


12-1-1965

The Irish Plumbing and Heating Engineer, December 1965 (complete issue)

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etal: The Irish Plumbing and Heating Engineer, December 1965 (complete)



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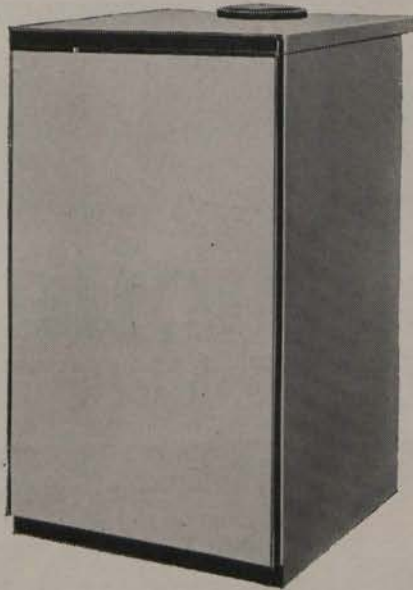
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DOI: 10.21427/D7GM61 J. G. Linton, 8, Corporation Street, Belfast 1. Phone: Belfast 21849.



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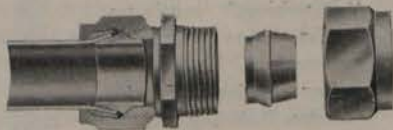
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See **Sanbra Fyffe** first

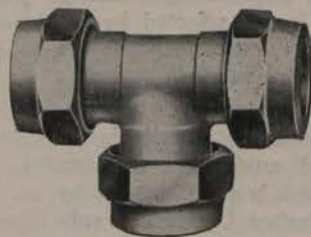
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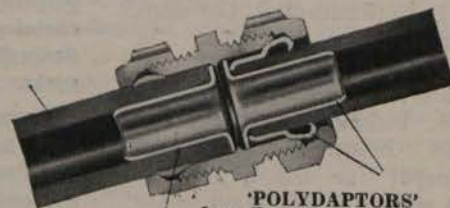
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Telephone: Dublin 375131 (5 lines) Telegrams: Sanbra, Dublin. Telex. 5325.



trade Topics

New suppliers company formed

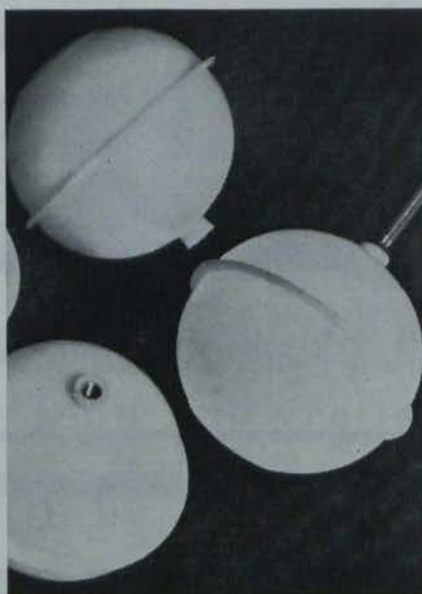
MR. J. M. HACKETT, formerly Manager of Heating Controls & Devices Ltd., Dublin branch, has formed a new company of wholesale suppliers to the heating trade under the title Heating Accessories Ltd. In addition to general office accommodation the firm's premises at 20, Lower Hatch Street, Dublin, includes a 2,500 sq. ft. showroom and stores.

Heating Accessories Ltd. have been appointed main distributors in the Republic of Ireland for Honeywell Controls Ltd. (Residential Division), commencing January 1st, 1966. In addition comprehensive stocks of B.S.A. Harford products are being maintained, including "Opromatic" and "Opio" Industrial Pumps. A separate depot for B.S.A. Harford equipment will be in operation in the New Year.

The Company is also planning to commence manufacture of stainless steel calorifiers early in 1966 and it is hoped to develop a worthwhile market in Ireland and abroad.

* * *

● **WHEN** the Minister for Local Government was asked in the Dail recently why he approved of the estimation of 3,000 imported pressed steel baths for the Ballymun housing pro-



New float

THE Royal Venton cistern float made from Rigidex high density polyethylene is not affected by the chemicals that are used to purify the domestic water supply in some areas.

The Royal Venton float is suitable for both hot and cold water cisterns. The float, which is manufactured by Steventon Plastics Limited, a subsidiary company of John Steventon & Sons Limited (Middlewich, Cheshire) has been widely approved.

ject, while the Irish manufactured product was available, Mr. Blaney, said that he had not sanctioned the use of imported baths in finished condition. He approved the use of pressed steel baths, the shells of which were imported but which were otherwise finished in this country.



★

*THE EDITOR AND STAFF EXTEND
A SINCERE CHRISTMAS WISH TO
ALL OUR SUPPORTERS WITH BEST
WISHES TOO FOR A BRIGHT AND
PROSPEROUS NEW YEAR.*

★



IRISH PLUMBING & HEATING

ENGINEER

Vol. 5. No. 9. DEC., 1965.

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

W. J. R. Couchman makes some constructive suggestions to installers in his Talking Shop column.

Our new series, based on stage two of the A. L. Townsend work, "Plumbing," continues as the author deals with roofwork.

Our review of the London Building Exhibition, continued from last month, is concluded in the industrial section.

Special review articles this month feature: (i) Domestic gas and solid fuel fired boilers, burners and controls (including warm air heating systems), and (ii) Radiators, radiant panels, convectors and skirting heating systems (including valves and controls).

●
Editorial and advertising offices:

Callaghan Chambers, 13/15
Dame Street, Dublin 2.

Tel. 56465-6.

London: J. T. Robson and
Son Ltd., 30 Fleet Street,
London, E.C.4. Tel.: Fleet
Street 4438.

plumbing

We continue here
the serialisation of

the author's four-stage work under the general title of

plumbing

THIS MONTH:
ROOFWORK

A. L. TOWNSEND, M.I.P., M.R.S.H., M.R.P.A.

THE author continues his discussion on roofwork.

Types of gutters.—Apart from the secret gutter, which has just been described, gutters found in roofwork may be classified as follows:—

Eaves gutters are commonly used on smaller buildings. As the name suggests, this kind of gutter is designed for fixing at the eaves of a pitched roof, but it can also be used at the drip edge of a small flat roof. It collects rainwater off these roof areas and conducts it to suitably placed outlets through which it falls, by way of the rainwater pipes, to the drain below. Eaves gutters are dealt with in detail later on.

Box gutters are used on larger buildings where there is so much rainwater to be drained from the roof that an eaves gutter would have to be unattractively large and would certainly be difficult to fix. It would also be difficult to maintain, that is, to clean, paint, or occasionally repair, on a high building; and the rainwater pipework would clutter up the facade. Since one of the aims of building design is to provide a clean elevation, box gutters are to be preferred. These can be fixed behind the facade, and can be designed to cope with any flow of rainwater.

Boundary wall gutters are of the box kind, placed along one or more sides of a roof and immediately behind the parapet wall. Here they form a trough, into which water can drain from a flat or pitched roof. The shape of the gutter cross section would be with both sides vertical for flat roof drainage, or with one side vertical and the other sloping at the same pitch as the roof, for pitched roof drainage. The drainwater pipes from such gutters may drop vertically within ducts inside the building, or they may be turned out through the wall to run vertically down outside the building. For ducted installation, the pipes would probably be of cast iron to

B.S. 416.

As you will know, a parapet wall is a vertical continuation of the outside wall of a building. It will be high enough to form a boundary fence to a flat roof, or to hide most of the pitched roof from people at ground level. A parapet therefore has two functions—to improve a building's appearance, and to define the roof area and form one wall of the boundary gutter. For this reason, gutters so placed are sometimes called parapet gutters.

Valley gutters are a special form of gutter used to weather the intersection of two sloping roof surfaces. One would be needed, for example, at the angle formed where a pitched roof cuts into another (see Fig. 8). Another example is seen where, particularly in factory buildings, a large floor area is covered by a series of double pitched roofs. A valley gutter is needed all along the lower edges of the oppositely pitched roof surfaces. In this case a vertical sided box gutter is sometimes used, or a purposely designed valley gutter, with sides splayed to the same angle as the roof pitch, could be used.

Tapering gutters are the older equivalent of the present-day factory made boundary wall, box and valley gutters. They were formed in timber and lined with lead. They may still be used to-day and lined with lead, copper, or aluminium. Factory made gutters in mild steel or asbestos cement are provided with a socket at one end so that they can be joined together to make one continuous length. Sheet lead, copper and aluminium gutter linings cannot be so joined. Furthermore, allowance must be made for expansion and contraction of these relatively thin materials which would otherwise be damaged by thermal movement.

The form of expansion joint provided is invariably a "drip," which will be about 2 in. high, and positioned

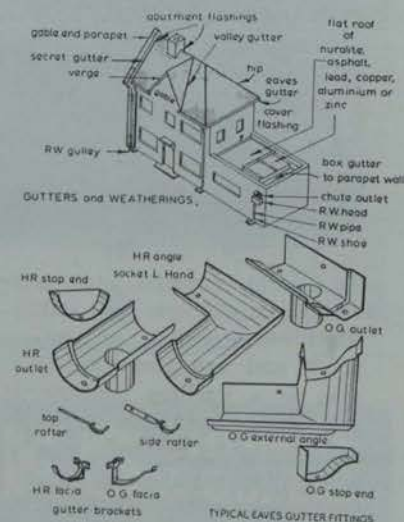
along the line of the gutter so that, in the case of lead gutters, no piece of lead is longer than 10 ft. In the case of copper or aluminium linings, the length between drips depends upon the girth and cross section of the gutter.

Between these drips, bays are laid to line the gutter, and each bay will need to have a 2 in. in 10 ft. fall. It follows, therefore, that the sole, or bottom, of a gutter made in this way will rise throughout its length whereas factory made box or valley gutters are fixed in continuous runs with no fall at all. Because of this the lead, copper or aluminium lined gutter will have to taper from its lowest end to its higher end, where, because it has risen up the roof slope all along to that point, it will be wider.

Tapering gutters are expensive and difficult to install and keep sound, and the modern way of doing the job would be to use socketed lengths of prefabricated gutter, laid to no falls.

Eaves gutters.—There are two patterns of eaves gutters—the "half-

Continued overleaf



Roof Weathering Details

FIG. 8

Five

ROOFWORK

from previous page

round" pattern, and the "Ogee" (O.G.) pattern. The shapes and dimensions of these vary considerably.

Half-round gutters, by virtue of their shape and the fact that they are fixed clear of the fascia board, or walls, are more accessible for periodic painting. This is important in the case of cast iron ones because they rely upon frequent painting to preserve them from rust.

The O.G. pattern takes its name from the classic double-curved shape of the ogee mould which it resembles in cross section. The gutters are fixed by screws passing through their flat back wall, which is in direct and full contact with the fascia board. These surfaces cannot therefore be regularly

painted, and if the gutter is made of a corrodable material, such as cast iron, they are liable to rust through at these places and leak.

Eaves gutters and fittings and rain-water pipes and fittings are made in various materials: cast iron; cast aluminium; wrought aluminium; copper and zinc; pressed steel (these may be galvanized before or after manufacture, or may be obtained finished in vitreous enamel); asbestos cement; and P.V.C. (Polyvinyl-chloride).

All these materials are suitable for gutters draining water from slated or tiled roofs. For other roof coverings you have to be careful in selecting your gutter material. As you know, if dissimilar metals are used together in the presence of acidic rainfall, there is a risk of electrolytic action hap-

pening.

This could occur even if the two dissimilar metals are not normally in contact: solvent rainwater could dissolve some of the roof covering metal and deposit this on to a gutter of a different metal, and thus set up a minute, but effective, electrolytic cell which would eventually corrode the gutter, especially if the gutter happened to be of zinc or galvanised mild steel, and the roof coverings were of copper.

Cast iron gutters and down pipes have been used in the past. The modern trend is toward using materials which are more corrosion resistant since, although they might cost a little more in the first place, they do not need to be painted periodically to keep them from rusting.

NEXT MONTH—Falls, Joints, etc.

KENNY & DEEY LTD.,

48 Townsend Street, Dublin, 2. Telephone 73108 (3 lines)

wish to inform the trade that they have been appointed Sole Distributors in Ireland for the

SINK - A - M A T I C



This most versatile unit is basically a stainless steel sink which incorporates an impeller and can therefore be used as a washing machine, dish washer and spin dryer. For information regarding this unit contact the above, or your local stockist for a demonstration.

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Denis Lowry Ltd. | LIMERICK
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Ltd. |
| BUNCRANA
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and Co. Ltd. | CORK
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Hardware Co. Ltd. | MONAGHAN
David Patton Ltd. |
| | | SLIGO
D. M. Hanley Ltd. |

trade Topics

AN interesting new product has been brought on the market here by Kenny & Deey Limited

A NEW SINK UNIT INTRODUCED

(48 Townsend St., Dublin), who have been appointed sole distributors in Ireland for the Sink-A-Matic automatic sink unit.

This unit (illustrated here) combines in a stainless steel sink unit a washing machine with an efficient spin-dryer attachment. Other attachments, such as a vegetable peeler and the like, will be introduced later.

The unit—it can also act as a dish washer—looks like a modern sink unit complete with single or double draining boards. Its "special powers" come from a small, rotating pulsator unit fitted in the back wall of the sink which produces the washing action in the same way as the widely accepted washing machine principle.

RECENTLY featured at their Dublin exhibition by Rubery Owen & Co. Limited (I.P.H.E., Nov.) was the

AIR HEAT RANGE FEATURED

Sutherland range of gas-fired warm air heaters by A. G. Southerland Limited (Warwick Road, Greet, Birmingham 11), a company in the Owen Organisation.

The range comprises the series AGS "25" with heat outputs from 25,000 to 28,000 B.t.u./h., and the series AGS "50" with outputs from 35,000 to 55,000 B.t.u./h. One of the key features of the Sutherland range is the stainless steel "clam shell" design of

● In our recent report on the new marketing arrangements of Delta Water Fittings we mentioned Bourners Supatap as one of the products marketed through the new organisation. This was incorrect and both the Supatap and Spatap continue to be handled by Bourners own sales organisation and distributed by their existing agent in Ireland.

the boilers' heat exchangers making for high efficiency and long life.

Also featured at the Building Centre exhibition was the range of Rowen sink tops in stainless steel and vitreous enamelled steel.

* * *

A NEW warm-air central heating system by International is designed to

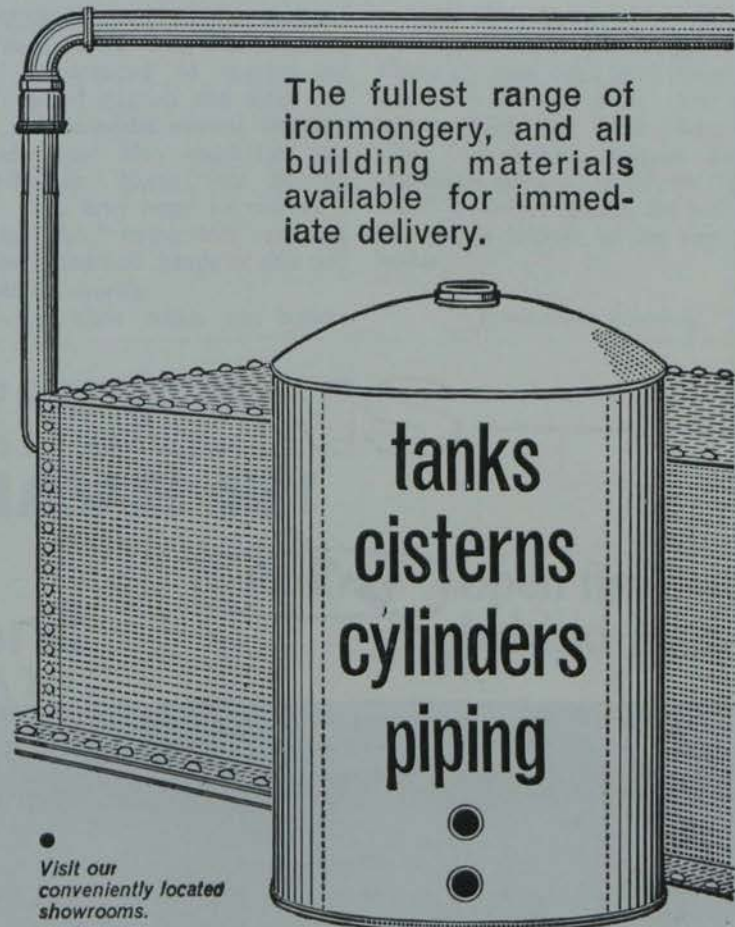
C. HEAT WITHOUT THE RADS.

provide full house heating and hot water for houses of up to 1,200 sq. ft., or a three bedroom semi-detached. The oil-fired heating unit is contained in a central brick chamber built up to first floor level and the heat is circulated throughout the house by grilles fitted flush in the wall of each room.



