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

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Reliable, Automatic, Elegant—designed to give the full benefit of luxurious oil fired central heating... and constant hot water too. The Unidare Wallflame Boiler is the first Irish made wallflame boiler...

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For the future BUY IRISH QUALITY GOODS

NOVEMBER 1965
Vol. 3 No. 8

SPECIAL MONTHLY SUPPLEMENTS: NORTHERN IRELAND MONTHLY REVIEW—INDUSTRIAL HEATING AND VENTILATING IN IRELAND
In an industry as professional as ours, it is rare indeed to see the word 'sensational' used to describe a product success. But there is no other word which so aptly describes the success of the THERMOPAK A1. It is a fact—THERMOPAK A1 is sensationallly successful. We knew it. You’ve said it. Your letters and phone calls have told us. The tremendous demand proves it. The success of the THERMOPAK A1 is fully justified. Think of it—just one pump makes all systems go! Its power-to-size ratio is so high it covers all domestic installations from 15,000 Btu/h to 150,000 Btu/h; solves all your installation problems. A really impressive achievement by Europe’s foremost pump design team.

AT-A-GLANCE PERFORMANCE
By simple manual adjustment the head output performance can be adjusted throughout the range shown on the chart.

STILL MORE BENEFITS
The THERMOPAK A1 is silent throughout its entire range of operation. Electrical connections are considerably simplified. It operates in any plane, saving space inside and outside the boiler. Write today for full specification.

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New national service scheme for THERMOPAK A1—finest scheme ever offered by any manufacturer. Write today for details.

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BOILERS AND RADIATORS LTD

International

By simple manual adjustment the head output performance can be adjusted throughout the range shown on the chart.

STILL MORE BENEFITS
The THERMOPAK A1 is silent throughout its entire range of operation. Electrical connections are considerably simplified. It operates in any plane, saving space inside and outside the boiler. Write today for full specification.

EQUALLY SENSATIONAL!
New national service scheme for THERMOPAK A1—finest scheme ever offered by any manufacturer. Write today for details.
418 PATTERN RATCHET DIESTOCK

Better threads, easier cutting, and quick and simple die and guide changing are the attractive features of this Chatwin product. The 418 Pattern Ratchet Diestock and die must satisfy the need for a tool which makes pipe thread cutting economical. Dies are available for the standard range of B.S.P. threads and alternatively, to Whitworth, U.S. standard, and Unified, within capacity of stock.

Simple Strength for the TOUGHEST JOB

STILLSON PATTERN PIPE WRENCHES

Heat treatment of the handle and jaw gives correct degree of hardness and prevents bending and breakages. Sturdy, light in weight and easy to handle, these wrenches are guaranteed against defects in material and workmanship.

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Telephone: Edgbaston 3521-3

COMPACT INSTALLATION
WATER SUPPLY

Self-priming with a suction lift of 25 feet, the electric driven M range of Mono Pumps are compactly constructed, flange mounted to a motor of very low power consumption. Its silent operation permits installation in any convenient position and the non-pulsating, steady flow will not transmit noise through the pipeline. No oiling or greasing of the pumping element is required and no foot valve necessary.

The MONO pump

Attractive terms to Dealers

MONO PUMPS LIMITED, 31b CENTRAL HOTEL CHAMBERS, 7/9 DAME COURT, DUBLIN.
Telephone Number: Dublin 70843.
Automated plant produces components of a consistently high quality and greater degree of accuracy. Advanced production techniques and a complement of modern machinery ensures continuous production of a comprehensive range of fittings.

Diverse manufacturing facilities permit quantity production or batch production for smaller quantities. This unique production capacity is integrated with an efficient distribution structure; location of purpose-designed warehouses ensures prompt deliveries to all parts of the United Kingdom. Country-wide representation means that a qualified representative is readily available in any district.

Call and see us on STAND NO. 124, AVENUE 'A', at the Building Exhibition.
We resume this month A. L. Townsend's Plumbing, stage two series, as he deals with roofwork.

W. J. R. Couchman has another lively contribution in our Talking Shop feature.

Potterton At Sea—In the Kish Light that is— is the title of a special article in the industrial section.

Special Review subjects this month cover:
(i) Domestic hot water supply equipment and boilers; (ii) Double glazing; (iii) Dust and waste collecting plant.

Trade Topics review the month's news in all sections.

Editorial and advertising offices:
Callaghan Chambers, 13 Dame Street, Dublin 2.
Tel. 56485-6.


NEW from Valor

HERE is the Valor Cisterns Limited (Ilkley, Yorkshire) all-plastics water-saving toilet cistern called the Super Viking Dualflo.

The method of operation is simple: if the flushing lever is pressed and allowed to rise immediately, only one gallon is released. This is sufficient to clear any fluids in the pan. If the lever is held down, the cistern delivers a full two-gallon flush. In both cases, the Dualflo is nearly silent in action.

Gecal tube demonstrated

A demonstration of new Gecal steel tubing held at Irish Steel House recently attracted keen interest.

Gecal, by Oriental Tube Co. Ltd., is being produced both metallised and insulated (IPHE, July). Agents are Monsell Mitchell & Co. Ltd.

A NEW range of attractively styled roll-topped radiators have been launched on the market. They are of contemporary design and have several improvements over most radiators currently available. Surfaces are easy to clean and concealed fixing brackets ensure a neat installation.

The Opio Rad range of radiators is intended for use with closed-circuit central heating systems. In order to give the 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 to 86 inches.

Specification: The new radiators conform with B.S.3528. Materials: 18 gauge mild steel, and tested pressure is 100 lbs. per sq. inch. The water content is (approx.) 0.9 lb. per sq. ft. of heating surface.

Mr. P. J. Doyle, M.M., Heating Department Manager, with Mr. Frank Brown, Sales Manager, Oriental Tube Co. Ltd. Below—Mr. Brown discusses the new tubing.

Published by ARROW@TU Dublin, 1965
check these features—

1. Robust portable stand folds up for easy transport.
2. Vice for cutting off, fitting unions, etc.
3. Precision machined Formers in high grade Mechanite.
4. Extruded alloy Guides housed in carrier to prevent damage and loss.
5. Safety Pin prevents accidents by securing Bending Lever in upright position when removing bends from machine.
7. Adjustable degree of bend quadrant for repetition bending.
8. Produces good quality sets, double sets, saddle bends, etc., all to predetermined measurements.

Only a Hilmor Machine has them all and they add up to Britain's best and biggest selling portable bender.

CAPACITY: GL3B (illustrated) ¾" to 1" BS.659 tube. GL3B 1" to 1¼" BS.659 tube.
Machines with standard tools suitable for bending light gauge steel tube with same od. as BS.659 copper.

HILMOR LTD.
(Sales & Service)
Caxton Way,
Stevenage, Herts.
Tel.: Stevenage 881.
Grams: Tubenders, Stevenage.

The Irish Plumbing and Heating Engineer.

EXHIBITION
DATE FIXED
A NEW DANFOSS VALVE
DANFOSS (London) Ltd. are now marketing a highly sensitive and more thermostatic radiator valve—designated the type RAV—which has been designed to control the room temperature in 2-pipe hot water central heating systems with flow temperatures up to 120°C (250°F).

The construction and styling of this new valve are interesting inasmuch as they illustrate a complete departure from the normal remotely located liquid filled phial arrangement—the actual thermostatic sensing unit being enclosed within the neat plastic control casing. The valve can be supplied, however, with a remote phial if required.

Although intended primarily for domestic use, the RAV has obvious appeal for commercial installations necessitating balanced temperature conditions since it can operate efficiently against a static head of 250 ft., special models being available to handle static heads of up to 320 ft.

The RAV has a temperature range of 8°—30°C (45°—85°F), and can be supplied in either straightway or angleway patterns with an easy to read scale calibrated in °Centigrade, °Fahrenheit, or numerals.

The month saw Mr. Edward (Ted) W. Pigot resign his Irish Shell and BP post to take up an appointment as Sales Manager of G. B. Britton’s subsidiary, Hilliard and Palmer, Killarney. Educated at Downside, he left in 1944 to join the Indian Army, subsequently serving in the Korean War with the Royal Ulster Rifles. Mr. Pigot has specialised in marketing and sales promotion.

THE Second International Plumbing and Domestic Heating Exhibition will be held at Alexandra Palace, London, from 3rd to 8th October next year. Exhibitions and Presentations Ltd. (43-46 New Street, Birmingham, 2), who are organising these exhibitions, reported that many firm bookings (totalling over 8,400 sq. ft.) for next year had been made by exhibitors before the first show closed.
WHEN THEY START TO LISTEN TO YOU

YOU know, if you make enough noise, somebody listens. In the September column I had a little grouse about the position with copper tube and fittings in Ireland, and the fact that more than one gauge of copper tube seems to be used with attendant complications with fittings, benders and so forth.

Since then I have been contacted by two manufacturers who are genuinely concerned to be as helpful as they possibly can. One of them pointed out to me that my remarks apply to the Twenty-six Counties, but that in the North, the British standard tube and fittings were used virtually exclusively. They manufacture to this standard and a certain amount of their products are sold in the South. The other manufacturer conveyed that there were no real problems in the Twenty-Six Counties since they turned out a wide range of good quality compression fittings to suit Irish domestic standard tube, which is, of course, freely available in the South. At the same time I was told that benders to suit this tube are readily available.

THERE is a possible area of confusion in the U.K., as well as here, since it is quite on the cards that a change from the British standard to a metric size might occur as and when Britain changes to the metric standard. The light gauge steel tube recently demonstrated in Dublin is to British standard size, but it is interesting that the manufacturers of this tube are also producing large quantities for export to metric sizes. It is to be hoped that they may add yet one more size to this range and export Irish domestic standard tube to this country.

