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H & V News

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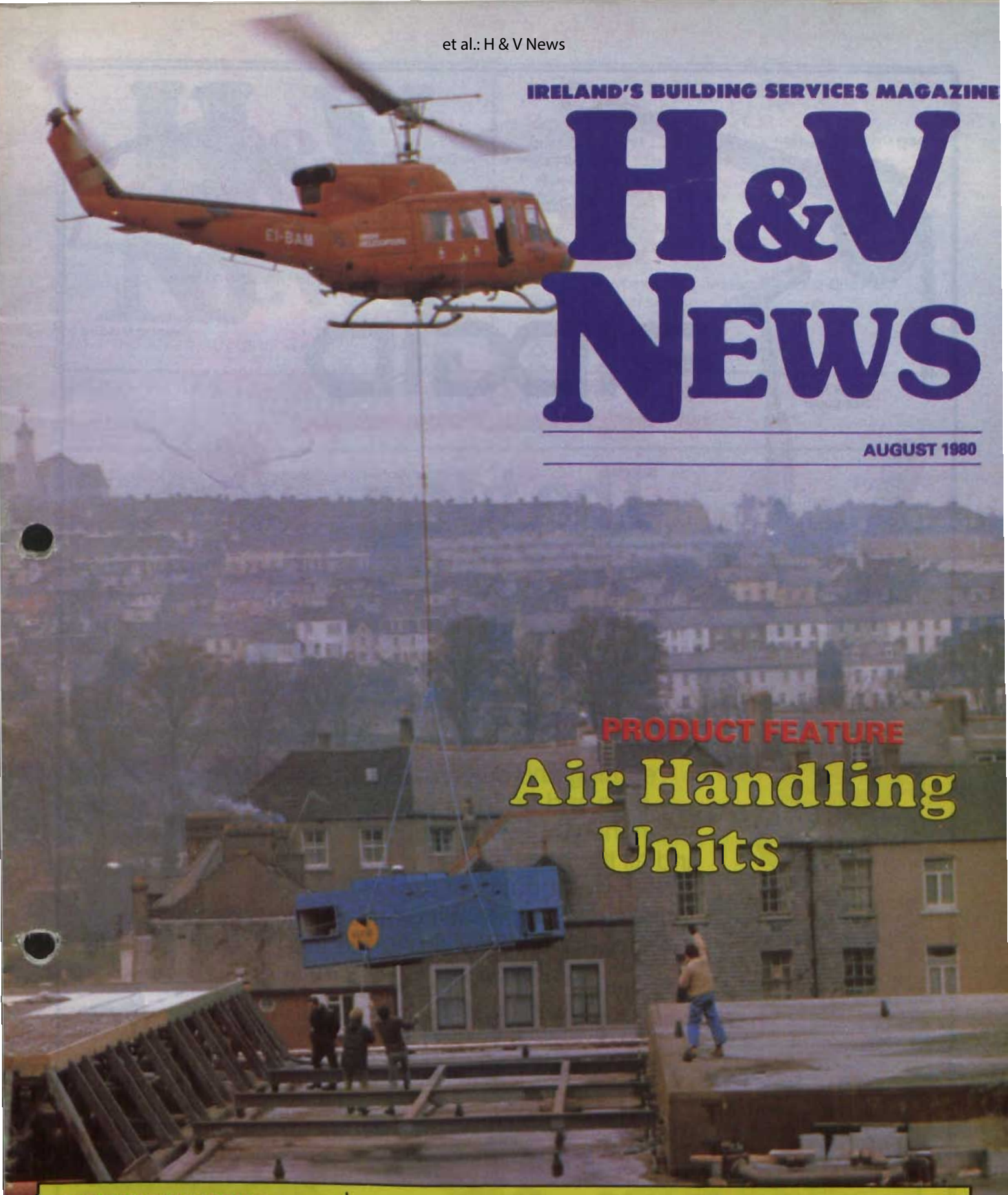
IRELAND'S BUILDING SERVICES MAGAZINE

H&V NEWS

AUGUST 1980



PRODUCT FEATURE

Air Handling Units

ALSO IN THIS ISSUE:

Windpower — a Windfall?

HEAT PUMP IN ACTION

- Down Mexico Way
- UK Import/Export Surprise
- Ulster News
- Finance for Sub-Contractors
- New Products


Heavy Duty Chain Wrench


Heavy Duty 4-wheel Pipe Cutter


Kollmann Drain Cleaning Machine

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Heavy Duty Pipe Cutter

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Emerson Electric Co.
EMERSON


Pipe and Bolt Threading Machine


Drop Head Threader


Power Threading Machine

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H&V NEWS

IRELAND'S BUILDING SERVICES MAGAZINE.

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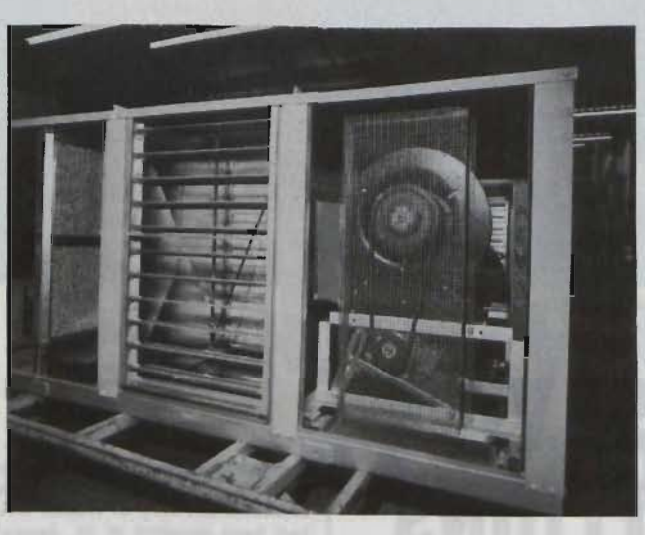
IN THIS ISSUE



AIR HANDLING UNITS — FEATURE

The air handling industry has come a long way in the past 15 years. There has been little inovation in the design of the system and its components, although improvements have steadily been taking place to increase the efficiency of each part of the unit. The demands made on the units have probably changed more than anything else. See page 15.

NEXT MONTH

Next month H&V News reviews

- Instruments and Controls
- Sanitaryware
- New Technical Feature — Central Station Air Handling Units by Michael Buckley MCIBS
- Wind Power — concluding article

Published by ARROW@TU Dublin, 1980

Shell Bid for Ergas Takeover?

A takeover bid for a stake of more than 70 p.c. of Ergas by the Irish Shell group is expected to be finalised withing the next couple of weeks.

The deal — which has been agreed in principle by the two companies — is believed to value the Arklow-based bottled gas distributors at over £5m.

A source close to Ergas said yesterday that Shell "sees the potential we see in LPG."

Another element of the deal is that Ergas has a stake in the Elf offshore consortium, and although Elf has yet to meet any success in its offshore effort, the stake would enhance the attractions of the takeover.

APPOINTMENT

Glen Dimplex Limited announce that Lochlann Quinn will shortly be joining them as Finance Director and Deputy Chairman. Mr. Quinn is currently a partner in Arthur Andersen & Co., auditors of Glen Dimplex Limited.

The Group, which is Irish owned, controls Glen Electric in Newry, Dimplex in Southampton, and last year acquired the assets of AET in Dunleer. Just recently, they also acquired the business of a major French manufacturer of electrical heating products. The Group now employs over 1,200 people and will have sales of £25,000,000 this year.

ENERGY SAVING COMPETITIONS

Energy Minister Mr. George Colley recently announced a national energy competition calling on the public to provide the ideas. The competition will also involve the business community, families and individuals, with the best ideas being adopted nationwide.

Speaking at the Institute for Industrial Research and Standards, Mr. Colley said the programme will include energy saving booklets and an award scheme for the best ideas.

There will also be a special Energy Hotline (tel. 376666) where I.I.R.S. technicians will be standing by to advise on energy-saving ideas.

Within the next six months, 15 booklets covering particular aspects of energy conservation will be published by the I.I.R.S.

About 4,000 copies of each of the booklets will be circulated free. They will cover insulation, industrial energy management and the use of control systems for energy saving.

There will also be one competition specially designed to bring forward and reward energy-saving inventions, so all you budding geniuses in the heating business get your thinking cap (or safety helmets) on.

New Storage Vessels at Guinness

Four of the largest prefabricated vessels ever delivered to the Guinness Brewery in Dublin have just been installed at St. James's Gate. The vessels of 100,000 gallons capacity are made of stainless steel and will be used for hot-water storage. They are part of a £1,000,000 project to improve the efficiency with which energy is used at Guinness.

The tanks are 50 feet high and, because of their extreme size, travelled in the early hours of the morning from the manufacturers, Messrs. A.P.V. Desco of the Long Mile Road, Dublin, to the Brewery.

Picture shows one of the huge vessels passing along a narrow street beside Guinness completely dwarfing the nearby houses.

Coolair Specials at UCD

Such has been the attention to detail in converting the former U.C.D. building in Earlsfort Terrace to house the new Dublin Concert Hall that even the air conditioning grilles have been specially finished to blend in with the various ironmongery finishes.

The aluminium grilles, which were supplied by Coolair Limited of Tallaght, will be installed in the ceiling, support columns, side walls and stage front. In addition, Coolair has also supplied a Daikin air cooled packaged water chiller to serve the air conditioning plant.

Varming Mulcahy Reilly Associates are the Consulting Engineers on the project and the equipment will be installed by the air conditioning contractors Climate Engineering.

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FINHEAT LIMITED

Now Stockists for Matthews & Yates AXIAL FLOW FANS

Now Stockists for Matthews & Yates AXIAL FLOW FANS

Nobody knows fans like Matthews & Yates

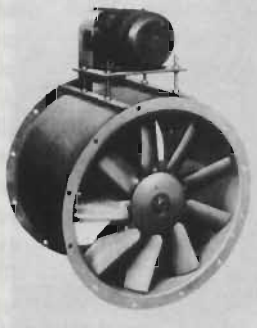
When it comes to fans, there's no substitute for experience. When it comes to experience, there's no substitute for Matthews & Yates. Take a look at our range—no other manufacturer can match it and our quality is universally accepted as the best there is.

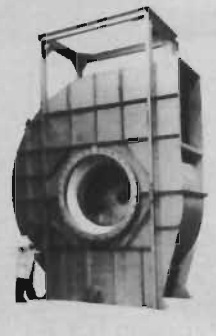
Axial Flow Fans—New from M & Y this comprehensive range of fans and accessories comes in 13 sizes from 315mm to 2000mm dia.

Cyclopac MK11 Air Handling Units—15 standard sizes built to the most exacting demands.

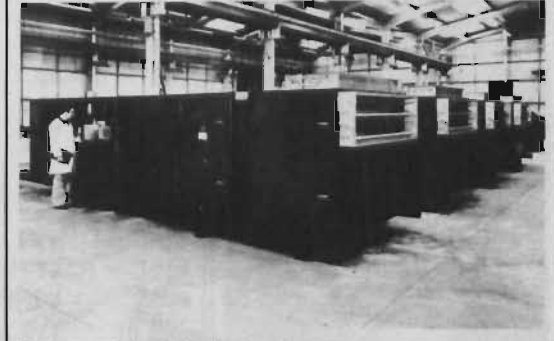
Centrifugal Ventilation Fans—This range of fans sets the standards by which all others are judged. Superbly engineered and installed in thousands throughout industry, M + Y Centrifugal Ventilation Fans are market leaders on an international scale.

Zephyr Modular—heavy duty industrial fans—an unprecedented success in less than three years.


Axial Flow Fan


Zephyr Modular Heavy Duty Industrial Fan


Centrifugal Ventilation Fan


Cyclopac Mk II Air Handling Units

From Sole Irish Agents

FINHEAT LIMITED

34 Watling Street, Dublin 8, Ireland. Tel: 778109/778120 Telex: EI 30751

Published by ARROW@TU Dublin, 1980

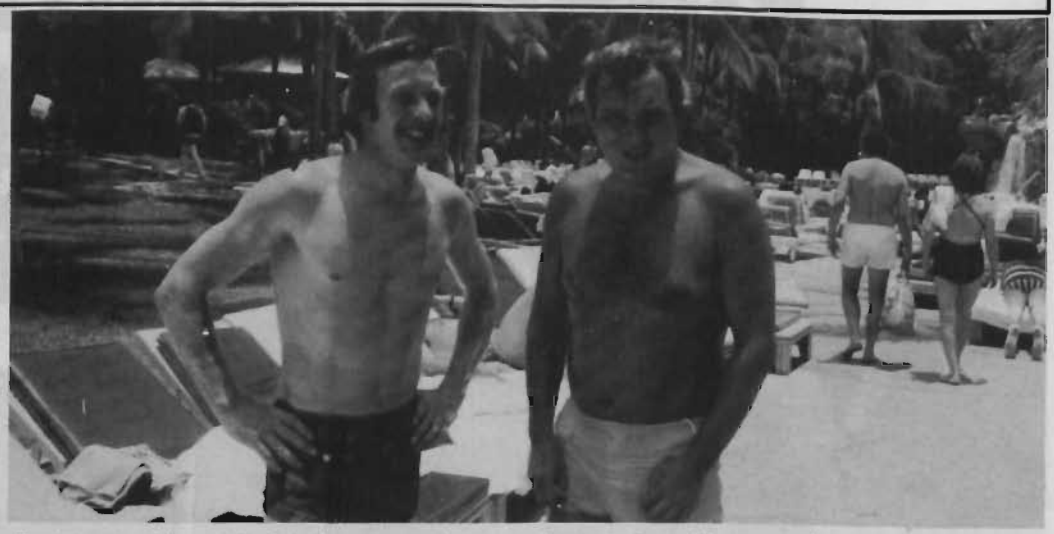
New Irish Fan Company

A new company, with plans to create 70 jobs in Ballyfermot Co. Dublin, is being set up by a Bray engineer, Declan Fehilly, under the IDA's Enterprise Development programme.

Acora Ltd., which will occupy a 9,600 sq. ft. factory in the Cherry Orchard Industrial Estate, will export impellers and fans for industrial and commercial markets.

Mr. Fehilly is the first Irish executive to return from abroad under the Enterprise programme, which through loan guarantees and grants, encourages Irish entrepreneurs to set up their own manufacturing businesses. During his 24 years in Britain, Mr. Fehilly was involved in design, manufacturing and sale of industrial fans.

In its two years, the IDA programme has approved more than 50 projects, which are expected to create 2,400 jobs.



Frank McLoughlin and Sinclair Thomson out in the sun thanks to Glow-Worm and of course C&F Ltd. Glow-Worm's Irish agent.

DOWN MEXICO WAY...

Some months ago after receiving details of the Glow-worm Annual Installers trip HVN commented that it would be nice to see someone from Ireland qualifying for such a holiday. Well as if by telepathy or some other magical means Frank McLoughlin of Sanford Heating in Dublin by installing 125 Glow-worm between July and January of last year, qualified for the trip.

Frank with over 600 central heating installers was airlifted, some by Jumbo Jet, first to Dallas for two nights, where they visited a dude ranch for a rodeo and barbecue, and then on to The Princess Hotel, Acapulco, claimed to be the most luxurious hotel in the world.

To cope with this paradise in the sun required ample refreshment from exotic cocktails served in whole coconuts and pineapples, in between rounds of golf, fishing for Marlin — someone caught a 250 pounder — visits to nightclubs and discos etc.

Next year's location still remains a mystery, but the target has been reduced to only 90 boilers to enable more installers to enjoy the rewards of their efforts. Maybe next year there will be an Irish contingent going to.....?

CHEAPER BY CHOPPER!

Our front cover this month features an air handling unit being dropped on the roof of Jurys Hotel in Cork for H A O'Neil Ltd. It seems that it was a lot cheaper to use a helicopter than to hire a crane for this particular job. Irish Helicopters supplied the 'Chopper'. Our picture show two other views of the operation.

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Hunter Not Too Hot to Handle!

Registering water temperatures of up to 95°C, a working test rig of the Hunter Genova CPVC hot and cold water system on the Hunter Plastic Industries stand at HEVAC '80 provided visitors with a convincing demonstration of the thermal insulation values of the system. They could comfortably hold the CPVC piping which was registering temperatures of up to 55°C, but could not touch the copper tubing used in the rig which was 30°C hotter. Heating engineers were also further impressed with the ease of installation.

In anticipation of the NWC's forthcoming approval for hot water use, orders were taken during the exhibition for the UK market as well as orders for container loads to Hunter's overseas outlets which included both the CPVC and the flexible polybutylene hot and cold water systems.

Hunter products are available in Ireland through the following distributors: Ward & Goldstone (Ireland) Ltd., Bishopstown, Cork, or Cork Plastics Ltd., Little Island, Cork. **Northern Ireland:** W H Martin Plastics Ltd., Mallusk, Co. Antrim.

The Hunter Plastic's test rig on their stand at Hevac '80.

New Hendron Company

Mr. Kevin Shearan, M.I.I.M.H., and Mr. Cyril Fitzgerald, M.I.I.M.H., have been appointed Directors of Hendrons Materials Handling Ltd., a new company within the Hendron Group. The new firm will handle the distribution and servicing of the complete product range of the Lancing Group, which comprises Lancing Bagnall and Lancing Henley forklift trucks.

Hendrons Materials Handling Ltd. have acquired a 1.3 acre site at Tramore Rd., Cork, and will soon begin construction of a 5,000 sq.ft. holding for spare parts and service.

Kevin Sheran of Hendron Materials Handling Ltd.

Cyril Fitzgerald of Hendron Materials Handling Ltd.

Ireland Leading Importer of CH Equipment to UK

Recent figures issued in the UK show that Ireland and France are the leading importers of heating equipment to the UK with France leading by a small margin, both hold approx. 20% each of the market. While imports in general to the UK are down Ireland's figure has increased. What is more interesting is the fact that UK export to Ireland are almost half what we import back to the UK giving a healthy balance in our favour. To add to this position UK exports to Ireland are also decreasing while our imports are on the increase. Our main import seems to be radiators, boilers and some ventilating equipment. The figures below are issued by the UK Board of Trade.

UK EXPORTS OF CENTRAL HEATING EQUIPMENT

	March 1980 £000	Dec 1979 £000	Jan-Mar 1980 £000
Total exports	1,368	1,224	4,001
Belgium-Luxembourg	31	84	132
France	244	143	626
Germany	180	46	287
Ireland	378	483	1,325
Netherlands	91	137	361

UK IMPORTS OF CENTRAL HEATING EQUIPMENT

	March 1980 £000	Dec 1979 £000	Jan-Mar 1980 £000
Total imports	3,189	4,014	10,200
Belgium-Luxembourg	575	806	1,839
Denmark	279	291	1,143
Finland	306	212	931
France	679	644	2,053
Germany	398	308	975
Ireland	646	563	1,929
Netherlands	410	362	1,590
Sweden	—	169	—

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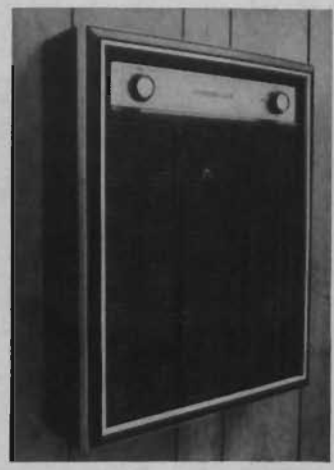
Quadrant - Chromalox Link-Up

Quadrant Engineers Ltd. have recently been appointed Irish agents for Chromalox Canada Inc. (U.K.) the well known manufacturers of electric space heating and air conditioning products. The range includes all types of electric heaters ranging from infra-red to forced air wall heaters, frost protection cables, hot water and steam boilers and of course packaged heating and air condition units. Chromalox have just introduced a forced air wall heater which can be recessed or surface mounted, rendered tamper-proof and is adjustable by a screwdriver.

