


5-1-1969

The Irish Plumbing and Heating Engineer, May 1969 (complete issue)

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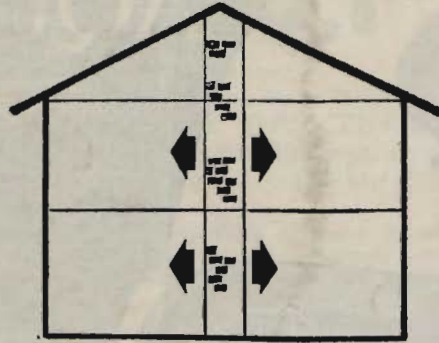
Recommended Citation

(1969) "The Irish Plumbing and Heating Engineer, May 1969 (complete issue)," *Building Services Engineering*: Vol. 9: Iss. 2, Article 1.

doi:10.21427/D74D8M

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SUPPLEMENTS ·

Published by Arrow Monthly Review/Industrial Heating & Ventilating in Ireland.
Dublin, 1969

MAY, 1969. Vol. 9. No. 2.

ELECTRICITY SUPPLY BOARD

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CIVIL ENGINEERING
CONTRACTORS**

The attention of building and civil engineering contractors and all others concerned is drawn to the danger of fatal accidents when carrying out work in the proximity of E.S.B. overhead lines and underground cables.

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The use of cranes, excavators, hoists, drilling rigs and scaffolding near live overhead lines involves the risk of electrocution. Take no risks; ensure that your employees are fully informed of the danger and that they take effective measures to maintain a safe working distance. If, however, it is essential to use such equipment near overhead lines, the nearest E.S.B. office should be asked to make arrangements to enable the work to be carried out safely. There will be no unreasonable delay in making the lines safe and in general this will be done at no cost to the contractor.

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Serious danger to life exists where any excavation work as for foundations for buildings or trenches for pipe-lines is carried out near E.S.B. underground cables. The nearest E.S.B. office will, on request, advise on the location of cables and will make any necessary arrangements to enable the work to proceed in safety.

**irish
plumbing
and
heating
engineer**

THE IRISH PLUMBING AND HEATING ENGINEER is the only publication produced in Ireland catering exclusively for the heating, plumbing, ventilation and environmental industries with a guaranteed circulation covering the Republic of Ireland and Northern Ireland every month.

* * *

WE begin this month a new series — The Mysteries of Microbore — by W. J. R. Couchman. This new series will, as it progresses, cover in detail all aspects of this often misunderstood system.

SPECIAL review topics this month deal with (i) Pipes tubing, fitting and jointings and (ii) Air conditioning, ventilation, refrigeration and warm air systems.

TRADE TOPICS review the month's news in all sections.

THIS issue also contains special reports by IPHE representatives including the recent Scottish Envirex '69 and London's International Plumbing and Domestic Heating Exhibition.

* * *

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trade Topics

FOLLOWING the recent announcement by Scanglo International Limited to build a 45,000 sq. ft.

SCANGLO TAKE OVER radiator valve plant at Newcastle West, County Limerick, terms have now been agreed with Scanline Limited, to acquire the entire shareholding of this Dublin based company, who for the past twelve months have been the marketing outlet for the original U.K. company Scanglo Industries Limited.

Scanline Limited will continue as before, as importers and distributors of Heating Equipment, including the Scanline Sealed System (incorporating the Flexcon Expansion Vessel) for which they are already well-known. When the Scanglo International factory is completed at Newcastle West, Scanline Limited will be the sales outlet within the Republic for Scanflow radiator valves manufactured there.

Elected

Mr. Peter Matson, Managing Director of Scanglo International Limited has been elected to the board. Mr. M. P. Raben and Mr. J. C. Foster will continue as Directors, with Mr. Hugh Sheerin as Sales Manager. Mr. C. B. O'Sullivan, B.Comm., A.C.I.S., A.C. W.A., will become General Manager.

And Scanglo International Limited has announced the opening of their new Dublin offices at 47 Lower Leeson St.

* * * *

ERIN Industrial Copper Co. Ltd. of 27 Upper Mount Street, Dublin, the Irish-owned firm which

WIDE RANGE OF CYLINDERS commenced business in 1963, are now manufacturing the largest capacity stainless steel cylinders in Ireland. These range in size from 30 to 1,200 gallons and are designed for both domestic and industrial uses.

Approximately 10 per cent of the company's output is in stainless steel with cylinders ranging from 300 gallons upwards. Those ranging from 30 to 300 gallon sizes are manufactured in copper. Each week, the Mount Street concern turns out three calorifiers in the 700-800 gallon capacity.

Metal work and ducting are other features of the concern's operations

while they are also engaged in the conversion of direct cylinders to indirect cylinders.

* * *

BROOKS Thomas & Co. Ltd. have joined with Norman MacNaughton and Sons (Dublin) Ltd.

BROOKS THOS. IN £2m. MERGER in a £2-million merger. The directors of both

groups foresee considerable scope for rationalisation because of the merger.

Mr. C. L. Brooks, Mr. G. D. Craig and Mr. J. C. Malone will join the board of MacNaughtons, with Mr. Brooks as chairman. Mr. James MacNaughton and Mr. Malcolm MacNaughton will join the board of Brooks.

It is the intention that MacNaughtons will continue to operate as a separate entity within the group, and that the interests of employees will be safeguarded.

WON IFL PRIZE



● Mr. Larry Tenanty, McGees of Ardee, accompanied by his wife, is seen off at Dublin Airport by Mr. Frank Murphy (right), Sales Manager, Irish Foundries Ltd., Bailieborough. Mr. Tenanty won a week-end for two in Paris as his first prize in the recent I.F.L. Window Display Competition which was open to stockists of I.F.L. products throughout Ireland. He won first prize in a similar competition last year.

METRIC PROGRAMME FOR

THE BUILDING INDUSTRY

Copies of the above booklet, which is published by the Minister for Local Government, and which contains details of the proposed timing of the change to the metric system in the building industry, may be obtained from the Government Publications Sale Office, G.P.O. Arcade, Dublin 1, or through any bookseller, price 2/6d, postage extra.

Roinn Rialtais Aitiúil.

5 Bealtaine, 1969.



● At a reception announcing the new Hamlet are (left to right): Mr. D. D. Frame, Chairman, Hammond Lane Group; Mr. J. Smith, Brooks Thomas; Mr. G. Parkinson, do., and Mr. Brian Murphy, Marketing Director, Hammond Lane.



● Also at the Hamlet reception were, from left : Mr. J. Darcy, Director and General Manager, Sanbra Fyffe; Mr. G. McHugh, Managing Director, P. J. Matthews; Mr. J. Rowe, Hammond Lane Group, and Mr. P. O'Kelly, Manager, Heating Division, Baxendales.

HAMMOND LANE LAUNCH HAMLET

CONFIDENCE in its future was the prevailing feature of the launching this month by Hammond Lane Ironfounders Ltd. of their new Hamlet boiler, an oil-fired central heating unit designed to suit all types of houses either already built or in the course of construction.

This confidence was portrayed by a spokesman at one of the trade receptions held to mark the introduction of the Hamlet when he told IPHE that they were hoping to sell as many as 5,000 units in the first year, taking both the home and export markets into consideration.

The Hamlet — an extremely compact and versatile boiler — will retail at £58 (plus taxes). It measures only 26" high by 20" wide by 14" deep and is available in two finishes, white and gilt stove enamel. It is designed to provide central heating for the average home (8-10 radiators) plus towel rail, plus domestic hot water (38,000 Btu/h.).

The Hamlet is also designed for trouble-free operation, one control allowing the user to decide on the volume of heat desired. Its compact size and clean looks will enable the Hamlet to be placed in the kitchen or living room where it will also act as a room heater.

Initially, Hammond Lane Ironfounders were gearing production to suit a projected demand of 1,000 units in the first year and 2,000 in the second year, but already it has been estimated that this will not suffice. So already, production programmes are having to be stepped up considerably.

Hammond Lane Ironfounders — one of the Hammond Lane Group — also announced at the launching of the Hamlet that they will shortly introduce a new cooker - central heating unit. As yet unnamed, the unit — which represents the first entry by the group into the combined heating-cooking field — will feature central heating (6-8 radiators or 120 sq. feet of radiator surface); two large ovens; a fully insulated extra large hot plate and easily replaced parts. The boiler will be of cast iron construction.

The boiler, which will be launched during Horse Show Week, will cost £135.

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SPRING SHOW PICTURE SPECIAL



● THE Buderus P.43 cast iron sectional boiler with outputs of from 640,000 and 1,640,000 Btu/h. was featured on the Quadrant Engineers' stand at the Spring Show. The boiler can also be used for pressurised combustion. Photographed on the stand are (left to right) Mr. Michael Smyles, Manager, Quadrant; Mr. Paul Bridgeman and Mrs. Nora Harkin.



● LEFT to right on the attractive Kosangas stand at the Spring Show were Mr. Peter Byrne, Sales Production Superintendent; Mr. John Hayes, Industrial Representative; Miss Ana Neilan, Demonstrator, and Mr. Michael McGlynn, Sales Promotion Representative.



● Mr. Paddy J. Morgan, Director, and Mr. Joseph C. Bigger, Director and General Manager, Hamco Enterprises Ltd., photographed on their RDS Spring Show Stand which featured a Hamco "Ace 80" oil fired centred heating boiler. The "Ace 80" is capable of heating up to 15 radiators. It also provides for cooking on top.



● Sales Representatives, Messrs. D. J. Byrne and J. Rowe, pictured on the Sanbra Fyffe stand at the RDS Spring Show. The exhibit featured a selection of showers and taps.



● On the John R. Taylor Ltd. stand were Sales Representatives Kevin Hicks and Kevin Shanahan, with a visitor to the stand.



● Another section of the John R. Taylor Ltd. stand.



● On the Lightfoot Refrigeration stand were, from left : Mr. Neils Zeuthen, Chief Engineer, Export Dept., Paasch & Silkeborg, Denmark; Mr. Tom McAuley, I.A.W.S., Limerick; Mr. Patrick Finnegan, Chief Engineer, I.A.W.S., and Mr. Tim O'Connor, I.A.W.S.

● On the Wavin Pipes stand at the Spring Show were, from left : Mr. Tom Gavin, Representative, West of Ireland, Wavin; Mr. John McKenna, Rep., East of Ireland, Wavin; Mr. Alwyn Parry, Rep. U.K. Wavin, and Mr. George Cooper Rep. Dublin Wavin.



MORE PICTURES OVERLEAF



● LEFT : The new Princess Acrylic bath was given pride of place on the Irish Foundries Stand. Looking after Mr. James Jameson, Sales Representative to the stand were (left to right) Miss Anne O'Gara, Secretary to the Marketing Manager, and Mr. John Graham, Sales Representative. ABOVE : On the Baxendale stand we pictured Sales Representatives Mr. James Mohan and Mr. James Rock.



● The Hammond Lane Group stand at the RDS Spring Show exhibited the new Hamlet boiler, where we pictured representatives Mr. Jack R. Bent and Mr. M. J. Graham.