It is surprising how anyone connected with the heating business suddenly gets run off his legs around the beginning of October. A few weeks ago I found that the people I normally work with never seem to be available on the 'phone any more, and for a while I wondered if it was something my best friends would not tell me. I knew I did not owe them any money because they would not lend me any anyway; finally, the penny dropped. All of them are trying to pack more work into the day than there is room for. My best record so far is 600 miles driving in addition to two normal days' work.

LIFE must have been much more peaceful in the days of horse transport. My father, who was a builder, always used to say that for six weeks before Christmas and six weeks after, one might just as well be out of business, but the heating trade is completely different and Christmas seems to be the deadline that everyone is working for.

Sticking out my neck again—I have a private notion that with the increase in pressure of domestic heating work, the time taken for installation is likely to reduce, if only because long practice makes people more familiar with a given job. Putting it another way—Parkinson's famous law states that the volume of work expands to fill the time available for its completion. Now, if this is true, then surely the reverse applies, and as the time available for completion reduces, so, somehow by hook or by crook and with out reducing standards, the installing trade will find itself fitting four jobs in where they only did three before. Since this means more profit all round, let us hope that we arrive at this stage eventually.

Talking of getting four jobs in where only three were done before, I think one could make a good case for the low cost partial or background heating system. Most heating engineers in the 'phone business will tell you that there is much more work available.
Talking shop

from previous page

bers by enthusiasts in particular areas.

I well remember a friend of mine in Kinvara, Co. Galway, driving through a small village of about two pubs and eight houses and telling me that he had a half dozen of these heaters installed. Let's face it, there were a half dozen houses which were a great deal warmer than they would have been otherwise, and had they been expected to install a full system, not one of them would have spent the money. The same sort of thinking can, of course, be applied to new houses—all of us tend to be dissatisfied with anything less than the best, but it is no good saying “£500 or nothing” to a man and leaving him when you know very well that his answer will be “nothing then.”

Letters to the Editor

We beg to differ...

Dear Sir—There is a suggestion, in an article headed “Domestic Heating” written by Mr. Bob Couchman in your September issue, that life has been made difficult in this country with regard to copper pipe and fittings.

I would like to re-assure your readers that copper pipe and compression fittings have been in use for many years in plumbing installations and in latter years in small bore forced circulation heating systems also and have proved entirely satisfactory. As manufacturers of compression type couplings for the Irish market we claim that they are preferable to the capillary type because they are easier to fit, far more adaptable, there is no question of damage by blow lamp to woodwork or decorations in the preparation of joints and they are available in a complete range for ex stock delivery to the merchant trade throughout the Republic.

We are given to understand that there should be no difficulty whatever in bending Irish copper tubing as suitable bending machines and tools are readily available in Dublin.

Finally, may I say how much we welcome the efforts being made by a major oil company to popularise small bore central heating and I take this opportunity of congratulating Mr. Couchman on the quality and readability of his article in your Journal. Having put our views to him separately and in a most cordial manner, I feel that we should also put our views to you in an open letter for the benefit of readers at large.

Yours faithfully,

J. F. DARCY,
General Manager and Secretary
Sanbra Fyffe Limited,
Conex Works, Santry Ave.,
Dublin.

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...

(Even the biggest is quickest by Telex... a direct link to Buderus in Germany)

... AND THE SAME GOES FOR STEEL COLUMN RADIATORS... THOUSANDS... ALL SIZES READY FOR TAKING... ASK JIMMY... HE'S THE BUSINESS.


QUADRANT ENGINEERS

167 STRAND RD., MERRION GATES, SANDYMOOUNT, DUBLIN, 4.
ROOFWORK is an important branch of plumber’s work. It is therefore worth revising the background—the general principles and the behaviour of roofing—before going on to consider other aspects of it.

The structure and design of roofs were dealt with in detail under the heading: “The Weathering of Buildings,” in the I.P.H.E. serialisation of part one of this work, when the various types—flat, double pitched, and mono-pitched—were described together with methods of laying and securing the different materials which could be used to cover these.

Sub-structure preparations were also described, and these were given as some of the more important points to look out for:

1. Timber deckings must be of well seasoned timber at least 1 in. thick.
2. Concrete screed surfaces must be trowelled smooth and to the proper fall.
3. Boards in timber deckings must be laid in the direction of the flow. In good quality work, however, they may be laid diagonally to the flow. This arrangement, which uses a little more timber, means that not only will the roof surface drain completely, but the whole roof structure will be more stable.
4. The boards must be laid heart side uppermost so that if they should curl, the sharp edges will turn down instead of up. In this way they will be stopped from damaging the metal roof covering.
5. Falls for “flat” roofs must be at least 2 in. in 10 ft.
6. All nail heads must be punched below the surface of the board.
7. Box gutters must be adequately wide. This not only ensures that rainwater is quickly drained away, but also gives the plumber room to work when he is laying them or maintaining them later.

You were recommended to use in-odoriferous felt underlays for the following reasons:

1. They act as a thermal insulator and so help to keep the underside of the roof cool in summer and warm in winter.
2. They prevent moisture from condensing on the underside of the metal roof coverings and so prevent trouble from corrosion.
3. They isolate the metal roof sheetings from timber or concrete deck surfaces which could possibly corrode them.
4. They act in some measure as sound insulators and so deaden the “drumming” effect of heavy rainfall.
5. They smooth out any minor imperfections in the prepared roof deck surface. This helps to avoid damage to the metal coverings and eases the thermal movements (expansion and contraction) which are bound to occur with variations of temperature.

In part one you were also told how to size bays in order to minimize the effects of thermal movement and to give adequate fixings to secure the roofing materials. Lead bays should have an area of not more than 20 sq. ft.

For copper and aluminium bays the recommended maximum area is less—only 14 sq. ft. This is because these metals are lighter than lead and therefore need more fixings to hold them down against the lifting effects of strong winds. A 14 sq. ft. area gives a greater number of bay joints in which fixing cleats are incorporated at every 18 in. Besides its greater weight, which helps to hold it down, lead has more wind resistance because of the way in which its roll joints are formed.

In part one it was explained that there is an effect called capillarity which has a damaging effect on brickwork by encouraging water to travel up through it from the ground, and down through chimney stacks and parapet walls. The various methods of preventing this by the insertion of damp proof courses were described and illustrated in detail:

1. Slates and soakers; cover flashings; stepped flashings; ridge pieces; cap flashings; and chimney flashings were also fully dealt with and their applications shown.

Abutment flashings—finish at rooftop

Abutment flashings must be used where a roof abuts a vertical wall in order to conduct the water from the wall face on to the roof surface. From here it can flow to the gutter and eventually drain away down the rainwater pipes. There are two main classes of abutment flashings—cover flashing, and stepped flashing.

Simple, straight lengths of cover flashing are used to weather upstand
A. L. Townsend on Roofwork

Metal fixing clips folded over the upstands to the roof covering will serve to secure the lower, free edge of the cover flashing. These clips are made about 2 in. wide from off-cuts of the roofing material and are sometimes known as tingles, but more commonly tacks, when used in sheet leadwork, and as cleats when used with copper or aluminium work.

Stepped flashings are used to weather a sloping roof edge abutting against a vertical wall. The finish at the roofline will vary according to the type of roof covering to be weathered—whether it consists of flat, bonded slates or tiles, or curved tiles such as the interlocking Roman tiles, or even corrugated asbestos sheeting. The architect’s decision will be affected by the importance of appearance and cost for the job, as well as by the efficiency of the various kinds of flashing finish. For this last point your opinion as a plumber may be asked for. The different methods are as follows:

1. The hanging step flashing with soakers is commonly used with ordinary tiles or slates (see Diagram C, Fig. 7). There is no “lay-on” of flashing material on the tiles or slates in this method. This not only avoids spoiling the appearance of an expensive tiled roof, but it also ensures that the weathering is less likely to be displaced by high winds (compare with Diagram D).

2. The step and cover flashing is sometimes used for flat, bonded slates or tiles. Here, no soakers are used with this method, and as you will see in Diagram D, if a strong wind were to lift the “lay-on” part of the flashing, then rain might blow along the roof surface and leak into the roof at the abutment. Also, if the architect has specified good-looking tiles, he will not wish to have the appearance of the roof spoiled by the “lay-on.” For these reasons the hanging step and soaker method is generally preferred for flat slates and tiles which overlap each other down the slope of the roof, and are bonded in courses across the roof.

The step and cover method is useful, however, where the roof is covered with shaped tiles or corrugated sheet.

The “Stonefield” roof, for example, employs stone slabs of irregular shape. These are dressed into rectangular pieces and sorted into groups according to their lengths, which can vary from as much as 2 ft. to less than 1 ft. They are then laid to courses with slates all the same length, the longest ones at the eaves, and getting shorter as the roof rises to the ridge.

These irregularly arranged courses could be weathered by soakers, cut to suit each individual course, and finally weathered by hanging step flashing, but they are often weathered by the secret gutter method, which dispenses with the need for soakers.
Equipment developments reported

ROPER Brothers Ltd. (5 South Anne St., Dublin) are agents in this country for the Crownette automatic continuous water heater—a product of P. and R. Electrical (London) Ltd. The Crownette will supply a continuous flow of water at any exacting temperature from cold to very hot (75 degree C.—167 degree F.), independent of water pressures. The unit can in fact be fitted to cold rising mains. The cold to very hot water is, of course, consumable.

The flow rate of the Crownette at 140 degree F. is approximately 15 gallons per hour. Some specifications of the unit are: height, 6”; width, 4⅓”; depth, 4⅓”. Overall from top of unit to base of faucets is 14.” The faucets are precision made, from brass with high grade white chrome finish. The unit body is of solid copper, containing a special copper long-life insulated element. It is fitted with a double-action micro-thermostatic switch and indicator light.

