

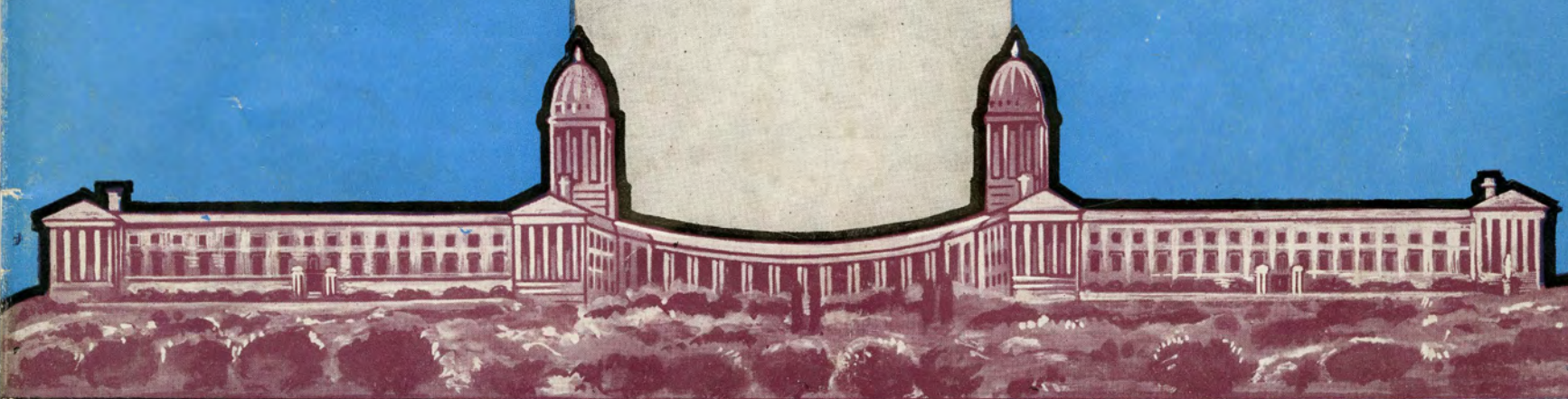
Vol. X

No. 73.

DECEMBER : 1949.

PUBLIC WORKS OF SOUTH AFRICA

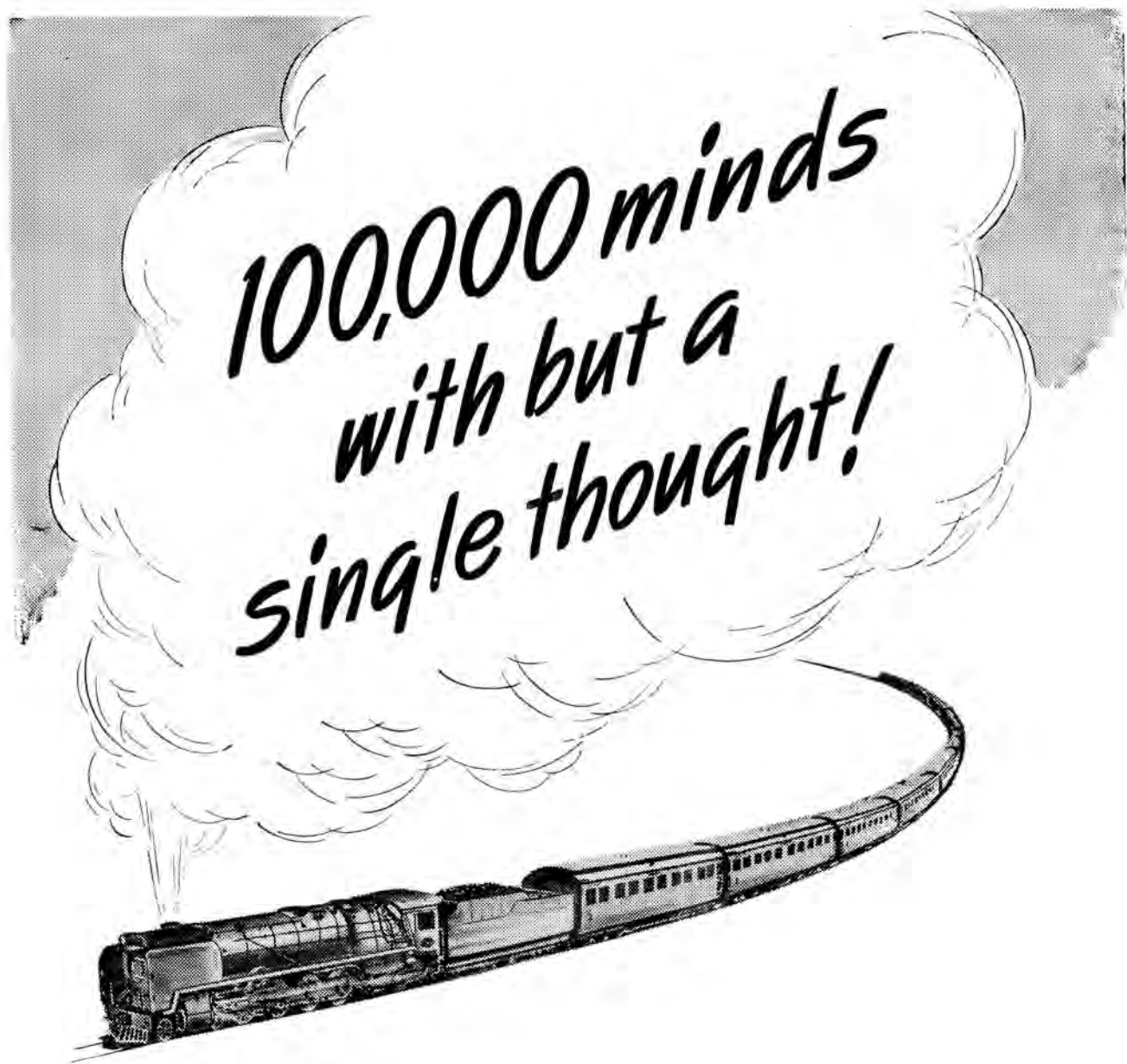
RECEIVED
29/12
PWS 10/73



Registered at the General Post
Office as a Newspaper.

Price per Copy : 1/6

Subscription : 15/- per annum



Whether a railwayman is General Manager or Porter, Chef or Engine Driver, he is always a railwayman first, conscious of being an essential part of a vast, complex, yet human organisation. It is this single, simple thought

that means so much to you, the railway user. This is the incentive for that extra courtesy, that extra service which comes from railwaymen who are proud of their jobs and from an organisation which is proud of its railwaymen.



SOUTH AFRICAN RAILWAYS

SERVICE ALL ALONG THE LINE

Because Bradley Washfountain serves 8 to 10 persons simultaneously, one of these group wash fixtures takes the place of 8 to 10 "single-person" wash basins.

The great reduction in materials required for Bradley Washfountains means lower installation costs and less subsequent maintenance, and the clean spray of running water from the central sprayhead insures maximum sanitation,—better washing with no chance of contamination or spreading of skin affections.



Which List of Materials Would YOU Buy?

Material Required	Bradley Washfountain accommodating 8 to 10 Persons	8 Single-Person Wash Basins
3/4" Galvanized Water Pipe	20 ft.	36 ft.
2" Galvanized Waste Pipe	10 ft.	16 ft.
1 1/2" Galvanized Vent Pipe	10 ft.	16 ft.
3/4" x 1/2" Galvanized Tees	0	14
3/8" Galvanized Nipples	0	16
1/2" x 3/8" Galvanized Ells	2	16
1 1/4" Galvanized Nipples	0	8
2" x 1 1/4" Drainage Tees	0	8
Traps	1	8
Angle Stops	2	16
	1 Sprayhead	16 Faucets



REPRESENTATIVES :

CHUBB & MAXWELL LTD.
CAPE TOWN & PORT ELIZABETH
GALLOWAY AND WHALL
KIMBERLEY

W. D. KYLE (PTY.) LTD.
DURBAN

JOHNSON & FLETCHER LTD.
NORTHERN AND SOUTHERN
RHODESIA

BRADLEY
Washfountain Company
of S.A. (Pty.) Ltd.

Models available for every purpose.



P.O. BOX 8527 TELEPHONE 22-8400
TELEGRAMS: "WASHFOUNT"

101-104, PAN AFRICA HOUSE, Corner JEPPE, BREE and TROYE STREETS, JOHANNESBURG



At Your Finger Tips

However widely dispersed your factory, works, or offices may be, your executives are at your fingertips if you have an A.T.M. key - controlled inter - com telephone system. 5 and 10 line installations available on inexpensive rental terms. Write for booklet.



intercom telephones on rental

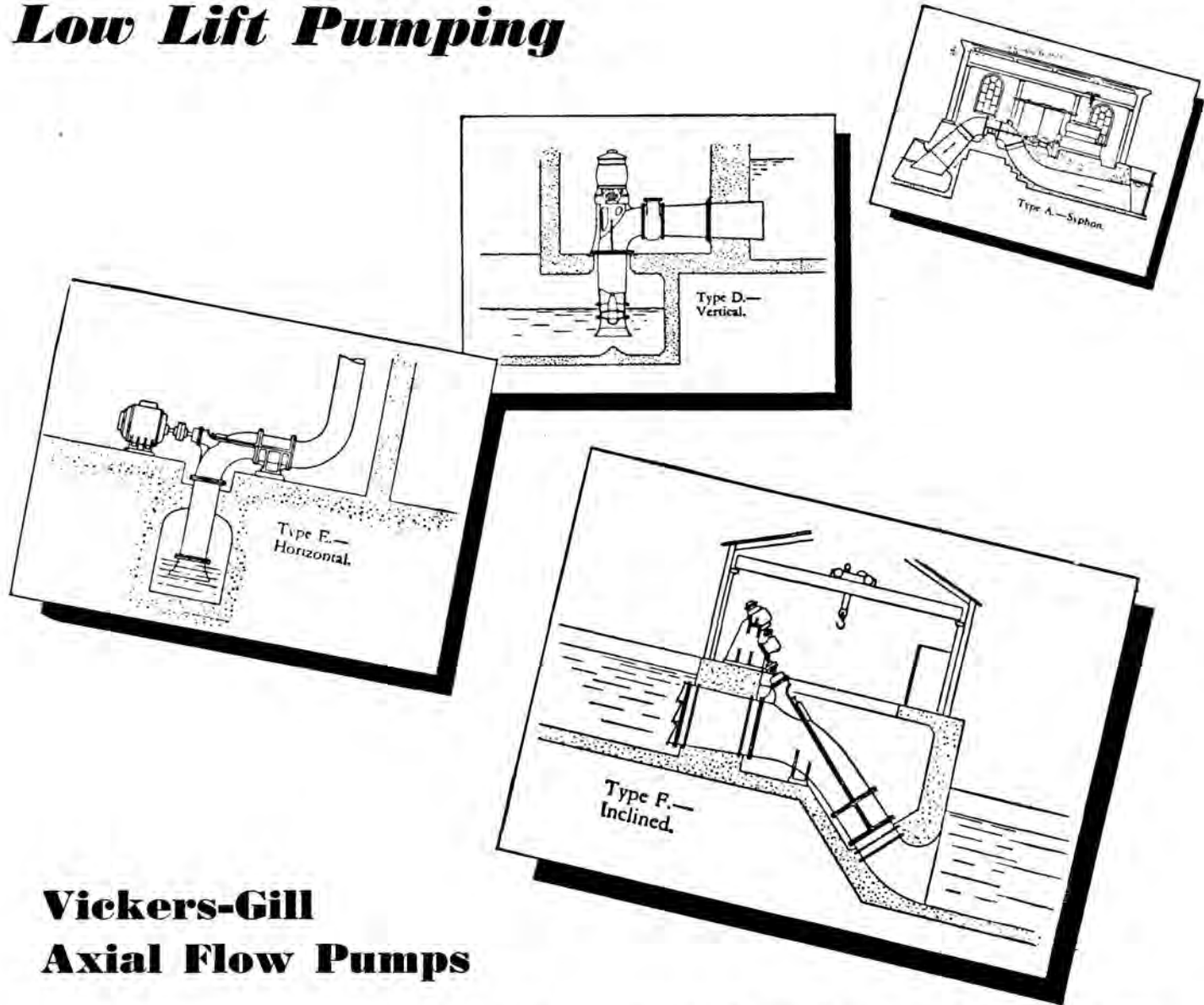
AUTOMATIC TELEPHONES (SOUTH AFRICA) LTD.

KELVIN HOUSE, HOLLARD & MARSHALL STREETS, JOHANNESBURG, P.O. Box 6687. TELEPHONE: 33-2914. TELEGRAMS: STROWGER, JOHANNESBURG. SERVICE DEPOTS AT JOHANNESBURG (P.O. Box 6687), CAPE TOWN (P.O. Box 3972), DURBAN (P.O. Box 2359) AND PORT ELIZABETH (P.O. Box 680).

Associated Distributors for AUTOMATIC TELEPHONE & ELECTRIC CO. LTD., LONDON AND LIVERPOOL, ENGLAND.

AT2211-A403

Low Lift Pumping



Vickers-Gill Axial Flow Pumps

These pumps are manufactured in single and multi-stage units capable of dealing with large volumes of liquid against heads up to, approximately, 60 ft. The above diagrams show a few applications designed to achieve the most economical operating conditions.

In addition to LAND DRAINAGE & IRRIGATION SCHEMES, this type of pump has been installed throughout the World for the following duties:—

Waterworks Services, Large Volume Flow Boosting, Condenser Circulating Water, Dock Impounding & Dry Dock Pumping, Stormwater & Sewage Disposal, Hydraulic Jet Propulsion for vessels operating in shallow or weed-infested waterways, Floating Pontoons for Irrigation Schemes.

IMPORTANT FACTORS: This type of pump is entirely and inherently SELF-REGULATING, i.e., at a constant speed of revolution any fall in head below the maximum specified condition, while accompanied by an increased discharge, will result in a decreased B.H.P., thus avoiding overloading the Prime Mover.

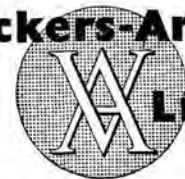
COMPACTNESS of design ensures utmost economy in pump housing and foundations, etc.

ECONOMICAL — as pump operates at higher speeds than those possible with Centrifugal Pumps.

HIGH EFFICIENCY — due to path of liquid flow being direct, internal losses are avoided.

NO PRIMING required when pump impeller is submerged.

Vickers-Armstrongs



Limited

VICKERS HOUSE, BROADWAY, LONDON, ENGLAND,

Included in the wide range of equipment supplied by Vickers-Armstrongs to users throughout the world are:—Duralumin Ships and Mancages, Coal Handling Plant, Mechanical parts for Electric Mine Winders, Condensing, Evaporating and Feed Heating Plants for Power Stations and Cement Making Plant.

Agents: VICKERS & METROPOLITAN CARRIAGE (S.A.) LIMITED. P.O. BOX 1137, JOHANNESBURG. Telephones: 34-2981. Telegrams: "VICKERSAF"

Sub-Agents: RHODESIA: J. CLACK & CO., LTD., BOX 638, BULAWAYO; BOX 409, SALISBURY; BOX 25, N'DOLA

NATAL: VICKERS & METROPOLITAN CARRIAGE (S.A.) LTD., P.O. BOX 417, DURBAN. PORT ELIZABETH: MORRIS & MARTIN, LTD., P.O. BOX 1102, PORT ELIZABETH



THE NAME
SUPERCONCRETE
 MEANS *Everything**

* IN REINFORCED
CONCRETE PIPES

For IRRIGATION, DRAINAGE,
 SEWERAGE. Also Pressure Pipes and
 all appropriate fittings. All Sizes.

SUPERCONCRETE PIPES (S.A.) Ltd.

P.O. Box 92, ROODEPOORT, TRANSVAAL
 Telephone 61-2121

* **In ASBESTOS CEMENT**
 ROOFING SHEETS & RAINWATER
 GOODS. For all Building Purposes.

* Superconcrete products meet the most exacting
 demands in quality, correct design and range of
 goods for all building and constructional work.

POST THIS COUPON NOW

To Superconcrete Pipes (S.A.) Ltd.,
 P.O. Box 92, Roodepoort, Transvaal.

Please send your latest literature on the following:
 Mark literature required.