● The Sink-A-Matic.

Called the Delvectair, the system is built into the core of the house and is therefore most suitable for installation in new homes—or in houses undergoing major conversion.



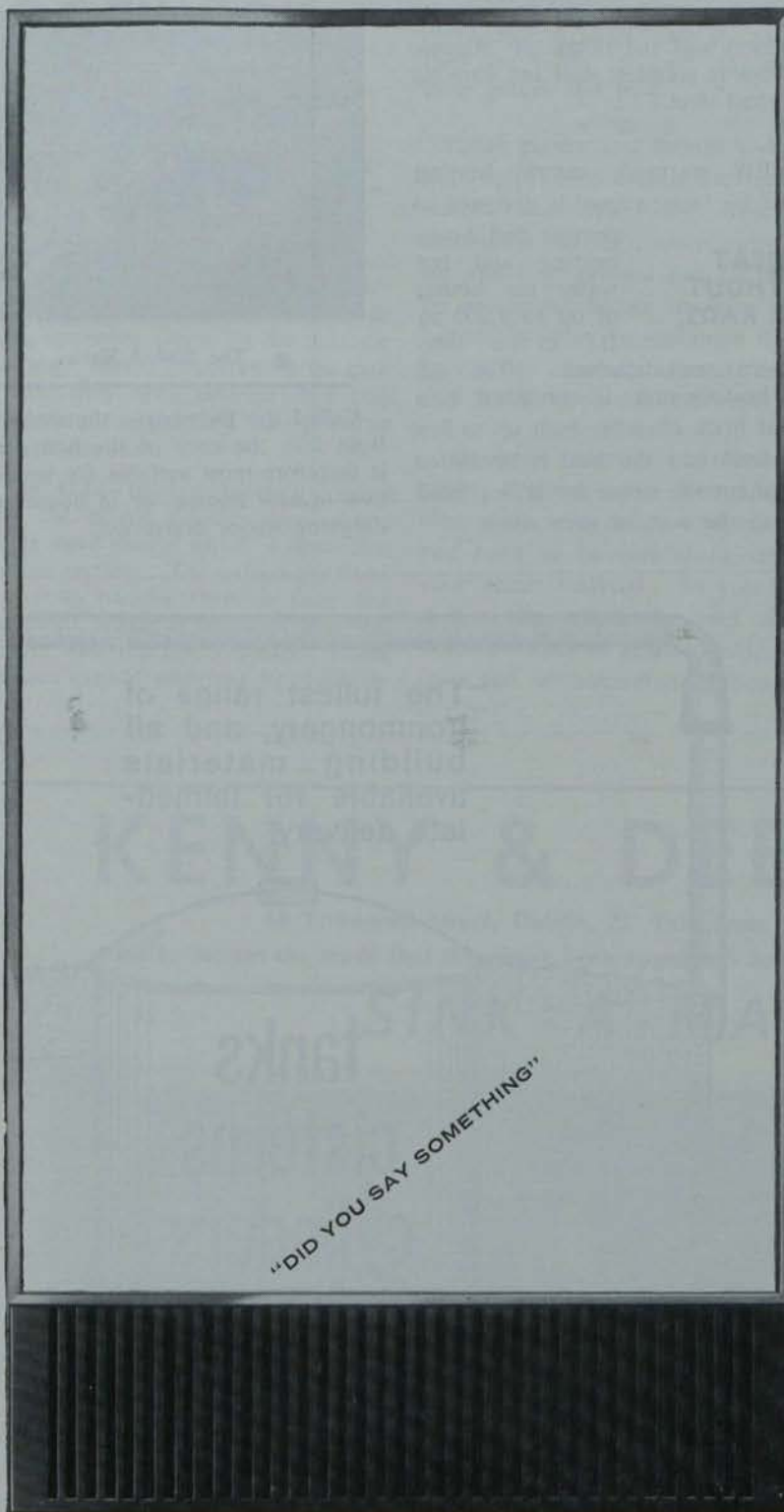
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CAPITAL GAS-FIRED BOILERS

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Belfast Office:

128, GREAT VICTORIA STREET, BELFAST, 2

Area Manager: P. J. B. JOHNSTON

Eight

SPECIAL REVIEW

THIS MONTH

GAS, AND SOLID FUEL-FIRED BOILERS

BURNING gas, solid fuel (and oil) all in one boiler is unusual, but Quadrant Engineers claim that the Buderus Logana 22 series can be supplied ex stock for all these purposes. Not only this, the firm claims, that any Logana 22 supplied for one fuel can at a later date be converted to another; for example many boilers installed for coke firing have been later converted to oil firing.

In this way, the first cost to the client is reduced. Quadrant can also supply the PC22 dual-fuel type boiler ex-stock, which can burn solid fuel or dry waste at one moment, while for oil firing the special fuel door is swung out and the pressure jet oil burner swung in.

The Logana 22 boilers are remarkable for their efficiency and attractive price, and are claimed to have been the best seller of the Buderus range in 1965. Sole agents in this country are Quadrant Engineers, 167 Strand

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

Road, Sandymount, Dublin 4.

* * *

MASSER Domestic Appliances Ltd., Ring Road, Ballyfermot, Dublin, have recently commenced to market the AGA range of gas, oil and solid fuel boilers for domestic central heating. They are now also marketing the Hess-O-Therm Warm Air heating system. The firm hope to market a complete "Pak," using their range of gas boilers, and full details of this will be available shortly.

There are eight AGA gas boilers

which give manual or electric ignition, sensitive thermostat control and electric or hand wound clock control. In addition, if you have a small bore system, they offer you a special programme selection switch. There are four new AGA oil-fired boilers—all of them pressure jet. They feature a unique zig-zag design of flue-way which allows hot gases to flow over a much larger water holding area than usual but in a more confined space, and more water is heated faster.

AGA also have eight solid fuel boilers, split into two groups of four. There are four coke fired boilers with the AGA circular grate. For bigger houses there are four more AGA solid fuel boilers designed to burn anthracite grains. These are "gravity feed" boilers in which the fuel is fed in from a hopper in the top of the boiler.

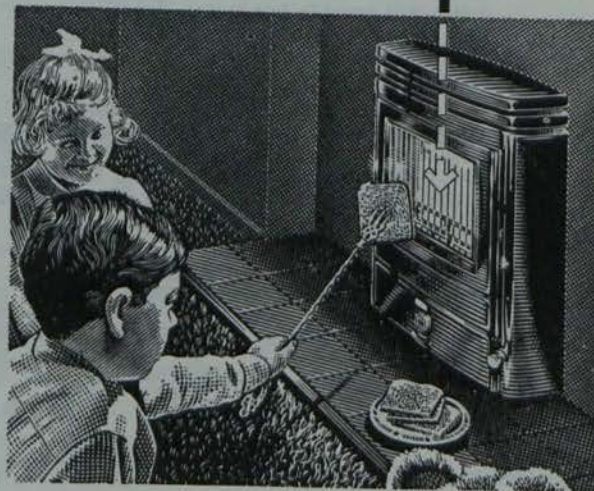
Continued overleaf

HEITONS HAVE IT!

**PARKRAY,
WATERFORD and
HAMMOND LANE
Inset and Free-Standing
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**TRIANCO, IDEAL
SUPERMATIC &
POTTERTON
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PARKRAY
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Quotations
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★
Phone
76711
(15 lines)

★

PRODUCT REVIEW

from previous page

A NEW central heating and hot water control has been introduced by Thomas Potterton Ltd., which according to tests carried out by the manufacturer, saves up to £10 a year on the household fuel bills. Called the "Prefect," the new control operates the hot water system independently of the central heating, controls the hot water supply at a lower temperature than the water in the radiator circuit, and offers a choice of 12 different programmes.

The new Potterton 30 plus 3 gas-fired boiler has been specially designed for a solid fuel replacement. Its water pipe connections have been set so that there is a minimum of pipe-work alteration, and although it is completely automatic it is not dependent on electricity. The boiler is operated simply by weekly winding of a clock control by which the boiler comes into operation for two periods in every 24 hours.

* * *

NEW to the range of William Sugg & Co. Ltd., Manor Royal, Crawley, Sussex, is the Halcyon Type 22/WH warm air heater. Used selectively, this new model will provide full comfort conditions in a room of average exposure and construction totalling up to 3,250 cu. ft. volume. Alternatively, it will provide good background heating in a typical modern dwelling up to 1,400 sq. ft. superficial area.

The new model also offers these important advantages over the earlier F60/WH now superseded: easier installation; greater reliability, and effortless operation. The unit has an output of 22,500 B.t.u./h., and it incorporates a more powerful 6-pole capacitor motor, direct drive fan, and Honeywell controls. In standard form a control panel, with all internal wiring, is an integral part of the fan unit.

An important feature of the 22/WH unit is the automatic fan control. The heater is allowed to reach its operating temperature before the automatic control switches on the fan, and the fan discharges all latent heat after the burner has been extinguished.

* * *

INTERNATIONAL Boilers and Radiators Ltd. market their "Capital" gas-fired boilers in this country through their representatives, Monsell Mitchell & Co. Ltd., Heating and Insulation Division, Townsend St., Dublin. The

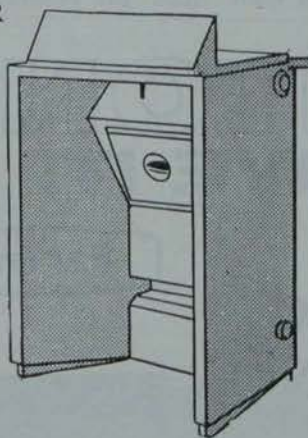
THE BELL TYPE 'D' HIGH OUTPUT BACK BOILER

DOMESTIC HOT WATER
(HIGHEST OUTPUT)

PLUS

CENTRAL HEATING
(SIMPLEST FIXING)

The Bell Type D HIGH OUTPUT Back boiler unit has been designed to suit 16" Bell Supaheat underfloor draught fires or Bell Raised Metal Fires. These fires will provide heating for a room of 1,500 cub. ft. and more and at the same time the boiler will provide hot water for all domestic purposes plus space heating by radiators in several other rooms.



The Bell Type D High Output boiler is of welded steel construction and is pressure tested and guaranteed. It is an all round boiler with self-contained flue, damper and throat unit. There is an access door for easy flue cleaning. The whole unit is in one piece for exceptionally easy fixing.

BACK BOILER OUTPUT: Domestic hot water and space heating by radiators—Domestic hot water plus 100 sq. ft. of radiator and piping surface. An indirect cylinder of 25/30 gallons must be used.

Central Heating only—125 sq. ft. of radiators and piping surface.

A. BELL & CO. (Eire) Ltd.

Rere 136 BOTANIC RD., GLASNEVIN, DUBLIN.

Telephone: 373611/2

SPECIAL REVIEW

from previous page

firm's area manager in Northern Ireland is P. J. B. Johnston, 128 Great Victoria Street, Belfast.

A room thermostat socket is provided as standard on "Capital" boilers and there is facility for connecting up a cylinder thermostat. A 1" valve is fitted to the boiler side of the pump, a draincock is fitted and a flue brush supplied. There is no possibility of reverse circulation.

There are fully automatic push-button ignition controls, with Honeywell Adatrol control, pilot flame failure safety device, time clock, etc. The international variable head Multi-flo accelerator is fitted to the 35, 50, and 70 models and the Thermopak CP2H to the 100.

The maximum output ranges from 35,000 B.t.u./h. of the "Capital 35" to 100,000 B.t.u./h. of the "Capital 100." The heating surface capacity of these models vary from 175 sq. ft. with the "35" model to 500 sq. ft. with the "100" model.

* * *

THE Dunsley Super Flued Boiler with Dunsley Controlled Underfloor draught fire, has recently been modified by a new design of the front. The new design became available from October 1 last. Appliances from Dunsley Heating Appliance Co. Ltd., Holmfirth, Nr. Huddersfield, are available through Builders' Providers both in Northern Ireland and the Republic of Ireland.

The Dunsley Super Flued Boiler is like the firm's Flued Boiler with the addition of two extra heating tubes which enter at fire level in each side cheek and pass upwards through the water jacket to emerge alongside the main flue. This gives the boiler a much quicker heat recovery. Both tubes and flue can be opened or partly opened with one operation, as the large damper covers all three openings.

The heat available with the 16" Super Flued Boiler is 91 sq. ft. of radiator surface, including piping in addition to domestic hot water—heating only 116 sq. ft. including piping. With the 18" Super Flued Boiler, the

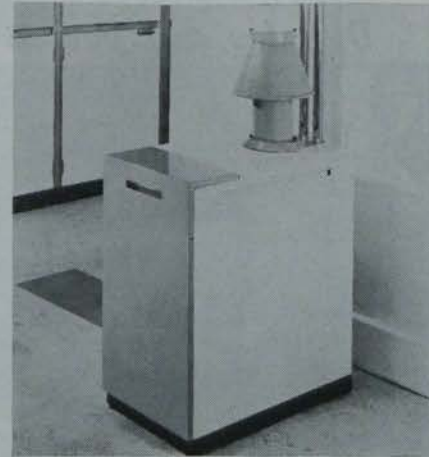
heat available for radiators is 116 sq. ft. of radiator surface, including piping in addition to domestic hot water; heating only 141 sq. ft. including piping.

* * *

HENRY Wilson & Co. Ltd., Kirkby, Liverpool, market the Wall-flame Boiler Model WF 75/s, which

Continued overleaf

● One of the good-looking boilers from the Potterton range. (See Review).



Sound Boiler Buderus!...



AND WE HAVE HUNDREDS HERE IN DUBLIN
... YOU WON'T BE STUCK WITH A STICKY
DELIVERY IF YOU USE OUR STOCKS TO
STACK AWAY THOSE QUICK NEEDED-NEXT-
WEEK JOBS ... PICK A BUDERUS ...

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... AND THE SAME GOES FOR STEEL
COLUMN RADIATORS ... THOUSANDS ... ALL SIZES
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Dunsley put you 5 years ahead



**open-fire
central
heating
completely
installed**

for around £195!

**DUNSLEY HEATING APPLIANCE
COMPANY LIMITED**

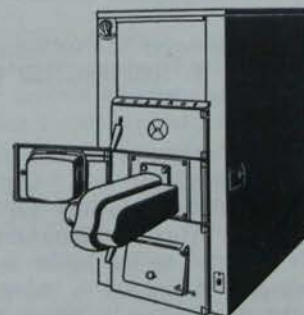
(Dept. I.P.H.E.), Fearnought Holmfirth,
Nr. Huddersfield. Tel. Holmfirth 635.



The revolutionary Dunsley System includes an open-fire boiler, five radiators, towel rail, pump, pipes, valves, and all installation charges complete for approximately £195. And then you begin saving on running costs, too, because you are using no more fuel than with an ordinary open fire—abundant hot water from heat that would otherwise be wasted. This is luxurious high-level heating at absurdly low cost, the hottest heating idea in years. And remember, over 100,000 are now in use—staggering evidence of Dunsley success. Dunsley Boilers and Radiators have a free replacement guarantee for five years. Approved appliance. Write for full details and address of nearest stockist today or call at your local Builders Providers.

SPECIAL REVIEW

from previous page



● The versatile Buderus boiler from Quadrant Engineers. (See Review).

covers outputs from 45,000 to 150,000 B.t.u./h. It is styled in plain faced casing and manufactured as the answer to those "in-between" installations in which the gap between the 60 and 90 models was too great.

The height is 39½" x 24" wide, x 26" depth. The flue offstake size is 7" to suit 6" B.S. flue pipe.

* * *

THE NEW Trianco SF.60 Solid Fuel Gravity Fed Domestic Boiler, rated at 60,000 B.t.u./h., is the newest, most streamlined boiler Trianco have ever produced, setting a new high standard in home heating.

The SF.60 has been designed to live happily in a modern house. This compact model requires a headroom of only 5ft. and a floorspace of 22" x 29" and the rear fitted "flow" and "return" pipes simplify installation. The large capacity hopper holds 100 lb. of anthracite grains and can be adjusted to use "peas" or "beans"—thus cutting down refuelling to a minimum. Cleaning is easy and infrequent. The clinker tray is big enough to last for days without emptying, whilst the controls and moving parts are designed for accessibility in that they are hidden behind the door to improve appearance and provide a built-in safety factor.