THE General Electric Company of Ireland Ltd. (Dunleer House, Store Street, Dublin) have introduced to the market their new slim design Mirror-Two Gallon Water Heater. It gives piping hot water for instant use and is thermostatically controlled. It is extremely easy to fit and install. Its modern appearance has been enhanced by the incorporation of a large 16” x 9” mirror specially treated to resist heat and condensation.

Placed over the bathroom sink, it does away with the conventional mirror and ensures a constant supply of hot water. Its swan shaped tap is easily turned in any direction. The voltage range is 200–220 v. and the loading is 2.3 Kw. There is a removable sheathed wire type element.

The Mirror heater is thermostatically controlled. The dimensions are 17” high, 10” wide, 8 3/16”, and the tap swing is 51”. There is a copper tinned inner container and a resin bonded glass fibre lagging.

FROM the comprehensive range of Sadia Water Heaters Ltd. we note with particular interest the Sadia Cistern Type Electric Water Heaters. They comprise a cylindrical hot water container, lagged with regranulated cork and surmounted by a cold water feed tank. The complete assembly is enclosed in an enamelled steel outer case. Wall mounting, floor mounting, and ”floor or wall” mounting models are available.

The Sadia Square 20 electric water heater is designed for free standing installation in small houses and flats. It can be connected to a number of hot water taps and will also work in conjunction with a fuel fired hot water system. The double arrangement of two 3 kilowatt elements gives flexibility of operation and economy in running costs, besides a very quick heating up rate. The unit has a cylindrical water container constructed of 19 gauge copper sheet, with copper welded seams and tested at 50 lbs/” inch pressure.

The range from Sadia also includes: free outlet electric water heater; two plus free outlet electric water heater; Supersix free outlet electric water heater; types G. and H. free outlet electric water heaters; wall mounting electric water heaters suitable for free outlet or low pressure installation.

UDB electric water heaters; and “Under the Counter” electric water heaters. The agents in Ireland are A. P. Haslam, 39 Lower Gardiner St., Dublin.

THE Santon D.P. 20 Pressure Type Dual Purpose electric water heaters are fully automatic multipoint, floor mounted, water heaters which can be situated beneath the kitchen draining board or in the conventional airing cupboard. Two thermostatically controlled 3 Kw. elements operated by a waist high switch can select either the heating of 5 gallons of hot water which will be available at all times for kitchen use or, the full 20 gallons when required for wash days and bathing.

Santon Model PT/EFM with capacities of 20, 30, and 50 gallons, are automatic electrical thermal storage, pressure type, floor mounted water heaters. The Tallstar models from Santons, with capacities of 30 and 50 gallons, employ the system of heating water in two stages and are arranged to be fed from a separate ball valve.

Continued page eleven.
gives hot to boiling water wherever you want it, whenever you want it, at the turn of a tap, instantly, endlessly...

TECHNICAL INFORMATION is available about the full range of Sink and Bath water heaters — also Industrial Water Heating.

Call, phone or write DUBLIN GAS SHOWROOMS

TEL. 71811
The Waverly One Twenty boiler is designed to provide economical hot water for small bore or gravity central heating systems in the range of 80,000 to 120,000 B.t.u./h., including ample supplies of domestic hot water via an indirect cylinder or calorifier.

The heavy duty steel heat exchanger is of a unique and remarkably compact design combining the advantages of the fire tube principle for rapid recuperation and waterway lining for low radiation losses and maximum economy. Operating pressure is 15 p.s.i. and heating surface area is 18.7 sq. ft. It is welded to BSS 1856, pressure tested to 60 p.s.i. and heat resisting stainless steel is used for surface subject to maximum temperatures.

Continued overleaf
The manufacturers are the Waverley Engineering Co. Ltd. (Hyde Street, Winchester, Hampshire).

FROM Main Morley Ltd. (Gothic Works, Wyre St., Padiham, Lancs.) comes news of their latest introductions to the market—the Main Dart instantaneous sink water heater with variable temperature control, and the Main Severn heater for complete household hot water service with high speed gas.

The Main Dart has built-in gas and water governors. A flame failure device is incorporated with the pilot. The stainless steel burner is designed for use with all gas groups; a water service tap is fitted and the two-stage gas tap can be used to isolate the appliance for servicing.

Particular care has been taken to ensure that the Main Dart is very easy to service when necessary—the heat exchanger/combustion chamber can be removed by the release of a single screw. The variable temperature control will enable the user to obtain an output ranging from 1.1 to 0.5 g.p.m. with the temperature of the water raised by 45 degrees F. to 100 degrees F. approximately, given an inlet working pressure of 9 lbs. per sq. in.

The Main Severn is in one standard form and will provide abundant hot water instantaneously to sink, bath and hand-basin.

DOMESTIC HEATING CONSULTANT

We require a young man with a technical background and with particular experience in the design, installation and servicing of Domestic Heating Equipment. The person chosen will be in sole charge of a technical advisory service available to prospective customers, heating engineers, architects, etc. Travelling will be involved, for which a car will be provided.

Salary will be negotiated in accordance with qualifications, experience, etc.

BOX NO. 1P. & H.E. 41/11.

LOEWE HEATING PUMPS

(A) LOEWE SILENTA GLANDLESS HEATING ACCELERATOR

Suitable for water temperatures up to 230° F. (110° C.)—maximum static head 85 lbs./sq. in. Capacities up to 110 g.p.m and frictional heads up to 26 ft.

(B) VARIABLE SILENTA ACCELERATOR

Select any of four different capacity head ranges by the simple adjustment of a knob. Capacities up to 22 g.p.m and total heads up to 10 ft.

(C) TWIN SILENTA ACCELERATOR

A permanent stand-by unit is always available which automatically switches on if the working unit fails. The stand-by unit can also be switched into operation in parallel with the working unit to boost the supply if so required.

(D) TWIN LOEWE CIRCULATORS

With all the advantages of 'C' above but for far greater capacities (up to 1,000 g.p.m.) and heads (up to 80 ft.). Temperatures up to 300° F.
SPEAKING at a reception held late last month in the Royal Hibernian Hotel, Dublin, to mark the inauguration of new premises for Distillers Chemicals and Plastics Group and an expanded local service to customers, Mr. R. M. F. Fenning, Managing Director, DCL Industrial Solvents Division, said that continued growth and buoyancy in the Irish economy had led DCL to establish these new facilities. In particular, the Irish chemicals industry was growing fast and a plastics industry was developing steadily.

To keep up with this growth and maintain its own tradition of service, Distillers Chemicals and Plastics Group had decided that local representation in Dublin by the Group’s own staff was essential, and so chemical products were now being handled direct, as plastics had been since 1962.

Mr. Fenning went on to say that with several large new plants shortly to be commissioned in the United Kingdom, Distillers Chemicals and Plastics Group could now offer an

- IN our review of the recent International Plumbing and Central Heating Exhibition on page 12 of our October issue, it was inadvertently stated that J. R. Taylor Limited, Dublin, had recently been appointed agents in the Republic of Ireland for the Danish Clorius and O.K. Organisations. We now understand that we were misinformed, and readers are asked to note that the agents in the Republic for Clorius valves, etc., are Modern Plant Limited, John F. Kennedy Drive, Naas Road, Dublin 12.

D.C.L. NEW DUBLIN PREMISES

almost unequalled range of high-quality materials, backed by local, on-the-spot, service. Storage facilities were now being extended so that orders would be met from stock.

Distillers Chemicals and Plastics Group office is at 3 East Wall Road, Dublin 3. Staff: G. Y. Blomeley (Manager), R. J. Clinton and Miss Carmel O’Donohoe.

** NEW CONDUIT CLIP **

A NEW labour-saving conduit clip, moulded from Delrin acetal resin, is now on the market. Designed to hold copper central heating pipes half an inch to one and a quarter inch diameter, it requires only one screw for attachment to the wall or floor, has no loose top pieces and is corrosion-proof.

Design of the Camfast clip has been made possible by the characteristics of Delrin. This thermoplastic material has high strength and rigidity; its resilience is much like spring steel; it has low moisture absorption and retains its properties over a wide range of temperatures and humidity. It is not affected by most solvents, acids and alkanals.

Camfast clips, for which application for patents has been made, are manu-

factured by Camfast Clips Limited (Station Close, Potters Bar, Herts.).

** **

IN ADDITION to their products already available, C. M. Hess Limited have now introduced their N.400 series of oil-fired warm air heaters. The Hess N.400 unit provides not only central heating for an average 3-bedroomed house but also the domestic hot-water requirements throughout the year. The unique design of this unit offers both services cheaply and efficiently.

The N.400 Hess heater incorporates two independent vapourising burners built into a large steel heat exchanger—the burners being silent and completely free from smell during operation. One burner is designed to heat the domestic water supply under thermostatic control, by means of a coil suitable for connection to a 30-gallon indirect hot water cylinder. The second burner is designed solely for space heating—when the grilles in the heating chamber are opened and warm air is circulated throughout the house. This burner may, if desired, be controlled from an electric room thermostat.

An igloo or mud hut? Not likely. But in case the impossible happens, you can rely on Aerobord to turn client’s folly into a haven of comfort. Aerobord, the versatile featherlight insulating material that makes civilised places habitable. And clients happy.

FACTS ABOUT AEROBORD: As thermal insulation a 1" thickness of Aerobord is equivalent to: 1.5" glass wool, 1.25" cork slab, 1.5" mineral wool, 1.8" softboard, 2.5" vermiculite, 2.5" wood wool cement slab, 3" strawboard, 3.5" asbestos insulating board, 6" vermiculite plaster, 40" brickwork, 50" concrete.

Manufactured in Ireland by SOUTHERN CHEMICALS LIMITED, ASKEATON

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Published by ARROW @ TU Dublin, 1965
The Irish Plumbing and Heating Engineer.