The external dimensions are 15" wide by 22" deep and the units are available in a variety of power sizes ranging from 1.5KW to 4KW.

The units operate in the temperature range of 45° to 85°F, have an on-off switch, are operated solely by fan and are protected against overheating. The six pole motor is permanently lubricated and the whole unit is available in black louvre section finish with black steel trim, or beige louvre section with beige steel trim.

Further information, literature and the complete Chromalox catalogue and price list can be obtained from the company's newly-appointed Irish distributor: Quadrant Engineers Ltd., Green Street East, Dublin 2, (tel: 771411).



Chromalux forced air wall heater.

FUEL UTILIZATION
March 1980

Fuel Utilization as % of gross energy in fuel	Type of User	Import cost to realize gross energy of one ton of oil (i.e. 437 useful therms)	Consumers fuel cost / Ton oil equivalent normal price
Electricity used directly or driving heat pumps			
32% Direct	Domestic	*** £230	£555
70% 2.2:1 H.P.	Domestic	£105	£252
* 96% 3:1 H.P.	Commercial Industrial Institutional	£77	£185
128% 4:1 H.P.	Glasshouses Mariculture Swimming pools Industry	£58	£139
Off peak Electricity			
32% **	Domestic	£230	£366
Domestic Heating Oil			
55% **	Domestic Commercial	£273	£334
Industrial / Commercial Fuel Oils			
65% **	Industrial Institutional	£185	£204
Town Gas			
60% **	Domestic	£357	£721
Coal burning appliance (1) open (2) closed			
(1) 20%	Domestic	£300	£465
(2) 40% **	Domestic	£150	£233

*3:1 H.P. = Heat pump which has 3kW heat output for 1kW electrical input.

** Assuming good control & maintenance.

*** 2/3 of E.S.B. fuel is Imported Oil.

Comparisons

Examining the Table, we can begin to see why it is so important to use reliable data.

Take an average four bedroom insulated home. We should be able to heat this house for a year with the gross total energy contained in one ton of heating oil - 265 gls. provided we could recover all that energy.

HEAT PUMPS AND ENERGY CONSERVATION

by
C.P. Ford,
Consulting Engineer and
T.C. O'Connor and
M.F. Kyne,
University College, Galway.

The article with this title which was published in June issue IHVN News inadvertently omitted the table on fuel utilization efficiencies which is given herewith. The basis of the comparison is a house with a space heating demand of 12800 kW hr (437 therms) per annum.

The costs of different methods of supplying this heat to the consumer and the import cost to the nation are shown. One sees that the use of heat pump technology enables a considerable saving in import costs to be made and it also affords a chance to change out of oil to oth. fuels. This was the main point of the original article and the reader is referred to the June issue for detailed considerations.

Jacobs International Wins GEC Contract

Jacobs International Ltd. announced recently it has been awarded a contract in Ireland by General Electric Company of the U.S. The contract is for a turnkey operation, complete design engineering, procurement, and construction of a £43 million facility for General Electric's new subsidiary in Ireland. The manufacturing facility is located in Clonshaugh Industrial Estate, Coolock, County Dublin, covering an area initially of 70,000 sq.ft. The plant will manufacture superabrasive products for use in grinding, sawing and cutting applications. In full production the facility is expected to employ approximately 500 people. The engineering contract for the factory was awarded to Jacobs in January of this year and the first phase of the project will be completed in April 1981. The project is due to be fully completed in December 1981. Announcing the new contract, Mr. John Buehler, Managing Director of Jacobs International Ltd., said the project is being handled by a complete staff of Irish engineers and technicians from our Dublin Headquarters. At peak, the project will employ up to 100 personnel full-time.

In addition to heavy and light industrial engineering, the project also involves some process engineering, environmental protection and waste treatment facilities, energy conservation, sophisticated materials handling and extensive air conditioning. Work has already commenced on the site in Coolock with construction of the foundation, steelwork and roofing.

Jacobs International is the international division of Jacobs Engineering Group, a U.S. Company engaged in "turnkey" operations on a worldwide basis.

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READYMIX INTRODUCES ENERGY SAVING BUILDING PRODUCTS

Readymix Ltd., have introduced a new range of high insulation products for use in wall construction and reinforced structural elements used in the construction of buildings. This represents the first product diversification undertaken by Readymix Ltd., and a new company, based in Dublin, will be formed to market and distribute a number of products related to energy saving with initial emphasis on structural materials. Our picture shows from left to right: John McMyler, Group Sales Director Readymix Ltd.; Mr. John Byrne, Chairman of Readymix Ltd.; and Mr. Edward Turner, General Sales Manager Aerated Concrete Ltd.

Glow-Worm Boilers Now on LPG

C & F Ltd. of Mill Lane, Palmerstown have announced that they are now in a position to supply Glow-Worm Boilers for use on LPG. Glow-Worm who are the biggest manufacturers of Gas Boilers in Europe produce Back Boilers, Wall Hung and Floor Standing Gas Boilers.

Initially, C & F, who are stocking the complete range of Glow-Worm Boilers for use on Towns Gas, will be offering Wall-Hung and Free Standing Boilers only on LPG. The range available giving outputs of from 38,000 BTU/Hr. to 100,000 BTU/Hr. is as follows:

Wall-Hung

Space-Saver 38 Balanced Flue and Conventional Flue. Space-Saver 50 Balanced Flue and Conventional Flue. Space-Saver 75 Balanced Flue and Conventional Flue.

Floor Standing

Glow-Worm 45/60 Balanced Flue and Conventional Flue. Glow-Worm 65/80 Balanced Flue and Conventional Flue. Glow-Worm 85/100 Balanced Flue and Conventional Flue.

The Wall Hung Space-Saver Range is particularly suited to Apartment Block Heating and the Floor Standing Glow-Worm models are designed for the traditional Home Heating Market.

NEW STOVE FOR IRISH CONDITIONS?

It is believed that an announcement is to be made shortly by the Minister for Energy, Mr. Colley, about the state backed development of a special stove particularly suited for Irish conditions. Parameters set by the NBST include that the stove can burn a variety of fuel including wood, turf and coal.

Mr. Frank Lunny of the National Board of Science and Technology declined to comment on the stove's development and said that a major Ministerial statement will be made in the very near future.

BRIEFLY

Kevin Halpenny has left W. H. O'Gorman (Ireland) Ltd. where he held the position of General Manager. His future plans are not yet known.

*****

James Gleeson & Co. Ltd. of Limerick and Dublin have advised us that apart from the Hoval range of boilers they also do the Kymi Kymmene range of cast iron boilers, the Weisnaupt Monarch range of oil/gas burners and the Loos range of steam boilers, these names are to be added to the lists of industrial and commercial boilers and burners published in our June issue. Gleesons telex number was also omitted, the number is 8287.

Gelman Appointment

Gelman Ireland Limited, the Irish subsidiary of Gelman Sciences Incorporated, have announced the appointment of Alan O'Connell as technical sales representative in the Industrial Process Filtration Division. Gelman Sciences Inc., leaders in the development and manufacture of microfiltration equipment and systems, whose headquarters are in Michigan, U.S.A., have been marketing their complete corporate range of products in Ireland since January 1979 through the Irish company. Gelman also lead in the development of bio-medical apparatus and serves world demand from manufacturing and marketing centres in the United States, Canada, U.K., Italy, France, Australia and Ireland. Their products cover health care, electronics, laboratory and process industries. Gelman Ireland Limited are at present located in Nagor House, Dundrum Road, Dublin 14.

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ULSTER NEWS

Speakers at a Seminar organised by the Public Service Training Committee on Part FF of the Building Regulations (NI) 1977 included J. Swift Chief Building Control Officer of the Borough of Hounslow, J. Harrington-Lynn D.op E. London, G. Southern, BLE Scottish Laboratory and G. Jackson of Pilkington Glass.

The new regulations are intended as an energy conservation measure. Buildings to which the act applies will have to be designed and constructed to provide adequate resistance to the passage of head from a building. The regulations lay down provisions for maximum U values for walls and roofs and maximum areas for windows and rooflight openings.

Copies of the regulations are obtainable from H.M.S.O.

●

Press announcements indicate that a new L.P.G. company Transgas Ltd. is about to enter the N.I. market.

●

The death has taken place of Savel O. Hicks, OBE founder and lately chairman of I.E.S. Industrial (Ireland) Ltd. Son of a well known Dublin cleric the Rev. Hicks, Savel was equally well known throughout the industrial and commercial scene in the U.K. and Ireland.

He did his training in Harland & Wolf Ltd. before joining Arthur Guinness Son & Co. Ltd. at St. James Gate Dublin. On the ourbreak of war he took up a series of government posts in London, Belfast and U.S.A. and all Canada all related to production. At the end of the war he became Sales Director of the international Davidson & Co. Ltd. the fan markers, for whom he travelled the world.

A few years ago he resigned to form his own company I.E.S. Industrial (Ireland) Ltd. with offices in Belfast and Dublin.

He took an active part in the professional bodies having been a past chairman of the N.I. branches of the Institute of Energy, Mechanical Engineers, Production Engineers, British Institute of Management, Engineering Employers Assoc. to mention but a few.

A person who devoted his life to the development of the prosperity of Ireland North and South — Savel will be remembered for his contribution not only to the engineering and energy industry but also to the fishing industry, the field of education, tourism — in all his feelings for the well being of his fellow man.

Sheffield Insulations chose the Europa Hotel for a trade show. Among those present were, D. P. Scannell, Managing Director, Sheffield Insulations (Ireland) Ltd. David Abblewhite, Sales Manager and Ken Whitehouse, General Manager and J. Bryans N.I. Representative of Sheffield Insulations.

●

Mr. G. W. Jennings, Chairman of the Rotary Group presided over a pleasant ceremony at the Groups Mallusk headquarters when 23 of the Groups employees received long serving presentations. Messers T. Colborn, W. Baird and D. Barry all received awards for their 21 years & over service while the remainder had between ten and fifteen years service.

Automation Controls Ltd. have moved into new premises at Musgrave Park Industrial Estate Stockmans Lane, Belfast.

Managing Director — Tony Watson welcomed consultants electrical and mechanical contractors to his new 10,000 sq. ft. premises, where they were able to inspect the estimating and design offices, stores, production area etc.

The company which employs 25 at present specialises in the design of panels, electrical components, which it also manufacturers and distributes. They also are the sole distributors for Kraus & Naimer Logstreys Modular Panels, Himel Enclosures, George Ellison Wire Circuit Breakers and Fusegear etc.

●

Mr. Brian McAdams, Service Manager of Fuel Services Ltd presented the prizes at the N.I. Branch of the Institution of Domestic Heating Golf outing at the renowned Clandeboye course. The outing was sponsored by Fuel Services and Shell Marketing Ltd.

The presentation was chaired by the Branch Chairman — Philip Johnston of Thorn Heating Ltd. The prize winner were — Shell Trophy went to Roy Goodwin while the runners up were Dan Loughrin, Andy Davison, Victor McMillon while the visitors prize went to David Thompson.

●

Following the death S. O. Hicks referred to elsewhere in these notes the Institute of Energy N.I. Section have invited Mr. L. S. Green to assume the role of Honorary Treasurer of the Section.

Mr. Green has been an active member of the committee for some years.

●

Mr. Tom Jameson has joined the agency division of John Kelly Ltd as Technical representative. Mr. Jameson will primarily be employed with the development of the sale and service of the companys boiler agencies.

●

Joe Crossland, National Sales Manager together with Ian Marshall, Products Manager and Ian Kenmahon N.I. agent of Glynwed Ltd. were the hosts to representatives of the heating and merchant trade at a series of trade shows held at various centres throughout Northern Ireland. The main purpose of the evenings was to introduce the new Rayburn 80 series of room heaters.

The 80 range indicates a number of new features particularly the new ridelling system whereby riddling is made from the outside thereby ensuring that no dust enters the room. The thermostat control has been moved to a more discreet position.

●

Messers Davidson & Co. Ltd., better known as Sirocco works, the international Belfast fan manufacturer's have commenced the rebuilding of their Bridge End factory.

Recently it was announced that their East Yard Works was having to close because of road and housing development in the area. The company decided to re-develop the main factory site, which necessitates demolishing their machine shops, offices, stores ect.

The planning of such an operation, to re-build a factory and at the same time maintain production is indeed a masterpiece of planning.

●

The Northern Ireland Energy Managers Group finished their winter programme with a burst of activity.

Firstly, an attendance of over fifty listened to an interesting paper on "Flow Measurement Relative to Energy Management" which was given by Mr. John Attwell, Divisional Director of Babcock-Bristol Limited.

In his talk, Mr. Attwell dealt with the practicalities of installation of flow measuring equipment, explaining in detail the traps to be avoided and advising on the purchase and application of the various types of meters.

Mr. Attwell warned of the mis-

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leading information that could be obtained by not rigidly following installation instructions, insisting that when in the works engineer should always consult with the suppliers.

This meeting was followed a few weeks later with a joint meeting with the local section of the Institute of Energy, when a "full house" heard Dr. McClements, Director of the Northern Ireland Economic Development Council present his Council's Report on Energy Conservation.

After he had presented his Report, Dr. McClements entered into the spirit of a frank, critical and at the same time complimentary discussion.

It was interesting to note that, though the Report had come out in favour of CHP, there was little support for the idea from the members of the Group, as it was felt that Northern Ireland's industrial units did not reallly lend themselves to such a policy, with a few exceptions.

The discussion also covered such things as tidal barrages, wind power, tighter building regulations, heat recovery and of course, the ever present local problem, the future of the gas industry.

The third event was the presentation of the prizes to the Regional Winners of the National Energy Conservation Competition for Schools.

Member companies of the Northern Ireland's Group's sponsored a prize fund for the winning team in each age group. As a result, Mr. F. R. McBride, M.B.E., Chairman of the Group had the pleasure of presenting portable television sets to each of the winning team of the Holywood Primary School and Friends School, Lisburn.

In recognition of their reaching the National Final in London, the Group presented each of the members of the team of Castlereagh School for Further Education with transistor radios.

Suitably engraved plaques were presented to each of the schools.

Mr. F. R. McBride, Chairman, N.I. Energy Managers Group with the prizewinners of the Northern Ireland Region of the National Schools Energy Conservation Competition. The prize giving took place at the B.P. refinery, N.I. Ltd.

PIPELINE

IIL GEM

The latest edition of IIL's Readout digest contains the following gem.

Letter to the Editor

Dear Sir,

In the corner of our office stands a large and expensive beast.

She is a really wonderful animal and we pay a small fortune for her.

But for most of the time she is forlorn and alone, untouched and silent.

Why don't you call her to-day. Her number is 4789 and she answers back ILL EI.

And she's cheaper and less frustrating than the 'phone. . .and boy is that saying something!

Your etc.

T. E. Lex., Operator.

IRISH JOKE

I thought it was more than a big naughty of Jetmaster to run the above cartoon in their Jetmaster Express paper. There are many Irish manufacturers who would be more than offended by the slight on their engineering prowess. It will be interesting to see the effect on Jetmaster's market share when certain high quality Irish manufactured units really start their marketing campaign shortly in the UK.

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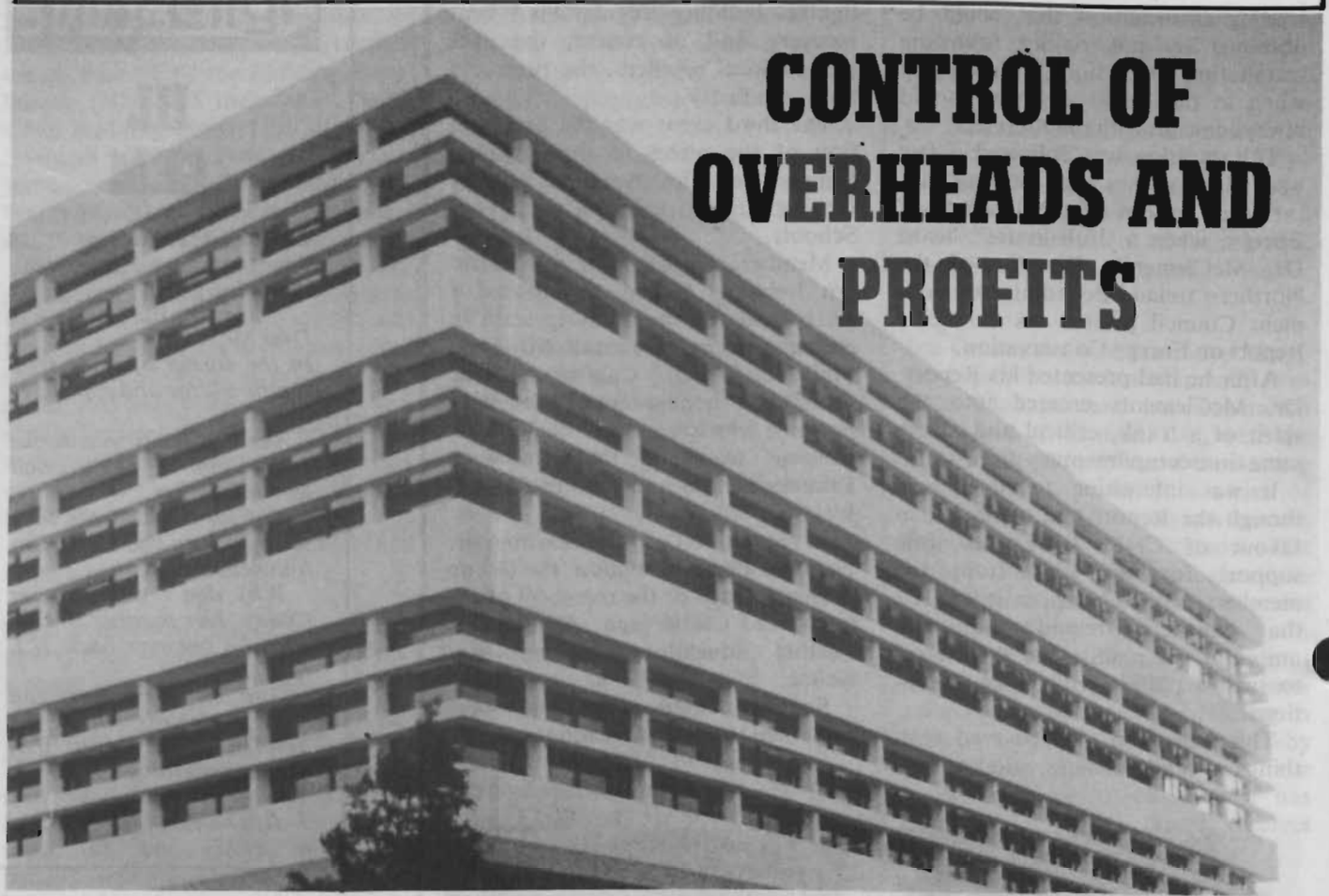
FINANCE FOR SUB-CONTRACTORS

CONTROL OF OVERHEADS AND PROFITS



As we said last month, the general aim or objective of all business organisations is to make a profit. We can define company profit quite simply by saying it is the amount of money remaining in the company's hands after it has met all of the costs of operation.