The Trianco SF.60 Solid Fuel Gravity Fed Domestic Boiler has an official rating of 60,000 B.t.u./h., suitable for full central heating in a modern 3-4 bedroomed house, together with constant hot water. The SF.60 Boiler, having achieved high solid fuel combustion efficiency in stringent tests, is the result of a long-term research and development programme.

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**Boilers give you the fuel
and output flexibility you
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AGA make a complete range Solid Fuel, Oil and Gas fired boilers from 12,000—140,000 B.Th.U's heat output for hot water and central heating. They are good looking, thrifty with fuel, easy to maintain and superbly made with all the traditional excellence of AGA design and engineering. And, because of the wide range available, you can always supply **exactly** the right AGA for every heating need. Efficient service facilities support the high reputation already earned by these widely known and well proved boilers. Full information and technical data from

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Twelve



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Gas-Fired DOMESTIC WARM AIR HEATERS

Halcyon is now more than ever the automatic choice for modern *gas-fired* warm air central heating. New and improved features in all models mean even greater efficiency. Heater units are compact and space-saving. They are preferably applied to properties in the design stage but can be installed in existing houses. Gas-fired warm air central heating is effective, clean, and economical in use . . . And the Halcyon system is one of the finest.



TYPE F120/WH*

Whole-house heating in dwellings up to 1,750 sq. ft. superficial area.
Warm Air Output—45,000 Btu/hr.
Gas Rating—120 cu.ft./hr. (500 c.v.)



TYPE 35

Whole-house, partial or selective heating in average modern houses.
Warm Air Output—35,000 Btu/hr.
Gas Rating—95 cu.ft./hr. (500 c.v.)



TYPE 22/WH*

Selective heating in dwellings up to 2,000 sq. ft. superficial area.
Warm Air Output—22,500 Btu/hr.
Gas Rating—60 cu.ft./hr. (500 c.v.)



TYPE FCH60

Selective heating in dwellings up to 2,000 sq. ft. superficial area.
Warm Air Output—22,500 Btu/hr.
Gas Rating—60 cu.ft./hr. (500 c.v.)



TYPE FH60

Selective heating in dwellings up to 2,000 sq. ft. superficial area.
Warm Air Output—22,500 Btu/hr.
Gas Rating—60 cu.ft./hr. (500 c.v.)



TYPE F45

Selective heating in dwellings up to 1,500 sq. ft. superficial area.
Warm Air Output—17,000 Btu/hr.
Gas Rating—45 cu.ft./hr. (500 c.v.)



TYPE F45/WH*

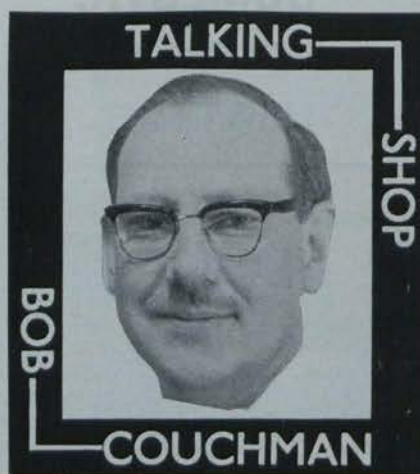
Selective heating in dwellings up to 1,500 sq. ft. superficial area.
Warm Air Output—17,000 Btu/hr.
Gas Rating—45 cu.ft./hr. (500 c.v.)

**On all /WH models provision is made within the unit for an independently controlled water heater for domestic hot water supply. Water heaters are obtainable from Ascot Gas Water Heaters Ltd., or Maxol Heaters Ltd.*

Data sheets available on all models

WILLIAM SUGG & COMPANY LTD · MANOR ROYAL · CRAWLEY · SUSSEX · Tel: Crawley 28833

Company Agent: W. Cole, "Dunblane," 7 Whitebeam Avenue, Clonskeagh, Dublin, 14. Tel.: Dublin 694943.



WE seem to be spared nothing this year but while the floods have contributed little to our business of providing warmth, the cold weather since has certainly made people realise that winter really does happen—every winter—and, like old age, it is something you have to get used to and prepare for. However, all the people that I know in the trade seem to be very busy doing something about this so I suppose we musn't complain.

Nor, I think, should we be too complacent. I am quite sure that people in the installing trade will be getting a better reward for their work in a year or two's time than they are now, if only because the sales of labour-saving equipment, like power tools and bending machines, have gone up. A lot of people, however, seem to have rather "short term" approaches to the reduction of labour costs.

Take, for example, a simple thing like dealing with floor boards. Alright, so you have your power saw and the right tackle for lifting the boards, but having lifted the boards, laid the pipework, filled it and tested it, lagged it and replaced the boards, what happens? Nine people out of ten nail the boards down very firmly, indeed (some of the rest just don't

Br-r-r-r — but we must not complain

nail then). I am sure that this is a mistake and one that in the long run can cause trouble. To my way of thinking the fitter should just get himself another power tool, a drill and a countersink and screw down the boards.

THIS may seem fussy, but we have nearly eliminated the use of the hammer when fitting a heating system and if there is one thing a customer objects to it is somebody thumping down floor boards above his head. The whole image of quiet smooth efficiency is destroyed. If the boards are screwed down it is a quiet operation. Since they are screwed they are readily located when tracing pipe runs on some possible future occasion and if you are unlucky enough to let a leak, an air lock or a modification, then everything is reached very easily. As I say, it looks fussy but I believe it makes sense.

The same thinking can be applied to pipe sleeves. How often you see a neatly drilled hole, pipe passed through it, made good with plaster and then, of course, when the pipe-work is heated everything moves and a crack or loose plaster results. Either that or because the pipe is stressed you get odd expansion noises. It is very easy to put in a sleeve of pipe. The old way used to be steel liners, but I think polythene is more suitable since there is no chafing. The pipe sleeves can all be put in at the same time and made good; due to this saving in labour the cost of the sleeves will probably be covered. For my part I would even use pipe sleeves

where the pipe goes through a wall out of sight.

There will always be movement and the abrasion caused to pipe expanding to and fro across the sharp edge of a brick or stone can, and occasionally does, cause a leak.

THIS question of expansion in pipe-work can often catch one bending (or catch the pipework bending). Generally on domestic work there are no very long pipe runs and, therefore, expansion is something that could be virtually forgotten, at least as far as making deliberate provision for it is concerned. However, just once in a while you find on a large job a straight run of 100 feet or so, and that, when it is hot, is going to move quite a bit. As a matter of fact, a 100 ft. length of copper will expand over 1½ inches if heated from room temperature to boiling point and in a case like that it is generally necessary to do something about an expansion joint.

For some reason these are hard to get in the smaller sizes, below 1½ inches, which seems a pity. Of course, the very small sizes of copper tend to "whip" when they expand and will take up quite a lot of movement in this way provided they are free to do so. The only trouble is, it is apt to be rather a noisy process.

I do not know whether the Editor is going to plaster the front cover with holly leaves, mistletoe or whatnot for Christmas—possibly he won't. Anyway, this is the Christmas issue, so, as Tiny Tim said: "God bless us, every one."



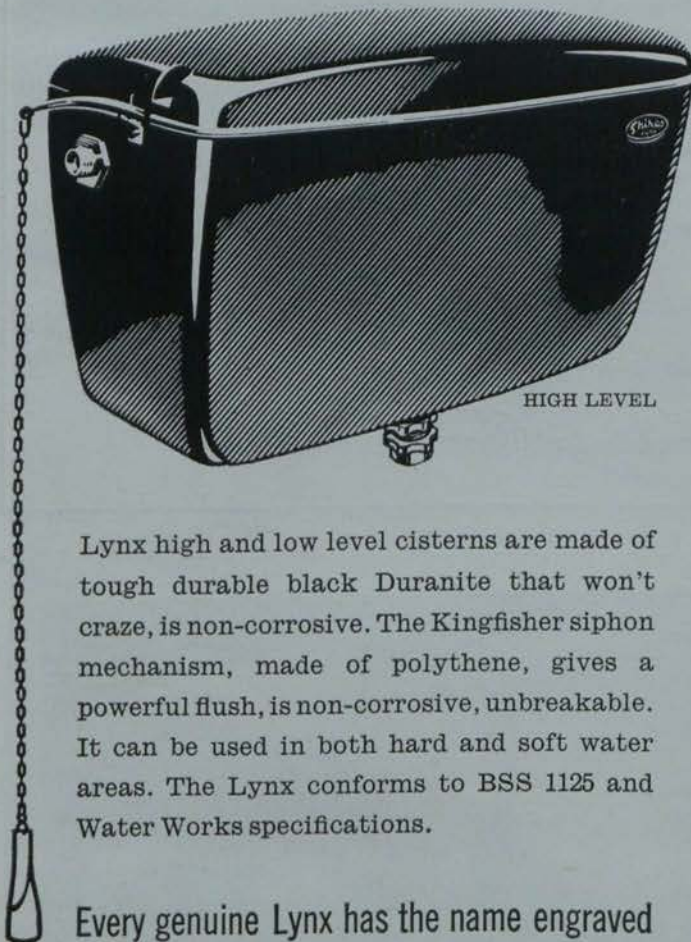
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GOOD LOOKING
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The Lynx is the easiest to install; the concealed fitting is neat and simple.

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Discreetly quiet with the most dependable mechanism ever.



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A REMINDER . .

Readers will shortly be getting through the post their Annual Subscription Renewal Forms.

The annual subscription is 25 shillings (post free), which represents no increase in price.

Readers' co-operation is asked for in the prompt return of their forms and this will be very much appreciated.

* * *

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MP251

What's all this about **ACOUSTI-FLO?**

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We can't show you Acousti-flo because it doesn't show in situ! No pipes or radiators, no wasted floor or wall space, just efficient air movement—heating or cooling. That's OCF Acousti-flo. Acousti-flo heating and air conditioning hides in the ceiling—is part of the ceiling, in fact. Made by Owens-Corning—world's largest Fibreglass producers. Our literature shows you how it works, shows you how Acousti-flo suits your needs. It will be sent on request.

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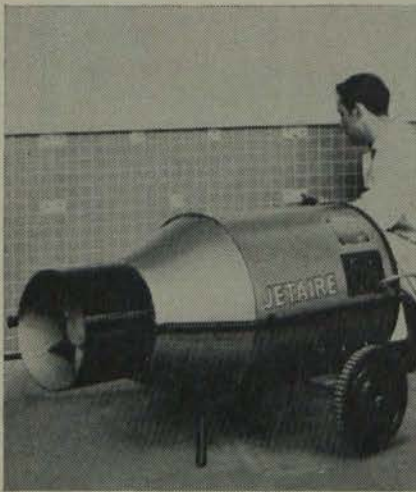
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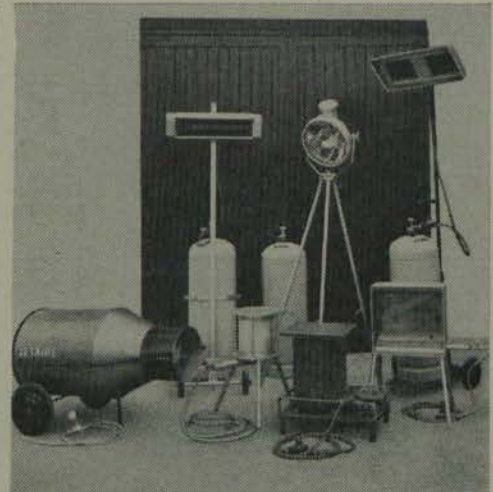
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Eighteen

A WARM air heating system which, it is claimed, shows big savings all round, has been installed in a show bungalow at the Ivanhoe Development, Carryduff.

SAVINGS WITH NEW SYSTEM

An oil-fired system which was developed on the Continent and in Britain, the new system is sponsored by Shell-Mex and B.P. Ltd.

Known as Brick Central, the system features a central brick chamber with the boiler circulating hot air to downstairs rooms at ceiling level.

While the system cannot be fitted into existing dwellings because the chamber has to be built into the house in its initial stages of erection, it is expected that it will set a new pattern in central heating.

The Ivanhoe Development with 83 sites contains some of the most modern houses in the Province. More than 30 bungalows incorporating this heating system are planned.

* * *

JOHN KELLY Limited of Belfast have been appointed Northern Ireland sales agents for the

JOHN KELLY AGENCY

storage tank services of Powell Duffryn Engineering Company Limited, of Cardiff. The agency covers all of Powell Duffryn Engineering's activities in the tankage field, ranging from the supply of works-made tanks to the on-site construction of tank farm installations.



● An agreement has been concluded between Valor and National Plastics—a wholly-owned subsidiary of Courtaulds—whereby Valor is to market exclusively in the U.K. the well-known range of Corina plastics flushing cisterns.

* * *

RICHARD Crittall & Company Limited (151 Great Portland Street, London, W.1) have joined as a full member The Hospital Construction Group Limited, the recently-formed consortium which provides a comprehensive service to regional hospital boards and private architects on the design and construction of hospital buildings.

Northern NOTES

Successful Institute of Fuel dinner



● OUR PICTURE shows (from left): President G. J. Gollin; N.I. Chairman J. M. Dow; the Lord Mayor, Councillor William Jenkins; Councillor M. Orr and Mr. E. McBride, N.I. Secretary.

THE Lord Mayor of Belfast suggested this month that if it was possible to obtain gas from under the North Sea it should be equally feasible to get supplies from under the Irish Sea.

Councillor William Jenkins, who was speaking at the annual dinner of the Northern Ireland Group of the Institute of Fuel, held in the Midland Hotel, said there was every hope that the North Sea fuel would bring many advantages.

The Lord Mayor said the opening on Belfast Lough of the B.P. Refinery had been a major contribution towards the economy of the Province, which had already benefited by cheaper petrol and oil as a result of this "home product."

The Chairman, J. M. Dow, Esq., welcomed over eighty members and guests. The toast of the "Institute" was

proposed by the Right Hon. Lord Mayor of Belfast, Councillor Wm. Jenkins, J.P., who expressed the hope that if natural gas was to be found in the North Sea, it might also be found in the Irish Sea, thus creating a source of power which could revolutionise the economy of Ulster. The President replied to the toast, paying particular tribute to the growth of the Northern Ireland Group.

The toast of the Guests was proposed by the founder Chairman of the Group, J. S. Kennedy, Esq., and the responses were by E. D. Maguire, Esq., Chairman of Messrs. Davidson and Co. Ltd. (Sirocco), and E. W. L. Blaikie, Esq., Chairman of the Scottish Section, both of whom spoke of their pleasure in being present, at the same time bringing many smiles with their topical reminiscences.

Instantaneous HOT WATER from steam—without storage

Cox Steam and Water Mixers deliver from 50 to 24,000 gallons per hour.

They operate with the highest efficiency at all pressures. Silent, efficient, compact and easy to install, replacing bulky and costly calorifiers.

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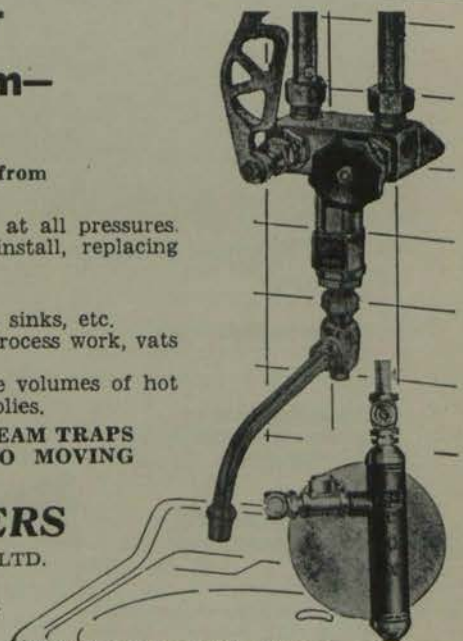
- ★ (1) BABY COX (½") for wash-basins, sinks, etc.
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NO LOSS OF CONDENSATION - NO MOVING PARTS TO GO WRONG**

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Heat Resistance
Withstands continuous discharge of boiling water

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Light weight and fabricated units speed up installation

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Pitch fibre pipe; Polypropylene fittings; both non-corrodible and non-electrolytic

'of course, Temple pre-fabricated units with the new 'O' ring joints were used'

The Temple system for multi-storey 6" soil pipes speeds up the building operation dramatically. The Neoprene 'O' ring joint allows for building tolerances of plus or minus $1\frac{1}{2}$ ". Pitch fibre pipes are exceptionally light, and can be sawn, drilled or grooved on site using only hand tools—more speed, less cost, fewer labour charges.

