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H & V News plus Hevac 80 Exhibition preview

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Coal and Industry Conference

- CIS Diploma Course
- CHS Keeling Link-up
- Indigenous Fuels Seminar
- Air-Ions
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Air Ions and Their Effects.
At the Burmah Castrol table were Joe & Ann Karney and Noel and Fannoula Curran.

Well known contractors Christy Kane and Joe Hogan pictured with their wives at the IDHE Dinner.

At one of the larger tables were (L-centre) Mrs. P. Hogarty, Mr. P. Hogarty, Mrs. Brendan Bracken, Gerry Phelan, Mrs. P. Waters, (R-centre) Brendan Bracken, Mrs. P. Phelan, Mr. P. Phelan, Mrs. G. Phelan and Mr. P. Waters.

Enjoying Veba hospitality were: Mr. and Mrs. Eamonn Cullen, Mr. and Mrs. B. Allen, Mr. and Mrs. J. O'Toole, Mr. and Mrs. Martin Foster, Mr. and Mrs. V. O'Reilly, Mr. and Mrs. Michael O'Connor, Mr. Roy Toner and Miss B. Marmon.

A happy group from Oil Fired Services were: (L-R) Chris Furlong, Colin O'Connor, Gertrude O'Connor, Margreth Purcell, Frank Purcell and Mary Furlong.

At the Myson table were: (L-R) Ciarán McDermot, Vivienne McDermot, Tony Callaghan, Frances Callaghan, Mary Monahan, Tony Monahan, Violet Beattie and Alan Beattie.

Although somewhat down in numbers from previous year this years IDHE was without doubt the most successful outing for many years. Spot prizes were in abundance and every table got at least one or two prizes. The venue, the Gresham Hotel, laid on an excellent meal and good entertainment.
Choose the elegance of

IRLIN

bathroom fittings

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

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

Sanbra Fyffe, Ltd., Conex Works, Santry Avenue, Dublin 9. Telephone 379291 (10 lines) Telex 5325
HASTIE GROWTH

Alan Nicholson, of Hastie Insulation (Ireland) Limited, who with fellow board members hosted a reception in Dublin recently to celebrate the continued growth of the insulation contracting company in Ireland.

At the reception, attended by representatives of major Irish businesses, he said that Ireland was paying greater attention to the economy for the company, a subsidiary of Fibreglass Limited, one of the largest manufacturers of insulation in Europe. Hastie Insulation has long had an established reputation in the UK for specialisation in petrochemical and process industries. Since beginning operations in Ireland, the company has completed contracts worth several million pounds, the most notable of which was the Platin II factory at Drogheda for Irish Cement. The board of Hastie Insulation (Ireland) Limited consists of Alan Nicholson, Leslie Jones and John Connell.

Unimack Ltd have moved to 70 Lr. Mountdown Road, Dun Laoghaire, Co. Dublin, Tel: 801964/5/6.

Unimack are agents for such products as Beeston Boilers and Biddle equipment.

IIRS BOILER TESTING SERVICE

A boiler testing service is now being offered, free of charge, to all companies in the commercial and industrial sectors by IIRS. The National Boiler Testing Service is operating from four centres — Dublin, Cork, Shannon and Sligo — and will test all boilers and air heaters with an output in excess of 50 kW or 170,000 Btu/hour.

The objectives of the service are:
• higher efficiencies with consequent reduction in fuel consumption;
• reduction in air pollution through improved combustion;
• adoption of good housekeeping practices in boiler houses;
• the monitoring and control of boiler efficiencies.

It has been found by IIRS that average boilers are running on at least six per cent below optimum efficiency.

Technicians from the Service will offer to test boilers and air heaters by the indirect or losses method, which required the accurate measurement of the following operating parameters: flue gas analysis, for carbon dioxide or oxygen; flue gas temperature; and smoke number of the flue gas.

The combustion efficiency of these boilers or air heaters can be determined from these measurements and a study of the measurements can also indicate reasons for a low combustion efficiency and possible ways to rectify such faults.

The Service began operations in Dublin and Cork last October and was established in Shannon and Sligo earlier this year. Each company with over 20 employees in the commercial and industrial sectors will be visited by technicians from the Service who will offer to test each boiler and air heater.

It is hoped that the reports of the Service will encourage companies to improve their boiler operating efficiencies and to eliminate other sources of energy wastage, so reducing costs.

Unimack on the Move

Mr. Alan Nicholson of Hastie Insulation (Ireland) Ltd.

CHS in UK Take Over

Chris Holcroft of CHS Ireland Ltd. has announced the acquisition of H Keeling (Towel Rails) Ltd of Walsall, West Midlands, England by CHS. Keeling’s have been established since 1900 and have been a prominent supplier of CHS for five years, both Chris Holcroft and Tony Connolly have been appointed to the board of Keeling’s.

Talking to H&V Chris Holcroft expressed satisfaction in this deal which will give a good base for CHS to develop their operations in the UK. Good luck Chris — Ed.
FINHEAT LIMITED
34 Watling Street, Dublin 8. Phone: 778109/778120 Telex: 30751

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EX-STOCK

A full range of Fan Convectors & Unit Heaters from S&P Coil Products Ltd.

FBM Fan Convectors

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FINHEAT LIMITED

Published by ARROW@DIT, 1980
EC & DHI MEETING ON IMPACT OF COAL USUAGE

The Energy Conservation and District Heating Association of Ireland recently held a public meeting at which Professor J. J. Walsh spoke on the impact of coal in the resident's sector. The author, who has had a long term interest in energy and environmental matters, reviewed in his paper, the current pattern of energy use in the domestic sector and of pollution, particularly in the Dublin area. The effects of the use of coal as a substitution fuel and the potential for minimising these effects by choice of fuel grade, choice of appliance and choice of heating system were also discussed. This was the final meeting of the season for the EC & DHI.

PARKRAY TRAINING

Instaheat Ltd, agents for Parkray appliances, recently ran a two day training course for contractors and merchants on the installation and sales of Parkray products. Speaking at the course were two instructors from Parkray in the UK and Eric White and Martin Darby of Instaheat also spoke on the marketing of Parkray products.

Report on Gas/Diesel Oil Waxing Problems

In January, 1979 the Minister for Industry, Commerce and Energy, Mr. Desmond O'Malley, T.D., requested the Institute for Industrial Research and Standards to investigate and report to him on the causes of the clogging of filters on appliances burning gas/diesel oil, which arose during the preceding cold spell. The Institute has completed its investigation and has furnished a report to the Minister in the matter. The report has now been published and copies may be obtained from the Government Publications Sales Office, GPO Arcade, Dublin 1 and the usual outlets (price £1.05). The Minister would welcome the observations of all interested parties on the implications of having the recommendations contained in the report implemented.

An energy competition was held in conjunction with the National Energy Conservation Programme stand at the recent Energex '80 exhibition held at Leisureland in Galway. A three-cylinder domestic hot-water display unit (shown in the attached photo) was specially designed for the occasion by the ESB. Competitors were asked to estimate the number of units of electricity which each of three domestic hot-water cylinders would use whilst kept at a constant temperature from 1 p.m., Thursday 20th until the exhibition closed on Sunday 23rd at 6 p.m. Almost 200 people took part in the competition. The results showed that the uninsulated cylinder use three times the electricity used by the cylinder fitted with a 3" thick lagging jacket, and four times that used by the cylinder pre-insulated with urethane foam. The foam covered cylinders are now under test by the IIRS. The competition helped to draw attention to the millions of pounds worth of energy being wasted each year by the estimated 350,000 homes which have not yet insulated their hot-water cylinders. The National Energy Conservation Programme was set up by IIRS at the request of Government to coordinate the national effort in energy conservation. It is supported by all relevant state-sponsored bodies and a wide range of other organisations. The NECP stand in Galway showed a selection of the wide range of energy-conservation projects in housing, transport, agriculture and industry now being undertaken at national level by An For Forbartha, An Foras Taluntais and IIRS.
ITT Controls Appoint C & F

ITT - Maclaren Controls have just announced the appointment of C & F Ltd as agent and distributor in Ireland for their extensive range of energy saving and appliance controls.

An internationally renowned and respected manufacturer, the Maclaren Controls Division of the giant international conglomerate ITT Industries based in New York and The Strand, London, the Scottish based Maclaren Controls Company, specialise in producing appliance and energy saving controls, thermostats as well as many other products covering a diverse selection of applications and industries.

Of particular interest to the Irish H & V industry is Maclaren's Hydra-motor valves. These valves are electro hydraulically activated for both commercial and industrial process work and are particularly suited to air, gas, oil, steam and water.

Maclaren's wide range of thermostats including their room stat, RT type, the antifrost 'stat, type GAF 2 and their dual purpose 'stat type GTC which maintains both air and soil temperature should be of considerable interest to the H & V markets here. The Electronic 'Thermo Time Regulator type ZTE 4/7 UK for the programmed control of storage radiators, electricaire and underfloor heating systems ensures that whatever energy is used is used effectively to provide maximum comfort conditions before breakfast time, or for commercial use, heating office or factory space to maximum effect prior to occupation by staff.

C & F will stock a comprehensive range of Maclaren Controls with particular emphasis on Energy Saving units. Further information plus current Literature can be obtained by contacting Maclaren's Irish Distributor — C & F at Glenside Industrial Estate, Mill Lane, Palmerstown, Dublin, 20, (Tel: 264898 & 264917).

This move complements the recent agreement with Finheat Limited of 34 Watling Street, Dublin 8, to promote the Company's products in Southern Ireland.

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IDEAL FOR ALL GRADES OF OIL

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CH—8702 ZOLLIKON—ZURICH SWITZERLAND

Telephone: 010 411 65 86 55
Established 1873

Published by ARROW@DIT, 1980

Northern Agents

Braithwaite & Co. Structural Limited have appointed McCraig Collin Limited of 6-8 Greenwood Avenue, Belfast BT4 3JJ, as their agents, for the sale of Pressed Steel Tanks in Northern Ireland.

This move complements the recent agreement with Finheat Limited of 34 Watling Street, Dublin 8, to promote the Company's products in Southern Ireland.

BTU Late News

Due to a clash between the HEVAC '80 exhibition and the May BTU golf outing, sponsorship has changed from B&E Boilers to Lister Tubes through the generosity of John English. B&E Boilers will now sponsor the July outing in Howth.

"3 Heavy Fuel Oil Storage Tanks at Manchester, Total Capacity 450,000 Gallons"
WEST CORK FIRM TO MAKE COOLING TOWERS & DUST COLLECTORS

The first water cooling towers to be made in Ireland will shortly be available as the result of a licensing agreement between Halligan Engineering Contractors Limited and Carter Collector Company of Birmingham. Carter-Halligan are opening a new factory in Bandon for the manufacture of towers and dust collectors. The venture has been supported by the West Cork Development Board and has been welcomed in an area of relatively high unemployment.

Heading the management team is Vincent Flynn, a regular visitor to Ireland since 1957. Mr. Flynn was Scottish/Irish Sales Manager for both divisions of Carter for many years and is familiar with the application and design of the extensive range of Carter products.

Further information from Carter-Halligan, Cloughmacsinmon, Bandon, County Cork. Telephone: Bandon (023) 41972.

Thompsons to Deliver £1 Million of Steel to ESB

The contract for the supply, fabrication, painting and delivery of the Boiler House and Boiler Frame for the extension to Shannonbridge Power Station has been awarded to Thompsons of Carlow. With the Boiler Frame requiring some heavy lifting, and precise fabrication on many of the machine parts with close-fit tolerances, Thompsons newly constructed fabrication shop and gantry crane will be fully utilised on this contract. Due for delivery over the next half year, the contract is valued in excess of £1 million and is one of the largest individual orders ever received by the firm.

Shannonbridge Power Station has been operational for 10 years, with a 40 megawatt output from milled peat. The new extension being added will use additional peat from Board na Mona’s Third Development Programme, doubling the power station’s capacity and is scheduled to join the national grid during 1982.

ENERGY EFFICIENT BUILDINGS SEMINAR

A seminar with a practical theme will be held in Jury’s Hotel on May 20th-21st, the subject being Energy Efficient Buildings. Speakers will be from the USA, UK and Ireland and will cover both housing and commercial developments in relation to energy efficiency and also practical experience gained over recent years will be discussed.

For further information contact: The Education Section, An Foras Forbathla, tel (01) 764211.

HENDRON GROUP ESTABLISH NEW COMPANY

The Hendron Group of companies which comprises Hendron Brothers (Machinery) Limited and Hendron Brothers (Dublin) Limited, have announced the formation of a new company, Hendrons Material Handling Limited. The new company, of which Mr. Gerald Hendron is Managing Director, is responsible for the distribution and servicing of Lansing Bagnall Fork-Lift Trucks in this country. The company is located at John F. Kennedy Drive, J.F.K. Industrial Estate.

UNIDARE ENGINEERING STUDENTS PRIZE

The winner of the 1980 Uni­ dare prize for Engineering Students, Mr. James Meehan, from the College of Technology, Bolton Street, was presented with his scroll and cheque for £150 at a reception in the Institutes of Engineers offices in Clyde Road recently. The competition for Engineering Students is divided into three inter­mediate stages: 1) Civil 2) Mechanical and General 3) Electrical. The overall winner is selected from one of these sections. The winning project by James Meehan, which was also the winner in the Mechanical and General in the intermediate stage, was “Practical Application of Micro Computers in the Building Services Industry”. The runners up were Mr. Eugene O’Brien, from U.C.G., winner of the civil intermediate stage and Mr. Ronan Costelloe, a student at U.C.D., who was winner of the Electrical intermediate stage.

MYSON RCM LTD

The name of RCM Equipment Limited has been changed to Myson-RCM Limited. Myson RCM, whose factory is at Fourth Way, Wembley Trading Estate, Wembley, manufactures grilles, registers and diffusers, and is a subsidiary of Myson Group Limited. Myson RCM are represented in the Republic by Finheat Ltd. and Northern Ireland by Coolheat Ltd.

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UF Insulation for Hollow Block Walls

Home Insulation Ltd. are now installing area formaldehyde (UF) foam insulation into 9” hollowblock walls as well as cavity walls. For hollowblock, the drilling pattern is altered to one line per floor at 9” centres and the pressure is increased to 60lbs/sq in which is sufficient to clear any mortar lodged in cavity holes. The U-value for hollow­ block walls is reduced from 2.16 to 1.11 with UF foam, and cavity walls from 1.72 to 0.51.

Further details from Home Insulations Ltd., 14 Herbert Street, Dublin 2, (Tel: 765197).
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 Expositions Ltd.
5/7 Main Street, Blackrock,
Co. Dublin, Ireland.
Telephone: (01) 885001
Chief Executive, Ciaran O'Connell. The knowledge available within the Company will enable them to act on a consultancy basis on insulation problems. Staff have been trained in depth to advise architects and consultants on the new insulation standards. The TID distribution warehouse, on the South West side of Dublin, will be serviced by container loads of Coolag products shipped from the UK. This method of transportation ensures sufficient stocks to meet most orders anywhere within the Irish Republic within 48 hours.

Mr O'Connell, said, "This is the biggest thing to happen to my company since it was formed five years ago. Polyurethane insulation is the market of the future as far as the Irish public is concerned and even though we will continue to distribute other insulation materials, I am convinced that within two to three years the Coolag range will form a large proportion of our business. My own sales force will be backed up by a network of sub-distributors to ensure all parts of the Republic are covered."

Constituting the largest system of its kind installed in Ireland at the present time, a variable air volume system has been installed in Phase One of the Irish Life development in Abbey Street, Dublin by the contractors, Climate Engineering Limited. The development, (letting agents Jones Lang Wootton, Dublin) is in two phases. Phase One, includes modern-styled residential and commercial blocks of up to six storeys high, a large (67,870 sq. ft.) retail store, shopping arcade of 83,500 sq. ft. and a parking area for up to 500 cars. Eight Buildings have been sited around an impressive entrance plaza over which has been built an imposing 10 storey main tower building, and there is an internal garden court. Conveniently, the shopping areas have been created at ground floor level around the plaza area. Phase Two, yet to be built, will comprise two further blocks. The perimeter area of the completed blocks are served by a four pipe induction system which operates by drawing fresh air into the building at roof level. Air is filtered and dehumidified and distributed by high velocity sill line induction units. The internal office areas are served by 300 Carlyle 37AF variable air volume units which are supplied with constant temperature air ducted down from air handling units sited in the rooftop plant room were supplied by Walker Air Conditioning Ltd. The total number of vav terminals comprises 226 masters and 274 slaves, but this arrangement can be altered, as partitioning requirements change, simply by plugging in a filter and factory calibrated regulator, thereby creating a master from a slave. The basic Moduline terminal, or 'slave', has no controls and up to four of these can be controlled by one 'master'. However, in this installation a large proportion of 'masters' have been fitted to allow for maximum flexibility in office layout. Each 37AF terminals, with a nominal capacity of 200 cfm, has a diffuser length of 1200mm to fit in with the 300mm ceiling tile, and as such are suitable for a concealed membrane ceiling. The terminal controls are easily serviced through a removable centre diffuser. Returned air is extracted via air handling light fittings.

The architects for this development were Stephenson & Associates, and the consulting engineers were Delap and Waller, of Dublin.

