

11-1-1965

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

Follow this and additional works at: <https://arrow.tudublin.ie/bsn>



Part of the [Civil Engineering Commons](#), [Construction Engineering Commons](#), and the [Construction Engineering and Management Commons](#)

Recommended Citation

(1965) "The Irish Plumbing and Heating Engineer, November 1965 (complete issue)," *Building Services Engineering*: Vol. 5: Iss. 8, Article 1.

doi:10.21427/D7BX3R

Available at: <https://arrow.tudublin.ie/bsn/vol5/iss8/1>

This Article is brought to you for free and open access by the Journals at ARROW@TU Dublin. It has been accepted for inclusion in Building Services Engineering by an authorized editor of ARROW@TU Dublin. For more information, please contact arrow.admin@tudublin.ie, aisling.coyne@tudublin.ie, vera.kilshaw@tudublin.ie.



THE HEART OF A WARM HEARTED HOUSE



THE NEW UNIDARE WALLFLAME BOILER



THE NEW WALLFLAME BOILER—WITH BUILT IN STABILISER
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 . . .

Manufactured by

UNIDARE LIMITED

Unidare Works, Finglas, Dublin 11
Tel. 71801 (15 lines)

For the future BUY IRISH QUALITY GOODS

NOVEMBER 1965

Published by ARROW@TU Dublin, 1965
Vol. 5 No. 8

SPECIAL MONTHLY SUPPLEMENTS: NORTHERN IRELAND MONTHLY
REVIEW—INDUSTRIAL HEATING AND VENTILATING IN IRELAND

we knew it! you've said it!

Building Services Engineering, Vol. 5 [1965], Iss. 8, Art. 1

ONE PUMP MAKES ALL SYSTEMS GO!

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 sensationally 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

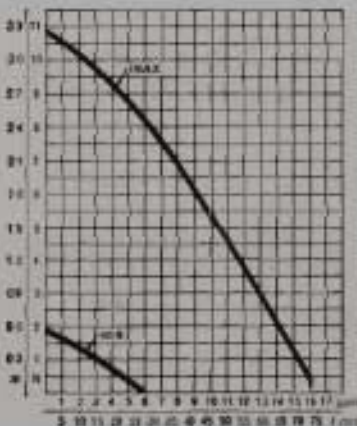
By simple manual adjustment the head output performance can be adjusted throughout the range shown on the chart.

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.

EQUALLY SENSATIONAL!

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



International

BOILERS AND RADIATORS LTD

PARK HOUSE, 22 PARK STREET,
CROYDON, SURREY.
TELEPHONE: MUNICIPAL 3581/5



Available from stock at your local merchant or the Sole Agents:

MONSELL MITCHELL & CO. LTD.

Dublin, Ireland Division, 67/73 Townsend Street, Dublin, 2. Telephone: 76282.
DOI: 10.21427/D7BX3R



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.

THOS. CHATWIN & CO.

Victoria Works, Great Tindal Street, Birmingham, 16
Telephone: Edgbaston 3521-3

ONE OF THE **BROCKHOUSE** COMPANIES

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.

MP261

DELTA WATER FITTINGS

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.

DELTA WATER FITTINGS LIMITED

SHOWELL ROAD, WOLVERHAMPTON. Tel: 3221/7 Telex: 33128
LONDON OFFICE — 121 GREAT SUFFOLK STREET, LONDON E.C.1. — Tel: 857 3321



trade Topics

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.

OPIO RAD RANGE

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 86½ 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.

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 Shell House recently attracted keen interest.

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



● 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.



IRISH PLUMBING & HEATING ENGINEER

Vol. 5. No. 8. NOV., 1965.

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

We resume this month A. L. Townsend's Plumbing, stage two series, as he deals with roofwork.

W. J. E. 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 15
Dame Street, Dublin 2.

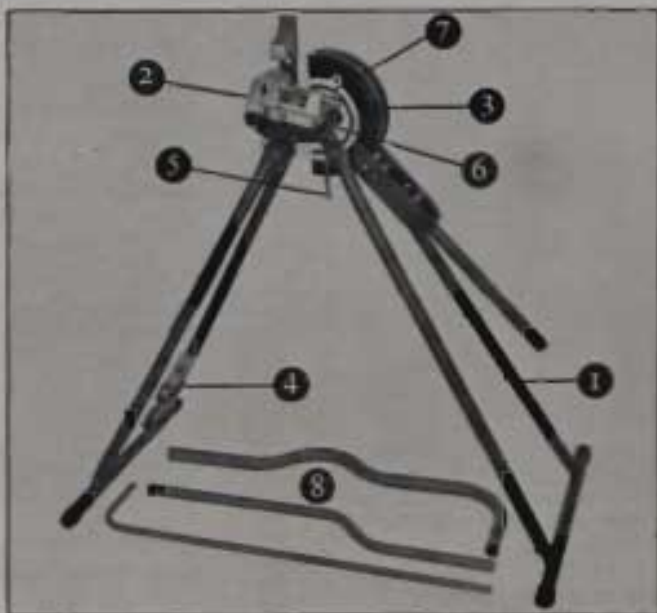
Tel. 56465-6.

London: J. T. Robson and
Son Ltd., 30 Fleet Street,
London, E.C.4. Tel: Fleet
Street 4432.

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.
6. Locating Bosses retain Bending Lever in position when changing Formers.
7. Adjustable degree of bend quadrant for repetition bending.
8. Produces good quality sets, double sets, saddle bends, etc., all to pre-determined measurements.

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



CAPACITY: GL2B (Illustrated) ½" to 1" BS.559 tube.
GL3B 1" to 1½" BS.559 tube.

Machines with standard tools suitable for bending light gauge steel tube with same o.d. as BS.559 copper.

HILMOR
TUBE BENDING MACHINERY

HILMOR LTD.
(Sales & Service)
Caxton Way,
Stevenage, Herts.
Tel.: Stevenage 581.
GRAMS:
Tubenders, Stevenage.

trade Topics

DANFOSS (London) Ltd. are now marketing a highly sensitive and more

A NEW DANFOSS VALVE

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 angle-way 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

EXHIBITION
DATE
FIXED

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 without 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 engin-

Continued overleaf

—so specify these BERKEFELD models

There's a special pleasure in using soft water. The best softeners for all domestic needs are British Berkefeld Mains Softeners filled with 'Amberlite', an extremely high capacity resin, and (most important this) coated inside with plastic for protection against salt corrosion, thus making them 'long-life' models. Easy to install and maintain. In mild steel with cream cellulose finish. Capacities 650-2,500 gals. between regenerations. Price from £50. ▶



Whenever there's the least doubt about the water supply, a Berkefeld Sterasyl filter is needed. It is the only type fitted with the unique Sterasyl candle, which not only traps water-borne disease germs, but destroys them. Pattern HM (illustrated) is in brass chromium plated, complete with taps and fittings £7.10.0. ▶



Industrial models of both water softeners and filters also available.

MODERN WATER TREATMENT CALLS FOR

BERKEFELD

British Berkefeld Filters Ltd.

Dept. 244, Cannon Lane, Tonbridge, Kent, England · Tel: 2255

In Dublin: G. Reid, 16 Fade Street, Tel: 76995.

The Irish Plumbing and Heating Engineer.

eers shy away from this type of work since they feel that it is not the complete job, but looking at it another way—if a man knows that it will cost, say, £500 to heat his house fully and only has £150 to spend, it is not, to my mind, unreasonable to offer to sell him £150 worth of heating on the strict understanding that he is not getting a full heating system, but that he is buying an installation that will give him value for money in terms of comfort. Oil-fired flued convectors for example—free standing flued heaters—then solid fuel equivalents are perhaps more familiar; these have been installed in considerable num-

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 what so ever 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.**

Telephone: 693940, 693943. Telegrams: Quadrant, Dublin. Telex: Dublin 5983.