Write to Temple Tubes for technical literature and learn about the unique fabrication and design service, the Neoprene 'O' ring joint and the Temple 'push-on' W.C. connector

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Northern Notes (cont.)

BUILDING CENTRE OFFICIALLY OPENED

THE Prime Minister, Capt. Terence O'Neill, took time off from electioneering late last month to formally open Northern Ireland's new Building Centre.

Capt. O'Neill spoke of "the task of national renewal." It was, he said, the job of scrapping the unsatisfactory and inefficient impedimenta of the industrial revolution—dark, ill-designed, inconvenient factories and cramped, crowded, inadequate homes—and of building a new physical structure which would offer the economy and society of Northern Ireland the opportunity of the best of contemporary living.

The Prime Minister said they were doing this in Northern Ireland "because our people deserved nothing less and because of the strong compulsions of a highly competitive world."

Capt. O'Neill said that heavy new burdens would fall upon the building industry in Northern Ireland. The new city, the major expansion of existing towns, urban renewal and the clearance of slum areas were some of the challenges which lay ahead.

Mr. Robert McKinstry, the chairman of the centre's board of directors, said the centre would become a meeting place for the whole building industry.

"We have all been fragmented for too long, working separately from

our own compartments, so ventures such as this at a time of the greatest building activity ever known, will help enormously to bring us all together and to be more forward as a team."

The director of the building centre is Mr. Shane Belford, a 33-year-old architect whom Capt. O'Neill described as "a young man of great energy and imagination."

The centre, which is located at 4 Arthur Place, is a complete information centre for the building industry. There is a permanent display by 50 firms of builders and facilities include a lecture theatre.

The building centre has been established of local architects, building contractors, engineers and quantity surveyors, to serve the building industry in Northern Ireland.

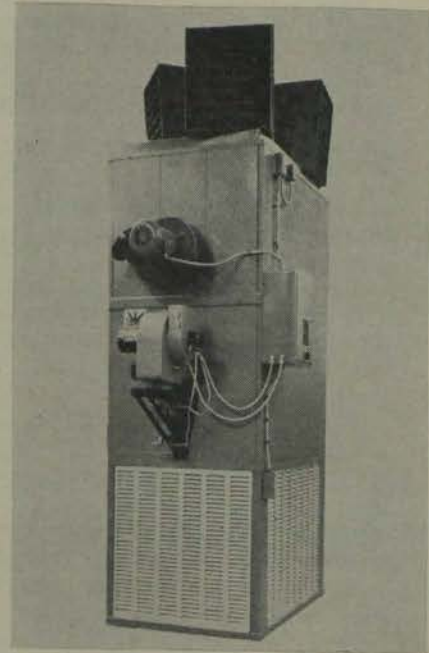
WITH the introduction of the MTP 750, 1000 and 1300, the range of

WANSON'S NEW AIR HEATERS

Wanson Thermobloc Multipass air heaters is increased to eight models, covering 550,000 to 3,500,000 B.t.u./h. The new models complete the Multipass range and make it the most comprehensive and technically advanced standard range of air heaters available to British industry. The new models are rated at 750,000, 1,000,000 and 1,300,000 B.t.u./h.

Based on the well-proven and highly developed larger Multipass range, and on the more recent MTP 550 model, the new units again employ a horizontally disposed combustion chamber and heat exchanger tubes. This arrangement enables the maximum amount of heat to be extracted from the heating surfaces and ensures a thermal efficiency of greater than 80 per cent. The combustion gases make a four-pass circuit before being discharged by the induced draught fan.

With a high capacity main circulating fan and a comparatively low temperature rise through the unit, the heavy gauge construction of the combustion chamber and heat exchanger ensures that specific heat strain is remarkably low. In this way, these vital parts are assured of a very long life without distortion or metal fatigue, which can easily occur where thinner gauge materials and higher temperatures are used.



● The new Wanson 1300 Multipass air heater fitted with moveable discharge heads.

CTC Heat (London) Ltd. (17 Sloane Street, London, S.W.1) are now market-

COMPACT CTC UNIT

ing a compact and inexpensive heat exchanger incorporating a special battery made of spiralled copper tubes connected in parallel. Suitable sections are provided for heat transfer. Various models are available, with heating surface areas ranging from 30 sq. ft. to 170 sq. ft.

Although particularly suitable for use in conjunction with CTC hot water and heating calorifiers, this space-saving unit also has applications in many other fields where it is required to heat or cool liquids. It can be used, for example, as a pre-heater or post-heater, as a cooler battery in a condensate water container, as an exchanger between hot water and heating systems, and for heating or cooling petroleum, benzene, special oils and similar liquids.

The unit—designed for a working pressure of 140 p.s.i.—is fully described in an illustrated leaflet now available from the company.

● THE contract has been signed for the 14-acre site at Ballyclare, Northern Ireland, for the projected new £500,000 factory of Turner's Asbestos Cement Co.

The Irish Plumbing and Heating Engineer.

HEVAC '66

20 per cent larger than '64 exhibition

A strong foreign challenge will be made at the fourth HEVAC, the International Heating, Ventilating and Air Conditioning Exhibition at Olympia, London, next year.

The exhibition, largest of its kind ever held, will be opened by Lord Robens, Chairman of the National Coal Board, on April 14, 1966. The show closes on April 22.

The exhibition is nearly 20 per cent larger than the previous HEVAC, in 1964. Exhibitors' stands cover more than 100,000 square feet and the big overseas competition with the British industry comes from firms representing some dozen countries. One of the largest overseas displays at HEVAC will be that of the Government of Ontario, who have taken 2,000 square feet of space to present an integrated exhibit of equipment manufactured in their territory.

Industrial Exhibitions Limited say that more than ten per cent. of the equipment shown will be from overseas.

With the accent on fuel economy, many new systems will be introduced which not only reduce running costs but make installation of equipment cheaper. One company will demonstrate a low pressure hot water heating system which, by using standardised fittings, and a totally closed circuit with a new type of diaphragm pressure tank, can cut the cost of a domestic installation by as much as 20 per cent.

Another firm plans to demonstrate how solid fuel central heating can be installed in modern caravans, with radiators in all "rooms."

Several exhibitors make a point of the silence of their systems. By silencing the supply units of ducted ventilation, cost is cut in the sound-deadening requirements of the ducting.

Advances are to be announced in the automation of control and safety systems in both domestic and industrial apparatus. The closer that a control system can approach ideal operating conditions, the greater the economy in fuel.

Early forecasts by exhibitors of what they will show at Olympia follow.

Heat Output Trebled.—A dual purpose radiator has been developed by Advance Engineering.

Twenty-two

THE EXHIBITIONS.

Next year sees HEVAC back again at Olympia. Already indications are that this will be a record HEVAC in every respect. This month we take an early preview look at some of the more interesting exhibits.

This, the Fanarad, operates as a conventional radiator, with an output of 4,000 B.t.u./h., but, when fans are switched on, steps the output up to 14,000 B.t.u./h. Tangential fans are used, giving a high air flow at comparatively slow speed with very little sound.

With the fans on, air is drawn down the wall behind the radiator then up through the space between the back and centre panels and finally down between the centre and front panels, discharging at floor level. The long traverse of the air flow gives the new radiator exceptional heat-transfer properties and the makers claim that the unit is the smallest radiator with such a high output. It is only 4½ ins. in depth. The 18-inch radiator, designed for fitting beneath windows, is 52 ins. long; the standard radiator, 40 ins. tall, is 28 ins. long.

A thermostat controls the fan system with a working range of 55-80 degs. F. (Advance Engineering Limited, Whytecliffe Road, Purley, Surrey).

Quiet Air Conditioning.—By introducing a considerable degree of noise suppression in the main supply unit, F. H. Biddle Limited claim that the Biddle-Bronswerk Inductair allows less costly provisions for sound-deadening in the air supply ducts. The primary air chamber is thermally and acoustically insulated on the inside with fibreglass.

New Million B.t.u. Boiler.—A sectional type oil-fired boiler which ranges from five to ten sections with ratings of 500,000 to 1,000,000 B.t.u.'s, is the new product featured by John Harper.

Commodore oil-filled electric radiators, selling well overseas, are shown. These are being particularly successfully marketed in Spain, Denmark and France and assembled for sale in Austria, Belgium, Portugal and Eire.

Another Harper interest is packaged boiler sets for "coin-op" laundrettes. Five units, from 400,000 to 800,000 B.t.u./h., are available, with special installations for soft water areas.

Slimmer Than Ever Boiler.—A completely fresh approach to the design of a domestic gas boiler by Powell Duffryn Heating has resulted in a unit which is only 10 inches wide. "The design takes advantage of all our experience but without copying the design features of its predecessors,"

Powell Duffryn say.

The boiler, the G.33, with 33,000 B.t.u./h. output, uses a plain walled flue. In place of the conventional metal fins there is a removable stainless steel diffuser. These features make for easy servicing. All servicing can be carried out from the front and top of the boiler.

Powell Duffryn, co-operating with their associate, Compagnie Francaise Powell Duffryn, are exporting heating appliances to France, with particular emphasis on gas-fired boilers and ducted warm air heaters. There is also a substantial market, they report, in Germany for electric radiators.

Spiral Heat.—Heating elements made from solid drawn copper tube to which a spirally wound copper fin is alloyed, are used in the heater units shown by Spiral Tubes. Optimum heat transfer is obtained by the use of copper throughout and the positive fin-to-tube bonding.

The company offer unit heaters in six sizes for use with high pressure or low pressure hot water or with steam. There is a choice of three motor speeds. Where low temperature water is used as a heating medium, special high-efficiency elliptical finned tube is used for the elements.

Boiler Research.—Three years of research lie behind the new boiler produced by Steel Radiators, the Stelrad Fifty. The makers say that it represents a completely new approach to boiler design, making extensive use of stainless steel. Unit construction has been adopted to make speedy servicing easier.

The Stelrad Fifty, with an output of 50,000 B.t.u.'s, can be supplied for either gas or oil firing.

The firm backs up the new boiler with a range of newly designed panel radiators.

Century-and-a-Half of Gas.—Halcyon gas-fired warm air heaters form the main feature of the Sugg exhibit, with examples of conventional flue, balanced flue and Se-Duct installations. One of the heaters is shown sectionally cut away and encased in perspex, demonstrating the component parts of a heater and their operational functions.

The company's association with gas goes back for more than a century-and-a-half, when Thomas Sugg, of Westminster, made the pipes for the first gas street lighting in Carlton House Terrace, London, in 1807.

Reporting

CURRENT GAS TRENDS

Swing to gas well maintained

THE British Gas Council, in figures for the period April, 1964, to March, 1965, demonstrates that the swing to gas is proceeding, for nearly 1,000,000 gas fires were sold, **four** times as many as five years ago. Central heating installations totalled well over 120,000, an increase of more than a third compared with a year ago! Why these meteor like rises? Why this upsurge of customer confidence in a fuel "written off" ten years ago as being behind the times and dying on its feet?

Many factors contribute, of course, but the offer of 'cheaper gas' on a special heating tariff around 17d Therm and a "hard sell" policy were the most important. Manufacturers of appliances contributed brilliantly; dozens of up to the minute fires, boilers and warm air heaters were designed and submitted to the arduous testing of the Gas Council's Appliance Testing and Research Station at Watson House. Ten years ago the makers of gas central heating equipment could be counted on the fingers of one hand, they have now increased many times over and "dual fuel" makers now report that the major part of their turnover is in gas equipment. New gas manufacturing methods and the "cast iron" probability, of finding natural gas in the North Sea means that Western Europe's Gas Industry is in for a hey-day greater than the days of the industrial revolution.

The customers for gas heating and the Installer trade are "over the moon" with the benefits of gas as a heat source, although technically speaking gas is marginally dearer than some competitive fuels, the ease of control and the simple facts of life, like low capital cost and a positive 'no burn, no pay' running costs have converted the market to a very large extent. The installer is happy because he now knows just how little cost he is put to in expensive "call backs" and his service problems is handled by the Gas Undertaking.

Dublin Gas Company and Belfast Gas Department and the larger Irish

Undertakings now have a highly trained 'Home Heat Service' capable of design and specification work from small 'partial' jobs to warming the air of a Bus Depot. They are

introducing tariffs as attractive as any in Britain and are actively promoting the sale and installation of 'packaged deal' heating sets so successful elsewhere. Irish Gas is winning Corporation and private housing over to gas heating in increasing numbers and if these economics are attractive to a Council tenant what better recommendation can be taken for the larger 'well off' client.

BULLFINCH (GAS EQUIPMENT) LTD.
 DIADEM WORKS, KINGS ROAD, TYSELEY, BIRMINGHAM 11
 Telephone: ACOcks Green 6301/3



UNIDARE TAKE OVER OERLIKON.—At the Dublin reception to mark the successful take-over bid by Unidare Ltd. for Oerlikon (Electrodes) Ltd. (I.P.H.E., November) were (from left): Dr. Robert Lake Lanker, Managing Director, Oerlikon; the Minister for Industry and Commerce, Dr. Hillery; P. H. Greer, Chairman of the new company; J. C. B. McCarthy, Secretary, Department of Industry and Commerce; and Mr. J. A. Sedgwick, Director. **SECOND PICTURE** (from left): Messrs. A. F. Bush (Oerlikon); F. Enright (Office of Public Works); B. Lennon (Office of Public Works), and Mr. C. B. Allen, the Oerlikon Irish General Manager.

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This Autumn, high impact, full colour press advertisements for Lincoln warm air central heating will be seen by over 22 million home conscious readers in journals like *Ideal Home*, *Homes and Gardens* and *Reader's Digest*. Lincoln installers will be making even bigger profits. Don't you want a share of the cake?

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The wide range of Lincoln Furnaces. The largest range of furnaces manufactured in the U.K. There is a Furnace for every installation. Lincoln ducting,

purpose made ducting for every job. So, if you think you measure up to our high standards and like working with a company that likes working, then you deserve a share of the cake. Write for full information on Lincoln Furnaces, or ask our representative to visit you.

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Area Representative, J. Fleck Esq.,
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industrial heating & ventilating IN IRELAND



trade Topics

A TURF v. oil row has delayed the building of the new £1½ million Science Department at University College, Cork. The dispute between College authorities—they favour an oil-fired heating system—has been in progress since the Department insisted on a turf-fired system.

Three years have now passed since sketch plans were submitted for approval with the heating crux presenting the latest reason for a further hold-up.

* * *

THE Ruston Group, drawing on the accumulated boiler making experience of many years at both the Ruston and Paxman Works, has introduced a new standard range of Shell boilers.

Designated "thermax two," the new boiler is to follow the three pass, wet back, oil-fired, shell type pattern and incorporates many features of the well-known Ruston Thermax and Paxman Super-Ultrasonic designs.

The new range is available either in packaged form, with evaporations up to 35,000 lb./hr., or free standing, with evaporations up to 50,000 lb./hr. from and at 100°C. Water heater outputs extend up to 50 million B.T.U./s/hr.

A high degree of standardisation has

been achieved, resulting in improvements both in combustion performance and manufacturing techniques. Boiler shell sizes have been rationalised and the most effective boiler length to diameter ratio adopted. Improved heat transfer rates with consequent higher overall efficiency are the outcome of increased flue gas velocity and turbulence. Standard equipment includes a Saacke rotary cup oil burner, complete with silencer, matched to the boiler design. Steam and water boiler mountings, control equipment and feed pumps are of the highest quality available.

* * *

A NEW range of seven sizes with nominal capacities of from 15-60 tons of completely packaged liquid chilling machines is now available from Carlyle Air Conditioning Company. Each unit contains, according to size, either one, two, three or four hermetic reciprocating compressors, and is complete with the cooler, controls and internal piping and wiring.

The factory-wired control centre includes a step-controller for capacity control; up to seven steps are provided on the larger models. The step controller also ensures that not more than one compressor will start at any one time.

Although designed particularly for

● A recent change of address has been that of J. & E. Hall Ltd. They have moved their Dublin branch office to 19-22 North Cumberland Street (Phone 488471-2-3-4). The company is a member of the Hall-Thermotank Group which covers the refrigeration, air conditioning and mechanical ventilation fields among others.



● The new "thermax two."

use in chilled water air conditioning applications, the units may also be used in all types of process cooling applications. This range of units offers a choice of condensing sources, either water cooled, air cooled or evaporative cooled versions are available.

The units are unusually compact and show a great saving in floor space. Every model will pass through a standard 30" doorway.