### SMALLEST WEATHERPROOF AIRHANDLER

Brennan Airconditioning Ltd. have always claimed that no job is too large or too small for them. They claim they are the only people in the country who can supply a fully packaged weatherproofed outdoor Air Handling Unit from as little as 25 cfm against 0.4" E.S.P. to 3,200 against the same external static pressure. These units are manufactured by Ventilating Equipment Supply Co. and are extremely compact and silent in operation. However, in the event of quieter units being required Brennan Airconditioning Ltd. would be pleased to supply the unit complete with attenuator.
DOGGETT AT SPRING SHOW

P.F. Doggett (Engineering) Limited will be displaying on their Stand No. T427 at the forthcoming R.D.S. Spring Show to be held in Ballsbridge, the following:

The new "Geith" Stone Spreading Trailer used for placing porous filling over pipes in drains. The 1980 Model is completely hydraulically operated and is equipped with conveyor belt which is twenty four inches longer than on any previous models. Drainage pipes in clayware, plastic, asbestos and concrete will also be on show together with the Turner range of circular saw type hedgecutters and flail mowers suitable for municipal authorities, farmers, contractors, etc. The "Geith" mole drain plough with subsoiling and pipe laying attachment for laying pipes up to a depth of 30" underground without the necessity of opening a trench for use on both wheel and crawler type tractors will also be shown.

STYROFOAM USED FOR OLYMPICS

Over 1½ million sq. ft. of Styrofoam has been used for the 1980 Winter Olympics which took place at Lake Placid, New York recently. Styrofoam is distributed in Ireland by Corcoran Chemicals Ltd. Styrofoam and Roofmate have been incorporated in the roof of the 120,000 sq. ft. Olympic Ice Arena. Installation under adverse conditions is one of the prime advantages of the "upside down" roof insulation system. This insulation method has been used in many Irish buildings including P.M.P.A. headquarters, New Library in Trinity, Merrion House, I.I.R.S. and others. Styrofoam has also been used in the Olympic bobsled run. This can accommodate sledding in outdoor temperatures.

BENTLEY INSTRUMENT CO.

WATER, GAS/STEAM AND CRYOGENIC METERS

TYPE M.S.  TYPE 44S  TRIDENT TURBINE  VORTEX

BENTLEY INSTRUMENT CO. LTD.
NEWSDESK

Selecting a Hotspot in the Cool

The rumble of an air conditioning unit might well persuade potential holiday-makers that they ought to be elsewhere, but it is hardly conducive to a pleasurable selection of their destination. So when travel agents, Eugene Magee Travel, of South Anne Street, Dublin, decided their shop needed air conditioning, they chose one of the quietest system available. And the units they selected were from Carlyle's 5ICS range, which, being a split system, are exceptionally quiet in operation.

The units were supplied by Walker Air Conditioning Limited, and were installed by Tempair Limited. Eugene Magee Travel is a fairly typical retail shop, where lighting levels can make the atmosphere unpleasantly warm. Carlyle's 5ICS range is ideally suited to such buildings where its versatility and ease of installation make it a popular choice. The model selected was the 5ICS218, which is the middle-sized model in a range of three, and provides 5.3 Kw cooling. The others offer 3.5 Kw or 6.4 Kw. A thermostat is incorporated in the unit and a remote control thermostat with unit fan controls is available for horizontal installations.

CIS DIPLOMA COURSE

Coal Information Services Ltd have announced details of a 5 day training course to be held between 19th-23rd May at the Engineers Club, Clyde Road, Dublin. The course will be given by members of the UK Solid Fuel Advisory Service staff and will cover technical and installation aspects of solid fuel central heating. At the end of the course an examination will be given and diplomas will be issued to those who pass. It is also proposed to run a similar course in Cork later in the year.

Brennans in Dairy Industry

Over the past few months Brennan Airconditioning Ltd. have supplied and commissioned many Chillers for the Dairy industry. The Brennan Group say that all orders have come from referrals from other users. The machines which have been used are the McQuay Europa Outdoor fully packaged machines in the AHR Series. Some of the more recent examples of installations of these units are: Owens Dairies Ltd., Slan, Contractor - Frost Engineering Ltd., Dublin. Leix Dairies Ltd., Carlow. Contractor - Frescold Refrigerations Ltd., Waterford; Dalgan Milk Products Ltd., Dundalk, Contractor - Murphy Refrigeration Ltd., Dundalk; and Snowcream Dairies Ltd., Wexford. Contractor - Livingston Refrigeration Ltd., Wexford.

SHIRES INTRODUCES 3 NEW COLOURS

To expand and improve upon their already extensive range of eye-catching colours, Shires have announced three new, distinctive, colour combinations which will be appreciated and are likely to be distinctive and different. All three colours are now available in Chloride Shires Allegro range and other installations can be appreciated. A new Bburgundy and two Rosette dual-tone hues - Rosette Gold and Rosette Lilac.

These new Rosette shades are available in Shires starter light-to-dark variations, the Gold being a base colour of Sun King combined with an Autumn Gold overspray. The second Rosette - Lilac uses a base colour of Orchid together with an Aubergine overspray. These new shades have been designed for the discerning customer who appreciates a unique and distinctive combination of colours.

Sanbra Fyffe (1976) Limited, the Irish manufacturer of plumbing fittings, has announced a change in the shareholdings of the company. The major shareholder, The Delta Metal Company Limited, the TMG Group Limited, have both increased their individual shareholdings. The Delta Metal Company now owns 60% (from 50%), and the TMG Group Limited has increased its shareholdings by 3.9% to 28.9%. This reduces the minority shareholdings to 11.1% from 25%.

Changes at Sanbra Fyffe

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Chages have also taken place on the board of Sanbra Fyffe who manufacture instantor compression couplings and plumbers brassware, employ over 300 people at their factory in Dublin.

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14
Trade Gap?

I.T.T.P.'s 'Irish H&V News' can help

Our business is bridging the trade gap any marketing man ignores at his sales peril — the communications gap between his sales strategy and his trade. With Irish Heating and Ventilating News we have been helping the environmental engineering industry for sixteen years.


IRISH TRADE AND TECHNICAL PUBLICATIONS LIMITED
5/7 Main Street, Blackrock, Co. Dublin. Tel: (01) 885001.
This recent conference was the first to examine the implications of increased coal use in industry. It informed planners, decision makers, engineers, architects, and plant managers on the current availability and supply of coal and also on recent advances in the technology of transporting, handling and burning of coal in industry and commerce. The programme was structured to provide participants with a comprehensive background to the decisions to invest in coal-burning plant. The programme on Day One examined future trends in the supply, availability and cost of coal and recent technological developments, speakers included Dr John Barrand, NIHE, Limerick, who spoke on Fluidised Bed Combustion — Its Potential for Ireland. Fluidised bed combustion (FBC) of low-grade coals is the subject of research at NIHE, Limerick — FBC is a low-temperature, clean, energy efficient process which will burn coals with a high ash content. Although results of the NIHE research are not yet available, a tentative conclusion is that mining in the Castlecomer/Slieve Ardagh area could be used as a fuel.

Hugh Finlay, Energy Division, National Board for Science and Technology, spoke on the Role and Impact of Developments in Coal Conversion Technology. Current international interest in coal conversion technology has great importance for Ireland. The feasibility of locating a coal conversion plant here has to be examined, but a standard coal refining plant could produce 20,000 barrels per day of liquid fuel — 18% of our present demand for petroleum products.

The programme on Day Two looked at the solutions to the problems of the handling and combustion of coal at plant level. Eoin Kenny and N. Cartwright of J A Kenny & Partners spoke on the larger and smaller boiler house and how to select coal fired boilers best suited to local characteristics, installation, maintenance and operational requirements and also on techniques for delivery, storage and handling of coal, the degree of automation employed and the handling and disposal of ash. B. A. Sheehan and D. J. Menzies of YMRA were the final speakers and discussed factors influencing investment decisions relating to coal burning installations. Capital, fuel and operating costs for three types of buildings, an industrial training centre, a factory and a hospital. The internal rate of return on investment in conversion to coal burning and for alternative schemes is projected. The conference was organised by the Institute for Industrial Research and Standards and the National Board for Science and Technology in association with the Institution of Engineers of Ireland and the Association of Consulting Engineers of Ireland.

At the Coal and Industry Conference jointly organised by the National Board for Science and Technology and the Institute for Industrial Research and Standards were: (L) Dr. Dick Kavanagh, National Board for Science and Technology, Mr. Hugh Finlay, National Board for Science and Technology, Professor J. J. Walsh, UCD and Mr. H. Pollock, UCC.

COAL AND INDUSTRY
CONFERENCE

The conference was opened by the Tanaiste and Minister for Energy Mr. George Colley T.D.

Less than two decades ago nearly 2 million tonnes of coal were consumed in Ireland each year, a quantity which accounted for almost 30% of our total energy needs. In the mid-seventies a low of 0.6 million tonnes consumption accounted for a mere 6% of our total energy needs. Coal imports have risen rapidly in the past year or so and it is estimated that we used about 1.2 million tonnes in 1979. There has also been a significant change in the pattern of usage. Before the general switch to oil a substantial proportion of coal consumption was in electricity generation, gas manufacture and industrial uses. In the late seventies the bulk of coal consumed was in the domestic market with a limited amount of industrial use. It is now clear that coal is set on a road to coal-burning.

Cement Roadstone will also be very substantial coal users; fairly soon. By the middle of the present decade the cement industry will possibly be consuming around 400,000 tonnes of coal per year. Other likely candidates for conversion to coal firing are middle to large scale steam users such as the Sugar Company factories, certain crematoria, breweries and some of the larger chemical works.

Our domestic resources of coal are very limited. I am having these resources reviewed since we should obviously make the most of them. The ESB are examining the new fluidised bed combustion technology with a view to using low grade coal deposits at Arigna for electricity generation. However, it is only realistic to conclude that if we substantially increase our coal consumption the bulk of the increased demand will have to be met from imports.

The fact that most of our increased coal requirements will have to be imported adds another tier to our energy vulnerability. There is such a spread of geographical location and diversity of political systems in coal producing countries that an OPEC situation is not as likely to develop as in the case of oil.

Increased coal-burning will also bring environmental problems. Here again, I must say that the large industrial users must take adequate steps to reduce and control the risk of pollution to the atmosphere and the environment generally. The use of coal in properly designed, modern plants will provide much greater scope for anti-pollution measures than in the case of widespread coal-burning in domestic houses and small industrial units, particularly in built-up areas. In this, as in many spheres of activity, there is a balance to be struck. Diversification out of oil into alternative fuels is essential but we must not pay too high a price by way of damage to the environment.
Brendan O'Brien has been appointed a Director of Quality Plastics Ltd. He joined the Company when it was incorporated in 1970 as Sales Office Manager and was subsequently promoted to Sales Manager. He guided that Department through rapid expansion and change.

A native of Kilgarvan, Brendan is well known in sporting circles. An outstanding handballer in his own right, he is closely identified with Capwell Handball Club. He recently won a Kerry Allstars award in this sport. He was educated in St. Brendan’s College, Killarney, Colaiste Iosagain, Ballyvourney and University College Dublin.

Des McDonnell has been appointed Managing Director of Hendrons Material Handling Ltd.

Mr Gerald Hendron has been appointed Managing Director of Hendrons Industrial Division.

Brendan O’Brien newly appointed director of Quality Plastics Ltd.

Leston is a well known in through rapid expansion and was subsequently pro­

LITERATURE

Two new bibliographies from BSRIA survey the world literature on odour control and ionisation.

1. Odour prevention and control

   The benefits of ionisation have long been the subject of debate. This new bibliography lists 50 references up to 1978, presenting both sides of the argument as well as the basic principles.

   Prices quoted in £’s sterling.

2. Atmospheric ionisation

   This bibliography lists 50 references up to 1978, presenting both sides of the argument as

   installation, operation and management are necessary, and BS 4434 Part 1 deals with these essentials in a general way. Part 2 is concerned with particular requirements for small systems use in household domestic appliances.

   Copies of BS 4434 Part 1 may be obtained from BSI Sales Department, 101 Pentonville Road, London N1 9ND. Price £7.50. (BSI Subscribing Members £4.50). Prices quoted are in £ sterling.

   On Warmer Lines

   FH Biddle Ltd have produced new literature for their range of Warmline continuous convectors, illustrating the 4 standard styles; sloping top with ‘S’ type outlet grille, front outlet with ‘S’ type outlet grille, top outlet with ‘S’ type grille and top outlet with aluminium grille.

   Also detailed are special arrangements of handrail or barrier-type Warmline, pedestal-type, front outlet with cable trunksing and Slimline Warmline.

   Further information from: Sermet (NI) Ltd, 11 Lisburn St., Hillsborough, Co. Down BT266AB, (Tel: Hillsborough 682531) or Unimack Ltd, 70 Lr. Mounttown Road, Dun Laoghaire, (Tel: 801964 /5/6).

   New Bathroom

   Armitage Shanks new Ver­sa­il­les Bathroom makes a luxurious idea and a practi­cal one. This complete suite — bath, w.c., bidet, basin, and complimentary accessories — is in Avocado with engineering contracting company. Mr. Tierney has been responsible for surveying large industrial projects including Tara Mines and Burlington Industries.

   de­si­g­nated corner bath.

   24 handholds. There is a grille, top outlet with ‘S’ type grille and top outlet with aluminium grille.

   Also detailed are special arrangements of handrail or barrier-type Warmline, pedestal-type, front outlet with cable trunksing and Slimline Warmline.

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DOMESTIC USE OF TURF

by Francis M. Lunny.

The first casualty caused by escalating prices and scarcity of oil fuel will be domestic oil fired central heating, which will probably have disappeared altogether by the year 1990. Solid fuel will be substituted, but solid fuel central heating is beset by the inconvenience of hopper filling and ash removal and the trend will probably be toward individual room heating.

Closed room heaters can be three or four times as efficient as open fires, and these appliances will gradually take over.

Turf-burning cookers, if used for the combined functions of cooking, water-heating, and kitchen space heating, are, at present fuel prices, a much more economical means of performing these functions than electricity. Since the price of electricity is dependent on the cost of fuel oil, the relative economy of turf-burning cookers is likely to be maintained.

The performance of turf-burning appliances depends first of all on design and secondly on operation. Efficient cookers are available but the design of room-heaters leaves much to be desired. Efforts are being made to introduce a really efficient turf-burning room-heater, but it is too early yet to comment on its future.

The operation of a turf burning appliance should be mainly directed to the complete combustion of the volatiles (tars and gases distilled from the fuel) and this necessitates the maintenance of a glowing firebed and the addition of fuel in small increments.

It is easier to achieve this in closed appliances than in open fires. The most difficult is the open fire with the "wrap-around" boiler — an appliance which is fundamentally designed for smokeless fuel. Great care is necessary with the wrap-around boiler if atmospheric pollution and chimney fires are to be avoided.

Chimney System for Solid Fuel Appliances

by B.J. Meridew

As this seminar has been arranged to discuss indigenous fuels, any points I make had better, in the main, relate to chimneys in their use with fuels of which you have an abundance, for instance peat and wood.

A seminar on The Use of Indigenous Fuels took place in Dublin on 7th February. The meeting which was sponsored by Grantaid Limited, the Irish distributor of Tiba solid fuel cookers, and was chaired by Hugh C. Maguire FCIBS, FIDHE, FRSH, MASHRAE.

The members of the panel were Francis M. Lunny BE, Energy Consultant, National Board for Science & Technology who talked about domestic use of turf fuel; Barrie J. Meridew, Marketing Services Manager, Selkirk Metalbestos who dealt with chimney systems for solid fuel appliances; Gerard Lyons BE, MIEI, Energy Research Engineer, An Foras Taluntais, Oak Park whose subject was 'Short Rotation Afforestation', and David Couper, Managing Director Grantaid Limited who spoke about the efficient use of indigenous fuels.

There was a lively general discussion after the meeting and such an interest was shown in the Papers that H&V decided to publish edited versions of all the papers in the following pages.

Notwithstanding the phenomenal scope for architectural individualism which the chimney provided, we need to go back about 150 to 200 years when the first steam engineers seriously gave the thought about the correct performance of a chimney in relation to the job it had to do, and this applies both to stationary chimneys and the mobile sort.

It soon became apparent that the hotter a chimney became the better the performance and the relationship between the temperature of the flue gases and the draught they provided was realised. The height of the chimney also had a bearing on the performance, and in consequence we need not go back far in time to recall the construction of very high chimneys of great girth, on brick works for instance. Their sole function was to generate tremendous draughts and therefore maintain good combustion.

It is strange to make a comparison nowadays when the emphasis is on very accurate control over the draught. Generally speaking extremely high chimneys are more often built in order to discharge flue gases at what is considered to be a safe level.

A chimney performs because the temperature generated within it provides momentum for the flue gases purely on the basis of the difference in density between those gases inside the chimney shaft and the cold air outside. However, those gases in the process of providing this momentum or draught, depending upon the material used to construct the chimney, lose a considerable quantity of heat which is absorbed by the structure, and although useful in maintaining the temperature of the gases within the flue shaft, it is nonetheless wasteful of energy.

In addition the flue gases are cooled quite rapidly until they are often almost as cold at the top of the shaft as the surrounding atmosphere into which they are being vented. It was soon found that if the temperature of the gases could be maintained, then the density differential would be similarly maintained and the chimney performance considerably improved.

Insulation in one form or another was subsequently applied and the effect was remarkable. As less heat was lost from the chimney, the gases remained hotter for less wasteful of heat, and the overall heating plant efficiency became higher.

About 1935 a Canadian Company started to manufacture metal insulated factory made modular chimneys which could be transported and erected with different heights and diameters. This was in fact the first Selkirk Metalbestos Chimney and the success of such a technically sound product resulted in further development and its subsequent manufacture in America and England. Now made from stainless steel, the insulated chimney has tremendous advantages over chimneys manufactured from conventional materials. If the degree of insulation is such that the amount of energy absorbed by the structure is kept to a minimum, and such a chimney is said to have a high thermal resistance and low thermal mass, it is possible to generate a column of flue gases within the chimney which become hot very quickly and thus generate a stable draught within seconds of the fuel being ignited. By comparison a brick chimney absorbs considerable energy because it has a very low thermal resistance and in consequence it is some time before a stable draught is achieved. Perhaps more importantly, the heat absorbed by the chimney is wasteful of energy.

A solid fuel heating appliance is entirely dependent upon draught to maintain combustion. Therefore a chimney which is able to maintain...
combustion by providing a draught which has been induced with very little heat, contributes to a more efficiently operated boiler plant.