QUADRANT ENGINEERS



167 STRAND RD., MERRION GATES, SANDYMOUNT, DUBLIN, 4.

plumbing

We continue here
the serialisation of

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

plumbing

THIS MONTH:
ROOFWORK

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

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 dockings 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 rain-water 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-

odorous felt underlays for the following reasons:—

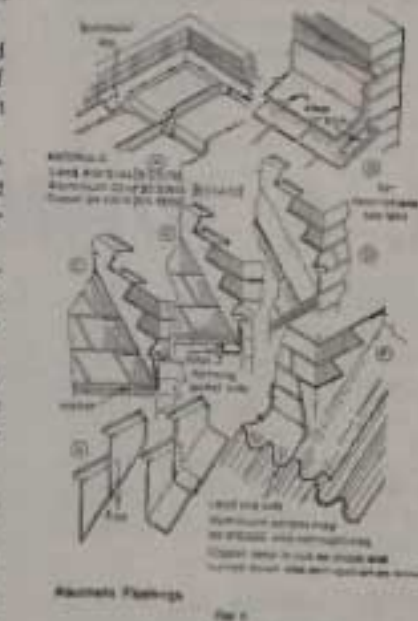
1. They act as a thermal insulator and so help to keep the underside of the roof cool in summer and warm in winter.
2. They prevent moisture from condensing on the underside of the metal roof coverings and so prevent trouble from corrosion.
3. They isolate the metal roof sheetings from timber or concrete 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 brick-work 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:

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 roofline—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 rain-water 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

Continued overleaf

The Irish Plumbing and Heating Engineer.

abutments to vertical walls which surround a flat roof (see Diagram A, Fig. 7). Similar cover flashings are employed where the top edge of a sloping roof abuts a vertical wall (see Diagram B, Fig. 7). In both cases the material has simply to be cut to the required length and width, a "turn-in" flange formed, and then carefully fixed so that the flashing will not be moved by wind forces. "Tags" made from rolled off-cuts of the same material are handy for wedges which are caulked into the spaces between the brick joints and the flashing "turn-in" so as to fix it securely. The joint is then finally weatherproofed by being pointed in cement and sand. Sheet

from previous page

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 "Stonesfield" 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.

A. L. TOWNSEND ON ROOFWORK

metal fixing clips folded over the up-stands 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 to 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 slated or tiled roofs. However, no soakers

ing. Such materials are not bonded as are plain tiles and slates, so that soakers cannot be used with them. This is because they are fixed with interlocking integral "up-stands" at the side edges of the tiles or sheets, which prevent the use of soakers anyway.

Diagram F illustrates a step and cover flashing applied to a corrugated roof surface. Notice the treatment at the lower edge of the chimney apron; and that the side flashings are just as would be used if it were a long sloping roof edge instead of a chimney weathering; and that the general treatment throughout would be just the same for lead, copper, aluminium, or Nuralite flashing materials.

3. **The secret gutter with step flashing** is shown in Diagram E, from which you can clearly see how the gutter is formed by means of a suitable batten which also serves to tilt the slates to deflect water away from the actual abutment. Rainwater from the vertical wall face runs into this gutter and discharges from here on to the roof tiles or slates lower down beyond the abutment.

Though the method may be used with plain tiles or slates this is not often done because the hanging step flashing and soaker method is just as effective, looks much the same, and is cheaper. However, the secret method is a useful alternative to the step and cover method for corrugated roof sheetings or curved tiles. It is also very useful in some special kinds of roofing which employ slabs of irregular size.

WHEN used for abutment weatherings to asbestos cement or mild steel corrugated sheet roof coverings, the secret gutter method allows for the considerable amount of thermal movement which is bound to occur. If step and cover flashing is used, such expansion and contraction of the large sheets will tend to drag the "lay-on," and the flashing is either loosened from the brick joint, or cracks as a result of fatigue from the continual movement.

4. There is yet another method—the **single soaker** and combined flashing. This consists of specially cut soakers, of such girth that they will lay about 4 in. beneath the slates, and stand up against the wall high enough to reach and "turn-in" a suitably placed brick joint—for a 45° pitch roof covered with 20 in. × 10 in. slates laid with a 3 in. lap, each, single soaker would need to be cut from rectangular pieces of lead 14 in. × 12½ in. The 14 in. dimension indicates the greatest girth, or all round width measurement, and the 12½ in. the length of the soaker which, as you will remember, is found by the simple formula: Length of soaker =

$$\text{Length} = [\text{length of slate (in.)} - \text{lap (in.)}] + 1 \text{ in. for fixing.}$$

This method is more commonly found in coastal areas where winds frequently reach gale force. As you can see from Diagram F, this really is a secure system of fixing for such exposed, wind-blown situations.

SPECIAL REVIEW

THIS MONTHDomestic hot water supply,
equipment and boilers.

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, 4½"; depth, 4½". 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, 10½" wide, 8 5/16", and the tap swing is 5½". There is a

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).

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 lb./sq. 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.



● The new G.E.C. mirror two-gallon water heater. (See Review).

Nine

*dublin***GAS**

*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

cistern together with a vent-expansion pipe. The model is constructed so that it heats the water from the top downwards by means of a special change-over Otter thermostat.

The incoming supply is automatically switched to the top half of the container until the top level of water reaches 150 degrees F. The supply is then transferred to the bottom heater to heat the total quantity of approximately 180 degrees F., or as required. This type of heater is particularly suitable for "off peak" application and ensures an immediate draw-off of really hot water soon after current is available.

* * *

GAS water heaters are extensively used in old or new property, for private or local authority building, for conversion or industrialised housing. Instantaneous sink water heaters provide hot water at whatever temperature is needed at any time of the day or night—even boiling water can be had instantly from the tap. These heaters ensure that the water is heated only as and when it is wanted and a very high degree of automatic control can be achieved.

Bath water heaters give sufficient hot water for baths instantly, and

SPECIAL REVIEW

from page nine

multipoint heaters provide instant endless hot water to each hot water outlet in the home. Water storage heaters provide hot water for instant use at low cost. Fifteen gallons of really hot water can be stored ready for instant use whenever it is needed at bath, wash basin or sink, enough to supply constant hot water to all taps for the average house or flat.

Hot water circulators can either replace a solid fuel boiler or may be used in conjunction with the solid fuel boiler or back boiler. A gas hot water circulator fitted to a well lagged cylinder provides a family with economic hot water.

* * *

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 re-



● From the Santon range, (See Review).

cuperation 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

G.E.C. water heaters



UNDERSINK WATER HEATER. Easily installed under sink, with special fitting provided. Thermostatically controlled. Capacity 2 gallons. Loading 1 KW. Price £13-10-0.



"MIRROR TYPE" 2 GALLON WATER HEATER. New revolutionary thermostatically controlled Water Heater incorporating large 10" x 8" Mirror. Loading 2-3 KW. Price £13-12-0.



CISTERN TYPE STORAGE WATER HEATER. Available from 5 gal. capacity upwards. Ball valve tank, hot water tank heating elements and thermostat are embodied in one unit. Price from £27-10-0.



NON-PRESSURE TYPE WATER STORAGE HEATER. Single outlet only. Takes its cold water supply direct from mains. Available in capacity from 2 to 20 gals. Prices from £12-0-0.



PRESSURE TYPE WATER STORAGE HEATER. For multipoint installations—takes its cold water supply from an overhead tank. The 20-gallon size provides ample supply for the average household. Larger sizes are available for hospitals, schools, institutions, etc. Price from £30-10-0.

The General Electric Company Of Ireland, Ltd.