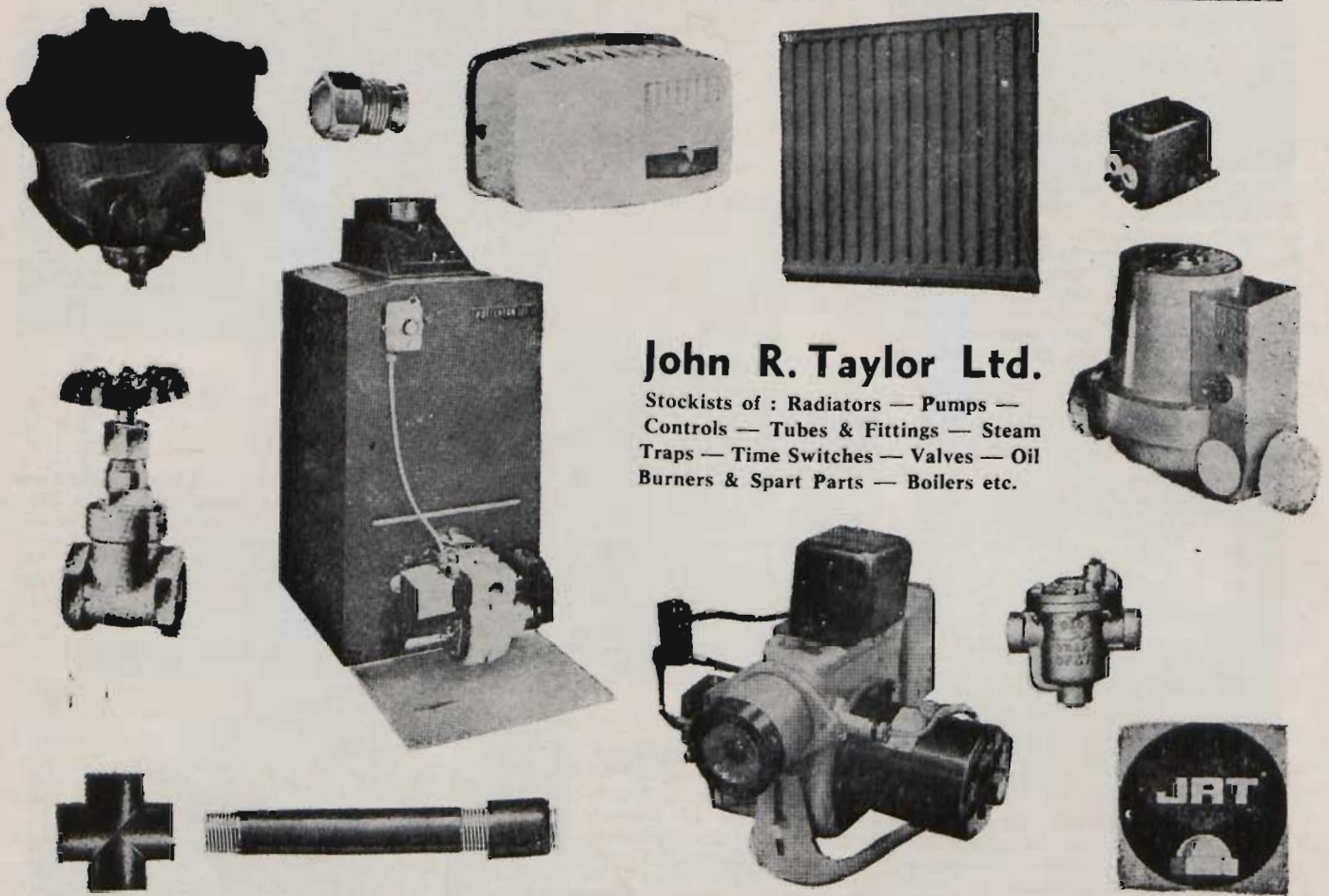
● On the Rototherm stand was Mr. Allistar Clotworthy, Sales Manager.

REPORT SHOW

From previous page



● Welding equipment featured prominently on the Heiton McFerran stand at the RDS Spring Show, where we pictured Sales Representatives, Messrs. Brian Andrews, Gerry Geehan and Sam Mahon.



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THE MYSTERIES OF MICROBORE

PART 1 – EVOLUTION OF A SYSTEM

IN engineering, as in the rest of life, to stand still is to stagnate. While many of our "new" ideas are not new at all, having been previously tried in, perhaps, an obscure way, any idea that is developing fast in any industry merits the careful attention of any member of that industry.

Unlike small pipe or small bore central heating, which developed in a definite pattern from a known place and point in time, the microbore system (or systems, for there are several), seems to have just evolved. Indeed there is no general agreement about the name, both mini-bore and microbore seem to be bandied about indiscriminately. To me, at least, the word "mini" is a bit overworked already. One identifies it with skirts and with cars, both rather attenuated and with somewhat racy associations on occasion. Microbore trips off the tongue more smoothly and has an air of precision about it. This is entirely as it should be since it needs to be a precisely designed system. Microbore, therefore, let it be, even if the opposition eventually win and the name is only used for this series.

Engineering practice, at least in the final analysis, consists of the intelligent application of known laws and principles. Within that definition microbore is not new. It is essentially a system for conveying water from a heat generator to a series of heat emitters via an assembly of pipework of smaller size than has commonly been used before, with the minimum size at present being a quarter of an inch or six millimetres. This has occasionally been done in the past in

Europe and in North America. The well-known and respected firm of G. N. Haden have used $\frac{3}{8}$ " pipework for lightly loaded circuits for many years and two of the original B.C.U.R.A. papers on small pipe central heating, published in 1956, advocated the use of $\frac{3}{8}$ " G.B. pipe as an alternative to half inch copper; although, of course, the former was a rather generous I.D. size compared with the O.D. copper and other material that is now used.

by
W. J. R. COUCHMAN
FIDHE, MASHRAE

The initial impetus for microbore seems to have come from several quarters at about the same time. Engineers in Scandinavia, England, Italy and Germany, were showing the way, mainly from 1965 onwards. The HEVAC exhibition in London last year showed, to the best of my knowledge, the first public display of microbore techniques. This contribution was made by an English supplier, J. Knowles (Heating) Ltd. of Middleton.

Another important contribution was made last year in the form of a paper from Mr. Glover of the Copper Development Association, while the Heating and Ventilating Research Association at Bracknell issued a preliminary report on their own laboratory installation which used existing microbore techniques and explored new ones. The increasing use of pressurised or "closed" systems has become associated, to quite a degree, with the use of microbore,

although one cannot sufficiently emphasise that it is quite normal practice to use microbore with a conventional open system.

Repetition becomes tedious; in an earlier article in this Journal I advanced the arguments, as I saw them, for and against the use of pressurised systems. It is perhaps sufficient now to say that many engineers agree that the intrinsic safety factor of an open system, even a badly installed one, is likely to be higher than the safety factor for a badly installed pressurised system. Since the use of pressurised systems seems to be on the increase there is clearly a need for some generally accepted standards to joint the way to more safe and effective design and installation practice.

There are signs in Ireland, too, of a trend towards the use of medium temperatures, i.e. in excess of 212 degrees F. There is a safe and satisfactory American system, using medium temperature, that has been used here for some years but installations using this system have always been professionally designed and installed, generally skirting heating has been employed. Amateurish medium temperature systems, perhaps using steel panel radiators and exposed pipework, should not be permitted.

It is as well, in the course of this sort of introduction to a subject, to attempt to list a few of the facts and fallacies associated with microbore.

It is not:

- (a) "A technological breakthrough" or anything like that.
- (b) Necessarily pressurised, the

Continued overleaf

paper published by the Copper Development Association made no mention of this subject and, indeed, emphasised that the principles and practices advocated in the British Standards Code of Practice "Small Bore Central Heating" should be followed.

- (c) Necessarily more "efficient": in any sense of that rather overworked word.
- (d) Associated principally with domestic heating practices. In fact there is probably more association with industrial practice.
- (e) Likely to transform the red figures on any contractors bank statement into black.
- (f) Necessarily involving the use of a high-output pump.

It is (I think) :

- (a) An important advance in heating practice, to be used with discretion and in the right circumstances.
- (b) A system that needs intelligent planning and, in particular, an intelligent control system.
- (c) Arousing more interest than any heating development in the last decade; the indications are, therefore, that many people in the trade are ready to give it a trial.
- (d) A system that has obvious application for high-rise buildings, hotels, flat blocks and so on; use in domestic practice seems to be justified but may be a bit less obvious.
- (e) A system that seems likely to cut costs, when used on suitable domestic heating jobs by between four and eight per cent (I would suggest that the trade

MYSTERIES OF MICROBORE

● From previous page

should use some of these savings to give themselves a decent living rather than continue with the present savage price-cutting).

- (f) A system that the public are probably going to like because it looks neat, causes less disturbance during installation and can be installed more quickly.

While writing the above, a line of one of the less lurid Army songs that one used to sing twenty-odd years ago, came into my mind :

"They stand on the Square and they bawl and they shout,
And talk about things they know damn-all about."

Actually I have changed one word in the last line but my point is that there is a risk of doing just this when discussing a new development. We do not yet know just how microbore will develop. Ten or twelve years ago we were talking about small-pipe central heating as a one-pipe system with fully exposed pipework and controlled by a mixing valve. One could easily be just as wrong, at this early stage, about microbore; eventually a pattern will emerge but one cannot, as yet, be sure what the pattern will be.

There are certain other heating systems, some of which are principally half-inch pipework, that have occasionally been confused with microbore although they differ in that little or no 3/4" or 1" tube is used and manifolds are not used. I know of at least three such systems, backed by Scandinavian or German manufacturers, with individual design procedures and specialised components. Each of these is a one-pipe ring main system, a common arrangement is to use a single, diverter-type valve to serve each radiator. Properly designed systems of this type can be quite good; they may or may not have a future here but they are not really microbore systems within the definition that is being used. They are therefore only mentioned in order to sharpen our definition.

Obviously a series of this type must include a suggested design procedure and a worked example and this will be the first objective. There is scope too for a detailed discussion of techniques associated with the design of pressurised systems together with some work on installation procedures. Finally, since there is an increasingly wide range of specialised materials and bits and pieces some attempt should be made to review these, with due respect for the laws of libel. It is one of the more well-worn clichés of journalism to talk about a given feature being provided in response to "overwhelming public demand." Those of us who are privileged to write for our own National Trade Journal try to avoid such unprofessional behaviour if we can. However, this is an instance where the Editor has been made aware of considerable interest among the readership. Therefore correspondence, suggestions, advice, details of problems overcome, queries and even constructive abuse, will be welcomed, because the rest of the series is not all written yet!

- Oxygen, Acetylene, Nitrogen, Hydrogen, Argon & Welding CO₂
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RADIATION LTD. have announced the appointment of Mr. C. J. McNamee as their sales representative for Northern Ireland and the Republic.

Mr. McNamee, who will be directly responsible to Mr. Charles Rolls, Area Manager for Ireland will act on behalf of New World gas cookers, Radiation gas fires, Parkray solid fuel room heaters, Ascot gas water heaters, and Radiation central heating systems. He will be based at the company's Sales Office at 38 Orby Road, Belfast, B.T5 - 5HN, and succeeds Mr. L. F. Young, who has now left the company.

Mr. McNamee is no newcomer to the domestic appliance scene in Ireland. He joined Radiation Limited in 1966 as representative for Ireland, but in March 1967 was appointed Eastern Gas Board Area Sales Representative for Ascot Gas Water Heaters Limited.

APPOINTED DIRECTOR

Mr. J. J. Moroney, General Manager, Fry's Metals Ltd., Dublin, has been appointed a director of the Mining Company of Ireland and Strachan Bros. Ltd., the lead sheet and pipe manufacturer.

Heating and Ventilating Exhibition for Dublin

An Industrial Heating and Ventilating exhibition is to be held in Dublin during September. The exhibition — the first of its kind to be held in the Republic — takes place at the Irish Trade Centre, Simmonscourt, Ballsbridge, from September 23 to 27.

The event is a direct follow-up to the entirely successful heating and ventilating exhibition organised in Belfast earlier this year. Displays of the latest developments in heating, ventilating and air conditioning will make it a most important calendar date.

The exhibition office is at 34 Lower Leeson Street (Tel. 63443). Full details from enclosed insertion in this issue.



● Mrs. M. A. Cashell, director, Irish Foundries Ltd., Bailieborough, Co. Cavan, presenting the trophy to Mr. J. Hoey, owner of Extrag Stout, which won the Open Farmers' Race at the Meath Hunt Point-to-Point meeting at Prouds-

town Park, Navan, recently. Included in the picture are Miss Ann Brogan, who rode the winner, and Mr. David Corrie, marketing manager, Irish Foundries Ltd. sponsors of the race.

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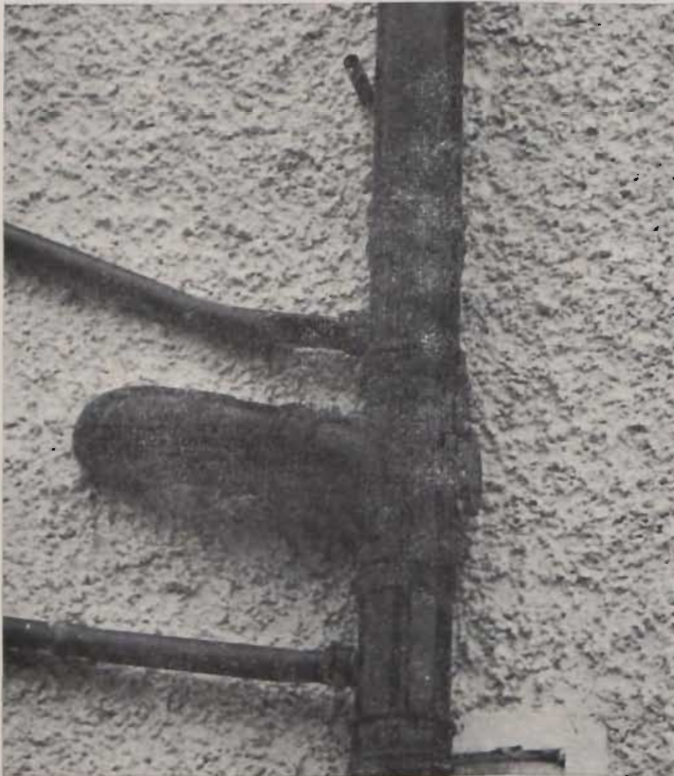


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Marley Single Stack Soil Pipe System

Heavy walled pipe. Smooth inside bore. O/Ring mechanical joints allowing for expansion and contraction. Easy to install.

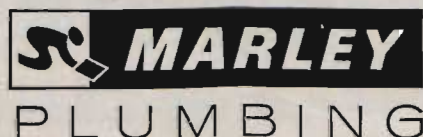
Marley Waste Systems

C.P.V.C. High temperature range, colour white. Recommended where water temperatures in excess of 70° are to be encountered.

