personalities attending included Mr Ray Barrett, Marketing Manager, the redoubtable Mr Ed Martin, Northern Sales Manager and Mr Syd Taylor, Publicity Manager.

It was announced that by the autumn of the next year, Thorn would have a solid fuel boiler, which should prove a welcome addition to the solid fuel market.

In furtherance of their campaign of the economic benefits of C.H.P.

* At the Northern Ireland branch of the CIBS annual dinner were (L-R): J. Gura; T. Stewart, (Pres. of Master Plumbers); V. Robinson (Pres. of R.S.U.A.); T. O'Hare; and S. Ferguson (Chairman — N.I. CIBS).

* Pictured at the CIBS annual dinner were (from L-R): J. Gura; T. Stewart, (Pres. of Master Plumbers); V. Robinson (Pres. of R.S.U.A.); T. O'Hare; and S. Ferguson (Chairman — N.I. CIBS).
The success of the function was never in doubt from the moment of the arrival of the first guest to be received by the N.I. Chairman, Mr. Charles Hicks.

Mr. Hicks had the pleasure of welcoming among the guests the President of the Institute, Mr. C. Heldrew and his wife, who, the following day, were to attend the annual dinner of the Southern Branch.

Following the serious speeches, Mr. John Scott, Chairman of the N.I. Branch of the Institute of Civil Engineers, brought the evening to a close with an excellent witty speech, expressing the thanks of the guests.

Engineering was well represented among the N.I. recipients in the New Years Honours list, with the Managing Director of Short Bros. & Harland Ltd, Dr. Philip Foreman receiving a Knighthood.

Mr. V. A. Cooke, Chairman of Henry R. Ayton Ltd with offices in Dublin and Belfast received the Order of the British Empire.

Satchwell Sunvic of Motherwell & Slough have appointed Mr. R. Malloy, Sales Engineer for Scotland and Ireland. Mr. Malloy will be based in Scotland.

Mr. Peter Shaw, an architect with Building Design Partnerships has been appointed Manager of their new Derry office.

Mr. Shaw has been with B.D.P. for some years and did his training at the Edinburgh College of Art School of Architecture.

Mr. Bernard Wright, National President of the Heating and Ventilating Contractors Association was the special guest of the Northern Ireland Region at their lunch at the Drumleir Hotel.

Mr. Wright was welcomed by the N.I. Chairman, Mr. George Stewart, also welcomed was Mr. Geoffrey Cutting, Director of the H.V.C.A. Arrangements for the function were carried out by Mrs. Myrtle Huntley, N.I. Regional Secretary.

The air conditioning products division of Toshiba (U.K.) Ltd have appointed B.L. Refrigeration & Air Conditioning Ltd of Albertbridge Road, Belfast to be their N.I. distributors.

Euroweld Ltd the Belfast Harbour based engineering firm announce that its share capital has been taken over by Irish Bridge Ltd.

The company, which specialises in the construction of pressure vessels particularly for the L.P.G. and chemical industry announced redundancies just before Christmas, some time rumours have been circulating as to the company's future.

The action of Irish Bridge means a break in the connection with the American company PX Nuclear Ltd who previously controlled the company.

Irish Bridge is a privately owned group of companies who have had outstanding success in the North Sea "off-shore" market and more recently they have completed a number of major installations in Ireland. The four divisions of the company are Irish Bridge Offshore specialising in off-shore work, Irish Bridge Energy involved in gas and oil exploration, Irish Bridge Teoranta for Eire projects and Irish Bridge Northern Ireland. At present employing 250 people Euroweld recently completed a major extension and is ideally suitable to make a major impact on the U.K. and European pressure vessel market.
Requirements of the Fireplace and Efficiencies

The Solid Fuel Advisory Service in the UK have recently issued the following guidelines for fireplaces which are equally applicable in Ireland.

**Constructional Hearth:**
The constructional hearth is a slab of concrete forming a barrier between the fire and combustible parts of the house such as the joists and floorboards. It must be 127mm (5") thick and extend not less than 508mm (20") beyond the front of the chimney breast and a minimum of 153mm (6") beyond each side of the builder’s opening.

**Superimposed Hearth:**
This is a decorative hearth manufactured from ceramic tiles, brick, natural stone or other non-combustible material and placed on top of the constructional hearth. It must be no less than 48mm (1 3/16") thick and must project into the room sufficiently to extend to a minimum 304mm (12") distance in front of an open fire or roomheater.