Sales Departments, Trade Counter and Showrooms: DUNLEER HOUSE, STORE STREET, DUBLIN, 1.
Branch Showrooms: 54 DAME STREET, DUBLIN, 1.

SPECIAL REVIEW

from previous page

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

* * *

FROM Main Morley Ltd. (Gothic Works, Wyre St., Padham, Lanes.) 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.

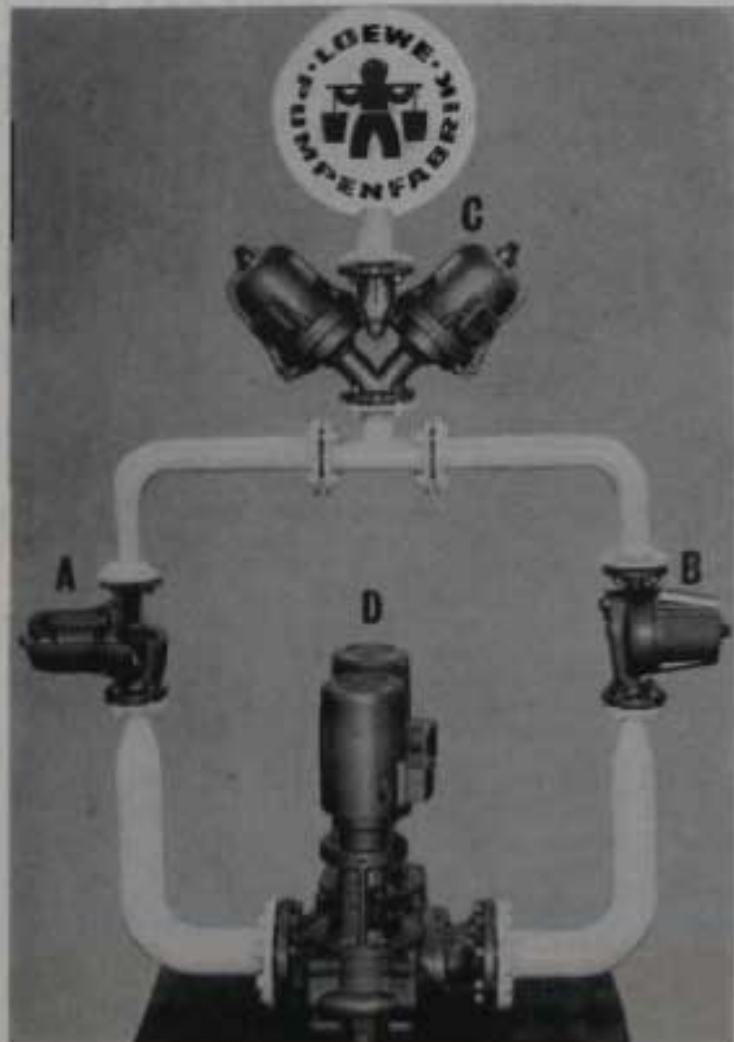
The Main Severn is in one standard form and will provide abundant hot water instantaneously to sink, bath and hand-basin.

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. LP. & 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.



H.R.HOLFELD LTD. Stillorgan DUBLIN phone 881603

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

D.C.L. NEW DUBLIN PREMISES

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.

trade Topics

almost unequalled range of high-quality materials, backed by local, on-the-spot, service. Storage facilities were 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.

* * *

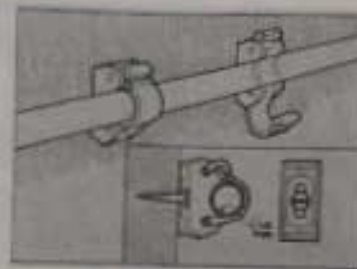
A NEW labour-saving conduit clip, moulded from Delrin acetal resin, is now on the market.

NEW CONDUIT CLIP

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 alkalis.

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



● **The New Conduit Clip.**

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

* * *

IN ADDITION to their products already available, C. M. Hess Limited

A NEW HESS BOILER

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.

cold houses

& hot houses

AEROBORD

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 1" thickness of Aerobord is equivalent to: 1.2" glass wool, 1.25" cork slab, 1.5" mineral wool, 1.8" softboard, 2.25" 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

industrial heating & ventilating

IN IRELAND



AN INTERESTING new range of automatic louvred shutters is announced by the

AUTO LOUVRED SHUTTERS

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 9 1/2" square to 17 1/2" square, at prices from £3 8s. 0d. Larger sizes are in process of development.

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

* * *

Following the introduction last month of their new range of Eurovent Polypropylene Diffusers, Van den Bosch Limited announce that these units can now be supplied on quantity orders in any colour to customers' requirements at no extra cost.



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 R. Murray, Manager, Process Instrumentation Sales. Right: Mr. D. W. Blakemore, Chief, Relay Tendering, with Mr. J. Quinn, English Electric, Johannesburg.

New English Electric range in Dublin

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 am-

plifiers 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, telemetering 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

are now represented...

...in Dublin

H McGeough
14 Castlewood Park
Rathmines
Dublin 6
Eire

Tel: Dublin 63470

...in Belfast

P & D Macfarlane Ltd
53 Ridgway Street
Belfast
Northern Ireland

Tel: Belfast 667968/9

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.

Trade inquiries to be directed to our representatives in Dublin or Belfast.

TRANE LIMITED

HEATING & AIR CONDITIONING
Manufacturing engineers of air conditioning, heating, ventilating and heat transfer equipment.

DONIBRUSTLE INDUSTRIAL ESTATE,
DUNFERMLINE, FIFE, SCOTLAND.
TELEPHONE: INVERKEITHING 700 & 7701

BRANCH OFFICES:
LONDON RICHMOND 7641 • MANCHESTER SALE 1313
BIRMINGHAM EDGBASTON 5053 • GLASGOW DOUGLAS 8621
BRISTOL WHITCHURCH 3180 • NEWCASTLE 813610 • LEEDS 686510
NOTTINGHAM 71855 • LIVERPOOL CENTRAL 3739



Here are five good reasons for specifying Biddle Heating Equipment

(write in and you can have
plenty more)

forceflo



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

warmline



Highly efficient and adaptable method of heating ideally suited to modern building design. Warmline unobtrusively skirts the perimeter of a room. Available in three heights (12", 15" or 20") offering a high output per foot run... independently! Heat is emitted evenly over the whole run so positioning can be varied anywhere without interfering with heat distribution. Individual damper control is a standard fitting. Warmline is available in two styles, flat front or sloping top, both are simple and quick to install.

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

uniflow



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

The Biddle Uniflow puts heat just where you want it.

vectair



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

coils



Standardised Biddle Coils have been designed to meet all the requirements of modern air heating and cooling equipment. These coils are of welded construction and are tested to 400 p.s.i.g. air under water for a working pressure of 500 p.s.i.g. Over 60 fin and tube combinations are available in standard casings ranging from 12" x 12" x 1 row to 25 ft nominal face area by 8 rows deep. High duty plus fins allow permit face velocities of up to 600 ft/min. without moisture carry-over. Biddle Standardised Coils are available in four main types suitable for use with the normal heating and cooling mediums.

Forceflo and Uniflow both now available from stock in Ireland

AGENT FOR IRELAND:

17 Lower Baggot Street, Dublin 2, Dublin 61207.

AGENTS FOR NORTHERN IRELAND:

Thermal Engineering (Thermal Engineering) Ltd., 26 Neill Hill Park, Belfast 6, Belfast 655759

F. H. BIDDLE LTD 18 Upper Grosvenor Street, London W 1 (HYDe Park 6532-9)

biddle



trade Topics

THE Hydro-flo electric chiller now marketed by Reznor Nesbitt (STC House, 190 Strand, London, W.C.2) is a packaged unit with all major components de-

signed and manufactured by one company. It can be used in conjunction with a forced hot water heating system for general air conditioning or for industrial process cooling.