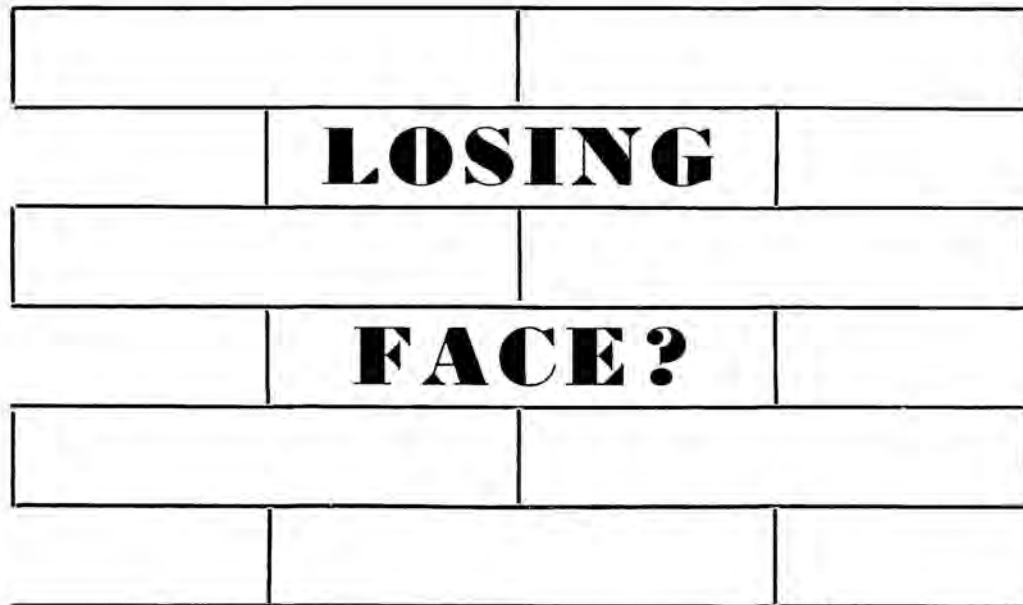
CONCRETE PIPES

ASBESTOS CEMENT
 PRODUCTS

NAME

ADDRESS





You can quite easily, if the final job hasn't that finished look, for no matter how skilled the builder and the architect, there is no substitute — even in their skill — for a good facing brick.

FACING BRICKS

may be your worry; but are our speciality.

Let us show you what we mean.

CONSULT :

Primrose Brickworks (1936) Ltd.

P.O. BOX 49, GERMISTON.

TELEPHONE 58-1311/2/3.

TEL. ADD.: "PRIMBRICKS."

REPRESENTATIVES:

Orange Free State and Kimberley: W. R. Pollock & Co. (Pty.) Ltd., Maitland Street, Bloemfontein.

Cape Eastern Province:

Central Saw Mill, P.O. New Brighton, Port Elizabeth.

Border:

C. Katz, 6 Belgrave Crescent, East London.



EVERITE SHEET PRODUCT AGENTS

Johannesburg	Associated Engineers Co., Ltd.	P. O. Box 1113
"	Dowson & Dobson, Ltd.	P. O. Box 7764
"	Sand & Co., Ltd.	P. O. Box 1377
"	Bell's Asbestos & Eng. (Africa) Ltd.	P. O. Box 4378
"	S.A. Timber & Joinery Works (Pty.) Ltd.	P. O. Box 6680
Vereeniging	Bester and Van Zyl	P. O. Box 211
Salt River	Bell's Asbestos & Eng. (Africa) Ltd.	P. O. Box 40
Port Elizabeth	Associated Engineers Co., Ltd.	P. O. Box 175
East London	Warden & Hotchkiss S.A. (Pty.) Ltd.	P. O. Box 186
Durban	Free State Eng. Supply Co. (Pty.) Ltd.	P. O. Box 399
Bloemfontein	A. Fairweather & Sons, Ltd.	P. O. Box 96
Kroonstad	Associated Motors (Pty.) Ltd.	P. O. Box 30
Bethlehem	South-West Asbest-Cement Co.	P. O. Box 163
Windhoek	Pigg's Peak Stores	P. O. Box 148
Pigg's Peak		P. O. Pigg's Peak

BUS BODIES S.A. LIMITED.

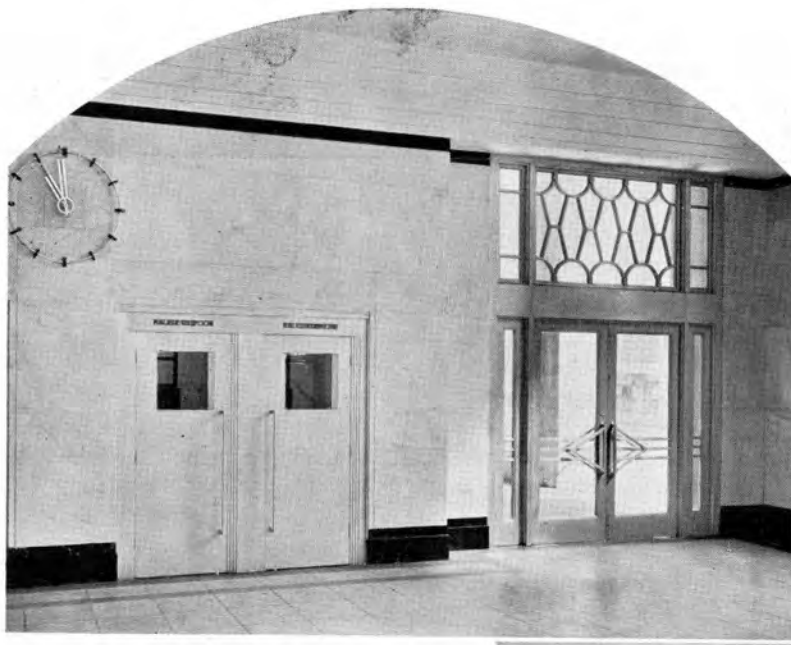
The ever increasing popularity of "Everite" roof cladding is due to its remarkable quality of being non-corroding, highly insulating, easy and economical to construct and requiring no maintenance.

"Everite" corrugated sheets should be employed where an economical, solid and long-lasting roof is required.

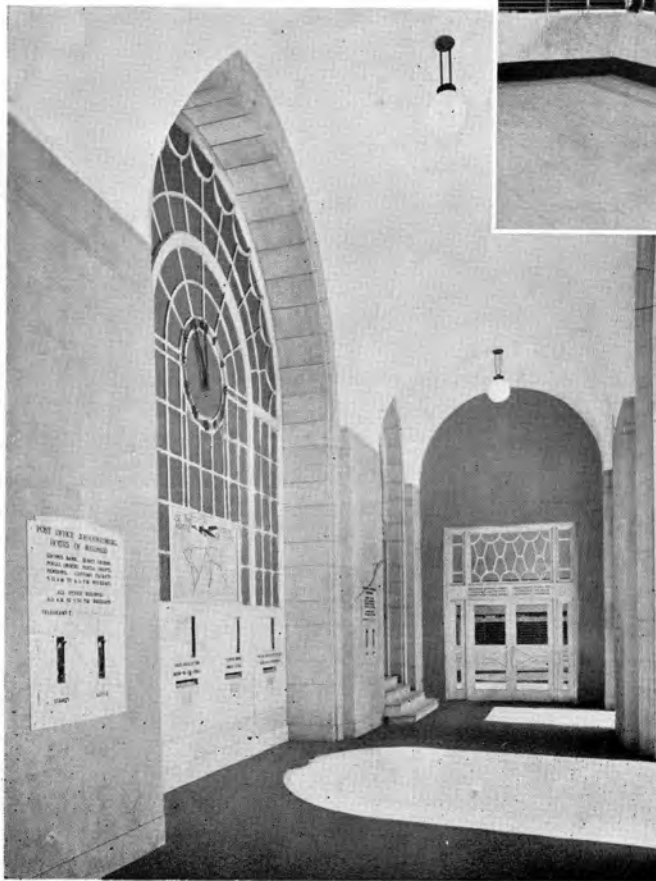
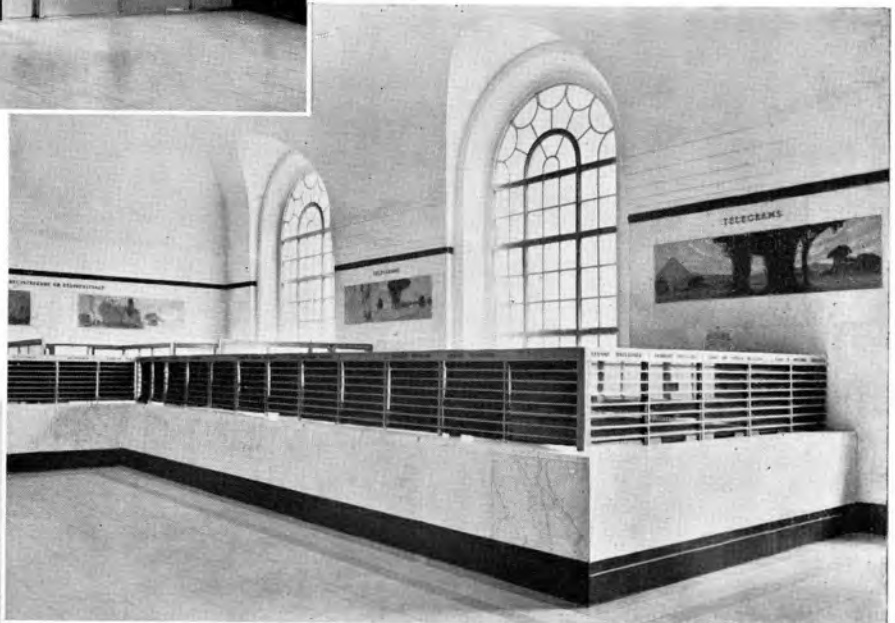
For industrial buildings such as factories, warehouses and workshops "Everite" Bigsix corrugated sheets are ideal cladding material for walls as well as roofs. The cost of erection is low and maintenance costs are negligible. They have high insulating qualities, keep buildings warm in winter and cool in summer. They are resistant to fire and attacks from fumes and acids common to industrial areas.

EVERITE (PTY) LTD.

P. O. KLIPRIVIER T.V.L. P. O. BRACKENFEL C.P.



GENERAL
POST OFFICE
Johannesburg



SAGE

METAL
CRAFTSMEN

THE WHOLE OF THE
METALWORK IN . . .
BIRMABRIGHT
was MANUFACTURED
in JOHANNESBURG .

By

FREDK. SAGE & CO. (S.A.) (Pty.) Ltd.
10, Heidelberg Road, Johannesburg
P.O. Box 777, - Phone 22-7555



MANUFACTURED JOINERY

We are equipped to undertake quality production joinery contracts for the Building and Woodworking Trades. We manufacture to Architects' own specifications.

- ◆ WOOD BLOCK FLOORS
- ◆ MACHINED TIMBER
- ◆ MOULDINGS
- ◆ TIMBER SUPPLIES
- ◆ SAWMILLING
- ◆ WALLBOARDS
- ◆ PLYWOOD
- ◆ STEEL WINDOWS
- ◆ MASONITE

We specialise in supply and lay, polished complete, high-class floors of all descriptions, including Asphalt and Cork Tiles.

A. BLAIKIE & CO. LTD.

130 WILLIAMS ROAD, DURBAN

P.O. Box 936

Phones 21585/21586

Tel. Add.: "ALEXBLAIK"





- ① ADVANCED ENGINEERING
- ② EASY OPERATION
- ③ LOW OPERATING COSTS

by AVELING-BARFORD, LTD., the originators and world's largest makers of Rollers and the builders of Britain's biggest Dumpers.

Many years of experience in the manufacture of rollers, heavy haulage and transport vehicles, combined with the most up-to-date manufacturing facilities and the latest innovations in design, enable AVELING-BARFORD, LTD., to produce the soundest and most dependable machines ever offered to the construction industry.

AVELING-BARFORD LTD.



For further data write for free illustrated booklet "What we make" (No. 1533) to the Sole Representatives throughout the Union:



Branches at:

Hubert Davies & Co., Ltd.

P.O. Box 1386 — HUDACO HOUSE, JOHANNESBURG — Phone 33-1061

Johannesburg, Durban, East London, Port Elizabeth, Cape Town, Bloemfontein, Salisbury, Bulawayo, N'dola, and London.



GRINDERS AND SANDERS feature simplicity of construction and are equipped with a renewable hardened rotor liner, air strainer and automatic oiler.

IMPACT WRENCHES for nuts $\frac{1}{2}$ in. bolt size up to 1 $\frac{1}{2}$ in. bolt size. Fast and cheap in action, and negligible maintenance are salient features.

ROTARY DRILLS for every purpose. No pistons, toggles or crankshaft keeps maintenance low and vibration is practically eliminated.



POWER VANE *Tools*

Compact Design : Maximum Power : Minimum Weight : Low Upkeep Costs

CONSOLIDATED PNEUMATIC
TOOL CO S.A. (PROP.) LIMITED

1 ROGERS STREET
P.O. Box 4921

SELBY

JOHANNESBURG
Phone 34-2351

Durban Office: P.O. Box 1692 Phone 2-0808

Works: Fraserburgh, Scotland

AGENTS:

Rogers-Jenkins & Co. (Pty.) Ltd., Box 1425, Cape Town.

Eastern Cape Province:

R. L. Weir & Co. (P.E.) (Pty.) Ltd., Box 148, Port Elizabeth.

Northern Rhodesia:

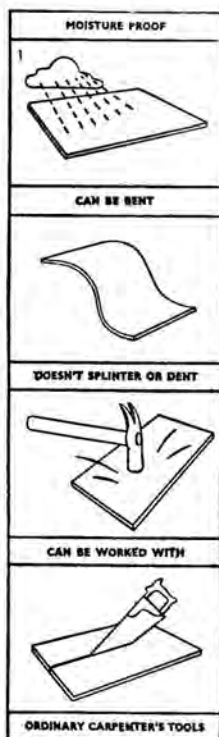
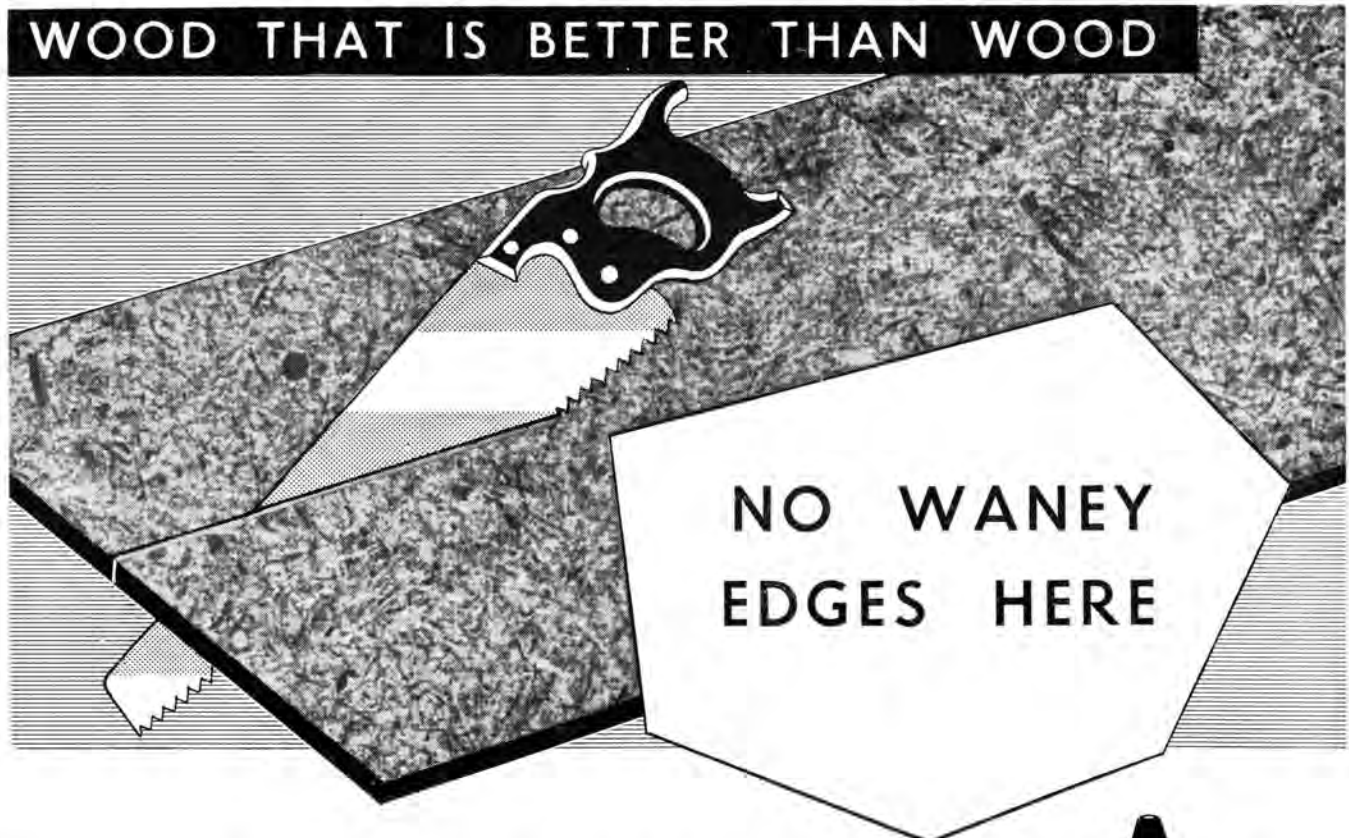
J. Clack & Co. Ltd., Box 25, N'Dola.