**Back Hearth:**
This fills in the height differences between the constructional hearth and the superimposed hearth. It must be level with the superimposed hearth and made with a mix of 4 parts sharp sand to 1 part cement mixed with water. A strip of asbestos rope must be placed between the back hearth and superimposed hearth to create an expansion joint. The mix must be allowed to harden before the fireback is positioned.

**Size of Flue Required:**
Of necessity there must be a relationship between the area of the fireplace opening and the cross-sectional area of the flue through which it passes must also be taken into account.

The more highly controllable the fire, the greater the efficiencies attainable. However, evaluation of the efficiency of a fire alone can be misleading, for example a powerful radiant heat source creates comfort conditions that cannot be measured adequately in terms of efficiency.

It should be remembered that while an electric fire can work at an efficiency of 100%, in the process of generation and transmission of the necessary electricity, some 60% of efficiency has been lost making electricity comparable in efficiency to other fuels.

Some typical solid fuel efficiencies:
- **Open fire without boiler:** Burning coal 26%; Chimney gain 3%; Total 30%
- **Burning Smokeless Coal 37%; Chimney gain 3%; Total 40%**
- **Burning Smokeless Coal 47%; Chimney gain 5%; Total 50%**
- **Open fire with high output boiler:** Burning coal 47%; Chimney gain 3%; Total 50%

**WHO REPRESENTS WHOM? 1981**

The publishers of the IRISH ELECTRICAL INDUSTRIES REVIEW are compiling a directory of manufacturers, agents and distributors in the electrical trade. Its lists of suppliers of electrical goods to the market in Ireland will make this yearbook a valuable reference work for wholesalers, retailers and contractors alike.

Questionnaires have already been distributed to principals, agents and distributors and these should be returned immediately. Additional copies of the questionnaire may be had on application to:

**Who Represents Whom?, Irish Trade & Technical Publications Ltd., 5/7 Main Street, Blackrock, Co. Dublin, (Tel: 885001). THERE IS NO CHARGE FOR LISTINGS IN WHO REPRESENTS WHOM?**

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*Source: Building Services News, Vol. 20, Iss. 2 [1981], Art. 1*
A new family of Carlyle energy-saving heat reclaim machines capable of extracting waste heat from any source of warm water for use in heating commercial and industrial buildings is now available from Walker Air Conditioning Ltd.

The new product, called the Heat Machine, is capable of delivering up to 4 kW of heat output for every 1 kW of electric input, thereby offering significant energy and cost savings over conventional oil and electric boilers.

The Heat Machine operates by removing heat from medium temperature water (10°C to 45°C) and through use of a refrigeration cycle, raising its temperature to usable levels (50°C to 70°C). Typical water sources include pot water, condenser water from other refrigeration machinery, waste water from industrial processes or waste water from dishwashers in hotels and restaurants.

The Centair control function. Control actions include proportional (P), proportional plus integral (PI) and P+I cascade control, giving full adjustment of the P band, integral action time, schedule and authority, limit values and remote set points. Gauges can be incorporated in the cases to give readings of the measured value and output conditions.

Sauter products are available from Dwell Controls Ltd.

**NEW PRODUCTS**

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**CENTAIR CONTROLS**

The Centair pneumatic range has been specifically designed for heating, ventilating and air-conditioning plant control by Sauter Automation Ltd.

The controllers are suitable for surface mounting or flush panel applications which allows easy maintenance on site. Single or multi-input units are available which work on a leverless diagrammatically constructed in a miniaturised system having independent elements for each control function. Control actions include proportional (P), proportional plus integral (PI) and P+I cascade control, giving full adjustment of the P band, integral action time, schedule and authority, limit values and remote set points. Gauges can be incorporated in the cases to give readings of the measured value and output conditions.

Sauter products are available from Dwell Controls Ltd.

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**KEDDY SUPERFIRE WITH BACKBOILER**

Keddy have added a back boiler option to the Keddy Superfire. The back boiler version of the Superfire is made in 6mm thick steel plate and conforms to BS 3377 and has two hot water outlets and two inlets, all for 1" diameter pipe. Each back boiler is tested at 80 psi and is guaranteed for five years. The Keddy backboiler features a twin flueway system which maximises the surface exposed to heat and gives the boiler a potential output of 8 kW upset, plus further 2 kW in radiant heat. Like all Keddy boilers the air supply is drawn from outside the room in which the fireplace is sited to ensure good combustion of all solid fuels, and the elimination of unwanted draughts. The raised hearth also prevents “cold feet” in the sitting room.