TRAPS: Marley Tubular Traps manufactured from white Polypropylene, are suitable for use with C.P.V.C., P.V.C. and Copper Wastes.

4" Vinyl Underground Drainage System

Fillings will accommodate all site requirements. No need for a concrete bedding or a great fall. Joints available in either O/Ring or solvent cement. Orange coloured, the pipes are available in 4', 6', 10' and 20' lengths.

**MARLEY**
PLUMBING

For complete technical information and illustrated leaflet write to:

<https://arrow.tudublin.ie/bsn/vol9/iss2/1>
General Products of Ireland Ltd., Laraghcon, Lucan, Co. Dublin. Phone 364122.
DOI: 10.21427/D74D8M

SPECIAL REVIEW

THIS MONTH

Circulators and Pumps (Inc. drainage and water pumps and water storage equipment.)

THE advantage of years of experience has earned for Marley soil, waste and sewer vinyl pipe systems a trouble-free reputation, which has seen them capture a large slice of this market.

The Marley single stack oil pipe system employs a heavy walled pipe, a smooth inside bore and O/Ring mechanical joints, allowing for expansion and contraction. One of its outstanding characteristics is its ease of installation.

For Marley waste systems, C.P.V.C. high temperature range is recommended where water temperatures in excess of 70 degrees are encountered. Marley tubular traps, manufactured from white Polypropylene, are suitable for use with C.P.V.C., P.V.C. and copper wastes.

Marley's 4" Vinyl underground drainage system does not need a concrete bedding or a great fall. Joints are available in either O/Ring or solvent cement. Pipes, which are orange coloured, are available in 4', 6', 10' and 20' lengths.

★ ★ ★

CARPENTER and Paterson Ltd. of Welshpool, Montgomeryshire, offer a complete range of pipe supporting

IN this equipment review we take a look at new developments in the fields covered by this month's special review. (All claims made are those of the manufacturer).

equipment, suitable for all heating and ventilating applications. Their range covers the smallest pipe clip up to constant load spring supports and covers over 500 different components.

These products are offered on an ex-stock Price List basis and quick and efficient delivery is being effected by sea or air to Dublin and Belfast.

All products are manufactured in accordance with best engineering design and practise and are completely approved by all the major companies, insurance and inspection authorities.

Apart from the range of stock manufactured items, this Company offers a

comprehensive design service, specialising in support of pipes and are prepared to undertake design, drawing work and manufacture of special gables, pylons, etc. to customers' requirements, working if required, from pipe-line diagrams.

Catalogues are available on request.

★ ★ ★

THE MAIN features of the McAlpine H.D. polyethylene waste system, are the exceptionally wide range of traps available, the simplicity of Surefit and Push-fit Fittings and the quality of the tubing.

Surefit Fittings comprise a socket with external screwed thread, coupling nut and synthetic rubber seal and the connection is made by inserting the pipe into the socket and tightening the coupling nut by hand.

Many of the traps available can be supplied with Multifit outlets and can, therefore, be connected to most makes of waste pipe, whether plastic or metal.

Continued overleaf

Announcing a further addition to THE DUBOIS range of HIGH DENSITY PLASTIC TRAPS



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A tubular BATH TRAP of conventional design made with 1½ in. internal bore having 1½ in. or 3 in. seal. 1 in. blank cap one side interchangeable with Giraffe type overflow assembly the other side OR Blank cap each side.

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- ★ OUTLETS SUPPLIED WITH: male B.S. pipe thread, also compression nut and ring for copper or plastic waste pipe.
- ★ DUBOIS PLASTIC TRAPS have successfully passed exhaustive tests with boiling water, oils, fats, detergents, etc.

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McALPINE

H.D. PLASTIC TRAPS WASTE PIPES & FITTINGS



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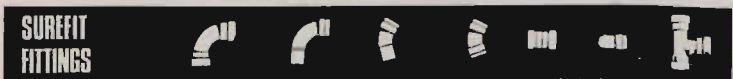
POSSIBLY THE LARGEST RANGE



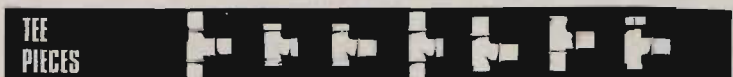
OF 1 1/4" AND 1 1/2" DIAMETER H.D.



PLASTIC TRAPS, WASTE PIPES AND



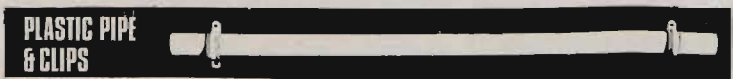
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McALPINE & CO LTD. KELVIN AVE. HILLINGTON GLASGOW S.W.2.
TEL: HALFway 3213-4-5

McALPINE

IRISH AGENTS: J.H. DONNELLY & SONS LTD.
Chamber of Commerce House,
7 CLARE ST. DUBLIN 2.



BATH TRAP OVERFLOWS



STANDING WASTE. 90° MULTIKWIK W.C. CONNECTOR



MULTIKWIK W.C. CONNECTOR

This advertisement has been adapted from the McAlpine Broadsheet which shows the complete range of H.D. Plastic Traps, Waste Pipes and fittings
Copy available on request

SPECIAL REVIEW

● From previous page

without the necessity of additional fittings. The recently introduced All-One trap carries tremendous advantages for plumbers engaged in the repair trade, as it can be used as a P-trap or an S-trap, and on account of the adjustable inlet and centre swivel joint can be used to connect to almost any existing plumbing installation.

All McAlpine plastic products are manufactured from high density polyethylene, are virtually unbreakable and are impervious to frost, boiling water, oil, grease, detergents and most chemicals.

* * * *

SIMPLICITY of operation is one of the outstanding features of F. W. Talbot and Co. Ltd's (North Windester, England) new heavy duty Taldex Underpressure Drilling machine.

The Taldex is a lightweight machine, simple to operate, and is designed for speedy and efficient drilling of P.V.C. and A.C. water mains. Its method of operation is superior to that of other types of equipment, and because it can be immediately applied to the main, the overall drilling time is considerably reduced, and the making of underpressure service connections is greatly simplified.

Taldex machines can be used in conjunction with either combined ferrule/straps or separate pre-tapped straps or the short-inlet ferrules, but the ferrule/strap because of its unique design, is the unit to be preferred.

Underpressure connections of 1/2" to 1" can be made with the Taldex, and ferrule/straps with outlets of the same sizes are available for various sizes of P.V.C. and A.C. mains. (see below).



● FROM F. W. Talbot's range of underpressure drilling equipment — See review above.

SPECIAL REVIEW
(Continued page 21)

Northern Ireland monthly review

MAY 1969

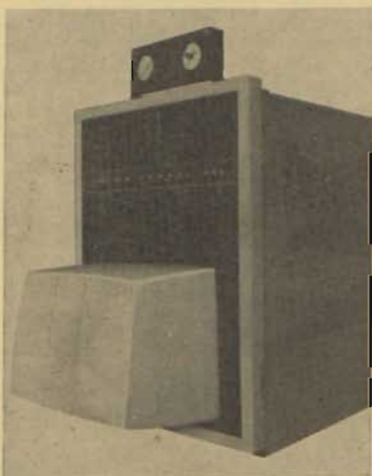
CRANE Ltd. announce a new series of commercial boilers for oil or gas firing — Whitehall **NEW CRANE XC Series — with BOILER SERIES** an output range of 240,000 to 2,000,000 Btu/h. (70-586 kw).

The new boilers retain the quality, easy erection, reliability and simple maintenance for which the original Whitehall boilers are renowned.

Whitehall XC Series boilers, which incorporate a waterway base, offer outputs of approximately 25 per cent more than those provided by comparable sizes of original Whitehall boilers, hence XC — EXtra Capacity.

Whitehall XC Series boilers, for oil firing have been matched with Oiltherm

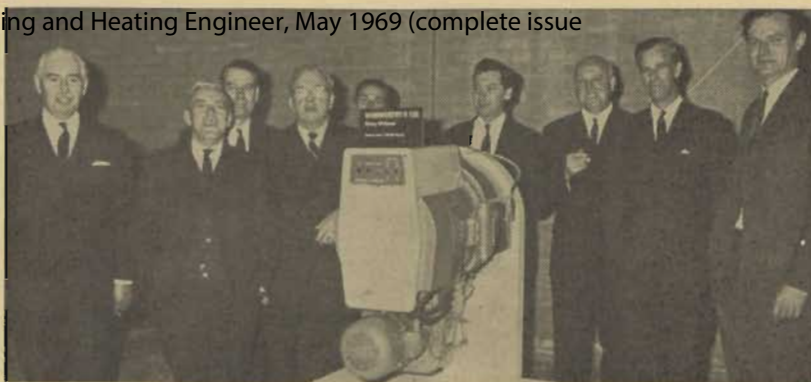
Continued page fifteen



● WHITEHALL XC Series boiler from Crane Ltd. (See also picture page 16).

APPOINTED AS STOCKISTS

AS part of their programme of establishing an extensive distribution network for the range of Pee Wee compressors, Danfoss (London) Ltd. have announced the appointment of a stockist for these units in Northern Ireland as follows : James Dunlop (N.I.) Ltd., Mallusk, Newtonabbey, Co. Antrim, N. Ireland. Telephone : Glengormley 4721/2.



HAMWORTHY RECEPTION

● Pictured at the Hamworthy Engineering Ltd. reception in the Wellington Park Hotel, Belfast, are (from left) : Messrs. F. Hamilton (J. Hamilton & Co. Ltd.), F. Rankin (Short Bros. & Harland Ltd.); A. Clark (Hamworthy); J. D. Raymond (Harland & Wolff Ltd.); D. Cadden, J. Hyde, W. B. Mitchell, J. A. Houston, and R. B. Haytor (all Hamworthy).

TO complement their large range of cisterns and associated sanitary equipment, Fordham Pressings Ltd. are now supplying the Fordham Rubberwell Resin rubber well bottom cistern, a new high level cistern specifically designed to replace old cast iron well bottomed cisterns with the minimum of plumbing alterations.

PRICE YOURSELF IN WITH A....

FULLY INSULATED AND APPROVED ICL CHIMNEY



- * Saves building the traditional brick chimney for solid fuel, oil or gas appliances.
- * Can be speedily erected and installed by the Heating Engineer.
- * Range of adaptors to fit all standard flue pipes and appliances.
- * Free design service.

The ICL Chimney, developed and manufactured for use on Oil, Solid Fuel or Gas appliances, can be erected within 30 minutes by two men at any stage of the house construction. It requires no special skills, or foundation, as it is available in a variety of lengths, to suit any installation and weighs only 5 lbs. per foot. Comprising an EN 58E stainless steel liner, a cartridge of fibrous mineral wool, and a heavily galvanised outer casing with patented stainless steel male and female end caps, ICL is the first British prefabricated metal chimney to be fully approved. Supplied complete with all necessary fittings and adaptors.

AGREEMENT CERTIFICATE 68/6.
U.K. JOINT MINISTRY OF HOUSING AND
LOCAL GOVERNMENT CIRCULAR 28/68.

for free Technical information folder and price guide without obligation :

INSULATED CHIMNEYS LIMITED
Broad Green, Wellingborough, Northamptonshire, NN8 4LQ
In Belfast : JOSEPH BLAIR LTD., Church Lane, Belfast 1.
Telephone : Belfast 30555 (10 Lines)



Did the Babylonians only hang their gardens ?

Sometimes they must have felt like hanging themselves. The construction handicaps they were labouring under in those days were enough to drive anyone up the wall. No Matthew Hall around to install the necessities of air conditioning, sanitation, heating, electrical services, etc. Without Matthew Hall multi services co-ordination it was one of the seven wonders of the world they managed at all!

Matthew Hall Mechanical Services Ltd.

41 Wellington Park,
Belfast, BT9 6DN
Telephone: 0232 669262

Matthew Hall House,
707-108 Tottenham Court Road,
London, W1A 1BT
Telephone: 01-636 3676

Matthew Hall House,
100 Washway Road,
Sale, Cheshire, M33 1RD
Telephone: 061-962 4311/8

85 & 91 Dykehead Street,
Queens Industrial Estate,
Glasgow, E.3.
Telephone: 041-774 3404

11/12 Queen Square,
Bristol, BS1 4NT
Telephone: 0272 20325/6
Also offices in Australia

● From page thirteen
burners — known for their excellent performance in Crane boilers — and are suitable for use with most other oil burners. For gas firing the boilers have been matched with Kingsway and Nu-Way blown gas burners.

The waterway base enables a high output-to-floor-space ratio to be achieved, with financial benefits derived from the saving of space. The reduced heat transfer from boiler base to floor permits the laying of simpler foundations so that these boilers are particularly suitable for installations in tanked basement or roof-top boilerhouses.

Installation time and costs are saved by easily fitted pre-fabricated refractories, significantly reducing site work, which only consists of placing a few dry jointed tiles on the combustion chamber floor.