Southern Rhodesia:

J. Clack & Co. Ltd., Box 409, Salisbury; Box 638, Bulawayo; Box 337, Umtali.

Portuguese East Africa:

Adriano Maia (Suc) & C.A., Lda., Box 354, Lourenco Marques; Box 414, Beira.



MASONITE PRESWOOD

THE WONDER WOOD OF A THOUSAND USES

In the Architectural and Building fields a waney edge (i.e. a flawed uneven edge) is recognised as one of the most wasteful factors in construction. You get no such losses with **MASONITE PRESWOOD**. Each sheet is perfect from corner to corner — knot and splinter-free too.

MASONITE PRESWOOD is re-organised wood. It is wood that has been exploded and bonded together again under great pressure so that the final

product is tougher, denser, more moisture-resistant, more adaptable and durable than ordinary wood. Only the usual carpenter's tools are needed to work it, and it will take virtually any finish. . . . These are but a few of the reasons why **MASONITE PRESWOOD** is ideal for work-bench tops, panelling, shelves, partitions, shelves, partitions and a thousand other applications.

MASONITE Insulation Board is available in the standard 1/2" thickness.

MERCHANT DISTRIBUTORS:

JOHANNESBURG, PRETORIA and WITWATERSRAND: Associated Ceiling Industries Ltd.; Associated Engineers Ltd.; Berold & Busansky Ltd.; W. R. Boustred Ltd. Dowson & Dobson Ltd.; Herbert Evans & Co. Ltd.; Hillman Bros. Ltd.; Hunt, Leuchars & Hepburn Ltd.; W. F. Johnstone & Co. Ltd.; K. & L. Timbers Ltd.; Plate Glass Beveling & Silvering Co. Ltd.; E. R. Pollak Ltd. Premier Timber Co. Ltd.; Timber & Trading Co. (Overseas) Ltd.; Sand & Co. Ltd.; Saratoga Timbers Ltd.; Thesen & Co. Ltd.; Universal Wood Industries (Lulpaardsvlei). **PRETORIA:** Amalgamated Hardware & Timber Co. (Pty.) Ltd.; Herbert Evans & Co. Ltd.; Hillman Bros. Ltd.; Hunt Leuchars & Hepburn Ltd.; Norman & Co. Ltd. **ALIWAL NORTH:** Greenslade & Dawe. **CAPE TOWN:** Arderne Scott Timbers Ltd.; Associated Engineers Co. Ltd.; Chubb & Maxwell Ltd.; Millars' Timber & Trading Co. (Overseas) Ltd.; Sam Newman & Co.; Purcell, Yallop & Everett Ltd. **EAST LONDON:** Associated Engineers Ltd.; Buffalo Timber & Hardware Co. Ltd.; Henderson Agencies (E.L.) (Pty.) Ltd.; Premier Timber Co. Ltd. **KIMBERLEY:** Armstrong-Leyland (Pty.) Ltd. **KNYSNA:** Thesen & Co. Ltd. **QUDTSHOORN:** Prince, Vincent & Co. Ltd. **PORT ELIZABETH:** Associated Engineers Ltd.; Central Saw Mills; Chubb & Maxwell Ltd.; I Kerbel & Co. (Pty.) Ltd.; Kohler Bros. Ltd.; Millars' Timber & Trading Co. (Overseas) Ltd.; Plate Glass Beveling & Silvering Co. Ltd.; Port Elizabeth Timber Co. Ltd. **DURBAN:** Associated Engineers Ltd.; A. Blaikie & Co. Ltd.; Hansford & Hansford Ltd.; Hillman Bros. Ltd.; Hunt, Leuchars & Hepburn Ltd.; W. F. Johnstone & Co. Ltd.; Millars' Timber & Trading Co. (Overseas) Ltd.; Sand & Co. Ltd.; Thesen & Co. Ltd. **PIETERMARITZBURG:** H. V. Marsh & Co. Ltd. **BLOEMFONTEIN:** Champions Ltd.; J. S. Oldfield Ltd.; W. R. Pollock & Co. (Pty.) Ltd.; Woolf Engineering Co. Ltd. **RHODESIAS:** Johnson & Fletcher Ltd.; Plate Glass Beveling & Silvering Co. Ltd.



Heard about the revolution?

There's been a revolution in bulldozer construction! The costly and laborious old crawler-dozer is out; Tournadozer brings long overdue reforms.

First, the ability to work twice as hard — Tournadozer travels at 15 m.p.h., forward and reverse . . . double the speed of any other dozer . . . double the work in a day. Second, instantaneous gear changing — air actuated clutches in Tournamatic transmission allow immediate gear changing on the move . . . no slowing up in operation.

Third, pneumatic tyres — the first dozer in Southern Africa able to move itself from job to job . . . and pull a hefty load at the same time. Those big tapered bead tyres give all the traction you need. Another thing, the operator sits up in front where he can see the whole job.

That shock-absorbing seat helps him give a better day's work, too.

There are Tournadozer demonstrations going on all the time. Please write us and invite yourselves. You can have immediate delivery . . . at the moment.

**J. BROCKHOUSE
(SOUTH AFRICA) LTD.**

FORMERLY



P.O. Box 50 Phone 25-2174
CLEVELAND, TRANSVAAL

BRANCHES AT

Cape Town P.O. Box 3715. Phone 54640
Durban P.O. Box 1701. Phone 27124
Port Elizabeth P.O. Box 2027. Phone 87056
Rhodesia: B.M.S. Engineering (Rhodesia) Co.,
Ltd., Salisbury.

**THEY ARE
ALL ACES IN THE NEW
FIRTH BROWN
PACKS**

FIRTH BROWN TOOLS LIMITED, SHEFFIELD

THOS. FIRTH & JOHN BROWN (S.A.) (PTY.) LTD.

10th FLOOR, MARITIME HOUSE, LOVEDAY STREET, JOHANNESBURG

Telephone 34-2971

Telegrams "PROMPTITUDE"

P.O. Box 1189

Managers: BALDWINS (S.A.) LIMITED

It's more than a name —it's a reputation

During the years in which Crittall-Hope pioneered, in South Africa, the steel window for public, commercial, industrial and domestic buildings the name "Crittall-Hope" and the quality of their windows became synonymous. In very many of South Africa's largest and most important buildings the windows are Crittall-Hope — chosen on merit.

The merit is based on experience covering 66 years, manufacturing skill and special purpose machinery.



Maritime House, Johannesburg

CRITTALL-HOPE METAL WINDOWS (SOUTH AFRICA) LIMITED

Office :
830 Maritime House, Loveday Street, Johannesburg
P.O. Box 3047

Factory :
Edison and Watt Streets, Langlaagte, Johannesburg
P.O. Box 1494, Durban P.O. Box 2908, Cape Town
P.O. Box 119, Port Elizabeth

**CRITTALL-HOPE
STEEL WINDOWS AND DOORS**

PUBLIC WORKS OF SOUTH AFRICA

PROPRIETORS: PUBLIC SERVICES PUBLICITY (PROPRIETARY) LIMITED,
EDITORIAL OFFICES AND PUBLICITY DEPARTMENT: FIRST FLOOR,
92, MAIN STREET, JOHANNESBURG. TELEPHONES: 33-9606, 33-1505.

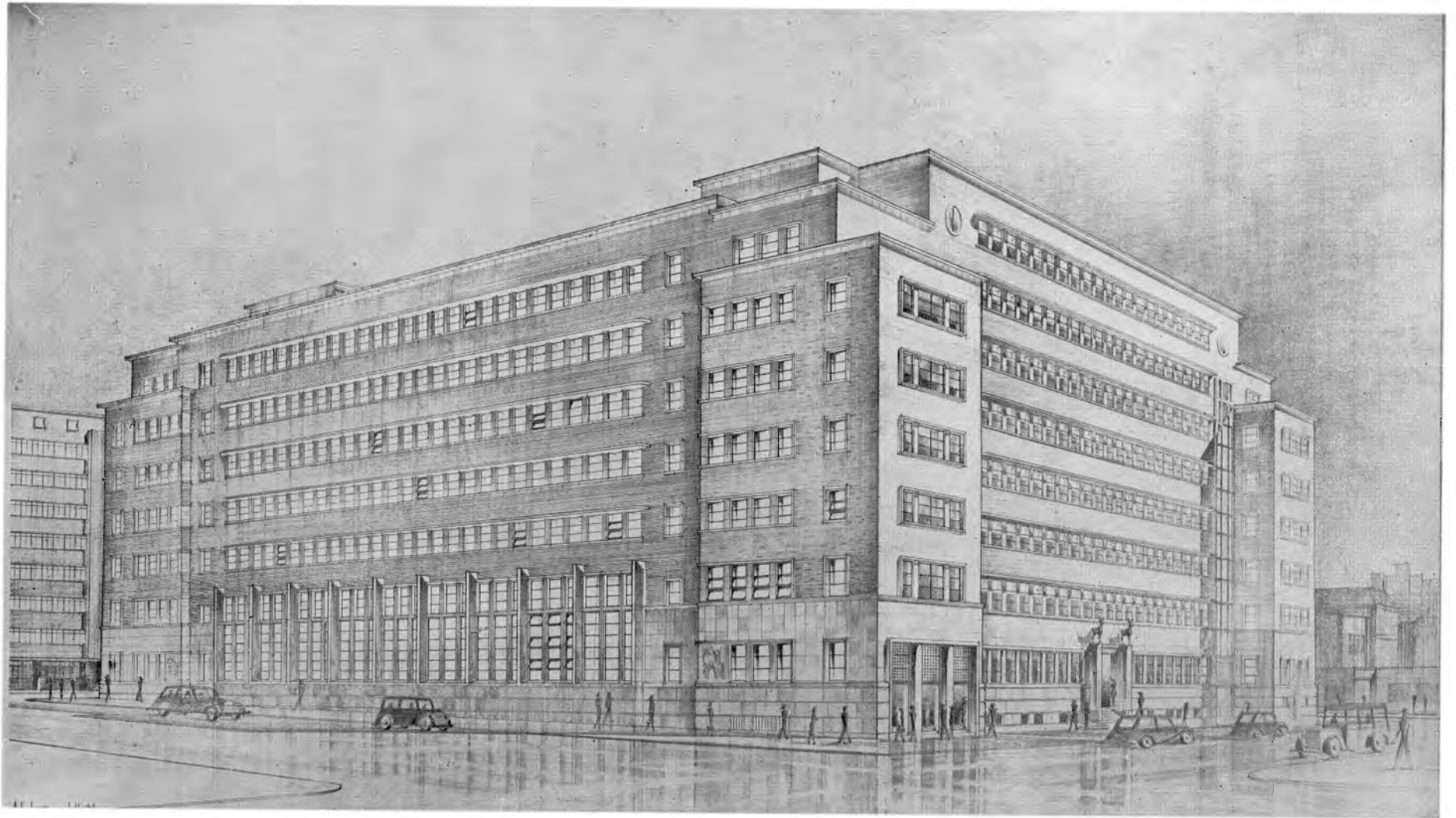
EDITOR:
W. R. GORDON, O.B.E. M.I.I.A. M. Inst. F.

PUBLIC WORKS OF SOUTH AFRICA, which is published monthly, is intended to keep the public up-to-date in regard to the engineering and building projects of the Central Government, the Provincial and Municipal Governments of Southern Africa and activities overseas.

VOLUME X • NUMBER SEVENTY-THREE • DECEMBER 1949

CONTENTS

NEW GOVERNMENT BUILDINGS: JOHANNESBURG
MUNICIPAL OFFICES FOR ALBERTON
ARCHITECTURE IN BRITAIN: A SURVEY
DOMESTIC SMOKE ABATEMENT
S.A. SPECIFICATION FOR TUNGSTEN FILAMENT
PUBLICATIONS RECEIVED
ABSTRACT FROM GOVERNMENT REGULATIONS
LIBRARY ACCESSIONS
TENDERS INVITED
TENDERS ACCEPTED



An artist's perspective showing how the new Government Offices will appear when completed.

NEW GOVERNMENT OFFICES, JOHANNESBURG

THIS building will occupy the site bounded by Rissik, Albert, Joubert and Frederick Streets and will accommodate the Departments of Inland Revenue and of Mines, including the offices of the Silicosis Board. The total staff employed in the building will be approximately 900 persons.

The basement car park, for official vehicles, will be accessible from Joubert Street, where "IN" and "OUT" ramps have been arranged at opposite ends of the block so as to avoid traffic congestion.

Around the perimeter of the basement will be arrayed the air conditioning plant and boiler rooms, electrical transformer accommodation, record strong rooms and various bulk stores. A central goods lift and stair is directly accessible from the basement car park. There will also be the bulk rubbish rooms, fed by a specially designed conveyor delivery unit, the rooms being cleaned from loading bays directly off the car park.

Ground Floor

This is allocated to the Department of Inland Revenue. The principal feature here will be the main public banking hall, running the full length of the building from Rissik to Joubert Streets, with the main counter and tellers' cubicles along the inner side. These, in turn, will have direct contact with the main working space. This working space will occupy practically half the total floor area of the block and, consequently, to ensure adequate ventilation of this large area, a system of forced air ventilation has been designed with a delivery through ceiling ducts and ventilators and with extraction by floor vents and ducts, leading back to the basement air conditioning plant. The main working space will also be acoustically treated to minimise the noise created by calculating machines and similar equipment.

A highly efficient system of mechanical accounting has recently been perfected by the Inland Revenue specialists and this system will be introduced to its fullest extent in the new building. Due to the vibration created by the heavy accounting machines, special arrangements have been made to provide complete isolation of the floors of the mechanical accounting branch, to ensure that the vibrations and noise are not transmitted to the main structure. The walls and ceilings of these rooms will also be acoustically treated.

Access Arrangements

Apart from the entrances to the main public banking hall, central entrances have been provided from Rissik and Joubert Streets giving access to the two main lift halls, each of which has a bank of three lifts running the full height of the building.

The first and second floors of the building are allocated to Revenue Registers and assessors' interview rooms, which will be fitted with specially designed and standardised unit furnishings.

The Department of Mines will occupy the remaining floors, the accommodation being planned to suit the special technical requirements of each branch.

A central staff tea room has been planned for the top floor, with access to the flat roof over the south wing. Access to the flat roof over the north wing will also be available from the north corridor.

Generally, the building has been planned on the hollow square principal, with a central cross forming four light areas of ample dimensions, to ensure adequate light and ventilation to the offices facing on to them. Special consideration has been given to the wall texture and colours, in order to obviate reflected glare from opposite walls.