Having implemented the necessary controls on contract costs, claims and cash flow, companies must not forget that the operating costs of the organisation must also be controlled in the same manner. The true profit situation of any company can only be known when all costings for labour and material and *overheads* are taken into account.

A very simple system of control can ensure that your profits are not absorbed by your overheads and by installing the method on Schedule 3 you can obtain a vast amount of knowledge of the operation of your company from your administration end.

The basic overheads required for all companies should reflect on the size of the business and the long or short term objective on future growth. By calculating the amount of money required to carry out a certain turnover in a years trading, a base percentage can be used to determine costs for carrying out an increased turnover. An example of this is shown in Table 1.

Year	Turnover	Overheads	Precentage
1970	£40,000	£4,800	12%
1971	£50,000	£5,000	10%
1972	£60,000	£6,000	10%

Table 1

If you therefore decide to increase your turnover, you have details of approximately what overheads you will require to carry out this function.

This also assists you when tendering for contracts as you know the minimum amount of overheads you must include in your nett cost and the required percentage can be applied as shown in Table 2.

Tender Amount Nett	say	£10,000
Amount required to cover overheads	say 10%	£1,000

Table 2

Your percentage nett profit can now be applied to your final price as you have covered your operating and overhead costs and, depending on the nature of the contract, your own knowledge of the market will determine what element of profit you should include.

The required percentage to cover overheads can be adjusted if necessary if any of the individual costs increase or decrease during the trading year but, the amount of any increase would be small and would not effect the overall running of the company's contracts.

Having this overhead control will make you more competitive in the tendering of projects and more in control of the money you are spending in order to make a profit and therefore

Value of Work Completed	say	£50,000
Costs Incurred	say	40,000
Gross Profit	say	10,000
Overheads	say	5,000
Nett Profit	say	5,000

Table 3

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SCHEDULE 3 — FIGURE 1

OVERHEAD CONTROL FOR 1973

	Total Cost 1972	Budget Cost 1973	ACTUAL COSTS 1973 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bank Interest	2,600	3,000													
Bank Charges	50	50													
Electricity	100	120													
Audit	100	120													
Salaries	2,200														
Depreciation	100	120													
Postage/Stationery	50	100													
Insurance	500	750													
General	500	540													
TOTAL	6,000	7,000													

survive in business.

At the end of your trading year your final figures would show as in Table 3.

Your therefore have achieved 20% gross profit on turnover; 10% nett profit on turnover; and 10% nett overheads on turnover.

As you can see, your overheads have taken away 50% of your profits and if you can find ways of reducing your overheads costs your profit will automatically increase. The breakdown of your overheads should be studied carefully to see if the cost of any item can be reduced, and priority should be given to the following items:-

(A) Bank Interest:- Considerable savings could be achieved by implementing and controlling your cash flow, detailed in depth in Part 1 of this series (see *H&V*, May).

(B) Insurances:- Obtain rates for all insurances including employers, and public liability at regular intervals from various brokers;

(C) Transport:- Plan the delivery and requirements of material to sites and arrange in advance for delivery by the suppliers;

(D) Depreciation:- Control the use of plants on sites and have machinery regularly serviced.

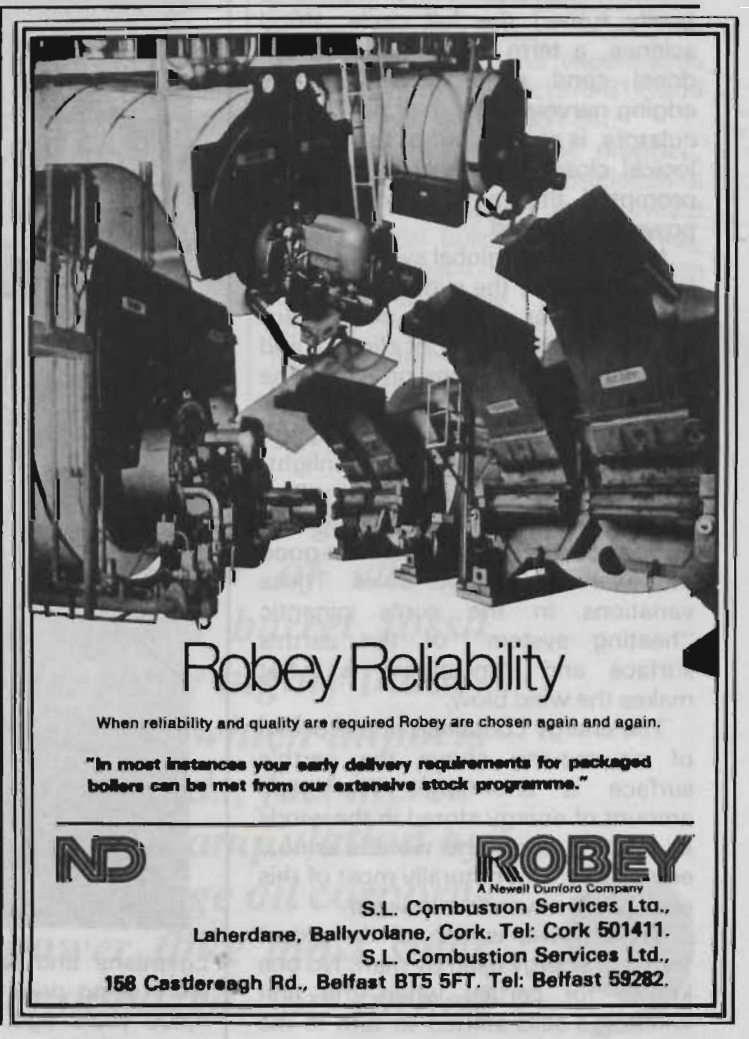
Your control schedule (Figure 1) shows your actual costs for year 1972 and your estimated cost for year 1973 in which you are trading and, having based your previous cost as a percentage of your turnover, you now have a fair idea as to how much your total overheads will cost for 1973.

By inserting the actual costs of each individual cost as they occur, you can monitor the cost of each item for comparison with your budget and, if one or more should be out of line, say after three or six months, you can take the necessary action, if possible, to control the problem.

Having completed your years trading for 1973, the amount of each month's costs can be totalled and used for comparison with your budget and as a guide to trading in 1974. Your differences, if any, can be studied to find out if any adjustments are required for future years and your control schedule therefore shows you all you need to know about your overheads.

The growth of any one business depends on the company's objectives and policy, but the control of the finance of that company determines its rate of growth.

**The author, Robert McClean is Accountant and Services Manager, Rotary Group.*



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ZONE

WINDPOWER — A WINDFALL?

by Don Hinrichsen

As part of the EEC's development plan for alternative energy Ireland has been financed to set up a number of experimental wind tubrines on the West coast. It will be some time before this project shows any results and so Zone for the next two months looks at wind power, its origins and some experiences of wind turbines in Sweden.

Famous artists like Cezanne, Daudet and Rembrandt have lived in them. They've been rhymed, riddled, romanticized and ridiculed over the years. Still another was tilted at in one of the most memorable scenes in world literature. Windmills have finally turned the full circle. Wind science, a term which did (and still does) send some power experts edging nervously for their pocket calculators, is coming out of the technological closet. The energy crisis has prompted the re-harnessing of the power in the wind.

Like all of our global systems, wind is generated by the sun — the earth's thermonuclear power plant. But because of the variety of climatic and topographic conditions on earth, the sun's energy doesn't warm the surface of our planet at a constant rate. Cloud cover blocks out sunlight, different materials absorb and reflect the sun's rays in varying degrees, and, of course, the equator is a good deal warmer than the poles. These variations in the sun's gigantic "heating system" of the earth's surface and atmosphere is what makes the wind blow.

The energy contained in the ocean of air moving above the earth's surface is enormous. The total amount of energy stored in the winds is about 3 times the world's annual energy use. But naturally most of this energy will never be extracted.

Wind power is one of the oldest forms of energy used by man. No one knows for certain when the first windmill's sails started to turn in the wind. Some suspect that the ancient Egyptians and Minoans (on Crete) were using primitive wind machines 4,000 years ago. In any case, it is known that by the seventh century AD the Persians had devised a crude vertical axis windmill for grinding grain. Wind power blew into Europe much later. The earliest reference to a

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windmill was in 1105 at Arles, France. By 1191 windmills had reached England.

During the Middle Ages, wind technology spread rapidly. Up to the industrial revolution, the Dutch, Flemish and Danish economies, to name a few, virtually ran on wind and hydro power. But it was Dutch ingenuity that really refined wind technology into a science. Using two-horsepower windmills — called polder mills — Dutch engineers managed to battle back the North Sea, reclaiming much land that would otherwise have been lost.

Today's modern wind turbines are just more sophisticated versions of the old Dutch horizontal axis machines. The basic technology hasn't changed *that* much. Blades or sails catch the wind and turn a shaft that powers an electric generator instead of a pump or a grinding wheel. Like in the old days, gears are used to increase the rotational speed of the shaft without requiring the blades to turn faster.

Still, it's a big leap from pumping water or grinding sesame seeds to extracting electricity from the wind. Whereas fossil fuels are highly concentrated and easily storable forms of energy, wind is neither. It remains a frustratingly unpredictable and undependable energy source. Wind conditions vary dramatically from place to place (even at sites a few hundred meters apart), it has a habit of changing direction frequently and sometimes doesn't even blow enough to move a hair on your head.

Despite these drawbacks, wind power is on its way to becoming an important component in a number of energy supply systems. As the world's barrel of fossil fuels continues to dwindle, some highly industrialized countries like Sweden, which imports 70 percent of its total energy needs, feel increasingly vulnerable to economic manipulation by energy exporting nations and large oil corporations. After all, wind power (like most solar sources) cannot be monopolized, or turned off!

One of the spinoffs of this feeling of "energy insecurity" is that wind technology is now a drawing card. This was highlighted recently when 200 delegates from 21 countries breezed into Amsterdam for the Second International Symposium on Wind Energy Systems. There was an emerging awareness that what the experts call "wind energy conversion systems" or WECS (whatever happened to windmills?) are rapidly becoming both technologically and economically feasible ways of tapping a largely wasted energy source.

Sweden, the US, Japan, and the Netherlands presented overviews of their respective wind energy programs. Having tossed $60 million into the wind, the US is by far the biggest spender. Sweden follows with a wind budget over the next three-year period of 110 million kronor ($26 million). This year, Canada, Denmark, and the Netherlands will also be spending millions of dollars on wind energy R&D.

It seems as though wind power is catching a "second wind" in other countries too. New Zealand has launched an extensive search for favorable wind wites and the government is apparently very interested in using wind-powered electricity generation in connection with hydropower. In Italy, Fiat is experimenting with small-scale 10 kilowatt units for electricity production. The Spanish equivalent of NASA has outlined a plan for wind resource management. Egypt has begun a wind measurement program at five sites (three on the Mediterranean and two on the Red Sea). Iran has approved an 18-month wind study program. Electro Peru is examining wind potential, especially in connection with its hydropower network. Brazil sponsored a wind energy conference last spring and is going ahead with several 1-8 kW machines for use in its remote northeast regions. Ethiopia, Thailand, India, Pakistan, and Malaysia are all developing either Cretan-type windmills for irrigation or experimenting with the multibladed US windmills for pumping water.

Sweden's wind program is coordinated by the National Swedish Board for Energy Source Development (NE for short). NE was inaugurated as part of the country's big new "energy package" which was outlined in the Energy Policy Bill of 1975. Wind is one of NE's ten main energy programs. The wind energy component is, in turn sliced into three segments: studies and experiments (1975-77); prototypes (1978-81); and full-scale evaluation (1981-84).

The first stage of the program, which ended in 1977, produced a hefty stack of reports and provided two essential building blocks. First, NE's studies established that Sweden has a favourable wind energy "profile". Second, it provided the necessary framework and data base upon which the green light was given for phase two: the prototypes.

Part two next month.

Wind power is on its way to becoming an important component in a number of energy supply systems. As the world's barrel fossil fuels continues to dwindle, some highly industrialized countries like Sweden, which imports 70 percent of its total energy needs, feel increasingly vulnerable to economic manipulation by energy exporting nations and large oil corporations. After all, wind power (like most solar sources) cannot be monopolized, or turned off!

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AIR HANDLING UNITS

By V. J. Garvey, B.A., B.A.I.

Introduction

Although the basics in building services design do not change much with the years, the emphasis placed on certain aspects of a de ign do. Today, the use (or misuse of energy can often by the deti mining factor in selecting one design over another. This article looks at some alternative methods of controlling volume in V.A.V. central station airhandling plant, and of how they compare from the point of view of energy useage.

The Problem

Although some manufacturers still offer Inlet guide vanes as a preferred method of control, a quick survey of this available central station V.A.V. plant very quickly convinces one of the need for a fresh approach. The principal problems associated with Inlet vane control are:

1. The inability of inlet vane dampers to maintain the fans operating efficiency at reduced volume.
2. The fact that the drive motors are designed basically for peak efficiency when operating close to full power, and consequently give poor efficiency figures at reduced power output.
3. The problems associated with achieving smooth reliable control over the vane movement.
4. The testimony of most commissioning engineers who, through a variety of the above, and other problems, consistently find it difficult to match design figures.
5. The high initial cost of fan inlet vanes.

The Alternatives

So, what are the alternatives? Face damper control is immediately out of the running on efficiency grounds. Variable pitch pullies lack properly developed automatic control systems, and are limited in the maximum power they can handle. Hydraulic and other variable speed "Gearboxes" generally suffer from the disadvantage of high initial costs, difficulty in achieving automatic speed variations, and the inherent problem of the primary source of motive power being designed for "full power" operation. D.C. variable speed motors are well developed for automatic operation, but perform rather poorly on efficiency and initial cost. Thyristor control of standard three phase motors does not appear to be sufficiently well developed to merit serious consideration, and also exhibits very high power losses. The main contender therefore is the use of a variable speed motor, which has the ability to maintain a high efficiency at reduced power, and is specifically designed for automatic control. The three phase rotor fed combutator motor appears to perform well on these grounds, and has the befefit of being commonly used for precisely this application.

The Facts

Despite the slightly lower efficiency of the variable speed motor, the energy saving is quite considerable. Apart from the direct saving in power consumption, the reduced losses at peak load represent a saving in the sensible heat gain normally associated with fan/drive assemblies in air handling units.

It is appropriate at this stage to describe the variable speed motor itself in some greater detail, and to look more closely at the control system associated with it.

The Motor

The principle of operation of the veriable speed motor can best be explained with a reference to fig. 1. The primary winding (1) in the rotor is directly connected to the three phase supply via sliprings (2) and this generates a rotating electromagnetic field. This field induces a voltage in the regulating winding (3) (the magnitude of which will be independent of speed), and also in the stator winding (7) (the magnitude of which is speed dependent, deducting to zero at synchronous speed). A partial voltage, which can be varied by altering the brush position is now tapped off the commutator by two sets of brushes (5 and 6) and fed to the stator winding (7). Depending on the magnitude and phase angle of this voltage, its addition to the secondary voltage produces a variable resultant voltage, and a state of equilibrium is reached corresponding to a certain speed, i.e. the voltage tapped off by the brushes "balances" with the speed-variable stator voltage. Speed control is obtained by shifting the brushgear. A small three phase induction motor is used for this purpose. this motor is "built in" to the main motor and can be run in either direction to increase or decrease the speed. The speed variations achieved is therefore smooth and slipless. The regulating time from minimum up to maximum speed is usually about 90 sec. although this can be selected anywhere from about 10 secs. to 240 secs. where required.

Motor Protection

Overload protection by an overload relay in the three-phase supply lines, as used with standard induction motors, is ineffictive with three-phase commutator motors since the supply current rises as the speed increases. Such an arrangement would, therefore, protect the motor against overload in the upper speed range only. However, there are two methods of protecting the three-phase commutator motor as follows:

1. Incorporating button-type thermostats in the stator winding which interrupt the control circuit of the supply contactor if the permissible winding temperature is exceeded and thus shut down the motor or trigger a warning device and:
2. Incorporating an overload relay in the secondary circuit of the motor. At rated torque the secondary current is practically constant over the whole speed range so that the motor can be protected against overload in this way.

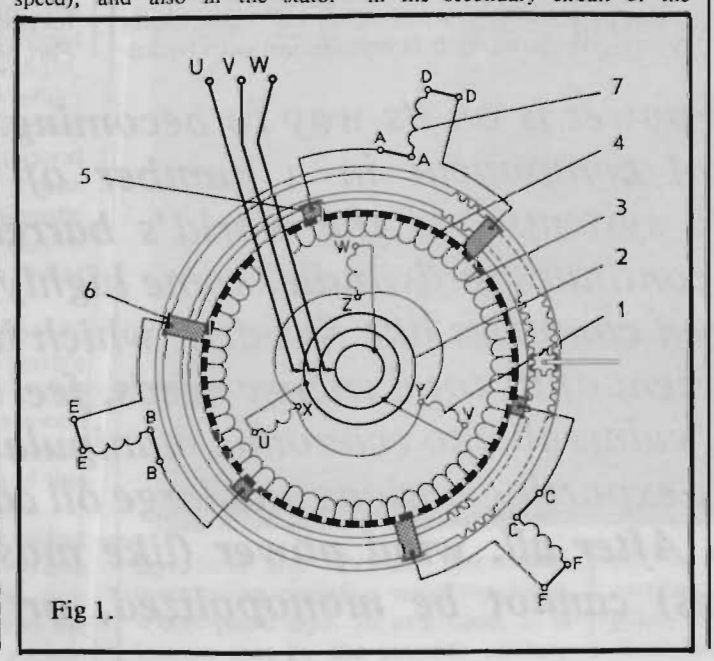

Fig 1.

The Control System

It is the great simplification in controls that adds much to the appeal of the variable speed motor. The speed control mechanism is an integral part of the motor. No mechanical links are used. All that is required on site is a pressure switch, speed variation can then be achieved with a simple across the line contactor. Using this arrangement stable control can be achieved, with duct pressure being maintained typically within less than 1.0 mm wg of selpoint. It could be noted at this stage as well thef, as the variable speed motor is always started at minimum speed, the need for current limiting devices on large motor startup does not arise, this introduces a further saving in controls.