Two comprehensive publications giving full technical data, with dimensions in imperial and metric units, are obtainable from Crane Ltd., Meadowlands, Stockmans Lane, Belfast.

* * * *

RADIATION APPOINTMENT

Mr. C. J. McNamee has been appointed Sales Representative for Radiation Ltd. in Northern Ireland and the Republic (See page nine).



BUILDTEX, The Scottish Building and Public Works Exhibition, is to receive the sponsorship of The Scottish Federation of Building Trades Employers —The Federation is to mount a display by The Scottish Building Apprentices' and Training Council.

The Exhibition, which takes place from March 10 to 14, 1970, at the Kelvin Hall, Glasgow, has already achieved considerable support — BUILDTEX was last staged in 1966 and already the total space allotted for exhibits exceeds the total taken on that occasion.

Said Mr. Robert Newnham, of Lintex Limited, the Organisers: "By including public works exhibits as well as catering for building materials and products there is no doubt that additional interest has been created in this

MAXETA AGENTS

HENDRON Bros. (Belfast) Limited have been appointed sole Northern Ireland agents for Maxeta Package Boilers, designed and produced by Alfred Allen Maxeta Ltd., Dudley, England.

Of wet-back construction, fully automatic Maxeta boilers conform to all relevant B.S. Specifications and are suitable for oil, town or natural gas.

Scottish based Exhibition. Plainly, its value as a marketing medium lies in the fact that Britain's industrial balance is shifting northwards. The flood of new industries into Scotland and the north of England is resulting in ever increasing building and construction activity."

* * * *

A NEW 24-page illustrated brochure describes the Holden and Brooke manufacturing range of Shell and Tube Type Heat Exchangers. With simple section drawings and photographs of Exchangers in situ, the brochure outlines typical applications, material and design specifications, fittings, testing and cleaning procedures.

CHINMEY CONSTRUCTION REFRACTORY ENGINEERING FURNACE CONSTRUCTION BOILER SETTING

DESIGN AND CONSTRUCTION OF
ALL TYPES OF CHIMNEY AND
REFRACTORY INSTALLATION

COBB REFRACTORIES LIMITED

4a, JENNYMOUNT INDUSTRIAL ESTATE,
NORTH DERBY STREET,
BELFAST, BT15 3HN.

Telephone: Belfast 748729/748798.

FIRST EVER SCOTTISH ENVIREX

WHEN Envirex '69 — the Scottish Environmental Engineering Exhibition — ended its five-day run at Kelvin Hall, it had been attended by some 7,500 trade visitors and the value of business initiated was estimated at £5-million. This was reported on behalf of the organisers by Mr. Alan Wright, joint managing director of Lintex Ltd.

The exhibition was attended by an Irish contingent, mainly representative of the Northern Ireland industry.

"This was a pioneering exhibition," said Mr. Wright, "the first of its kind to be held in the U.K. or even in the world. Its impressive first-time results reflect the importance of environmental engineering as one of the U.K.'s fastest growth industries, with a current annual market of £500-million.

"Envirex '69 has successfully paved the way for a larger and more important Environmental Engineering Exhibition to be held in Glasgow in 1971. We hope to make it an international and not just a British event."

Mr. Wright declared that almost all the exhibitors at Envirex '69 were well satisfied with the quality of attendance, which included consulting engineers, building services engineers, architects and contractors who had come from every area in Britain.

He said that some of the exhibitors claimed to have done as much business in Glasgow as they had at much larger exhibitions in London. Substantial orders had been taken in the mechanical services sections of the exhibition, and more than £4-million worth of business had been initiated through new environmental engineering projects.

Over 100 people attended the one-day conference held during the exhibition.

Mr. Wright said the international conference being planned as part of the 1971 exhibition would last three or four days, each day being devoted to a specific aspect of environmental engineering.

Discussions about the arrangements for Envirex '71 were now taking place with major trade associations, universities and professional bodies within the field of environmental engineering. An



ARMITAGE WARE TRADE SHOW

● At a recent Armitage Ware trade display in the Midland Hotel, Belfast, at which the extensive Armitage Ware range, including the new Corvette suite, was exhibited, were (left to right): Mr. R. F. Browne, Area Representative, Armitage Ware; Mr. H. Rowan, Miss Rosemary Shaw and Mr. Martin Brown. BELOW: Also at the Midland Hotel were (l. to r.) Mr. S. Langford, Marketing Executive; Mr. N. J. Harding, Mr. T. L. Moffett (Building Design Partnership) and Mr. F. Latimer, Sales Administration, Armitage Ware.



advisory committee representing these interests as well as commercial firms in the building services industry would be formed in May.

It was planned to widen the scope of the next Envirex, particularly in the sections covering equipment, fittings and furniture for offices and factories. There would also be a special section devoted to product and machinery environment control engineering.

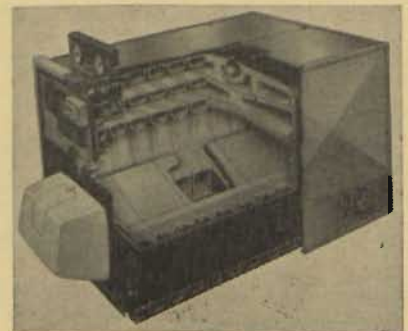
* * * *

TWO gas-fired warm air units, the LNC 35/44 and the LNC 45/60, with Btu/h. outputs of 35,000/44,000 and 45,000/60,000 per hour, respectively, are the latest additions to the range manufactured by Lincoln Warm Air Heating Equipment Ltd., of East Grinstead, Sussex.

The units, which have been designed with easy installation in mind, can be fitted with an Ascot type 303 WE/1 circulator for the provision of hot water.

A direct drive, variable-speed fan with sliding-withdrawal and plug-in electric facilities for easy servicing has been incorporated into both designs, as have the easily accessible washable air filters.

The units, delivered completely assembled and pre-wired, complete with manual fan switch for summer circulation, occupy only 2½ sq. ft. of floor space.

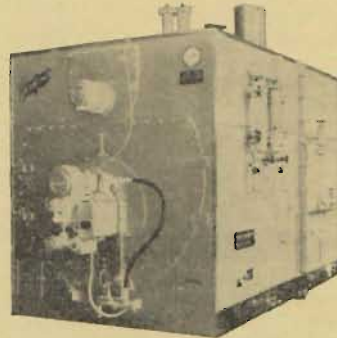


● THE Crane Whitehall XC Series showing side waterways and water cooled bottom.

COCHRAN

Everything you could ask for in Boilers

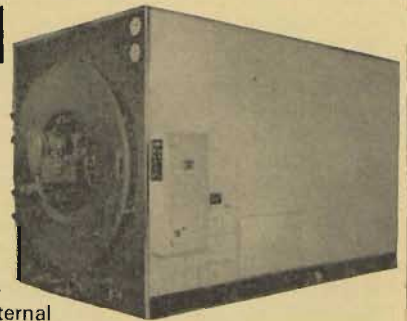
CHIEFTAIN



An oil-fired steam boiler with world-wide success. Uniquely designed for greater efficiency and reliability. Available in 22 sizes with evaporations from 1500 lb/hr to 50,000 lb/hr.

- * Highly efficient at all load levels
- * Extremely economical to run
- * Reliable, compact, easy to install and operate
- * Cleanly designed with cool-to-the-touch rectangular casing
- * Provides wide turn down. The oil burner is designed to the boiler

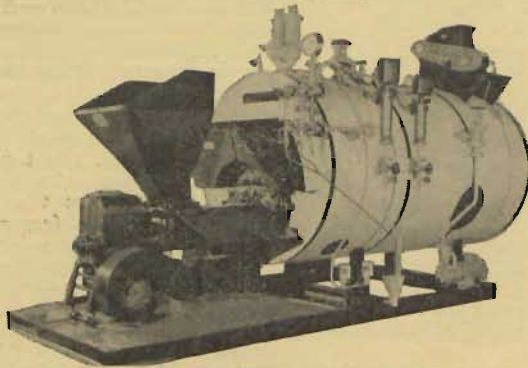
CLANSMAN



Hot water boiler with many advantages including a unique patented internal re-circulator. Available for low, medium and high temperature hot water applications from 1 million to 25 million Btu/h. as standard and to 50 million Btu/h. to order.

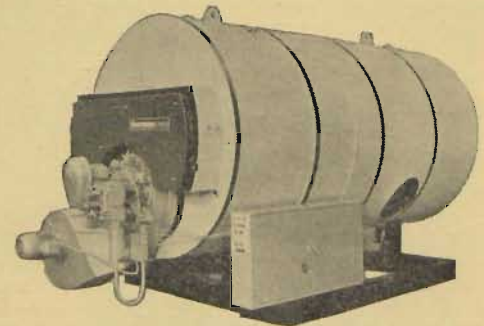
- * Gas and oil firing
- * No water stratification
- * Wide temperature differentials—up to 150°F (66°C)—more if required
- * Automatic magnesite injection—neutralises sulphuric acid in flue gases for low temperature hot water applications
- * High thermal efficiency—constant over full range of operation

THERMAX — solid fuel



An outstanding range of boilers suitable for practically every type of steam or heating application. Available with evaporations from 1,500 lb/hr to 25,000 lb/hr. Burns almost anything, including turf. The forerunner of *all* wet-back boilers. Efficient, economical to run and utterly reliable.

thermax two — oil fired



A range developed from the famous Thermax wet back design. Runs on all types of fuel oil. Supplied as a free-standing unit up to 52,000 lb/hr. or packaged in a range from 3,000 lb/hr to 47,500 lb/hr. Safe, reliable, efficient and easy to run. Extremely versatile.

Using the facilities at Annan and Lincoln, Cochran are also able to fabricate all types and sizes of pressure vessels, columns, storage tanks, shells and similar large fabricated plant. They are able to quote for complete boiler house installations, renovations and repairs.

Cochran & Co., Annan, Ltd.,
Cochran Thermax, Lincoln, Ltd.,
70 Upper George Street,
Dun-Laoghaire, County Dublin.
Tel : Dublin 805660.

Southern Engineering Co. Ltd.,
Parnell Place, Cork.
Tel : 21712.

W. H. Scott & Son,
130 Upper Newtownards Road,
Belfast, 4.
Tel : 654680.

Cochran & Co. Annan, Ltd.,
Annan, Dumfriesshire,
Scotland. Tel : Annan 2111.
Telex : 778183.

Cochran Thermax, Lincoln.
P.O. Box 33, Lincoln, Lincs.
Tel : Lincoln 30681.
Telex : 56123.

AP 200

EVERY FOOT OF SPACE BOOKED

EVERY possible foot of stand space was booked by 75 exhibitors for the third International Plumbing and Domestic Heating Exhibition at the Horticultural Halls, Westminster, London, this month. This year exhibition opening hours were extended to cater for the increased number of visitors.

And in conjunction with the Exhibition a Domestic Heating Conference saw a series of highly valuable papers presented, each with a practical application to help the heating installer understand and overcome the problems and controversies that arise on nearly every job.

Sessions on micro-bore heating standardised and packaged installations, spare parts and replacements gave a much needed airing to some delicate issues.

Among the more interesting displays are noted that . . .

Six new Aluminium handled straight pipe wrenches in 10", 14", 18", 24", 36" and 48", have been introduced by the RIDGE TOOL COMPANY.

Nearly fifty per cent lighter than comparable pearlitic iron wrenches the 10" weighs only one pound and the 36" only 11 pounds, contrasted with 1½" pounds and 19 pounds.

The new wrenches complement an existing line of 14", 18", and 24" aluminium handled wrenches designed with the jaw parallel to the handle.

Introduced at the Exhibition were NIBCO's installer stock packs offering three-way value. The packs, four in all, offer savings under three headings—cast savings because by purchasing in bulk substantial savings in cash are

made and passed on; NIBCO cleaning accessories are supplied free with each pack; and stock packs allow the installer to save time by having popular fittings etc., his own stock.

Full details of the stock pack scheme are available here from OBC Ltd., as is a leaflet showing pack contents and cost savings against list price.

The theme of the DANFOSS (LONDON) LTD., stand was "Dial Danfoss for Comfort"—the slogan of the Company's 1969 marketing campaign.

The "Dial Danfoss for Comfort" campaign is backed by the recently introduced "Key to Comfort" controls pack several of which were displayed on the stand. This new pack, which contains all the necessary controls for a central heating system in an average sized house, comprises four Danfoss RAV thermostatic radiator valves and one RAI thermostatic cylinder valve. All the equipment in the pack is of the non-electrical type, thus obviating any wiring operations during installation.

The RAV was also displayed individually in both its fixed and remote sensor forms. Originally introduced about 3 years ago, the RAV is based on 15 years experience in this field. Available in either ½ in or ¾ in angleway or straightway models, the RAV has an overall temperature range of 8° - 30° C (45° - 85° F) and an operating principle based on a temperature sensitive vapour charge enclosed within the plastic thermostatic regulating top.