Special Features Embodied

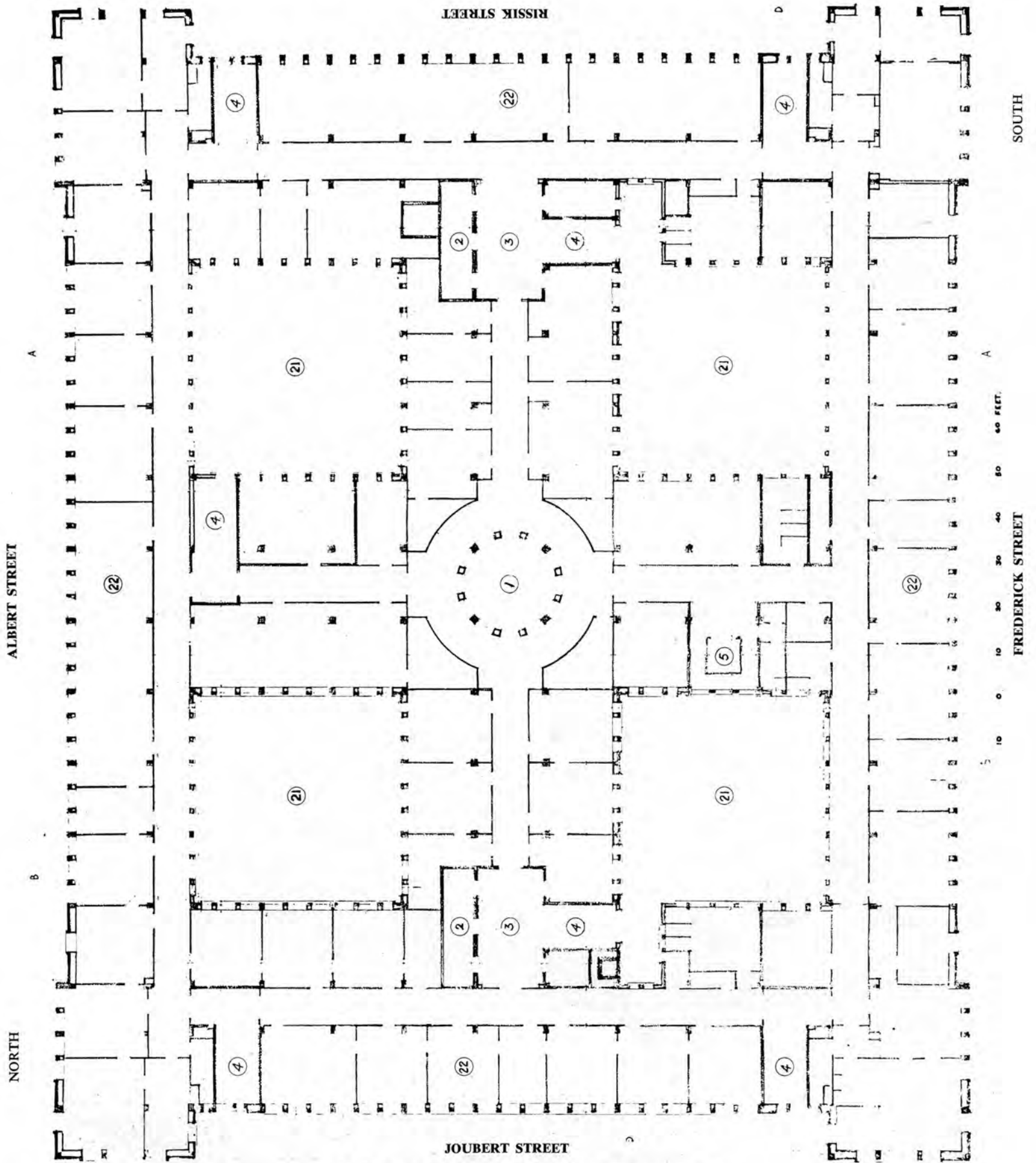
Several unusual features have been incorporated in the structural design. A deep hollow external wall construction allows for the flushing-up of structural columns and, at the same time, permits the total encasement of all heating pipes and radiators. The latter will be of the steam connector type, the only visible portion of which will be the perforated facing panels, set flush with the surrounding plaster.

The reinforced concrete frame has been designed to allow of the erection of lightweight cross partitions on a beam grid of approximately 5 ft. 4 in. centres, consequently room dimensions are established merely by multiples of 5 ft. 4 in. bays to suit requirements and these sizes may be varied from time to time as occasion demands, without creating a major structural disturbance.

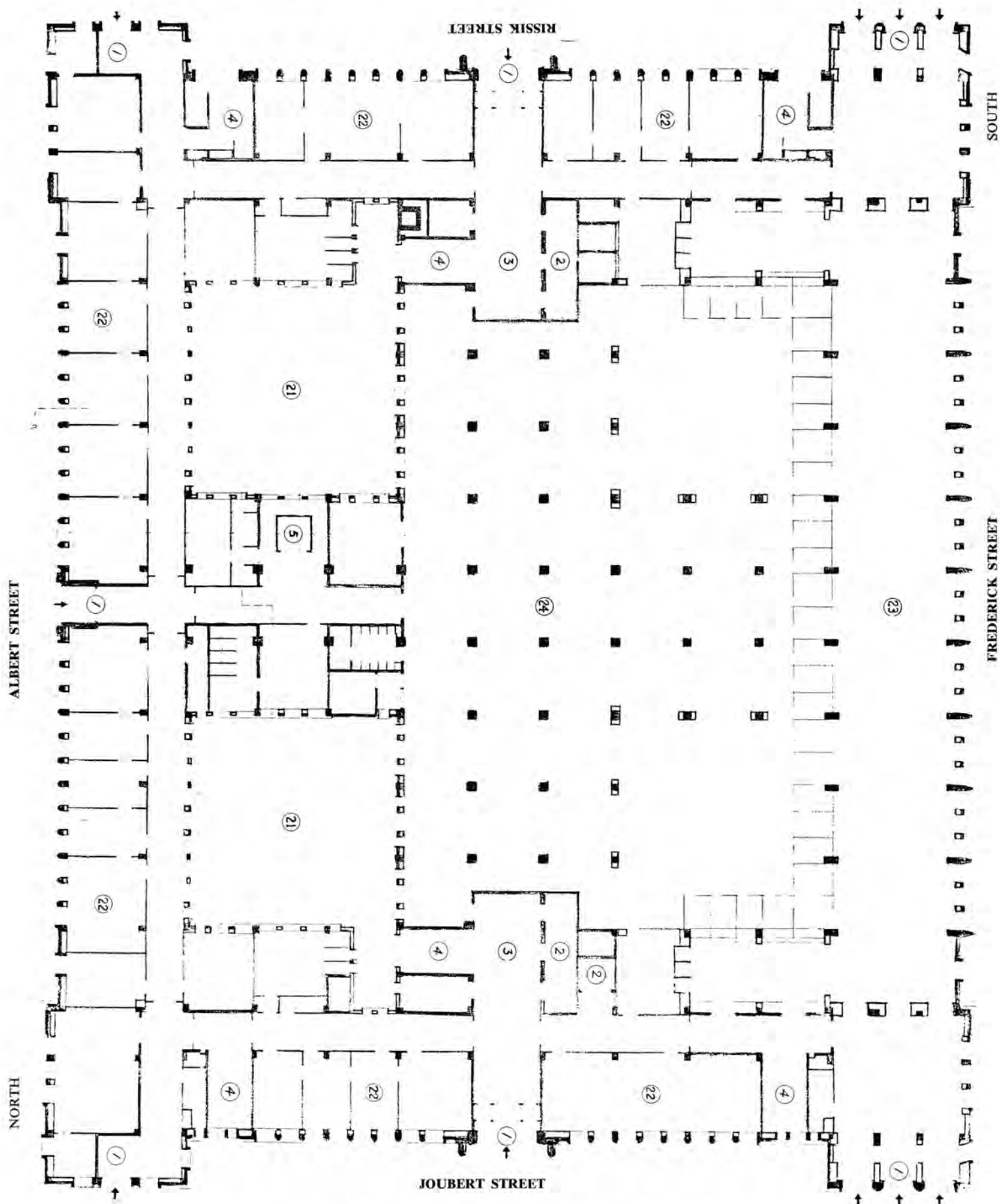
Arrangements are being made for the building in of all telephone cables and direct contact will be available at any point along three sides of any room from lead lines fitted behind removable skirtings. To ensure that absolute secrecy is maintained in confidential telephonic discussions between branches, an intercommunicating telephone installation will be provided for senior officers, entirely apart from the normal telephone system, which will operate through ordinary private branch exchanges, situated on the ground and fourth floors.

Standardisation of Detail

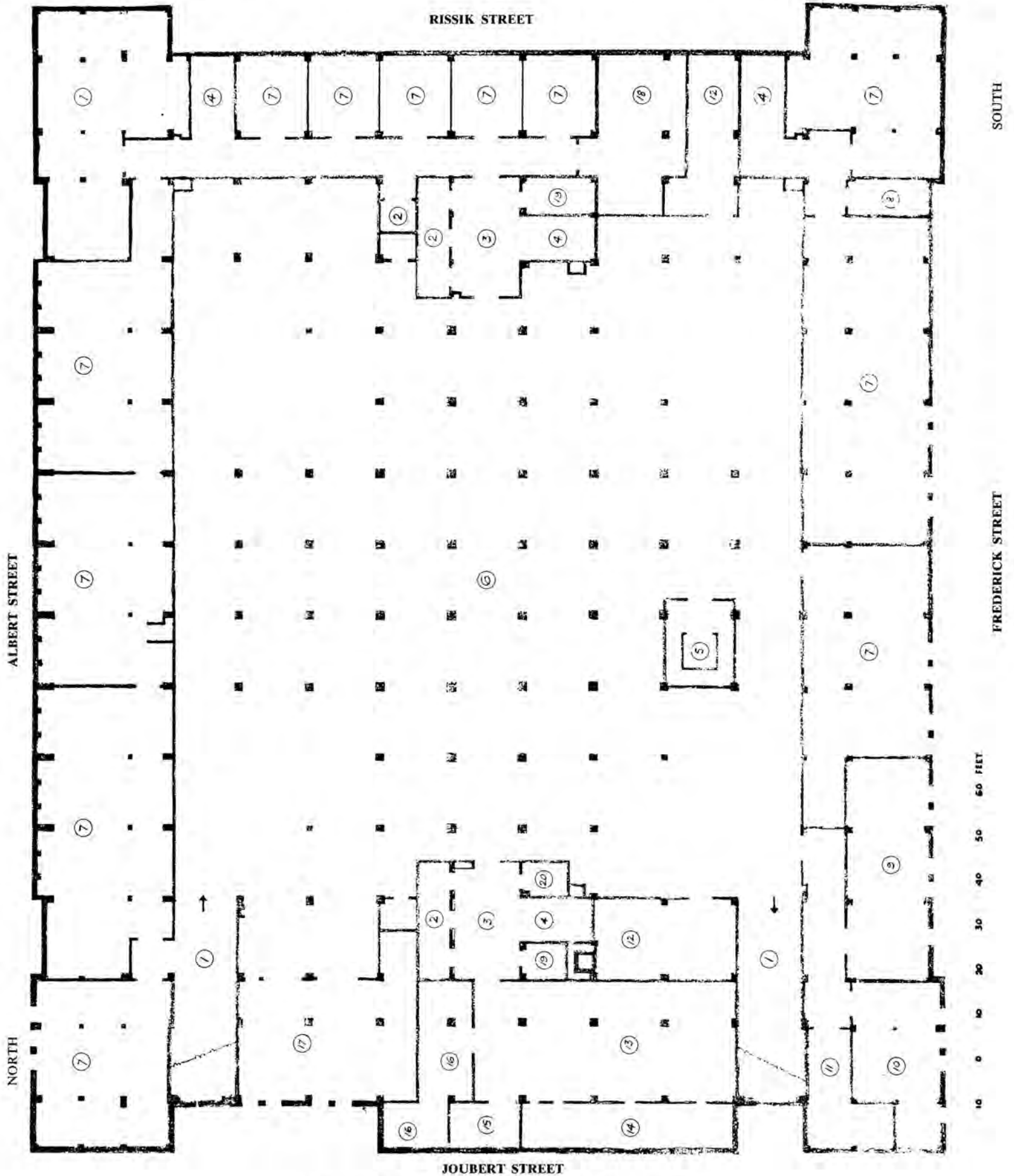
This has been given particular attention and, in spite of the introduction of several unusual features in the design, extensive repetition will bring those features into the category of "stock" items. Floor upon floor of doors, fanlights, windows, blinds, converted panels, pelmets, etc., will be exactly alike in dimensions and detail, thereby accomplishing, it is



Third Floor Plan, new Government Offices, Johannesburg.
Legend on page 21.



Ground Floor Plan, new Government Offices, Johannesburg.
Legend on page 21.



Basement Plan, new Government Offices, Johannesburg.
Legend on page 21.

hoped, a considerable saving on the original estimated building cost of £1,100,000.

All four fronts of the building will be finished with polished Parys granite plinths to approximately ground floor sill line. From that line up to the sills at first floor level these will be art stone facings and above that line face brickwork will be used to the full height of the building with art stone dressings to windows and hoods. The elevators have received the same close attention to standardisation of detail, as has been given to the internal work, and harmonious simplicity forms the keynote of the whole project. No haphazard "back elevation" treatment will be found anywhere in the design, as close attention has been paid even to the elevational treatment of the internal light areas, where the usual tracery of soil and anti-syphon pipes will be conspicuous by their absence.

South African Materials

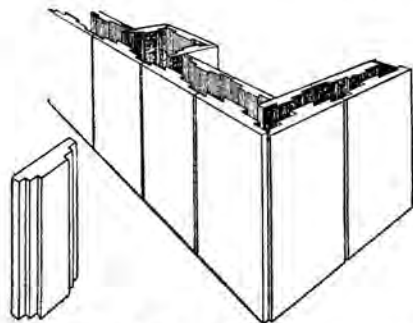
In conformity with the usual P.W.D. practice, preference has been given to the use of goods of South African manufacture, and where it is anticipated that certain materials might be in short supply when actually required, a reasonable quantity of an alternative material has been incorporated in the design to overcome the difficulty of price adjustment on variations at a later stage.

LEGEND :

- | | |
|--------------------------------|---------------------------------|
| 1. Entrance. | 13. Main Boiler Room. |
| 2. Passenger Lift Wells. | 14. Fuel Bunkers. |
| 3. Lift Halls. | 15. Ash Bunkers. |
| 4. Stairways. | 16. Pump Rooms. |
| 5. Goods Lift and Stair. | 17. Air Plant Rooms. |
| 6. Basement Car Park. | 18. Exhaust Plant Room. |
| 7. Record Rooms, Stores, etc. | 19. Electrical Switch Rooms. |
| 8. Telephone Cable Chamber. | 20. Fire Sprinkler Control. |
| 9. Electrical Transformers. | 21. Open Areas. |
| 10. Municipal Switch Room. | 22. General Offices. |
| 11. Intercom. Telephone Plant. | 24. Banking Hall Working Space. |
| 12. Bulk Rubbish Rooms. | 23. Main Public Banking Hall. |



A building with Philipp Holzmann wall panels under construction. No shuttering is required, and considerable savings in labour, material and time are claimed.



Perspective sketch of the standard wall panels of the Philipp Holzmann method of wall construction.

NEW GERMAN METHOD OF WALL CONSTRUCTION

SEVERAL important claims are made for a new patented construction method, developed by Civil Engineer Heinrich Müller of the Philipp Holzmann A.G., of Frankfurt-on-Main, and described by Herr Helmut Schiebler of the German Railway Administration in *Der Eisenbahnbau* of June, 1949. The method, which has been tried out successfully for residential and industrial buildings in Western Germany, is based on the use of particularly shaped, pre-cast concrete "shells" which serve as shuttering for the light concrete cast in situ, and which are, at the same time, used in lieu of a special façade treatment. The shape of the panels, which is apparent from the illustration, guarantees an efficient permanent adhesion between the shell and the filler concrete; this has been proved in laboratory tests on samples of "shell walls" of 30 centimetres thickness. The "shell" itself has an average thickness of 6 cm. The exposed surface of the external panels is strengthened by a 15 mm. concrete layer of higher cement percentage. The panels measure 40 by 70 cm. and weigh up to 30 kgs. according to the quality of the concrete. They can be produced either at the factory or on the site. The choice will be governed by weighing up, in each case, the lower production capacity on the site against the additional cost incurred through the transport. Ordinary panels without a reinforcement layer of concrete can be cast upright, six at a time, whilst the special external panels must be cast, one at a time, on a horizontal vibrating table. The smooth iron bedplate of the table imparts a smooth aspect to the concrete.

For the assembly of the panels, simple hoisting devices of steel and timber are being used, specially adapted for the purpose. After the assembly of the panels, the filler concrete, only slightly "plastic," is brought in.

Among the buildings constructed in accordance with this method are silos in the port of Mannheim, the boiler house of the "Continental" rubber works at Korbach and some buildings of the "Badische Anilin — und Soda Fabrik" at Ludwigshafen. The method has also been used for foundation walls of the "bizonal" housing estate at Frankfurt-on-Main. Experience at these places suggests that the method has considerable advantages. Requirements for skilled labour (especially brick-layers) are considerably reduced. No shuttering is required. Using concrete of suitable granulation, it is possible to reduce the thickness of external walls from 38 to 30 cm. without lowering the present standard of thermal insulation. The employment of special façade panels avoids the need for special façade treatment, without calling for any increase in maintenance cost. Savings can also be made in respect of the rough-casting of internal walls. Owing to the simple method of construction, the building time can be reduced. The overall cost is about 20 per cent. lower than for brickwalls of equal thickness, and the savings are even greater, if account is taken of the fact, already mentioned, that the walls may be reduced in thickness. The method can be used for all walls of 25 cm. thickness or more. A special point is made of the fact that the aspect of the façades is of great aesthetic value, so that the method is a suitable means to beautify the appearance of utility buildings at no extra cost.