The control of the return air flow is equally straightforward. A signal from the supply flow motor to a control box will set the speed of the return flow to that of the supply fan, with an accuracy of better than 1%. As a boon to the commissioning engineer, some "knobs" are fitted here which allow the speed of the return fan to be "shifted" in relation to the supply, up, or down by 20%. The range can also be expanded or contracted, thus allowing absolute flexibility in meeting design figures.

The return fan motor controlled device is a standard proportional controller, commonly used in H.V and A.C. applications. The wiper of a 500 transmitting pot on the supply motors indicates the angle of the brushgear positioning shaft to the controller. The controller then raises or lowers the speed of the return fan until its transmitting potentiometer indicates the same angle, hence speed. The application is very similar to that of using a "slave" controller to position volume control dampers in a multiple damper system.

Conclusion

We can conclude that the variable speed motor has some outstanding advantages in V.A.V. fan drive applications.

- Smooth stepless control of pressure, with a high degree of accuracy.
- Simple reliable control, offering savings in initial capital cost, and in commissioning effort.
- Highly efficient use of electrical and mechanical energy. This leads to lower running costs.
- The motor is always started in the minimum speed position. The starting current is therfore very low (approx. 1.7 times full load content), resulting in savings in electrical starting gear. The start up is also very smooth and silent, and impose minimum wear and tear on drive components.

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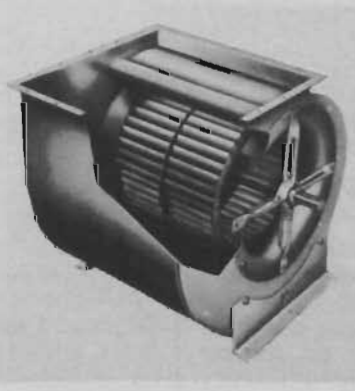

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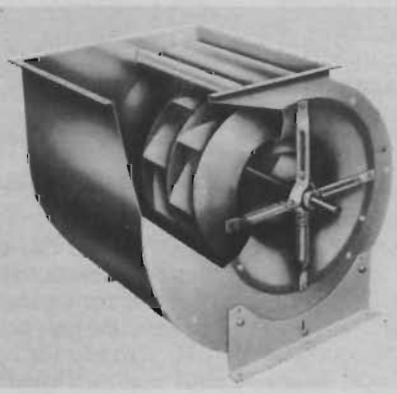

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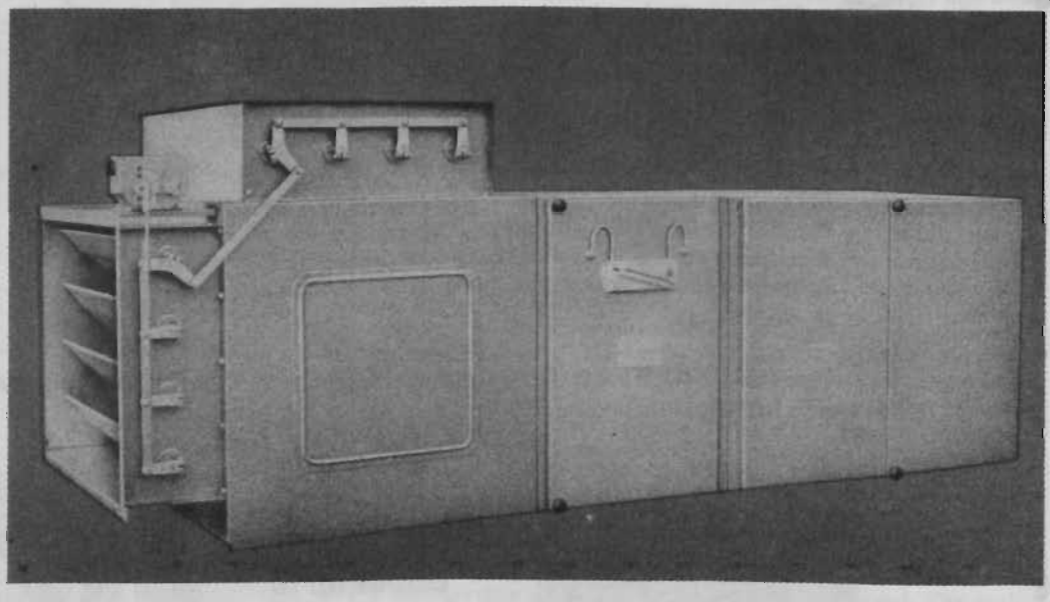
AIR HANDLING UNITS — THE FUTURE

Most companies are convinced that those options concerned with energy conservation will become increasingly popular in the future. These include all forms of heat recovery systems and VAV systems. These options are not economically viable for every installation now, but further development and/or steeply rising fuel costs will eventually make them almost essential to the standard design of air handling units.

The air handling industry has come a long way in the past 15 years. There has been little inovation in the design of the system and its components, although improvements have steadily been taking place to increase the efficiency of each part of the unit. The demands made on the units have probably changed more than anything else. By meeting these demands as they arise, air handling units can provide a far more flexible service in a package now than was available from the first units. The customer has come to expect not only a better quality unit, but also a better quality service from the supplier — and he can now receive both.

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



One of the Biddle 'V' Pak range of air handling units from Climavent.

Climavent

In the words of Geoff Reynolds, Operations Director of Bahco Ventilation Ltd, "It's as easy as ABC."

The secret is that all Bahco's ABC air handling units are built up entirely from individual modules. Each module is an entity in itself, capable of performing its designed duty at maximum efficiency. For example, the fan unit, filter section, and heater battery are each quite separate sections and are put together like red, yellow and green building blocks. In all there are more than twenty of these modular sections in the ABC range.

This makes for complete flexibility of layout. Many shapes are possible. Individual sections can be stacked vertically or horizontally. By using deflector sections a U configuration is possible, so that the exhaust and supply air connections are adjacent to each other at the same end of the unit. A Bahco ABC ventilation unit may be twisted through six or seven different directions. In fact, the number of permutations has not yet been charted.

In practical terms, Bahco's ABC can cope with whatever restricted space is available for a plant room.

There are now ten sizes of ABC (sizes 0-9) giving a choice of air flow from 0.25 m^3/s (450 cfm) to 23 m^3/s (50,000 cfm). This means that the ABC range will provide a complete air conditioning service for anything from the board room to a huge factory complex.

The ABC also incorporates duty overlap. Adjacent sizes overlap with one another in the amount of air they are capable of shifting for any given amount of time. This ensures that the unit chosen will neither be too big nor too small for the intended function. Thus, specifying engineers and authorities can be certain that there will be a unit of the right size to provide high operating efficiency and economy for every duty.

While all ABC sizes are available in modular sections, it is possible to have a fully assembled packaged unit as an alternative. These integrated units usually comprise mixing dampers, filter, heating coil and fan in the smaller sizes of ABC.

It is not surprising that the ABC is described as an air handling unit which treats air with the respect it deserves. Prices are competitive and delivery normally takes six to eight weeks.

Bahco equipment is available from Climavent Ltd.

Airpac

The Airpac range, according to the manufacturers, Woods of Colchester, was designed specifically to meet the need for a unit that was competitive both in price and performance, completely metric, combined filter heater and fan in one basic unit casting, and was produced in quantity for quick delivery.

The Airpac 4 range has five sizes of unit, ranging

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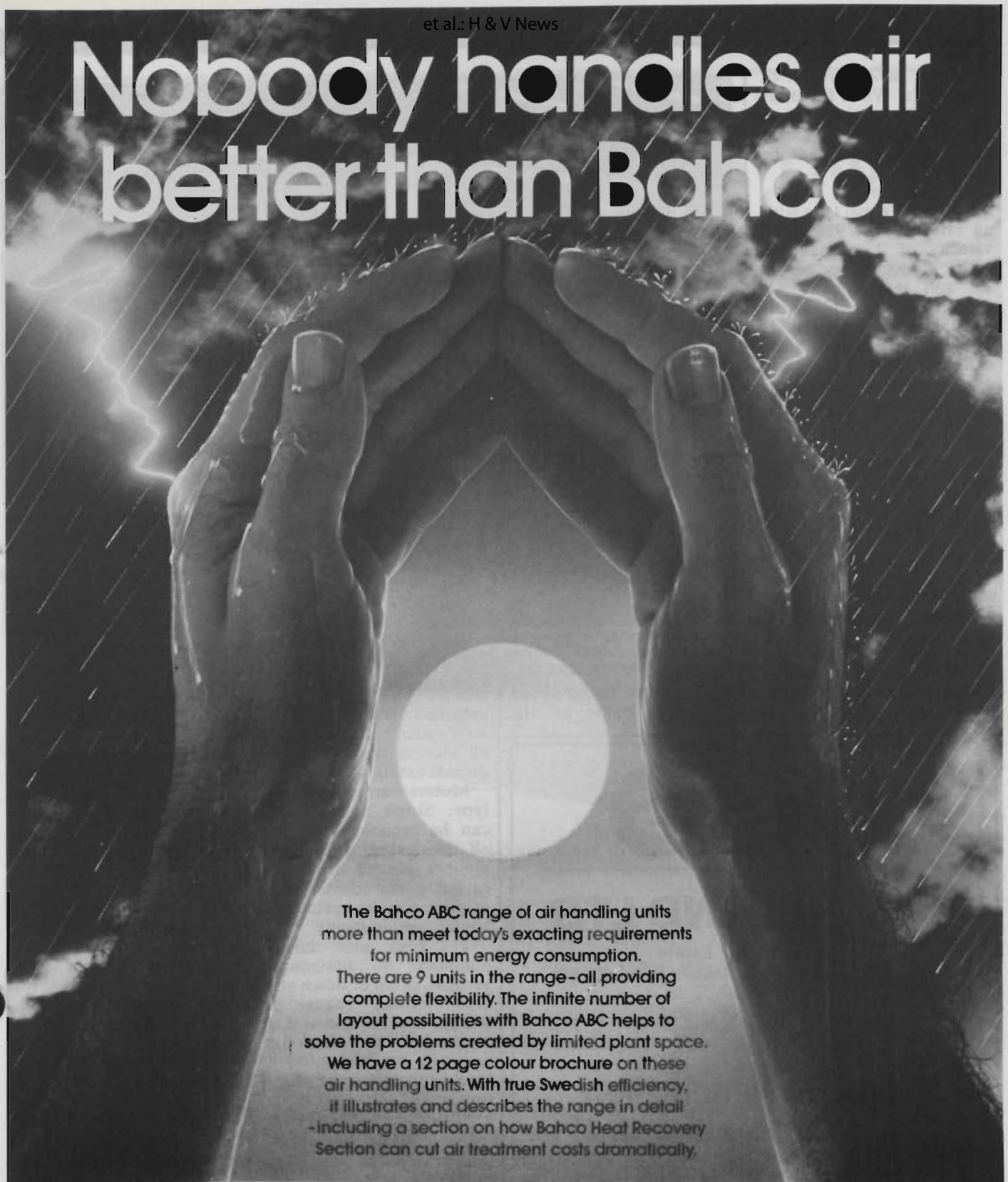
Nobody handles air better than Bahco.



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

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Sole Irish Agents **CLIMAVENT LTD. 29 North Brunswick Street, Dublin 7. Phone: 776615 Telex: 31718**

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from 0.7 m^3/s through to 4.45 m^3/s. When the units are used for heating only an increase of approximately 30% in volume can be achieved.

The filter media is of a throw-away panel type with an efficiency of 92% at a velocity of 2 m/s and is easily accessible for removal and replacement. All filter media comply with BS2831 No 2 test method. The unit is supplied with either a flag type filometer or a manometer, inclinced type, whichever is specified.

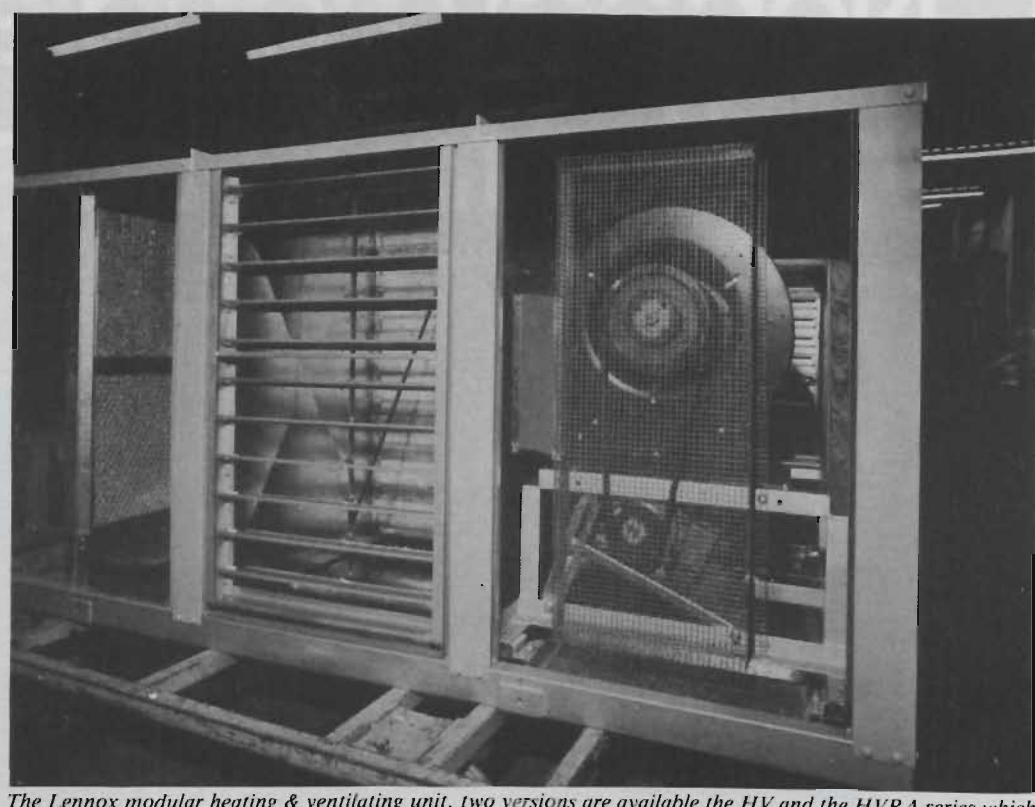
The heaters are of standard design of LPHW., two rows with ten fins at 2.5mm spacing. Tubes and headers are of copper. Fins are of aluminium. Connections are of BSP (M) thread. The battery can be used in left or right hand applications without any effect on performance. Coils are tested at least 25kg/cm^2 under warm water.

The fan unit comprises a double inlet, double width centrifugal type fan with a runner shaft mounted on the same frame as the motor. The frame is in turn mounted through rubber A/V mounts, thus isolating all moving parts from the outside casing.

Motors are of TEFC type. Single and standby can be accommodated on all sizes except 407. There are pre-selected drives for each size, and selections are made nearest to customers' specific requirements.

The basic unit can be mounted in horizontal, vertical, or up or down attitude without change in design. The fan can also be assembled to discharge vertically up, but this feature requires special attention and additional cost.

Further information: GEC Distributors.



The Lennox modular heating & ventilating unit, two versions are available the HV and the HVRA series which cover the horizontal and downflow designs. These outdoor modular H & V Units are supplied by the Lennox Distributors in Ireland, C & F Ltd.

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United Air Coil Limited

Lennox

Lennox Industries of Basingstoke have just launched a new range of Rooftop Heat Pumps with cooling capacity of up to 60 k.w. and heating capacity of up to 58 k.w. Auxilary heating is available using either electricity or hot water up to 120 k.w./hr.

The DSS1 Heat Pump Single Zone Unit incorporates a complete Heat-Vent-Cool system (including outdoor unit) of highly engineered, integrated components in a weatherproof, low silhouette single package. The Lennox DSS1 heat pump is ideall suited for installation in a wide variety of commercial and institutional buildings. Only one source of energy is needed at a building with the all electric heat pump. There is no need for a flue or combustion air intake. The energy saving control system finely matches the supply air temperature to the load requirements of a building with maximum operating efficiency. Factory assembled units are designed for easy installation, maximum accessibly and ease of service. Units are designed for rooftop installation with bottom handling of supply and return air. A separate roof mounting frame (optional) mates to the bottom of the DSS1 unit and when flashed into the structure. A choice of three frames is available; standard frame, combination supply and return air frame and adaptor frame for horizontal discharge. Roof mounted equipment saves valuable interior floor space, keeps sound

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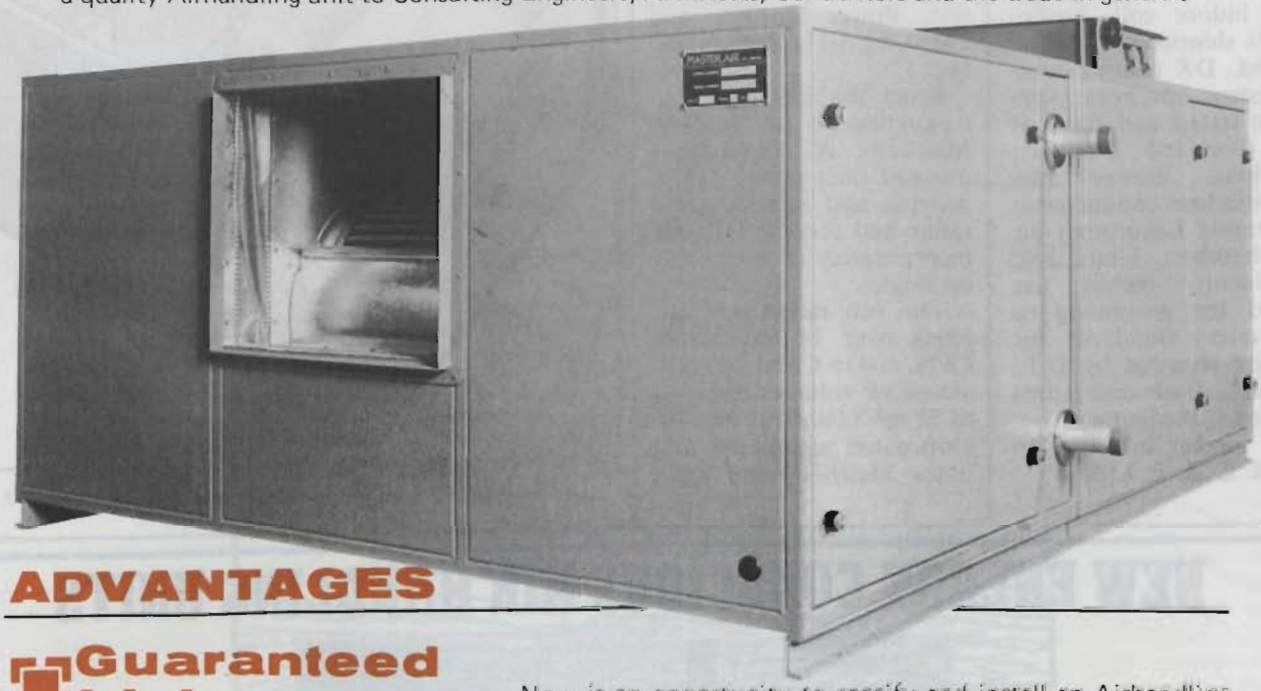
AIRHANDLING UNITS FROM MASTER AIR

The Irish manufacturing company, Master Air Co. Limited, have pleasure in offering a quality Airhandling unit to Consulting Engineers, Architects, Contractors and the trade in general.