● A completely new and extremely versatile series of Double-Duty boilers, suitable for operation on oil, gas, solid fuel or wood, has been introduced to this country by CTC Heat (London) Ltd. (17 Sloane Street, London, S.W.1). Known as the CTC 440 Series, it comprises nine different models with heating surface areas from 10 sq. ft. to 100 sq. ft., and maximum capacities from 48,000 to 480,000 B.t.u./h. per hour. The series thus covers a complete range of applications, from the small house or bungalow to industrial and commercial premises.



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Whatever the type of heating installation Rocksil Building Insulation Products in quilt, mat or blanket form, will greatly reduce heat loss and give excellent impact sound insulation. The material is quick and easy to lay. Slabs and pipe sections are also available for tank and pipe insulation.

See literature in SPECIFILE

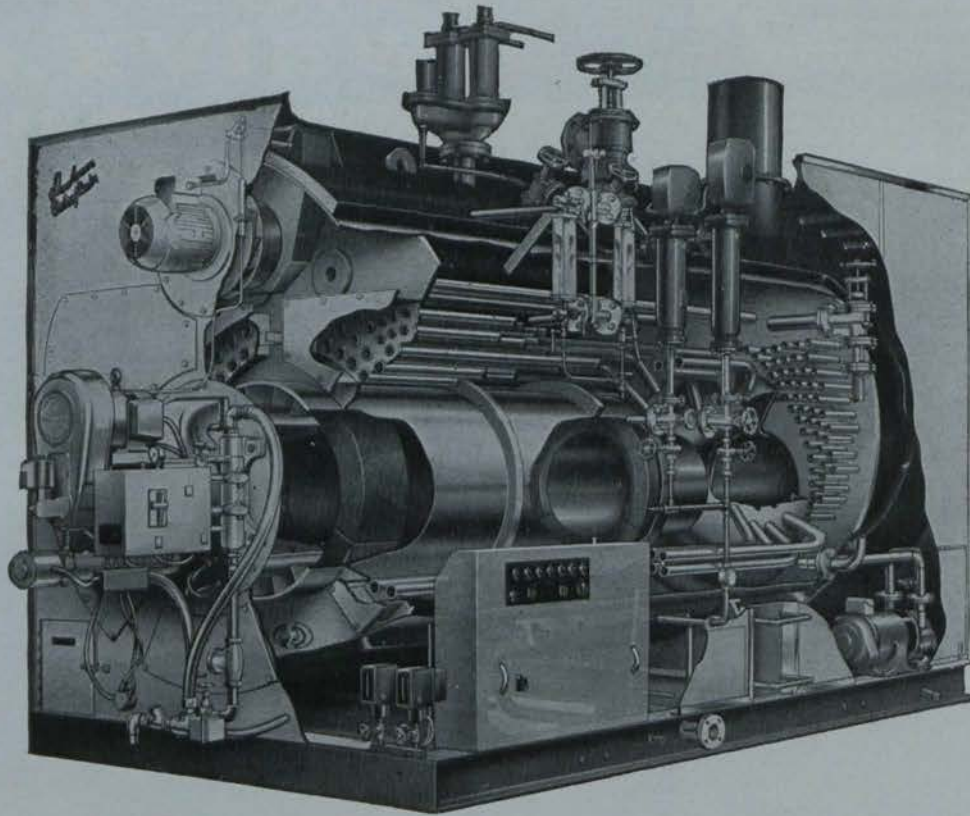
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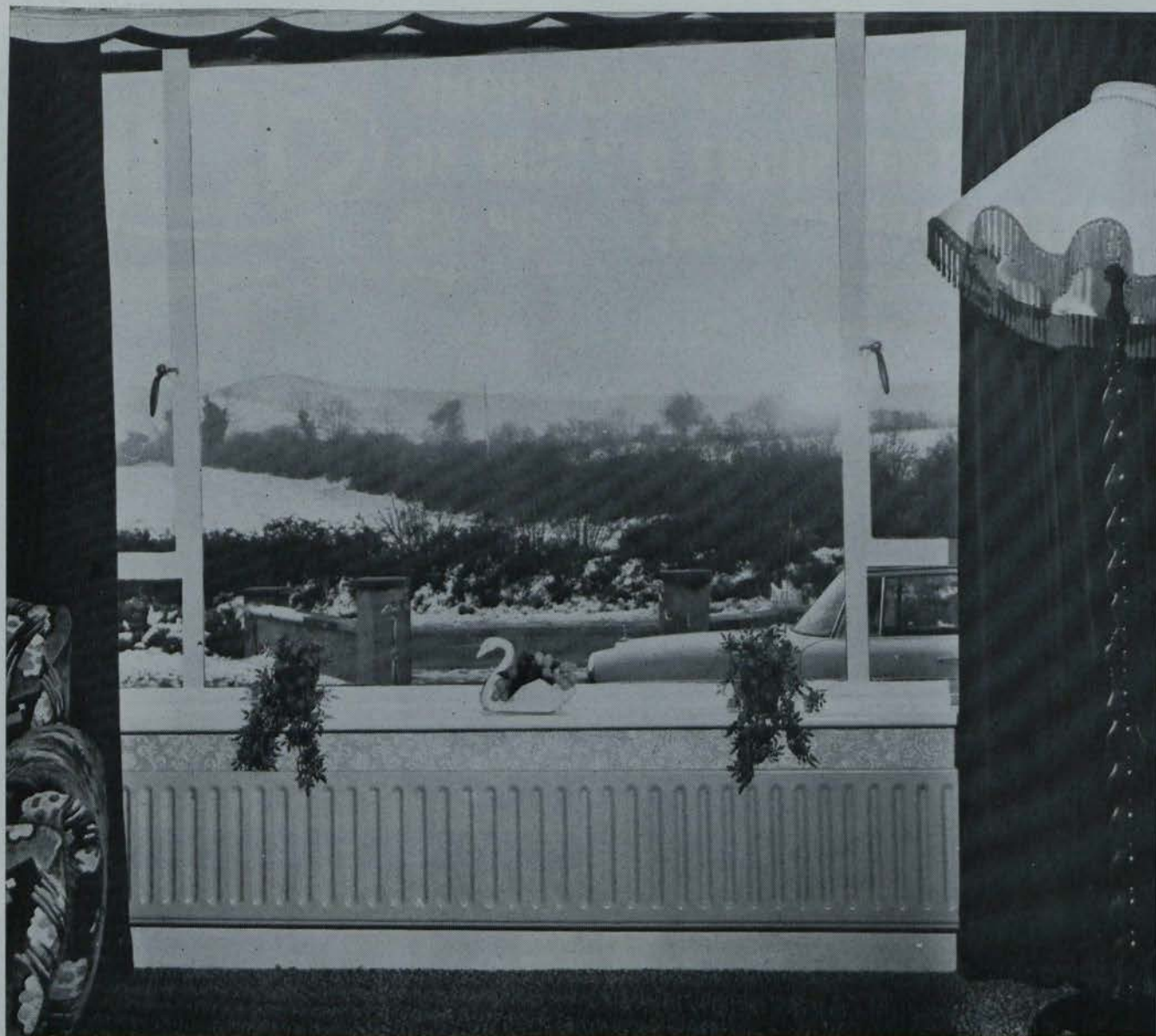
What's so special about the Chieftain?

Plenty. It is, for instance, exceptionally quiet in operation, cool running and most economical in floor space. It ranks as an outstanding 3-pass, oil-fired boiler. It is fully automatic with optional superheaters. It offers excellent internal accessibility. And that's not all. Dominating other important advantages is its performance—rated at 85% gross c.v. efficiency. Small wonder, then, that demand runs high for the Chieftain—the finest boiler of its type available in Europe today. Write now for details to **Cochran & Co. Annan Limited**, Newbie Works, Annan, Dumfriesshire, Scotland. Tel: Annan 2111 or contact us in London (Tel: Abbey 4441) in Glasgow (Tel: Central 4929).

COCHRAN **CHIEFTAIN** BOILER

AP 91

Twenty-seven



BARLO PANEL RADIATORS

AVAILABLE FOR IMMEDIATE DELIVERY IN SEVEN HEIGHTS OF $7\frac{7}{8}$ ", $11\frac{13}{16}$ ", $15\frac{3}{4}$ ", $19\frac{11}{16}$ ", $23\frac{5}{8}$ ", $27\frac{9}{16}$ " AND $35\frac{7}{16}$ ", AND IN LENGTHS FROM $19\frac{1}{2}$ " TO $236\frac{1}{4}$ " IN ONE PIECE. HIGH PERFORMANCE, EXCELLENT MATERIAL, SMOOTH ROUND TOP WITHOUT RIDGE. FULL RANGE OF SIZES READY FOR INSTALLATION.

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MONTHLY SPECIAL REVIEW

Radiators, radiant panels, convectors and skirting heating systems (incl. valves and controls)

Many applications covered

A unit capable of transmitting heat either by radiation or convection, or both together, may be called a radiator. The term radiator is generally confined to steel panel or cast-iron sectional radiation. Panel radiators are generally made of the pressed steel type or of the aluminium type, the latter being somewhat revolutionary, in that the water capacity is reduced, by special internal design. Since the water content is reduced, faster heating takes place, thus being more economical than the standard pressed steel type. The plainer the surface of the panel radiator the greater is the radiation area. In the case of the column radiator, the closer the columns or sections, the greater the proportion of convected and radiated heat.

Convected heat warms the air and is distributed by natural convection currents. These currents can carry heat to areas where radiant heat is not effective, e.g., at the back of presses, behind stairways, etc. Radiant heat is transmitted in all directions in straight lines and passes through the air in the form of heat waves, e.g., as in sunlight, ultra violet light, etc. Secondly, when the radiant heat strikes an opaque object or surface the energy or heat is re-directed again by the object or surface.

One favourable point in relation to radiant heat is that the air is inclined to retain its natural humidity.

It may interest our readers that various types of paints have a considerable adverse effect on radiation; e.g., ordinary bronze paint (metallic) may reduce the total transmission of radiation by as much as 36% on plain surface ceiling position and 25% on plain surface wall position. As far as painting radiators is concerned, the position may be summarised as follows: most paints, except **metallic paints**, can be used without altering appreciably the amount of radiated heat.

The general effect of an enclosure or cabinet placed about a radiator is to restrict the airflow and diminish the proportion of output due to radiation. However, proper well designed enclosures may improve the heat distribution obtained in an unenclosed radiator.

Types of Radiators in common use to-day are:—

- (a) Panel radiators, pressed steel, aluminium.
- (b) Cast iron column radiators.
- (c) Convector radiator, as distinct from the convector heater.
- (d) Skirting radiators.
- (e) Finned-tubing radiator.
- (f) Base-board radiator.

The medium of heating radiators can be either hot water, high or low temperature, high or low pressure, steam high or low pressure, hot oil circulation, electric elements and gas.

The Finned-tube heat distributing

unit is a heater composed of a finned tube element fabricated from metallic tube to which metallic fins have been bonded. They are available in several sizes, from ½" diameter upwards, either made from steel or certain compositions or copper. The resistance of the flow of steam or hot water in finned-tube elements is the same as that through standard piping of equal size.

Where an equal distribution of heat is required in a building, finned-tube proves very effective in that it can be easily fitted right around the base board of a room, and so preventing unnecessary draughts and uneven temperature. Normal placement of the tube is along the walls of greatest heat loss, whether in the form of skirting heating, forced fan convector or a battery of finned tubing. A sinuous water flow through the tubing is recommended in preference to headers to terminate the pipe runs, to prevent short circuiting, where several tiers are to be fitted. Furthermore, the application of the sinuous system gives a more even temperature and cuts down, on the use of balancing valves.

Convector Heaters are made in a very wide variety, depths, sizes, lengths and enclosures. The heating elements consists of fabricated ferrous or non-ferrous metals as well as cast iron. The air enters the bottom of the heater enclosure, and is heated when it passes through the heating elements, and leaves the enclosure through the outlet grille over the heating elements. The units may be of the free standing, wall mounting, recessed type. The heating medium can be hot water, steam, hot oil or gas or electricity.

The modern convector heater is often called the "fan-assisted" or forceflow convector heater. The unit incorporates a cabinet with top and bottom grilles, the bottom grille being

HEAT EMISSION—B.T.U.'s		per sq. ft. per hour.		Emission.
Type of Radiator.		Width in Inches.		B.t.u.'s/hr./sq. ft.
(a) Column Radiator	2½" to 3¼"	185
" "	5" to 5¾"	170
" "	7½" to 8¾"	160
(b) Hospital Pattern	3" to 3½"	185
" "	5" to 5½"	158
" "	7" to 7½"	151
(c) Cast Iron Window Rad.	13" to 13½"	158
(d) Wall Radiator	Cast iron	171
		Steel (single panel)	192

(Reproduced from British Code of Practice C.P. 341.300-307, 1956).

Continued overleaf

Twenty-nine



This Special Review article is by J. L. Fitzgerald, B.Sc.

Radiators, Convectors etc

from previous page

generally fitted with filter pads, heating elements, super silent blower coupled to an electric resilient motor, mounted below the elements; a three position switch can be incorporated to vary the speed of the fan or blower from slow to fast, and a damper on the top outlet. The fan assisted convector heater has now been so perfected as to prove almost noiseless.

Radiant Heating.—The ideal balance of heat for the human body at work or play is normally that obtained from outdoor sunshine. In the factory or workshop this ideal balance is most nearly approached by radiant heating, which can provide a comfortable environment achieved at lower air temperatures than are necessary with other heating systems.

In large or medium size buildings where roofs are generally high, and heat losses great, the worker in a more or less stationary position, radiant heating systems, using steam, hot water, Infra Red heating, gas heating or electric radiant panels, have many advantages, which are not widely used in this country.

The principal advantages is that constant heat is provided to the stationary worker, which is comfortable; fuel savings can be cut by approximately 25%; there is very little air disturbance which is so valuable to air laden factories and industries; local heating can be easily achieved in exposed areas, etc.; lighting units can be easily built in to many ray-strip panels, etc.

Controls and Valves.—With much emphasis on economies and automatic control and labour saving devices, the growth of automatic controls is steadily on the increase. To give but one single instance: the use of the thermostatic radiator valve for domestic central heating is becoming very

widespread. On rise in temperature to the pre-determined setting, the thermostatic valve shuts off the supply of hot water to the radiator, which in turn affects the running costs of the boiler, and on a drop in temperature the valve opens again, thus allowing the radiator to heat up. In the industrial field the use of motorised valves, steam and hot water temperature regulators, outside pilot control stats, etc., is very much on the increase. The user is becoming very conscious of the necessity of such fuel saving units.

The control of the flow of steam or hot water can easily be achieved by the fitting of thermostatic valves, motorised valves, room thermostats, etc. While at the same time the control of the speed of blowers and fans (as used in the fan assisted heaters) can be easily controlled by a room thermostat. The sooner we realise that a little extra capital expenditure at the beginning of our installations or projects, the sooner will we return our capital outlay.

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

TRANE Type FK Convectors are free standing with standard open inlet, and can be supplied in six various heights and 11 different lengths. To provide greater strength, fronts and tops are in 18 gauge, backs and end panels are 20 gauge. Cabinets 36" long or longer are further reinforced by a horizontal steel channel welded to the inside surface of the front panel.

The convector grilles are an integral part of the front panel. The convectors can be supplied in several models: wall mounting, recessed, semi-recessed and sloping top for both free standing

Continued page thirty-three

HEATING SYSTEM LEAKS SEALED WHILST YOU SIT BACK

Pour OXYPIC, the *guaranteed* leak repair preparation, into a hot water installation and seal leaks, no matter where they are, in *30 minutes!*

Faulty fittings, bad threads, sand holes, any leak through any cause is sealed economically and quickly. No dismantling needed; no patches or welding; no need to even *find* the leak; no trouble at all!

*Oxypic prevents rust and scale. It can be also used as an active leak preventive.

N.B.—Unsuitable for domestic or draw-off systems.