Building Digest, October, 1949.

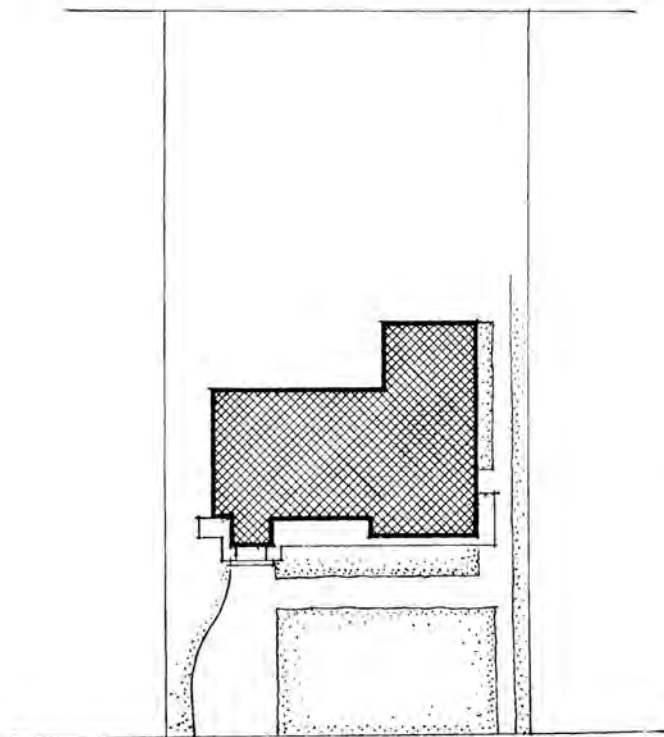
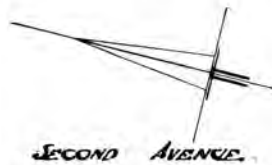
MUNICIPAL OFFICES FOR ALBERTON

ALBERTON has been going through a period of phenomenal development during the last few years. Due to its locality on the Rand this Municipality was forced to foster local industrial expansion. The existing administrative accommodation of the town was becoming increasingly inadequate for the housing of the increasing number of municipal employees and augmented public services. Thus, towards the end of 1947, the Council decided to undertake the erection of new Municipal Offices, sufficient to meet the immediate pressing requirements.

The Council did not intend the new offices to be large enough to allow for extensive further expansion of the growing town, but limited its programme to a scheme, the cost of which would not exceed an amount of approximately £15,000. Provision has, however, been made for certain future additions at the back of buildings now completed. But, in general, it may be said, that the building should be described as a typical example for Municipal Offices in a town of approximately 10,000 inhabitants.

Building Site

The available site, situated next to the existing old Town Hall, is a middle stand with a street frontage of approximately 150 feet and a depth of 200 feet. As the programme was



Artist's perspective of the finished building.

limited to a certain built-up area, and as only a portion of the site could be built upon, it was decided to set the front elevation 50 feet back from the street boundary, and to design the building free from the adjoining properties. This has materially assisted in accentuating the official character of the building, a consideration which has also led to the laying out of brick flower boxes and flower beds on the front court.

Programme

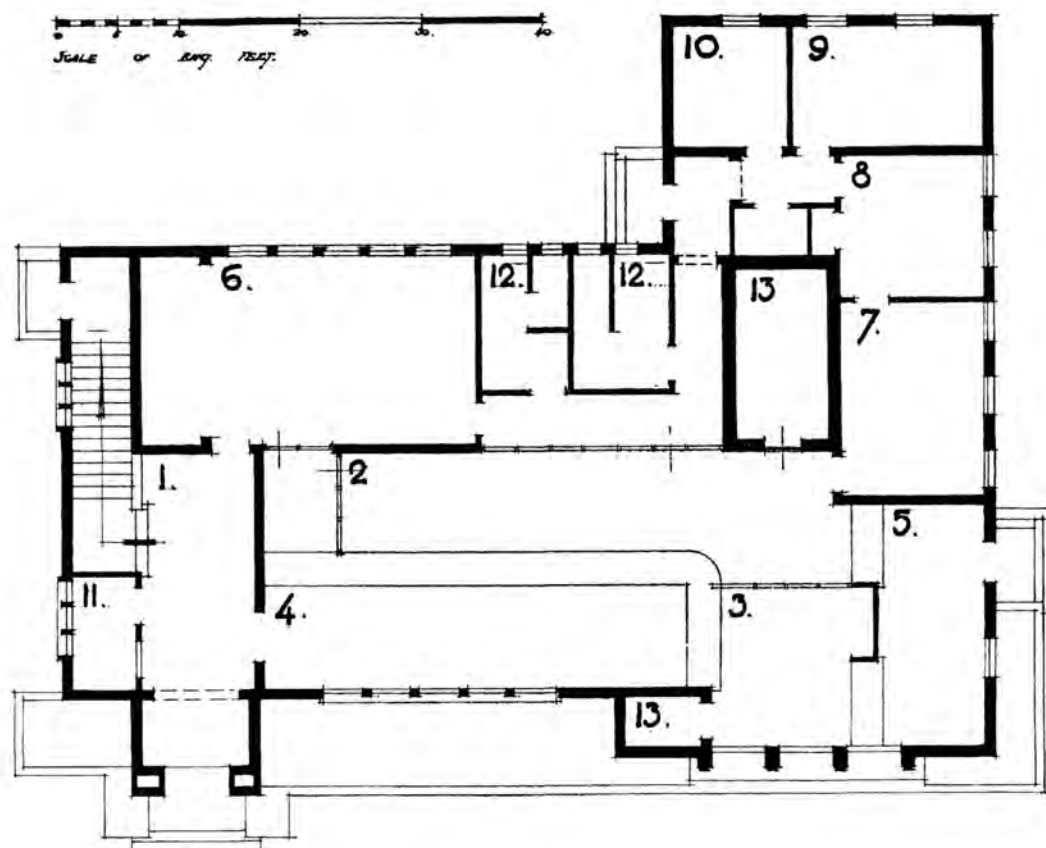
The programme, as supplied to the architects by the council, provided for the designing of a building with accommodation for a Council Chamber and Mayor's Parlour (each to be approximately 600 square feet), a Committee Room, offices for the Town Clerk, Assistant Town Clerk, Committee Clerk, Treasurer, Accountant, Register Clerks, Typists, inquiry office, telephone exchange toilets, tea kitchens and three strong rooms as well as for a public hall for the collection of revenue and traffic licences, with separated sections for Europeans and non-Europeans.

Architect's Conception

The two main functions of the municipal body, namely the managing and the administrative functions, are separated by the differing floor levels. The Revenue and Licensing Departments, it was felt, should give easy access for the public and are, therefore, preferably situated on the ground floor. The Council Chamber and related rooms, including offices for the Town Clerk, are placed on the upper floor.

In order to elucidate the plan more fully, a walk through the building will probably give a better idea of the grouping of the different units. We enter through the main entrance door, under the far projecting eaves of this section of the roof, and stand in the lobby with the foundation stones at both sides, built into the facebrick walls. From the lobby we proceed to the spacious entrance hall with the main staircase.

Site plan for the new Municipal Offices, Alberton.

GROUND
FLOOR
PLAN

LEGEND :

- | | | |
|------------------------|--------------------|------------------|
| 1. Entrance Hall. | 5. Native Counter. | 9. Typists. |
| 2. Revenue Department. | 6. Registry. | 10. Wash-up. |
| 3. Traffic Department. | 7. Accountant. | 11. Enquir.es. |
| 4. European Counter. | 8. Treasurer. | 12. Toilet. |
| | | 13. Strong Room. |

Here we find the Enquiry Office at the left hand side and notice that this office is simultaneously used as a telephone exchange. The double glass doors at the right hand side of the hall lead to the public hall for payments of Revenue and Licences, and the office of the Registration Clerks, which also has its section of counter-space.

The space behind the large counters is partitioned off for the different departments and the non-Europeans, entering through a side entrance, have their own totally separated waiting hall. There are two strongrooms, accessible from behind the counters. The arrangement as shown on the plan, makes it easy for the officials serving behind the counters to attend, alternately, to both sections of the community and the open character of the whole makes for easy supervision. The Treasurer and Accountant must have easy access to the space behind the counters. Their offices, therefore, are somewhat away from public circulation and can, in this case, only be reached through a private back entrance, an arrangement preferred by these officials. The back entrance lobby and communicating passages, which are well lit through reeded glass partitions, are for official use only. The financial offices and typists, together with toilets and wash-up, are also situated

here. Having now described the ground floor, it is only necessary to mention the floor area, which is 3,700 square feet.



Detailed view of Portico to the Main Entrance.



Interior view of counter and space for European ratepayers.

First Floor Layout

Going upstairs, we first arrive at the top landing. Here we find the office of the Town Clerk, together with a smaller office for his Secretary and a strongroom for documents. The corridor, which is well lit by the large staircase window, leads to the Council Chamber and Mayor's Parlour. Both rooms are entered through heavy panelled double doors. The narrow high windows of the Council Chamber, create the atmosphere of seriousness, desirable for this room. The Mayor's Parlour, adjoining the Chamber, is very large and, together with its covered balcony facing the street, has three double glass doors, and large cupboards on both sides. It will certainly leave an impression on guests of the Council.

At the other side of the corridor on the east side of the building, we find the offices of the Assistant Town Clerk, Committee Clerk and Typists. A reasonably sized Committee Room is also available for smaller meetings. Toilets for both sexes, together with a cloakroom and small tea kitchen, are situated on a side passage. The area of this upper floor amounts to 3,275 square feet.

Finishings

By the selection of materials and finishings, the architects have endeavoured to keep the maintenance costs of the buildings as low as possible. The external walls have been carried up, in facebrick work, for the full height. The bricks used for the plinths and flower-boxes, are two-inch plum-coloured, machine-pressed, and the walls above plinth level are golden brown face brick of the same size. Horizontal brick joints are $\frac{5}{8}$ " thick and $\frac{1}{2}$ " recessed and the perpends are minimized. Concrete surfaces such as wall bands, pier cappings, window surround and sills, have been plastered with coloured cement plaster.

The roof has been covered with blue slate and simple wrought iron ornaments have been utilized to punctuate the intersections between ridges and hips. The eaves project four feet and soffits have been carefully designed with recessed panels, heavily framed. Special steel windows of universal-sections have been used throughout. Main entrance doors are made of two-inch double panelling. Durable materials have also been employed for the internal finishings. The

public spaces such as lobby, entrance hall and revenue halls for Europeans and natives have two-inch plum-coloured face brick plinths up to window sill height. The floors to the entrance hall, stairs, cloak rooms and toilets have been paved with cream-coloured terrazzo work. The rates hall floors are covered with coloured asphalt tiles in block pattern and all remaining floors with kijaat woodblocks.

The counters have facebrick dadoes in two-inch plum-coloured bricks and $1\frac{1}{2}$ -inch kejaat tops. All joinery throughout the building has been executed with specially selected, well-seasoned kejaat, timber, and special attention has been given to the heavily panelled double doors to the Council Chamber and Mayor's Parlour.

Satisfactory heat distribution has been obtained with tubular heating, thermostatically controlled for each individual room, and four hot air ventilators have been installed in the Rates Hall.

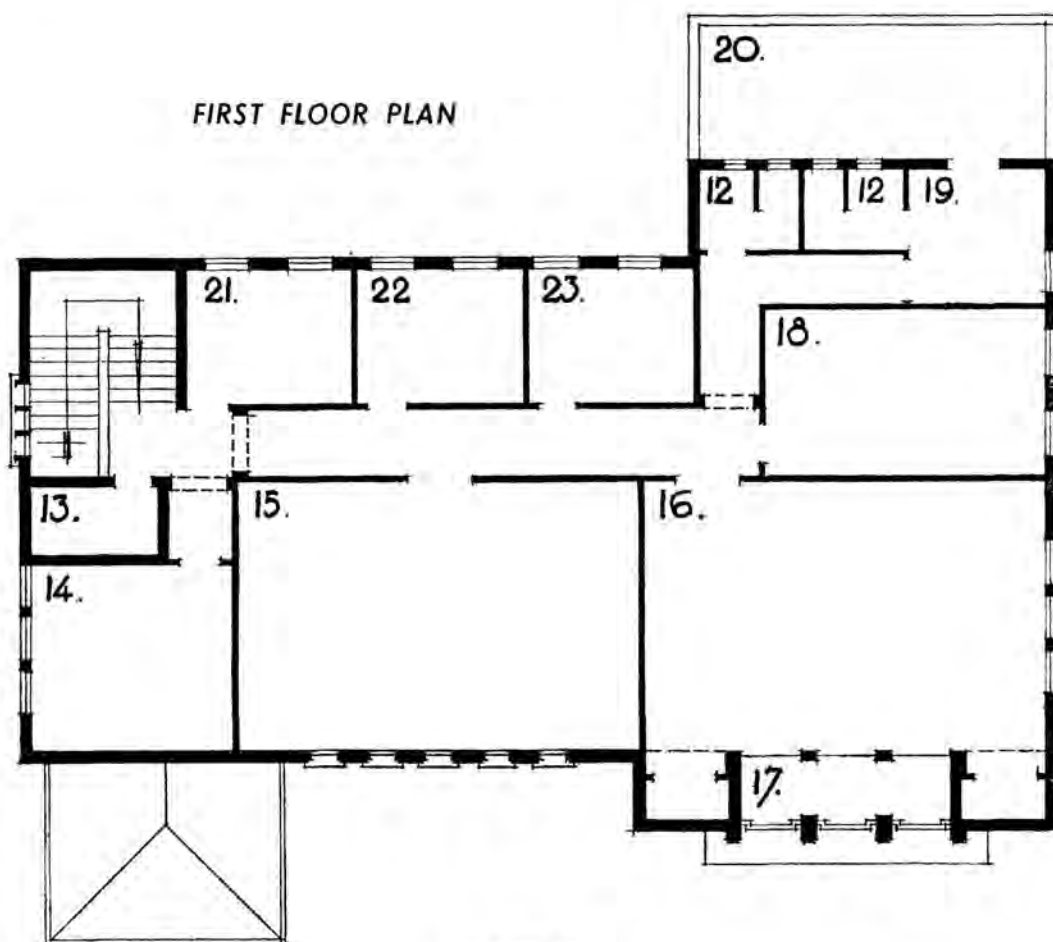
Telephone cables for the public and inter-communication telephone systems have been concealed in hollow skirtings. Fluorescent electric lighting tubes and fittings have been liberally distributed over the building, with the exception of Council Chamber and Mayor's Parlour, where special chandelier type fittings have been installed. Painting internally has been carried out in four coats of oil paint in a light stipple finish.

Local Materials

Materials used in this construction are estimated to be for 95 per cent. of their total cost, manufactured in South Africa. The result is a building which proves capable of meeting the demands made upon it, and the cost of which does not exceed the amount of £15,000, which was set aside for the purpose. The Architects are Messrs. Van Gemert and Breedveld of Johannesburg.



View of the Council Chamber with seats for the Mayor, Councillors, Officials, the press and the general public. Special chandelier lighting has been fitted. The cane-backed chairs are particularly desirable for coolness. On the walls are photographs of past Mayors of Alberton.

**LEGEND :**

- | | | |
|----------------------|----------------------|---------------------------|
| 12. Toilet. | 16. Mayor's Parlour. | 20. Balcony. |
| 13. Strong Room. | 17. Balcony. | 21. Typists. |
| 14. Town Clerk. | 18. Committee Room. | 22. Assistant Town Clerk. |
| 15. Council Chamber. | 19. Cloakroom. | 23. Committee Clerk. |

Road Safety

THE new National Road Safety Organisation of South Africa has started to issue a monthly bulletin to describe its activities. In the first number it is reported that up to the present 23 local road safety associations have been formed and that 26 more are projected for the remainder of this year. Those already formed in the Cape Province include East London, Grahamstown, Port Elizabeth, Cape Peninsula and Goodwood-Parow. In Natal there are associations at Durban, Pietermaritzburg and Ladysmith; in the Orange Free State, Kroonstad, Bloemfontein, Brandfort, Winburg, Ventersburg and Rouxville have been organised while, in the Transvaal, local associations are in being at Pretoria, Johannesburg, Germiston, Krugersdorp, Roodepoort-Maraisburg, Alberton, Boksburg, Brakpan and Vereeniging. A study group has been formed to formulate objectives for road safety education, teaching methodology, general basis of curriculum and the legal position of scholar patrol.