ADVANTAGES

Guaranteed Irish — Now is an opportunity to specify and install an Airhandling unit manufactured by a wholly owned Irish manufacturing company.

Design — Superior robust design with the main frame structure formed from 12 gauge box section steel. All panels are internally insulated and attenuated to minimise noise breakout.

Range — Heating application units up to 75,000 m^3/h. Cooling and De-humidifying units up to 75,000 m^3/h.

Low Noise — All units can be selected at maximum static efficiencies, low rpm and low noise outout. All fan and motor units are mounted on an internal floating frame thus minimising vibration transmission to casing and ducts.

Delivery — We offer a better realistic delivery to site than any other Airhandling unit manufacturer outside Ireland and eliminate lengthy transportation delays.

Cost — Because we have direct control over our own manufacturing costs, and a range of standard units selected to meet specific duties without the need to oversize, we can offer a very competitive price for any given size of unit.

For further details or price quotation please contact:

Master Air Co. Limited.

Unit 52, Cherry Orchard Industrial Estate, Ballyfermot, Dublin 10. Tel: 268190/268230.

Published by ARROW@TU Dublin, 1980

outdoors, provides ease of service access without disturbing occupants of the building and permits easy concealment of ducts in drop ceilings.

The heat pump DX heating-cooling consists of two separate and completely independent refrigeration systems including separate Lennox Landmark compressors and their independent outdoor coil with fan and a separate circuit in the single indoor coil. Equipment is shipped factory assembled. DX heating-cooling system has been thoroughly tested and rated at ARI Standard 240 test conditions. Blower data from unit tests conducted in the Lennox Laboratory air test chamber. Units and components within are bonded for grounding to meet safety standards for servicing required by U.L. and NEC. Each unit is test operated at the factory.

For further information contact C & F Ltd.

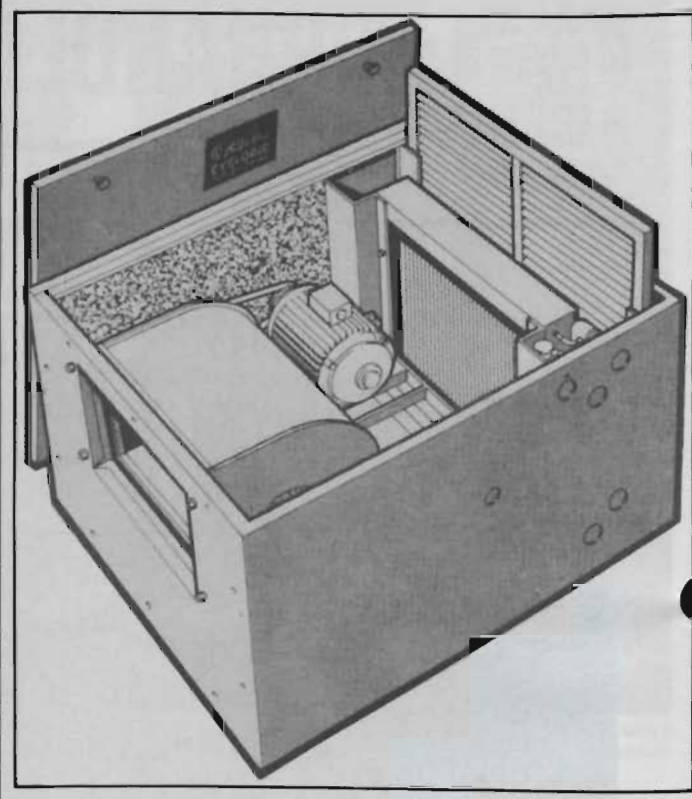
Finheat

Since the Matthews & Yates Cyclopac was first introduced it has earned a high reputation for quality and reliability amongst Specifiers, Installers and Users.

Units have been installed in many different locations included amongst which are Airports, Hospitals, Railway Stations, Television Studios, Universities, Hotels, Power Stations and Factories of many types, etc.

From the unit's first introduction to the market, Matthews & Yates have pursued their policy of improving and extending the range and these details are incorporated in their new catalogue.

The full range now extends over 14 sizes from CPN. 108 to CPN. 140 providing air volumes in excess of 28 m^3/s (60,000 cfm). Incorporated within the unit is the Matthews and Yates Fan which has been tried, tested and proved in many thousands of installations throughout the world.



A Matthews & Yates Cyclopac air handling unit from Finheat Ltd.

NEW ENERGY CONSCIOUS AIR HANDLING UNITS

Units are available in nine different sizes from 1500m^3/hr to 90,000m^3/hr. Five different types of heat recovery systems available for all sizes

brennan group

Details available from:—

brennan airconditioning limited.

60 cookstown industrial estate
tallaght co dublin

tel: (01) – 514711
telex: 33339. EI

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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.

I.T.T.P. Ltd. publishers of Business Efficiency Times, Irish Travel Trade News, Futura, Irish Electrical Industries Review, Irish Heating and Ventilating News, Retail News, Plan and Jewellery Ireland.

IRISH TRADE AND TECHNICAL PUBLICATIONS LIMITED
5/7 Main Street, Blackrock, Co. Dublin. Tel: (01) 885001.

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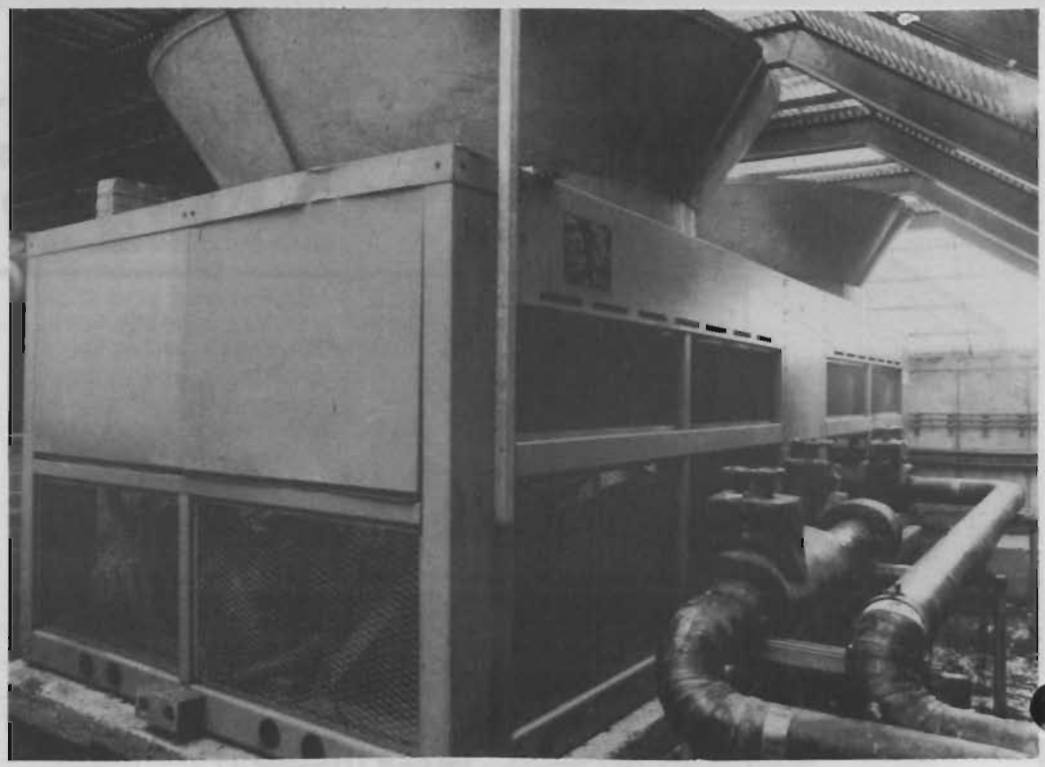
Building Services Engineering, Vol. 19 [1980], Iss. 8, Art. 1

Virtually all variations and extras are available including damper/mixing boxes, choice of filters, heaters and cooling coils, spray coils, various humidifiers.

In addition, the units can be double skinned, and motors internal or external and be supplied suitable for dual duct or multi-zone systems.

The new catalogue and any other information on Cyclopac is available from Finheat Ltd.



The Carlyle 39M air handling unit which has been installed in the basement of the Jefferson Smurfit Group headquarters in Clonskeagh, Dublin.

Walker

Despite Walker's divesification into allied fields such as filtration and pumps, the supply of Carlyle equipment remains the pivot of the Walker operation. Products range from room air conditioners with nominal capacities starting at 1.6 Kw right up to the largest centrifugal chillers with capacities of more than 7040 Kw. Other items include:

Compressors: The 5 series open reciprocating compressors which are available with belt or direct drive assembies with capacities from 17.6 to 845 kW. The 6 series hermetics go up to 351.7 kW.

Condensing units: The smaller 38 series air cooled units are a distinctive cylindrical configuration and offer from 7.04 to 21.1 kW. The larger capacity units, up to 246.4 kW, are low profile for roof top use. There is a range of water cooled units as well.

Air cooled condensers: The 9 series units are designed for vertical installations with horizontal air flow, or vice-versa, from 8.5 to 2957 kW.

Air handling units: The 39 series of roof top modular air handling units have blow through or draw through, reheat or preheat from 1.18 to 29.7m^3/s.

Self-contained packages: A versatile range of self-contained packages some for remote location, some for location in the area to be served. Capacities up to 202.5 kW.

Chilling packages: The big selling 30 series is a highly compact range of liquid chilling packages for air conditioning or process cooling applications. Capacities to 422.4 kW.

VAV units: The 37 series VAV units offer unusually good room air distribution. The split plenum model will deliver cool air to one side of an office partition and warm air to the other. The capacity range is from 9.44 to 188.76 L/s.

Absorption chillers: The 16 series hermetic absorption machines provide from 352 to 3942 kW.

Fan coils: The 40 and 42 series between them span the fan duty range from 0.10 to 11.80m^3/s.

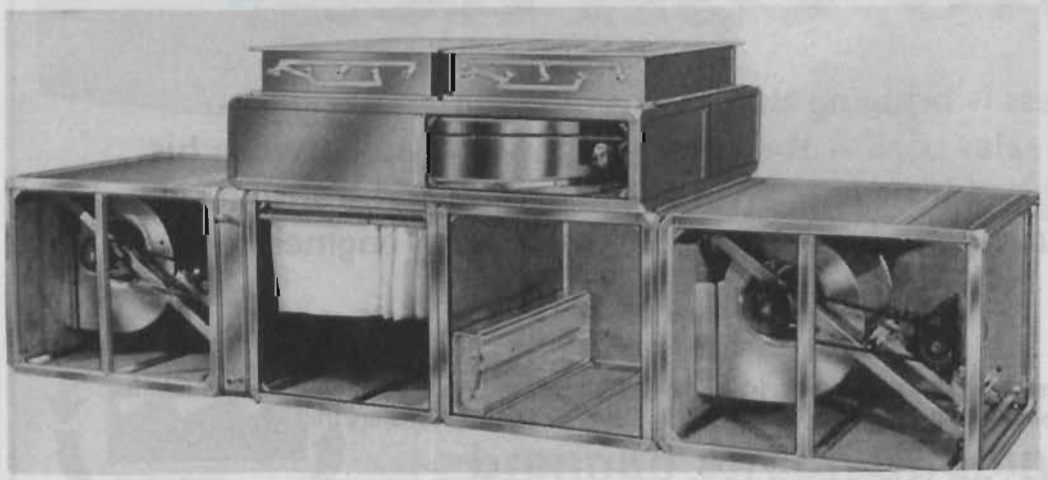
Induction units: The 36 series is available in horizontal or vertical form, from 0.44 to 2.93 kW.

For further information contact: Walker Air Conditioning Ltd.

PM—Luft

Since November last year Brennan Air Conditioning have been marketing the PM-Luft range. The LA air handling unit from PM-Luft is a result of new ideas in the field of modern air handling unit design engineering. The aim is to offer sufficient versatility to ensure that every installation gives an optimal performance, combined with low investment, installation and running costs. The units are made up of function sections which can be fitted together to form combinations suitable for the specific requirements of every installation. And the range of possible combinations is vast.

The LA units are available in nine sizes. The sizes in the range are dimensioned with generous overlaps, making it easy to select the correct dimension for a particular application. The units cover a flow range bebween 0.4-25 m^3/s (1500-90,000 M^3/h) and a press-



The LA series of PM-Luft air handling units from Brennan Air Conditioning Ltd.

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Some very unlikely people have Multivent in common

Metricaire: air handlers for all occasions.

With the kind of flexibility that's inherent in our Multivent Metricaire air handling units, it's hardly surprising that our eventual end users are a pretty varied bunch. At a new university in Saudi Arabia, for example, at television studios and military establishments in the UK, even at the Old Bailey there are people who depend on Metricaire comfort conditioning.

Whatever your application, our design engineers can assist you in selection from a wide range of modules that embraces four types of filter section, three types of fan and heating and cooling coils for all media. Every model in the Metricaire range can be built up to match your specification with maximum efficiency and economy.

Whatever combination of modules you choose can be constructed in horizontal or vertical configuration for either plant room application or, in special weather resistant finish, for external location.

Multivent Metricaire Series 'G' air handling units are suitable for capacities from 0.15m³/sec to 4.00m³/sec, while the recently extended Metricaire Series 'A' range covers 0.15m³/sec to 14.00m³/sec at pressures up to 2250N/m². For applications requiring greater capacities our L&N units are available with ratings up to 40.00m³/sec.

Metair Ltd Bridport Road, Edmonton, London. N18 1SL. Telephone: 01-803 3366

MKR Group

Available from Sole Irish Distributors **Glowtherm Ltd** 194, Whitehall Road, Terenure, Dublin 6. Phone: 513887, 516644, 516531 Telex: 30841

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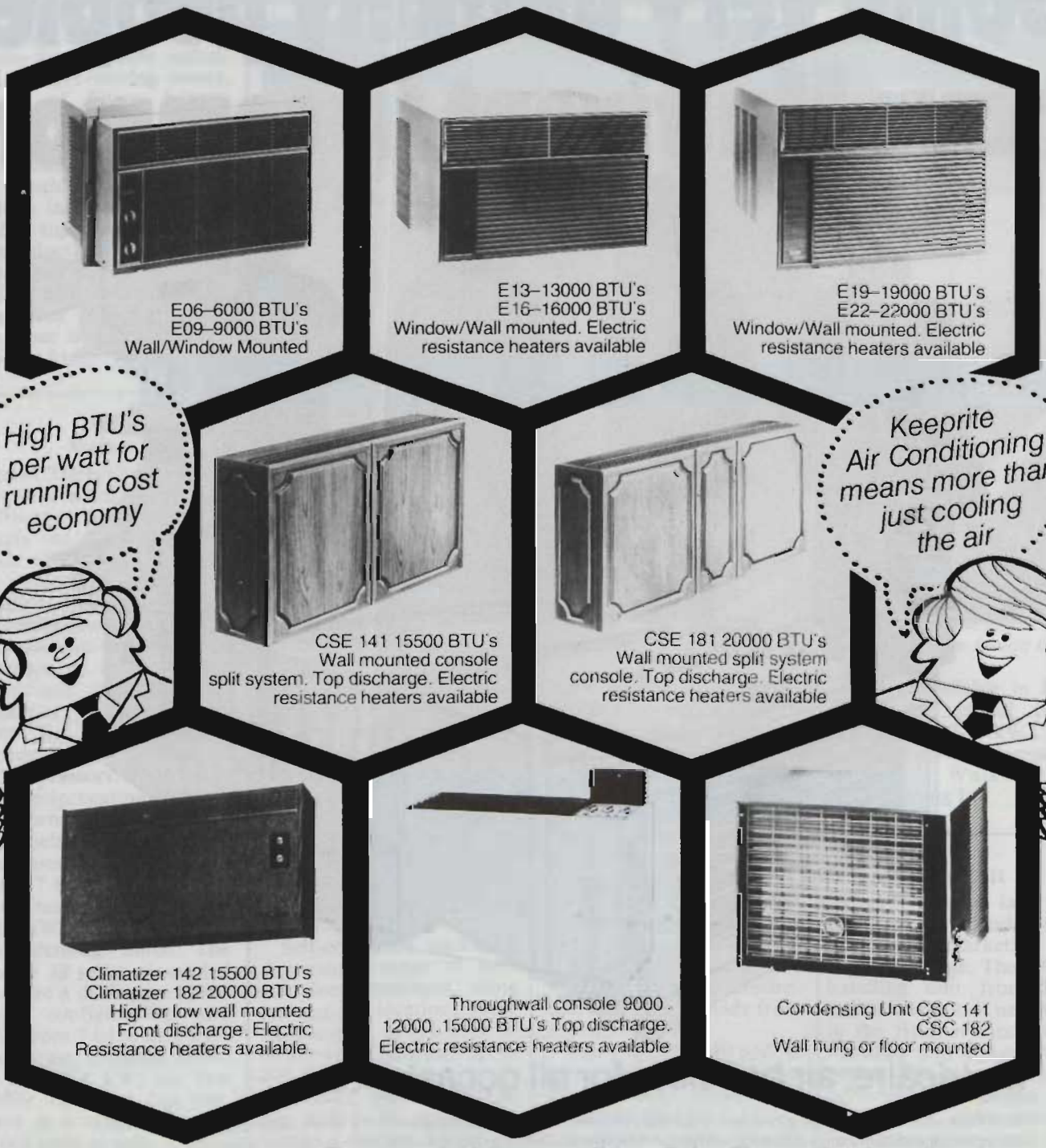

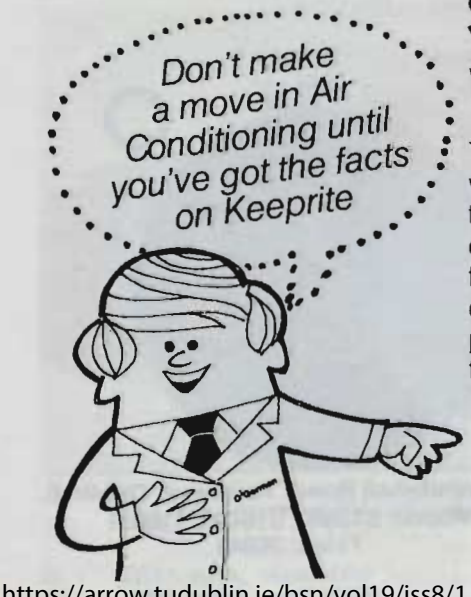

Superb Keeprite Air Conditioning versatile enough for every situation

This is the superb range of Keeprite packaged Air Conditioning . . versatile enough to meet every requirement . . . high or low mounting . . . through the wall or window . . . and all with high BTU's per watt for running economy. True comfort is a blend of temperature, humidity control and filtration. Efficient humidity control is built into every Keeprite unit . . . large coils wring moisture from the air while washable filters collect airborne pollen, dust and dirt. This combined with low noise level makes Keeprite the range to choose from.