POTTERTON announced the introduction of a new gas-fired wall-mounted unit for domestic whole house heating and hot water supply.

A comprehensive research and development programme has resulted in this technically advanced unit, an entirely new concept in Potterton boiler design. To be known as the Potterton FRS boiler, it is light in weight, easy to site, attractive and compact, and yet capable of reliable, automatic and economic operation with full small bore combined central heating and indirect hot water supply systems.

This low thermal capacity unit will be available in two sizes, the Potterton FRS 38 with a maximum output of 38,000 Btu/h. and the Potterton FRS 52 with a maximum output of 52,000 Btu/h. A unit of 70,000 Btu/h. output will be added to the range later this year.

UNI-TUBES LIMITED, a subsidiary Company of Smiths Industries Limited, featured their recently introduced Kopex Flue Lining Pack at the exhibition.

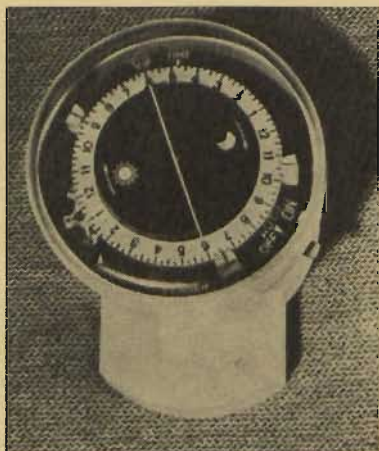
The new Kopex flue lining pack covers the range of popular lengths and diameters of stainless steel liner and, in addition to all the items required to complete a normal lining, include a vinyl coated asbestos-cement terminal fitting, newly combined plate and clamp, and plastic nose-cone and draw cord.



● "Miss Plumber's Mate, 1969" — 23-year-old Christine Cowland — pictured (left) on the stand of James H. Lamont and Co. Ltd., from whom she received one of her prizes. On right is "Miss Plumber's Mate, 1966." Christine's prizes were £100 in cash, a set of plumber's tools, a selection of radiator valves and a stainless steel sink top. Lamont and Cox Ltd. are represented in Ireland by Joseph Rea and Son (Belfast) and Mr. J. Cashman, Cork.



● Christine Cowland — Miss Plumber's Mate, 1969 — receives her £100 cheque from Kay and Co. (Engineers) Ltd., who are represented in the Republic by F. M. Marr and Son Ltd., Dublin.



● For simple control of lighting or central heating Venner demonstrated their Venneron. This is a 15 amp single pole time switch with three voltage ranges (110, 220 and 440 volts), fingertip setting of two adjustable switching periods per day, and a three position manual switch which provides constant ON, constant OFF or automatic setting. The "Venneron" also incorporates as standard an 'Easiset' day omission device which allows the ON switching to be omitted for a 7-day period.

The new Kopex pack has a number of novel features. The top sealing plate has a raised flange that does away with the separate clamp; the liner itself is square cut in the factory, making it safer to handle; one end is fitted with a throwaway polypropylene nose cone already attached to a draw cord. Variations: Three lengths—20, 25, 30 feet; Two Diameters—4 and 5 inches; Three carton sizes—44 x 44 x 12; 39 x 39 x 12; 38 x 38 x 9 inches.

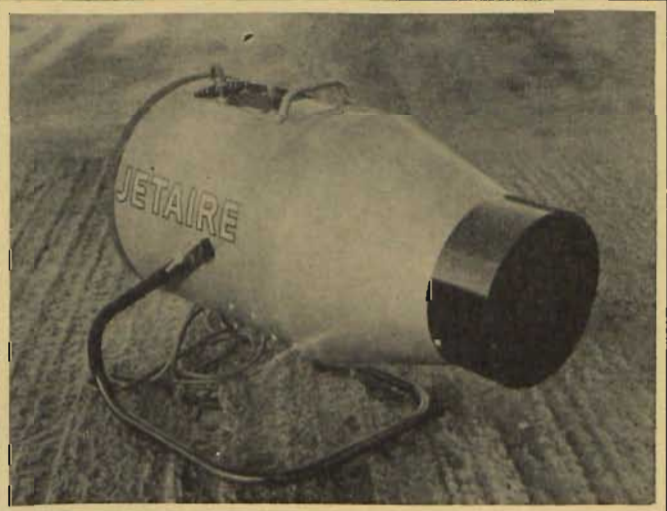
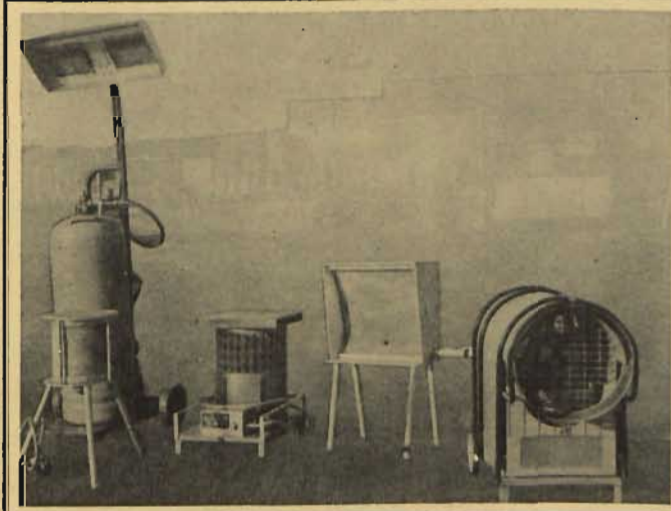
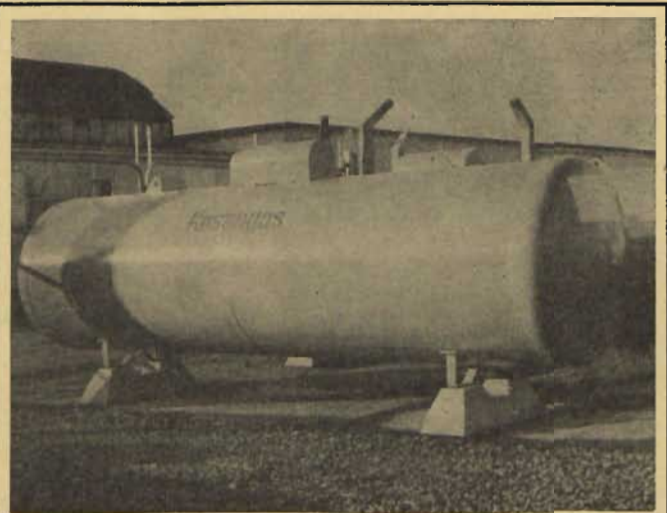
INTERNATIONAL JANITOR LTD. Their stand presented examples of the slim-line International 35 (35,000 Btu/h) and International 50 (50,000 Btu/h) multi-gas boilers which are in either basic form or as small-bore units—International S35 and S50. The International 50 is only 12 inches wide.

The ODY-1 oil-fired pressure jet domestic central heating boiler, which was also shown, is sufficiently quiet and compact in operation to be installed in the kitchen. It is available in three outputs—60,000, 75,000 and 90,000 Btu/h.

The theme of the MARLEY exhibit put emphasis on new development in rainwater, soil and underground drainage systems. These included the Olympic rainwater system, which is the

Continued page twenty

isn't this the kind of versatility you want from a heating fuel?



Top Left Customer Delivery. Top Right Customer's own Storage Point. Bottom Left Selection of Emergency Heating Equipment. Bottom Right Large Warm Air Blower.

To heat a Factory or Farm Building, Ballroom or Building Site, all with equal efficiency.

Kosangas has this adaptability, this all-round capacity to solve Heating problems, however complex, however simple.

Kosangas control is instant. It burns cleanly, without fumes or deposits. And, it's backed up by the service you expect from an efficient modern Fuel system.

Fast, dependable, technically geared to tackle the Heating problems of to-day. And to-morrow.

Get Kosangas in bulk for large-scale consumption; or in smaller Cylinders for portable use.

For the full Kosangas Heating story, contact the Industrial Sales Division, at Belfast 43221.

Ask, too, about the Kosangas Equipment Hiring Service.



Kosangas (Northern Ireland) Limited, 7 Fountain Street, Belfast, BT1 5EF. Telephone 43221

only rectilinear profiled gutter to incorporate the patented notched joint. Building Services Engineering, Vol. 9, 1969, Iss. 2, Art. 1
 4" x 2" gutter and 2½" x 2" rectangular pipe is available in an attractive blue-grey colour.

Another new gutter profile exhibited for the first time was the 125/150 deep half round system which has a distinctive beading on the front edge. The Classic, Box Eaves unit and half round sections are also featured.

On the stand of TUBE PRODUCTS LIMITED, a TI company, three extensions to the range of Tru-Wel central heating tube were shown for the first time in addition to the existing basic tin-zinc coated tube.

The original Tru-Wel tin/zinc-coated mild steel tube which was introduced in May of last year, will continue to form the main selling line of the Tru-Wel central heating range and is avail-



● KOPEX "Packaged" stainless steel flue lining, containing all the components and accessories for a complete flue lining installation.

EXHIBITION REPORT

● From page eighteen

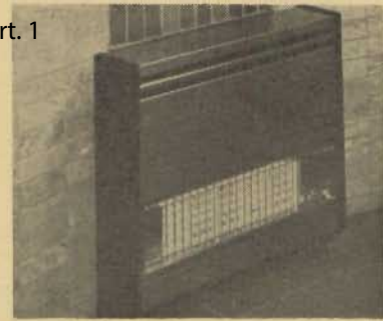
able in ½, ¾, 1, 1¼ and 1½ in nominal bore sizes packaged in sealed bundles of 20 ft. lengths with protective end caps.

On show for the first time was plastic coated Tru-Wel central heating tube. This plastic sheathing now permits the tube to be buried in walls, floors and concrete.

And as an alternative to tin-zinc coating, Tube Products are now offering Tru-Wel central heating tube coated with passivated zinc, which the company is also introducing ¾ in i.d. Mini-bore tube as an addition to the Tru-Wel range.

The SIMPLICITY PRODUCTS display featured the new Simplicity Super flexible metal tubing. Made to the original Westaform 9-rib formula, the new product is available in sizes from 9" up to 30" diameter. It represents an advance on ordinary large diameter Westaform because its deeper ribs give a greater degree of flexibility. For example, the 12" diameter flexible tubing will now bend around its own diameter. Simplicity Super is available for two separate applications—as a flue lining (Super Westa form) and as flexible ducting (Simplicity Super Flexible Duct). Republic Agent: W. K. Hosford Ltd., Cork.

VENNER LIMITED exhibited a range of time switches and domestic



● The Baxi-Bermuda-Plus

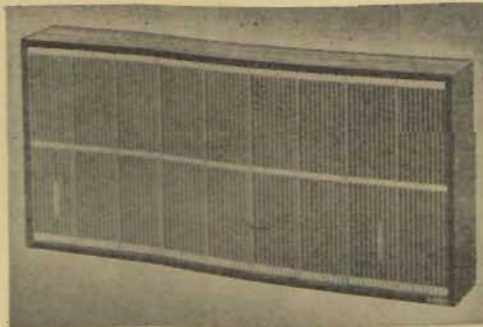
heating controllers covering the majority of professional central heating requirements. Their exhibits certainly confirmed that the company now have available a comprehensive selection of time switches and controllers to meet the needs of the engineer, installer and user alike.

The BAXI stand featured a number of the company's appliances including the Bermuda-Plus gas-fired central heating unit. The Bermuda has an 11,000 Btu/h radiant convector room heater behind which is a 40,000 Btu/h boiler, out-of-sight in the fireplace opening.

Also on show were the Fantom fire, a forced draught open fire with built-in fan, which will burn the cheapest smokeless fuel, and the Baxi Burnall underfloor draught fire. Both open fires, with high output back boiler, will heat up to six radiators.

DOMESTIC HEATING ?

We carry a large stock of boilers, radiators, controls and other appliances for Domestic Heating by well-known manufacturers, including B.S.A., Wilson, Potterton, Parkray, Peglers, Satchwell, Danfoss and Fenton Bym, and our expert advice is always at your disposal.



HEATING CONTROLS & DEVICES LTD.

Head Office and Works, CARROWREAGH, DUNDONALD, BELFAST, NORTHERN IRELAND

Phone Dundonald 2683/4/5/6.

Also at 4 South Richmond Street, Dublin, 2.

Telephone: Dublin 58772/3



SPECIAL REVIEW

● From page twelve

The most important features of the Heavy Duty Taldex machine are the increased thickness of the spindle and the unique integral cutter, ensuring perfect alignment of the drills and robust performance, particularly on 1" services.

Attachments are available to enable this machine to be used for making : $\frac{1}{2}$ " and $\frac{3}{4}$ " service connections on P.V.C. Mains; 1" connections on A.C. Mains; $\frac{1}{2}$ " and $\frac{3}{4}$ " connections on A.C. Mains, and inserting screwdown pattern ferrules in both P.V.C. and A.C. Mains.