Peat and wood require the same conditions for combustion as solid fuel in the accepted sense i.e. coal. The heat content ton for ton is approxi- mately a third to a half less, depending upon the type of wood and moisture content. For large industrial applications particularly where peat is concerned, most of the moisture is dried out beforehand, whereas for domestic applications with both wood and peat it is common to find the fuel, depending on how long and how it is stored, to have quite a high moisture content. In the combustion process, particularly where wood is concerned, such inherent moisture leads to the production of creosotes whereas condensation occurs within the chimney and to the possibility of subsequent chimney fires. For this reason it is recommended, particularly where factory made chimneys are concerned that seasoned timber is used, and that in the case of peat, it be as dry as possible. Condensation within the chimney can obviously only occur if the walls of the flue are cool enough to allow the moisture in the flue gases to condense, the threshold is commonly called dewpoint.

A factory made insulated chimney has a very high internal skin temperature due to its thermal resistance, and it is therefore less likely to contribute to condensation when compared to a brick chimney, where because of the reasons first explained it is possible for condensation to occur much more easily.

On larger boiler plants where particularly peat is burned the control of the flue gas environment virtually eliminates this sort of problem, as the entire plant is operated to maintain as high an efficiency as possible. In consequence the peat is fairly dry and condensation if any will be kept to a minimum. The new Beaumont Hospital currently being constructed here in Dublin has our chimneys and peat is being burnt. As far as domestic application is concerned, for both wood and peat, some other prudent comments should be made.

There are a large and ever increasing number of domestic wood burning stoves on the market, on many of which I am sure peat will be burnt. There are some stoves, with respect, the design of which makes them very inefficient. Generally speaking the less efficient, the higher the flue gas temperature, and although the average flue gas temperature above a wood burning stove will be in the region of 300°C - 450°C, it is not unknown for that temperature to be as high as 1300°C - 1500°C should the design of the stove permit flames to leave the fire box. Such conditions are injurious to a factory made chimney and for that reason we would prefer to see a length of cast iron or suitable steel flue pipe used for perhaps the first two to three feet between the appliance and the commencement of the stainless steel chimney.

Woodburning stoves have been with us for centuries and more recently in those countries where they have been established than here, and I am thinking of Scandinavia and Canada particularly, it has been the practise to burn timber that may well have seasoned for two years and which is consequently very much drier. I mention this, because as I said earlier, if wood is burnt in a wet condition i.e. freshly cut, a considerable volume of water vapour passes through the chimney with other products of combustion, and unless the chimney is regularly swept, deposits of creosote and other tarry substances will collect on the chimney walls. Should these substances ignite it will cause an undesirable chimney fire no matter what the chimney construction, and generally factory made chimneys, our own included, have flue gas temperature limitations of approximately 540°C for normal use and of up to 750°C for short periods.

However, enough of technicalities. From an economic point of view, chimneys which were abandoned when alternative and cheaper methods of heating requiring different venting methods became far popular, now offer a flexibility in application and the prefabricated type are cheaper to erect. It was encouraging to see Ireland set the standard by introducing a mandate ensuring the installation of a chimney in all new dwellings, a policy which I think will inevitably be adopted in the United Kingdom.

As chimneys are now a must, it is very encouraging to me representing a chimney manufacturer to be in a position to explain the advantages of our type of insulated chimney being suitable as a product not only capable of contributing to energy conservation but which offers a very competitive and generally cheaper way of fulfilling that mandate, whilst at the same time providing the means of allowing occupiers of dwellings built without a chimney the facility of installing heating of their choice including those capable of burning your indigenous fuels.

**Biomass**

by G.J. Lyons

The term Short Rotation Forestry (S.R.F.) applies to species of forest material which gives rapid juvenile growth and are capable of re-growth from harvested stumps, through successive cutting cycles. Development of this material as a timber resource first began in Georgia, U.S.A. in the 1960's for production of a feedstock for the pulp and paper industries. The concept is based on the exploitation of high early growth increments of certain deciduous tree species through a silvicultural cropping system known as coppicing.

Coppicing refers to the harvesting and subsequent re-growth of the above-ground biomass on a fixed cutting cycle or rotation. Re-growth is sustained by sufficient carbohydrate reserves in the harvested tree stumps and the planting of new seedlings after harvest is thus necessary. Current national and inter-national research and development (R&D.) programmes are investigating rotations of between two and six years. Such cutting cycles produce sufficiently high yields to give short-term economic return on invested capital. Annual yields of the order 12 to 15 tonnes per hectare of dry wood materials can be expected from low grade agricultural and peatland areas. This amounts to a fuel yield of up to 5 tonnes oil equivalent (T.O.E.) per hectare per annum.

S.R.F. Energy Potential: — Irish context

In quantifying the potential of S.R.F. for Ireland, it is necessary to identify those sectors of the energy market where this concept might be feasibly adapted. The main feasibility criterion is the technical one, which leads to the isolation of three main areas of application:
1. Electricity Generation
2. Process Heat/Steam
3. Space Heating

In view of these utilisation sectors, it is worthwhile to examine the supply and demand for energy resources in Ireland. In 1973, space and Process Heating accounted for 62 per cent of final energy deliveries to the consumer. The small contribution of electrical energy (6.7 per cent) to final usage is worth noting. Energy statistics published by the Government in 1978 identify the importance of the domestic and industrial sectors for energy demand. Of the total energy consumed by the domestic, commercial and industrial sectors, up to 58.9 per cent is used for space heating and 29.4 per cent for process heat. This is equivalent to 2.85 MTOE or 38 per cent of total primary energy consumption.

The Agricultural Institute (An Foras Taluntais) is currently engaged on an EEC funded research programme on the production of energy from short rotation forestry, for both large and small scale applications. Should this concept prove successful for Ireland, a considerable reduction in fuel oil imports could be achieved. In addition to development of S.R.F., this country has an active afforestation programme for conventional forestry, amounting to state plantings of about 9,000 hectares per year. As these forests are systematically thinned from 22 year growth onwards, large quantities of low quality or small diameter wood becomes available for use.

The energy potential of S.R.F. plantations is derived from the unit calorific value of the wood fuel produced, through the application of assumed process efficiency ratings for any given conversion technique. Availability of suitable low priced land is critical for the economic feasibility of S.R.F. energy plantations. Virgin blanket and cut-over peatlands will most likely prove the best alternatives, in view of their otherwise low opportunity values and many other socio-economic and environmental factors. Bord na Mona currently produce fuel and horticultural peat from an area of 77,000 hectares, which, during the coming decades will become available as cut-over peatland. S.R.F. plantations established on this area could maintain 280 MW of electrical capacity, which is 10 per cent of total installed generating capacity. Utilising 20 per cent of the extensive Western blanket peatlands for S.R.F. production could double this potential at present sylvicultural yield levels (see Figure 3). An increase in sylvicultural productivity through sustained R & D effort would further enhance S.R.F. energy potential.

The economics of using conventional forest thinning as a fuel resource is dependent on the availability of alternative markets for saw-log and pulpwood. With the recent decline in the Irish particle-board industry, the local market for pulpwood has been significantly reduced. This, in particular, applies to small diameter wood produced from first thinnings, of which 350,000 tonnes are available annually. In terms of heat capacity, this material is equivalent to an annual fuel yield of 0.05 MTOE.

Production of S.R.F. Energy

The production of energy from S.R.F. may be considered as a system of 4 main processes, each with its own group of activities.

Production: This includes all of the activities associated with establishment and management of the S.R.F. plantation, from site preparation to plant cultivation and periodic fertilisation.

Plate 1. Morbark feller bunched mounted on a Bobcat tractor harvesting an area of Ash coppice at Oak Park.

Exploitation: Having grown the S.R.F. material, the wood biomass is harvested at the end of the production cycle (rotation). Exploitation consists of primary felling, chipping and transportation of the fuel to centralised storage facilities, where stocks are maintained prior to conversion (See plates 1 and 2 of harvesting equipment).

Conversion: Many techniques are available for converting S.R.F. wood chips to usable fuel and energy forms. The direct combustion routes to space heating, process steam and electricity are the more technically established and energy efficient options.

Utilisation: Assuming direct combustion of the wood fuel chips, three areas of utilisation appear feasible. (i) Domestic central heating, especially in rural areas. (ii) Supply of industrial process heat/steam. (iii) Electricity generation on a medium scale.

Conclusion

In conclusion, it is worthwhile to briefly examine the economic feasibility of producing energy from S.R.F. Plantations. Figure presents the variation in S.R.F. wood fuel production costs against sylvicultural productivity, with respect to price levels of fuel oil and sod peat. This ill-
Report on recent seminar on "The Use of Indigenous Fuels"

The use of Indigenous Fuels clearly establishes the present economics of the S.R.F. for energy concept. Thus, as the cost of imported fuel oil continues to escalate, S.R.F. energy plantations may, in the near future, provide a partial solution to Ireland's energy equation.

Plate 2: Feeding relatively large diameter material into a mobile chipper at Oak Park.

S.R.F. FUEL COST

<table>
<thead>
<tr>
<th>Fuel Costs</th>
<th>Cutting Cycle: 4 years</th>
<th>Planting Density: 6725 plants/ha.</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td></td>
<td>5 ton/ac. dry matter</td>
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<tr>
<td>90</td>
<td></td>
<td>Fuel Oil, 1978/79</td>
</tr>
<tr>
<td>70</td>
<td></td>
<td>Sod Peat, 1978</td>
</tr>
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My name is David Couper and I will try to tell you how to burn the native fuels which Frank Lunny and Gerry Lyons have managed to produce for you for domestic heating. There seems to be little point in saving imports and being more self-sufficient if we are going to squander our hard gained turf and timber by inefficient heat transfer methods.

When most of us think about domestic heating, the first thing that springs to mind is the ordinary open fire and this, as we all know, is perhaps the least efficient method of burning any fuel. Early fireplaces in New England in the USA have been estimated at less than 10% efficient. Benjamin Thompson, later Count Romford, spent considerable time in the c.18 developing an efficient fireplace, probably the first scientific design of the domestic unit. However, even this and its most modern counterparts are only, according to the Coal Research establishment, at best 26% efficient, which still means that around 3/4 of your heat goes straight up the chimney.

This situation excited the interest of another Benjamin — Benjamin Franklin, who developed one of the first dampers — a sliding door to restrict air flow between fire and flue. This was later incorporated in a free standing fireplace which he called the Pennsylvania fireplace. This was a cast iron shell with dampers which was free standing in the room and most efficient methods of burning indigenous fuel have evolved from this basic concept.

Then, with the coming of King Cole, this concept was not developed in the US and Britain but, in the Scandinavian countries and in Central Europe, free standing fireplaces became very common and the major work in modern design was done in Scandinavia during and immediately after the Second World War when coal supplies were too scarce and valuable to use for domestic heating and the consequent shortage of timber and peat fuels — just as in Benjamin Franklin’s mid c.18 America — made the efficient combustion of what fuel was available essential.

The question which springs to mind is — what exactly is necessary for an efficient free standing stove or fireplace. I will illustrate this by singling out timber as the example for which I will give figures but similar principles apply for turf. Timber ignites at an average temperature of 250degC although this may be as low as 100degC in some circumstances. However, higher temperatures are required for complete combustion, for timber, like peat, lignite and soft bituminous coals, contains hydrogen chemically combined to form volatiles. When the timber is heated to 250degC, with a limited air supply — and it is obviously undesirable to supply more air than necessary because heat is carried into the atmosphere with this air and thus wasted — pyrolygenous acid (commonly called creosote) is first ev...
Report on recent seminar on “The Use of Indigenous Fuels”

olved and this further breaks down to produce acetic acid, acetone, methanol, turpentine and many other components. A recent authority lists 213 components discovered in the condensate of the destructive distillation of wood. These volatiles, driven off as gases, are combustible and represent as much as 50% of the heating value of the wood. To burn these gases, as much as 16 kw or in the case of a Tiba cooker up to 84,000 bthuhs, both with an efficiency of over 70%, into your room or into your house through your central heating system. It may also do the cooking and smoke your salmon... but a few cautionary tales.

Turf and peat products are generally marketed at a uniformly low moisture content and, if stored under cover, will generally remain constant. However, a tree, beech or oak, for instance, cut green can have a moisture content of over 80%. This drops to approximately 40% out of doors when the timber is split and stacked but cannot drop much further unless the timber is then stored under cover with freely circulating air. In the case of oak to attain an ideal moisture content of around 15% may take as long as 2½ years. It is very obvious that most people buy and use wood that is wet. Not only do they pay prices which are far too high (and prices in Dublin at the moment are around 4 times those in Britain) but they are also paying this grossly inflated price for water. This would not be so bad except that the water itself has a considerable affect on the efficiency of the stove, fireplace or central heating unit. The first consequence of unnecessary moisture is that it has to be driven off in the flame and the heat required to do this — the latent heat of vaporisation — is around 971 bthuhs per lb. This is in addition to the heat required to vaporise the steam formed by the combustion of the hydrogen in the fuel. It is obvious that the moisture content should be kept as low as possible. A second reason for this is that added moisture reduces the likelihood of reaching ignition temperatures for the volatiles with the effect that these volatiles are deposited as creosote on the chimney and this leads to unpleasant and even dangerous results.

Similar creosote deposits can be occasioned when very efficient appliances are turned down extremely low, say for firing overnight. The result of this is that the temperature of the flue gases is lowered considerably and condensation of the volatiles builds up in the chimney. It is as a result of this that most manufacturers recommend daily high temperature operation.

One particular point in regard to chimneys is to do with cookers which have convoluted flueways designed to take the hot gases round and about the oven. There have been a number of cases in Britain where such appliances, left to burn overnight, have, in the small hours of the morning in cold weather, ceased to draw the flue gases up the chimney with a resultant emission of carbon monoxide into the kitchen. There have been several cases of carbon monoxide poisoning in humans and death of pets as a result. It is essential that any such appliance should have a bypass damper so that when the oven is not required, flue gases may be eliminated directly and in a warmer condition, to the flue.

It goes without saying that appliances should be sized to the room/house, and that appliances should be used as efficiently as possible. Optimism efficiency is obtained at higher temperatures where the volatiles can be burned more easily. Undersizing causes the appliance to be run flat out all the time with no margin for flexibility. Oversizing an appliance tends to ensure that it is continuously run at lower temperatures causing loss of efficiency from incomplete combustion of the volatiles and depositing of these volatiles on the flue. It is, of course, essential that all appliances should be installed by a competent and experienced solid fuel heating engineer.

I think it is foolish to put a boiler, no matter how well insulated, in an outhouse, it should, I suggest, be inside the house where any heat loss from the appliance will accrue to the house and it should ideally have more than just one function.

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22
NEW PRODUCTS

NEW RANGE OF BRASSWARE FROM IDEAL-STANDARD

Fabian, a young and talented European designer, was commissioned for the Dualux range by Ideal-Standards who have, in recent years, made a big impact in bathroom furniture design by the use of designers like Italian Paolo Tilche, who was responsible for the highly-acclaimed and exclusive Michelangelo suite. The Dualux range of dual handle mixers — the first range of ceramic valve bathroom brassware designed with the British market as a prime objective — comprises four fittings. They are a monoblock fixed-spout washin basin mixer; a monoblock high necked swivel-spout wash basin mixer; a monoblock bidet mixer with a swivel nozzle for adjusting the angle of flow, and a deck-mounted bath mixer with a flexible hose and handspray attachment for showering. All fittings are available in either chromium plate or Karatclad hard gold plate finish.

The monoblock wash basin mixers are designed for fitting into single hole wash basins and both have a pop-up waste. The bidet fitting, which also has a pop-up waste, is for over rim supply — in line with the latest trends — and can be used either to fill the bidet or provide a stream of water. The bath mixer affords the added luxury of over-the-bath showering — the shower is also handy for hair-washing and rinsing out the bath — and, after the shower has been shut off, the water supply automatically reverts to a bath supply position.

Freezalarm from Ranco Controls

A compact, electronic 'freezer watch dog', which gives a warbling note of alarm or can call a remote telephone point in the event of high temperatures, has been introduced by Ranco Controls Ltd. Designed for use with commercial refrigerated display cases, cold stores and freezers, the RANCO FZA 'Freezalarm' also has attraction for domestic freezer applications. It gives both visual and audible warning of high temperature caused by refrigeration failure, and ye allows the temperature cycling that occurs during normal operation of defrosting cycles to continue without alarm indication.

Further information from HRP Walker, Harmonstown Road, Dublin 5, (Tel: 336046 or 316056).

Brooks Thomas to Distribute Craftsman Aerocowl

Brook Thomas have been appointed Sole Distributors in the Republic of Ireland for the Aerocowl, which represents a completely new approach to the elimination of down-draught, and has been featured on the TV programme "Tomorrow's World".

Craftsmen Aerocowl is aerodynamically designed using an aerofl for an expansion chamber on top of a venturi system. This combined system is held at a predetermined height above the chimney orifice allowing a bleeding system which compensates any negative pressure caused by the cowl. Due to this bleeding system only the air available at the fireplace orifice is used; accentuation of draught problems in the house is prevented and, excessive fuel burning is reduced, resulting in a saving in fuel consumption.

The Craftsmen Aerocowl, converts all winds to a transverse laminar airflow and in consequence totally prevents down draughts. Drawdown suction which occurs when winds blow along parallel with the long axis of the dwelling is countered by a simultaneous increase in negative pressure, always ensuring that negative flue pressure exceed that of internal room pressure. No choking of air flow takes place even in still air conditions as the exit area of the cowl is designed to exceed the area of the chimney orifice, when the correct size cowl is used.