For further information apply to:

O'GORMAN (IRELAND) LTD

Unit 13, Dublin Industrial Estate, Glasnevin, Dublin 11. Tel: 300977 Telex: 30981.

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DOI: 10.21427/D79D85

ure range up to 2500Pa.

Units in the LA series can be assembled in line, vertically or angled. By using two angle sections it is possible to arrange for the inlet and outlet to be on the same side of the unit. This capability makes it easy to adapt the unit to every situation. The fans are suitable for forward, upward or downward discharge.

Heat recovery is an essential feature of modern air handling equipment. The LA systems offers five different heat recovery methods, so as to offer the correct characteristics and efficiency for each installation and to make it possible to adapt the system to every installation situation.

Heat exchangers LAVA, LAVB, air-air, rotary

Rotary (regenerative) exchangers are particularly well suited for applications requiring high efficiency, and in which moisture is to be recovered from the exhaust air at low outdoor temperatures. The optimum efficency in terms of thermal economy is between 70-80%.

Heat exchangers LAVC, air-air plate heat exchanger

Heat exchanger Lavc is suitable for use where the air is dust-laden, or at high ambient temperatures and for flow rate range up to 8.3 m^3/s. The head exchanger works on the counterflow principle and this makes it highly efficient (70%).

Heat exchanger LAVD, air-liquid-air

Heat exchanger Lavd is suitable for use in installations in which there is some distance between the exhaust air and the supply air. Heat may be recovered from ventilation air or process air. The efficiency can be up to 60%.

Heat exchanger LAVE, air-liquid/gas-air

Lave is suitable for installations with low air flow rates, where the system is required to be highly reli able. Efficiency up to 65%.

Heat recovery by recirculated air mixing

Recirculated air mixing is a common form of heat recovery which requires low investment costs. If no fresh air is mixed in, the efficiency is 100%. Normally this method is used to recover part of the heat in the exhaust air. Recirculated air mixing can be combined with any of the other heat recovery methods.

The LA system has more than 20 function sections, and each function section is available in nine sizes. Every function section is designed for its own paricular purpose and is mounted in a sturdy frame. The sections are coupled together by means of slide rail joints (sizes between 005-030) or flanges (sizes 045-080). the sections can be fitted either on the suction or pressure side of the fan. Function sections from different unit sizes may be combined.

For air flows of up to 8.3 m^3/s (30,000 m^3/h) the most commonly used functions, for example dampers or mixing section/filter/heating coil/fan, can be supplied as a composite unit assembled at the factory. No further assembly on site is necessary. The unit is delivered to the site as a complete assembly ready for connection to the electric power supply, water system and air ducts. Composite units are available in sizes 005-030. They are mounted on a girder chassis as standard.

For further information please contact Brennan Air Conditioning Ltd.

Sermet

Sermet offer a wide variety of heating and ventilating products, which is backed by a comprehensive sales and service policy.

The company's air conditioning specialist equipment is the well known and reputable F H Biddle range which covers all sizes from the small packaged unit to the full modular plant for industrial and commercial use. The Biddle heating range of convectors and

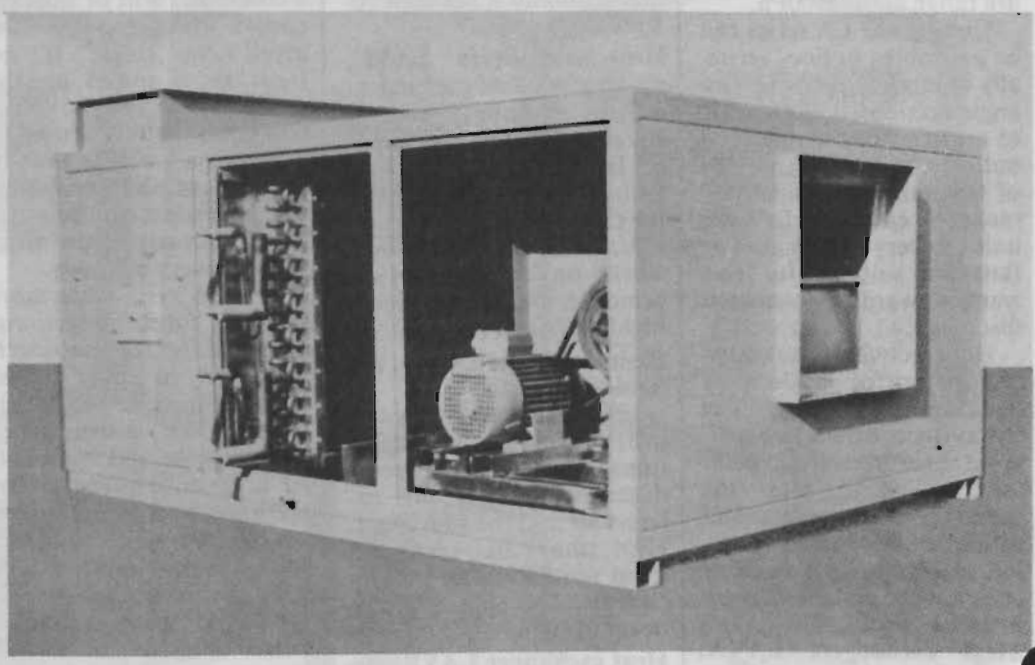
heaters is also well to the fore in the industry.

Trane

Selecting Climate Changer AHU's is made easy by a new service. This new computer service is available through the local Trane sales office via the General Electric Mark III worldwide computer network.

All you have to do is input your required summer and winter design conditions, including details of cooling and heating, filtration, humidification, electrical characteristics and any of 22 special feature requirements. The computer takes it from there and gives you these items for your design decisions.

1. Two Selections.
A reduced first cost (usually the lowest cost) unit selection which meets a specified maximum coil face velocity and all other specified performance requirements. An oversized unit selection which allows you to easily calculate the annual energy cost savings and the first cost premium. The resultant payback period can guide you in deciding which unit to specify.



A Trane Climate Changer AHU.

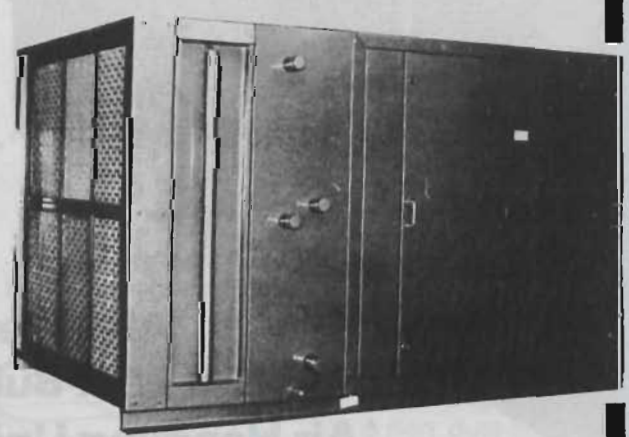
2. A Psychrometric Analysis of Your Performance Requirements.
Mixes the specified outside air and recirculated air. Selects the lowest first cost combination of coils, humidifier, fan(s) and special features to meet your performance requirements. Prints out the leaving air temperature from each section (mixing box, heating and cooling coils, humidifiers and fan) along with the air pressure drop and other performance data for each.

3. Supply and Return Fan Performance Point.
Based on the specified total supply air volume and external static pressure, the computer adds the air pressure drop through each selected component and selects the best available supply fan with the proper motor drive. It prints out the rps, absorbed kW and fan efficiency, plus the motor size and drive. The return fan, if required, is selected based on the specified air volume and external static pressure. Similar printouts are given. A fan performance allowance is made when using vertical and/or blow-through fan discharge configurations.

4. Sound Power Octave Band Analysis.
Printed out at the fan inlet or outlet, as specified for your system acoustic design.

5. Weight/Dimensions/Price Index
The operating weight and overall unit dimensions are summarized for your equipment room planning. A price index can be given for the total unit and each component for your economic analysis.

Gullair for better Air Handling Units



Gullair

2 HARNESS ROAD, LONDON SE28 0AP. TEL: 01-310 6465

Coolair

Air conditioning specialists Coolair Limited of Tallaght are sole distributors in the Republic of Ireland for the full range of Vequip air handling equipment. Manufactured in the U.K., the Vequip rane comprises air handling units in standard and fast build form, twin fan extractors and air purification equipment. The Vequip air handling range consists of fourteen models all with double skinned infill panels for better thermal insulation and reduced noise breakout. Sections bolt easily together for rapid site assembly and all moving parts are isolated from casings for increased anti-vibration.

For situations where space is limited or of irregular dimensions, Vequip air handling equipment can be assembled in fast build kit form. Models from the

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IhVex '81

Ireland's Building Services EXHIBITION

Heating & Ventilating/Air Conditioning/Fuel Conservation/Environmental Engineering/ Pollution Control/Refrigeration/ Sanitaryware/Plumbing Equipment

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, Dubfin 4.

Dates

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

For full exhibition details contact:

ittex

Irish Trade & Technical Exhibitions Ltd.
5/7 Main Street, Blackrock,
Co. Dublin, Ireland.
Telephone: (01) 885001

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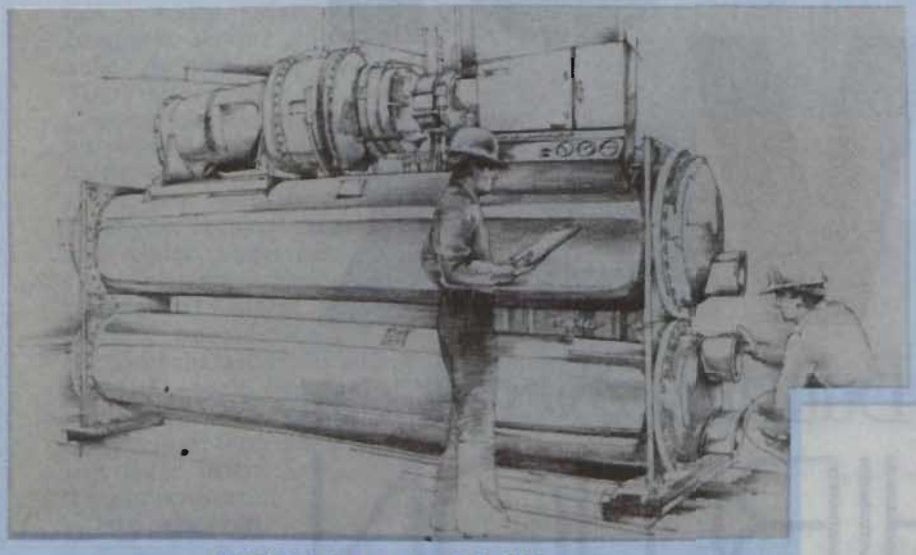
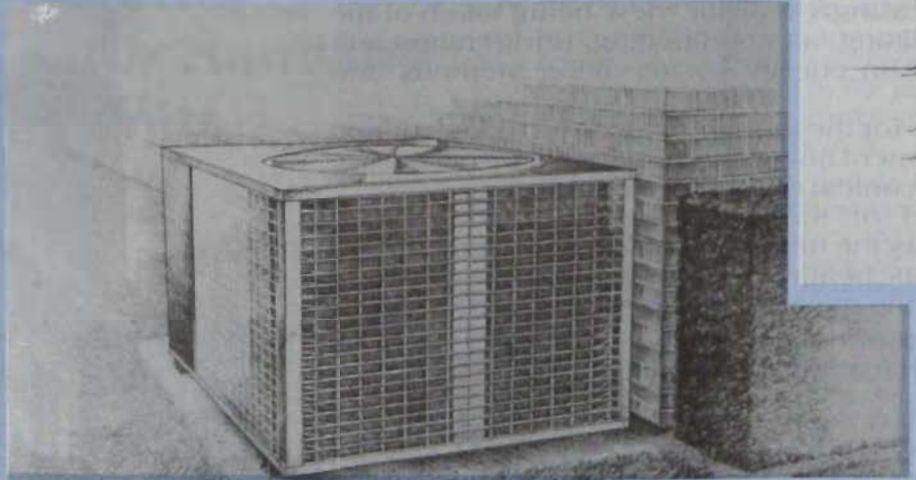


PE Water Chiller

Do you have a unique air conditioning job?

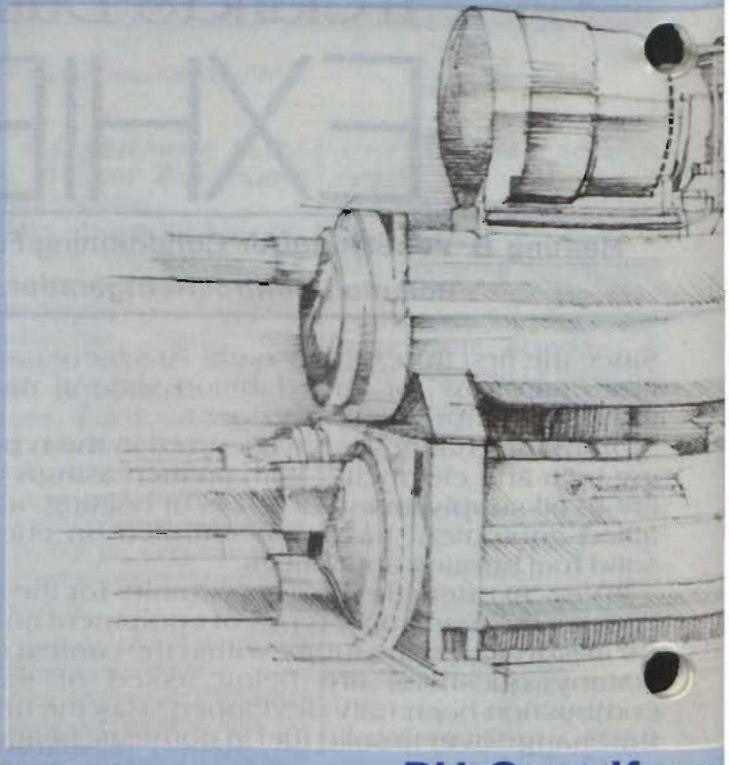
Do you have an unusual air conditioning job?



HP Split Heat Pump

DO YO

- HEAT PUMPS
- WATER CHILLERS
- ROOFTOP UNITS
- PACKAGED UNITS
- CONDENSING UNITS
- AIR HANDLING UNITS



PH Centrifuga

Do you sometimes nee

Do you sometimes nee

IF THE ANSWER TO ANY OF THESE QUESTIONS IS YES THEN

AIR CONDITIO

SOLE DISTRIBUTORS **Reconair Ltd.** Unit 4A Coolock

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GHOUSE

NEED

- COOLING TOWERS
- FAN COIL UNITS
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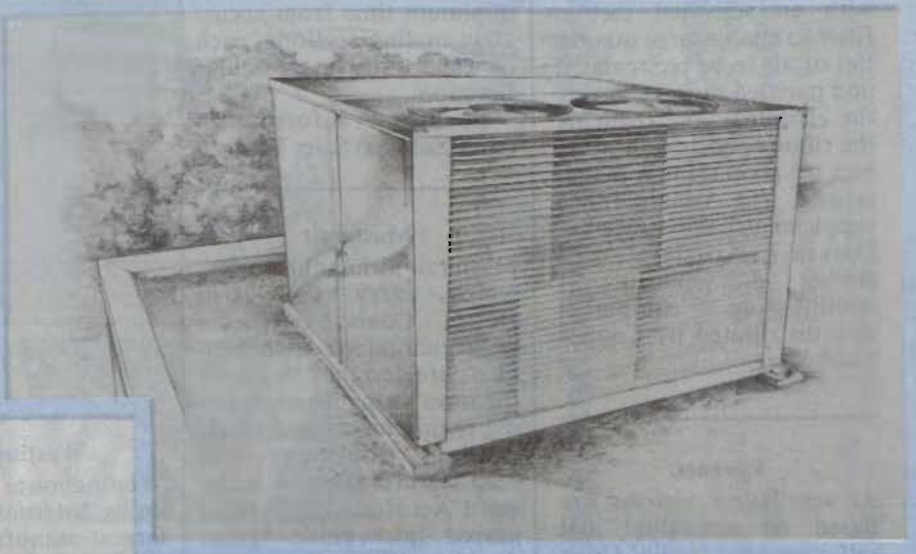
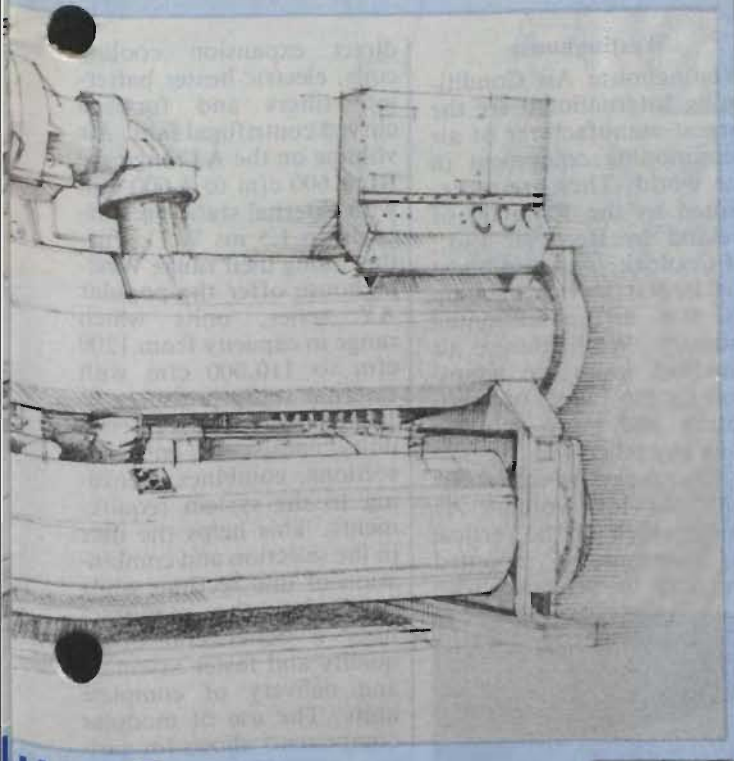
- INDUCTION UNITS
- CONDENSERS



IK Rooftop Unit

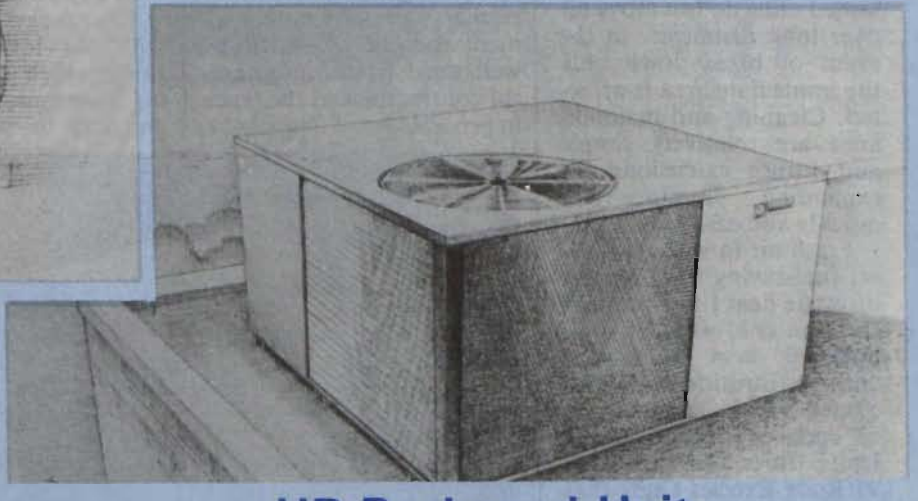
Do you live where energy costs run high?