It is interesting to note that out of five countries whose

accidents per ten thousand vehicles have been analysed by the New Zealand Government, South Africa comes last with the most accidents. At 16.5 per 10,000 vehicles, South African roads are more than three times as dangerous as those in New Zealand and over twice as bad from the accident point of view as those in the United States. It is also worthy of remark that while one in every 50 rural road accidents in the Union was fatal, only one in 500 town accidents proved to be so.

While it is good to note that the Association is setting up its organisation swiftly and that steps are being taken to cure what is, undoubtedly, a great evil in the country, it is significant that, so far as can be seen, no steps are being taken to enlist architects and others who might help to prevent future accidents, through better town planning and traffic engineering. It is to be hoped that the Association will give evidence in the near future that it is seized with the importance of this aspect of the overall problem.

Architecture in Britain

A Survey

By **HECTOR CORFIATO**,
F.R.I.B.A., F.S.A., S.A.D.G., Hon. F.I.B.D.,
Lecturer at the Bartlet School of Architecture University
College, London.

ARCHITECTURE in Britain has been no exception to the fundamental process of evolution, but often in the past, arising above the usual gamut, it revealed qualities much above its contemporaries. In mediaeval art, England produced a unique style, human in scale, poised in equilibrium and rhythmic in ordinance. In classical architecture the architect in Britain, after suffering the influence of Italy and France, returned to the very fountain-head of classicism, Greece and Rome, resulting in the triumph of the 18th century.

The 19th century, so crude in its taste and prolific in revivals, in turn sentimental, positive, materialistic and vulgar, was bound to produce that reaction which nowadays is covered by what is known as modern architecture.

Twentieth Century Simplicity

But just as the 18th century refined architectural form, the 20th century simplified form and relied on contrasting texture or volume for effect. This simplification is to be seen in every part of the world, as speed in communications and exchange of ideas tends to a levelling of taste and design. This is true of all arts, painting and sculpture, and especially of architecture. Although both originality and quality in building may see the light in foreign countries, one may safely state that Great Britain is nowadays leading in the modern movement. This may be due to the large numbers of teaching centres, obviously resulting in variety, or to the fact that the cultured patron of architecture is no more the wealthy individual, but very often the state or the large anonymous company.

Behrens' turbine factory of the General Electric Company in Berlin, built in 1909, the box-type houses of Le Corbusier in France, and the brick patternings evident in Swedish or Dutch works, have produced all over the world, a spate of buildings in the style and spirit of these examples.

Britain obviously, could be no exception, and the characteristics of reinforced concrete, cantilevered walls and screened structural points of support are to be seen, often without obvious reason, in many a building. Concrete walls and flat roofs may not be suitable for the English climate and may be at variance with the regional character, but faith often eliminates logic, and as Cicero said "Fate, not wisdom, often rules our lives."

Page 26.



Liverpool Cathedral, designed by Sir Giles Gilbert Scott, draws inspiration from traditional styles.

Earlier Town Planning Ideas

The collective quality of building in Britain may show its measure in buildings classified as industrial, ecclesiastical, educational, monumental or utilitarian. Of the latter Britain, in the last few decades has proved beyond a doubt that design of houses, whether for the masses or the individual has kept that integrity of merit that many generations of craftsmen



The new Waterloo bridge which takes the place of Rennie's original structure.

have handed down to us. As early as 1790, Samuel Pepys Cockrell's report to the governors of the Foundling Hospital contained the excellent recommendation "that the standard of the smaller houses should not be below that of the larger. They should be so grouped as to form self-sufficient market and shopping centres. Servants and other workers necessary to keep the community going, should be provided with suitable quarters within groups formed in units." This recommendation is very near our modern conception of a neighbourhood unit and echoes the definition in 1943 of the Ministry of Health's Central Housing Advisory Committee under chairmanship of Lord Dudley, on the design and arrangement of modern houses.

While in the past the design of the smaller house was influenced by the larger house of the nobility, taxation and the servant problem have reduced the modern house to a minimum uniformity. As in the 18th century, when shopkeepers and noblemen lived in terraced houses (the houses being designed on a repetitive plan), the modern houses tend to a uniformity of appearance, only broken by the perspective effects of the varying arrangements. The variety shown in the Letchworth, Hampstead or Welwyn Garden Cities is shunned by the housing schemes of Port Sunlight, Bourneville Village Trust, the London County Council Becontree Estate, the Penilee and Pollock Estates in Glasgow and so on.

But while the design of a modern house may show notable change as the form of living has changed, the design of certain buildings such as churches has not changed, so much because the functional purpose of churches has practically remained constant through the years. Such long tradition makes it difficult to venture into new avenues and most of the modern churches are based on themes accepted by the church. The Liverpool Cathedral or the new Guildford Cathedral are majestic buildings drawing their inspiration from ecclesiastical style. This does not mean that churches designed with a complete break from past experience have not been attempted.

School Design Improvements

Of the utilitarian buildings, schools have precedence. In this type of building immense strides have been made in

planning, lighting, heating and ventilating class rooms and examples may be seen in the Middlesex County Council Schools at Greenford, the schools at Southall, Sidcup, the St. John's School at Leatherhead or the Whittingham College, Brighton. Like the School at Impington, Cambridge, or the School in Richmond, Yorkshire, all the designs are based on irregular planning, with large glazed wall areas contrasted either with towers or plain surfaces.

The post-war conditions have impeded the growth of monumental architecture. One has to look to the years following the first world war for meritorious examples. University buildings in London and the provinces, government offices or banks provide contrasting conceptions in design from the use and abuse of the classical column to the austere architecture of quasi-puritanism.

The projects for a theatre at Oxford, the L.C.C. concert hall and the civil centre buildings for Harlow New Town, are things to come and in preparation. The Finsbury Health Centre, the Zoological Animal Houses, tube stations that at Gants Hill, in Essex, are evidence of liveliness in design. The large low cost blocks of flats in the neighbourhood of Hampstead, Finsbury, Camden Town, Kings Cross and Holborn, show novel ideas in design, where the financial factor is paramount.

The Mersey Tunnel and new Waterloo Bridge over the Thames are bold engineering feats to which the hand of the British architect has added grace. There are laboratories, baths and swimming pools, hospitals, crematoria, power stations, factories and other buildings too numerous to mention, which give but a small idea of the pre-war building activity in England.

Given the opportunity, architecture in Britain, when unhampered by present-day building restrictions, will rise again with new spiritual values. Progress in architecture is neither the privilege of certain periods nor of certain forms, but derives from the practical necessities due to the evolution of human activity and aesthetic expression.



A classroom wing of the Sidcup and Chislehurst School completed in 1938 for the Kent County Council. The school can accommodate 660 boys.

DOMESTIC SMOKE ABATEMENT

By

LORD SIMON OF WYTHENSHAWE

WHILE Lord Simon's remarks, published below, were meant for a British audience, there is much contained in them which will be of interest to South Africans, especially those who live and work in Reef towns. There are perhaps two angles to which we might draw attention. From the architects' point of view, too, little appears from Lord Simon's address in connection with the very real damage which smoke causes to buildings not only from an appearance but from a maintenance angle. Also in a country, where bituminous coal is both plentiful and cheap, it would be idle to neglect the importance of developing the use of coal-burning appliances which consume their own smoke, and of which quite a number are on the market overseas.

This whole question, of smoke abatement, is becoming of greater and greater importance due to the large industrial expansion of South Africa. To hasten an appreciation of what is involved it would appear that the time is overdue for the creation of a Smoke Abatement Society, such as has already existed for years in Britain and which has its counterparts in the United States of America. Such a body could arouse public opinion and direct efforts along lines practical and useful to this country.

THE story of factory smoke is one which covers large extensions in the use of electricity; the considerably increased use of gas; great improvements in the structure of boiler plants for efficiency and smokelessness, and steadily increasing co-operation between local authorities and manufacturers in making combustion more smokeless by the training of stokers, and in other ways. This has been and is a continuing process; great progress has been and is being made towards a really satisfactory state of affairs. The story of the domestic smoke problem is a very different and a much more difficult one, and I propose, therefore, to confine my address to-day almost entirely to the domestic problem.

Newton Committee, 1920

The landmark in the first year was, of course, the publication of the Newton Committee's report in 1920; the first public and authoritative report which pointed out the immense importance of the damage done by domestic smoke.

The Committee first met in March, 1920. So impressed was it with the urgency of using better methods of domestic heating in the large number of new working-class houses which it was hoped were to be rapidly built that it actually produced an interim report in three months, pointing out that the open coal fire and the old-fashioned kitchen range were

"inefficient, wasteful of fuel and labour and productive of smoke." Better appliances and methods were available, though much research was still required. It recommended that the Government should decline to sanction any housing schemes unless specific provision was made in the plans for the adoption of smokeless methods for supplying the required heat, and that the Government should encourage the co-ordination and extension of research into domestic heating problems.

The Committee was wise and right. It need not have been in such a hurry. Lord Newton wrote in 1922: "The very Ministry which was established to protect the health of the people has hitherto completely ignored the damage, waste and discomfort caused by domestic smoke." And twenty years later that same Ministry had still taken no action whatever under either of the recommendations of the Newton report.

The Newton report was an admirable document. It is a lamentable fact that so far as action by the Government was concerned it might just as well never have been written.

The Simon Report

The beginning of the final stage in the history of smoke abatement is marked by the creation of the Ministry of Fuel and Power in 1942. Owing to the grave shortage and high price of coal, more efficient consumption had become an urgent national necessity and the Ministry from the beginning meant business. Over one-third of our coal is used in one form or another for domestic purposes, so the Minister in 1945 appointed a strong committee, of which I was chairman, with the following terms of reference: "To consider and advise on the use of fuels and the provision of heat services in domestic and similar premises, in the interests of the occupants and of the nation, with special regard to the efficient use of fuel resources and to the prevention of atmospheric pollution."

The report was published in 1946 and this is how we summed up the position as regards domestic heating:—

"The four million houses built in the inter-war period are probably larger than houses in other countries for the corresponding income groups, yet the area of the house properly warmed for comfort during the winter is probably smaller than in any other civilised country . . .

"Our coal is used for domestic heating with a degree of inefficiency which is not, so far as we can ascertain, even approached in any other country in the world . . .

"Over 80 per cent. of domestic heating is provided by burning bituminous coal mainly in open grates or in kitchen ranges. The open grate has always been the greatest sinner in smoke production . . .

"To sum up, we are using excessive quantities of coal; we are providing inadequate heating in our houses; we are

pouring out masses of soot and tar into the atmosphere . . .”

That is the Committee's verdict on the four million houses built under the control of the Ministry of Health, after it had received the Newton report, and in spite of the continuing efforts of the National Smoke Abatement Society.

Smoke abatement has always been the blind spot of the Ministry of Health; I am glad to say that at long last there are signs that this is beginning to clear.

Turning to the post-war period we found that during the last two or three years there had been great progress, particularly on the part of private enterprise. There were some strong research organisations in existence among individual large firms in the gas and electricity industries, and a few were beginning to appear among manufacturers of solid fuel appliances; there were also several organisations of growing importance controlled by industries. What was perhaps even more encouraging, we found that at long last the Government was taking an active interest in research and development. During the war nothing had been done except a slight extension of the facilities of the Fuel Research Station, which did useful work on a tiny scale. Now things were different. At the instigation of the Ministry of Works, the D.S.I.R. had appointed a Committee on Heating and Ventilation under the chairmanship of the distinguished scientist, Sir Alfred Egerton, whose report produced a mass of basic facts covering nearly all the scientific aspects of heating and ventilation. The Simon report may be regarded as an attempt to indicate how the data given in the Egerton report can best be applied in practice.

Lines of Development

The Committee concluded that there were three main lines of development for efficient, convenient and smokeless domestic heating. The most important is to replace the bituminous coal used for domestic purposes by some smokeless solid fuel — anthracite, or some form of coke or briquette, to be burnt with an efficiency of not less than 40 per cent. The second is to increase the use of gas and electricity from 15 per cent. to, say, 30 per cent. of the total fuel consumed, in about twenty years. The third is to burn bituminous coal with increased efficiency and much less emission of smoke. These three developments depend on action by many different bodies and in many different directions.

Two specially urgent developments are a cheap and efficient system of central heating for small houses, and (most important of all) a stove to burn bituminous coal smokelessly, or nearly smokelessly. I venture to predict that both these will be on the market at reasonable prices within the next few years.

District heating may prove to be an important line of advance, but there are serious difficulties. A dozen plants are likely to be at work within the next year or two.

Our Committee made no less than forty-one separate recommendations, and concluded that if these recommendations were reasonably followed it should be possible to secure that the 50 million tons of bituminous coal now burnt with a working efficiency of 20 per cent. should be replaced in twenty years by smokeless solid fuel, or by bituminous coal burnt smokelessly, or by gas, or by electricity, with an average coal economy efficiency of not less than 40 per cent.

This would render possible the following results:—

The virtual abolition of domestic smoke.

Less labour and dirt in the house.

And either:

(a) Doubling the useful heat in the smaller houses at little or no greater cost to the householder and no increase in the consumption of coal; or

(b) An increase of 50 per cent. in the useful heat in the smaller houses with a substantial reduction in cost to the householder and a saving to the nation of perhaps 10 million tons of coal per annum.

We pointed out that to achieve these results in twenty years meant an annual increase in the output of all kinds of smokeless solid fuels of 1 million tons. If the increase averages only 650,000 tons, then thirty years will be needed. Much depends on the vigour of successive Governments and of the National Coal Board. But the encouraging thing is that the Committee felt justified in suggesting that it should be possible to achieve these results in from twenty to thirty years.

Progress will be Rapid

That means that after thirty years there should be no more domestic smoke, and it is reasonable to assume that the rapid increase in the use of electricity for factories and the greatly

NEW COLONIAL OFFICE BUILDING

The new Colonial Office will occupy the site of the old Westminster Hospital and former Stationery Office, on the west side of the Middlesex Guildhall. It will provide 120,000 square feet of office accommodation on eight floors.

The plans for the new building (which is shown in the perspective as it will appear from the corner of Princes Street and Broad Sanctuary) have been prepared for the Ministry of Works by Mr. T. S. Tait, F.R.I.B.A., of Sir John Burnet, Tait and Partners, after consultation with the Royal Fine Arts Commission.



improved combustion of the modern super power-stations will mean the end of any serious emission of smoke from factories (though the problem of metallurgical furnaces may remain). So that we may look forward with reasonable confidence to the end of the smoke nuisance as a whole within thirty years.

Why has progress been so slow, especially as regards domestic smoke? And why are we justified in believing that it is unlikely in future to be so rapid?

There are four main reasons :

(1) This country is blessed with large reserves of bituminous coal. This is our **most** important natural resource ; it is also the perfect smoke producer. Up to World War I coal supplies were ample and very cheap, after World War I supplies were still ample, but expensive, and people began to think seriously of economy. Now coal is much more expensive and we are not producing enough to meet all our needs. The country has been forced to think hard and to act. The Ministry of Fuel was created and has been acting with great vigour, not primarily in order to abate the smoke, but to promote economy and efficiency in the consumption of fuel, which by great good fortune comes to much the same thing.

(2) Both the main lines of reform — the conversion of bituminous coal into smokeless solid fuel and the burning of bituminous coal smokelessly for different domestic purposes, require much scientific and technical work. The amount of such work has been utterly inadequate in the past ; it has greatly expanded in many directions during the last few years. There is every reason to hope that it will shortly be on a really adequate scale.

Public Enemy No. 1 ?

(3) Public Enemy No. 1 in the smoke abatement world has always been and is to-day the open coal fire. Lord Newton wrote in 1921 : "Hitherto all criticisms of our present system have been met by indignant expostulation that the open fire is one of the sources of England's greatness and prosperity and that any attack on it is of the nature of high treason." Everybody hated smoke, everybody loved the open coal fire ; the open coal fire won hands down. The Simon report sums up : "The open coal fire is sociable and pleasant ; but it involves dirt and drudgery for the housewife ; it wastes millions of tons of coal each year, and it is the chief sinner in rendering our cities unfit for human habitation by its smoke."