For further information please contact: A O'Dowda, Marketing Manager, Building Materials Division, Brooks Thomas Ltd., Bluebell, Naas Road, Dublin 12, (Tel: 783422 ext. 300).
When a power cut occurs the new Myson generator will provide enough electricity for 3 or 4 lights, a central heating pump and burner, a refrigerator, deep freeze and colour TV within a maximum of 2,000 watts. The Myson generator is one of the finest compact generators of its type on the market, the Misgraves 2 Kilowatt — along with a kit which includes all the additional components and fittings you're likely to need. This means that the business of installation has been simplified dramatically. With this Myson system, changing over to standby power is as easy as starting a lawnmower and throwing two switches!

As an optional extra an installation kit is available. All ancillary components and fittings have been selected to meet stringent safety requirements and make installation a quick and easy job for a qualified electrician.

Kit includes:
- A plastic coated steel switchbox containing isolator switch and mains/generator changeover switch. As a safety feature the box is locked when the isolator switch is in the 'mains on' position.
- Wiring diagram, raw-plugs and screws for wall mounting.
- 5 metres of cable pre-wired to switch box and generator plug.
- 6 feet of flexible exhaust tubing.
- Inhibitor petrol additive to maintain engine in top condition.

For further information contact: Myson (Ireland) Ltd, Parkmore Industrial Estate, Long Mile Road, Dublin 12, (Tel: (01) 509075) Telex 43218.

When it comes to servicing the Brennan/P.M. Luft air handling units it could hardly be any easier. The entire motor/drive/fan assembly simply slides out. The great advantage of this of course is that insulation in the fan cabinet is never disturbed and there is much less likelihood of particle migration. This new range of AHUs is available in 9 sizes from 1000 to 90,000 cubic metres per hour.

Further details are available from: Brennan Airconditioning Ltd, 60 Cookstown Industrial Estate, Tallaght, Co. Dublin, (Tel: (01) 514711) Telex 33339 El.

The entire motor/drive/fan assembly sliding out of the insulated cabinet in the new Brennan/P. M. Luft AHU.

New ‘Middle’ Size Bath from Royal Doulton

With the launch of the new Sheba bath, Royal Doulton has further extended its range of bath sizes. The new bath, wider than average — 1700 x 750mm, fills a gap between the highly popular Portia and the extra-wide Cressida introduced last year. A luxury bath, with a sculptured bathing area, the Sheba incorporates several special features. The anti-slip showering area makes it equally convenient for bathing and showering, and the twin grips and twin soap recesses complement the flowing contours of the bath. Manufactured in 5mm acrylic, the Sheba is reinforced with glass fibre, and is mounted on Royal Doulton’s unique metal cradle which ensures a high degree of rigidity and stability to the bath. The new bath is available in the full range of Royal Doulton acrylic bath colours to which there are two recent additions: Mink and Harvest.

Pictured here, the latest addition to Royal Doulton Sanitaryware's bath range: the Sheba.
NEW PRODUCTS

NEW COOLING TOWERS
ARE EXPENSIVE

A new series of evaporative cooling towers is expensive, so the manufacturers told us. Developed for arduous industrial duties, they are extremely robust, more compact, and require virtually no maintenance, this in addition to performing their cooling duties efficiently and unobtrusively. Watermiser say their GRP towers have been designed to meet a specification rather than down to a price. They cost considerably more to make than the flimsy, easily corroding, maintenance intensive models frequently used for air conditioning applications. Nevertheless, say Watermiser, where a building services consultant or user is concerned to achieve efficient, trouble-free operation from his air conditioning system, one of our GRP towers can provide the economic answer. The one piece, self-coloured shell, requires no painting inside or out. Laminated in heavy duty reinforced glass fibre, towers are corrosion-proof, even in the most aggressive atmospheres. Additionally they are impervious to bacterial attack. Unlike those of many other manufacturers maintenance on Watermiser towers can be carried out safely, without engineers having to climb up to the top, which can be a dangerous procedure. A wide panel at the base of each unit allows easy access for internal inspection and to further facilitate servicing, the forced draught, direct driven fans are located at low level. Other features include two pass chevron type eliminators, which are 99.95% efficient in reducing mist carry over, British standard required only 99.20%. Packing — the heart of a cooling tower is uniquely vacuum formed in PVC, this provides for very effective heat transfer, and has high resistance to chemical attack. Mesh screens on the inlet prevent fouling from such debris as leaves.

Further information from Henry R Ayton Ltd both in Northern Ireland and in the Republic.

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Henry R. Ayton Limited

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Mr. Michael Allison M.P. Minister of State for Northern Ireland headed the guest list at the annual dinner of the Northern Ireland Section of the Institute of Energy. In proposing the toast of the Institute, the Minister congratulated it on the active part it played in the energy scene in the Province. The Minister spoke of the high cost of energy in Ulster, stating that it was being constantly monitored in relation to prices in G.B. and that the rising costs were a matter of concern to the government.

Over 120 members and guests in the Culloden Hotel heard the President of the Institute, Dr Simmonds reply, in which he spoke of the Institute's position as regard Finniston and of the active part the section played in the structure of the Institute.

The toast of the Guests was presented by the Chairman of the Section, Mr C. J. Monaghan, who paid tribute to industry, commerce and particularly the Dept. of Commerce's Energy Division for the help and assistance the Section had received from them over the years.

Mr Ross Campbell O.B.E., Chairman of the N.I. Branch of the B.I.M. and of the Road Industry Training Board replied on behalf of the Guests in an amusing and most acceptable manner.

The Northern Ireland branch of the Institute of Domestic Heating Engineers held their annual dinner in the Strangford Arms Hotel, Newtownards.

Sixty members and guests attended the function under the Chairmanship of Mr Roy Best, who in his speech reviewed the past and future activities of the Institute.

Other speakers included Mr Jim Luke and Mr George Montgomery.

The cabaret proved an added attraction at the dinner which came under the organisation of the Hon. Secretary Mr Brian Page.

On and from 1st July, the building regulations dealing with thermal insulation of buildings will come into effect.

Under the regulations it becomes mandatory for a building to be so designed and constructed so that the enclosing structure provides adequate resistance to the passage of heat.

Copies of the act are available from the stationery office at a cost of...
£1.75. The act is known as the Building (Amendment No. 2) Regulation (Northern Ireland) 1980.

One of the best attended lectures in Belfast for a long time was the one sponsored by the Institute of Energy when Mr. Tony Lyon of Calor Kosangas (N.I.) Ltd. spoke on the application of L.P.G. for domestic, industrial and transport purposes.

In addition to Institute member and guests, a large number of persons connected with the L.P.G. industry in both the South and the North of Ireland attended.

In his extremely well illustrated talk, coupled with practical demonstrations, Mr Lyon spoke of the “make up” of the various forms of L.P.G. equipment and of course the use of L.P.G. in an automotive fuel.

Park Sectional Insulating Co. Ltd. have introduced an improved version of their Parkaflue factory made insulated chimneys.

The chimneys from 125 mm to 200 mm for gas, oil or solid fuel appliances now have a moulded hydraulic cement synthetic aggregate 14 mm thick inner flue liner.

The moulding system ensures that the insulation is continuous for the entire height, there are no metal parts bridging the insulation joints.


Associated Agencies Ltd. of Belfast have been appointed stockists of the Myson range of axial, propellor and prelubricated fans.

Cool Products Ltd of Belfast have been appointed sole distributors of Poladaire open type compressors and condensing units in Northern Ireland. A full stock of spares and units will be available.

Cool Products is a member of the long established air conditioning and refrigeration group of J. Norman Fulton.

H & T Bellas Ltd. the Coleraine based builders and plumbers merchants announce that Mr R. McAllister has been appointed to the board of directors.

Mr McAllister has been 24 years with Bellas and has served in various capacities including an eight year period in their plumbing and hardware department.

Mr Tom Stewart has succeeded Mr Jim Moore as chairman of the N.I. Master Plumbers Association.
Most of the molecules in the air have a balance of positive and negative particles. However, an air molecule can lose an electron and then becomes a positively charged particle or positive ion. The process of gaining or losing electrons is called ionization.

In normal clear air, there are about 1,500 to 4,000 ions per cubic centimeter. The concentration is much higher at the seaside, beside waterfalls, at health spas or in the mountains. It is now known that the proportion of ions in the air can have remarkable effects on plants, animals and humans so that it is now becoming routine to include ionization equipment when central heating is installed in offices, factories or homes.

Negative ions are good for you and positive ions are bad for you: let us take a look at some of the effects of high levels of positive ions in the air. These occur in towns, cities or buildings with central heating. They also occur 24 to 48 hours before thunderstorms and in certain parts of the world which have warm dry and very hot winds. People who are weather-sensitive will be only too familiar with the effects of an excess of positive ions in the air.

**The Effects of Negative Ions**

Studies have shown that plants and animals thrive on air that has a high proportion of negative ions. One researcher was so impressed by the effects of these that he gave them the happy title of 'Vitamins of the Air'.

We know, for example, that an adequate supply of negative ions in the air speeds up the growth of plants, increases the learning ability of people and animals, reduces anxiety levels and decreases the effect of infectious organisms such as viruses or bacteria.

So effective are negative ions in the air that they are now routinely used in many forms of medical treatment. For example, they have been used successfully to treat some types of migraine, asthma, hay fever, eczema...
and even severe burns. In fact, in Ireland to date the most common use for negative ion therapy has been in the recovery of patients who have suffered from burns; the ionizer heals the burns more rapidly and also greatly reduces the pain and the possibility of infection.

The Russians have been familiar for a long time with the beneficial effects of negative ions in the air and use them in space craft, the cock-pits of aircraft and nuclear submarines to improve the quality of the air in these environments. In the United Kingdom and the United States ionization is now being used in many cases where alertness or proficiency is important such as police control rooms, ambulance stations, control towers at airports, hospitals and offices where proficiency is particularly important.

The Effects of Positive Ions

Unfortunately, most modern activities such as driving, smoking, central heating, and using high densities of synthetic material in houses and offices lead to an increase of positive ions in the air. Air pollution, overcrowding, stuffy rooms, car interiors and particularly forced air heating systems greatly increase the number of positive ions in the air. The effects of this increase of positive ions are numerous... Insomnia, irritability, depression, excess fatigue, nausea, oedema, hot flushes, sweating or chills, tremors, migraine and tension with all its manifestations. An excess of positive ions has also been implicated in allergic reactions of various kinds including hay fever and conditions of the skin. In short, an excess of positive ions in the air leads to...

- Discomfort, lassitude, loss of mental and physical efficiency and poor performance.
- An increase in susceptibility to colds, flu, other respiratory illnesses and infections of various kinds.
- Various effects on the adrenal, pituitary and thyroid glands so that water balance, thirst, appetite and sexual behaviour are affected.
- Decrease in abilities to perform well coordinated movements and to tolerate stress.

A survey carried out by a biologist in the U.K. showed that two out of three people in a large central city office block suffered from the effects of too many positive ions in the air. Symptoms ranged from drowsiness, to wheezy chests and nausea. A subsequent investigation of 30 other office blocks revealed that the main culprit was the metal ducting of the air conditioning system which trapped the negative ions in the air, this combined with a high incidence of synthetic carpets and furniture fittings which by collecting static electricity drained the air of remaining negative ions. Cigarette smoking also depletes the air of negative ions as does other forms of pollution. There can be little doubt that an excess of positive ions is responsible for much of the irritability and decrease in mental and physical efficiency experienced by people living and working in heated buildings and factories.

Unfortunately, as we go about improving our energy conservation here in Ireland, we are also likely to disimprove the ion condition of the air because we will be excluding as much fresh air as possible and recirculating the existing air. This may very well lead to a saving in energy but could multiply behavioral and medical problems of people living and working in centrally heated areas.

Finally

Seeing that we in Ireland are not bringing our insulation and heating up to European standards generally this is a very good opportunity to incorporate ionization into heating systems. The cost of doing so is relatively small, particularly in the case of offices and factories but the benefits could be enormous. As I mentioned in an earlier article on this topic, one Swiss bank which did a scientific trial on the effects of ionization found that there were sixteen times less colds and flu amongst the workers when the air was ionized. Many banks, factories and other locations in Britain now routinely use ionization of the air to improve the working environment and thereby lower the tension and fatigue levels of staff and improve their performance. We pollute our living and working environments in many ways some of which are only now coming to light. We now know that we have built up around us an atmosphere which militates against the earth's natural ion generating processes. The time has come to remedy this. Given the research results on the beneficial effects of negative ions to date there can be little doubt that any employer who chooses to include ionization in the atmosphere control system of a plant or office will be well rewarded.

Brendan McGann is a doctor of behavioural science and at present specialises in and works as a health and safety analyst to industry, and has written two books, "The Best of Health" and "Behaviour, Health and Lifestyle", both published by Villa Books, Dublin.

Our thanks to Ion-Eir Ltd who supplied this article.
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H&V News
MAY 1980
IRELAND'S BUILDING SERVICES MAGAZINE

Hevac 80
19-23 MAY 1980
NATIONAL EXHIBITION
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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 Btuh). 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.

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The entire "COALMISER" range includes as standard:-

* large furnace proportions
* low overall heat transfer
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* 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
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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)/12300 kW (36,000,000 Btuh) and the Windsor steam and hot water boiler for duties up to 5400 kg (11,905 lb/hr)/3600 kW (12,280,000 Btuh).

Both ranges are suitable for gas or oil firing.

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Ambi-Rad

Energy saving is the keynote of the Ambi-Rad radiant heating display at HEVAC '80. A working example of this high efficiency gas fired industrial heating system will be exhibited. The Ambi-Rad heater incorporates a pair of radiant tubes above which is supported a polished stainless steel reflector. An automatic gas burner fires into one tube and the hot gases are drawn through the twin tube arrangement by a small vacuum fan mounted on the second tube. The burner incorporates electric ignition and full flame monitoring safety interlocks. The vacuum fan is driven by a totally enclosed fan cooled motor and is constantly monitored by a self checking vacuum proving circuit. The Ambi-Rad heater is British Gas Approved.

Ambi-Rad heats in exactly the same way as the sun. Designed to heat factories and other large buildings effectively and efficiently, Ambi-Rad units are mounted at high level in the factory roof. Infra-red heat rays are emitted and directed downwards towards the people working in the building. The floor and surroundings are warmed by radiation and become secondary emitters producing an all round radiant warmth in the lower occupied levels of the building whilst avoiding wasteful high temperatures in the roof space, so often to be found with warm air heating systems. Savings of between 25% and 50% are frequently possible using Ambi-Rad. Ambi-Rad Ltd have recently moved to newly acquired premises at Cardale Street, Rowley Regis, Warley, West Midlands where they have an extensive development and manufacturing facility specialising in energy efficient industrial radiant heating equipment.

Anglo Nordic Holdings

Visitors to the Anglo Nordic Stand No. 1A42 at Hevac will find something different, not only in the field of domestic and commercial heating, but also in the nature of the exhibits themselves. Energy saving is a strong theme on the Anglo Nordic stand. Under the banner “The Anglo Nordic Energy Show” are two working exhibits, showing domestic and commercial heating systems. The commercial system incorporates Happel Heat Pumps firing Thermalrad radiators, together with Happel and Bini fan convectors. The simulated domestic installation, demonstrates the layout principles of a home-heating system, incorporating the Spartan Automatic Recovery Tank and the Econozone P30 Hot Water Heat Exchanger, with Anglo Nordic Thermalpanel low water content radiators. Thermalpanel radiators are also shown in cut away form to demonstrate the air movement method of heat transfer. The Anglo Nordic Thermalrad range is also on display. Another central feature is an actual working model of a swimming pool! The unit is complete in every detail, with sand filtration units and pumps, and incorporates perfect miniaturised versions of the ‘Wilo’ range of swimming pool equipment. This is complemented by the complete range of ‘Wilo’ pumps for domestic and commercial applications.

The major exhibits are supported by Delhi Centrifugal Fans, Happel Air Conditioning Products, air movements products, heat pumps and fan convectors, with the Anglo Nordic competitive range of Bini fan convectors. Chemical cleaning and combustion efficiency products, for
And Panda your customers. Get into the finest range of oil boilers in the country. With 10 different Panda models from Thorn, and three output ranges to cover 16 to 35.2 kw (55,000-120,000 Btu/h).

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There are cased, uncased and through-the-wall versions. Each one’s a fully automatic pressure jet unit burning either kerosene or gas oil. One simple control sets the thermostat. And if the user wishes it a programmer can be fitted inside the boiler to heat the water automatically with or without the central heating.

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The Panda family measures up right. You couldn’t ask for a friendlier range of oil boilers. And neither could your customers. Right! Now send in the coupon.

See our full range at HEVAC stand no. 1B50
improving and maintaining the efficiency of heating systems, are shown and a burner components display sees the launch of a new Sunstrand range of fuel units, incorporating devices to overcome the problem of sticking drive shafts. Also featured is the complete range of Angelo Nordic brassware — Newtherm Thermostatic radiator valves, Mitre manual radiator valves and the well-proven range of gate valves, stopcocks and general plumber’s brassware.

**AIAX**

AIAX (U.K.) Limited have increased the size of their Stand No. 3x60 at HEVAC in order to make space for the latest development of one of their associated companies, Climaveneta of Italy. The new development concerns an Air to Water domestic heat pump boiler called the “Nova-calor” which can provide water up to 55°C to radiators and taps with a C.O.P. varying from 4.55 to 2.31 and capacities ranging from 5340 kcal/hr to 34530 kcal/hr. For instance, during the summer the largest boiler WRA 102 PC will provide hot water at 35°C with an ambient of 15°C and with a capacity of over 40 kW for an input of only 9 kW while the same boiler will provide water in the winter at 55°C at an ambient of — 15°C with a capacity of 19 kW for an input of only 7½ kW. The acoustically and thermally lined unit has centrifugal condenser fans making it suitable for indoor installation, e.g. the kitchen.