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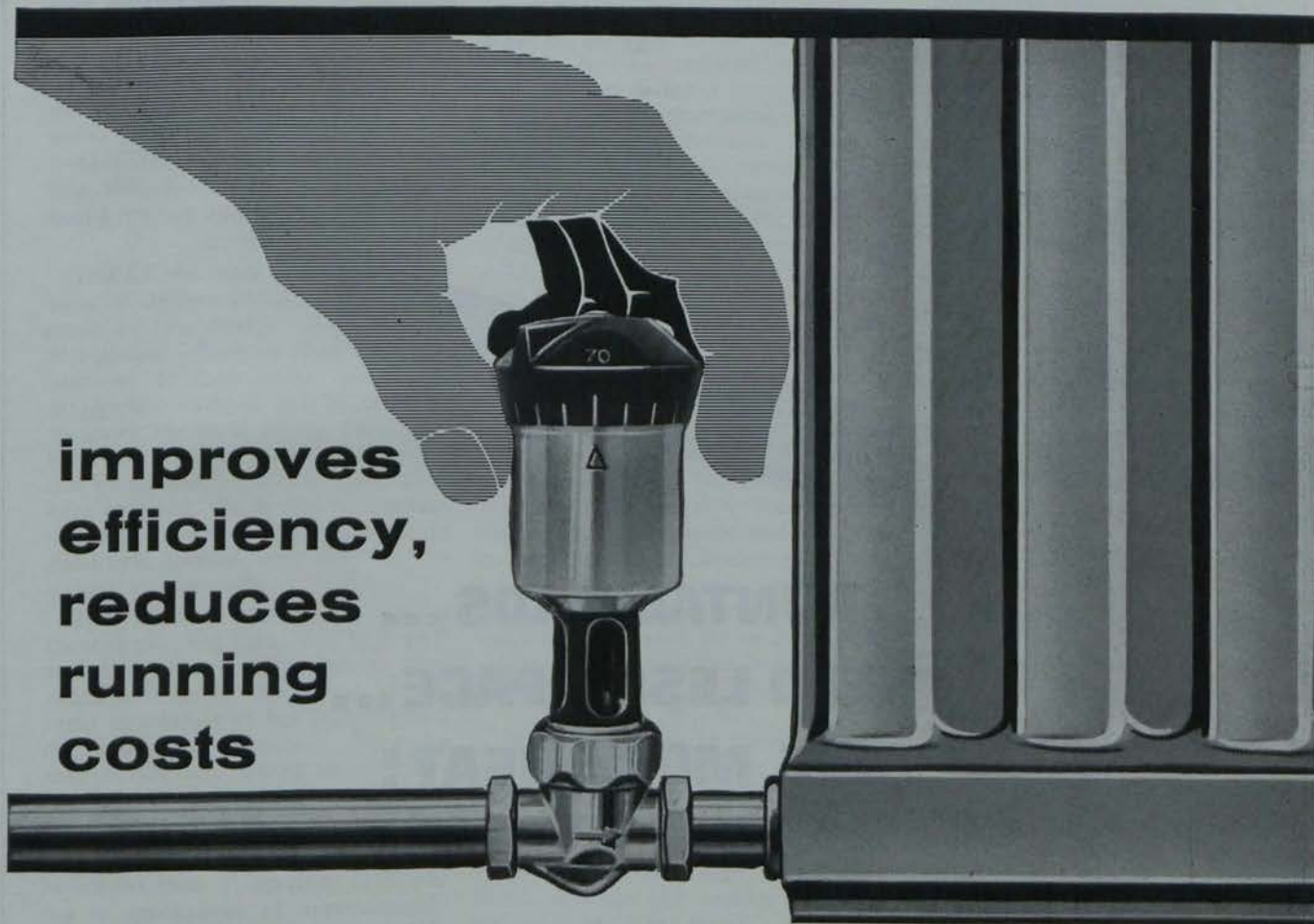
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Established 1892.

Thirty

Stelrad heating ...



**improves
efficiency,
reduces
running
costs**

Today's demand is for better, more effective heating systems. Steel radiators Ltd.—the pioneers of the steel radiator in the U.K.—have made two important additions to their range of central heating products, which bring new flexibility to designers and considerable advantages to users.

STELOSTAT

(Covered by world-wide patents)

The new thermostatic valve that controls the heat output from individual radiators and maintains pre-set room temperatures.

Of similar dimensions to an ordinary control valve, Stelostat may be easily fitted to existing or new small-bore installations, the low cost will be rapidly recovered from savings in fuel consumption.

STELRADS



The best steel radiators for every installation. Available in the widest range of sizes, shapes and heat outputs to meet all the requirements of industrial, institutional or domestic systems. The specification of Stelrads is an insurance; research, careful manufacture and stringent 100 lb pressure test ensure the longest trouble-free life.

STELERATOR



A new accelerator pump for small bore systems which is compact, completely silent in operation, and has a power consumption of only 20 watts. Self lubricating bearings and the judicious use of stainless steel in its construction ensure satisfactory service over very long periods.

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STEEL RADIATORS LIMITED**

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The Irish Plumbing and Heating Engineer.



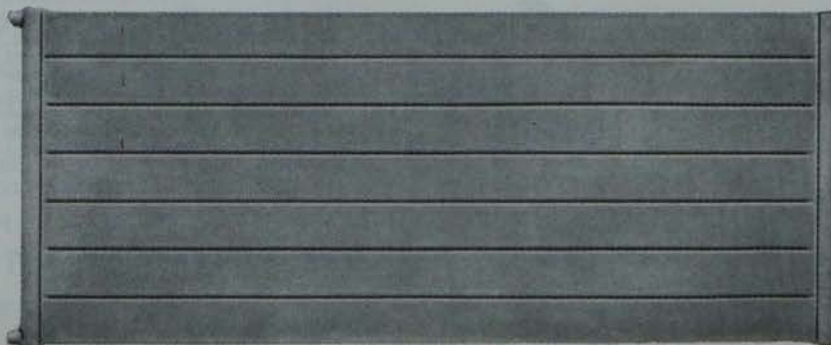
**RUNTAL RADS ...
NEED LESS SPACE ...
GIVE MORE HEAT !**

RUNTAL CONVECTORS pack more radiating area into the smallest possible length. This coupled, with their complete versatility of size (you can order specific dimensions to suit your customers exact needs) makes them ideal for any area where extra high heat output is required. And you can count on Runtal for quick delivery and service. ▲

RUNTAL PANEL RADIATORS reflect a 'decor-design' approach to heating. Extra high in heat output, these rads add good looks to every installation. This plus dependable delivery ensures your clients complete satisfaction. Recommend Irish made Runtal. Available from ▼

RUNTALRAD LIMITED,
147 LR. RATHMINES RD., DUBLIN, 6

TELEPHONE 976973



and wall mount. They can be supplied with inlet grilles which completely hide valves and pipe connections.

They feature a non-ferrous heating element, which responds instantly to the thermostat without lagging or overriding their settings, and therefore wasting no fuel by overheating. Finger-tip damper control conveniently located at the top of the cabinet modulates the heat output for these dust and dirt-free, cleanly operating units.

Also from Trane Ltd., Dunfermline, Fife, Scotland, is the Trane Baseboard heating unit.

* * *

THERE are more than 800 different sizes of Wilson radiators, which are made as two models—Waveline and Straightline. Slimmer than the diameter of a three-penny piece, the Straightline radiator can be prepared to match the decor of any room, and both the Straightline and Waveline can be painted without serious loss of heat emission. Both can be supplied as single panels or double, treble or quadruple banked, and all can be curved to any angle.

The all-steel construction makes them strong, but light, with high heat emission. The combination of horizontal and vertical waterways assures rapid circulation of hot water with a balanced heat emission. They are suitable for any closed circuit heating system—whether this is fuelled by oil, gas or solid fuel.

The Waveline models are available in lengths from 3" up to 8' 11½", rising in graduations of approximately 6". Heights are from 6" to 36", rising in graduations of 6". The Straightline models are available from 3" up to 7' 1½", rising in graduations of 6". The heights are from 6" to 24" in graduations of 6". The manufacturers are Henry Wilson & Co. Ltd., Kirkby, Liverpool.

* * *

THE Conrad new radiant convector from F. H. Biddle Ltd. is fabricated from hard aluminium alloy sheet



● From F. H. Biddle Ltd.—the Conrad radiant convector. Illustrated here is the 72 in. model which weighs only 49 lbs.

SPECIAL REVIEW

from page thirty
channel modules 2" wide by 22" high by 3" deep, each with 6" deep air discharge grille. These modules are held together rigidly by a serpentine coil of ¼" bore seamless copper tube which is expanded hydraulically—at a pressure of 1,300 p.s.i.—through accurately formed collared orifices in each channel flange.

The bond is permanent and the resultant contact between tube and flange is such that maximum conductivity from heating medium to formed front panel is achieved. The assembly is completed by the attachment of a sheet steel back panel and a removable steel top cover which permits access to the ½" air cock fitted to the coil. Conrad heaters are available in nine different lengths, from 24" long up to 72" long in 6" increments.

Messrs. Biddle also manufacture the Warline type CF continuous run perimeter heating. The unique Biddle process of mechanically bonding element fins to tubes gives perfect metal to metal contact, allowing maximum heat transfer. Copper tubes are standard; steel tubes are available if required. 1 in., 1½ in. or 2 in. bore tubing can be supplied with various fin spacings to suit the application.

* * *

TOTAL flexibility in the positioning of heating in the home is offered to architects, heating engineers, and householders by the skirting heating units manufactured by Dunham-Bush. Dunham-Bush 8½" high units, when fitted, simulate and replace the conventional skirting board, remaining completely inconspicuous and conserving valuable wall space, normally taken up with other types of heating.

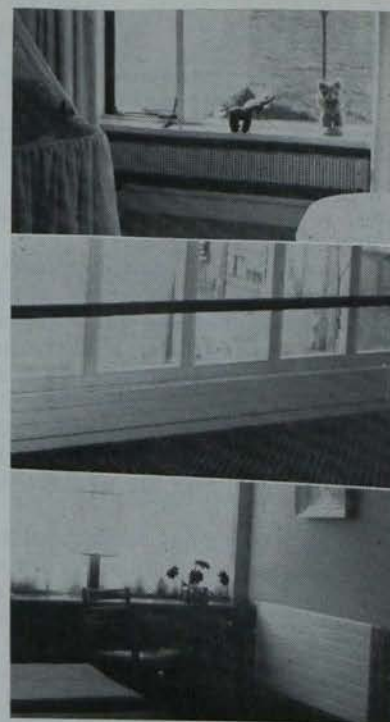
The units are operated from an application rated boiler which can be oil, gas, or solid fuel fired. The units also have the added advantage of being able to run beneath areas regarded in the past as "cold"—like large picture windows, where other forms of heating appliance cannot be sited.

* * *

MONSELL Mitchell & Co. Ltd., heating division, Townsend St., Dublin, represent International Boilers and Radiators Ltd. in this country, and market their "Capital" radiators and skirting heating. There are 17 sizes of radiators in three heights to choose from, and single radiators can be joined end to end for an exact fit. A blanking piece neatly covers the join.

Factory made double panels give additional heat in the space of one and are very attractive in appearance.

Continued overleaf



● Our pictures show three typical installations of Runtalrad equipment.

Runtal range

RUNTALRAD Ltd. (147 Lr. Rathmines Road, Dublin) have recently announced the introduction of a new range of Irish made panel radiators and convectors. The main advantages of Runtal panel radiators are high heat emission per square foot of heating surface, the wide range of sizes available, heights from 2¼" to 55" with increments of 2¼", lengths from 1' 8" to 20' 0" with increments of 4", good appearance and an easy cleanable smooth flat surface. Runtal panel radiators may be obtained in either single or double panels.

Runtal panel radiators are also available with a "convector plate" fixed to the back of each panel. The purpose of this plate is to increase the heating surface for a given size of radiator.

Runtal convectors have this plate fixed to the back and front surfaces and are available in four heights: 2¼", 5½", 8½" and 11", and lengths from 1' 8" to 20' 0". These units have a very high heat emission per foot length and are ideal for use under the long low windows of modern buildings.

Runtalrad Ltd. report their products widely accepted here and have secured a number of important Board of Works contracts, mainly for schools' heating, in addition to contracts for bigger commercial installations.

Thirty-three

SPECIAL REVIEW

from previous page

Prices for radiators include brackets, aircocks and plugs. Bottom tappings are $\frac{3}{4}$ " BSP both ends. On top, one end is $\frac{3}{4}$ " BSP, the other is tapped $\frac{1}{2}$ " BSP to take an aircock.

"International" skirting heaters are also available from Monsell Mitchell. They can be installed under low-silled windows or wherever a conventional radiator would upset a room decoration scheme. Where more heat is required, heaters can be mounted in two tiers, one above the other. Factory made doubles are also available.

* * *

VENT-O-THERM conditioned warm air heating units may either be connected to a channel system or may be used for discharge. In the latter case, no conduits are needed for the conveyance of the warm air to the place where it is wanted. Direct discharge of part of the air and transfer of the remainder to another area via conduit is possible. The units may be arranged in series if desired. Monsell-Mitchell are agents here for Vent-O-Therm. Messrs. The International Boilers and Radiators Ltd. area manager in Northern Ireland is P. J. B. Johnston, 128 Great Victoria St., Belfast.

* * *

HATTERSLEY Delflo radiator valves have been designed for use on all low and medium pressure hot water systems up to 150 p.s.i. and 250 degrees F. All sizes $\frac{1}{2}$ " to $1\frac{1}{4}$ " are full bore-streamlined and have minimum flow resistance, making them ideally suitable for either pumped or gravity systems.

For the convenience of heating engineers, all Delflo lockshield valves have a concealed indicator enabling them to be accurately adjusted either in relation to the full open position. The manufacturers are Hattersley (Ormskirk) Ltd., Halifax.

* * *

VEHA panel radiators are available in eight standard heights and numerous lengths up to 32". Banks of double, triple or quadruple panel radiators are provided at no extra cost. Special high panels—40", 48", 56", and 64"—are now available in five lengths. Easy mounting is possible as a result of a wide range of screw-on and built-in brackets.

The radiators are made of heavy gauge steel, and the standard test pressure is 90 lbs. per sq. in., but by means of extra spot welding, radiators tested at 150 lbs. per sq. in. are produced suitable for buildings of any height.



**A wide
'rad'
range
from
Barlo**

● The comprehensive and versatile range of Irish made radiators from Barlo Heating Ltd. have been well received by the trade. Our picture shows (left) Mr. Aiden Barlow, Director, Barlo Heating Ltd., welcoming Mr. Roger Glinos as Technical Representative. Mr. Glinos, who is well known in heating circles, was previously with Messrs. J. Varming and S. Mulcahy, Consulting Engineers, before taking up this new appointment.

Veha Radiant panels used as ceiling panels, provide maximum heat emission per square foot and maximum comfort with a very even distribution of heat, without draught. This is achieved at an air temperature which is several degrees lower than in the case of other methods of heating and allows: a higher degree of air humidity, considerable fuel economy, and a complete saving of floor or wall space. The manufacturers are Veha Ltd., of Wicklow.

* * *

THE Thermalrad is a successful blending of radiator and convector and is less than half the size of the conventional pressed steel radiator. Because of its unique internal design this smaller unit has a thermal output greater than radiators twice its size.

Another factor which provides for greater efficiency with Thermalrad is that the water content is only one-fifth of that of conventional radiators, making the Thermalrad particularly responsive to thermostatic or clock control. The manufacturers are Thermal Radiators Ltd., who are represented in the Republic by Mr. P. J. Noone, Heatoven Supply Co., 379 South Circular Road, Rialto, Dublin 8, and in Northern Ireland by Mr. G. W. Monson, G.W. Monson & Sons, 227 Beersbridge Road, Belfast 5.

* * *

COPPERAD convectors have been redesigned and are now available with either parallel tube or series tube elements. The series tube elements have plain copper tail connections and are for use on hot water systems, whereas

the parallel tube elements have screwed connections and are for use on either hot water or steam systems.

Among other modifications, the casing has also been redesigned, and the units are available in three styles—wall mounting, floor mounting, or concealed mounting. As an optional extra a control damper may be supplied which varies the heat output by restricting the flow of warmed air through the outlet grille. When fully closed the heat output is reduced by approximately 70 per cent.

Copperad convectors are supplied in synthetic primer of neutral colour. The finish is stoved on and is an ideal base for any good quality decorator's paint. The convectors are supplied for use with hot water (low and high temperature) and steam and vapour systems. The manufacturers are Copperad Ltd., Colnbrook, Bucks., England.

* * *

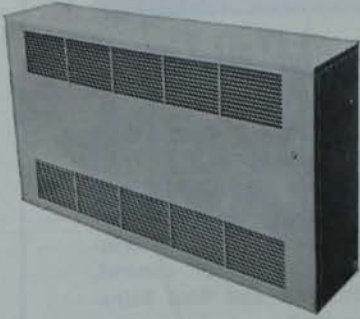
GLOW-WORM Ltd. have introduced a new gas-fired room heater to their range of heaters and central heating appliances. Enclosed in a fine grain tola wood cabinet, the Monaco heater will blend with every taste in decoration. It provides both radiant and convected heat for a really large room, has automatic ignition and an adjustable thermostat with eight settings up to 85 degrees F. The controls are recessed to prevent accidental damage, but with ease of access for finger tip touch control, and for replacing the governor and ignition battery. It is rated at 18,000 B.t.u./h.