The packaged unit is simple to install. The component parts are pre-assembled and it is only necessary to connect the unit to the water and electricity mains service.

The Hydro-flo package has a capacity of between 7½ and 200 tons of refrigeration an hour (between 90,000 and 2,400,000 B.t.u./hr.). Among air conditioning applications are hotels, restaurants, hospitals, offices, factories, shopping centres, churches, schools, theatres and cinemas.



● At the Engineering and Scientific Association lecture were (from left): Mr. David Gunn, Association President; Mr. O'Neill and Mr. Hugh Simpson (see below).

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.

The lecture—"Design of Modern Shell Type Boilers"—was given by Mr. Hugh Simpson, M.I.Mech.E. (Chief Engineer, Cochran & Co., Annan, Ltd.) and Mr. David Gunn, B.Sc. (England), M.Sc.F.Inst.P., A.M.Inst. Gas.F., M.I.Plant E. (Cochran Technical Director).



Van den Bosch mobile unit's Irish tour

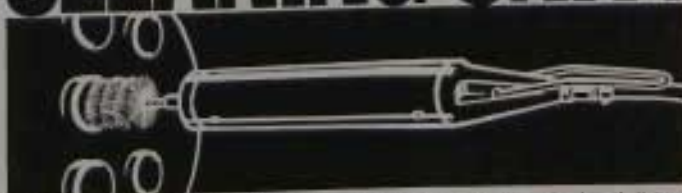
THE new Van den Bosch mobile demonstration unit is to make an extended tour here starting early January next.

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 fibreglass 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.

A UNIQUE BOILER-TUBE CLEANING UNIT!



The Ferret is a completely unique type of boiler-tube cleaning unit. Attach it to a standard tube brush and it will creep along the tube—without revolving—and without any need for manual pushing and pulling! When it reaches the tube end, the double thrust action then reverses and the Ferret returns—ready for the next tube!

- THE FERRET**
- Cuts labour time—no manual pushing and pulling
 - Does away with extension rods
 - Gives cleaner tubes
 - Works quickly

For Publication No. 308, or a demonstration in your own plant, CONTACT:

HALPIN & HAYWARD LTD.

Agents, Buildings 16-17 Lower O'Connell St., Dublin, 1. Tel.: Dublin 48628, and 589 Upper Newtownards Road, Knock, Belfast, 4. Tel.: Dundonald 3213.

The Irish Plumbing and Heating Engineer.

POTTERTON boilers have a reputation for versatility, and they fulfil 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 Potterton 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.

IT consists basically of two parts, a large circular base structure or caisson within which is a standard lighthouse tower containing all the functional elements of a normal lighthouse, including living and working quarters, the whole of which is designed to be lowered on to a gravel pad laid on the sea bed 60 ft. below the surface. Hitherto, the conventional type of lighthouse at sea has been constructed upon rock foundation.

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 Potterton DOA 150 oil-fired boiler with Nuway pressure jet burner, complete with all automatic controls. Pipework from the boiler is taken to high level within

Eighteen

POTTERTON AT SEA



The now familiar bulk of the Kish light under construction.

IN THE KISH

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, with a total capacity of 7,500 gallons. Fuel is delivered by a service vessel, which comes alongside the lighthouse and connects up the delivery lines to the bunkering points, which are situated outside the third storey.

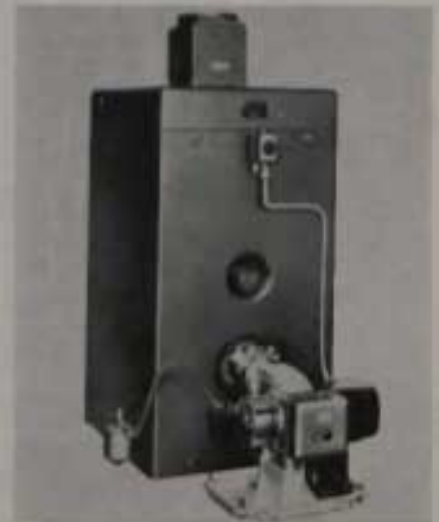
A particular problem encountered in the installation was the flue-ing of the boiler. The flue has been carried vertically up within the central spiral

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.

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 Potterton boiler. These warm the entrance hall, radio, observation and fog-signalling rooms situated on the upper floors.



● A Potterton DOA 150 oil-fired boiler which was used in the Kish installation.

INDUSTRIAL SECTION ►

Continued Page 27.

Northern Ireland monthly review



PERKINS

The Oldest Name in Heating

For the Largest Range of

**Fully Automatic Oil-Fired Boilers
and Air Heaters** DOMESTIC and INDUSTRIAL to 5M. B.T.U./HR



MANUFACTURERS
OF THE NOW
WORLD-FAMOUS

**Balance
Flue
Mini
Pressure
Jet**

*Consult us
about your*
**Flue
and
Siting
Problems**

Sole Concessionaires:

ULSTER HEATING CENTRE

(Ernest Wilson Ltd.), 90 Cromac Street, Belfast, 2. Tel. 21449.

OIL FIRED HOMES (Ireland) LTD.

6 Harcourt Road, Dublin, 2. Telephones: 57039/57030.

Northern Ireland:

Republic of Ireland:

The Irish Plumbing and Heating Engineer.

Kosangas

serves all industries with best
quality lowest priced bottled gas



Jetair Heater



Kosangas Tanker



Industrial Heaters

- *Kosangas* service aids productivity and effects economy not only in plumbing and heating, but in numerous other industrial and domestic applications.
- *Kosangas* is widely known as Ireland's most versatile industrial fuel: a modern, clean-burning, fumeless gas of high calorific value, leaving no deposits.
- *Kosangas* service has earned a high reputation for promptness and efficiency. Skilled technicians and fitters are available.
- *Kosangas* Propane is supplied in 73 lb., 24 lb., and 11 lb. cylinders. *Kosangas* can also be delivered in bulk into customer's own storage.
- *Kosangas* technicians can provide guidance on any industrial fuel problem without obligation.
- *Kosangas* offer a HIRE SERVICE for certain equipment.

*If you would like a copy of our new Leaflet of Kosangas Industrial Applications please telephone our Industrial Sales Dept:
Belfast 33221 or Dublin 74774*

McMULLANS KOSANGAS (N.I.) LIMITED, 7 FOUNTAIN STREET, BELFAST. 1 TELEPHONE: BELFAST 33221
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.

GAS ON SHOW AT CENTRE

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

● MR. H. F. HARRIS, M.I.Mech.E., M.Inst.F., Chief Engineer of the Northern Ireland Hospitals Authority, who retired recently, is widely known and respected in engineering circles in Northern Ireland and took a leading part in forming the Northern Ireland Branch of the Institute of Fuel, becoming its Chairman in 1961.



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.GasE., M.Inst.F., Engineer and Manager of the Belfast Corporation



● The new Le Bas Tube Co. Ltd. warehouse and sales office at 472 Shore Road, Belfast 15.

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 Pulsometer 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-

Continued page twenty-three

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 in 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.



for complete dependability



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.



There are over 1,000 patterns and sizes from $\frac{1}{4}$ " to 6", black or galvanised, and every fitting is individually tested to 360 lb. p.s.i.



From your local stockist or from

LE BAS TUBE COMPANY LIMITED

24, Donegall Square Mews, Belfast.

Telephone: Belfast 22129.

NORTHERN NOTES *from page twenty-one*

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

and attics—an important factor when replacing conventional metal and asbestos tanks.