AUTOMATIC LOUVRED SHUTTERS

An interesting new range of automatic louvred shutters is announced by the London Fan and Motor Company Limited, makers of the popular range of Breeza fans. Frames and louvres are made in an attractive light grey plastics material. The louvres are formed and counter balanced to reduce air resistance to an absolute minimum.

The company has, for many years, supplied shutters and louvres in aluminium and the new range replaces the old series, having several advantages over the metal construction. Although prices are comparable with ordinary metal shutters at present on the market, the plastics units are of more handsome appearance and silent when in operation.

Four sizes are at present available, from 9½" square to 17½" square, at prices from £3 8s. Od. Larger sizes are in process of development.

Republic of Ireland agents, Pan-Aer Sales Ltd., Dublin.

NEW ENGLISH ELECTRIC RANGE

At the English Electric Meter and Relay Exhibition at the Intercontinental Hotel, Dublin—Left: Mr. L. A. Fry Manager for Ireland of English Electric, is shown the fold out Power Supply Unit by B. Murray, Manager, Process Instrumentation Sales. Right: Mr. D. W. Blakemore, Chief, Relay Tendering, with Mr. J. Quinn, English Electric, Johannesburg.

AN INTERESTING new range of automatic louvred shutters is announced by the London Fan and Motor Company Limited, makers of the popular range of Breeza fans. Frames and louvres are made in an attractive light grey plastics material. The louvres are formed and counter balanced to reduce air resistance to an absolute minimum.

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Republic of Ireland agents, Pan-Aer Sales Ltd., Dublin.

NEW ENGLISH ELECTRIC RANGE

The English Electric Company Limited is to manufacture an entirely new range of electronic process instrumentation equipment for the measurement and conversion into electric analogue signals of quantities such as pressures, temperatures, levels and flows. A new venture for the Company, the equipment is intended for monitoring and control systems employing fluid and heat variables in a wide variety of industries.

Improved design features new to process instrumentation, resulting from English Electric's long experience in power generation and industries such as steel, coal, chemical, petrochemical, paper and rubber, have been embodied. To be marketed under the trade name Modulelectric, the range will initially comprise transmitters, power supply units, square root extractors, millivolt amplifiers and a selection of receiving devices.

The equipment has been designed to provide ease of maintenance, accurate transmission up to 20 miles, and to permit the use of simple space-saving receiving devices—advantages not always present in existing non-electric equipment. In addition Modulelectric components can be used with any make of indicating, recording, telemetry or data-logging equipment. Schemes from simple monitoring to complex control systems can be built up on the modular principle, including digital computers if required.

The English Electric Modulelectric range has been developed by the Meter, Relay and Instrument Division at its Stafford factory, built in 1962 for the manufacture of precision control and measuring devices for electric power; the introduction of the new process instrumentation is thus a natural extension of the Division's activities and one which reflects the Company's increasing effort in the engineering and supply of complete industrial automation schemes.
Trane offer a wide and comprehensive range of heating, air conditioning and refrigeration equipment providing unmatched flexibility of selection. With one manufacturer supplying such equipment you have a single source of responsibility for all the equipment on the job.

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**warmline**

Highly efficient and adaptable method of heating ideal for modern building design. Warmline unobtrusively sits the perimeter of a room. Available in three heights (12½", 16", 20½") offering a high output per foot run... inexpensively! Heat is emitted evenly over the whole run so positioning can be varied anywhere without interfering with heat distribution. Individual element control is a standard fitting. Warmline is available in two styles. Set front or slippin top, both are simple and quick to install.

**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 at floor, wall, recessed and semi-concealed units. These exciting convectors have a unique heating element. Fins and tubes are mechanically bonded, metal to metal, providing the most permissive 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. air, 500 p.s.i. water for a working pressure of 200 p.s.i. Over 60 ft. and tube combinations are available in standard coatings ranging from 12" x 12" to 60 ft. nominal face area by 8 rows deep. High duty plus fit, now permit face velocities of up to 650 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.

**Uniflow** and **forceflo** both now available from stock in Ireland.

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THE Engineering and Scientific Association of Ireland heard a useful and interesting lecture at their meeting held at the T.C.D. Physics Theatre this month.


Van den Bosch mobile unit's Irish tour

The new Van den Bosch mobile demonstration unit is to make an extended tour here starting early January next.

The demonstration unit, which is a joint venture by Van den Bosch Ltd. of Wimbledon and Owens-Corning Fiberglas of High Wycombe, is fitted with samples of a wide range of the two companies' products.

Within the unit is a cutaway OCF Acoustiflo ceiling, a noise test demonstration model to show the sound absorption properties of OCF ducting, and many mounted samples of Fiberglas Insulation products and Europair grilles, registers and diffusers. Of particular interest is the section of the unit where practical fabrication of fiberglass ducts is demonstrated, and interested customers may themselves make up sections of duct.

The demonstration unit has been equipped to enable the products of the two companies to be seen and widely demonstrated. On its Irish tour the unit will visit Dublin, Cork, Limerick and Belfast. It will be accompanied by Mr. T. F. Barrett, Irish agent, and officials of the companies involved.

Published by ARROW@TU Dublin, 1965
POTTERTON boilers have a reputation for versatility, and they fulfill many roles. One of their most unique, perhaps, is to be found eight miles off the coast, outside Dublin Bay, where a new and revolutionary type of lighthouse has been constructed and erected on the Kish Bank to replace the lightship which has guarded this stretch of treacherous sand bank since the 19th Century.

In this unusual setting a Pottery DOA 150 oil-fired boiler has been installed to heat the upper part of the structure, and to serve the heater battery of the Plenum ventilation system which provides heating and air-conditioning to the lower part of the lighthouse.

The distinction of commissioning the first all-concrete lighthouse off these shores goes to the Commissioners of Irish Lights. On the 9th of this month, Mr. E. E. Benson, Chairman of the Board of Commissioners, officiated at the commissioning ceremony, and the lighthouse came into operation at sunset on that day.

It was after discussion with Sir William Halcrow & Partners, consulting engineers to the Commissioners, that tenders were invited for the new lighthouse. An imaginative and practical scheme for a reinforced concrete structure submitted by Christiani & Neilsen Ltd. was accepted. Already experienced in the design of floated concrete structures, their design was based on similar lighthouses of much smaller size which they had erected off the coast of Sweden.

In planning the heating service special attention was paid to the insulation to prevent heat loss, and all rooms, except those on the lowest three floors, are insulated with 1½ in. thick cork fixed to the walls, which gives an overall U value of 0.15.

Everything has been done to provide the crew of four men with comfortable quarters: each will have an individual bedroom, and maintain a three abroad, one ashore, roster every fortnight.

Entrance to the lighthouse is on the fifth floor which, from there to the 12th floor, is heated by eight radiators served by the Pottery boiler. These warm the entrance hall, radio, observation and fog-signalling rooms situated on the upper floors.

The design and layout of the tower section and the services with which it is equipped was carried out by Hunter & Dunn, consulting engineers, in association with Christiani & Neilsen. They planned the heating system and installed a Pottery DOA 150 oil-fired boiler with Navvy pressure jet burner, complete with all automatic controls. Pipework from the boiler is taken to high level within staircase-well to high level on the seventh floor. There it is divided horizontally, passing through the outer walls at two points, each branch terminating with an anti-back draught preventer, which takes care of any wind variation. A draught stabiliser is built on to the boiler flue outlet to maintain the desired draught at all times. Owing to the height of the flue—it is nearly 40 ft.—it was constructed in short lengths and jointed to enable any part to be easily replaced. A condensation drain was added at the base, and the flue was lagged on the outside where it runs up the staircase-well.

POTTERTON AT SEA

IN THE KISH

The new familiar bulk of the Kish lighthouse under construction.

The boiler room and arranged to form a header. From this header the pump-assisted circuits are taken, one to serve the radiators sited on the upper floors in the tower, the other circuit is arranged to serve the heater battery of the heating and air-conditioning system which serves the living and sleeping quarters of the crew and the stores, workshop, pump and boiler rooms.

The boilerhouse is on the first floor in the caisson section, as also the sound-proofed engine room which houses a generating plant with a capacity of 70 kilowatts, sufficient to provide power to run the lantern and allow a surplus for any breakdown. Here also are the two oil storage tanks, each of three abroad. A particular problem encountered in the installation was the flue-ing of the boiler, the flue has been carried vertically up within the central spiral...
Northern Ireland monthly review

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McMULLANS KOSANGAS LIMITED, O'CONNELL BRIDGE HOUSE, DUBLIN 2. TELEPHONE: DUBLIN 74774
THE Northern Ireland Gas Employers’ Board has mounted a special gas exhibit at the N.I. Building Centre which gives a comprehensive view of the various domestic and industrial uses of this fuel.

The gas-fired ducted warm-air system, which can provide full or selective central heating, is shown in still and animated diagrams. In fact, the Building Centre itself is heated by this method.

Gas-fired warm-air heating is already installed, or being installed, in many Housing Trust and local authority developments throughout Northern Ireland. Particularly noteworthy has been the choice of this system for several Housing Trust multi-storey blocks of flats around Belfast.

The industrial gas exhibits, in both colour and black-and-white, illustrate a few of the 4,000 industrial processes in which gas is used for precise control of temperature and operation. All types of commercial and industrial heating are featured.

* * *

LE BAS Tube Company Limited, well known to users of malleable iron tube fittings, have opened a new warehouse and sales office at 472 Shore Road, Belfast 15. The Manager is Mr. G. H. Edmonston. This development underlines the importance which Le Bas attach to this rapidly expanding market for their products.

The new premises provide much needed space for more comprehensive stocks. Modern facilities enable an experienced staff to deal efficiently with customers’ requirements.