Keddy stockists are C. P. Gloneys Ltd, Lifdy Bank, Dublin 8.

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Industrial Boilers Service and Spare Parts

Manufacturers of
- Steel Chimneys, Condensate Tanks, Pressure Vessels, Incinerators
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Agents for NEI Thompson Cochran Ltd

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**LOW COST pH METER**

Model 7015 is compact, easy to read and simple to use, with calibration, temperature and slope controls on the front panel for easy access. The 0-14pH analogue scale is also calibrated for millivolt readings, for use in redox titrations. A robust BNC socket eliminates meter failure due to input socket breakdown resulting from poor connection and disconnection of electrodes.

Model 7015 is a mains instrument supplied complete with robust plastic bodied electrode and assured buffer sachets.

Further information from Industrial Instruments Ltd, Dublin and Cork.
NEW PRODUCTS

Wolf Klimatechnik

Products

Wolf Klimatechnik Air Handling Units available in ten sizes up to 100,000 m³/hr (9,000 cfm) fulfill every demand of modern ventilation systems.

The KG AH-Unit range is designed for easy "mix and match" of the available modules as fan, filter, mixing, heating, cooling or washer section to suit every requirement.

Fans can be either forward or backward facing curved impeller blades. Cassette or bag filters are available in various specifications to suit demand. Filter sections can be combined with washing or exhaust air systems and dampers. Heating coils, easily removable, can be selected for LPHW or Steam operation. The washer section can be delivered in stainless steel or GRP construction.

Sound level control is achieved with attenuators which are also part of the Wolf KG AH-Unit System. Supply and exhaust entries can be positioned to suit individual installations. Each section is insulated with abrasion resistant mineral wool to avoid heat loss or noise transmission. Units for external mounting are in weather-proof design. All units are available in double skinned construction on request.

Newly introduced sections and dampers.

VELOCITY MONITOR

The Edralarm is the latest instrument to emerge from the technical team at Airflow Developments Ltd. This device is a permanent air flow monitoring anemometer which, when connected to a suitable alarm, will give a visual/audible warning immediately the pre-set velocity limit is passed.

Edralarm has been designed primarily for chemical and medical laboratories and can be used in clean rooms, fume-cupboards, glove-boxes, etc., where air flow in a known direction exists. It is also ideal for applications where a high standard of ventilation control needs to be maintained to comply with Health and Safety at Work Acts.

The instrument runs from a 24V mains supply and is available in two analogue versions suitable for velocity ranges 0.25 - 1.25 m/s (50 - 250 ft/min) and 0.25 - 10 m/s (50 - 2000 ft/min).

Further information from: McKenna Ireland Ltd., Ardee House, Blanchardstown, Dublin (Tel: 213988 Telex: 25671).

NEWS EXTRA

New Taney Agencies

Taney Distributors have been recently appointed agents in Ireland for Benrad Ltd., of Terborg, Holland. Benrad manufacture a range of domestic and Industrial balanced flue heaters and a full range of industrial blow warm air heaters suitable for Propane or Natural gas. Both ranges of heaters have been fully approved by Calor Kosangas Ltd., and are now available ex Dublin stock at extremely competitive prices. Details of the range of heaters available are as follows: Benrad balanced wall heaters: From 7,200 Btu/hr to 36,000 Btu/hr. Benrad warm air heaters: From 40,000 Btu/hr to 340,000 Btu/hr. Taney Distributors have also been appointed sole distributors in Ireland for the Aga and Rayburn range of heating appliances. Mr. Andy Kavanagh, who has considerable experience in the solid fuel business will be responsible for the promotion and development of this market.

Rayburn have a complete range of heating appliances including the- Rayburn 80 series, Rayburn Rhapsody, Rayburn 70 series, Rayburn No 4 series, Rayburn Prince 76 series, and the Rayburn Super Series.

They also have a range of open fires including the Rayburn Open Fire, The Lesham Fire, The Sefoton Full View Fire, and the Lowburn Fire.

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