Continued page thirty-six

Here are five good reasons for specifying Biddle Heating Equipment

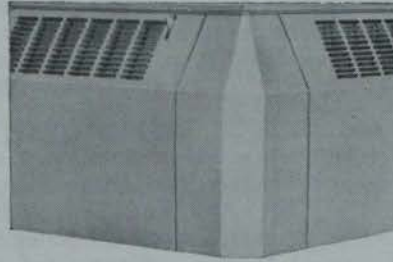
(write in and you can have
plenty more)

forceflo



The forced air fan convector heater which is really quiet . . . a guaranteed noise criteria rating for all conditions. Sound level problems—specify Forceflo. Forceflo is the only unit tested through all audible frequencies. There is a wide range of sizes, outputs (up to 62,000 Btu/h) and design; free-standing, concealed, remote and ceiling mounted.

warmline



Highly efficient and adaptable method of heating ideally suited to modern building design. Warmline unobtrusively skirts the perimeter of a room. Available in three heights (12½", 16½", 20½"), offering a high output per foot run . . . inexpensively! Heat is emitted evenly over the whole run so partitioning can be erected anywhere without interfering with heat distribution. Individual damper control is a standard fitting. Warmline is available in two styles, flat front or sloping top, both are simple and quick to install.

As one of the largest and most progressive organisations in the fields of heating, cooling, ventilating and air-conditioning in the United Kingdom, Biddle are renowned for their high quality equipment. They have made their presence felt in the comfortable conditions prevailing in many famous structures. Coventry Cathedral, Shell Centre, South Bank, London Airport, Royal Festival Hall, Houses of Parliament, British Museum, Old Bailey Courts and the G.P.O. Tower Telephone Exchange are just a few. Biddle match their experience and resources with progress. Research and Development Engineers are working continuously to find the best heating and ventilating equipment for modern industrial and commercial buildings.

uniflow



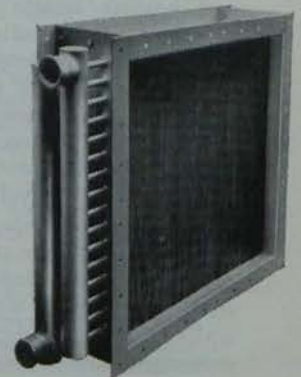
The dependability and efficiency of the Uniflow Unit Heater is legendary. Units are available with horizontal or downward discharge, for low, medium and high pressure hot water, low or high pressure steam. The horizontal unit for creating a flow of warm air along exposed walls, into narrow aisles and blanketing large doorways. The downward unit for projecting heat downward, regardless of obstacles which would impede a horizontal airflow. The Biddle Uniflow puts heat just where you want it.

vectair



The ultimate in convection heating. Available as floor, wall, recessed and semi-concealed units. These outstanding convectors have a unique heating element. Fins and tubes are mechanically bonded, metal to metal, providing the most permanent and efficient heat transfer made. Available in an extensive range of sizes for all hot water or steam systems—conventional or small-bore.

coils



Standardised Biddle Coils have been designed to meet all the requirements of modern air heating and cooling equipment. These coils are of welded construction and are tested to 400 p.s.i.g. air under water for a working pressure of 200 p.s.i.g. Over 60 fin and tube combinations are available in standard casings ranging from 12" x 12" x 1 row to 25 ft. nominal face area by 8 rows deep. High duty plus fins now permit face velocities of up to 600 ft/min. without moisture carry-over. Biddle Standardised Coils are available in four main types suitable for use with the normal heating and cooling mediums.

Forceflo and Uniflow both now available from stock in Ireland

AGENT FOR EIRE:

Thermal (Ireland) Ltd., 85 Lower Baggot Street, Dublin 2. Dublin 61237.

AGENT FOR NORTHERN IRELAND:

Samuel Stewart (Thermal Engineering) Ltd., 26 Neills Hill Park, Belfast 5. Belfast 655759

F. H. BIDDLE LTD 16 Upper Grosvenor Street, London W 1 (HYDe Park 0532-9)



biddle

SPECIAL REVIEW

from page thirty-four

The Glow-Line panel radiators are all of steel construction and are just half an inch thick. Yet they are claimed to be 10 per cent. more efficient than any comparable radiator with a heat transmission factor of 206 B.Th.U./sq. ft./100F.

* * *

NEWS from Quadrant Engineers about their stock of Buderus steel column radiators: "When we imported and stocked them first we did not expect any great business," Brendan Little of the Sales staff said. "We still do not expect column radiators to equal the sales of steel plate radiators, but they have a definite place in those locations where a large heat release is needed in a small space, and where immediate delivery is needed we can hardly be beaten."

Mr. Little added that apparently there is also a swing to these column radiators in very modern houses where their clean vertical lines fit in very well with up to the minute detail. A new slim high section will soon be available on the Irish market.

* * *

THERE are eleven models in the Dimplex range of panel type radiators in loadings from ½ to 2 Kw., or in the column type range, a choice of four loadings of 1, 1½, 2, and 3 Kw. The Dimplex oil-filled electric radiators provide the user with a portable central heating system without installation cost. Each radiator is fitted with a sensitive air temperature thermostat which makes it possible to select a precise room temperature to suit every day and season.

* * *

HANDLEY PAGE'S hot water panel radiators are shot-blasted to provide a rust-free and smooth surface prior to painting, and are electrostatically sprayed with two coats of white gloss stove enamel and then, for protection, are individually wrapped.

The radiators have a distinctive, easy to clean, fluting, are formed from 18-gauge, mild steel sheet electrically seam-welded for extra strength. They are designed for a working pressure of 50 p.s.i. Each radiator is tested to twice this pressure before leaving the factory.

* * *

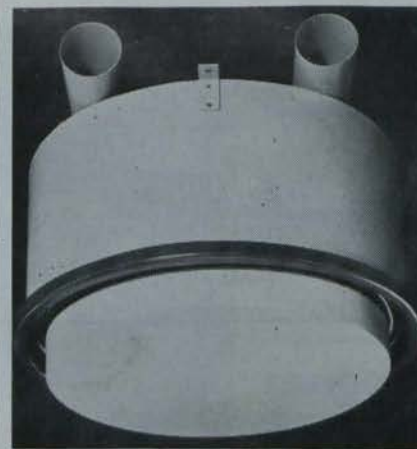
A NEW range of attractively styled roll-topped radiators have been launched on the market by B.S.A. Harford Heating Ltd. The "Opio Rad" range of radiators is intended for use with closed circuit central heating systems. In order to give

maximum assistance to installers these radiators are available in heights of 12, 18, 24, and 30 inches. A variety of lengths can be supplied from 19 inches to 86½".

The material is 18 gauge mild steel and the tested pressure is 100 lbs. per sq. in. The water content is approximately 0.9 lb. per sq. ft. of heating surface. The connections are four recessed tappings per radiator—single panels, ½" tappings; double panels, ¾" tappings. There is a combined iron plug and air cock vent and one iron blank plug. The transmission factors per sq. ft. heating surface for 100 degrees F. temperature differential are: single panel, 182 B.t.u.'s; double panel, 155 B.t.u.'s.

* * *

THE latest addition to the range of convector heaters from Fenton, Byrn & Co. Ltd., Armfield Close, West Molesey, Surrey, is the "L" Series of Apartment heaters. Constructed in mild steel, the casing comprises top, bottom and side members and four removable panels. These panels are "rigidised" to eliminate drumming. The heater may be used without panels, side members, and base as desired.



New from Biddle

PICTURED here is the new F. H. Biddle Blendaire dual duct attenuator diffuser unit.

The new unit is basically a terminal box for a high velocity system which combines the functions of temperature control, volume control, attenuation, diffusion and final filtration, all in one unit.

Also from Biddle is the new Warmline brochure. It gives details of the type CF Warmline which supersedes the previous design and incorporates alterations to simplify the method of erection.

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controlling electrically driven pumps
Limit switches
Liquid level alarms
Motorised valve controls
etc., etc.

MERCURY TUBE and SILVER CONTACT types. Indestructible polystyrene floats. Floatgear also in stainless steel, copper, mild steel and polythene. Deliveries ex stock.

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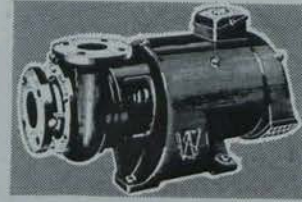
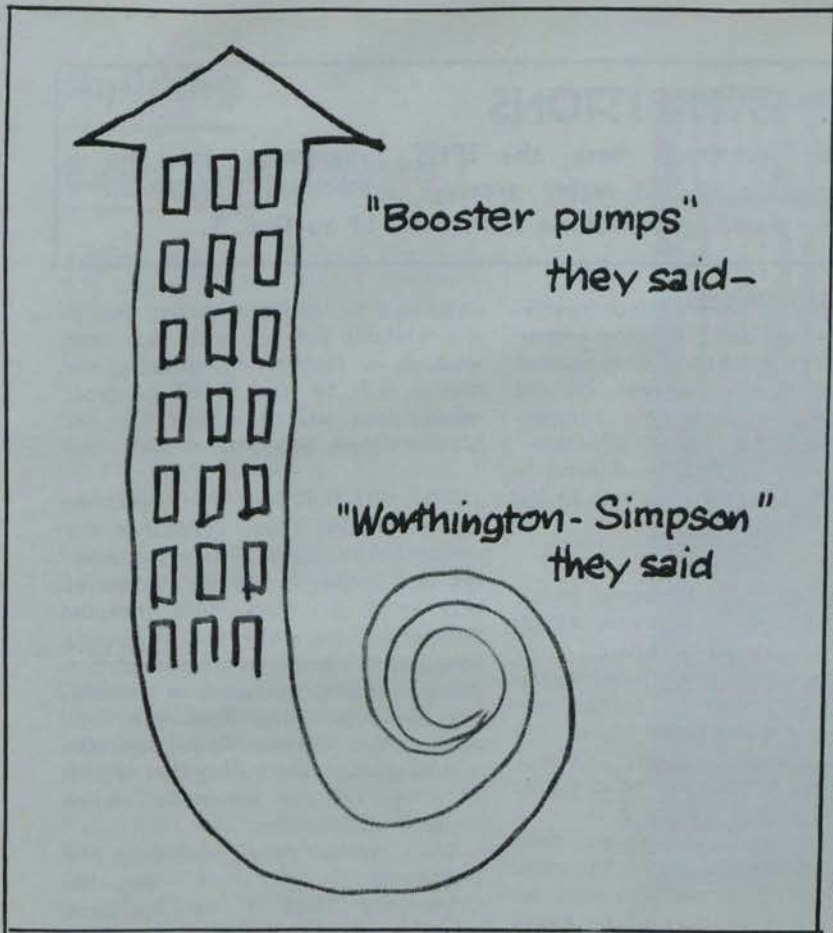
Available from the Manufacturers



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Worthington - Simpson Ltd

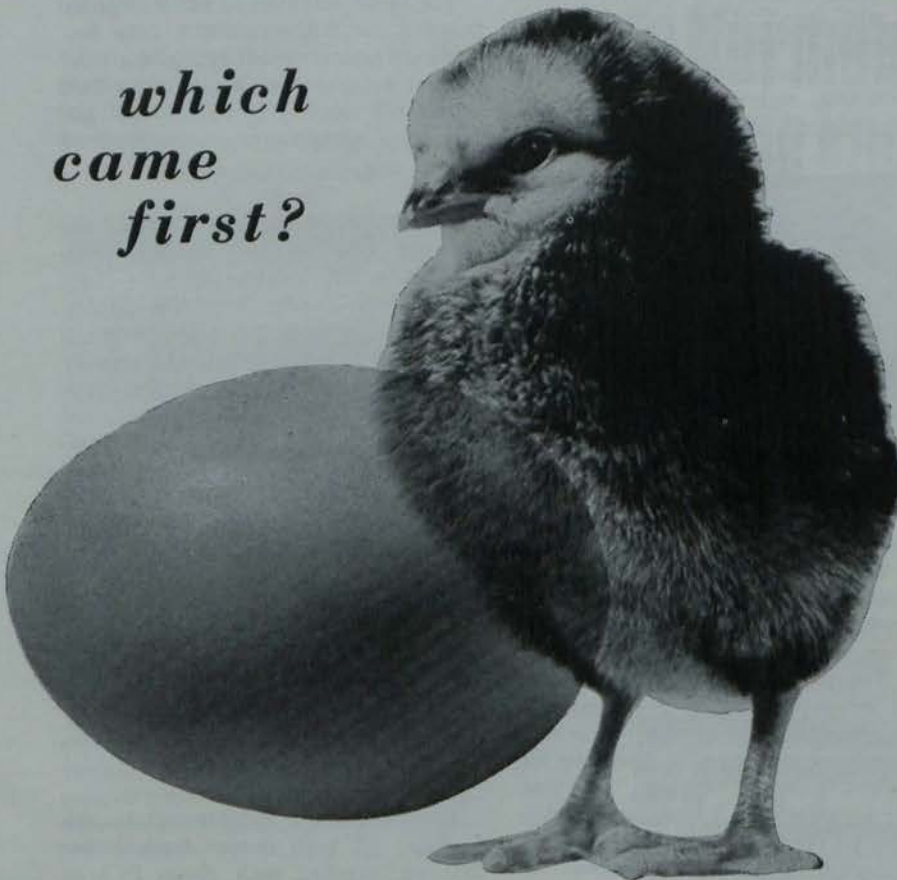
6 WATERLOO ROAD DUBLIN 4

**Pumps • Compressors
Heat Exchange Equipment**



P9335

*which
came
first?*



WHO KNOWS? We don't, and frankly we haven't much time to think about it. Here at Davidson's we're much more concerned with other problems—moving air and other gases, for example. For over 80 years we have been thinking about the problems involved and solving them by designing and making fans and ancillary equipment exactly fitted to requirements. Whether it's heating and ventilating, air conditioning, fume or vapour removal, dust collection, air preheating or the pneumatic conveying of bulk material, Davidson's have the right equipment for the job. You'll find our products in thousands of British factories, in many British coal mines, in most British power stations, and in industrial establishments throughout the world. Our extensive range of technical literature is freely available on request.



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(Telephone Belfast 57251)

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(Telephone Whitehall 3541)

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THE BUILDING

EXHIBITION

REVIEWED

WE continue here our coverage of the recent London Building Exhibition. The exhibition brought success for the heating equipment and sanitaryware manufacturers who participated in the Irish stand organised by the Building Centre.

Potez Industries of Ireland report that, as a result of the exhibition, they have given orders to their factory to start production on 500 furnace units valued at £30,000. This was apart from business transactions for other units.

Equipment we noted at the exhibition included:—

THOMAS POTTERTON Limited, manufacturers of heating equipment, exhibit a range of their latest domestic appliances and controls, with the emphasis this year on flexibility and variety, by indicating that there is a Potterton appliance to suit every type of building development—architect designed houses, industrialised building, flats, “spec” developments or local authority estates.

Foremost among the new equipment shown is the Diplomat “range-rated” gas-fired boilers, introduced this year. With outputs from 30,000 to 80,000 B.t.u./h., these five new boilers cover the requirements of the main consumer central heating market. Two basic types—standard and small bore—are available.

* * *

POWELL DUFFRYN Heating are introducing a new slim-line gas-fired central heating and domestic hot water boiler—only 10 inches wide. Apart from its space-saving qualities, the new Smiths clock controlled G-33 (output 33,000 B.t.u./h.) is notable for the ease with which its operation can be regulated by the householder. Two panel mounted dials are readily accessible behind the lift-off front door. The thermostat offers a full working range of 120°—190° F.

The essential component for the high-efficiency of the G-33 is a one-piece stainless steel diffuser plate, held on short cross bars resting on top of the water jacket. The diffuser is lifted

Thirty-eight

THE EXHIBITIONS

We continue here the IPHE Programme for the coverage of the major overseas exhibitions. NOW—
The Building Exhibition from Nov. 17 to Dec. 1.

out and brushed clean without trouble.

The standard boiler is being presented under fire on the stand, supported by a selection of other gas, oil and anthracite boilers from the comprehensive Powell Duffryn “all fuels” range. The display is also illustrating the company’s outstanding role in the warm air heating field.

* * *

ON SHOW to the general public for the first time is the new 45,000 B.t.u./h. Heatmaster gas-fired, small bore central heating unit from Radiation Central Heating Ltd., which services six to ten radiators (up to 230 sq. ft. of radiator surface) and provides at least 30 gallons of domestic hot water—more if required.