In addition to GF malleable fittings, with which the name of Le Bas is so closely associated, a number of the Group’s products are stocked for the first time. These are the GF range of portable tube cutting and screwing machines, and the GF range of rigid PVC pipe fittings and valves. PVC pipe is there too and a considerable range of cold drawn seamless steel tubes to B.S.980:1950 is now available to industry “off the shelf.”

* * *

DR. W. DAVIDSON, Technical Director of Powell Duffryn Heating Limited, recently gave an illustrated talk on the latest developments in domestic heating by warm air, to member of the Northern Ireland Group of the Institute of Fuel, in Belfast.

Dr. Davidson illustrated his talk with black and white and colour slides of interesting installations. Dealing first with gas-fired ducted systems, he mentioned the wide acceptance of this method on a large scale, by local authorities, estate developers and industrialised housing manufacturers, for traditional and new style housing. This method gives the customer a modern, flexible, full heating system for the lowest operating cost, which the builder is able to provide for the lowest capital cost.

A more recently developed system of warm-air heating described by Dr. Davidson, and illustrated by reference to Powell Duffryn Housewarmers, is that which employs hot water fan convectors.

The meeting was under the chairmanship of Mr. J. M. Dow, M.I.Gas.E., M.Inst.F., Engineer and Manager of the Belfast Corporation Gas Department, who is chairman of the Institute.

* * *

SPP pumps and associated equipment to the value of £85,000 are to be incorporated in the new Lough Neagh water scheme now being developed for the Belfast City and District Water Commissioners.

Two pumps from the new range of axial and mixed flow equipment manufactured by SPP, Sigmund Pul­ someter Pumps Ltd., are included in the four units to be installed in a Low Lift Station at Dunore Point on the shores of Lough Neagh, Co. Antrim, 14 miles from Belfast.

The two 9-in. SPP axial flow pumps each have a 2.5 m.g.d. capacity, and two 14-in. SPP pumps have 5 m.g.d. capacities. System head: 115 ft.

The new Dunore Point Pumping Stations will pump raw water from the Lough up to the Treatment Works and then deliver it by high lift pumps to a new Service Reservoir at Hyde-

* * *

Government grants for house improvements to be increased

GOVERNMENT grants for house improvements and conversions are to be improved in the near future in order to decrease the number of houses without baths and hot water.

Replying to Mr. William Boyd (Labour, Woodvale), Mr. Craig, Minister for Development, said that the 1961 census there were 50,000 houses in Belfast without baths and 47,000 houses without hot water. He proposed to make the grants more attractive to encourage a greater number of conversions.

Published by ARROW@TU Dublin, 1965
Use **GF** malleable iron tube fittings always with complete confidence. Perfect threads, true malleability and great strength mean time saved in installation and long, reliable life.

**GF** fittings are good for your goodwill; better to begin with; best in the long run.

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**LE BAS TUBE COMPANY LIMITED**

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Telephone: Belfast 22129.
park, Mallusk, Co. Antrim, some eight miles from Belfast, through 48-inch diameter pre-stressed concrete pipelines.

A further four SPP units are to be installed at the High Lift Station—half a mile inshore from the Low Lift Station. These are two 8" and two 10" vertical split casing pumps (2.5 m.g.d. and 5 m.g.d.). Design duties: 1,736 g.p.m. and 3,742 g.p.m., each at 342.75 ft. total head. The aggregate drive of the High Lift pumps is 1,460 h.p.

A GROUP of the Association of Waterworks Officers, Northern Ireland Area, paid a visit to Wavin Pipes Ltd., Balbriggan, Co. Dublin, recently. The party was led by Mr. R. E. D. Bain, B.A., B.A.I., M.I.C.E., M.I.W.E.

They were entertained to a luncheon by Mr. T. MacMahon, B.E., B.Sc., M.I.C.E.I., Chairman and Managing Director of the Company and other executives and then toured the factory.

In the course of his speech at the luncheon, Mr. Bain, who is Chief Engineer, Belfast Waterworks Commissioners, reminded the guests that his organisation had been the first to use Wavin in Northern Ireland—this was when the Wavin factory was in its early days in a small premises in Drumcondra—and that it gave him great pleasure to be the organiser of the party to this new extensive factory in Balbriggan.

On the conclusion of the tour of the factory the party left for Dublin, where the following morning they were the guests of the Dublin Corporation, Waterworks Department, on an inspection of the Fluoridation Plant.

OSMA Plastics Ltd. (Hayes, Middlesex) announce a further extension to their large range of plumbing and building products. Osmathene circular polythene and polypropylene water storage cisterns are now available to meet a specialised demand for this type of cistern. Their flexibility allows them to be pushed through narrow openings into lofts and attics—an important factor when replacing conventional metal and asbestos tanks.

Osmathene cisterns are manufactured by injection moulding on one of the largest machines in the country. This method of manufacture guarantees wall thickness and surface finish. They are easy to nest whilst in storage, have a high resistance to impact, are unaffected by climatic conditions and will not rust, rot or crack.

Three sizes are available: 7 gallon Polypropylene (expansion), 40 gallon and 70 gallon Polythene, with lids provided for the two larger sizes. Trade prices are: 7 gallon, 37/9d.; 40 gallon, 67/6d.; 70 gallon, 118/9d. Two further sizes, 30 gallon and 60 gallon, with lids, will be added to the range early next year.

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Let’s hear about it...

WE should like to remind those concerned that we like to have good notice of functions, trade showings, etc.—a week to ten days if possible. Please advise us of these events to our Dublin offices or to 27 St. James Park, Belfast.

The Irish Plumbing and Heating Engineer.

By


SERVICE AND MAINTENANCE

The question of servicing domestic heating equipment, particularly boilers, is one which leads to a lot of ill will between equipment distributors, installers and customers. It would appear that many manufacturers want nothing whatsoever to do with their equipment once it has left the works; similarly many heating contractors lose all interest once they have made the last connection.

The unfortunate customer is too often in the middle of the dispute as to who is responsible for after sales service, which eventually results in not only one dissatisfied person but three. Many of the faults which occur in the early days after the completion of an installation are due quite frankly to faulty workmanship. Heating engineers have the unfortunate habit of treating all jobs as the same whereas each one should be treated individually, particularly when it comes to flue conditions. On the other hand manufacturers produce boilers for a universal market and while many of them try to produce a unit which covers all conditions, this, at present day prices, is impossible.

A certain amount of blame must be attached to the manufacturers, who are producing leaflets and literature for the public market, and while these publications may be attractive and help to sell the boilers, they are sadly lacking in technical information and there is certainly a great deal of difficulty in obtaining the more comprehensive publications from the suppliers.

The heating contractor may believe that he is not in effect responsible for after sales service and this may be so, but on the other hand he has a certain amount of moral responsibility, as in a great many cases the customer accepts what he recommends. Assuming that we accept this argument and the distributor or manufacturer accepts the responsibility of service, is it not correct that he would be entitled to charge for a call which is made to a job where the fault was due to the negligence or lack of knowledge of the installer?

It is not generally realised the high cost of running a service organisation, mainly because of the amount of time spent in travelling from job to job. In addition the work tends to come in spasms but the staff must be maintained as must the transport. Personnel have to be specially trained for the work and have a complete knowledge, not only of engineering, but of electrical controls and fuels.

A major problem is caused by the fact that all branches of the industry, particularly the appliance manufacturers and the fuel interests, have spent considerable time and money trying to convince the public that the use of a particular fuel or boiler will ensure years of trouble free running, and yet we all know at heart that such a Utopia is still a long way off. The demand for compactness and automation has resulted in boilers with narrow water ways, small flues and an abundance of electrical equipment, all of which are contributing factors to the possibility of breakdown.

It should be remembered that the average householder has little technical knowledge and should not be expected to take apart a complicated piece of equipment in the event of its failure and particularly he cannot be expected to rebuild it to the fine limits at which it was pre-set, and we have all had the experience of the client who has a little knowledge and who can, if anything, be a greater embarrassment than those who are completely ignorant of the equipment.

Having in the foregoing words possibly created the impression that neither the contractor or manufacturer wants anything to do with servicing, it would appear that there is an opening here for someone to set up a servicing organisation which will cover all types and makes of plants. Many people have tried to operate such a concern but few, if any, have been successful, particularly if this was their only form of business.

The reason for their failure was certainly not due to the lack of initiative or hard work, but, the writer believes, it was due to the fact that the general public now believe that service is not required, and if it is it should be free or carried out under a guarantee or warranty. Experience has shown that they are not prepared to pay for adequate servicing.

A realistic approach must be made to this problem before the growth of heating strangles itself through a breakdown in services. Contractors and suppliers must get together and appreciate that they both have an obligation to the main person in the contract, namely, the customer, who sometimes at the moment is the last person to be considered.

It is suggested that the obvious answer is to introduce a condition of sale whereby the customer purchasing an installation or equipment must sign a service agreement, but it is doubtful if everyone would accept such strong terms.

The alternative would seem to be a standard charge which would be included in the price of the installation and that this charge would be either payable to the contractor or distributor who would undertake to provide service for the first period of six or twelve months. If this were done it is possible that firstly the customer would appreciate the need for such a service contract and at the same time it would settle the disputed point of responsibility.

Manufacturers must be prepared to...

Continued page twenty-six
The Temple System offers

Building Tolerance
The O ring joint allows for plus or minus 1/8

Heat Resistance
Withstands continuous discharge of boiling water

Speed
Lightweight and fabricated units speed up installation

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

‘Yes pitch fibre was specified’

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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 1/8. 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.

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Temple Tubes Limited
Temple Mill, Epsom, Surrey. Tel: Passfield 281
Branch in succession to Mr. N. M. Scott, who is retiring, having reached the age of 65.