For Engineers wishing to utilize the screwdown pattern ferrule/straps (stopcocks and ferrules combined) with either crutch or square heads, two accessories only enable any Taldex machine to be used to insert these under-pressure, in either P.V.C. or Asbestos Cement Mains.

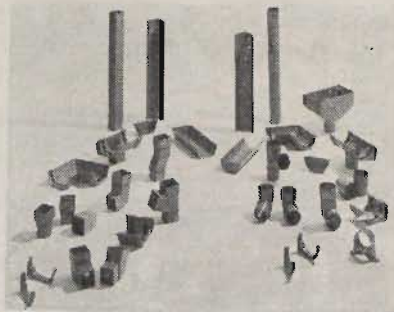
The operation is the same as upon standard ferrule stems, with the exception that the screwdown spindle is inserted instead of the normal inner plug. To do this the two additional accessories required are : A Barrel Extension Piece (TXS 28); A Screwdown Plug Adaptor for inserting $\frac{1}{2}$ "/ $\frac{3}{4}$ " Screwdown Spindles (TXS 31), or a Screwdown Plug Adaptor for inserting 1" Screwdown Spindles (TXS 32).

Having drilled the main, closed the valve and removed the headworks, the barrel extension piece is attached to the valve and the special plug adaptor is screwed into the trepanning cutter (on P.V.C. mains) or into the headworks adaptor for plug insertion (on asbestos cement mains). The top square on the spindle is then pushed into the square recess and held tight by the internal leaf spring. This assembly is screwed back into the machine, the valve opened and the spindle is wound down onto the ferrule seating. The machine is then removed from the ferrule/strap and the assembly of the unit can be completed.

* * * *

L. R. WOOD Ltd. (174-5 Pearse St., Dublin 2) are sole distributors for Wicu tubing in the Republic and are now carrying stocks of $\frac{1}{2}$ -in. tubing in coils of 25 metres (82½ ft.) and 1-in., 1¼-in. and 1½-in. hard drawn lengths of 166 feet. Delivery is ex-stock.

Wicu tubing, which will shortly be available for micro bore systems in 10, 12 and 16 m.m., is a pre-insulated copper pipe comprising of an ivory coloured P.V.C. sheath extruded over high



● The new Unidare-Terrain Half-Round and Square Section Rainwater system being highlighted.

NEW SYSTEMS

UNIDARE Ltd. recently provided — at a series of informal meetings in Dublin, Cork, Limerick and Galway — a valuable opportunity to examine in some depth the development and progress in P.V.C. systems in general and Unidare-Terrain soil and waste and rainwater systems in particular.

The meetings saw a most interesting and useful debate which, coupled with a series of demonstrations in the correct use of the numerous fittings in the Unidare-Terrain range, made the sessions most worthwhile.

And new from Unidare-Terrain are two P.V.C. rainwater systems. These are the Half Round and Square Section Rainwater Systems which the company should have available to the market here in September.

The company availed of the opportunity of its series of meetings to announce this latest development in the Unidare-Terrain success story.

The new 4-in. Half Round and 4½" Square Section R/W Systems are quicker and easier to fix and have been designed for long, trouble-free service. Both systems are dry jointed throughout.

The rigid gutter fittings, with integral fixing lugs outside the seal and wet areas, incorporate seals and spring action gutter securing clips. Downpipes are joined and fixed to walls with combination pipe and fitting clips which embrace both the pipes and fittings, providing shrouds for the cut ends of the pipes together with expansion gaps to accommodate thermal movement.

quality copper barrel. The interior design of the P.V.C. Sheath ensures that there is only point contact with the copper tube, reducing thermal conductivity to a minimum. This unique cross sectional pattern creates locked air space between the insulating sleeve and the pipe, which results in a very high degree of insulation.



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industrial heating & ventilating

IN IRELAND



COPPERAD RADS AGAIN FROM BSS

BBRITISH Steam Specialties of 33 Lesson Park, Dublin, are to reintroduce Copperad Corinthian radiators to the Irish market.

A spokesman said that they plan to hold extensive stocks of the radiators and that they will be marketed at most competitive prices.

Other news from the Lesson Park concern is that Mr. Liam Cahill has been appointed Branch Manager. He succeeds Mr. David Wheeler, who resigned recently (IPHE, last month).

Mr. Brendan Stack has taken up the new appointment of Heating Products Manager — Ireland, with a task of developing and co-ordinating BSS activities in the important heating field.

A FEATURE of the company's recent Spring Show exhibit was a Paxman 40F Autonomic boiler, having a specific output of 4,000 lb. of steam per hour at 100°C. which is one of a range of Autonomic models, built by the Paxman Process Plant Division of English Electric Diesels Limited at Colchester and available as boilers with outputs up to 6,000 lb. of steam per hour, or as water heaters with outputs from 500,000 to



IHVE GOLF OUTING

A TOTAL of 32 competitors participated in a recent golf outing, organised by the Irish Branch of the Institute of Heating and Ventilating Engineers at Woodbrook Golf Club.

In all, twelve prizes were on offer. Results : H. A. O'Neill Cup — Mr. J. J. O'Neill; Chairman's (Mr. Sean Mulcahy) Prize — Mr. Michael O'Doherty and Mr. Eamon O'Brien; class prizes : Messrs. Jimmy Davenport, Don O'Malley Myles Molloy, John B. Doherty and G.

Williams. Other awards went to Ted Cooley, Larry Gilmore and Fergus McGinley.

Subsequently, a very enjoyable dinner and social gathering was held in the clubrooms at which tradition was broken when wives and girl friends joined competitors for the event. Over 90 people were in attendance.

● Above : Mr. Brendan Scannell, Leinster Branch of the Golfing Union of Ireland; Mr. Peter Nolan, H. A. O'Neill & Co. Ltd.; Mr. J. J. O'Neill, winner and current Irish International golfer (Lyons & Partners), and Mr. Paddy Clonan, Vice-Chairman IHVE, pictured (left to right) at the IHVE outing.



● At the Woodbrook Golf Club-House, were (left to right): Mr. Eamonn Curran (Capt., Woodbrook Golf Club), Mrs. Eamonn Curran; Mr. Paddy Clonan, Vice-Chairman, Irish Branch IHVE, and Mrs. Paddy Clonan.

A CHANGE OF NAME . . .

A CHANGE of name has been announced for M. A. Boylan Ltd. The company is to be known as Cape Insulation (Ireland) Ltd. of 50a Harcourt Street, Dublin.

However, the change of name will not result in any major variation of business and Cape Insulation will carry on the same business as Boylans,

However, of considerable importance is the acquisition of stores space at Ardee House, Ardee St. The premises will give the company much greater stores facilities and a spokesman for the company said that this would be "a considerable advantage all the way round."

RIGID SECTION PIPE INSULATION

The things you need to consider

The things you need to consider	How FRS 950 meets them	*
Temperature Range	Up to 950°F	✓
Fire Safety	Non-combustible - BS.476:Part 1	✓
k Value	0.28 at 200°F mean 0.46 at 400°F mean	✓
k Value	5-7 lb/ft ³	✓
Weight	1/2" - 4" insulation thickness. Nested sections for minimum heat loss.	✓
Range of thicknesses	Complies with B.S.3958	✓
Dimensional Accuracy	Robust and non-friable	✓
Damage Resistance	Vibration resistant - unaffected when tested to B.S.2972	✓
Permanence	Non-hygroscopic	✓
	Non-corrosive	✓
	No sustenance to vermin Meets B.S. nos. 1334, 1588; 3708, 3958	✓

You can't match that full set of ticks

Top of the P.I.P.S. (Pipe Insulation Performance Scale) That's FRS 950

*In the last column, check any other product you can think of with appropriate ticks. You'll find it's no match for FRS 950—the only one that gets the full set of ticks. Not for nothing is Fibreglass known as the first name in insulation.

In going over the chart you'll see

just how far, technologically, FRS 950 leads in this field. You'll see that this top-performer from Fibreglass is the answer to today's—and that means your—requirements in pipe insulation.

The full FRS 950 technical story comes in a leaflet. It's yours for the

asking. The same goes for any answers you may need on specific questions about your own design or cost aims. Let FRS 950 wrap itself around your problem now.

The last word in rigid sections—
from the first name in insulation

Agents: Morsell, Mitchell & Co. Ltd., Heating and Insulation Division,
Windmill Lane, 8-11 Sir John Rogerson's Quay, Dublin 2. Tel: 776282

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21 Merrion Sq. North, Dublin. Tel. Dublin 67060.



MONTHLY SPECIAL REVIEW

Air Conditioning, Ventilation,
Refrigeration and
Warm Air Systems

IMPROVING PRODUCTIVITY AND EFFICIENCY

THE Civil Service perhaps are the largest occupiers of office space, housed in a multiplicity of buildings throughout the U.K. and Ireland. The majority of Civil Servants work in the cellular type building, whether old or new, whereby office space is broken down into relatively small offices.

Quite recently in the U.K. the Ministry of Public Works and Buildings has been examining the requirements of the Civil Service with regard to office accommodation, efficient working capital costs, running and maintenance costs.

In commercial buildings, particularly so called "glass houses" or tall rise office blocks, salaries and wages comprise by far the largest part of the total cost of operating the building, i.e. of the cost of performing the function for which the building is constructed. A case can be made for industrial buildings; a small increase in productivity of the personnel will represent a saving of the cost of fitting and operating air conditioning. Hence for certain types of "glass house" buildings, tall rise office blocks and certain industrial premises, air conditioning may be justified by an improvement in efficiency and productivity of work, taking into account satisfaction and proper working conditions.

Generally, the cost of air conditioning depends to a large extent on the design of the building, as well as how temperature and humidity are controlled, thereby complicating the system and adding costs. Recently, a conference held at the University of Nottingham on air conditioning systems for buildings turned out to be a battle ground in many respects between Architects and Air Conditioning Engineers.

One outstanding point recorded by the experts was that there exists a great need for integration between Architects and Engineers and clients. Architects

are not generally experts on air conditioning design, nor their function. They certainly need to be aware of general principles of design and so call in at an early stage manufacturers of equipment for its best use and the consulting environmental engineer. The day has arrived and we look forward to seeing fully exploited the integration of Architectural, Mechanical and Structural engineering to promote proper environment for the worker.

Unfortunately, one cannot always blame the client or architect, the client's principal adviser, when he considers various tenders for a project on the basis of capital cost for generally insufficient thought may not be given to the operation, control and maintenance of the system. While the best air conditioning plants, while well designed and installed, if they are not properly commissioned and operated, they are useless.

The trend in office buildings today, particularly the "glass house" type (i.e. those tall office blocks which are just a box fully glazed, with no architectural features) is to keep construction cost down, due to initial cost of site and building materials. The answer to reduce such costs seems to be the open landscape office, thereby reducing the number of small offices, by single floor large scale ones.

There are many advantages in such landscape offices — environmental offices — ease of communication, time saving and efficiency, where superiors view the staff all day long, savings on the basic construction, more efficient use of space and, of course, efficient use of air conditioning, while providing a lovely environment by potted plants, house shrubs, etc. The overall result ends in a building comparable in cost to a conventionally designed office, but

with better working environment.

Careful design is very critical in such an open plan air conditioned office block, both from a thermal and acoustic point of view. Such office blocks seem ideally suitable for Civil Service, Corporations, County Councils, where routine work is daily carried out. From experience, here at home in Ireland and in the U.K., evidence has suggested that both efficiency and morale have benefited from the open environmental office.

**SPECIAL REVIEW : Continued on
page twenty-eight.**

WITH the inevitable demands which will be made of specialist technologists **PREPARING FOR THE SEVENTIES** arising from industrial change and expansion with the advent of the Seventies, the two major national societies of professional engineers in this country have merged into one organisation.

The new organisation, which caters for the majority of the 3,500 professional engineers in the Republic, is called "The Institution of Engineers of Ireland." This development was announced at a recent Press Conference at the Shelbourne Hotel, Dublin, by Professor J. Dooge, President, Institution of Engineers of Ireland.

The two engineering bodies which have merged together to form this new Institution are the Institution of Civil Engineers of Ireland and Cumann na n-Innealtoiri, and with the formation of the new Institution of Engineers of Ireland, the profession will be catered for to a much greater and more sophisticated degree.

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AMENCO AIR HANDLING UNITS are designed precisely to conform to customers requirements. Outputs 100 to 20,000 c.f.m.

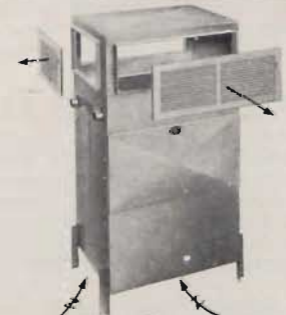


PERIMETER HEATING is Flexcil or Linearflex. Flexcil is practical, utilitarian and adaptable. Linearflex is for high-prestige situations, advanced and elegant.



AMENCO WARM AIR HEATERS range 55,000 – 2,000,000 Btu/hr. Vertical or horizontal. Oil or Gas. Completely pre-wired. Free-standing or ducted connections.