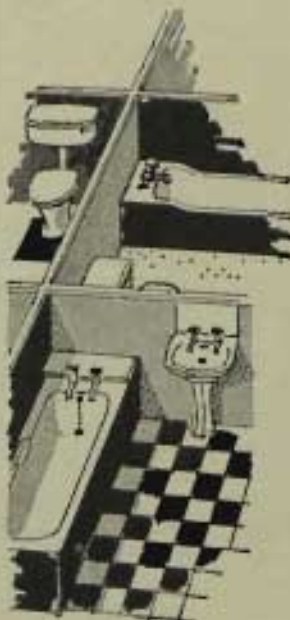
Osmathene cisterns are manufactured by injection moulding on one of the largest machines in the country. This method of manufacture guarantees wall thickness and surface finish. They are easy to nest whilst in storage, have a high resistance to impact, are unaffected by climatic conditions and will not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

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.

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.



NORTHERN IRELAND'S FINEST PLUMBING SHOWROOM

Here is the largest and most modern selection of Plumbing and Sanitary Fittings tastefully and colourfully displayed.

- 12 COMPLETE BATHROOM SUITES
- 5 COMPLETE FITTED KITCHENS
- 20 STAINLESS STEEL SINKS

- | | |
|--------------------------|--------------------|
| Shower Cubicles | Vanitory Basins |
| Shower Fittings and Taps | Urinals |
| Wash Hand Basins | Drinking Fountains |
| Bidets | Fireclay Sinks |
| Chemical Closets | Bathroom Cabinets |

DISTRIBUTORS TO THE TRADE

JOSEPH BLAIR LTD

CHURCH LANE • BELFAST

PHONE 30555 (10 LINES).

The Irish Plumbing and Heating Engineer.

By



F. R. McBRIDE, A.M.I.Mech.E., M.Inst.F., F.Inst.P.

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



**'Yes
pitch fibre
was
specified'**

The Temple System offers

Building Tolerance
The 'O' ring joint allows for plus or minus 1/4"

Heat Resistance
Withstands continuous discharge of boiling water

Speed
Light weight and fabricated units speed up installation

Efficiency
Pitch fibre pipe; Polypropylene fittings; both non-combustible and non-electrolytic

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

The Temple system for multi-storey 6" soil pipes speeds up the building operation dramatically. The Neoprene 'O' ring joint allows for building tolerances of plus or minus 1/4". Pitch fibre pipes are exceptionally light, and can be sawn, drilled or grooved on site using only hand tools—more speed, less cost, fewer labour charges.

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

Temple Tubes

Limited
Temple Mill - Passfield - Liphook - Hants - Tel: Passfield 261



Twenty-five

The Irish Plumbing and Heating Engineer.



● British Insulated Callender's Cables Limited have announced that Mr. T. H. Robinson, A.M.I.Mech.E., has been appointed Manager of their Belfast

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.

* * *

● BELL'S 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 gas service be introduced. Therefore, towards the end of last year Babco-Condrup Limited acquired the controlling interest in Gas Services (Filling and Distribution) Limited of Weedon, 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 Weedon 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.

Maintenance

from page twenty-four

give more complete installation instructions and site erectors and designers must read this literature, not leave it buried among piles of paper. If these suggestions were adopted they would go a long way to producing a much happier atmosphere between all those persons who are concerned in the domestic heating industry.

INDEX TO ADVERTISERS

Airasco Products Ltd.	17 Hendron Bros. (Machinery) Ltd.	32
Alliance and Dublin Consumers' Gas Co.	18 Hilmor Ltd.	4
Biddle, F. H., Ltd.	16 Holfeld, H. R., Ltd.	12
Blair, Joseph, Ltd.	23 Ideal-Standard Ltd.	Cover (iv)
British Berkefeld Filters Ltd.	5 Le Bas Tube Co. Ltd.	22
Brooks, Thomas & Co. Ltd.	27 Leinster Engineering Co. Ltd., The	38
Chalwin, Thomas, & Co.	1 Martin, T. & C., Ltd.	28
Clyde Fuel Systems Ltd.	39 McMullians Kosogas (N.I.) Ltd.	20
Cochran & Co. (Annan) Ltd.	43 Mono Pumps Ltd.	1
Crampton, G. & T., Ltd.	37 Mossell Mitchell & Co. Ltd.	Cover (ii)
Dansk Stoker & Varmekedel Kompagni	40 Oil Fired Homes (Ireland) Ltd.	19
Delta Water Fittings Ltd.	2 Quadrant Engineers	6
Du Bois Co. Ltd., The	Cover (iii) Southern Chemicals Ltd.	13
Flemings Fireclays Ltd.	Cover (iii) Temple Tubes Ltd.	25
Flynn, Mr. M.	29 Thompson, John, Wilson Boilers Ltd.	31
Frenger Ceilings Ltd.	37 Trane Ltd.	15
General Electric Co. of Ireland Ltd.	11 Unidare Ltd.	Cover (i)
Green, A. P. Refractories Ltd.	30 Whensoe Ltd.	32
Harris Engineering Co. Ltd.	44 Wilson, Henry, Ltd.	35



MONTHLY
**SPECIAL
REVIEW**

**1 DOUBLE
GLAZING**

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 stand-

ard 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 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

Twenty-seven

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



This Special Review article is by W. J. R. Couchman, A.M.A.S.H.R.A.E.

Double glazing

from previous page

a window, the heat loss, or heat requirement, will be reduced by approximately one-half; the precise amount varies very slightly according to the method used. Best results are obtained with sealed units where the two panes are provided with an air gap of not less than three-quarters of an inch. In practice the gap is often reduced to half an inch or even less, without any significant deterioration.

Apart from value in thermal insulation double glazing can be of great service in sound insulation. Optimum conditions are not the same as for thermal insulation; for best results the panes should be from four to eight inches apart. However, even with the panes spaced for thermal insulation the degree of sound attenuation is extremely good and this has often proved of real value in reducing traffic noise.

There are three main types of double glazing units, and these are as follows:

- (1) Sealed Units.
- (2) Storm sashes.
- (3) Clipped or sliding panes.

Sealed Units undoubtedly represent the best approach to double glazing. Each unit is completely sealed and airtight, therefore only the two outer surfaces need ever be cleaned. The inner space is occupied by dry air or by an inert gas; therefore there is no risk of internal condensation. Of course there can be no question of cutting the units to size, since they must be factory sealed, and because of this they tend to be used mainly for new work in standard size frames. Since the units are fairly thick they cannot usually be accommodated in frames which are rebated for single glazing only, although one manufacturer does provide a special sealed unit with the inner pane extended or "stepped" to fit into a standard rebate. Sealed units are relatively costly, and while

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 | ★ MAXIMUM LIGHT |
| ★ CUTS HEAT LOSS BY 50% | ★ SOUND INSULATION AS WELL |
| ★ WINTER WARMTH | ★ EASY TO CLEAN |
| ★ SUMMER FRESHNESS | ★ SIMPLE INSTALLATION |

Product of Alumin Building Components Ltd.

Telephone 71571 (exts. 20 and 10)

for full details and descriptive leaflets.

T. & C. MARTIN Ltd.

D'Olier House, D'Olier St., Dublin, 2

— and —

Main St., Bray, Co. Wicklow



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

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

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 to arise if the space between the

save

2
POUNDS

in heating costs with

twinseal

DO-IT-YOURSELF DOUBLE GLAZING



TWINSEAL is the latest, easiest Do-It-Yourself Double Glazing System. Fitting is so easy! Simply slide glass into TWINSEAL plastic channel—which forms the second frame and spacer—insert foam sealing strip, and your second pane is ready to clip into the easy-to-use retaining brackets on the inside of your original window.