Do you live where temperatures run high?



Heat Pump

service immediately?
parts the next day?



UR Packaged Unit

THESE ARE GOOD REASONS TO SPECIFY WESTINGHOUSE
ING EQUIPMENT

ndustrial Estate, Dublin 5
1 – 470209 – 470113 Telex: 31356

Also available on pageboy Tel: (01) 972229 Unit 804 – 547 – 345

Building Services Engineering, Vol. 19 [1980], Iss. 8, Art. 1

Vequip range of twin fan extract units are specially designed with a duplicate stand-by fan system for in hospitals, hotels, factories and offices and are constructed from corrosion-proof steel for internal or external mounting. The Vequip air purification unit is fitted with an activated carbon filter to enable large quantities of air to be recirculated and purified thus increasing the efficiency and reducing the running costs of heating and air conditioning installations. The Vequip range supplements the range of Daikin, Airedale and Barber & Colman air conditioning equipment also distributed by Coolair Limited.

Eurenco

JJ ventilation systems are based on individual and self-contained 'Inblo' Units and Roof Extract Units, thereby dispensing with the costly central plant room and long runs of metal ducting associated with conventional systems. This not only permits fast and economical installation, but also results in substantial reductions in power requirements since the self-contained units do not move air over long distances. In the event of break-down only the immediate area is affected. Cleaning and maintenance are relatively simple and future extensions for expanding premises are quickly and easily installed.

Fresh air in warm weather, fuel-saving reclaimation of waste heat from the roof space in cold weather, plus optional heat generation and air filtration are all included within the compass of each of the JJ 'Inblo' Units. In conjunction with JJ Roof Extract Units they enable the requirements for a comfortable working environment in almost any industrial situation to be met quickly, efficiently and economically.

The required number of units having been established by site survey, they can be positioned to serve the often different individual needs in various parts of an overall area. thus, the temperature or fresh air service within a large building is not governed by a particular problem arising in one section.

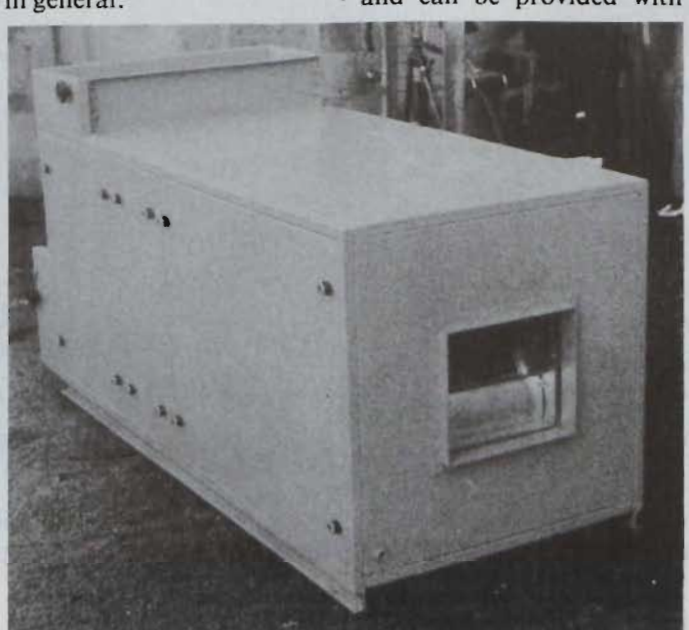
The JJ development of modular construction enables purpose-designed units to be assembled in minimum time from accurately mating sections, each of which fulfils a particular function.

Further information from Eurenco Sales Ltd.

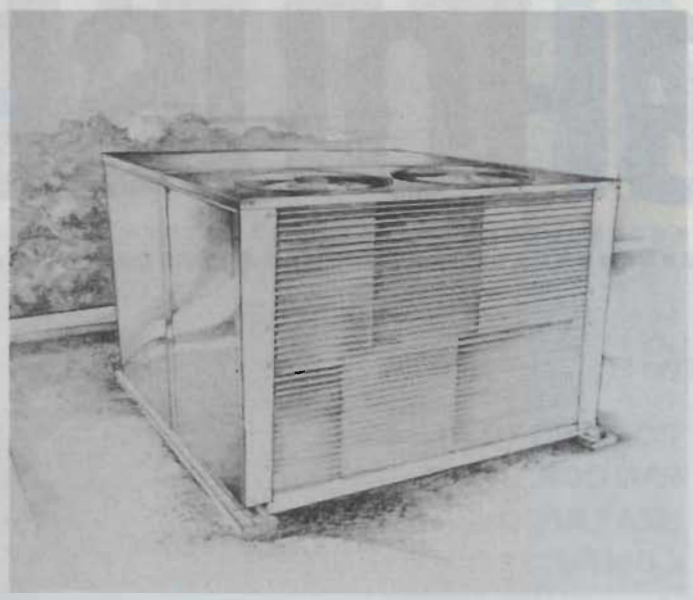
Masterair

Masterair airhandling units, which carry the Irish Goods Council certificate of a guaranteed Irish product, are designed to match the most stringent engineering requirements and specifications, with many optional features such as: backward Aerofoil DIDW fans, geared inlet guide vanes, double skin construction etc.

Whilst the Masterair catalogue illustrates a range of standard sizes of airhandling units, custom built units can be designed to suit awkward and restricted plantrooms or other spaces. This flexible policy ensures a very comprehensive service to clients in terms of primary air moving equipment and one which will be welcomed by the mechanical contractor and the trade in general.



A Masterair air handling unit with mixer, filter, coil and fan section.



Westinghouse IK rooftop unit.

Westinghouse

Westinghouse Air Conditioning International are the largest manufacturer of air conditioning equipment in the world. They are represented in the Republic of Ireland by Reconair Ltd., of Coolock, who also boast the largest service back-up to the air conditioning industry. Westinghouse air handling units are adaptable for most types of application and more versatile than any other.

The range which starts with the low volume AJ range which can be vertical or horizontally mounted and can be provided with direct expansion cooling coils, electric heater batteries, filters and forward curved contrifugal fans. Air volume on the AJ range are from 600 cfm to 4,600 cfm with external static pressures up to 1.5 ins W.G. Further along their range Westinghouse offer the popular AY series, units which range in capacity from 1200 cfm to 110,000 cfm with external static pressures to 10 ins W.G. The AY series units consist of modular sections, combines according to the system requirements. This helps the user in the selection and combination of unit sections while permitting the manufacturer a better control of quality and faster assembly and delivery of complete units. The use of modular components allows for various sections to be interchanged for achieving the best air treatment and control. The four basic arrangements of the AY units are those designate "T". "C". "S". The heating and ventilation type "T" units consist essentially of a fan section which can be used alone or with a filter section added for industrial and commercial ventilation. Addition of a steam or hot water heating coil allows the units to be used for heating and ventilating applications. Steam injector or electric pan humidifiers may be added to match ap-

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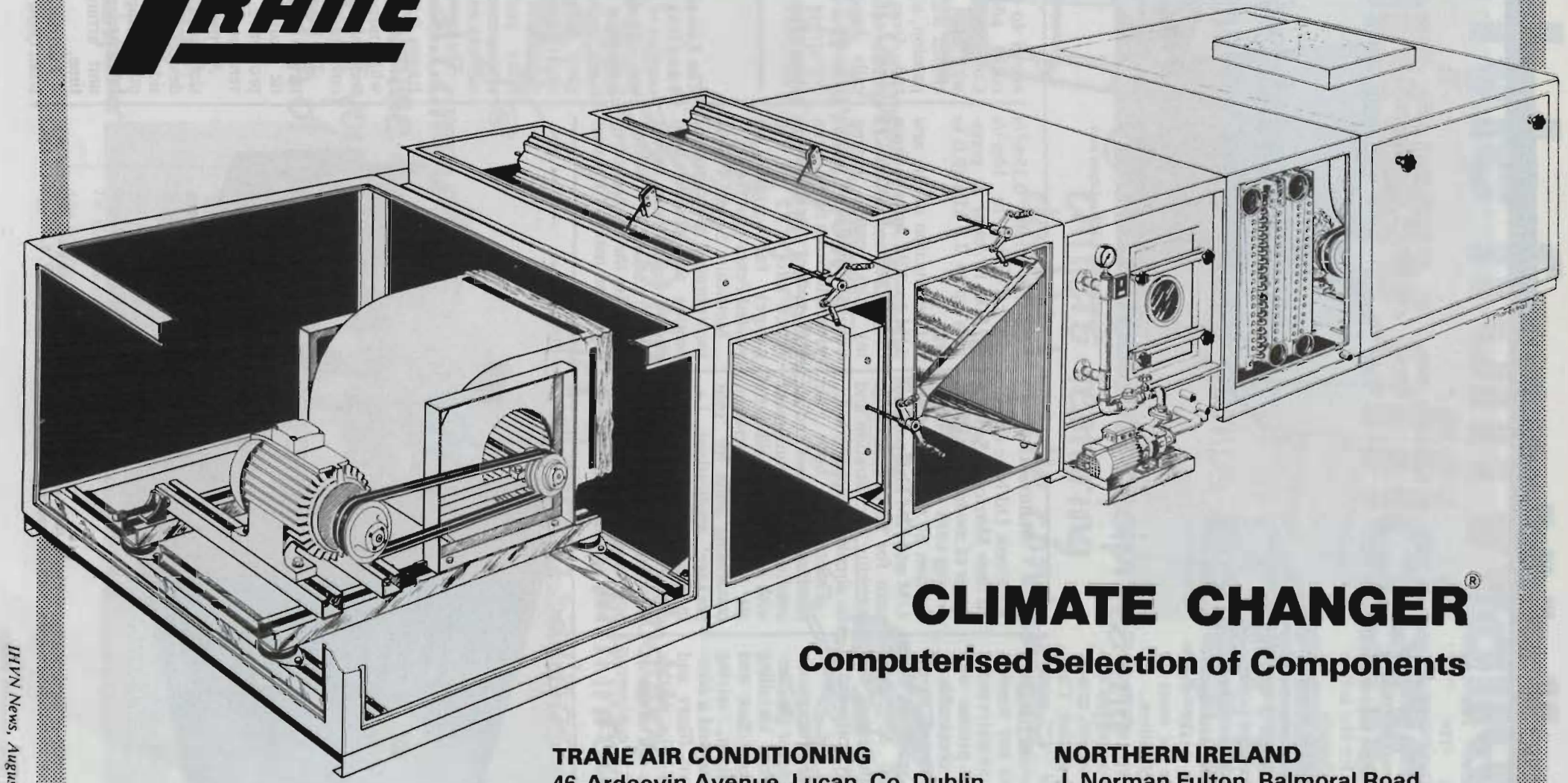
TRANE®



CLIMATE CHANGER®

Computerised Selection of Components

TRANE AIR CONDITIONING
46 Ardeevin Avenue, Lucan, Co. Dublin.
Phone: 280935/281638. Telex: 31082.

NORTHERN IRELAND
J. Norman Fulton, Balmoral Road,
Balmoral Industrial Est., Belfast.
Phone: 662111. Telex: 747559.

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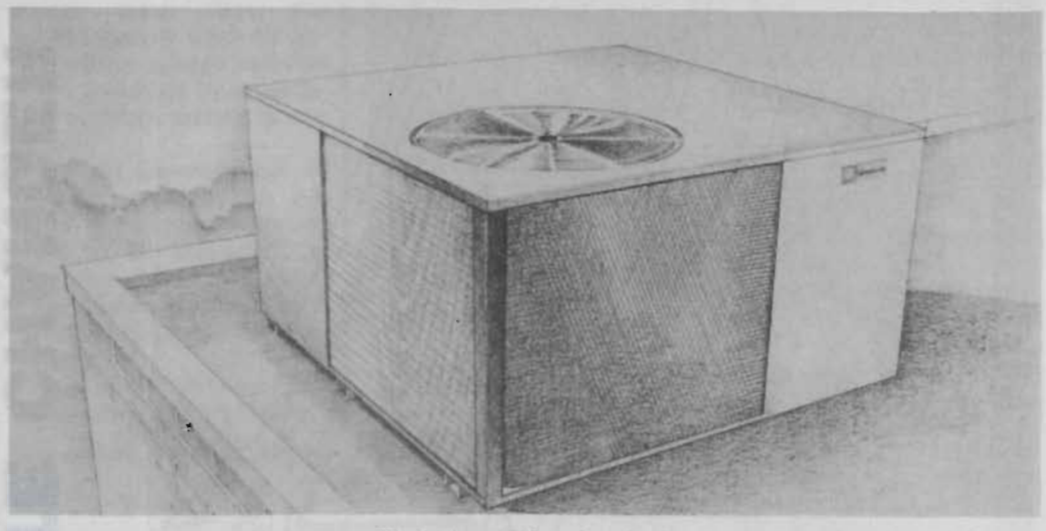
plications requiring air humidification. The air conditioning type "C" units in their simplest format differ only from the type "T" unit in that a drain pan extends below the unit sections for the collection of condensate. "C" units are available in a great variety of arrangements which may include a water or direct expansion cooling coil, or a combination of many sections and accessories which make these units suitable for most air treatment applications.

The "S" type unit include essentially a sprayed surface process section attached to the fan section. Compared to the "C" model, this unit provides the specific answer to any humidification requirement through the precise dew point control obtainable on the air distributed to the conditioned space. A heat exchange coil of copper tubes with aluminium fins to avoid early corrosion is included.

A full range of accessories are available for the complete AY series including external motors, face and by-pass sections, mixing boxes, dampers and a complete range of filters and filter sections. For further details of the full range of Westinghouse equipment contact Reconair Ltd.



Westinghouse UR packaged unit.

Multivent

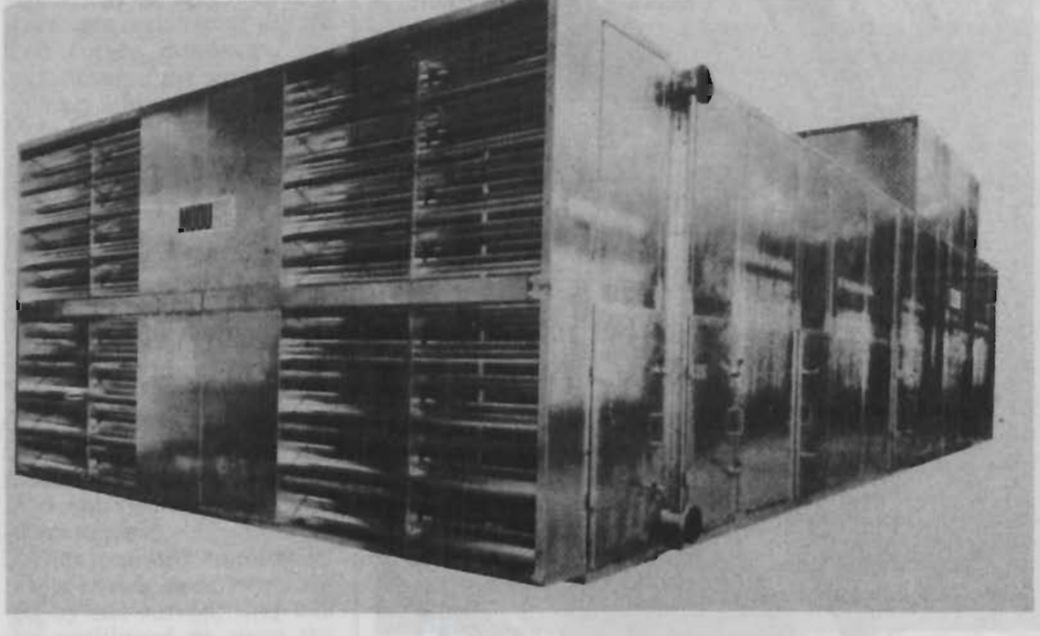
Multivent Ltd have extended their Metricaire Series A range of modular air conditioning units with the introduction of the new Model 11M and 12M high pressure units for heating, cooling, humidity, air filtration and air circulation applications.

Embracing both air handling equipment and air conditioning equipment with optional low silhoutte air cooled refrigeration condensing units for 'split package' applications, i.e. in systems which have no chilled water available, the Metricaire Series A range now comprises 10 models with an extended range of capacities from 0.15m^3/s (300 ft^3/min) to 14m^3/s (29,500 ft^3/min) at pressures up to 2.2 kPa (9.0 in wg).

Construction of the new 11M to 12M units is from double skinned 50 mm (2 in) thick panels having acoustic insulation sandwiched between two 1.6 mm (16 gauge) steel sheets bolted into a 3.2 mm (10 gauge) fabricated, all welded Penta-post frame.

Metricaire Series A units incorporate a new design of heating and cooling coil, embodying an open header construction, which simplifies the connection of pipes and makes for easier access to air cocks, drain cocks and channels etc. Coils are available for use with hot water, steam, chilled water, or direct expansion, all being constructed from high quality copper tube with mechanically bonded, aluminium plate fins.

Further information from Glowtherm Ltd.



A large Moducel make-up air plant rated at 43m^3/s (8600 cfm) with two stage air filters which was delivered to a car assembly plant. The Moducel range of LKB air handling units is handled in Ireland by W. J. Hogg & Co Ltd.

Luwa

The Luwair SB rane of air handling equipment consists of various standarised sections which can be assembled on a modular basis. Individual cube and part cube sections with easily removeable access panels give the utmost flexibility and virtually any arrangement is possible to suit awkward siting.

The casings of Luwair SB air handling units have rigid frames fabricated from preformed channel sections with purpose made corner sections and flush mounted cover plates.

The cover plates have internal thermal and accoustic insulation fitted with a protective coating to prevent insulation breakdown.

All panels are fitted with slot operated quick release devices and fan handlings, side panels, dampers and other components are easily interchangeable to alter the unit arrangement at any time.

Further information from Glowtherm Ltd.