Mr. Robinson, whose appointment is effective from next month, studied at Belfast and Manchester Colleges of Technology, entering in 1948 the technical department of Crossley Bros. Ltd., diesel engineers, of Manchester. In 1949 he joined Warner Barnes & Co. Ltd., general merchants and engineers in Manila, becoming in 1952 engineering department manager. He held this post until leaving the Philippines in 1964, joining BICC in Belfast in October of that year.

A SWEPT entry branch has been added to the range of components in the Aspect PVC stack drainage system, which is marketed by the Universal Asbestos Manufacturing Co. Ltd. (Watford, Hertfordshire). Introduction of the swept entry branch will allow the Aspect soil system to be used more widely than hitherto.

BELLS Asbestos and Engineering Ltd., 17-21 Ormeau Road, Belfast 7, announce that they have been appointed agents in Northern Ireland for the Virax range of plumbers' and heating engineers' tools.

THE continued development in and demand for Primus liquid petroleum gas equipment made it imperative that a new national service be introduced. Therefore, towards the end of last year Bahco-Condrup Limited acquired the controlling interest in Gas Services (Filling and Distribution) Limited of Weeton, Northamptonshire.

Since the beginning of the year over 800 authorised exchange stations have been appointed, each one of which has been provided with a free loan float of Primus cylinders, thereby ensuring an immediate, on-the-spot user exchange. Under the new scheme all Primus cylinders are filled and inspected at Weeton and, when necessary, at no extra cost to the user, are refurbished or replaced. All exchange stations are serviced by Primus vehicles or chartered transport.

In Northern Ireland and the Republic the service has been implemented by the creation of master floats in Belfast and Dublin, where, respectively, Messrs. John A. McClelland & Co. Ltd., and Messrs. John C. Parkes & Sons Ltd. service the local networks.
WINDOW HEAT LOSSES STAGGERING

In calculating the heat requirements for any building one becomes sharply aware of the very high proportion of the total heat losses that take place via the windows. Roof insulation is, at last, becoming standard practice, standards of thermal construction for walls are tending to improve but, at the same time, window areas in the average new house tend to be greater than they were a few years ago. Thus it is not unusual to find in design work that the window losses may amount to a quarter or more of the total structural losses. A reduction of this loss will be reflected, not only in reduced running costs, but also in reduced heating installation costs.

The heat transmittance coefficient ("U" value) for a single pane of glass under average conditions is 1.0. This compares with 0.34 for a cavity brick wall or 0.2 or better for an insulated roof. This loss can be expressed in terms of an example as follows.

A fifty square foot window (not particularly large by modern standards) under design conditions with a room temperature of 70 degrees F. will lose two thousand B.t.u.'s per hour (50 x 40 x 1.0). It is generally accepted that in this climate the average seasonal heating load is equivalent to eighteen hundred hours at full load conditions. Thus the seasonal loss through this window would be 1800 x 2000 = 3,600,000 B.t.u.'s.

Between ten and thirteen square feet of radiator surface, depending on the type used, would need to be installed to replace the window loss. Most important of all, perhaps, since the heating engineer is essentially dealing in comfort is the fact that the area of the room close to the window will never have a particularly steady temperature. Indeed, unless some means of heating is provided below the window there will be a constant down-draught of chilled air across the pane. There will also be an undue loss of body heat on any side exposed to the window—the so-called "cold radiation" phenomenon.

If a second pane of glass is fitted, on either the inner or outer side of...

Continued overleaf

Closing The Windows Doesn't Keep In The Heat

Over one-third of the heat in a room is lost through the windows. The remedy is double-glazing, so CRITTALL designed the "Winter Sash" which attaches easily to existing window frames, cutting internal heat loss, fuel bills, traffic noise and preventing steamed up windows.

CRITTALL "Winter Sash"

BROOKS THOMAS & Co. Ltd.
4 SACKVILLE PLACE, DUBLIN 1. TEL: 41841

Published by ARROW@TU Dublin, 1965
sashes are fitted with hinged sections which correspond to the opening areas of the original windows and facilitate cleaning. A limited degree of ventilation to the outside air is desirable between the panes; this limits condensation. The distance between the two panes of glass tends to be greater than with the average sealed unit; this may possibly improve the insulation value by a very slight amount. The appearance of a well made storm sash is quite satisfactory when fitted and factory built units, framed in plastic or other lightweight sections, are available in Ireland, together with the sealed units.

Double glazing

from previous page

...their use may be justified in terms of comfort and convenience it normally takes a number of years to recover the capital outlay through reduced running costs.

Storm Sashes.—This is probably the earliest application of double glazing and has been used in North America and Scandinavia for many years. A storm sash is simply a second window, complete with fastenings, which is fitted over an existing frame, usually being removed and stored during the summer. They may be mounted inside or out and are sometimes fitted direct to masonry rather than to the existing window frame. Most storm sashes are fitted with hinged sections which correspond to the opening areas of the original windows and facilitate cleaning. A limited degree of ventilation to the outside air is desirable between the panes; this limits condensation. The distance between the two panes of glass tends to be greater than with the average sealed unit; this may possibly improve the insulation value by a very slight amount. The appearance of a well made storm sash is quite satisfactory when fitted and factory built units, framed in plastic or other lightweight sections, are available in Ireland, together with the sealed units.

DUOTHERM DOUBLE GLAZING

- Fixed and Sliding
- Cuts Heat Loss by 50%
- Winter Warmth
- Summer Freshness
- Maximum Light
- Sound Insulation as Well
- Easy to Clean
- Simple Installation

Product of Alumin Building Components Ltd.

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D'Olier House, D'Olier St., Dublin, 2
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panes is accessible and if it has a limited amount of ventilation to the outside, not to the heated air of the room.

Storm sashes can present a storage problem during the summer months since they, or rather the panes in them, are so fragile and they would not.

Continued overleaf

An example of double glazing—Pilkington Insulight on these multi-storey flats absorbed approximately 13,500 sq. ft. of 32 ounce glass.

SPECIAL REVIEW

from previous page

Clipped or Sliding Units—in their simplest forms—are simply extra panes which may slide in runners without any framing, or which may have a lightweight, possibly plastic, frame, secured to the main window frame by spacers and turnbuckles. Usually this proves to be the cheapest form of double-glazing to install. The appearance can be quite good but it is wise to provide for easy removal or access for cleaning. Purpose built units are available with a fixed or opening outer pane and with overlapping inner panes moving in runners.

Having discussed the general advantages of double glazing as well as the basic types available, it is advisable to consider some of the areas where difficulties might arise.

Glass is a heavy material and there may be cases where existing frames cannot be easily adapted to carry the extra weight, especially if opening lights are used. In such cases, as well as in cases where the old frames are difficult to adapt, consideration should be given to the use of purpose built units.

Condensation occurs when moist heated air from within a room comes into contact with the cold non-porous surface of glass. The likelihood of condensation is greatly reduced with double glazing since the inner pane will never be as cold, but any condensation between the two panes can be most irritating since it may be difficult to remove. The same holds true for dirt and dust. Of course such problems could not arise with sealed units. However, these problems are not so likely if the space between the

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Units
survive long if stacked haphazardly in a garage or garden shed. Storage racks or other suitable accommodation should always be provided.

Finally, there is the question of cost. The cheapest form of double glazing may cost three shillings a square foot or even less, but sealed units will cost several times this amount and the cost of these can only be repaid from running costs over a period of possibly ten years or more. Despite this the use of double glazing is increasing in this country. The reason for this is probably the same as the reason for the vastly increasing amount of domestic central heating—the public are prepared to pay for comfort.

**Product Briefs**

QUICK-FIX double glazing system can be fitted to metal frame windows. It will be found more satisfactory to fit outside the existing window, but in this case it will not act as a draught excluder.

The agents in Ireland for Quick-Fix double glazing system are Monsell Mitchell & Co. Ltd., Heating and Insulating Division, 67-73 Townsend St., Dublin.

**PILKINGTON** Brothers Ltd. (St. Helens, Lancashire) are now marketing double-glazing units with all glass edges in addition to the "Insulight" Mark IV, metal-edge units. The new units are known as "Insulight" Glastogla. The construction of the glass-edge unit has been proved over ten years of use in the United States. Two panes of clear sheet glass are spaced and the edges are fused together. The result is that in effect the whole unit is one continuous piece of glass.

**ALUMIN** Building Components Limited (Weston Super Mare) have based their double glazing with Duotherm S design, principally on three features: P.V.C. channelling, sliding panels and an ingenious locking mechanism. The inner window is not a fixed, single pane but two sliding panels which run smoothly in grooved channels.

The panels are held tightly together when closed by a hidden spring which clinches the overlapping edges and seals the insulating air space. The natural flexibility of the glass ensures a perfectly flush fit.
This Aquapac Coalmaster is now in use at Underground Mining Machinery Ltd’s factory at Aycliffe Industrial Estate near Darlington to meet increased heating demands. The boiler works on the high pressure hot water principle and the new coal-fired wet-back unit is internally pressurised by a steam cushion. Output at the working pressure of 110 psi is approximately 5 million Btu/hr. Firing is by the highly automated Thompson-Triumph Travelling Grate Stoker burning washed smalls under forced and induced draught conditions. Coal is automatically raised from bunker to hopper by a high speed screw elevator controlled by a probe switch in the hopper. The boiler incorporates a new rear de-ashing system whereby ash is deposited directly into collection bins for easy removal. The Aquapac Coalmaster was designed expressly as a hot water boiler for compact, high efficiency, trouble-free working. It is available for up to 25 million Btu/hr output and is suitable for low, medium and high pressure hot water requirements.
Have You A Waste Disposal Problem?