**Appliance Components**

Appliance Component’s theme at this year’s HEVAC on stand No. 2126, is energy conservation in the home, factory and office. Energy conservation is one of the major themes at this year’s HEVAC, and the Appliance Components stand is no exception. The stand is well-equipped with a range of heating systems, including a new domestic heat pump boiler called the “Nova-calor”. The boiler is designed to provide water up to 55°C to radiators and taps with a C.O.P. varying from 4.55 to 2.31 and capacities ranging from 5340 kcal/hr to 34530 kcal/hr. For instance, the largest boiler, WRA 102 PC, will provide hot water at 35°C with an ambient of 15°C and with a capacity of over 40 kW for an input of only 9 kW while the same boiler will provide water in the winter at 55°C at an ambient of — 15°C with a capacity of 19 kW for an input of only 7½ kW. The acoustically and thermally lined unit has centrifugal condenser fans making it suitable for indoor installation, e.g. the kitchen.

For the industrial market, ACL are launching a new automatic sequence controller that can be applied equally well to multiple boiler installations and multiple chiller systems. Basically, it is an automatic sequence controller with a memory. Its function is to bring in and switch out of operations boilers or chillers as required — but it remembers how long each unit has been on and ensures that all of them get equal use. This results in a minimum of breakdowns, maximum efficiency and minimum maintenance.

For industrial control, Appliance Components are introducing at the show a general-purpose relay family, the ACL Izumi ‘Yellow’ series. The series, which comprises 51 basic types, is available with a multitude of contact configurations, mounting and terminal styles and a.c. and d.c. current and voltage ranges. Standard, midget and miniature models are available in contact ratings from 0.4 A to 10 A depending upon size and type. Contact configurations range from single-pole double-throw to four-pole double-throw twin. A number of DPDT models offer a self-holding function to give a memory or flip-flop capability. Designed for maximum density mounting, the complete series consists of only ten physical sizes, ranging from 14 to 36 mm wide. All models will operate in ambient temperatures from -5°C to +40°C and life expectancy is from 200,000 to 500,000 electrical operations and 5,000,000 to 50,000,000 mechanical operations depending upon type. A variety of mounting and termination arrangements and sockets are available; relays may be rail or panel mounted employed pin, blade, solder, wrapping or printed circuit board terminations. The majority have ul recognition, are CSA approved and use precious-metal contacts for long trouble-free life. In addition, Appliance Components will be showing their range of Motortrol motorised valves which includes two-port on/off types and three-port diverting valves for hot and cold water; models for chilled water (two and three-port); a version for steam; mid-position valves etc. Most of these are now available with screwed ½-inch and ¾-inch BSP and compression fittings.

**BAHCO Prizes**

At Hevac, Bahco are to launch a range of rooftop air handling units. To mark the occasion, each day the company are to give away a cooker.
Carlyle from Walker is energy efficiency

1. The unbeatable range of energy miser heat pumps

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hood. Every visitor to Stand No. W20, in Hall 3, will have the opportunity to win one of these superb Swedish designed Bahco domestic cooker hoods. The first person each day to give the correct answer to a question relating to the new rooftop unit’s specification will be the winner. The prizes will be presented daily at 5 o’clock.

**Bartol Plastics**

Making its Hevac debut on stand No. 2M50, and following on from recent acceptance by The National Water Council for non-pressurised domestic central heating applications, is the Acorn range of push-fit plastics fittings, pioneered by Barton Plastics Ltd, and launched to the trade last year. Bartol’s stand will display the complete range, which also has NWC acceptance for above-ground hot and cold water services, in addition to an Agreement certificate (No. 79/639) giving Acorn automatic acceptance by the NHBC. Designed as a cost effective alternative to capillary soldered or compression fittings, Acorn has a durable polybutylene body into which lubricated copper pipe is inserted, pushed past a slight resistance point, to be held firmly in place by a purpose-designed, stainless steel grab ring. Since its 1979 introduction, Acorn, available in 15mm and 22mm sizes, has been used in domestic plumbing and heating installations of all types, and is quickly gaining wider recognition. Other Bartol products to be displayed at HEVAC will include the company’s soil, waste and rainwater systems.

**BSRIA, CIBS and HVCA**

A familiar sight at HEVAC exhibitions is the stand shared by the industry’s service organisations. BSRIA, CIBS and HVCA will once again be together at HEVAC ’80 on Stand 2N56, centrally in Hall 2. The industry’s research, professional and contract associations will be on show demonstrating their individual and combined resources under the joint theme of Service to Industry.

**Keith Blackman**

The Keith Blackman stand will be devoted entirely to the new Series 28 centrifugal fan range which is being launched at HEVAC. A selection of Series 28 fans will be exhibited including standard single inlet pedestal arrangement, direct drive, double inlet and a complete fan set mounted on a new combination base. A selection of Series 28 impellers will also be shown to demonstrate the enormous choice offered by this fan range. Every aspect of Series 28 is new including the C.N.C. production machinery and even a new factory being set up to produce it at Rugby.

**Braukmann**

Braukmann are introducing three additions to their thermostatic radiator valve range at HEVAC, a unique ‘vandal proof’ thermostatic head with ‘authorised only’ temperature adjustment, a new high capacity valve body suitable for ‘one pipe’ and low pressure steam heating systems and the T11OB ‘locked on’ head with restricted temperature ranges. A special display will feature another ‘first’ for Braukmann, a unique ‘in line’ service facility on safety valves and groups type SM152 and SG160 which, together with filling, temperature relief and pressure reducing valves make up a range of control valves for the controversial unvented system. A working display unit of the self cleansing water filter type F76 should attract considerable interest, and the recently announced by-pass and pressure differential controller DU146 will also be featured.
Clyde-Combustions

Clyde-Combustions in their Diamond Jubilee year will show on Stand No. 1E34 at HEVAC '80 a wide selection of cast iron sectional hot water boilers, boiler/calorifier combination units, oil and gas burners, calorifiers, and cast iron and steel column radiators. The newly introduced 045 atmospheric gas boiler range will be on show for the first time. Three 045 units, five, eight, and thirteen section models from this British Gas Corporation approved range which is offered in a total of eight sizes covering outputs from 45.7 kW (156,000 Btu/h) to 120 kW (412,000 Btu/h) will be on display. 045 gas boilers have low gas pressure requirements and will operate up to 80% thermal efficiency. They are fitted with an independently positioned limit stat and aspirating multi-bar burners controlled by an on/off switch incorporated into an inbuilt control module with thermostat and thermometer. As many as eight 045 boilers of the same size can be banked and connected to a common chimney outlet to form a multi-boiler installation for loadings up to 3,296,000 Btu/h.

Other models representing Clyde-Combustions extensive commercial and industrial hot water boiler range include a gas fired boiler rated at 656 kW and two oil fired boilers rated at 64.5 kW and 287.2 kW. The boiler/calorifier combination unit range is covered by two gas fired units 64.5 kW, calorifier storage 175 litres (38.5 imp.gal.) and 216.9 kW, calorifier storage 350 litres (77 imp.gal.) All are fitted with Clyde-Combustions fully matched burners. The standard boilers will be displayed with a number of cast iron sections removed to show the method of assembly. Combination units will be shown minus side panels to expose vessel, pump and pipework. Calorifiers, both vertical and horizontal models with either fixed or removable coils, in a wide range of storage capacities and recovery times, including a number of new sized models for easier specification for normal, medium and high pressure hot water and steam applications. A cut-a-way model will display the non-corrosive, hygienic, easy to clean thermoglazed internal finish.

Also on display will be oil and gas burners designed and produced by Clyde-Combustions for their own boiler range and suitable for other boiler makes. Offering some of the most up-to-date advances in combustion engineering the display will include burners with hours run meters and pressure gauges, with castings finished in Epoxy plastic and impervious to grease and dirt. As a major supplier of column radiators, Clyde-Combustions will feature a special display of high output cast iron and steel column radiators. Four models will be shown, FKR cast iron radiator for hot water or steam, Stabulo and Stabulo 72 steel radiators for low, medium and high pressure hot water and Radiaplan, an attractively styled cast iron radiator for hot water and steam applications.

Clipper Air Handling Units Ltd.
Clipper are exhibiting a working size M.8 unit comprising:- Mixer, Filter, Heater and Fan Sections handling up to 1.0m³/sec. A speed control unit is included giving variable volume control which can be supplied for either 3 phase or single phase motors. Also on display are several Clipper standard disposable pad type Filter Sections illustrating the wide range of Clipper Units from size M.4 (0.1 m³/sec) to M.17/24 (12.5 m³/sec). Energy saving equipment such as Heat Pipes, Thermal Wheels, Run-around Coils are also available.

Danfoss
Danfoss Ltd., exhibiting at the forthcoming HEVAC Exhibition from May 19th - 23rd, 1980, where their stand No. 2M20, Hall 2, will feature many new and recently introduced products from the company's Residential Heating, Commercial Heating, Burner, Hermetic, Industrial and Motor Control Gear Divisions.

Products of particular interest will be:

a) the recently introduced range of electronic automatic controls for
energy management and building automation system for offices... hospitals... factories... etc.

The EY 1200 is a mini computer based system utilising micro electronic technology to supervise your Power Demand... Heating Control... Load Cycling and other energy programmes automatically.

This gives a rapid return in your investment by energy/fuel conservation. Effective building automation giving Control... Monitoring... Limit Value supervision together with easy programming are available to your operator. Sauter back-up servicing maintains smooth running efficiency. If you would like further information, please contact your nearest Sauter Office.

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SOPAC THERMOSTATS ON STAND 1A68

SA Clamp-on Thermostat
Range 30-90°C (S.P.D.T.)

T.A.
380 Series
Range 6°-30°C
to 20 amps
Differential ½% / 1% f

Type GP
Industrial Thermostat (remote)
Range 0-320°C
2.3 Metres Capillary

SU Duel BoilerStat
Control range 60-90°C
Limit range 90-110°C

Type G.A.
Self Contained Industrial Thermostats
Range 0-110°C

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Tel: 266677 Telex: 30898.
Products from the new range of Danfoss electronic, automatic controls for ventilation and air conditioning systems.

ventilation and air conditioning systems comprising weather compensators, temperature and humidity regulators, damper motors, outdoor and wind sensors, temperature controlled solar radiation control, frost protection thermostat, thermo/hydraulics, motors, reversible gear motors, rotating valves, seated valves, electronic differential thermostats and temperature controlled valves for solar heating systems.

b) New versions of the established type GEV electrohydraulic safety valves for shut-off and regulation of gas supply to gas burners.

c) the recently introduced 'H' range of compressors, specifically designed for use on heat pump systems for heating tap water and for heat recovery ventilation systems.

d) The VLT range of variable speed drive units for control of standard 3-phase squirrel cage motors rated from 0.75kW (1hp) to 15kW (20hp).

e) The EMUF range of ultrasonic flow transmitters which measures the liquid flow within a pipe and represents that flow as an electric output signal (4-20mA) proportional to the flow.

Denco Miller

Celebrating their 25th Anniversary this year, Denco Miller of Hereford, will be exhibiting their comprehensive range of air conditioning and ancillary equipment at this year’s HEVAC on stand 2044. HEVAC also sees the launch of Denco’s A/C Product Sales Division to complement the activities of the company’s regional contracting offices. Under the control of Chris Reeves, based in Hereford, the Product Sales Division has been launched to supply the complete range of A/C equipment, to refrigeration and air conditioning contractors throughout the United Kingdom. The standard range of Denco A/C equipment from D.M.2 upwards is now available, at competitive prices with extremely good delivery. The units are modular in concept and designed specifically for ease of transportation and installation. With the exception of the upflow DM2 (8 kw) all other units are available in either upflow or downflow configuration. Capacities range from 8kw - 190 kw 0.4m³/s - 11.5m³/s. Versatility comes from the fact that many of the basic components are interchangeable and the choice of options and applications is virtually unlimited.

Dienh Time Controls

Time Controls is one of the six divisions of Diehl GmbH & Co., headquartered in Nuremberg, generally recognized as a leader in developing and marketing time control equipment for a wide variety of applications. Diehl GmbH & Co., specialized in semi-finished metal products, clocks and watches, defence technology, computer systems, time control and electrical components, secured a total turnover of 1170 million Deutschmarks in the fiscal year 1978 (annual report ‘79 not yet published).

Highlights of the product range exhibited at the HEVAC, Birmingham, will focus on heating, ventilating and air-conditioning applications:

- Timeswitches for built-in applications with daily programme.
- Timeswitches for built-in applications with weekly programme.
- Mechanical timeswitches clockwork driven for electrical appliances and installations.
- Synchronous timeswitches motor driven for electrical appliances and installations. In addition synchronous motors, interval timers, electronic timeswitches and electromechanical cooker timeswitches will be shown at the Diehl stand, No. 2M30 in Hall 2.

Dienh synchronous motor driven timeswitch with weekly programme (Vario-mat series) for building into appliances.

Dunham-Bush

Innovation in terms of both products and technology will be a strong feature of the Dunham-Bush display at HEVAC this year — stand number 2M40, Hall 2. Among the products making their first public appearance at the Birmingham show will be new packaged chillers, several new ranges of heating equipment and the Dunham-Bush ‘Multiple Source’ heat pump system. Dunham-Bush are among the pioneers of multiple source technology, and demonstrations of this new energy saving technique, supported by a visual display will take place on the stand each at 11.00 a.m and 3.00 p.m. The Dunham-Bush ‘Multiple Source’ heat pump system is designed to extract heat from virtually any source, including lights, process plant, computer rooms, air conditioning exhausts ducts and additionally from outdoor air, when necessary, to provide hot water for heating purposes at temperatures up to 66°C (150°F). Based on the company’s well proven PCX rotary screw compressor packaged water chiller, the ‘Multiple Source’ system operates during the summer months much like a conventional air conditioning system, but with the ability to recover enough heat for domestic hot water services. During spring and autumn when both heating and cooling are required, the
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system rejects any excess heat as and when available into a water storage tank, to be reinjected into the system on demand under thermostatic control. During the winter months, the system draws upon all available free sources of heat energy; should this fail to meet building heating demands, an air source coil is automatically phased in to provide supplementary heat.

A new entry in the Dunham-Bush heating product catalogue is the redesigned Natural Convector range, with models suitable for wall, floor or recessed installation. Two and three tube heating element models are available, providing nominal outputs from 500 to 3850 Watts. The units are available in a range of sizes to suit applications, and have a slimline casing with black extruded grilles, matching the new Series A Fan Coil heater range. A representative selection of the twenty nine models which comprise the new Series A Fan Coil range will also be on show. These units are suitable for free standing, recessed, concealed or ceiling mounting, and reversed air flow applications. All models are available in four casing lengths and a choice of seven nominal heat outputs from 3.0 to 15kW. New cooling products to be shown at HEVAC include the Dunham-Bush PCW X helical axial screw compressor packaged water chillers, in a range which provides cooling capacities from 160 to 425kW (45 to 120 TR). These units will extend the advantages of rotary screw compression to applications requiring lower cooling capacities.

Completing the list of new products on display is an addition to the Big 4 Series compressor, packaged chillers, a twin compressor, dual circuit model with a capacity of 155kW (44 TR). This forms part of the rationalised range of Big 4 units, all available with a liquid receiver manifold and reversed air flow applications. All models are available in four casing lengths and a choice of seven nominal heat outputs from 3.0 to 15kW. New cooling products to be shown at HEVAC include the Dunham-Bush PCW X helical axial screw compressor packaged water chillers, in a range which provides cooling capacities from 160 to 425kW (45 to 120 TR). These units will extend the advantages of rotary screw compression to applications requiring lower cooling capacities.

Drayton

Showing for the first time on the Drayton Controls stand at the 1980 HEVAC exhibition are the Drayton 3-way Tapstat and Gravity Tapstat hot water cylinder temperature controllers and two new TRV2 thermostatic radiator valve variants featuring angle and straight bodies for steam radiators.

The entire current range of home and overseas TRV2 thermostatic radiator valves will also be featured, together with a new Drayton Energy Minder microprocessor energy management system.

Visitors will also have the opportunity of examining a new leaflet aimed at the end user. This is designed to aid owners of unsophisticated central heating systems which incorporate the minimum of temperature controls to take logical steps in upgrading the controls to achieve better fuel economy. Like previous leaflets in the series, this one is available to installers in quantities of 50 to help them promote their system upgrading business.

Dunphy Oil and Gas Burners Ltd.

Dunphy Oil and Gas Burners Limited of Rochdale, Lancs., will show 7 machines on its Stand IF50 at HEVAC '80. Their exhibits will cover the range of 'T' Burners in 5 frame sizes covering ratings from 200,000 BTU/H (60 Kw.) to 30,000,000 BTU/H (8,800 Kw.). Innovation will be both new Drayton Energy Minder microprocessor energy management system.

Visitors will also have the opportunity of examining a new leaflet aimed at the end user. This is designed to aid owners of unsophisticated central heating systems which incorporate the minimum of temperature controls to take logical steps in upgrading the controls to achieve better fuel economy. Like previous leaflets in the series, this one is available to installers in quantities of 50 to help them promote their system upgrading business.

Benefits from thoughtful design:
- L.P.G.
- sludge gas
- Exhibits in standard fishih from the production line will illustrate the major factors in Dunphy's promotional effort. User oriented benefits from quality engineering:
  - thrust bearings in door hinges
  - self-aligning bearings in all in k a g e s
  - 'in-house' components for vital functions

Benefits from thoughtful design:
- optimised 'power to function' ratios
- energy conservation facilities
- fully closing air dampers

Dunphy fans on view are purpose-made to their own design parameters; the vital task of balancing is not left to outsiders. Each fan is individually balanced, using sophisticated new plant, to a figure equal to, or better
One of the new Prestcold modular air-cooled condensing units in the ¾ to 3 h.p. range. (See page 20)

than, the smallest achievable residual unbalance permitted by I.S.O. 1940-1973 (E). The result — a marked reduction in sound levels and a machine that is vibration-free.