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NEOFLEX FAN CONVECTORS – low level, and high level, free standing and concealed. 4 models. 14,600 Btu/hr to 63,000 Btu/hr.

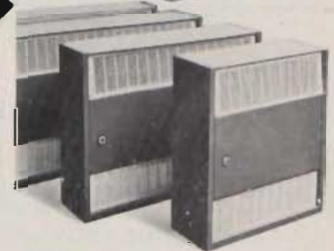
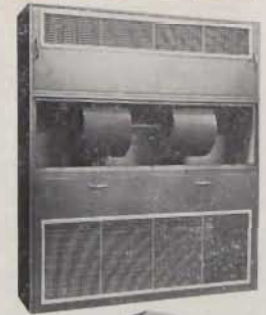
HOME HEATERS by Flexaire have four plus points. Speed control. Simplicity of cleaning. Robustness. 'Two-phase delivery' for investment protection.



NATURAL CONVECTORS Wall or floor or recessed models. Robust construction, range of colours. Heating elements for steam and high or low pressure hot water. Damper control available.

UNIT HEATERS in two basic forms, Horizontal and Vertical discharge. High efficiency heat exchanger, pleasing casing design.

HEATING & COOLING COILS to clients requirements. Sprayed cooling coils, as illustrated also available.



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London W.10.



rooms. In addition to extractor fans, Epelair manufacture the famous ductless hoods, namely the KH601 and KH701.

A recent addition to the comprehensive Woods range is the Airpac air handling unit, which includes filters, heater and cooler, steam or water humidifier, eliminator; fan unit and silencer.

Also from Electrical Industries of Ireland Ltd., is a comprehensive range of propeller fans, aerofoil fans and roof extract units.

* * * *

THE Rootes Tempair range of air conditioning equipment now includes the Gemini 102. The Gemini is a split-unit similar in performance and styling to the Pacific 102 (illustrated below) but designed so that the console may be positioned anywhere in a room while the condensed unit can be located on the roof of the building or on a balcony or an outside wall. The only connections between the two sections are two 3/4 in. diameter pipes. Apart from its ease of installation, the Gemini is extremely economical to run. In continuous operation (without thermostatic limitation as in normal use) its power consumption is equivalent to that of a 1 1/2 kW. electric fire. A 3 kW. heater can



● AFOS Ltd., of Manor Estate Anaby, Hull—they are seeking agents in the Republic—have successfully introduced their Solo C range of either oil or gas fired air heaters with outputs from 70,000 to 220,000 Btu/h. in seven sizes.

Afos Solo C units are an addition to the well-known Solo Range which for many years have earned a high reputation. Solo 'C' units, in addition to supplying heating, ventilation and domestic hot water during the heating season, can also be used for summer ventilation and domestic hot water only.

Extremely high efficiency is a keynote of all Afos units and the use of low temperature leaving air on these warm air heaters gives low running costs.

As they are manufactured for the indirect principle i.e. the air does not pass over the combustion chamber, but only over the water jacket, there is no dryness in the airstream and no irritating particles of burnt dust.

SPECIAL REVIEW

● From previous page

also be fitted for winter operation.

The Pacific 102 is a self-contained unit in which heating, cooling, dehumidifying are instantly available with constant temperature control always in operation. The unit can be installed through casement or sash windows, cavity or curtain walls.

Agents: Republic — Stephens Heating Suppliers Ltd., Collinstown Cross, Collinstown, Co. Dublin. Northern Ireland — J. Norman Fulton Ltd., 3, Bedford Street, Belfast BT2 7EN and J. Love & Son, 31a Sydenham Road, Belfast.

* * * *

CENTRIFUGAL fans of all kinds, high volume, medium/low pressure, covering a multitude of applications, have been a speciality of Carter Thermal Engineering Ltd., Redhill Road, Birmingham 25, for a number of years.

Research and development is constantly in progress to meet the requirements of modern H and V engineering, the latest innovation being a small aluminium fan suitable for volumes from 150 to 600 cfm capacity at pressures up to 4 1/2 s.w.g. Units have a cast aluminium casing and are fitted with multi-vane forward-curve impellers.

Three sizes are available: 4 1/2 L.S. with a 1/6 HP motor; 6 L.S. fitted with a 1/2 HP motor, and a 7 1/2 L.S. fitted with a 3/4 HP motor. Available ex-stock, these fans are ideally suited to small quantity air applications.

* * * *

A SINGULAR answer to a problem with many facets is the claim of Colt Heating and Ventilation Limited, who introduce a new range called the Concord, spelt without the 'e'. Make-up Air Unit. The problem of introducing make-up or replacement air for high volume extract systems has meant in the past that air is drawn into the area from adjacent shops, or through windows, or gaps in sheeting etc. The negative pressure created in the building by extraction results in dust, dirt, and even rain-water as well as air, being drawn into the building.

The Concord Make-up Air Unit delivers a high volume of air which may also be tempered to offset heat losses. It is manufactured in module form, the units being available with either direct firing gas burners or, steam or hot water heater batteries, according to the installation requirements. The gas fired model delivers 18,000 ft³/min. air and has a heat output of 900,000 Btu/h. When using steam, or hot water, as the heating medium, air volume delivered is 15,000 ft³/min. containing 770,000 Btu/h.

THE Greenwood Airvac Ventilation Ltd. Maxadome range, with twelve standard units, nine types of domes, four methods of mounting, and a wide selection of square, rectangular and circular sizes, provides the architect with an almost limitless combination from which he can plan his own purpose made scheme with all the cost advantages of using standard units.

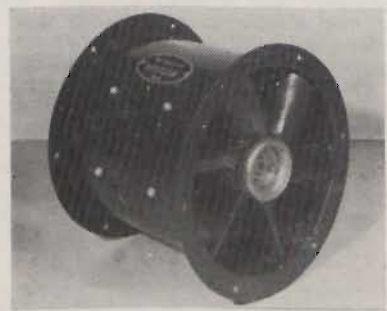
This range combines two vital factors in every unit — permanent or controllable ventilation and natural daylight. In the new Maxadomes, increased free areas of ventilation have been achieved in extremely low overall heights. On the Type HM this is less than 4" — excluding dome and curb.

* * * *

NOW available in Ireland from their agents, Walkers Ltd. of Nephin Road, Dublin, are the new Carlyle Moduline Units — ceiling terminals which have created two entirely new kinds of air conditioning systems.

One is a very simple duct system, capable of maintaining accurate temperature controls, room by room or module by module, in spaces of any size. Moduline units do this by varying the volume of cool air discharged into the spaces served, but with none of the disadvantages up to now associated with variable volume distribution.

The other new system made possible by Moduline units is called a Dual Conduit System. One set of units supplies constant temperature air at variable volume to offset heat from lights and people. A second set of units in the same space, separately supplied, maintains constant air volume at variable temperature to offset heat gain or loss by transmission. This arrangement provides the benefits of a double duct system, but with greater simplicity and economy.

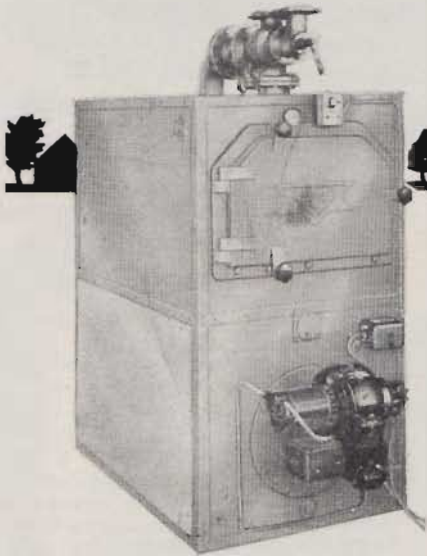


● A Breeza type P propeller fan from the London Fan and Motor Co. Ltd., now at 75-81 Stirling Road, Acton, London W.3. This range offers fans from 36 ins. to 60 ins. diameter, air movement up to 44,500 c.f.m. up to 1.0 in. s.w.g. resistance and are fully reversible. These larger diameter propeller fans are fitted with the Breeza Streamline impellers, giving 100 per cent air volume in either direction, according to rotation of the motor.

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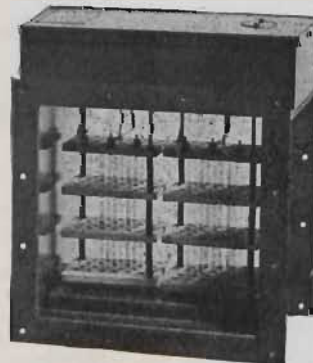
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ELIMINATING CROSS-TALK AT U.C.D.

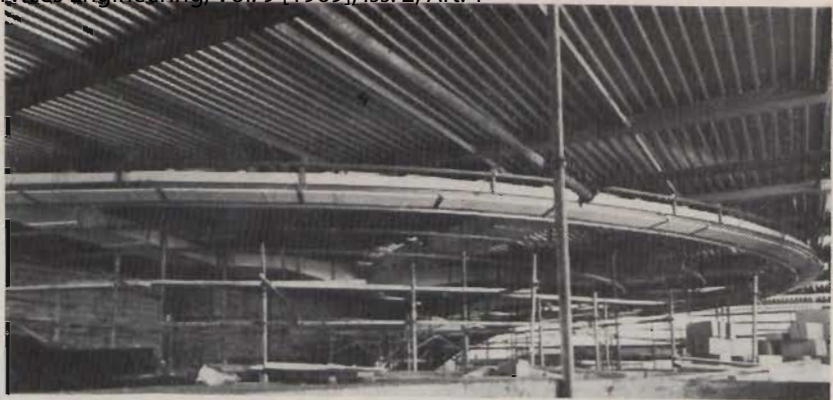
WHEN designing the warm air supply and extraction ducting in conventional sheet metal for the new Arts Faculty at University College, Dublin, the consultants were faced with a major sound transmission problem between classrooms. Other factors considered were the difficulties involved in lifting and fixing sections of very large ductwork; the possibility of increasing the extract rate in the classrooms should occupancy be increased, and the fact that supply ductwork had in any case to be insulated. The problems were discovered early in the project, when a full scale mock-up of a typical



● The illustration shows a return air duct in one of the corridors. Branches are connected to return air grilles in a series of classrooms.



● The versatility of the duct system is amply demonstrated in the photo. (see article).



section of the proposed design was built to evaluate materials to be used for the structure and services.

Consideration was given to various methods of eliminating the cross-talk, which was principally through branch ducts extracting air from the lecture and study rooms. The noise level was reduced to a tolerable level by fitting a 1 in. thick glass fibre lining to the sheet metal branch. The success of this action led to trials with Europair glass fibre duct system materials, which proved to be successful and more economical than using sheet metal ducts with separate liner.

The duct system offers a complete combination of thermal and acoustical insulation, and incorporates a tough aluminium foil vapour barrier facing finished in PVC.

The board in this application was made up into ducting in a workshop, set up on site, using the special Europair tools which make fabrication a very easy task. The material is simply grooved to allow the board to be formed into the required shaped duct. One of the tools is designed to cut the board to the required total perimeter dimension and at the same time to form a tight fibre to fibre joint with a built-in sealing flap. The flap is then used to staple the whole assembly into the required shape and the joint is then finally sealed using a mastic adhesive reinforced with a fibre tape.

For the job at University College, Dublin, the consulting engineer specified Europair duct system for a large amount of the supply and extraction ductwork, and the heating contractors and duct fabricators were soon aware of its advantages in respect of simple fabrication and ease of handling. The versatility of the material was quickly recognised by those who were experienced in sheet metal fabrication and no difficulties were encountered in making up the transition pieces which can be seen in the illustrations. At first, the contractor following the basic fabrication procedures laid down by the manufacturer.

However, after only a short while the workmen developed their own techniques for handling the material and their innovation achieved economies in time and material even beyond the manufacturer's estimates. Because of the excellent sound attenuation properties of the Europair duct system, square bends and short transition taper pieces can be tolerated. Where turning vanes are necessary, the rolled-sheet metal splitters can be pushed through the completed duct and embedded into the

● This illustration shows section of the continuous semi-circular distribution duct (see article).

fibre glass material for support. The resulting discontinuity in the vapour barrier facing can then be sealed with joint sealing adhesive and tape as recommended by the manufacturers. This method was used on the UDC contract, and the branches complete with turning vanes were taken off square from the main duct.

Where adjustable dampers were required for balancing the system, these were supplied in the same form as would be used in sheet metal ducting. In addition to the fact that duct system is easy to fabricate, the contractors were impressed with the ease with which the finished parts could be handled. Having stapled and sealed the longitudinal joints, it was found that the lightweight units could be butt-joined into long lengths without becoming at all unwieldy, thus easing the installation task. Another factor which impressed the contractor was that the lightweight system only required light support.

S.M. flanged collars were used to butt-join ducts where any side was greater than 16 in. in length. The ductwork was fastened to the collar by using sheet metal screws and large washers. The joint was then sealed using the manufacturers recommended adhesive and tape method. The joints between straight duct lengths and transition pieces can be seen in the illustration of the radial duct layout in the semi-circular theatre.