Scientific and technical brains have for the last few years been tackling the problems of the open coal fire ; efficient and often attractive alternatives to the old-fashioned grate are already on the market, and beginning to be installed in large numbers. Progress has been slower than the Simon Committee hoped, but it is reasonable to say that **in the battle against the old-fashioned open coal fire burning bituminous coal victory is at last in sight.**

(4) The fourth reason for confidence is that at last the Government is concerning itself actively with fuel economy and smoke abatement. Of the forty-one recommendations of the Simon Committee, twenty-seven were directly addressed to the Government — the Ministry of Fuel and Power, the Ministry of Works, the Ministry of Supply, the Ministry of Health. These Ministries have set up a Joint Standing Committee to follow up our recommendations, and having regard to the shortages of supplies, and the difficulties of carrying

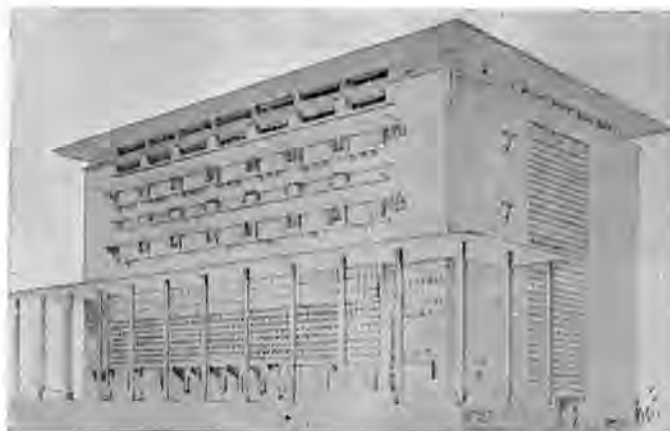
out quickly a revolution in domestic heating they are doing a good job. It is most encouraging to be able to record that the Ministry of Health in recent months has been fully co-operative, and that when, in 1948, the supply position justified it, the Minister immediately made it a firm condition of approval for all new housing projects that the main heating appliances should be selected from the list of appliances tested and approved by the Ministry of Fuel and Power.

In particular, we owe our thanks to the Ministry of Fuel and Power and the Ministry of Works, who are showing an initiative and energy in this field which represents a complete revolution as compared with the past, and to the D.S.I.R., which is rendering essential services on an increasing scale, mainly through the Fuel Research Station.

Finally, the three great national fuel-producing corporations (Coal, Gas, Electricity) are of basic importance. On them lies the responsibility for producing each year more gas, more electricity, and, above all, a steadily and rapidly increasing quantity of smokeless solid fuel.

If my analysis is right, then it is clear that the main work that lies before the National Smoke Abatement Society in future will be — to endeavour to ensure that the Ministry of Fuel and Power and the Ministry of Works carry on their excellent work with their present zeal and efficiency ; to bring constant pressure to bear on the National Coal Board to reach the target of an additional million tons of smokeless solid fuel each year, and to make every effort to ensure that the Ministry of Health maintains its recent active interest in smoke abatement.

And, of course, a great deal of educational work is needed with local authorities, architects, builders and others ; such work is likely to be more effective now than ever before because smoke abatement, without losing its idealism, has now become a practical proposition.



Design by H. Honinckx for the new head office of the Banque du Congo Belge at Leopoldville. One of the main objectives is the protection against excessive heat. It will be noted that this is an adaptation of European architecture to a tropical climate.



The new bridge over the Toise River on the Amabele-Cathcart section of the Cape Eastern main line. The new route between East London and Queenstown, of which this bridge is a part, has taken 14 years to complete. The total cost, including the mountainous section, was nearly £3½ million.

Photo : South African Railways.



ARCHITECTURAL PROBLEMS IN THE BELGIAN CONGO

PROBLEMS of colonial architecture in general, and that of the Belgian Congo in particular, are the main theme of the June (1949) issue of *Rythme*, the organ of the "Société Centrale d'Architecture de Belgique." A foreword by M. Pierre Wigny, the Belgian Minister for Colonies, is followed by contributions on native art, on the adaptation of European building styles to colonial and tropical conditions, and on the development of urban architecture in colonial towns. A number of projects or recent realizations of prominent buildings are briefly described, e.g., the project illustrated here, for the head office of the "Banque du Congo Belge" at Leopoldville, designed by the Belgian architect H. Honinckx. As is the case with all modern buildings in tropical regions, the most important problem is the protection against the sun. In this particular case, protection is mainly provided by means of protruding "sunshades" so that no glazed surfaces are directly exposed to the sun. A double roof and the general shape of the walls (see cross-section, illustrated) secure a maximum of ventilation. That applies especially to the spacious public hall which occupies most of the ground floor. The building will have a structure of reinforced concrete, with non-bearing walls, faced with shop-cast concrete slabs. The foundation walls will be masonry, consisting of local stone material of a red-brown shade.

In a further contribution, M. C. Heymans, who has been placed in charge of "colonial town planning" in the Belgian Congo, discusses some of the problems involved. It is an illusion to think that the town planner in the Congo is confronted with virgin country which he can plan to build up in

accordance with his dreams. On the contrary, **it is necessary to spend years of hard, realistic and non-spectacular work on improving the urban conglomerations which, in spite of their comparatively recent origin, already show many of the more unfortunate features of the older European cities.** Lack of planning in the early stages and lack of adequate financial means in later years, have in many cases prevented the healthy growth of the settlements. Moreover, the recognised policy of fostering the gradual emancipation of the Natives must find its counterpart in an adequate planning not only of the European quarters but also of those of the Natives, in spite of the negligible monetary contributions which the natives themselves can afford to make. A town like Léopoldville, for instance, has a population of 130,000 Natives, but no more than 8,000 Europeans. The efforts of the colonial town planners are concentrated on the creation of new, healthy town centres where also the Natives can have their share of an improved standard of living.

These efforts call, for the first time in the history of some of the settlements, for the provision of public transport facilities, so that an unduly high density of population in the central area can be avoided. These transport facilities must be cheap so that the Natives can afford them. The obvious solution is the planning of "linear" dormitory suburbs along a single railway line which can handle a considerable traffic at a low cost. What is therefore aimed at, is the emergence of a new, colonial type of "linear city" which will supersede the compact and unhealthy settlements of the earlier colonisation period.

S.A SPECIFICATION FOR TUNGSTEN FILAMENT LAMPS

THE general service electric lamp is a complicated device.

Behind it lie years of painstaking research, scientific progress and relentless efforts towards simplification and standardization. To standardization, especially, the consumer owes the low cost of the modern electric lamp, its uniform performance and the convenience he enjoys when making replacements.

One has only to recall the lamp efficiency of 1.4 lumens per watt of Edison's first lamp and compare it with the 12 to 20 lumens per watt of general service lamps to-day, to realize what remarkable advances have been made by scientists and lamp development engineers. More than an eight-fold increase in lamp efficiency has resulted from their efforts.

Lower Costs

And the increased efficiency has in no way led to higher prices. On the contrary, regardless of the ups and downs of economic cycles, continual price reductions have been made over the years so that the average cost of a lamp to-day is only about 40 per cent. of what it cost in 1920.

For general lighting purposes the arc lamp, the earliest commercial form of electric light, had to give way to the tungsten filament lamp now almost universally used. To-day the use of arcs is confined largely to projection, photography and older lighting installations. The wide use of tungsten for filaments is due to its inherent ability to operate at a temperature approximately equivalent to twice the temperature of molten steel. Even higher operating temperatures and therefore greater lamp efficiency were made possible as a result of developing the single-coil and the coiled-coil tungsten filament.

However, the perfection of the filament does not represent the only advance. Equal gains were made in a host of minor aspects of design, processing and manufacturing, which over the years all add up to tremendous gains in lamp value. Filament length, diameter and form, coil spacing, mandrel size (the mandrel is the form on which the filament is wound), lead-in wires, number of filament supports, method of mounting, gas pressure, bulb size, shape, temperature and the like have all passed through the mill of painstaking research.

Fluorescent Developments

Recently gaseous or electric discharge lamps have opened a new field for future progress. Particularly significant in this respect is the radically new fluorescent lamp which not only offers high efficiency, but is of sufficient simplicity to be readily adaptable to all manner of general lighting applications.

And so from day to day science and research continue their steady march toward better, cheaper and more abundant light to serve the needs of millions of consumers all over the world.

At least two factories are now manufacturing tungsten filament general service electric lamps in South Africa, and at the request of one of the largest consumers of electric lamps in the Union, the Standards Council has been instrumental in having a South African specification prepared for general

service electric lamps. **The technical committee** entrusted with the work has already finalized the specification which is soon to be considered for approval by the Council.

Specification Contents

During the preparation of the specification due consideration was given to the fact that screw caps and holders and reflector-type fittings complying with both English and American standards are being fairly widely used in South Africa. No attempt has been made to standardize on one type of screw cap only, and both British and American types are therefore permitted.

The committee decided that the lamps manufactured with either British or American light centre lengths should be covered by the specification, the British light centre lengths being regarded as the standard for South Africa, and the American light centre length being given as "permissible." In order to facilitate the working of this scheme it is recommended that consumers should specify when lamps with American standard light centre lengths are required.

For the rest the South African specification for general service tungsten filament incandescent lamps will deal with lamp dimensions, initial efficiencies, electrical ratings and lamp life. The grounds for rejection of lamps have been tied up statistically with normal variation in quality of lamps produced, to ensure that the quality of lamps finally approved, as conforming with this specification, will be fairly uniform.

The standardization mark of the Standards Council — the guarantee of quality to the consumer — will be available to manufacturers for use on lamps produced in accordance with the standards laid down in the specification.

The South African Standards Bulletin.



The plastic tuber, laying up and brading machines at the new Asea cable factory, at Pretoria.

PUBLICATIONS RECEIVED

Annual Report of the Department of Justice, 1948. Published by the Government Printer, Pretoria. 37 pp. 3s.

Commenting upon the general work of head office, the report says: "Again this office was called upon to keep pace with the manifold duties arising out of an ever-increasing expansion, urban as well as rural, a task severely hampered by the existing staff shortage."

Under the heading of accommodation, especially for offices, the report goes on to state: "The acute shortage of office accommodation still continues . . . The Department has a **huge building programme** and all steps are being taken with the limited arrangements at its disposal, to relieve the most critical problems in this connection." In connection with Residencies the report was equally pessimistic. "The Department experienced considerable difficulties," it said, "in the placing of its officers, as almost invariably married officers with families were unable to find suitable accommodation at their new stations on transfer . . . in many cases (**where residencies were available**) it was not even possible to effect the necessary repairs, and many complaints were received in connection with the condition of buildings."

It would appear, therefore, that although the Department has its usual quota of present-day difficulties of staff shortage, common to the whole Government service, as well as serious troubles over accommodation, the latter will provide much work for designers and builders when finance allows the "huge" building programme to proceed.

Electrical Equipment: Safety Specification for Electric Radiators. Published by the Standards Council, in English and Afrikaans. 26 pp. 5s., post free.

In the foreword to this specification it is pointed out that it forms one of a series drawn up to establish minimum safety standards for electrical equipment and that the desirability of such a series of specifications was brought to the attention of the Standards Council by the South African Institute of Electrical Engineers and the National Council for the Electrical Industries of South Africa.

After dealing with definitions and scope, the specification goes on to prescribe methods of design and construction, including a limitation on tilting. Standards are laid down in respect of safeguarding heating elements and other current-carrying parts. Protection against rust, prevention of damage to electrical parts through adjustable reflectors and the use of adequate switches are stressed. Two other sections cover electrical connections, earthing facilities and the provision of flexible cord of an approved heat resisting type. Marking regulations and methods of test are also laid down.

Report of the National Council for Social Research. Published by the Government Printer, Pretoria. 16 pp. 1s. 3d.

This report covers the years 1947 and 1948. While the field to be covered is obviously large and the subject important, the report is disappointing. In order to gain a picture of what is happening in non-European areas, an investigation is being made into a number of aspects of life at the Atteridgeville Location, Pretoria. During the last two years the Government has laid down the policy that "in order to co-ordinate" and increase the efficiency of research in the social field, the subsidisation of research should be effected through one channel, the National Council for Social Research."

During the two years reviewed the Council awarded grants and bursaries amounting to close on £45,000. The scheme to provide a number of full-time research workers at South African Universities has, however, been held up for lack of the necessary funds with which to launch the scheme.



Dover, which suffered severely from enemy bombardment during the war, is building new schools. This view shows the Shatterlocks county primary school designed to give both pupils and teachers the maximum amount of air and light.

SCOTLAND HAVE GREY TELEPHONE KIOSKS.

Discussions between the Royal Fine Art Commission for Scotland, the Council for the Preservation of Rural Scotland, the Department of Health, and the G.P.O. have resulted in an agreement whereby telephone kiosks in Scottish beauty spots or places of architectural interest can in future be painted a battleship grey instead of the familiar red. As kiosks must be readily recognizable in an emergency the glazing bars of the doors and the sides will remain Post Office red.

Architects Journal.

ABSTRACT FROM GOVERNMENT REGULATIONS

Price Control : Maximum Prices of Cement. Extraordinary Gazette No. 4278, dated 11th November, 1949.

This regulation, made by the Price Controller, is in accordance with the terms of regulation No. 3 of War Measure No. 49 of 1946. It fixes the price of cement throughout the Union, with the exception of the mandated territory of South-West Africa and the protectorate and settlement of Walvis Bay.

The prices at which cement may be sold are set out for five principal areas, which are scheduled. The additions which dealers may charge to bona fide constructional engineers and building contractors and to other purchasers are described, as also delivery charges within the municipal areas concerned. There is a considerable discount for cash. Up to the 19th November any person, other than a cement manufacturer, was entitled to sell any cement that he had in stock on November 11th, 1949, at the previous maximum price. In a note the Controller states that with the removal of the Government levy, opportunity has been taken to revise and fix maximum prices for cement on a Union-wide basis.

Industrial Conciliation Act, 1937. Building Industry, Queenstown. Extraordinary Gazette No. 4280, dated 11th November, 1949.

This notice from the Department of Labour settles a dispute which arose in connection with the building industry in Queenstown and which was referred to an arbitrator. After making a number of definitions, including the radius outside which a job becomes a "country job," the award goes on to lay down wages and cost of living allowances for various categories of workmen, the prohibition of piece work, payment of wages, overtime and other remuneration, walking time and transport provision and allowances, hours of work, notice of termination of work, provision of wet weather shelters and latrines, granting of annual leave and cognate matters. A Holiday Fund Committee is to be established under one of the clauses of the award, which came into operation on 14th November, 1949, and is to continue until 31st July 1950.

City of Bloemfontein, Amendment of Building Regulations. Administrator's Notice No. 154 of 1949. Official Gazette of the Province of the Orange Free State, 28th October, 1949.

This regulation is an addition to Article 271 of the existing regulations. It relates to premises where artificial or forced ventilation is installed, and lays down that "the whole content of each chamber or room shall be renewed once in every fifteen minutes during all times of occupation or use, provided Kata thermometer readings are not below the following standard :—

Dry Kata thermometer reading 5.

Wet Kata thermometer reading 16.

The temperature in each room or chamber shall at no time be less than 65 degrees Fahrenheit. The natural lighting of the premises shall be to the satisfaction of the City Council." Certain relaxations in connection with the open space or unbuilt area of buildings, with and without air conditioning are also laid down.

City of Cape Town. Amendment to the Building Regulations.

This regulation takes the place of the old regulation, No. 832. It relates to the erection, taking down, repair or alteration of any wall or structure and the carrying out of any earthworks on any land, other than garden or similar work involving the movement of less than two cubic feet of material. The regulation goes on to say. "Where, in the opinion of the City Engineer, such work is likely to obstruct or render inconvenient to traffic any street or footway, such owner shall, before the commencement of such work, obtain the licence of the Corporation and cause to be put up such board or fence or covered gantry as the City Engineer may deem sufficient to provide a footway for passengers . . . When the said work is finished or when the board, fence or gantry is removed . . . the Corporation shall repair any damage caused to the street or footway and the cost shall be duly certified by the City Engineer . . ." If the cost of repair exceeds the estimated cost, for which the owner will have to pay a deposit, the extra cost must be paid to the Corporation or, alternatively, any overplus already paid will be refunded to the owner. Any architect whose client may be having work done which would, possibly, be affected by this regulation would be well advised to apply to the City Engineer, Cape Town, for a full copy of the amended regulation.

Borough of Margate. Plumbing and Drainage By-laws. Provincial Notice No. 454, 1949. Official Gazette of the Province of Natal. 1st November, 1949.

These new regulations cover the entire Gazette Extraordinary of 27 pages. After a long general section, there are others dealing with drains, soil pipes, waste pipes, sanitary fittings, miscellaneous and plans and notices, as well as fees. It is also laid down that "no person shall carry out . . . any drainage work . . . unless such person is in lawful possession of a licence granted by the Council authorising him to do so."