- * Suitable for wood and metal frame windows
- * Allows windows to open normally
- * Uses clear glass—no distortion or discoloration
- * Reduces condensation—saves paint and woodwork
- * Can easily be removed for periodic cleaning
- * Gives a neat, unobtrusive finish

Available from

M. FLYNN

GLASS AND GLAZING SPECIALIST
110 AMIENS STREET, DUBLIN 1

Phone 42554/44242

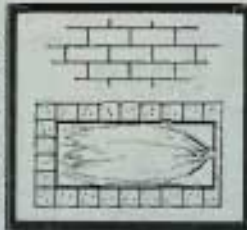
Also Suppliers of
Insulight and
Glass to Glass
Double Glazed
Units

The A.P. GREEN GUIDE TO REFRACTORY MAINTENANCE



PROTECTION

1 Use SAIRSET refractory cement for laying-up all types of firebrick. Protect new and existing brickwork with a coating of SAIRSET. Seal cracks—reduce risk of spalling and slag attack. SAIRSET is available in $\frac{1}{2}$ cwt., 1 cwt., and 2 cwt. drums ready mixed. It should be in your maintenance store.



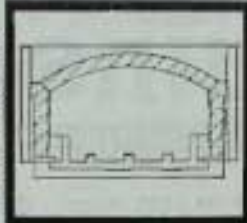
REPAIRS

2 Repair damaged walls with HYBOND plastic refractory. Can be used for small gaps or the complete wall or arch. For extreme temperatures use HIGH ALUMINA PLASTIC. HYBOND is delivered in 1 cwt. cartons sliced ready for ramming-in.



RE-LINING

3 Avoid intricate brickwork and special shapes by lining with KAST-SET refractory concrete. Simply mix and pour. When an insulating refractory is required for furnaces use KAST-O-LITE. Monolithic linings are economical on fuel and simplify maintenance. A. P. Green refractory concretes are sold in 1 cwt. bags.



**SAIRSET - KAST-SET
HYBOND - KAST-O-LITE**

Are all available from
DUBLIN—
Brooks Thomas
Dublin 41941.
BELFAST—
Corbett-Cobb
Belfast 748779.



A. P. Green Refractories Limited
York House, Wembley

Tel: DILIGENCE 0455 Telegrams: GREENCO WEMBLEY Telex: 298755

from previous page

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" Glastoglas. 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.



the new

JOHN THOMPSON AQUAPAC COALMASTER

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.

JOHN THOMPSON PACKAGE BOILER DIVISION, LILYBANK WORKS, LONDON ROAD, GLASGOW E1.

John Thompson Ltd., 25, Lower Leeson St., Dublin. Tel: Dublin 63544

John Thompson Ltd., 16/20, Rosemary St., Belfast, 1. Tel: Bel. 27757



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—

- 1 Step Grates
- 2 Fire brick lined incinerators
- 3 Inclined charging door with integral cast hopper
- 4 Sliding grates
- 5 Cyclo-vane fly ash control

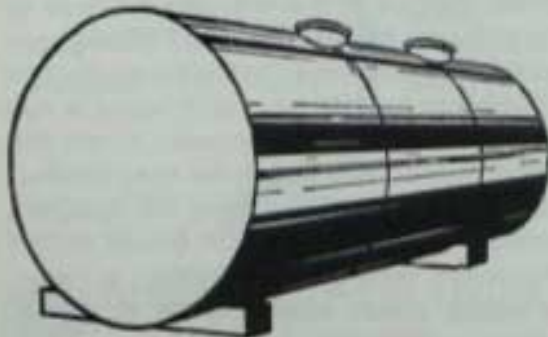
- Your waste disposal problem is as near as your telephone. We shall be only too pleased to discuss your problem and offer you the perfect solution.

HENDRON BROS. (Machinery) LTD.

144 Richmond Road, Dublin, 3. Telephone 376061.



IRISH INDUSTRY NEEDS WHESOE BUILT WELDED STEEL TANKS



for the storage of liquids and gases. If you have a problem of this nature consult us and we will be happy to give you free technical advice.

WHESOE

WHESOE (IRELAND) LIMITED,
Hawkins House, Hawkins Street, Dublin, 2.
Tel: 73475.



MONTHLY SPECIAL REVIEW

2 Dust and Waste
Collecting Plant

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 .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.

Dusts are solid particles projected into the air by natural forces such as storms, volcanic eruptions, earthquakes and man-made forces, such as crushings, grindings, demolition, etc. Particles are not called dust unless they are smaller than about 100 microns. Fumes are solid particles formed generally by the condensation of vapours from normally solid matter. Smokes are extremely small solid particles produced by incomplete combustion of organic substances, such as tobacco, wood, oil, coal, turf, etc. Smoke is generally defined as the mixture of solid, liquid and gaseous products, though technical literature distinguishes between soot or carbon particles, fly ash, cinders, unburnt gases. Smoke particles vary in size from approximately one micron to 0.3 micron. (Micron—millionth of a meter or thousandth of a millimetre).

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 wood-working 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 operations, 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) Ducting, 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 sawdust, bakelite 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 a "tailor made" one 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

Continued overleaf

Thirty-three



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



Our picture shows a Sirocco 6 cell R type collector installed in an industrial boiler house.

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 calorific

value, precautions must be taken against explosion. Amongst such dusts are flour, pulverised fuel, sulphur, acetate 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).**

SIROCCO equipment manufactured by Davidson & Co. Ltd., of Belfast, is supplied for the control of dust and grit in a wide variety of industries, ranging from electric power production to textile manufacture. The Sirocco "D" type dust collectors are used for the removal of dust in many types of industry and are also employed extensively as secondary units in grit arresting plants. They operate on the centrifugal principle.

Sirocco Cellular dust collectors are installed in many power stations as well as in industrial boiler houses throughout the world. The Sirocco "R" type dust collectors offer a somewhat lower efficiency than the Sirocco cellular collection, but incorporate a

Continued page thirty-six

Thirty-four



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:



Henry Wilson & Co. Ltd.

Makers of Heating Equipment since 1840

16 Fade Street, Dublin

Telephone: Dublin 76009

P.O. Box 6 · KIRKBY · LIVERPOOL

Telephone: Simonswood 3541

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 fume 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 which allows the gas to pass through the filter bank. Many



Adoption of radiant panel system



INTERESTING INSTALLATION IN NEW CRAMPTON 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. Crompton Ltd. headquarters in Bullsbridge, the opening of which we reviewed last month.

With Frengerstrip temperature gradients 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 dirt-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 the semi-industrial use.

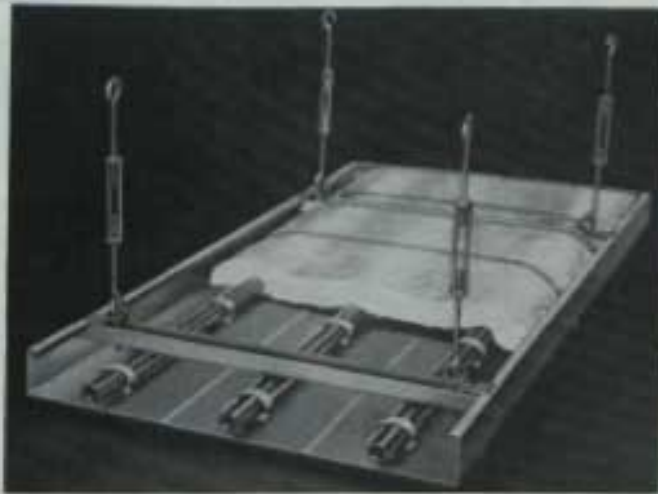
Frengerstrip is a single installation reducing pipework and valves to a minimum and without moving parts requiring maintenance. It is adaptable in width and length to varied heat requirements.

A nine grid has 1/2" stretcher tubes welded into 1 1/2" 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.

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.