If you have this problem, we have the answers in Joseph Goder Incinerators. There is a Joseph Goder Incinerator for every waste disposal problem, whether small or large. Joseph Goder Incinerators are designed for Schools, Hospitals, Veterinaries, Supermarkets, large stores, institutions, etc., etc. Joseph Goder Incinerators are designed for perfect incineration by—

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The specialised field of dust and waste collection

Before we look at ways and means for waste collecting plant, we may profitably have a quick look at the composition of air. Air is a mechanical mixture of many gases; normally it consists of approximately 21% oxygen, 78% nitrogen, 1% argon, and 0.03% carbon dioxide. There are traces of several other gases varying in amounts, such as hydrogen, neon, ozone, helium, xenon, etc., and small quantities of microscopic solid matter, called permanent atmospheric impurities. Air contaminants can generally be classified as organic or inorganic, visible or invisible, toxic or harmless, etc., etc. Classification is chiefly based on the origin or method of formation. The following groups will help to clarify the matter:

(a) Dusts, fumes, smokes are classified as solid particulate matter,
(b) Mists, fogs, etc., are liquid particulate matter,
(c) Vapours and gases are non-particulate.

Many mineral and organic dusts are capable of producing dust explosions. Very often a primary explosion results from a small amount of dust in suspension which has been exposed to a source of ignition; pressure and reverberation created by the primary explosion leads to secondary explosion and so on until sufficient accumulation of dust is dislodged to create a large explosion. Explosive dusts are potential hazards whenever the dust escapes uncontrolled to disperse in the atmosphere or settle in buildings.

Industrial Dust Extraction

Many industrial processes generate unwanted dust. For example, sawdust and wood chippings from woodworking machines; metal dust and particles from grinding machines; sand dust from foundry knock-outs. It will be clearly seen that for efficiency of the work and the health of the employees, it is essential that all harmful dusts should be got rid of as quickly and as completely as possible. This can be done by an Industrial Extraction System. Basically this means sucking out the dust. The principal elements in it are:

(a) Collecting hood to collect the dust at its source of origin.
(b) Dusting, to carry the dust to its place of disposal.
(c) Separator, to separate the dust from the airstream.
(d) Fan, to provide the motive power for the system.

Velocity.—The conveying velocity is dictated by the type of dust which must be carried. Metal dust will naturally require more suction than sawdust. If the velocity is too low the dust will not be conveyed to the separator, but will lie along the ductwork. On the other hand, if the velocity is too high, there will be excessive frictional losses in the plant, thus increasing motive power and resulting in increased running cost.

Vapours and extremely fine dust require approximately 2,000 - 3,000 conveying velocity ft. per min. Industrial dusts, such as coal dust, bauxite dust, etc., require a conveying velocity of approximately 3,000 - 4,000 ft. per min. Wood chippings, 4,000 - 6,000 ft. per min. The collecting hood should be as near as possible to the source of the dust, and yet should not interfere with the operation or process of operation of the machine.

Since there is such a variety of dusts to be extracted, there is no standard hood available. Every job has to be "tailor made" for its particular application. However, the following basic rules should be followed as closely as possible:

(a) Mouth of the hood should be as close as possible to the source of the dust.
(b) The dust should be extracted away from the operators' breathing zone.
(c) The flow of dust should be directed into the hood; consequently the hood should be placed and shaped to suit the flow.
(d) Where there is no pattern or direction to the generation of the dust, as in a foundry, the hood should be large enough to give full effective coverage, with a high power plant.
SPECIAL REVIEW

from previous page

entrance velocity to create a good air movement to the hood.

The ducting should be preferably round or circular in preference to square or rectangular. Ductwork is generally made of sheet metal, depending on the type of dust to be extracted. To-day, with the great improvements in non-combustible plastic compositions, etc., the ease of erection and flexibility and cost add to its preference. Great care should be taken when fabricating sheet metal ducting, so as to avoid rough joints or laps, and leaks. Sharp bends should be avoided and the ducting should be as straight as possible and airtight. The Separator unit is a device to separate the dust from the moving airstream. The types of separator in general use are:

(1) The Cyclone,
(2) Filter,
(3) Wet Collector.

(1) Cyclones consist of a hollow drum, tapered towards the bottom. The dust-laden air is introduced through the tangential inlet and spins round and downwards. Centrifugal force throws the dust particles to the outside wall of the cyclone, where they travel down with the airstream to the dust outlet at the bottom. The clean air then spirals upwards and out through the central outlet in the top of the cyclone. Generally the dimensions of a cyclone are related to the inlet duct diameter. Particles down to a size of about 50 microns will be separated. For better and higher efficiency, small diameter long cone cyclones can be designed and used in pairs or groups as required to handle the total volume. Particles as small as 15 microns can be separated by a special design.

(2) Filters.—Cloth filters, usually of the bag type, are used for the collection of fine dusts, and work very well down to a particle of approximately 5 microns. An automatic shaker can be incorporated for cleaning the filter bags.

(3) Wet Collectors.—Water is the medium used to separate the dust particles from the airstream. The method used varies according to the collector design. It may be the passage of dust-laden air through jets of water sprays or through water curtains, etc. The collected dust settles out as sludge, which is removed automatically or manually according to the size of the unit. The wet collectors are to be preferred, for the sludge can be more easily removed through the sewers.

It should be noted that in any building or factory where an extraction system is in operation, make-up air will infiltrate to replace the quantity exhausted. During cold weather, warm air should preferably be introduced to keep up the inside working temperature. Generally, the exhausted clean air should never be returned to the building for it contains minute particles of dust. These minute particles are most hazardous to health. The greatest hazard, next to the health hazard, is the risk of fire or explosion. With certain dusts of high caloric value, precautions must be taken against explosion. Amongst such dusts are flour, pulverised fuel, sulphur, acetic bases as in button making, etc. Fire dampers, explosion doors and spark proof features should be incorporated. The greatest danger is static electricity.

Maintenance and Performance.—Periodic inspection and checking of exhaust systems are necessary if control is to be maintained at the effective level of the original installation. Continued effectiveness depends on maintained design in volume flowing through the exhaust hoods. A checking procedure, therefore, must include some data to indicate at least relative air flow through the hoods. Testing and recording of air flow and pressure for each installation are of the utmost importance.

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).
WILSON WALLFLAMES
NOW CONVERTED TO GAS-OIL TO SLASH COSTS FOR YOUR CUSTOMERS

Britain's most popular wallflame range now gets even more appeal for Irish customers. Successful conversion to 35-second oil burning makes Wilson Wallflames even more competitive on running cost—and of course they're still the most handsome and the most reliable.

Remember—when they're undecided about central heating, it's Wilson Wallflames that can tip the balance your way.

If you would like further details, please contact Mr. George Reid at:

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Telephone: Simonswood 3641
PRODUCT REVIEW

from page thirty-four

new principle which eliminates the need for a secondary collector. Originally designed to meet the needs of smaller industrial boiler houses under the provisions of the Clean Air Act, the “R” type collector is now being increasingly used in the largest power stations.

Sirocco chimney grit collectors combine optimum efficiency with low cost and minimum maintenance. They provide an ideal means of eliminating grit and removing a big percentage of dust emitted by small solid fuel boilers, kilns and incinerators. They also serve as efficient spark arresters.

THE Barrywald Safety Automatic Incinerator has been designed to give a simple and trouble-free disposal service which can be operated by anyone. All that is required is the depression of the left side of the unit. This single action sets the automatic mechanism into immediate operation by opening the outer and furnace covers, rotating the safety trap to the receiving position, clearing the combustion chamber of ash remaining from any previous insertion, and by tilting the mercury vacuum switch.

The switch, when tilted, switches on the electrical components to begin the disposal action. These components consist of a specially designed sheathed element, the signal indicator at the front right of the cabinet and a time control unit which returns the mercury switch to its “off” position in 5/7 minutes, when the current is automatically cut-off.

The agents in Ireland for the Barrywald Incinerator are: Roper Brothers Ltd., 5 South Anne Street, Dublin.

** A NEW and improved design of Tornado-Fischer automatic filter known as the Series 1050 has recently been introduced by the Gas Cleaning Division of Keith Blackman Ltd. Whilst retaining the excellent Fischer shaking principle, new circular fabric bags giving a greater filtering area have been utilised together with improved constructional features.

The shaking principle provides rotary vibration, with the bags always held in tension, combined with a self-purging action and for many purposes offers the most efficient method of removing dust from gases from industrial processes.

The new filter has a built-in inlet manifold which is positioned at both or each of the filter banks. Many

Thirty-six

types and grades of filter fabric are available and determine the operating temperature of the gases: wool and synthetic fibres up to 150° C, and glass fibre up to 350° C.

A new cyclone dust separator, the Velocene, has also been introduced by the Gas Cleaning Division of Keith Blackman Ltd. to give high efficiency separation of the dusts. The cyclone can be used by itself; as a second-stage separator after a standard centrifugal settler; or as a pre-collector before a bag filter or wet scrubber.

Adoption of radiant panel system

INTERESTING INSTALLATION IN NEW CRAMPION H.Q.

THE many features of Frengerstrip radiant panels by Frenger Ceilings Ltd. are shown to good advantage in their installation (see illustration) at the new G. & T. Crampton Ltd. headquar ters in Ballsbridge, the opening of which we reviewed last month.

With Frengerstrip temperature grad ions are significantly reduced, minimising heat losses by conduction through the roof. In factory buildings, the roof is frequently the major source of heat loss.

Where dust-producing processes are carried out, the solid matter (which may be of many different forms, such as sawdust from woodworking machinery, lint from clothing manufacture, powders from food or chemical processing, as well as smoke and dust) is not recirculated by forced convection. There are also, of course, no air-streams.

Frengerstrip enables engineers to locate a medium-temperature radiant heating assembly of acceptable appearance and minimum weight over the occupant or process. This is particularly applicable to this semi-industrial use.