Also on view at Stand IF50 — System 2000 a new concept in the provision of an A.O.T.C. steam boiler control panel. Produced by Dunphy engineers as a design aid for Package Steam Boiler manufacturers or for steam boiler conversions, it is available in 4 options all based on the same module:
— suspended from the boiler top on a universally mounted tabular wiring conduit
— attached to the boiler casing
— attached to the boiler house wall or built in to a main panel
— console mounted at floor level with lockable isolating cabinet (see photograph)

All options of System 2000 incorporates the standard 'pod'. This has a facia setting out all the necessary functions to comply with A.O.T.C. requirements in 'mimic' form in colour. All control signal lights are in appropriate colours.

Europair

International S.A.

Centrifugal fans, thermal and acoustical insulation, glass-fibre pipe section, air diffusion, filtration, air conditioning accessories, flexible tubing, galva, stainless steel, heat recovery, humidification and costron-air decontamination will all be displayed or illustrated. Europair are constantly enlarging their product range to incorporate the requirements of our increasingly energy conservation society. Heat pumps are manufactured by an associated company in Austria. Europair's latest factory is situated at Enon not far from Helsinki in Finland. The factory manufactures Thermo Coils for use in energy recovery systems.

Thermo-coil energy recovery systems can be applied to every situation where air is exhausted whether the exhaust is hotter or cooler than the ambient conditions, whether it is clean, or dirty and contaminated. The greater the exhaust volume, the longer the operating hours, and the more severe the design extremes, the greater the opportunity for savings.

In typical HVAC systems applications, Thermo-coil function year round — recovering heat from exhaust during heating hours and removing heat from incoming air during cooling hours.

This system application of Thermo-coil is suited to today's overall energy conservation efforts, making it possible to have true economizer layouts at the same time energy is recovered from exhaust in both heating and cooling modes. Maximum energy recovery and minimum energy input combine to maximize savings. Schools, auditories, hospitals and other systems where numerous air changes are required provide ideal Thermo-coil applications. The absence of cross contamination is also important in many of these systems.

Further information from Europair or at HEVAC.

Faral Tropical

Three entirely new additions to the Faral Tropical range will share the limelight on Stand 1D70 at HEVAC. The centre of attention is likely to be the new 'Faral Tropical 80' radiator, the very latest model in the company's series of lightweight, die-cast aluminium radiators from Italy. The 'Faral Tropical 80' takes its name from its width — each section being 80mm wide, compared with the 60mm width of established Faral Tropical models. Heat output per section will be increased and Faral Tropical claim that the new radiator will be extremely cost-effective in every way.

A new one-piece double-bracket wall mount is also being unveiled on the Faral Tropical stand. Guaranteed to make setting-out quicker and installation simpler, the new double-bracket unit is claimed to be the first of its kind made for use with high output, die-cast aluminium radiators. Faral Tropical's third new entry is the RBM range of valves from Italy. RBM valves are well established in Europe, with an excellent reputation for engineering quality and high reliability. Faral Tropical are the new sole distributors of RBM valves in Britain. The level of pricing is said to be very competitive and Faral Tropical will be giving particular prominence at HEVAC to RBM radiator valves, gate valves, stop valves and a unique patented connection for washing machine waste.
Fibreglass Limited

Fibreglass Limited (stand 2M48) features fire-safety, higher insulation standards and its nation-wide stores service at HEVAC '80. Fibreglass will launch an entirely new Class 'O' Fibreglass insulation finish which requires no decoration and achieves the highest fire-safety ratings. Available on FRS 950 pipe insulation and both rigid and flexible duct insulation in a wide range of thicknesses, the finish satisfies Class 'O' of the Building Regulations. The stand also features Factoryliner, an easily-fitted, light-weight insulation panel for use in new and existing industrial buildings, and Crown 75, a resilient, flexible glass fibre mat for thermal insulation of roofs, walls and timber joist floors, which can also be fitted in the cavities of light-weight partitions to reduce sound transmission.

Glow-Worm Ltd.

Glow-Worm Limited, acknowledged as 'No 1 in Gas' for central heating boilers, emphasise their dominant place in the market by displaying their complete range of wall hung, plus their gas fires and Mastermind programmer on stand 1A18 at HEVAC. The Space Saver range of 10 wall hung boilers covers outputs from 6.45 kW (22,000 Btu/h) to 17.6 kW (75,000 Btu/h), in both balanced flue and conventional flue models, and all are range rated. The 22 versions of the Glow-Worm free standing boiler cover outputs from 8.8 kW (30,000 Btu/h) to 35.2 kW (120,000 Btu/h). All are available in both types of flue with a choice of control specification. Designed to fit between kitchen units or, in other instances, under working surfaces, all can incorporate the pump within the casing. In addition to the Capricorn 246, Galaxie 246 and Majorca 346, the new Glow-Worm BBU fire fronts are on show. One is based on the best selling Melody fire to produce the Majorca 246M and the second is the beautifully modern live fuel effect Royale 246, the fire of which, with an efficiency of 70% has a higher efficiency then any competitive appliance.

HCP Ltd

HCP Limited are specialists in the design, manufacture, and installation of low temperature hot water natural convector perimeter heating systems, for domestic and commercial applications. On Stand 2J 22 at HEVAC '80, Periwarm perimeter heating systems will be shown in a wide range of styles covering bottom inlet and top outlet convectors, and heated handrails for floor to ceiling fully-glazed installations. Peristrip, is a totally new concept in perimeter heating. This system is based on 100mm wide panels fitting between continuous top and bottom rails, the rails being bolted to wall brackets. Rails are made from extruded aluminium which can be anodised or stove finished in paint or polyester powder to an B.S. colour.

Front panels are available in anodised aluminium, stove finished paint, polyester powder or GRP, in a wide choice of colours and textures. Peristrip can be made to any height and offers unlimited modular application and simple replacement in the event of damage. Perivector, is a new range of hot water natural convector available in two widths, two standard heights and eleven cabinet lengths to give a total range of forty-four standard models with outputs 0.5 to 4.0 kW. Elements are steel tube with steel fins. Headers with straight connection, and air vent as standard. Manufactured from vinyl faced steel, any size and type of casing in a variety of finishes can be supplied to overcome the traditional problems of making-up panels on site.

Heatech

The new Heatech HDG, smokeless, multi-fuel boiler will make its public exhibition début on the stand of Heatech Limited (Stand 1A06), at HEVAC '80. Heatech Limited have been appointed sole UK distributors for this Austral designed boiler, which burns ordinary coal or wood smokelessly as well as having the facility to switch automatically to oil or gas. The fully patented HDG system employs a single chamber, double-burning boiler which Heatech claim gives 85-89% overall boiler efficiency irrespective of the fuel used. The fuel is burnt in a small area at a very high temperature. Any smoke which is produced at the top of the fire rises and is then mixed with seconday air and passes down a chimney at the
Hevac is one of Europe's most important trade events, with all the latest international developments in heating, ventilation, insulation and air conditioning.

There are over 350 exhibitors, from 14 countries; all the leading manufacturers from Britain and around the world, a wider range of products, and, for the first time, a separate domestic heating and ventilation section.

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Hevac 80
Published by ARROW@DIT, 1980
Hill-Foster Limited

The Euramo commercial and industrial pumps which will be on show at stand IC66 and cover a range from about 100,000 to 4 million BTUs, embracing 31 models, both single and twin units, most with variable outputs. Also on show will be a large number of Euramo heating pumps in single and twin models with mechanical seals, as an alternative to glandless circulators, as well as other types of centrifugal pumps.

Ferroli boilers on display will include the latest models of the L1 atmospheric gas range for outputs from 150,000 to 320,000 BTUs an extensive range of oil fired cast iron boilers, such as the NG/NGT, NFR and NLR with outputs from 55,000 to 800,000 BTUs and also the PREX pressurised steam boiler (100,000 to 10 million BTUs).

As sole distributors for National Copper & Smelting Company of the USA, Hill-Foster shall be showing samples of 15, 22 and 28 mm copper tube which is marketed by Hill-Foster throughout Great Britain and Ireland.

Honeywell

New products from every part of Honeywell's Residential Division range, including a new European standard valve motor, a new gas control valve, several new Flame Safeguard devices and a new electronic air cleaner will make Honeywell's stand at HEVAC '80 an important launchepad for the latest in controls equipment this year. Still under wraps is yet another development, being prepared for its first public showing at HEVAC, that will take Honeywell into a new area of the domestic controls market with an advanced microelectronics product developed entirely within the U.K.

New from Honeywell's light commercial controls range is the M606 valve motor, with an improved torque rating allowing it to handle 3- and 4-way hydronic valves up to 4-in. diameter. Able to replace the former V6053 motor where necessary, the new slide mount unit can also drive non-Honeywell valves up to 3-in. diameter via an optional adapter kit. A manual override handle and position indicator is incorporated in the design, which was developed at Honeywell's Newhouse, Lanark factory for application across Europe. Entirely built in Scotland, the new motor replaces the old model for virtually the same unit cost. The M606 is the first to be announced in a line of new commercial controls, all developed in Scotland, to a common shape devised by a top international designer.

Among domestic temperature controls, Honeywell's L641 cylinder stat, also available in a pipe-stat version, will be given its first major showing at HEVAC. With it will be displayed the company's extensive range of Sundial package control plans, incorporating the T6060 room stat, L641 cylinder stat and motorised valves for any given type of installation. A recent addition is the new Rad Plan, a non-electrical package for full control of room temperature and domestic hot water based on the Honeywell Y508 thermostatic radiator valve. Where electrical motorised valves are used, however, an entire replacement power head is now being made available as a spare in addition to replacement motors alone. Apart from its other advantages it will allow old relay-based Y-Plan installations to be updated to the latest non-relay design for added reliability. Also, a new 1-in. model V4073A three-position valve has been added to further extend the range of Y-Plan options.

In gas controls, Honeywell's new V4900 series will be shown for the first time in the U.K. Available in 1/2" or 3/4" models, the series offers either single or dual valve controls, with regulation for automatic gas burners up to approximately 60 kilowatts. Operators and regulators on the new series are unchanged from existing ranges, ensuring proven reliability and utilizing an existing range of replacement parts. Honeywell's established Compact and IGCG gas controls ranges will also be on display.

Flame Safeguard developments will be strongly in evidence including a new servo regulating shut-off gas valve, the V4085; the S720 electronic spark generator and R4412 atmospheric gas burner control. The V4085 is a unique combination of pressure regulator and shut-off valve to British Gas Class One standards in a single unit suitable for both atmospheric and forced draught gas burners from 80,000 to 800,000 kCal/hr. The valve operates on a single valve seat and is field adjusted by means of a single screw, providing significant cost and time savings. Flange mounting simplifies burner servicing and mounting attitude is completely unrestricted. Because of the high accuracy in regulation of gas pressure the V4085 makes possible, higher burner efficiencies can be achieved to save energy.

The new S720 electronic spark generator provides up to 10,000 sparks per second with only a 25W power consumption to ignite any oil
Sole Irish Agents for WOODS of Colchester.

KEITH BLACKMAN

Range of Heating and Ventilating Equipment.

GP PROPELLOR FAN

AIRPAC 4 AIR HANDLING UNIT

VAROFOIL FAN

MF ROOF EXTRACT UNIT

AEROFOIL BIFURCATED FAN

UDC ROOF UNIT

DDC ROOF UNIT

See us on Stand 2L20 HEVAC 80

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National Distributors for U.K. & Eire

We can meet your environmental needs. Simply write or telephone your nearest Biddle Sales Office.

Published by ARROW@DIT, 1980

Hevac Supplement, IHVN May 1980
or gas burner, yet it is up to one-third the weight of conventional electric spark generators. The equally new R4412 atmospheric gas burner control offers performance to British Gas standards in a compact unit designed to plug into a sub-base for ease of installation and servicing.

Honeywell's newest product area — electronic air cleaners — will also be featured at HEVAC by means of an active demonstrator proving the effectiveness of electrostatic at clearing smoke and fumes. Models on show will include a new F54C ceiling-mounted light commercial design, together with the F52 return-grill cleaner and the F56 portable unit. A feature of the new F54C is its incorporation of the “Coanda principle” of air flow, ensuring maximum cleaning effectiveness with minimum temperature extremes and draughts. By distributing clean air at ceiling level in all four directions at once, and drawing smokey, dirty air up from below, the Coanda air flow provides a 360° cleaning pattern without creating an inhospitable, draughty area below. All of these products, plus Honeywell’s surprise microelectronics announcement, can be seen on stand B56 at HEVAC.

**Horstmann**

Horstmann Timers & Controls Ltd, a member of the Horstmann Gear Group in Bath, will be displaying a comprehensive range of programmers, time switches and controls for domestic, commercial and industrial applications.

Amongst those products on display will be — The Horstmann 424 Range of programmers for all forms of domestic central heating — Horstmann electrics immersion heater controls — the Horstmann economiser optimum start control — run-back. Timers for various applications, and gas detection equipment.

Energy conservation is an important element of Horstmann’s programme and they offer a friendly welcome to all visitors to their Stand — (No. IE 02), where they may find the solution to their particular control requirement.

**Kiloheat**

Kiloheat Limited will launch at HEVAC on Stand 3T 60, a range of extremely quiet, compact, direct drive centrifugal fans designed for small duties. The new Silentovent fan range has been developed from Kiloheat’s well established TZA and TEA centrifugal fans noted for their high performance. Direct driven by motors having special slip characteristics matched to the performance of newly developed forward curved multivane impellers, Silentovent quiet running fans produce a steep pressure volume curve and are speed controllable. At HEVAC a working model of a Silentovent fan will demonstrate the fan’s characteristics, such as steep pressure volume curve, small volume change with changes in system resistance, the ideal speed control of 0 to 100% variation without thermal overload of the motor, and the low and extremely flat sound power development giving no increase in noise levels at free air conditions.

The Silentovent range covers single and double inlet fans with diameters from 160 to 355 mm, volume up to 35,000 m³/h. Using alternative scroll sizes and casing widths, further subdivision of duties can be obtained on each impeller diameter, ensuring full coverage of the range. Fan casings are fabricated from galvanised sheet steel of lap joint construction and can be made in special materials or protective coatings to order. Silentovent is in volume production and is readily available with a choice of speed controllers.

Other models representing Kiloheat’s extensive direct drive centrifugal fan range, maximum impeller size 900 mm, duty up to 12 m³/s, will be on display with examples of their belt driven models, maximum impeller size 1600 mm, duty up to 100 m³/s. A belt driven unit will demonstrate the function of Kiloheat’s inlet vane controller, mounted inside each inlet cone with no external projection, to give economical control of fan volume or pressure.

Also on show for the first time will be a new range of Twinscroll duplicate fan units in all glass fibre enclosure. Belt driven, fully enclosed, interior and weatherproofed exterior models, these fully 100% stand-by units have multivane or backward curved aerofoil impellers with fan/motor assembly on A/Y mounts. Duty up to 3 m³/s, 1500 N/m². Root extracts units for horizontal and vertical air discharge, with backward curved centrifugal impellers on external rotor motors, maximum impeller size 710 mm, duty up to 13 m³/s, available with speed regulators, flameproof motors, and soaker sheets for any roof profile will also be shown. A working model of a Kilowarme door heater unit, which can be fitted in multiples for extra wide doors will complete the display.

**Mathews and Yates**

Mathews and Yates of Swinton, Manchester, will be launching two new products at the HEVAC. Firstly, a completely new metric range of axial flow fans will be shown with 13 sizes from 315 mm to 2000 mm having direct aluminium impellers and fitted with pad-mounted air-stream rated motors. A comprehensive selection of silencers, anti-vibration mountings and other accessories is available from this new fan range.

The second new product is the Mark 11 Cyclopacair handling unit. The main feature of this new design is its heavy gauge pentapost frame construction, with double skin insulated panels as standard. This ensures better acoustic and thermal insulation and eliminates the risk of fibre migration often associated with single skin units. Mathews and Yates believe that the new Cyclopacs, with their heavy robust construction, will be one of the best value-for-money ranges on the market. A demonstration unit will be exhibited at HEVAC illustrating the advantages of volume...
New from Dunphy
Oil/Gas Burners Ltd.

A proven design in oil/gas burning.

TD series dual fuel application.

TH2 series heavy oil burner.

TLI series light oil burner.

Come and see our comprehensive range of oil & gas burning equipment ranging from 200,000 btu/h to 30 million btu/h.

On Stand No. 1F50

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control utilising variable speed motors or variable inlet vanes. Other Mathews and Yates products on show will be forward curved, backward curved and Zephyr industrial fans.

Meynell Valves Limited

Safemix Thermostatic Showers are shown by Meynell Valves Ltd. in Hall 1 on Stand number 30 with a variety of electronic control devices for the safe provision of hot water for a demanding variety of varying supply conditions with a renowned fail-safe device so that there is a shut-off of hot water in the event of a cold water failure. Electronic Safemix devices include Magishower which provides a shower for 30 seconds when the user places a hand or foot over a standard built-in sensor unit. Alternatively, the provision of hot water for washbasins is Magicontrol so that if the user places a hand over the sensor unit built-in to the washbasin surround then hot water flows into the basin for 30 seconds.

Steam Water Mixing Valves are shown with sectioned models and various aids to show how energy saving can be attained by providing hot water cheaply from steam, without storage, heat losses or space required for normal hot water storage vessels. A new type of Thermostatically controlled Steam Water Mixer is shown for applications which require tempered hot water for process control etc. A range of industrial Bronze Valves, including Remote Control Valves, foot operated valves, strainers, gate valves, plug and pet cocks, etc. are also featured on the stand.