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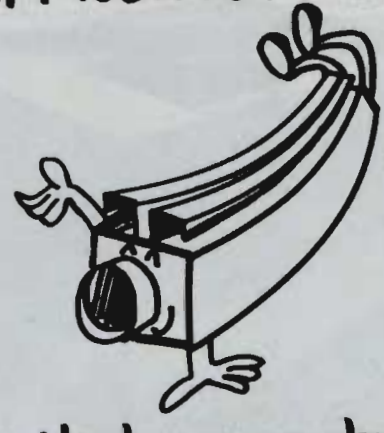
Carlyle from Walker is energy efficiency

① The unbeatable range of energy miser heat pumps

② Heat reclaim reciprocating chillers featuring double bundle condensers

③ Multi-compressor water chillers giving lower part load running costs



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the air conditioning leader

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9a Cherryhill Road, Dundonald, Belfast BT16 0JH. Tel: Dundonald 5235 Telex: 747681

Washington Road, Unit 10B, Abbotsinch Industrial Estate, Paisley PA3 4ET Tel: Glasgow 887 0551 Telex: 779406

Also Edinburgh (Tel: Edinburgh 553 1720)

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PROJECT PROFILE

HOWTH HEAT PUMPS

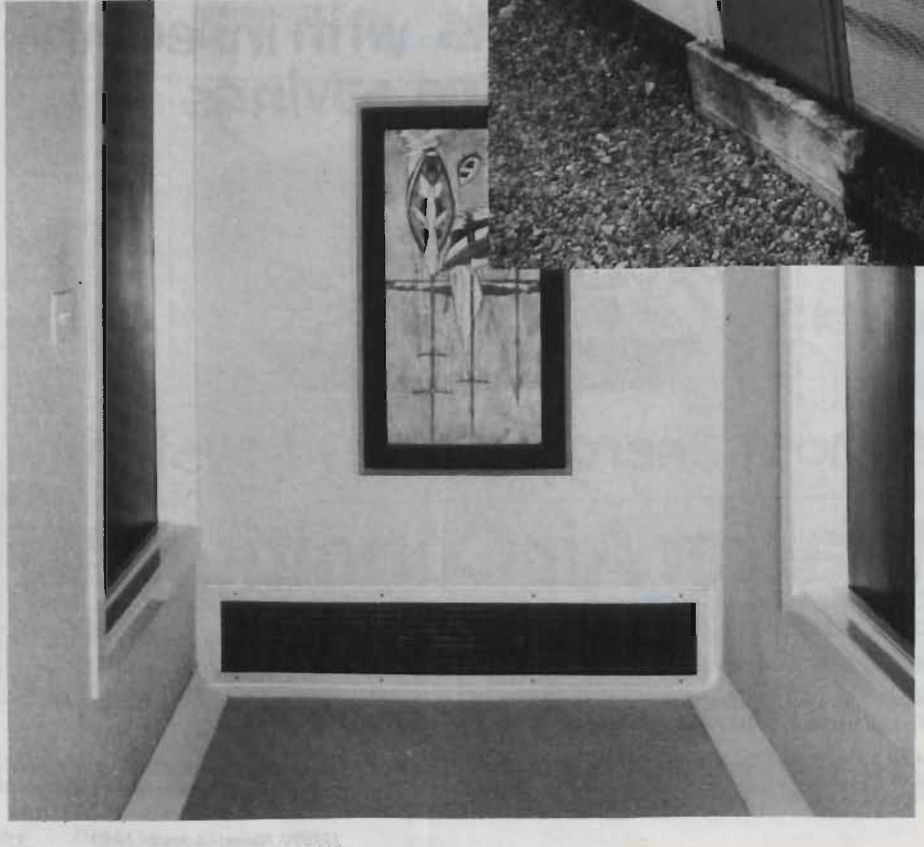
There is still a lot of talk about heat pump test rigs, mock up installations etc but there is little data available on actual local installations. So it was very interesting to look at a job that has been installed for three years in a normal household environment. The house overlooks Dublin bay at Howth and the owners claim that on the cost per useful therm basis the system could be saving them as much as £300 p.a. over an oil fired system. The system was designed by Walker Air Conditioning Ltd., with the heat pump installed at the back of the house and air, at a rate of 244m^3/s is distributed via an underfloor duct system. The ducting was laid in trenches cast in the foundations of the house.

The house itself was designed with energy saving in mind, to take full advantage of solar heat gains, with the sun shining into the kitchen early in the day, moving round to the lounge by late afternoon.

Air distribution grilles are located in the floor beneath the windows, approximately 10 in. from the wall to give curtain clearance, the ideal situation for heat pump systems because of the low grade heat generated. This location enables discharge air to blanket walls and windows, eliminating cold draughts. It also allows excellent temperature stratification across the rooms, impossible to achieve with a high level supply which tends to heat the ceiling instead of the occupied areas. Since supply air temperatures with heat pump heated homes are lower than with conventional heating systems, low level supply is recommended to reduce draughts. Moving air, even at 37°C may feel uncomfortable to those in the vicinity of the supply outlet. Another major point in favour of low level supply with grilles positioned below the windows is that it minimises condensation and may eliminate the need for double glazing.

Grilles positioned above the doors take all return air back into the main corridor and it is exhausted via one large wall mounted grille at the end of the hall.

A clever innovation to this system is that the thermostats are located in the kitchen, dining room, living room and lounge. These have been wired in



Above: The Carlyle 50DQ008 packaged heat pump installed at the back of the house by Walker Air Conditioning,. Dublin.

Left: Large wall mounted exhaust grille at the end of the hall.

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Air distribution grilles which are located in the floor beneath the windows approximately 10 ins. om the wall to give curtain clearance.

arallel and the area governing the sequence of the system can be manually selected by a selector switch. This gives added economy on running costs in that in any normal home, the family would be in the kitchen in the morning where heat is generated by cooking. In this instance the kitchen is East facing and gets the early morning sun. Therefore the system would throttle down maintaining 22°C in the kitchen and 4°C less throughout the rest of the house. This reduces running hours drastically by allowing the area actually in use at the time to control the overall system, thereby eliminating one of the minor disadvantages of an all air system.

In this instance the whole house is kept comfortably warm the whole time. During the evening the system is held at 21 - 22°C and at bedtime it is throttled back to 15°C, generally considered to be an acceptable daytime temperature. Since the house has an excellent level of insulation it takes about eight hours for the system to switch back on automatically, even with an outdoor ambient of 0°C.

Other advantages of this type of system are filtration — the whole house is kept cleaner and cigarette and cooking smells are removed, and cooling is an added bonus during the summer.

This Carlyle 50DQ008 packaged heat pump has a nominal heating capacity of 25.47Kw, and nominal cooling of 26.05Kw. The ESB have installed instruments to enable the system to be monitored. Thermocouples were set in the unit itself to measure supply and return air temperatures, condenser on and condenser off temperatures, as well as electrical input. These E.S.B. instruments only succeeded in confirming that the savings in running costs estimated by Walker Air Conditioning were totally accurate.

New Grundfos Controls

With energy conservation becoming more and more vital, manufacturing companies, in particular those in the heating and ventilating industry are being called upon to develop energy saving products. In response to this call Grundfos Pumps Limited has launched a range of pump controls designed to maximise the in-built flexibility and economy of the company's commercial heating pumps.

In many heating systems today, inadequate, outdated or inflexible controls lead to energy being wasted needlessly. The new Grundfos controls, coupled with circulators from the company's commercial range offer not only flexibility and relaiability but make a positive energy saving contribution.

The range comprises 24 hour clock programmers, automatic change-over programmers and panels, and a new starter unit.

The new range of energy controls developed by Grundfos especially for its variable and single speed industrial circulators.

The SAMT and SAPT Programmers cover the entire Grundfos range of Multi-speed circulators. They ensure heating systems operate at maximum economy in fluctuating energy requirement conditions by changing pump speeds on a timed basis. Also introduced for the Multi-speed range is the GES 1 Auto-Changeover programmer which guarantees total reliability through the automatic cutting in of a standby unit, both on a timed basis and in the event of failure of the duty pump.

The Robinair leak detector from RSL Ltd.

Leak Detectors from Robinair

Robinair announce the availability of their new halogen Leak Detector following successful field trials. The instrument has a 14 in. flexible probe connected to a coiled cord which extends to 40 ins. — ideal for those hard to reach joints. Warning is both audible in the form of increasing alarm frequency and by visual indicator lamps. A low battery, two position, high-low level switch to compensate for contaminated areas. The instrument, model 14850, is competitively priced and is supplied in a high quality carrying case.

Robinair products are available from RSL Ltd.

Fernox Alu Protects Aluminium Radiators

Fernox Alu, Central Heating Corrosion Inhibitor for systems with aluminium radiators came too late to please Snr. Galvani the discoverer of the type of corrosion named after him, but Fernox Alu has already pleased heating engineers and householders who reported excessive hydrogen gassing prior to the addition of the new product to the circulating water.

Sacrificial elements have been made of aluminium for decades and can protect copper and steel by the preferential corrosion of the aluminium. Sacrificial radiators are no longer a problem with the new Fernox Alu, claim the manufacturers, except that the price of Fernox Alu is slightly higher than for Fernox MB-1 (for steel/copper systems).

Boiler noises are also effectively prevented by Fernox Alu. For good measure, and since we are morally obliged to save fuel, it also prevents or greatly reduces the chance of lime deposits in the boiler.

Fernox Alu is supplied in 1 Gallon and 5 Gallon containers. It is used at the approximate dilution of 1 in 20 gallons, i.e. gallon for a small bore installation serving an average 3-bedroomed house.

Further information from Industrial (anti corrosion) Services, Britannica House, 214-224 High Street, Waltham Cross, Herts, England, (tel: 0992-22368 & 28355 — 5 lines) or distributors throughout Ireland.

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Latest in Perimeter Heating

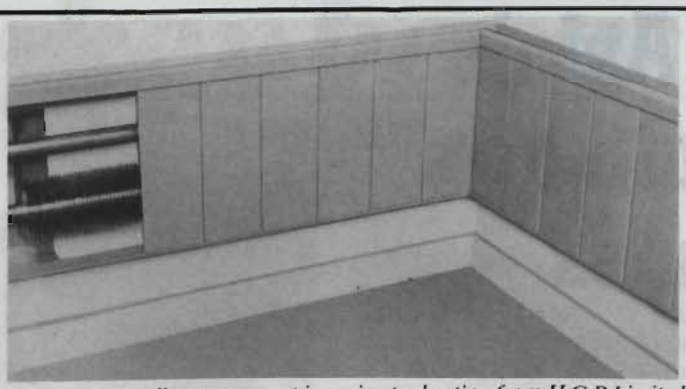
An original concept in perimeter heating design has been introduced by HCP Limited.

Peristrip is an entirely new style of hot water natural convector perimeter heating based on 100mm wide facing panels fitting between continuous top and bottom carrier rails and capped with a continuous aluminium linear grille.

Available from a mini-height of 150mm, Peristrip can be made to any dimension to suit individual architectural requirements.

The system allows partitioning to be located in any position along the perimeter without the need to pre-plan and permits alteration of partitioning layout at a later time if required.

The single or double row copper tube aluminium-finned hot water elements and other internal services are readily accessible and the front panels are easily replaced in the event of damage.



Peristrip, a totally new concept in perimeter heating from H C P Limited can be made to any height and offers unlimited modular application.

As with all HCP Peri-warm perimeter heating systems, integral cable ducts to carry mains cable, Post Office and internal lines can be incorporated into the Peristrip system. Any 100mm panel can be punched to receive a single socket outlet.

New Peristip which can also be used to clad perimeter air conditioning systems is supplied with a coating of strippable film to protect against accidental damage during installation.

Further information from Eurenco Sales Ltd.

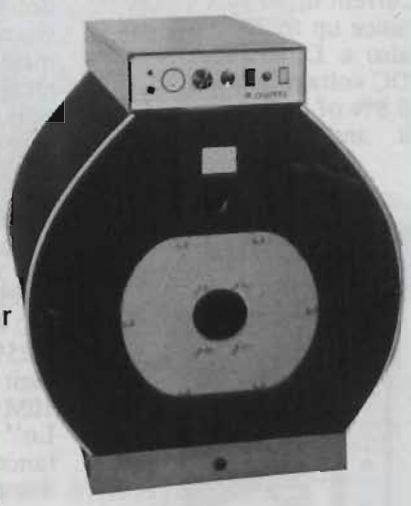
MEDION GRILLE ADAPTOR

If your premises have a ducted ventilation or air conditioning system, then your negative ionizers need not encroach on valuable worktop or desk space or rely on internal fans. By fitting the new Medion EC200 over a diffuser, an ion-rich atmosphere is generated at the terminal and distributed effectively by the air flow. Negative ions — the vitality factor in fresh air — are simply air molecules with a negative electrical charge and are inevitably attracted to the earthed surfaces of metal ducts. For this reason it is not possible to generate ions centrally and distribute them throughout a building — but the new EC200 is the next best thing. Weighing less than 2kg., consuming a sociable 1 watt and offering negligible resistance to airflow or direction, the EC200 has a major effect: less bacterial cross-infection, headaches and stuffiness, greater health, welfare efficiency and comfort.

Further information from Ion-Eir Limited, 32 Sycamore Road, Dundrum, Dublin 14, (tel: 989183).

CHAPPÉE BOILERS

Highly efficient and compact, Chapée cast-iron sectional oil or gas fired boilers cover a range from 600,000 to 4.4 million Btu/hr (176 KW - 1.29 MW).



Multi-fuel with oil-gas-solid fuel from 70,000 Btu's/hr to 250,000 Btu's/hr.

Hevac

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

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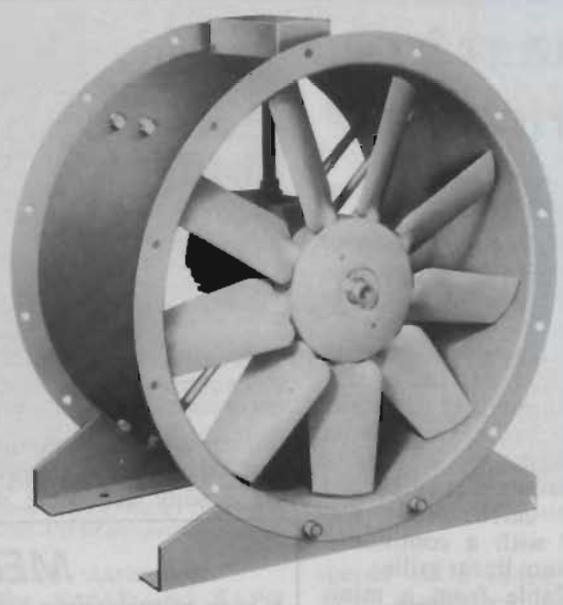
Metric Axials from Matthews & Yates

Matthews & Yates have introduced a new range of metric Axial Flow Fans to compliment their established range of Centrifugal Fans and Air Handling Units. The Fans, known as the M + Y Axial, come in thirteen metric sizes from 315 mm to 2,000 mm, each fan size is available at a variety of speeds with 3, 6, 9 blade, guide vane and two stage options. Die cast aluminium impellers are standard and bifurcated and vee-belt driven versions are available for industrial applications. A full range of accessories is also available including silencers, flexible connections, anti-vibrations mounts etc. To aid fan selection the Company has published an extensive 100 page catalogue AF/5, which is available on request. Within days of launching the Axial Fan range, an order for 75 fans was received from Dublin Stockists, Finheat Limited.



M + Y, size 630, 9 blade axial flow fan.

Myson Launches Eurofan

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

The range of Eurofans covers 10 diameters from 305 to 1905mm (12 to 75") and fan performances range from 300 to 300,000 m^3/hr. Static pressures of up to 510mm (5.10K N/M^2) can be achieved with multi-staging.

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

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

Avo Digital Multimeters from IIL

The range of Avo digital multimeters is further extended with the introduction of two new pocket sized instruments. Both use liquid crystal 3½ digit displays with 13mm characters and are finished in the Avo two-tone grey styling.

Avometer DA211 is a hand-held dmm with function and range selected by thumb-operated push-buttons. The measurement ranges cover ac or dc voltage up to 1000V, dc (only) current up to 10A and resistance up to 2M . There is also a Diode Test facility. DC voltage accuracy is + 0.8% of reading + 1 digit and input impedance 10M . The meter is rated to withstand the accidental application of 250V mains on any range except the 10A socket. A single 9V PP3 type of zinc carbon battery gives an approximate life of 200 hours.

Industrial Instruments Ltd. extends its range of Avo Multimeters with these two pocket sized instruments.

Avometer DA212 is a pocket size meter with function and range selected by the more traditional Avo style rotary switches. The 3½ digit LCD also includes symbols for polarity, decimal point, low battery warning, over range and, most importantly, units of measurement. 4 zinc carbon cells of the HP7 type give a life of about 200 hours. The measurement ranges include ac current up to 1000mA. The others are dc voltage to 1000V, ac voltage to 750V, dc current to 1000mA, resistance 20M . DC voltage accuracy is + 0,25% of reading + 1 digit and input impedance is 10M . By using the "Hi-Lo" ohms facility, resistance in sensitive semiconductor circuits may be measured with a voltage of less than 0,35V, to avoid errors caused by junctions being turned on by the more normal resistance measuring voltage of 3,2V.

Avo products are available from Industrial Instruments Ltd.

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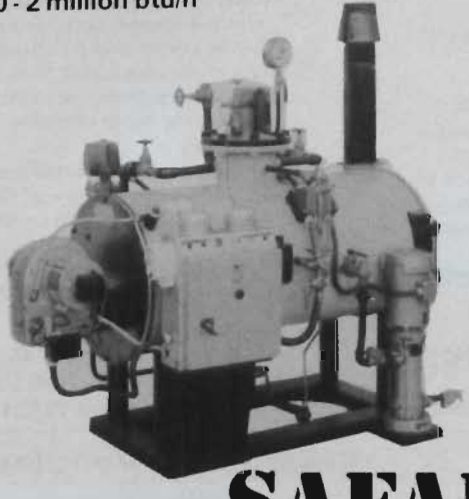
Baldoyle Industrial Estate, Grange Road, Baldoyle, Dublin 3

Dantherm

WARM AIR HEATERS

Free Standing or Horizontal Up to 90% Efficiency
100,000 - 2 million btu/h



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40,000 - 400,000 btu/hr in Hot Water
40,000 - 200,000 btu/hr in Electricity

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150 lbs/hr — 10,000 lbs/hr

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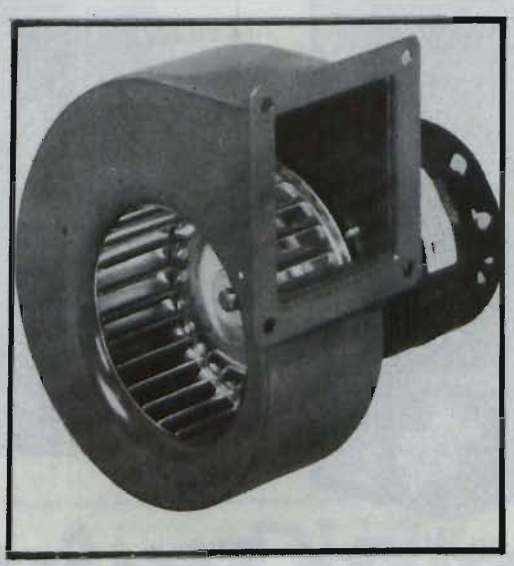
After 21 years of making professional equipment for air and gas movement, our three divisions have become leaders in their field.

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 division also manufactures a range of flue boosting and dilution equipment for gas-fired boiler installations.

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

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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 fee per minute, (providing they are non-inflamable).

Portvent is ideal for providing emergency or temporary ventilation, and is equally useful for.

Direct scavenging of car exhausts in service bays Removal of arc-welding fumes Rapid equipment cooling

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