FRENGER STRIP radiant strip heating supplied and installed at **G. & T. CRAMPTON LTD.** for **G. LARCHET** Consulting Engineer
129 Rathgar Road, Dublin, Dublin 973562
by **FRENGER CEILINGS LTD.**
65 Balfour Avenue, Belfast 31887
Ormeau Road, Belfast, 7.

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.

G. & T. CRAMPTON, LTD.

Building & Civil Engineering Contractors



Telephone: 680691-7; 680682

Telegrams: "Foundation," Dublin



Directors:

- J. McClintock
- J. S. East
- S. H. Seymour, B.Comm., A.C.A.
- S. Clark, A.I.Q.S.

Chairman:

G. H. C. Crampton, B.A.I., M.I.C.E.I.

Joint Managing Directors:

- G. C. Crampton, B.A.I.
- Ivan Webb

**SHELBOURNE ROAD,
BALLSBRIDGE,
DUBLIN, 4.**

VOKES BERGEN GENSPRING

GENFLEX BELLOWS 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 1½" to 120" nominal bore, and in rectangular section in any dimension up to maximum practical shipping size.

The BERGEN System



The only complete integrated systems of pipe supports. Vokes Bergen Genspring Ltd. manufacture a comprehensive range of support hangers which can be supplied as standard component assemblies or tailor-made to special requirements. Parts can be compiled and ordered by tabulation, using simple code marks.



MICRODISC

An edge filter for all chemical fluids. The filter element consists of a stack of discs keyed to a central spindle and separated by spacers. The narrow slots thus produced may be varied at manufacture from .0015 in. (.040 mm). Further sizes range from 1" B.A.D. to large standard flanged connections. Cleaning is carried out without interruption of flow by one complete turn of a handle on top of the filter.

VOKES

Filters for Industrial Liquids

**PERMANENT
 SELF-CLEANING
 ALL-METAL
 ELEMENTS**



MICROWIRE

For the filtration of water, aqueous solutions, process water, circuit water, cooling water, etc. The filter element—an accurately spaced wire mesh wound on to a precision machined former—can be varied at manufacture to give interstices between .001 in. and .010 in. (.025 and .254 mm). Capacities range from 14,000 to 200,000 g.p.m. Back flush cleaning is carried out entirely automatically without interruption of flow. A secondary microdisc filter can be fitted, if required, for recovery of the liquid used for back flushing.

Full technical information available on request.

THE LEINSTER ENGINEERING CO. LTD.

128-130 CHURCH STREET, DUBLIN 7. PHONE 771093/4. SOLE AGENTS FOR VOKES AIR, OIL AND FLUID FILTERS AND VOKES BERGEN GENSPRING SUSPENSION SYSTEMS.



trade Topics

UNIDARE Ltd., Finglas, Dublin, have made a successful take-over bid for Oerlikon (Electrodes) Ltd., of Cowley, Sussex.

UNIDARE TAKE OVER OERLIKON

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 would be produced and marketed entirely in Ireland.

He said their action in taking over the British company was because

Rubery and Owen stage a Dublin

reception,

display



RUBERY OWEN and Co. Ltd. this month staged a successful display of heating equipment and sanitary ware in Dublin at the Building Centre. At the display there was also an informal cocktail party which was well attended. Our picture shows (from left): Messrs. L. F. Cole, Assistant Export Manager; L. Friedman, Export Manager, Domestic Equipment Division of Owen; W. D. Hannah, Technical Director of Rubery Owen; H. G. Kendrick, Sales Promotion Manager; K. W. Talbot, and E. C. Rollinson, Director of Exports, Owen.

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 Oer-

likon'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.

CLYDE

LIGHT OIL BURNERS



Clyde Fuel Systems manufacture a wide range of light oil burners for converting boilers from solid fuel. Illustrated is model 'Junior' which can be easily and quickly installed.

6 BRANCHES THROUGHOUT IRELAND



You can now take advantage of six service branches in Ireland. Another addition to the extensive after sales network throughout Ireland.

CLYDE tasso

CAST IRON SECTIONAL BOILERS



Clyde "TASSO" cast-iron sectional boilers are available for solid fuel, oil, or mechanical stoker firing with operating efficiencies of approximately 80%. Suitable for central heating and hot water systems with ratings from 80,000 to 2,575,000 B.T.U.'s per hour.

CLYDE FUEL SYSTEMS LTD.

80 Holywood Road, Belfast. Tel.: Belfast 65365/6.

Branch at Londonderry.

CLYDE FUEL SYSTEMS (IRELAND) LTD.

6 Mount Crescent, Dublin. Tel.: Dublin 66489.

Branches at Cork, Limerick and Longford.

The Irish Plumbing and Heating Engineer.

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.

➔ **4,800 MILLIONS**

This figure confirms what specialists are saying.

D.S.V.—THE BOILER WITHOUT PROBLEMS



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

HOT WATER
HIGH TEMP. HOT WATER
LOW PRESSURE STEAM
HIGH PRESSURE STEAM

Other Products:

OILBURNERS
POWER INJECTORS
TRIMIX VALVES
CIRCULATING PUMPS
RADIATORS, etc.



A/S DANSK STOKER & VARMEKEDEL. KOMPAGNI

Denmark:
4, Landgrevten
Copenhagen K
Phone MI 2070
Cables: Lynfyf
Telex: 8107

Ire:
33, Pearse Street
Dublin 2
Phone Y2104
Cables: Lynfyf Dublin

England:
Oil-Age Boiler Co. Ltd.
46, Victoria Street
London, S.W.1
Phone ABB 3160
Cables: Oilagbo London S.W.1.

IRELAND REPRESENTED AT OLYMPIA EXHIBITION

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 news making equipment on show at the exhibition:

B.S.A. HOLFORD 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 Torridheat 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. Holford 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., L.I.S.A. All Shires baths displayed here are in "Perspex." With their Nalad 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 Nalad 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, Slynlynx;

THE EXHIBITIONS

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

new thermoplastic high and low level Puma cistern; dual flush siphon Kingfisher Twinflo. The Slynlynx 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 Myser 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 Repeats 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 Gramston Plastics Limited.

Continued overleaf



ABOVE—This counter-top wash-basin is from Twyfords Ltd. (See report).

BELOW—The new Redfyrn Centramatic 80 which has an output of 80,000 B.t.u./h.



THE EXHIBITIONS

from previous page

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

APPLIANCES, both instantaneous and storage, chosen to demonstrate their suitability for use in one, two and multi-storey housing, whether new or existing, are shown by Ascot Gas Water Heaters Ltd. Newest model in the company's comprehensive range is the G815 series balanced flue multipoint which provides a whole house service to bath, washbasin and kitchen sink. Designed to simplify installation problems, the G815/2 is intended primarily for mains water supply, and the G815/3 for low pressure supply.

Specifically designed for use with the SE-Duct method of flueing in high buildings is the slim Ascot 727 instantaneous multipoint, also providing a whole house service.

The Ascot G810/2 and G710/2 conventionally flue multipoint gas water heaters and the G611/4, a compact unit fitting in a small space, designed primarily to serve the bathroom at low capital and running costs, will be on view.

* * *

TWO CENTRAL heating systems, both under fire, and a new design underfloor draught open fire, are being shown by Baxi, Bamber Bridge, Preston, Lancs.

The central heating systems are: Baxi-Gas, a gas-fired, warm air, thermostatically controlled central heating unit with a capacity of 30,000 B.t.u./hr.; and the company's small bore central heating system operated from one of their continuous burning open fires and a back boiler.

The new design of underfloor draught open fire is named the "Panoramic." It can be installed as a free-standing unit, or inset. The feature of the Panoramic is the canopy, which will be available in two styles, short or long, in hammer finish copper or stainless steel.

Other products on the Baxi stand will include the Burnall underfloor draught open fire; the various methods of ash disposal—deep ashpit, outside ashbox and Rotary ashbox—and three types of back boiler.