Mylon Group

As befits Europe's leading manufacturer of indoor environmental control equipment, Myson Group has chosen Energy Conservation as its theme for HEVAC '80. And spearheading Myson's energy saving drive is a brand new domestic air-to-water heat pump which will revolutionise home heating during the 1980's. Full details of the heat pump will not be disclosed until the Exhibition opens, but it will give nearly 3kW of heat for every 1 kW of electricity consumed with outside temperatures at 20°C and significant energy savings even with outside temperatures below freezing point. The heat pump will be available in either single or twin units. The single heat pump unit will give heating outputs from 4.3kW at -5°C outside temperature to 10kW at 20°C on a leaving water temperature of 55°C. The twin unit will provide double these outputs with the same energy savings. Minor pipework and electrical and electronic fittings are all that is needed to install Myson's heat pump to replace or work in conjunction with existing heating systems.

Another brand new energy saver from Myson is a heat pump providing heated water for swimming pools. Using virtually the same materials as the domestic heat pump, with the exception of a different heat exchanger and condensing coil, this heat pump will give approximately 4kW of energy for every 1kW of electricity consumed. Full details will be available at HECAC.

On display at HEVAC for the first time is the energy saving "Myson Supastyle" split system air conditioning unit with heat pump. This supplies cool air during the summer and heat during the winter. In summer the outdoor condensing heat pump unit, which does most of the work, pumps a refrigerant into the heat exchanger in the indoor evaporator unit. The warm air inside the room is drawn in by the centrifugal fans in the base of the unit, passes through the refrigerated heat exchanger and is expelled as cool, clean air. In the heating mode, the same outdoor unit in air, concentrates the available energy to heat the refrigerant gas, and pumps it to the heat exchanger in the indoor unit, where the quiet centrifugal fans gently disperse the heat into the room.

In average spring and autumn temperatures, the "Myson Supastyle" split air conditioner in the heating mode will give nearly 3kW of heat for every 1kW of electricity consumed.

Completing the line up of energy saving products from Myson new to HEVAC are Myson "Micronair" electrostatic air filters which ensure almost 100% efficiency in cleaning air polluted by oil mist, welding fumes, fine particles, pollen or smoke. In most instances, the cleaned air can be recirculated within the factory, thus producing big energy savings on expensively heated make-up air. In the case of oil mist collection, the oil can be recirculated for reuse, again producing major energy saving.

Also new to HEVAC on the Myson stand are the Myson "Velaire" pressure jet oil boiler, the Myson "Unit Two" water circulating pump, the "Myson Warm Rail" electric oil-filled towel rail, Myson "Hellix" window and wall fans, domestic oil and commercial electrostatic air filters, electric fan heaters and a new 400mm roof unit. A comprehensive selection of Myson Group's 150 product ranges in the heating, ventilating, air conditioning, electrostatic filtration and refrigeration industries will also be on display. Full details will be available at HEVAC.

Prestcold Group

Showing on stand 3V40 selected refrigeration products manufactured by the Company at its Theale Division, comprising semi-hermetic and 'open' compressors up to 55 kW; air- and water-cooled condensing units for many different applications; and compressor/receiver assemblies. Exhibits include a new series of air-cooled condensing units based on a modular design concept to provide flexibility of duties within standard sizes of baseframes. Also on view will be the Denco Prestcold AGR valveless rotary compressor as being developed for cooling/heat pump system. A solus site within the stand will feature energy efficiency, as exemplified by models from the Prestcold range offering improved performance characteristics and greater utilisation of input power.

Stand 3V40: Searle Manufacturing Company Limited

Showing a number of products entirely new to the Searle range of Solent Air Conditioning Systems, including packaged and split air conditioning and heat pump units, details of which will be released later. Also on view will be selected models of Searle air-cooled condensers, unit coolers and finned tube heat exchangers.
Call at the following stands to see the full range of equipment handled by our principals.

Westinghouse
Air Conditioning
Stand No. 3T70

NUAIRE
Stand No. 3X20

Fibreglass Limited
Stand No. 3M48

Reconair Ltd.
Unit 4A Coolock Industrial Estate, Dublin 5
Telephone: (01) 470611 - 470209 - 470113 Telex: 31356

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Published by ARROW@DIT, 1980
matic washing machine. The new Radiation-Ascot marketing policy for the 1980's is to develop appliances which are highly efficient and therefore economical to operate, simple to install and service to save labour costs, good to look at and competitively priced.

Robinair

The Robinair Division of Kent-Moore U.K. Limited are taking the opportunity to launch, for 1980, their new Robinair refrigeration and air conditioning service products for 1980 at the HEVAC '80 Exhibition. The brand new releases include:

- New "Light Weight" range of service stations

Following the success of their "Light Weight" Service Station range released last year, Robinair are showing the Mark II version of this popular evacuation and recharging Service Station range. The new versions accommodate a wider selec-

Rabtherm Group

The Rabtherm Group (Stand 3S40) which is based at Walsall Wood, West Midlands offers a comprehensive service supply of refrigeration and air conditioning equipment, accessories and tools to the environmental industry. Exports to over 80 countries are handled from the headquarters and other distribution points are Dublin, London and Newcastle.

A new catalogue — "Rabtherm Guide '80" will be launched at the Exhibition and free copies will be available for trade only customers. All visitors to the stand will be able to enter a free crossword competition with camera prizes. The stand will show a commercial refrigeration component circuit and a domestic refrigerator circuit.

Radiation Ascot Ltd

Radiation-Ascot Ltd., two of the fastest growing names in gas heating, are showing their new range of Fuelsaver gas wall mounted central heating boilers at stand 1B70 at HEVAC. The Fuelsavers, which have already won three Awards, have outputs from 25,000 to 100,000 Btu/h in a range of eleven models. All are one man installations and are the 'smallest, lightest and most efficient' boilers for their output on the market.

There's the new Stowaway BBU with a choice of four fire fronts, and a selection of Radiation gas fires including the Supersaver live fuel effect fire which is the most efficient chimney flued gas fire on the market.

Ascot, the most famous name in hot water, is represented by their latest multipoint, the Ascot Sovereign, which provides whole house hot water through existing outlets and can also supply a shower and auto-
After 21 years of making professional equipment for air and gas movement, our three divisions have become leaders in their field. Whether it's fans, instruments or ventilation units, you'll find Airflow Developments a tower of strength.

Instruments Division

Our Instruments Division offers a comprehensive range of precision manometers, anemometers and specialist test equipment. They bring laboratory accuracy to on-site testing by combining simplicity, portability and durability. Technical assistance on special measurement problems is readily given.

Fans Division

Our Fans Division has a reputation for quality and can provide the economic answer to any fan supply problem from three categories.

CAT 1 — an extensive stock range of double and single inlet blowers.

CAT 2 — blowers built from stock components to meet special requirements.

CAT 3 — tailor made fans designed to meet the most demanding specifications of equipment designers.

Aidelle Division

Our Aidelle division specialises in ventilation for domestic, commercial and industrial premises. Aidelle is well known for its leading range of Loovent extractor units and has recently introduced an attractive range of recessed wall fans. These use the extra power of centrifugal impellers for more effective ventilation.

The Aidelle Division is handled by McKenna Distributors Ltd. 2/6 Aston Quay, Dublin 2. Tel: 773132 Dundalk 34981/2 Waterford 75931/2

Emergency Ventilation

Portvent is a compact, portable unit that quickly and efficiently provides localised ventilation. Easily carried to the required area, the unit can be used either to supply fresh air or to remove gas fumes and dust at a rate of up to 500 cubic feet per minute (providing they are non-inflammable). Portvent is ideal for providing emergency or temporary ventilation and is equally useful for.

Please let me have details of:

- Instruments
- Fans
- Aidelle
- Emergency Ventilation

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Ardee House, Blanchardstown
Co. Dublin. Tel: 213988/213337/213203 Telex: 25671.
tion of Robinair Vacuum Pumps adding greater depth to the number of models that can be offered. In addition a modified frame provides greater stability and rigidity.

- New multi-end electronic temperature testers

A brand new range comprising of four models, each having the capability of registering temperature at four separate locations on the same meter. This range offers the unique choice of analogue or digital readings in degrees fahrenheit or degrees centigrade scale. These testers provide a range of minus 60°F (-55°C) to +300°F (+150°C).

- New Robinair high vacuum pumps

Two additional models to expand the existing Robinair range of 'well proven' high vacuum pumps. Both models are compact and particularly light, providing portability with high performance. Model 15086 is a two stage 1 c.f.m. pump and model 15091 is a single stage 2 c.f.m. version.

- New line tap valves

These adjustable valves provide ease of entry into a refrigeration system by piercing and sealing on to copper tubing. The valves cover various sizes and no special tools are required. Their unique sealing method allows usage on bent or uneven tubing, whilst the design incorporates advanced safety features.

- New refrigerant leak detectors

A portable battery operated detector offering audible and visual alarms. Detector lead extends to 40' and a special switching system permits leak detection in contaminated areas. Sensitivity 1/2 oz per year.

In addition to their new 1980 products release, Robinair Division of Kent-Moore U.K. Limited will also be exhibiting a substantial selection from their refrigeration and air conditioning service products which is probably the widest range in the world.

Robey of Lincoln

Robey of Lincoln Limited will be exhibiting two new boilers on their stand at HEVAC '80, both boilers being further developments of their well proven three pass wet back design. The principal exhibit will be a Robey Incendo Coal Fired Hot Water Boiler rated at 16 million Bthu's/Hr. The Robey Incendo is available for steam or hot water and for duties from 5 million to 25 million Bthu's/Hr. Although shown as a coal fired boiler, the Robey Incendo is also available for firing on other solid fuels including wood and R.D.F. and conversion from open fire to gas fired back boiler type appliances. Also to be displayed is the new range of large diameter round and rectangular patterns is on view, certain models being available with spring-reserve. A new low-cost programmer and a simple 24-hr dial time switch are being exhibited; they are particularly easy to set and have modern styling which is both functional and elegant. Also being shown is a miniature hour meter and the Sangamo Thermostatic Radiator Valve.

Rite-Vent launches Europe's Biggest Range of Little Chimneys

Rite-Vent welcomes you to stand 2P30 at the HEVAC '80 Exhibition. On display will be the biggest range of small flues and chimneys in Europe, extending from 75mm to 610mm internal diameter. The Rite-Vent range is suitable for gas, oil and solid fuel applications for domestic and industrial markets. Products available include 'B' Vent, C.V.T.A., All Weather Vent, Stainless Steel Insulated Chimney, Flex-Rite and Maxflow. On display at HEVAC for the first time will be the new low resistance Combined Ventilated Tile and Adaptor, which can be supplied to tone with all modern tiles. 'B' Vent and All Weather Vent, suitable for class II appliances, are kitemarked to BS.715. Diameters range from 75mm up to 150mm for domestic use. Rite-Vent also supply a gas flue collector box which can be installed either across a corner or against the traditional "fireplace wall". Two sizes of box are available, one to accommodate a standard gas fire, and a larger box for a back-boiler unit. The system has the full approval of the British Gas Corporation.

The Rite-Vent Stainless Steel Insulated Chimney carries the BS.4543 Kitemark in diameters 125mm, 152mm and 203mm. A firechest can also be supplied in pre-fabricated sections which facilitates quick and easy installation. The whole system can then be concealed behind a plasterboard chimney breast or decorative stone rendering. Also available is the top quality flexible flue liner, Flex-rite, manufactured in Type 316 stainless steel. The liner is used for...
Now there really is something new under the wind, rain, snow & sun

To complement BAHCO’s successful A B C Range we are introducing at H.E.V.A.C. the A E L rooftop plant room.

The unit is totally weatherproof — it can withstand a Swedish Winter — it comes to site pre-wired, pre-piped, in fact ready to run and in the energy conscious eightys naturally heat recovery is included as standard.

So why not visit 3W26 and see just what BAHCO the energy master, can offer.

• S. You could also win a cooker hood.

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On HEVAC stand no. 2J30

• ask for Ian Hutchinson

Full Range range available with
• Day Omitting Device
• 36 Hour Spring Reserve
• Changeover Contacts
• Single & Twin Zone Programmers

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26 Charles Lane, Mountjoy Square, Tel: 740786.
Telex 5588.
Satchwell Sunvic

A revolutionary direct burner ignition system for gas appliances is one of five new star products which Satchwell Sunvic will have on display at HEVAC. This outstanding new system consists of a direct action solenoid valve with a combined governor and servo valve. A spark igniter, flame detection unit and start sequence timer are built into the valve body together with associated logic circuits. Applications is to any gas appliance where direct ignition is required and, in particular to any appliance where the combustion air is provided by a fan. The DBI has been designed by Satchwell to meet the demand for efficiency and energy conservation in the gas heating industry. It controls the start sequence and monitors the running of the burner on demand of the boiler thermostat or other controls.

For appliance manufacturers it eliminates the need for pilot assembly, pilot gas tube, thermocouple or igniter and leads. For boiler manufacturers it also simplifies the design of heat exchangers and the flue. It means reduction in the number of parts, lower costs and easier servicing. For end users the benefits are simplicity, reliability, smoother, quieter start and cost saving due to the elimination of the pilot.

Three new electronic products will be on the Satchwell stand.

Number one is the first ever total electronic domestic optimiser which is ideal for cutting fuel bills in homes and business premises like shops and small hotels.

Next is Satchwell's electronic clock thermostat for controlling domestic heating systems. Number three is a new electronic heating programmer operating on a four on/off timing mode. Satchwell's fifth new product is the range of spring return zone valves, which set themselves apart from any other valves in the market in that they consist of two separate parts. For the first time with spring return valves the valve bodies and the actuators are separated so that installers can, if they wish, plumb in the valve section first and then wire-up the actuator later at a more convenient time. As well as these new products Satchwell will be displaying their comprehensive range of domestic central heating controls and to emphasise the company's in-depth involvement in energy conservation there will be one other dramatic product on the Satchwell stand. This is the company's solar powered car which was voted the most ingeniously designed vehicle at the recent Design Engineering Exhibition. Satchwell are giving away a solar car as the prize in a free competition which will be open to every visitor to the stand, stand number 1A28.

Selkirk Metalbestos

As well as showing an extensive selection of chimney systems on their own stand Selkirk Metalbestos, one of Europe's largest manufacturers of prefabricated insulated metal chimney systems, will be exhibiting a cut-away demonstration model of their popular prefabricated domestic hearth and chimney system at HEVAC on the Solid Fuel Advisory Service stand. The display illustrates the versatile Selkirk 6" id SM stainless steel chimney complete with a lightweight Selkirk concrete chamber ideal for rapid erection in new buildings or in houses which have no fireplace or brick chimney. The Selkirk system is set in a prefabricated cut-away chimney breast. A fire surround and solid fuel room heater are used to demonstrate how the appliance is fitted into the concrete chamber and the subsequent arrangement necessary to easily provide an effective installation.

Europe's largest manufacturers and the original inventors of prefabricated insulated metal chimney systems, Selkirk Metalbestos will be displaying a selection of their comprehensive range of chimneys and flues at HEVAC. The company manufactures chimneys for all types of fuel burning appliances in a range of sizes suitable for all domestic properties and industrial and commercial applications up to 36 ins. diameter. Technical advice on specification and installation will be readily available from fully qualified staff throughout the duration of the exhibition.

Sauter Automatic (Stand No. 2Q36) are one of Europe's largest manufacturers of automatic control equipment designed to meet the exacting demands of the heating, ventilating, and air conditioning and energy management markets. The equipment is designed to fully meet customer needs and consists of both pneumatic and electronic control equipment, as well as computer systems for energy management. On show for the first time will be,

1. Equitherm type ERTJ10 of latest electronic miniature design with all controls and setting and motor built within the valve assembly. Less installation, low cost package, reliable operation, easy to commission, competitive prices.

2. Revised design of the successful Sauter Optimiser type EXRS31 now with added feature of manual override to produce boost operation of flow temperature at any time, with automatic resetting of the optimiser control should the reference room temperature fall below the set point.

3. Flexotron 1000 — miniaturized electronic plug in control system with eurocards providing indication and controls. The main feature of the stand is energy management.

With the well established and proven EY 1200 micro mini computer system, featuring:-

A) Fire and security.
B) Energy optimisation.
C) Building supervision.
D) Lighting control.
E) Programmed maintenance.

The rest of the stand will feature the following... The full range of certain pneumatic controls — Flexotron 1200 electronic controls — Timeswitches, room thermostats and the "HBCC" humidistats — Control valves, both pneumatic and electronic actuation — Building system design and installation — Control panels, including boilerhouse instrumentation — Commissioning and maintenance systems.

Schwank

Schwank Ltd., one of Britain's leading suppliers of gas fired infrared heating equipment, are launching their Miniray heater series on Stand No. 2108 at HEVAC '80. Also on display will be their recently introduced Series 100 and highly acclaimed series 2000 ranges. MINIRAY

Designed for propane or butane gas operation, the Miniray series features...
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 '0' surface as laid down in Building Regulation E.15 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.
Stelrad Group

At the HEVAC 1980 exhibition the Stelrad Group will be exhibiting in Hall 1, stand number 1C50 and will have on display examples of the comprehensive current product range and new domestic and commercial/industrial boilers not exhibited before. Stelrad's leading range of steel panel radiators will be on view. Standard panel radiators (P rads) available in 300mm (12''), 440mm (17''), 590mm (23'') and 740mm (30'') heights — single or double panel, with outputs from 210 to 4811 watts (716 to 16415 Btu/h). High output convectors panel radiators (K rads) also available in single or double panel with outputs from 359 to 7362 watts (1225 to 25118 Btu/h) and in 440 (17''), 590mm (23'') and 740mm (30'') heights.

In domestic free standing gas boilers Stelrad have the extended range of Ideal Vulcan boilers, not shown before, as well as the famous range of Ideal Concord and E. Type boilers. The Ideal Vulcan ranges now offers three model types. Each is available in either room sealed or open flue versions and in output ranges of 8.8 to 11.7kW (30000 to 40000 Btu/h) and 11.7 to 16.1kW (40000 to 55000 Btu/h).