The company also shows their Ductair G2300 and G3500/4500 series warm air unit. The compact, suitcase-sized G2300 provides full or background heating for the small house or flat and includes versions for use with conventional or balanced flues and with the SE-Duct in multi-storey buildings.

The floor-mounted Ductair G3500/4500 series demonstrates Radiation central heating for the larger,



● Part of a 3-inch bore pitch fibre pipe which was installed in 1910 shown on the Key Terrain stand. It was specially flown over from America for the exhibition. The pipe formed part of an underground irrigation scheme at Wenatchee, Washington State, and was extracted after 34 years’ service. The remainder of the pipe-line is still operational to-day and is providing an efficient method of drainage. The pipe was manufactured by steeping a fibre tube in pitch—a method which was superseded by the development of vacuum impregnation in the 1930’s.

three to four bedroom house and is also suitable for use with the same methods of flueing. Completing the display will be the G302 gas-fired, small bore unit designed for the smaller house, bungalow or flat.

* * *

BIG FEATURE of the display by Radiation Gas Fires Limited is the substantial saving in costs when building new houses by the installation of pre-formed gas flues built into the thickness of the wall instead of using conventional brick chimneys and fireplaces. Actual examples of installation costings, using Radiation fires, among them the new Radabeam 800, will be quoted, illustrating that savings of up to £36 can be made on individual installations.

Their entire range, including the Highspeed G “furniture” fire, the Crystalglow Mark II., the Sunbeam, the BC 10, the Radabeam and the free-standing flueless 460 convector, is on show.

The latest addition to the Radiation range is the Radabeam 800. An important feature of this fire is the new radiant developed by Radiation, which glows all over even when the gas has been turned down to a third of its full rate.

* * *

RADIATION Parkray Limited are showing two of the models from their new “K” range of solid fuel room heaters under fire. On display in room settings, is the Parkray 77K, which has the largest capacity of the three models in the range, providing room heating, hot water and central heating, and the 33K, a non-boiler version which provides room heating only. The 77K is seen feeding radiators positioned about the stand, as well as a hot water cylinder; this, with the necessary plumbing, is also be on view.

Radiation Parkray also show the 66K in a demonstration sectioned setting with a Megrove Inspection Box and Frame. An additional display will feature the 66KF, a new free-standing version of the “K” model room heaters.

Completing the exhibit will be the Parkray 16 high output back boiler flue set installed with their “Clean Air” inset fire, and the range of

Building

Exhibition (contd.)

Parkray solid fuel boilers, the S.25, S.55 and S.56. The boilers are being shown in three of the five colour finishes available: white, willow green and citron yellow.

* * *

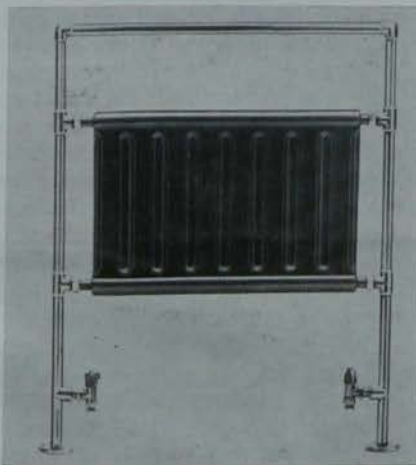
A NEW oil-fired domestic heating boiler is introduced by Redfyre Ltd., of Thorncliffe, Sheffield. The Plus 5 inset room heater under fire heating radiators and hot water is also featured, together with other main appliances in the domestic heating range.

With the emphasis of the display on full or partial central heating the Company are showing their two other oil-fired boilers, the recently-introduced Centramatic 35 Series 2 (38,000 B.t.u./hr.) and the Centramatic 50 Series 2 (53,000 B.t.u./hr.). With them will be the full range of Redfyre gas-fired boilers.

The solid fuel range is represented by the Plus 5 room heater incorporating a high output Bacboiler and built-on convection casing, open fire Bacboiler units and continuous burning fires.

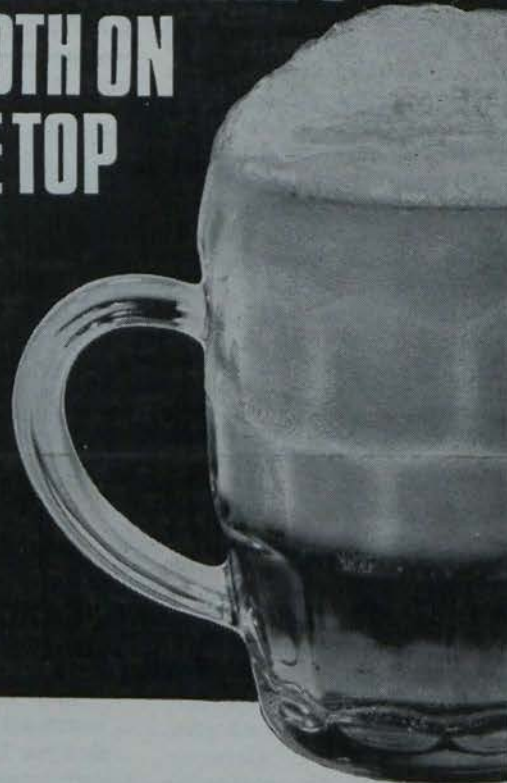
A scale model of the combined indirect warm air unit, the Redfyre Domestic Air 45 Unit/Gas, produced for industrialised building and estate developments is displayed.

Continued overleaf



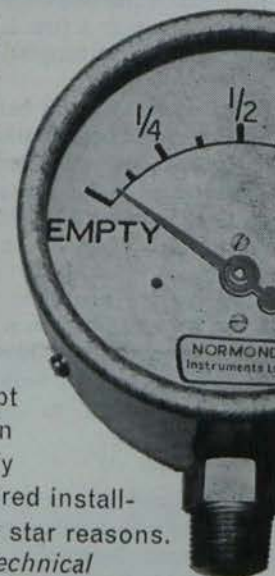
● The new Astor hot water towel rail, shown for the first time at the exhibition, has an inset radiator painted grey. It comes in two overall sizes—36 x 30 inches, giving a radiation surface of 21 sq. ft., and 36 x 24 inches, with a radiation surface of 2 sq. ft. The BTU output is 190 per sq. ft. temperature of 100 F.

UNLESS THERE'S FROTH ON THE TOP



a Normond tank content gauge knows to a pint measure

Stout Drinkers and excise men may take this measure in wee drams. Heating Engineers are asked to accept it in good spirit with a certain amount of gravity and specify Normond gauges for all oil-fired installations. There are at least five star reasons. Send for completely sober technical literature and pre-war budget prices.



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The Irish Plumbing and Heating Engineer.

PRIDE of place on the Stelrad Stand is given to the new Stelrad Fifty Boiler, the result of over three years' research, development and field testing by Steel Radiators Limited. This boiler can be supplied for either gas or oil-firing and has an output of 50,000 B.t.u.'s. It is a completely new approach to boiler design, making extensive use of stainless steel and its unit construction has been specially designed to facilitate speedy servicing.

Backing up this new venture will be their newly designed Stelrad Super Panel Radiators, which have proved so popular since their launching in the middle of the year.

* * *

A NUMBER of new products are featured on the Walker Croweller stand. These will include the new Leonard bath and shower assembly, a single thermostatic controller for both showering and bath filling. This is an entirely new product released for the exhibition.

Also on display is the Leonard 886 combination, a thermostatic shower/bath filler designed especially for the Continental market and previously only exhibited in Germany. The full range of the company's Leonard 72 thermostatic shower combinations is also shown.

Two new developments of the Walker Croweller Unatap spray mixing tap are exhibited—the new Unatap II. and the lever action Unatap designed especially for hospital use.

* * *

THE FULL range of Mira bath and shower fittings and combinations is the main feature of Miraflo Ltd. stand. The range include examples of combinations with both flexible and rigid outlets, with concealed and exposed plumbing.

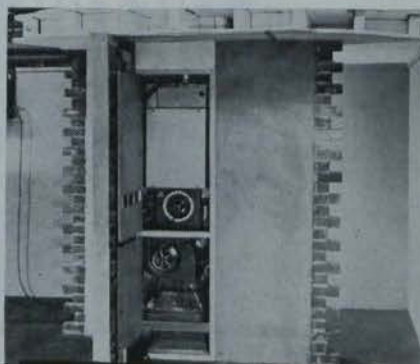
On exhibit for the first time is the new Mira 10 bath and shower unit, only recently introduced. This unit combines the functions of bath taps, shower taps and bath to shower diverter.

* * *

HILMOR Limited are exhibiting a large and comprehensive range of hand-operated and hydraulic bench model and portable bending machines to cover the requirements of the plumber, gas-fitter and heating engineer. Important modifications and new developments designed to increase efficiency are shown and demonstrated for the first time at this exhibition and skilled operators will be

Building Exhibition (contd.)

from previous page



● The new Redfyre unit.

COMPACT REDFYRE UNIT DISPLAYED

An exhibition attraction was the new oil-fired combined indirect warm air unit being developed by Redfyre Ltd. (Thorncliffe, Sheffield). Very compact, it is only 2ft. 1in. square and, as shown here incorporating the new Redfyre Centramatic 80 boiler, is 7ft. high. This picture, taken in the Company's Development Department, shows how the unit could appear incorporated in a house.

At the top of the unit is the boiler, fully insulated for heat and sound and with a co-axial fan supplying combustion air to the burner. Beneath it is the centrifugal fan with its adjustable pulley and the circulating pump alongside. Sheet polythene forms a flexible connection between the base of the fan and the heat exchanger below it so that air is directed through the heater battery, for heating by water pumped from the boiler, into the plenum box at the base of the unit. As shown here the warm air is discharged through low level outlet grilles but for extended plenum and perimeter systems the plenum box can be set below floor level.

In the inspection doors (left) are the grille supplying combustion air to the boiler fan and one of the warm air outlet grilles. A simple control panel supplied with the unit makes it unnecessary for these doors to be opened except for servicing the boiler.

in attendance to advise on all aspects of tube manipulation.

* * *

ADDITIONS to existing ranges and new products, including their new Belmont thermostatic radiator valve, are shown by Peglers Ltd. (Belmont Works, Doncaster), makers of the wide range of taps, valves and accessories, including Prestex compression joints and fittings for plumbers and engineers.

* * *

THIS YEAR'S Conex-Sanbra display has a most comprehensive selection of modern Plumbers' Brassfoundry and Sanitary Fittings.

The Aqualyne-Easilyne range of Sanbra fittings include the most contemporary taps, bath mixers, shower assemblies, sink and basin fittings, bidet sets, and, for the up-to-date hairdressing salon, shampoo mixers and ancillary fittings.

General Plumbers' Brassfoundry, including standard "Easiclean" bathroom and kitchen fittings in the attractive star crosstop pattern incorporating red and blue indices, and attendant sundries such as bibtaps, stopcocks, ballvalves, wastes, overflows, traps, draw-off cocks and safety valves.

The Conex range of compression fittings is here represented by a wide selection, including Conex Type "A" compression joints for use with semi-hard B.S.659 copper tube, and polythene tube to B.S.1972, B.S.3284, and B.P.F./42; Conexel Type "B" compression joints for use with B.S.1386 soft copper tube, and Conex Stopcocks produced in a comprehensive range with compression ends for direct connection to copper and polythene tubes.

On view are Fullway Gate Valves, Needle Valves, Steam Valves, Check Valves and Plug Cocks; also Setflo and Lokflo Radiator Valves, Drawn Copper Traps and Conex Waste Fittings.

* * *

A NEWCOMER to this year's Building Exhibition, the Stainless Steel Sink Co. Ltd., of Ring Road, Lower Wortley, Leeds 12), manufacture the well known Pland range of stainless steel sinks. The range is most comprehensive, consisting of more than 64 individual sizes and designs for domestic use alone, while the company have an equally large range of commercial catering sinks and sterilizers. Pland sinks can be made to specific measurements.

The Irish Plumbing and Heating Engineer.

PRIDE of place on the Stelrad Stand is given to the new Stelrad Fifty Boiler, the result of over three years' research, development and field testing by Steel Radiators Limited. This boiler can be supplied for either gas or oil-firing and has an output of 50,000 B.t.u.'s. It is a completely new approach to boiler design, making extensive use of stainless steel and its unit construction has been specially designed to facilitate speedy servicing.

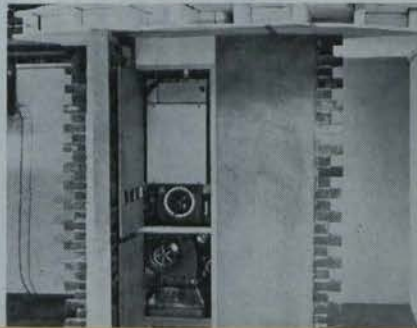
Backing up this new venture will be their newly designed Stelrad Super Panel Radiators, which have proved so popular since their launching in the middle of the year.

* * *

A NUMBER of new products are

Building Exhibition (contd.)

from previous page



in attendance to advise on all aspects of tube manipulation.

* * *

ADDITIONS to existing ranges and new products, including their new Belmont thermostatic radiator valve, are shown by Peglers Ltd. (Belmont Works, Doncaster), makers of the wide range of taps, valves and accessories, including Prestex compression joints and fittings for plumbers and engineers.

* * *

THIS YEAR'S Conex-Sanbra display has a most comprehensive selection of modern Plumbers' Brassfoundry and Sanitary Fittings.

The Aqualyne-Easilyne range of

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Dublin, 2.

only recently introduced. This unit combines the functions of bath taps, shower taps and bath to shower diverter.

* * *

HILMOR Limited are exhibiting a large and comprehensive range of hand-operated and hydraulic bench model and portable bending machines to cover the requirements of the plumber, gas-fitter and heating engineer. Important modifications and new developments designed to increase efficiency are shown and demonstrated for the first time at this exhibition and skilled operators will be

is directed through the heater battery, for heating by water pumped from the boiler, into the plenum box at the base of the unit. As shown here the warm air is discharged through low level outlet grilles but for extended plenum and perimeter systems the plenum box can be set below floor level.

In the inspection doors (left) are the grille supplying combustion air to the boiler fan and one of the warm air outlet grilles. A simple control panel supplied with the unit makes it unnecessary for these doors to be opened except for servicing the boiler.

per Traps and Conex Waste Fittings.

* * *

A NEWCOMER to this year's Building Exhibition, the Stainless Steel Sink Co. Ltd., of Ring Road, Lower Wortley, Leeds 12), manufacture the well known Pland range of stainless steel sinks. The range is most comprehensive, consisting of more than 64 individual sizes and designs for domestic use alone, while the company have an equally large range of commercial catering sinks and sterilizers. Pland sinks can be made to specific measurements.

Forty

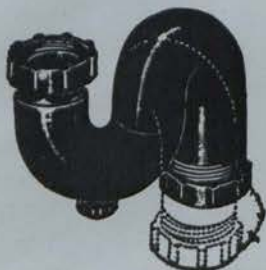
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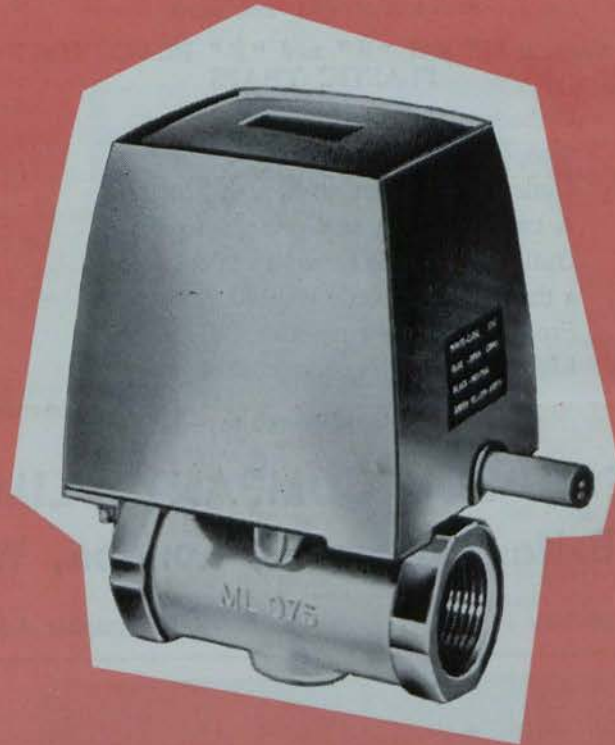
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