Frengerstrip is a single installation reducing pipework and valves to a minimum and without moving parts requiring maintenance. It is adaptable in width and length to varied heat requirements.

A pipe grid has 1” stretcher tubes welded into 11” headers, and is cross-braced at intervals with channel sections which serve to locate the stretcher tubes and provide hanger points. The grid is fitted with aluminium panels rolled with shaped contact flanges held to the tubes with spring steel clips. The outer panels have deep box-section edges which retain and enclose the aluminium-faced insulation mat backing the grid.
IRISH PLUMBING & HEATING ENGINEER

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.

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.

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SHELBOURNE ROAD,
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Genflex Expansion Joints

absorb pipework movement in all three planes

Movement, expansion and contraction caused by temperature changes can cause trouble in any piping system. Genflex expansion joints are the simplest and most economical method of absorbing thermal movement in all planes. They are easily installed, need no maintenance and can be used in a variety of applications.

Construction

Standard Genflex joints are manufactured from stabilized stainless steel in circular section with a longitudinal butt weld and are available in sizes from 1/4" to 120" nominal bore, and in rectangular section in any dimension up to maximum practical shipping size.
Rubery and Owen stage a Dublin reception, display

UNIDARE Ltd., Finglas, Dublin, have made a successful take-over bid for Oerlikon (Electrodes) Ltd., of Cowley, Sussex. The take-over was outlined at a reception in the Intercontinental Hotel, Dublin, late this month. Mr. P. H. Greer, managing director of Unidare and chairman of the new company, told the guests, who included the Minister for Industry and Commerce, Dr. Hillery, and the secretary of his Department, Mr. J. C. B. MacCarthy, that now for the first time a complete range of modern and technologically advanced arc welding electrodes could be produced and marketed entirely in Ireland.

He said their action in taking over the British company was because when Unidare entered the electrode field, they did so to save an existing small Irish industry which was finding the going too hard and which without assistance was about to close its doors. The take-over had not only kept this industry alive but had turned it into a profitable one which had been able to show some small success in the export field. They had taken an 80 per cent shareholding in Oerlikon's British operation and were building a new factory in Finglas where they would manufacture not only for the Irish market but for Britain as well.

When the new factory was completed, it would give employment to 200 workers.

Mr. Robert Lake Lakner, managing director of the new company, also spoke.
4,800 Million BTU

This figure is the total capacity of the boilers manufactured by D.S.V. in the last twelve months.

- **4,800 MILLIONS**
  This figure speaks for itself—and shows the confidence our customers have in us.

- **4,800 MILLIONS**
  This figure at the same time indicates our practical experience which D.S.V. customers enjoy.

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  This figure confirms what specialists are saying.

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**D.S.V. STEEL-PLATE BOILERS FOR:**

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- HIGH TEMP: HOT WATER
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**England:**
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46, Victoria Street
London, S.W.1
Phone ABB 6103
Cables: Oilagbo London S.W.1
THE Building Exhibition opened this month at Olympia and Ireland is well represented at the two-week show, now in progress.

Home manufacturers in the heating equipment field are among the featured exhibits on the Coras Trachtala stand. Sanitary ware is also featured on the CTT stand, which displays the products of 17 Irish firms on a 2,000 sq. ft. stand.

And now we look at some of the new making equipment on show at the exhibition:

B.S.A. HARFORD Heating Ltd. will be exhibiting their wide range of central heating products. The highlight of the stand is the new range of Hotspur Mk 3 boilers, which has been considerably redesigned and features an attractive new casing constructed from a heavier gauge of metal than used in previous models.

The new “Barnet” half-inch slim-line valve, available in brass or polished chrome and of either angled or straight design, is now on view, and the Torridheath burner is also shown, both as a separate item and as a unit incorporated into a Hotspur boiler.

Among the exhibits are several of the B.S.A. Harford range of variable-head circulators and a wide range of radiators.

LOW-COST luxury bathrooms are the theme of Shires’ stand, which was designed by industrial designer, Colin Cheetham, F.R.S.A., I.I.S.A. All Shires baths displayed here are in “Perspex.” With their Naïad and Robin ranges Shires offer a total of 76 different “Perspex” baths, giving the customer low-cost luxury and bringing the trade the advantages of lightness. Baths in the material are also colour-fast.

Matching vitreous china wash basins, toilets and bidet from Shires Naïad and Heathcote ranges are being shown with the baths to complete the bathroom displays.

On show for the first time is the Shires concealed cistern, Sylmlynx, a new thermoplastic high and low level Puma cistern; dual flush siphon Kingfisher Twinflo. The Sylmlynx on display may be operated by both hand and foot remote flushing controls, but a lever mechanism is available.

Many up-to-date applications of Breon PVC designed for the building industry are being shown by British Geon Limited. The stand is divided into two parts. One part is devoted to displays showing the ways in which the building industry uses Breon, including structural applications, soil pipes and rainwater goods, wall coverings and flooring.

The other part of the stand is a representation of a house showing new developments of British Geon’s materials. The stand was designed by E. Charles Gardiner, F.S.I.A.

THE VALOR Company displays on three stands. On Stand 421, the Company is showing the products of its water fittings and stamping division, manufactured by Valor Partridge Ltd. and Valor Lawley Ltd. A full range of water fittings is being shown, including the new luxury Astor Taps and new designs of high neck pillars and general plumbers’ brass foundry.

Two stands, 446 and 457, form the Valor Cisterns Ltd. display, which feature the all-plastics construction of their products. Four new products are shown with the present wide range of goods.

The President Luxury Bath is available in white and in the four standard B.S. colours. The Poly Trap domestic waste pipe is guaranteed for life.

The new Ducta cistern, for confined duct work, is claimed to be the narrowest cistern produced in Britain and operates by remote control, hand or foot. The Water Manner Urinal is designed to save more than 50 per cent. of the water used by conventional methods.

Other new additions to the Valor Cisterns range include the Oyster wash basin, a range of shower trays and the Repeata Trough Cistern, which has a continuous flushing trough and non-corroding internal cistern fittings.

On exhibition for the first time is the V.B.G. soil and waste pipes system. This comprehensive range of piping for the building and plumbing market is also being marketed jointly with BX Plastics Limited and Grahamston Plastics Limited.

Continued overleaf
A BIG LAUNCH into two new central heating markets is planned by Ideal-Standard at the Exhibition. A bid to capture a large share of the warm-air market is to be made with the introduction of the Selectaire 30, a comparatively low-cost gas-fired unit which gives full central heating in 2/3 bedroom houses or selective heating in larger property.

This is the first product in a large range of warm-air units which the company plans to introduce within the next few months.

Designed for durability (the heat exchanger is in cast-iron) and quick installation, the Selectaire 30 has an output rating of 30,000 B.t.u./s. The unit is entirely works assembled and is available for conventional flue, balanced flue or se-duct flue—in standard and de luxe form.

Another product launch—of particular interest to heating engineers and contractors—will be the Neotrim, a continuous natural draught convecto for a wide variety of commercial and other buildings. A feature of the Neotrim is its high output per ft. length. Furthermore, this high output is permanently ensured through the use of box-shaped easy-clean aluminium fins which resist crushing and distortion. The fins are bonded to copper or steel tube.

To demonstrate the versatility of the Ideal-Standard range across all-fuel central heating systems and the sanitary ware field, the Company's stand is also featuring a wide variety of new products, including radiators, boilers and sanitary equipment.

A COMPREHENSIVE selection from Twyfords' range of products includes examples of sanitaryware for every aspect of domestic, industrial and public use; for installation in hospitals, schools and colleges, hostels, universities—in fact every type of establishment to which the public have free or limited access.

Items introduced for the first time: the new "Classic" washbasin with matching low-level w.c. suite; a new heavy duty water closet; a corner-fitting washbasin in two sizes, and a "Senator" with matching hand-rinse basin, each with a marked Continental aspect.

These two items, made originally for installation in the Barbican scheme in line with specifications prepared by Messrs. Chamberlin, Powell & Bon, architects for the project, are now in production and generally available.
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).
Mr. H. J. Bambrick.

Whessoe appoint general manager

Mr. Henry J. Bambrick, Director, Whessoe (Ireland) Limited, has been appointed General Manager of the company.

Mr. Bambrick is a native of Dublin and has for some years been a director of Universal Fabricators (Dublin) Limited, and Carthorn (1949) Limited. These companies are now members of the Whessoe Group of engineering companies specialising in the production of welded steel plate fabrications, tanks, pressure vessels, etc., for the petro-lem, chemical, gas, power and building industries.

SINCE the recent introduction by Midland Industries Ltd. of their new range of temperature control valves, a number of heating and cooling applications have arisen for which the existing valves would not be suitable due to being grossly oversized.

The new MIL Mini-temperature control valve has been specially developed to accommodate very small flows on a variety of heating and cooling applications generally met with on special purpose machines and processes and thus provides a more economical solution to this problem than the fitting of smaller valves and seats to the existing sizes.

These valves are available as direct thermostat operated valves or can be pressure operated by a pneumatic or hydraulic signal. They are suitable for use on Steam and High and Low Pressure Hot Water Services, Air Heating and Cold Water cooling applications.

Incorporating ¾" B.S.P.T. connections, they offer very close control within a temperature range of 10 to 180°C (50–356°F.) and are supplied with thermostatic bulbs and capillaries for operation bands of 20°C.

THE recent completion of new laboratory and office facilities for its Research and Development Division was announced this month by Mr. R. H. Morris, Managing Director, Crane Ltd.

A NEW 500,000 Btu's OIL FIRED AIR HEATER

- 500,000 B.t.u./hr.
- Over 82% efficiency.
- Outlet head included for vertical free-standing models.
- Horizontal or vertical models.
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