* * *

GLOW-WORM Limited are displaying their newest introduction, the

Monaco gas fire, fully connected and actually working. Their gas-fired boiler, the G.50 SB (50,000 B.t.u./hr.), is also under fire and connected to a selection of Diamond and Glow-line steel panel radiators and skirting heaters. This boiler incorporates the famous Sunrod heat exchanger surface and is available with a choice of controls, as a top flue or balanced flue model and as a complete small bore packaged unit.

The Monaco gas fire is featured again with the Garnet gas convector heater as a "packaged pair," with matching teak facing and frame. The Monaco provides radiant and convected heat and can be fitted into a fireplace, against a wall or mounted on a wall.

Glow-Worm manufacture a wide range of solid fuel and oil-fired appliances and many of these are represented.

* * *

HI-VEE Heating Limited of Carpenders Park, Watford, announce the introduction of a unique ductless warm air unit, the Hi-Vee Eighteen, at the Exhibition. This unit is designed to be built into room dividing walls, and requires no duct or installation structure whatsoever. The unit operates on the indirect radiator system principle, thereby providing modern warm air and all domestic hot water.



● The B.S.A. Harford New Super Optomatic variable head circulating pump which offers a wide range of performance.

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 convector designed 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.

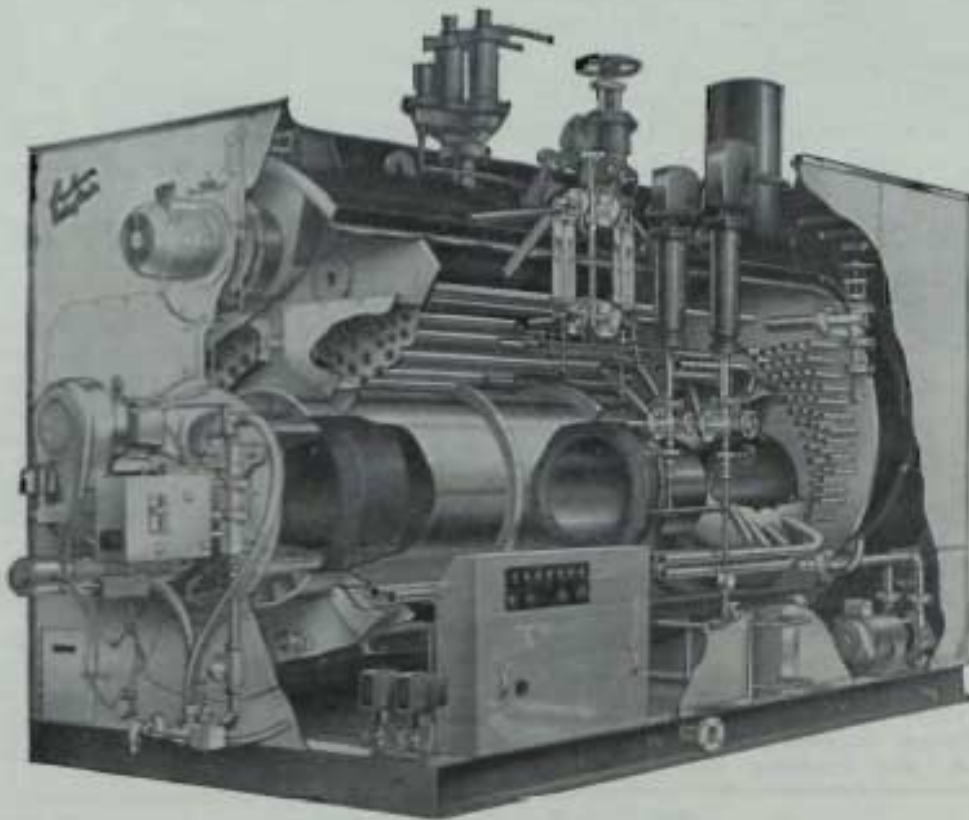
To demonstrate the versatility of the Ideal-Standard range across all-fuel central heating systems and the sanitary ware field, the Company's stand is also featuring a wide variety of new products, including radiators, boilers and sanitary equipment.

* * *

A COMPREHENSIVE selection from Twyford's 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 counter-top washbasin 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).

COCHRAN **CHIEFTAIN** BOILER

The Irish Plumbing and Heating Engineer.



● 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 petroleum, chemical, gas, power and building industries.

SINCE the recent introduction by Midland Industries Ltd. of their new range of temperature control valves,

MIDLAND 'MINI' VALVE

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 $\frac{1}{2}$ " 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 latest addition to the range of valves, taps, joints and fittings for plumbers and engineers manufactured by Peglers Ltd. (Belmont Works, Doncaster)—the new Belmont thermostatic radiator valve for hot water heating systems—is fully described in an illustrated A4 leaflet published by Peglers Ltd.

* * *

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.



Still leads the way...

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.
- Ducted models available.
- New high efficiency combustion head gives permanently clean flame.
- Nozzle and flame position visible during operation—simple to adjust.
- Photo-electric burner control.
- Complete range of oil heaters now. HO/VO 100, 200, 300, 500, CO 600, 800 1000.

Other products include Gas Fired Air Heaters (Vertical Horizontal); Gas Radiant Heaters, Gas Fired Conveyor Heater, Electrostatic Air Cleaning Equipment and Mechanical Dust Collectors.

Further details, data sheets, etc., available. Please write to:

HARRIS ENGINEERING CO. LTD.

KILLOWEN STREET, COLERAINE, NORTHERN IRELAND

Telephone COLERAINE 2315



DESIGNED TO LAST



Fill in the part of
the postcard which
interests you and
post it.

NO POSTAGE REQUIRED IF
SENT FROM REPUBLIC OF
IRELAND.

Reader Enquiry Service

IRISH TRADE & TECHNICAL PUBLICATIONS LTD., 13/15 Dame St., Dublin 2.

Please send details of the editorial/advertised* item on page.....
of the.....196..... issue of.....†
Brief identification of item concerned.....
.....
.....

*I/We wish to receive.....† regularly.

I/We wish to advertise in..... †

Please send subscription/advertising* rates and details.

*Delete as applicable †Name of Journal

Name..... Position.....

Firm.....

Address.....



Orthodox Shape!
Smooth Bore Tubular construction.
Outlets can be turned through 220°.
A two-piece trap at a one-piece price.
Outlet on 'S' trap turned to inlet forms
a through-bore bottle trap.
Frost and damage resisting.
Light weight = lower transportation costs.



Manufactured by:—

THE DU BOIS COMPANY LIMITED
15 Britannia Street, London, W.C.1

Telephone No.: TERminus 6624-5.

Telegraphic Address: "Bleitrap, London."



Now: a new gas fired warm air heater the "Selectaire" 30 by "Ideal-Standard"

Meet the "Selectaire" 30. A new, easy-to-install gas fired warm air heater. 30,000 Btu/h output made by "Ideal-Standard". Made for new homes. Offers a whole host of outstanding features:- high efficiency. Factory assembled for speedy installation. Cast-iron heat exchanger—stronger, longer-lasting. Completely automatic—controlled by room thermostat. For



conventional flue, balanced flue or Se-duct application. Washable filter. Stove enamelled jacket in Dresden Blue finish. Choice of two models—Standard or De-Luxe. De-Luxe comes complete with time switch and provision for summer ventilation. For further information on the new "Selectaire" 30 write to:- Ideal-Standard Ltd., P.O. Box 60, Hull, Yorks.

**More new homes are warming
to "Selectaire" heating**



IDEAL-Standard

LIMITED

"Ideal-Standard" and "Selectaire" are trade marks of Ideal-Standard Limited.

Visit our Stands Nos. 403 and 405 at the Building Exhibition.