The illustrations show duct system in conventional straight runs in corridors and spanning a large hall as well as a rather more unusual application in a semi-circular lecture theatre. There are several such theatres in the UCD Arts Faculty and each one is heated and ventilated with warm air delivered at high level and extracted at low level. Both supply and extraction ducting is fabricated from the Europair duct system material, thus eliminating need for silencers between the theatres and the plant rooms immediately under.

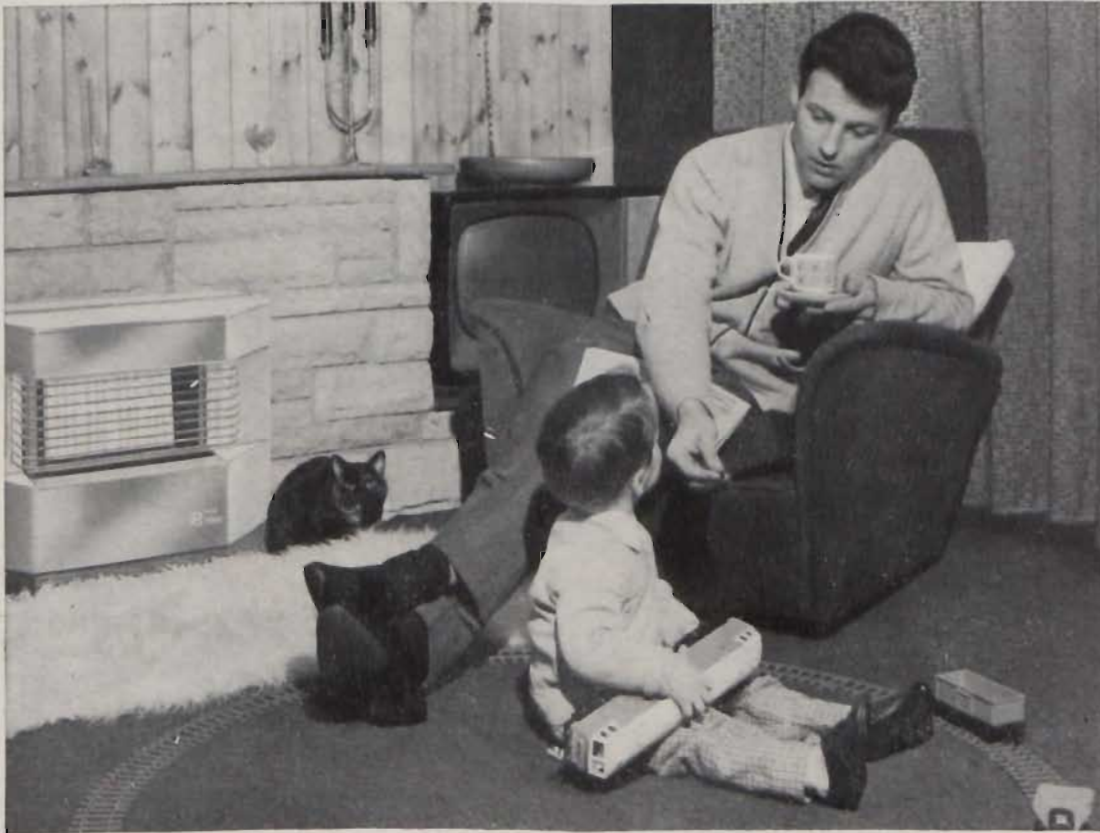
All the branches and transition pieces are made from the duct system boards and the contractors use their sheet metal marking out and cutting experience to make the most economical use of the board which is delivered to site in sheets 4 ft wide and either 6, 8 or 10 ft in length.

On this particular contract, most of

Continued page thirty-two



BM-70 protects... *night and day*



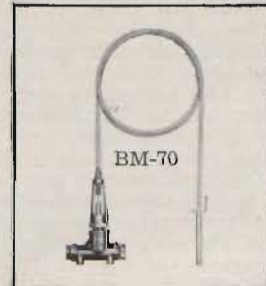
Here is a remote-acting fire protection valve made to British Standards Specifications. The BM-70 is especially designed for oil-fired domestic heating installations and incorporates these extra safety features:

- ★ Simple manual operation for routine testing.
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SEE THE BM-70 AND OTHER ACCESSORIES AT :
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Stockists : OBC LTD., & HEATING CONTROLS AND DEVICES LTD.



BM CONTROL VALVES LTD., Gogmore Lane, Chertsey, Surrey. Tel.: Chertsey 2055-6.

ELIMINATING CROSS-TALK

● From page thirty

the ductwork is at high level hidden above a false ceiling. The ceiling structure in the semi-circular lecture theatres is particularly interesting. Cedar wood panels are suspended from a steel framework and arranged with edges overlapped to form a concave surface for the best acoustical effect. The seating is tiered to give the whole audience a clear view of demonstrations and visual aids used at lectures.

Quite apart from the sound attenuation properties of this system, the thermal insulation properties of the product were recognised as an advantage.

The growing importance of thermal insulation is emphasised by the recent publication of a BS Code of Practice, Correct thermal insulation of pipes, ducts and plant for heating, ventilating and air conditioning systems, increases the efficiency of the installation. Pre-formed insulation materials are being widely used by thermal insulation contractors to progress their policy of making their industry a dry trade.

It is of prime importance to incorporate a vapour barrier in the thermal insulation of plant which will possibly operate at temperatures lower than ambient. It is of equal importance to ensure that the insulation material is of uniform thickness to prevent "sweating" and possible breakdown of the plant due to corrosion. The use of corrosion resistant materials and the elimination of the use of water in the application of insulating materials has made possible with the development of new materials and installation techniques. The ultimate logical step is to construct as much as possible of the equipment from materials which have better thermal insulation properties. Dry insulation materials are easy and light to handle. The incorporation of a suitable vapour barrier finishing material cuts out tedious and time consuming site labour can be reduced to a minimum. As stated earlier, a site workshop was set up to make the ducting as required. In fact, the manufacturing programme was kept comfortably in phase with the building work and the Glass Fibre Ducting fabrications were stock piled as required to ensure no delay to other trades or to the installation programme.

The stock required can be easily stored in flat sheet form, before and after grooving and cutting to size.

Smaller ducts can be joined together by using one of the Europair tools to form a ship-lap joint. The joint is then sealed with the correct mastic and tape which holds the whole assembly firmly together and prevents air losses. The adaptability of the system is illustrated in the photographs of the UCD project which serves to emphasize the point that Glass Fibre ducting can be used for something more than mere straight lengths.

The use of the system reaches beyond warm air supply and ventilation and extraction ductwork into the realms of air conditioning. Using the same

techniques for fabrication and erection, the materials can be used within the manufacturers specified design limits for high velocity air conditioning systems. Unwanted noise is sometimes generated in the mixing boxes and amplified in the ductwork beyond. This type of application is ideal for Glass Fibre duct system, since the sound attenuating feature can be used to full advantage and the thermal insulation material ensures that heat losses from the air after mixing are kept to a calculated minimum.

At the smaller end of the scale, Glass Fibre duct system is frequently specified for the return air duct in domestic installations. Since this is generally short in length, there is very little attenuation with a conventional sheet metal duct and the noise level can often be higher than can be tolerated. By specifying this duct system, the installer is saved the trouble of lining the duct, which not only costs more but reduces the effective area.

The technical advantages of the system are of value to both the designer and installer of ducted air installations. Consistent materials make it possible to rely on calculated heat losses and

sound attenuation estimates. The installer does not require to invest heavily in plant and tools for fabrication, and there is no speculative investment in variety since the material is fabricated to virtually any size of duct from stock supplied in the form of flat boards.

Perhaps the most important advantage of all is in the surprisingly low cost of the complete installation. The material alone incorporates several features which would each be the subject of a separate purchase if conventional insulated ducting was specified. A further economy is contributed by the ease with which the material can be handled and supported.

This logical combination of materials and the introduction of efficient fabrication techniques mark a very real contribution to the progress of a developing industry.

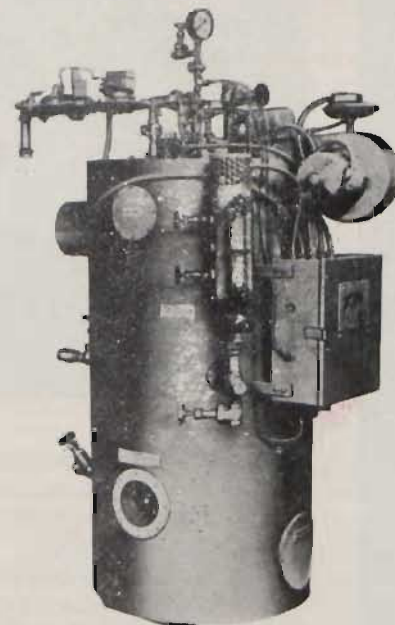
The architect on the UCD project was Andrzej Weichert, in association with Messrs. Robinson Keefe & Devane. The consulting engineers for the mechanical contractors were the Brightside Engineering Co. (Ireland) Ltd., for whom Messrs. Metweld Ltd., carried out the duct work subcontract.

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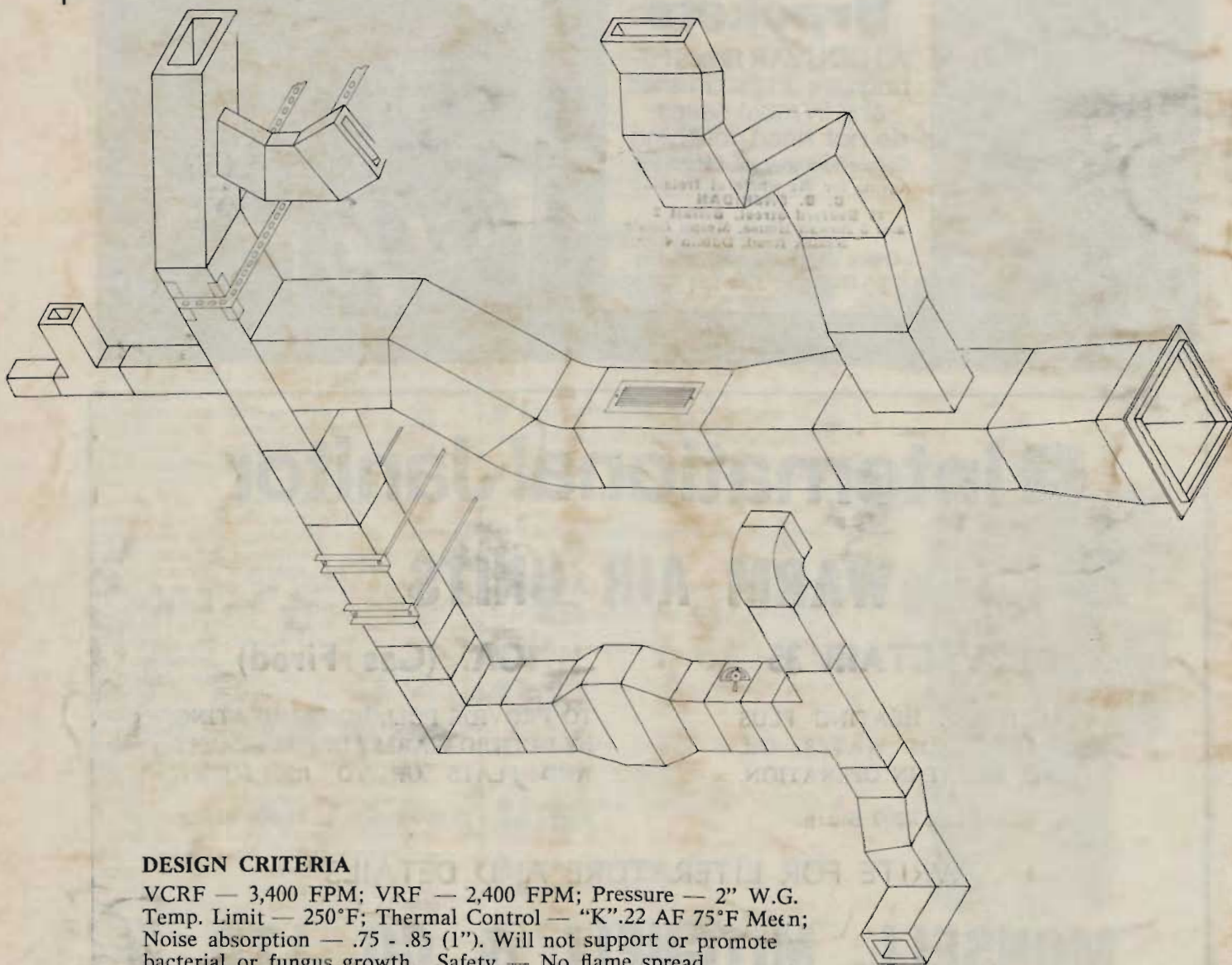
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