The Ideal Concord, a deluxe boiler with a programmer incorporated into an attractively styled control panel, is available in six models all range rated. Outputs vary from 11.7 to 23.4kW (40000 to 80000 Btu/h). Ideal E. Type boilers are available in 12 models form 8.8 to 36.6kW (30000 to 125000 Btu/h) and with the exception of the larger output model, all models are range rated.

The Ideal Concord WRS and WCF range of wall hung boilers offer the advantages of uncomplicated design, easy installation, simple servicing and sound reliability. WRS models (balanced flue) are available in three range rated boilers covering outputs from 6.4 to 16.1kW (22000 to 55000 Btu/h). WCF units (open flue) come in two range rated models spanning from 8.8 to 16.1kW (30000 to 55000 Btu/h).

‘On-the-hearth' appliances will be represented by the Ideal Concord Companion and the Ideal Concord H45/55. Fire outputs are adjustable between 1.5 and 2.9kW (5000 to 10000 Btu/h) with back boiler outputs range rated from 8.8 to 13.3kW (30000 to 45000 Btu/h).

Virtually any commercial installation requirement can be fulfilled by Stelrad atmospheric natural gas boilers from the Ideal Concord C and Concord 400-1450 ranges. The Ideal Concord C, consisting of seven sizes of cast iron sectional boiler with outputs from 41kW (140000 Btu/h) to 96.7kW (330000 Btu/h).

The Ideal Concord 400-1450 fulfils the requirement for larger output atmospheric natural gas boiler applications. This range consists of twelve cast iron sectional boilers with fully automatic control systems and provides an output span of 111 to 422kW (380000 to 1440000 Btu/h).

The smallest in the Stelrad range of forced draught boilers is the Ideal Falcon. An output band of 25.5 to 115kW (87000 to 394000 Btu/h) is covered by twelve sizes of boiler. Burner options are available and can be supplied for gas or oil firing.

Next in the range of forced draught boilers is the Ideal CR2. A compact range of heating boilers available in ten sizes covering an output range of 122 to 279kW (420000 to 960000 Btu/h) in increments of 27kW (60000 Btu/h).

For industrial installations the Ideal Viceroy and Viscount provide a range of boilers suitable for either oil or gas firing (plus the recently added dual fuel burner option) and cover outputs from 117 to 477kW (40000 to 1630000 Btu/h) for the Viceroy range and 527.5kW (18000 Btu/h) to 1480kW (5050000 Btu/h) for the Viscount range.

The latest addition to the Stelrad range of boilers, not exhibited before, is the Ideal Concord Super. This boiler range is a new concept in modular gas fired units with a very high efficiency of 85% on grass calorific value. Designed for application in commercial and industrial premises the Ideal Concord Super consists of a number of identical modules each with an output of 50kW (170600 Btu/h). The number of modules in a complete boiler depends on the maximum load requirement — so flexibility is a key factor with boilers available from one to twelve modules providing a maximum output of 600kW (2047200 Btu/h) from the largest unit which still has a single flue off take.

A Searle EV air conditioning unit which can be seen at HEVAC.
Now you can have radiator central heating with a Stiebel Eltron heat pump.

The familiar range of water heating products will also be on display.
Stiebel Eltron

A comprehensive range of heat pumps is being introduced by Stiebel Eltron Ltd. at HEVAC '80. The range is manufactured in West Germany by the parent company, Stiebel Eltron of Holzminden. The Stiebel Eltron range covers a choice of heat pumps for extracting heat from either ambient air, or free standing water, or a combination of earth and water. This heat can be used to raise the temperature of a wet central heating system. Efficiency is high, as the following examples show. Assuming an outside temperature of 2°C and the required temperature of the central heating water is 35°C, (for underfloor heating for instance) the compressor of the smallest Stiebel Eltron air/water heat pump uses 3KW in order to produce 8.7KW (COP = 2.9).

The water/water heat pump is even more efficient. Assuming the temperature of the primary water to be 10°C and the required temperature of the central heating water to be 55°C the largest type in the range requires 11.3KW to produce 33.4KW. The appliances include half hermetically sealed compressors, evaporators — with condensers, controls and safety devices, clock counter, pilot lights and overall electronic control. They can be set to work on a daily cycle. Normal heating and ventilating engineers would carry out the installations — with prices varying according to individual installation requirements.

Teddington Appliance Controls

Energy saving domestic heating controls will be the theme of the Teddington Appliance Controls Ltd presentation at HEVAC '80. The Company can be found on one sector of the star-shaped stand No. 2K50 — taken by the parent UGI Group — and shared with Teddington Refrigeration Controls Ltd. Being shown for the first time are two new products: a Room Thermostat Type FEA, and a Hot Water Cylinder Thermostat Type FEA. The latest improved version of the Company's Thermostatic Radiator Valve Type AAG, notably for the valve stem and O-ring seals. The sensing head has been carefully designed to limit the possible influencing effect of heat rising from the radiator and the temperature range has been increased — 10°C (50°F) to 33°C (92°F). Other improvements include a nickel chrome finish and a longer tailpiece to permit fitment to any currently available steel panel radiator. A concealed high limit locking device has been retained as an energy saving feature.

Teknigas

Teknigas Limited will be exhibiting a comprehensive range of gas burners, controls and ancillary equipment all of which fully conform to both UK and European requirements. The sensing unit can be delayed until the premises are occupied. This feature reduces risk of damage or unauthorised tapping during the interim period. The design is aesthetically pleasing and the front-mounted temperature scale is clearly defined. Cylinder Thermostat Type FEA can be used to control a motorised valve on the domestic hot water side of a central heating system. When used with a zone valve, the thermostat can control tap water temperature to avoid risk of scalding. By arranging the control system to shut down the boiler when both hot water and heating are at the required temperature, fuel consumption can be substantially reduced.

The thermostat is easily installed by strapping onto the surface of cylinders from 12 to 24 inches diameter. Temperature adjustment is by means of a top-mounted control knob having the scale marked around its bevelled edge, which can be clearly seen from above or from the side. An important consideration when installed in a linen cupboard. Improved materials of construction have been used in the Thermostatic Radiator Valve Type AAG, notably for the valve stem and O-ring seals. The sensing head has been carefully designed to limit the possible influencing effect of heat rising from the radiator and the temperature range has been increased — 10°C (50°F) to 33°C (92°F). Other improvements include a nickel chrome finish and a longer tailpiece to permit fitment to any currently available steel panel radiator. A concealed high limit locking device has been retained as an energy saving feature.

Thorn

Thorn Heating Limited, manufacturer of domestic central heating equipment, are exhibiting on stand number 1BS0 Hall 1 at this year's HEVAC Exhibition. The complete range of Thorn Heating equipment will be displayed on an island site, consisting of the 'Panda' range of oil boilers, the 'M' range of free standing gas boilers and the 'Olympic' wall hung gas boiler. Also on show will be the 'Hotspur' range of wall mounted gas boilers and the 'Olympic' wall hung gas boiler.

The Thorn optional built-in pump is available for all models and the Thorn programmer for all cased versions. Outputs range between 19 kW (55,000 Btu/h) and 27.9 KW (120,000 Btu/h). Also on show will be the Thorn Hotspur range of wall mounted gas boilers.

GAS BOILERS

The Thorn Housewarmer range of back boilers score points for being light in weight (only 77lbs) and thus easy to install, install, easy to service and elegant to look at, aspects that appeal to merchant, installers and consumers alike. The boiler has an output of 45,000 Btu/h (13.2 kW). There are four lines available the E with a metal back boiler, the S finished in attractive teak, the Super and the Housewarmer De Luxe — perhaps the most elegant...
back boiler on the market. All Housewarmers can be hearth or wall-mounted. The Thorn 'Olympic' wall hung gas boilers are available in two sizes, the 20-35 C/F and B/F rated at 10.26 kW (35,000 Btu/h) and the 38-50 C/F and B/F rated at 14.65 kW (50,000 Btu/h). The compact crisp white lines of the Olympic will blend with kitchen unit designs, conforming to British Standard measurements for height and depth to ensure a smooth uninterrupted line in any scheme. A special Thorn plug-in programmer can be incorporated within the case and a pump kit is available to special order. The Thorn 'M' range of free standing gas boilers now has a big brother in the shape of the new 120/150C. Range rated with outputs from 120,000 Btu/h (35.17 kW) to 150,000 Btu/h (43.96 kW), it is designed for open flue application and supplied as a cased version which can accommodate the Thorn optional programmer and pump. With this addition there are now five standard boilers in the 'M' gas range with the exception of the 120/150C. All have balanced and open flue versions. These are range rated with outputs from 8.79 kW (42,000 Btu/h) to 43.96 kW (150,000 Btu/h).

Apart from the 120/150C they are available in both cased and uncased versions, and for under work surface applications.

**THORN PANEL RADIATORS**
Thorn's policy of keeping things slim and attractive extends to their panel radiators. A comprehensive range of rolled top single and double radiators are available with three heights to choose from. All are fully approved by MARC.

**THORN 25/30AH and 25/30WH GAS WARM AIR HEATERS**
With a range rated output of 25,000 Btu/h to 30,000 Btu/h the 25/30 is available with or without integral water heater, and with or without incorporated clock. Additional kits include, duct base, slot fit and storey height panels.

**THORN 30/40A and 30/40W GAS WARM AIR HEATERS**
Range rated outputs from 35 to 50,000 Btu/h with or without incorporated water heater. This downflow heater gives a big performance from one of the smallest units available. Features include automatic lock control, multi position programmer and three alternative methods of installation.

**THORN R/CA and R/CW GAS WARM AIR HEATERS**
This new downflow heater is intended principally for the replacement warm air market and will fit directly onto the existing duct base of the Sugg Haleyon type. With an output of 6.45 kW (22,000 Btu/h) with or without an incorporated water heater, the unit is suitable for low output new installations designed to meet the needs of low energy dwellings.

**THORN PLANETAIRE 22**
The Thorn Planetaire 22 is a water-to-air heat exchanger for use in central heating systems to provide warm air heating when connected to a central heating boiler. The heater is compact and is finished in white stove enamel, it has an output of 22,000 Btu/h and can be used in a variety of applications.

Suitable boilers for use with Planetaire include the Thorn Olympic 20/35 C/F or B/F.

**TI Creda**
Air conditioning will be very much the focal point of TI Creda's stand at HEVAC this year and two new Creda designed split system air conditioning units — one of which will be launched onto the market during the exhibition — will be displayed for the first time. Creda will be exhibiting on Stand No. 3U64, Hall 3.

A new split-system air conditioner with a 7 kW, cooling output will be launched at the exhibition. The system is ideal for use in shops, offices, conference rooms, hotel lounges or similar applications requiring efficient air conditioning of a medium-sized single room.

Versatility of siting is a main feature and the attractively-styled fan coil unit can be mounted on a wall at high or low level, or horizontally at ceiling level. Detailed information will be available at the exhibition.

A new ducted system will be shown to the public for the first time and will be available later in the year. The system is a development of the very popular H300 system, but greater flexibility of siting has been achieved by splitting the system into two units. Further details will be released at the exhibition.

The Creda Fairline 'S' series split system has been updated to include a new colour scheme. The panels are in Oyster finish and the outlet grille is Seychelles Brown. The room unit can be wall-mounted either at high or low level and the condensing unit can be either roof or wall-mounted. Three models are available, with cooling outputs of 2.64 kW, 3.37 kW or 5.1 kW.

The popular Creda Fairline 'WS' series through-the-wall units will be seen in operation. These completely self-contained units are for individual room conditioning. The floor-mounted consoles are quiet in operation and attractive to look at. Heating is by means of a hot water coil or an electric heater. Three models are available, with cooling outputs of 2.73 kW, 3.37 kW and 5.1 kW.

The Creda Climate Command is the ideal all-the-year-round heating/cooling system for multi-unit buildings such as offices and hotels. It is quiet and efficient and does not need an opening through the wall. Room air is drawn in at the base of the unit, filtered, heated or cooled as required and discharged through the louvres at the top.

The Creda Fairline H300 and H600 'cooling only' packaged units are ideal for multi-room applications, supplying cooled air to the conditioned rooms via ducting.

The very popular Caribbean TSR storage heaters — available in outputs of 1.7 kW, 2.5 kW or 3.4 kW — will be shown. These heaters are much slimmer and more attractive than conventional storage heaters — so they are less obtrusive and less demanding on living space. They have feet which tuck under the carpet, giving the heater an elegant wall-mounted appearance. This means there are no pressure marks on the carpet and there's space underneath the heater for easy cleaning.

**Trox**
The Trox lead in the technologies of air distribution, acoustics and air filtration is clearly evident in the extensive range of new products on view at HEVAC '80, many of which are supported by test demonstrations. An air distribution film of the new VAV Varyset applied under critical test conditions to several types of diffusers is shown with a working model. Other new A/D products featured include a smoke detector, low and ultra-low leakage dampers, fire dampers, an air diffuser with...
particulate filter and shut off valve and a demonstration of the new R type volume controller. (refer photo 3 attached).

Among the acoustic exhibits, displays of splitters and silencers are sited with the new SKS kit industrial enclosure which demonstrates its constructional and acoustic advantages in novel form. A comprehensive selection of media introduces the filtration range which contains cased roll and bag filters with ducted absolute and ducted bag filters having side withdrawal panel, accompanied by working leak-proof and oil-mist tests.

**Vokes Air Filters Ltd**

Vokes Air Filters Limited, Burnley will exhibit a range of new header sizes in their Universal 2 series of bag filters on stand no. 3W40 at HEVAC while their sister company Vokes Limited, Guildford will show examples of their stainless steel bellows expansion joints for the first time. Univee 2 bag filters are self-supporting, multi-layer air filters designed for a wide range of air flows and long operational life — up to one year under average conditions. The Vokes bellows on show have been designed for the H & V industry where typical applications are subject to thermal and mechanical movement, e.g. chiller lines, distribution mains, and low/medium pressure hot water lines.

Other Vokes products on display will include, an Unipak Absolute filter housing of the type widely used in nuclear industry and other applications requiring maximum safety standards. A selection of Absolute filters will also be shown. These individually tested filters are subjected to a BS3928 test programme which guarantees penetration from 5% to as low as 0.003% for applications demanding exceptional efficiency.

To complete the Vokes display of products, a selection of unit roll, roll filter and roll filter refills will be on view with examples of Veeglass and Supervee panel filters, grease eliminators and Volfil disposable grease filters.

**Vaillant Ltd**

The company's growing role in the United Kingdom and Ireland is given added impetus by Vaillant's impressive stand at this year's HEVAC Exhibition. An important highlight of the display is the working display of the firm's advanced combination gas boiler concept, the VCW-W Control. This design, which is being tested at Watson House, sets advanced standards of operating efficiencies and installation convenience. Although revolutionary to the U.K. and Ireland, the principle of combining central heating with instantaneous d.h.w. production is well established by Vaillant on the Continent; but the wall-mounted Control is also a total "package", incorporating as it does, circulating pump, expansion vessel, electronic control system and safety devices. Installation is simple and much quicker compared with the additional connection of the conventional heating system components. The ingenious working display enables the precise iner-action of the various controls governing the unit's different sections to be studied, and the fast response characteristics are clearly portrayed.

Other products being featured include Europe's largest capacity multipoint water heater, the MAG 400, free standing boilers, the range of BSI approved sink heaters and multipoints, unit heaters, gas-fired storage water heaters, electric water heaters, electronic control systems and room thermostats.

**Gas Water Heaters**

The Vaillant MAG 400 multipoint has an output of 96,000 Btu/hr (27.9kW), making it the biggest-capacity multipoint on the UK market. In operation, the appliance gives a constant temperature to the hot water irrespective of draw off. This unit is available in f/form only.

**Freestanding Boilers**

Considerable interest has been shown in the firm's freestanding boilers because of the oil crisis, and the VKS range of gas-fired units which has outputs of up to 320,000 Btu/hr (93kW), suitable for light commercial and industrial applications, is being shown. The VEK 5 electric sink water heater and VEN range of electric storage water heaters are also displayed.

**Controls**

Versatile set-back thermostats, and various combinations of electronic control systems are being featured.

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**Woodes of Colchester Limited**

A representative selection of high technology fans, air handling and air distributing equipment will be shown. There will be a display of historical fans and literature epitomising the theme of Woods at HEVAC '80 — 'Seventy years of air supremacy'. Woods of Colchester Limited gained the HEVAC Export Award for 1979; also, for the second year running, the H & V News Award.

**Wednesbury Tube Company**

"If you've got it, flaunt it!", so the saying goes. The Wednesbury Tube Company feel that their stand is one of the most visually exciting ones they have been involved with. And the exterior tells of an even bolder approach by the well known tube and fittings manufacturer. The wraps are off two new exciting product ranges, which Wednesbury are confident will generate a high response from people visiting their stand. Wednesbury's current range of products are also displayed. Kitemarked copper tubes, solder ring capillary fittings, the Microbore system (which Wednesbury pioneered in the late sixties) and the Micraversion unit. A continuous slide programme gives a new insight into the manufacture of copper tube and fittings, from raw material to finished product. Wednesbury are sure that their black and gold stand won't go unnoticed, and if you are looking for surprises at HEVAC '80, they will be very pleased to talk to you on Stand 1D56.
And now the good news...

At Prestcold we recognise the need to adapt to our fast changing world. That's why we've designed a whole new range of Modular condensing units with the built-in features and flexibility to carry you through the 80's and beyond.

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A glance at the impressive features of the new Standard range will confirm that they are quite simply, superb units for general applications.

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- Fan guard to international safety standards.
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- Additional range of compressors for R22 MBP applications.
- Alternative receivers easily fitted for special applications.
- New heavy-duty fan mounting for smooth running and easy access.
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But the good news doesn't stop there...

As the full range of units becomes available, it will be possible to select various combinations of the four major unit components, i.e. compressor, condenser, receiver and baseframe, to provide units which will maximise efficiency, minimise noise level, or meet special requirements.

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[Advertisement with technical specifications and contact information]
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