There are a number of schedules attached and dealing with drainage plans, requirements regarding pipes and fittings, as well as the type of forms that have to be filled in by anyone contemplating the laying of drains within the municipal boundaries of Margate. Any architect, builder or property owner, desirous of doing or supervising such work, would be well advised to obtain a copy of the Notice, which it is, obviously, impossible to summarise in greater detail here.

LIBRARY ACCESSIONS

C.S.I.R. Information, in its present form, is a list of accessions to the Library and Information Division of the South African Council for Scientific and Industrial Research. Many of the publications listed were received from the Union's Scientific Liaison Offices in London and Washington.

The arrangement of the accessions list is alphabetical under subject headings. As far as practical these headings have been kept uniform with those used in the **Industrial Arts Index**, a publication familiar to most searchers for technical information. The classification numbers follow the Universal Decimal Classification. Short annotations or abstracts have been added when the titles are not self-explanatory. Certain documents have already been handed to institutions which have built up collections covering highly specialised fields. In such cases the name of the institution is given in this list, as the document in question is located there. Applications to borrow such items should be sent direct to the institute named, not to the C.S.I.R. Library.

Publications not in constant use by the departments of the C.S.I.R. may be borrowed through the post. **Enquirers should note the number at the left-hand side of each item (e.g., 35/21)** and address their letters to: Library and Information Division, South African Council for Scientific and Industrial Research, P.O. Box 395, Pretoria. Telephone: 3-1261 (Ext. 42).

Documents should be returned to the Library by **registered post, packed flat.**

A supplement, dealing with accessions which are restricted in circulation, is issued for the use of Government departments only.

ACOUSTICAL ANALYSIS.

36/2 BOZZOLI, Guerino Renzo.

Acoustical analysis using sound pulses: a thesis presented to the Department of Electrical Engineering in the Faculty of Engineering, University of the Witwatersrand, Johannesburg . . . Johannesburg, University of the Witwatersrand, 1947.
292 p. photos., tables, diags.

534.84

AIR FILTRATION

36/6 BILLINGTON, Neville S. and D. W. Saunders.

Air Filtration . . . London, Institution of Heating and Ventilating Engineers, April, 1947.
50 p. illus., tables, diags.
Reprinted from Journal of the Institution of Heating and Ventilating Engineers, April, 1947.

"The present paper is divided into three main sections:—
(1) A review of the functions of an air-filter installation, with particular reference to ventilating plant;
(2) A summary of some of the relevant literature, chiefly of American origin; and
(3) a survey of the author's own researches on filters for ventilating plant. This includes details of an accelerated test, some empirical relations between efficiency, resistance and velocity, and an account of a new and efficient filter medium.

The paper is in no way concerned with filtration as applied to internal combustion engines or similar applications."

Pam. 628.83

ALLOYS.

36/7 BRICK, R. M. and Arthur Phillips.

Structure and properties of alloys: the application of phase diagrams to the interpretation and control of industrial alloy structures . . . New York, McGraw-Hill book co., inc., 1942. (Metallurgy and Metallurgical Engineering series).
xiv, 227 p. photos., tables, diags.

669.018

ARCHITECTURE

36/8 LUTYENS, Robert and Harold Greenwood.

. . . An understanding of architecture. London.
People's Universities Press, 1948.
xviii, 19-116 p. illus.
Bibliography: pp. 115-116.

72

BRICKS.

36/16 BONNELL, D. G. R., and others.

The determination of the crushing strength of building bricks, by D. G. R. Bonnell, B. Butterworth and A. J. Newman. London, British ceramic society, 1947.

289 p. tables, diags.

Reprinted from Transactions of the British Ceramic society vol. 46, September, 1947.

"The influence of the method of testing upon the results obtained in compressive strength tests on bricks and 10 different methods of test. The total number of bricks tested was 5,784. The results have been analysed from the point of view of selecting the most suitable method of test for inclusion in a British Standard. The method finally adopted in B.S. 1257: 1945 is given in an appendix."

Pam. 691.47: 620.173.

BRICKWORK.

36/17 FROST, William.

The bonding of brickwork . . . Cambridge, University press, 1933.
p. 23 + (223) p. diags.

693.2

BUILDING.

36/18 GREAT Britain. Department of scientific and industrial research. Building research station.

. . . Structural requirements for houses, by F. G. Thomas . . . London, H.M. Stationery office, 1948. (National building studies, special report No. 1). 9 p. plates, tables.

Main sections: Loadings; Strength requirements; Stiffness requirements; Methods of applying test loads; Measurement of deformations.

Pam. 69.04

36/19 GREAT Britain. Ministry of Works.

. . . New methods of house construction. London, H.M. Stationery office, 1948. (National building studies, special report no. 4).

35 p. plates, tables (some folding).

"The report classifies the non-traditional systems according to their methods of production, sets out salient features of each type of house, and reaches conclusions as to requirements in labour and materials for the various types derived from a study of their erection on a pilot production scale on a number of sites.

The appendices describe the organisation set up for the collection of data on man-power and costs, and the statistical methods employed for their analysis — an investigation unique in that it has dealt with new building methods, the cost of which could not be analysed by traditional means."

Pam. 69: 728

DICTIONARIES. Afrikaans.

34/65 KRITZINGER, M. S. B. and others, Comps.

Verklarende Afrikaanse woordeboek . . . tweede uitgebreide druk. Pretoria, J. L. van Schaik, 1947.
734 p.

Compilers are: M. S. B. Kritzinger, F. J. Labuschagne, P. de V. Pienaar, J. H. Rademeyer, H. A. Steyn.
(Not available on loan.)

439.36—3

DICTIONARIES. German.

- 34/66 ILLINOIS. University. Engineering experiment station.
 . . . German-English glossary for civil engineering, by
 Alphonse A. Brielmaier. Urbana, University of Illinois,
 1940. (Bulletin vol. 37, no. 20, January 9, 1940; Engineering
 experiment station circular series no. 40).
 37 p.
 (National Building Research Institute.)

Pam. 624(038)=3=2

DICTIONARIES. Swedish.

- 34/67 SVERIGES industrilexikon: flersprakligt, bestrivande tekniskt
 uppslagsverk. Stockholm, Sohlmans förlag (1948).
 vol. 1 only.
 (Not available on loan.)

6(038)

FOOD.

- 34/78 SCHULTZ, Theodore W. ed.
 Food for the world. Chicago, University press (1946).
 xiv, 353 p. tables, diags.
 Sections: the food movement; population; nutrition; food
 supplies; international relations; consequences and policy.
 338: 63

FOUNDATIONS, Chicago.

- 34/80 ILLINOIS. University. Engineering experiment station.
 . . . History of building foundations in Chicago. . . . by
 Ralph B. Peck. Urbana, University of Illinois, 1948. (Bul-
 letin vol. 45, no. 29, January 2, 1948; Engineering experi-
 ment station, bulletin series no. 373).
 64 p. illus., tables, diags.
 (In National Building Research Institute.)

Pam. 624.15(773)(091).

FURNACES.

- 34/82 ILLINOIS. University. Engineering experiment station.
 . . . The Illinois smokeless furnace, by Julian R. Fellows . . .
 Alonzo P. Kratz . . . and Seichi Konze. Urbana, University
 of Illinois, 1947. (Bulletin vol. 45, no. 9, September 24,
 1947; Engineering experiment station, bulletin series no.
 370). 80 p. illus., tables, diags.
 (In National Building Research Institute.)

Pam. 662.931+662.966.

GLASS.

- 34/84 STEVELS, J. M.
 Progress in the theory of the physical properties of glass
 . . . New York, Elsevier publ. co., inc., 1948.
 xi, 104 p. tables, diags.

666.1/2.

GRAVITY WELLS.

- 34/85 ILLINOIS. University. Engineering experiment station.
 . . . The free surface around, and interference between
 gravity wells, by Harold E. Babbitt and David H. Caldwell.
 Urbana, University of Illinois, 1940. (Bulletin vol. 45, no
 30, January 7, 1948. Engineering experiment station, bulletin
 series no. 374).
 60 p. illus., tables, diags.
 (In National Building Research Institute.)

Pam. 628.112.

HEATING. Panel system.

- 34/87 RABER, B. F. and F. W. Hutchinson.
 Panel heating and cooling analysis . . . New York, John
 Wiley and sons., inc., (c1947).
 vii, 208 p. tables, diags.

697.353.

- 34/177 ILLINOIS. University. Engineering experiment station.
 . . . Tests of plaster-model slab, subjected to concentrated
 loads . . . by Nathan M. Newmark and Henry A. Lepper.
 Urbana, University of Illinois, 1939 (Bulletin, vol. 36, no.
 84, June 16, 1939; Engineering experiment station bulletin
 series no. 313).
 56 p. illus., tables, diags.
 (In National Building Research Institute.)

Pam. 624.073 : 620.17.

- 34/178 ILLINOIS. University. Engineering experiment station.
 . . . Tests of reinforced concrete slabs subjected to concen-
 trated loads . . . by Frank E. Richart and Ralph W. Kluge.
 Urbana, University of Illinois, 1939. (Bulletin vol. 36, no.
 85, June 20, 1939; Engineering experiment station, bulletin
 series no. 314).
 78 p. illus., tables, diags.
 "The tests reported in this bulletin form a part of an
 investigation of reinforced concrete slabs subjected to con-
 centrated loads, which was undertaken to secure information
 needed for more effective design of highway bridge floor
 slabs."
 (In National Building Research Institute.)

Pam. 624.21.073 : 624.21.012.4] : 625.745.1 : 620.178.

KITCHENS.

- 37/105 BRITISH Electrical Development Association, London.
 Electric kitchen design for small houses. London, British
 electrical development association (1948?)
 12 p. illus., plans, diags. (some col.)

Pam. 728.933

LONDON.

- 37/110 MUMFORD, Lewis.
 The plan of London county . . . with editorial note by
 F. J. Osborn. London, Faber and Faber, Limited (1947?).
 (Rebuilding Britain series, no. 12).
 40 p.
 This essay was written after the appearance of the L.C.C.
 plan and before the Greater London Plan of 1944.

Pam. 711.4(421).

PATENTS.

- 37/132 UNITED States. National Research Council.
 Survey of University patent policies : Preliminary report,
 by Archie M. Palmer . . . Washington.
 National Research Council, 1943.
 168 p.

608.3 : 378.4(73).

PILES and pile driving.

- 37/135 AMERICAN Society of Civil Engineers, New York.
 . . . Pile foundations and pile structures . . . New York,
 American Society of Civil Engineers, 1946. (Am. Soc. C.E.
 — Manuals of engineering practice — no. 27).
 viii, 72 p. tables, diags.
 Prepared by the Joint Committee on bearing value of pile
 foundations of the Waterways division, Construction division
 and soil mechanics and foundations division.

Pam. 624.154/155.

PIPE fittings.

- 37/136 BRITISH Standards Institution, London.
 Malleable cast iron and copper alloy pipe fittings for
 steam, water and gas; screwed B.S.P. taper male thread
 and parallel female thread. London, British Standards
 Institution, 1945. (British Standard 1256 : 1945).
 53 p. tables, diags.
 (In National Chemical Research Laboratory).

Pam. 621.643.414 : 389.6.

- 37/137 BRITISH Standards Institution, London.
 . . . Malleable cast iron and cast copper alloy pipe fittings
 for steam, water, gas and oil : screwed B.S.P. taper thread
 . . . London, British Standards Institution, 1938. (British
 Standard 143 : 1938).
 55 p. tables, diags.
 (In National Chemical Research Laboratory).

Pam. 621.643.414 : 669.13 + 669.35 : 389.6.

PIPE Lines. Identification.

- 37/140 BRITISH Standards Institution, London.
 . . . British standard specification for the identification of
 chemical pipe lines. London, British standards institution,
 1932. (British standard no. 457-1932).
 7 p. diags.
 (In National Chemical Research Laboratory).

Pam. 621.643-777 : 389.6.

PISÉ de terre.

- 37/142 CALIFORNIA. Agricultural Experiment Station, Berkeley.
 . . . Adobe Construction, by J. D. Long; revised by L. W.
 Neubauer . . . November, 1946. Berkeley, University of
 California, 1946. (California Agricultural Experiment Station
 Bulletin 472).
 63 p. illus., photos., tables, diags.

Pam. 691.41.

- 37/143 GREAT Britain. Department of Scientific and Industrial
 Research. Building Research Station.
 . . . Building in adobe, cob and pisé de terre : part I.
 Publications of the Department of Scientific and Industrial
 Research. Garston, Building Research Station, 1947. (Library
 bibliography no. 54 N.)
 4 p. Duplicated.

Pam. 691.4 : 016.

- 37/144 UNITED States. Department of Agriculture.
 Rammed Earth Walls for buildings, by M. C. Betts and
 T. A. H. Miller. (Washington, Government Printing Office,
 1937). (Farmers' Bulletin No. 1500).
 23 p. photos., diags.

Pam. 691.41.022.

PLASTICS.

- 37/145 PLASTICS Catalogue Corp., New York.
 Modern plastics encyclopaedia : charts . . . (New York),
 Plastics catalogue corp., c1948.
 12 loose charts in box.
 Contents : 1. Identification of plastics. 2. Properties. 3.
 Chemical Formulae. 4. Plasticizers. 5. Solvents. 6. Adhesives.

7. Coatings. 8. Fibers properties. 9. Synthetic rubber. 10. Laminating resins. 11. Laminates properties. 12. Plastic films.
(Not available on loan).

697.5(084.21).

PUBLIC WORKS SPECIFICATIONS.

37/177 UNITED STATES. National Bureau of Standards.
... National directory of commodity specifications; classified and alphabetical lists and brief descriptions of specifications of national recognition, prepared by Paul A. Cooley and Ann E. Rapuzzi under the direction of A. S. McAllister . . . Washington, U.S. Government Printing Office, 1945. (National Bureau of Standards Miscellaneous Publication M 178).
1311 p. Mimeographed.
(Not available on loan).

6 : 389.6 : 016.

37/178 UNITED STATES. National Bureau of Standards.
... Supplement to National Directory of Commodity Specifications; classified and alphabetical lists and brief descriptions of specifications of national recognition, prepared by Paul A. Cooley under the direction of G. N. Thompson . . . Washington, U.S. Government Printing Office, 1947.
iv, 322 p. Mimeographed.
(Not available on loan).

6 : 389.6 : 016.

ROAD Engineering.

37/163 INSTITUTION of Civil Engineers, London. Road Engineering Division.
"Soil drainage with particular reference to road engineering," by Rudolph Glossop . . . session 1946-1947. London, Institution of Civil Engineers, 1947.
56 p. tables, diagrs.

Pam. 625.745.3.

SEWAGE Purification.

37/169 UNITED STATES. Public Health Service.
Studies of sewage purification: The utilization of organic substrates by activated sludge, by D. R. Placak and C. C. Ruchhoff. (Washington, Government Printing Office, 1947). (Reprint no. 2786).
20 p. tables.
Reprinted from Public Health reports vol. 62, no. 20, May 16, 1947 pp. 697-716.

Pam. 628.35.

SLOPES. Karroo.

34/179 FAIR, T. J. D.
Hill-slopes and pediments of the semi-arid Karroo . . . Johannesburg, L. S. Gray and Co. (Pty.), Ltd., 1948.
pp. 71-79 illus.
Reprinted from South African geographical journal, vol. 39, April, 1948.
The writer acknowledges financial assistance from the National Council for Social Research.

Pam. 551.41(687).

SLOPES. Natal.

34/180 FAIR, T. J. D.
... Slope form and development in the coastal hinterland of Natal. Johannesburg, Hortors Ltd., 1948.
pp. 33-47 plate, diagrs.
Reprinted from Transactions of the Geological Society of South Africa, vol. 51, 1948. Sponsored by the Council for Social Research.
"The forms and combinations of slope elements responsible for the variety of landforms in the coastal hinterland of Natal are described, and the following factors tending to produce or modify these are discussed:—
(a) Rock type and structure varying from weak granites, tillite and shale to resistant quartzitic sandstones. Weak and resistant rocks succeed one another and faulting is common.
(b) A humid sub-tropical climate combining both a well distributed rainfall with heavy convectional downpours."
(c) A falling base level."

Pam. 551.41(684).

34/182 FAIR T. J. D.

Slope form and development in the interior of Natal, South Africa, Hortors, Ltd., 1947. Johannesburg.
pp. 105-118, plates diagrs.
Reprinted from Transactions of the Geological Society of South Africa, vol. 50, 1947. Sponsored by the Council for social research.
"Slope elements typical of a sub-humid region are described

and the following factors tending to produce or modify these are discussed:—

(a) Horizontal structure with alternate hard and soft strata.
(b) A sub-humid climate with a summer rainfall of the convectional type.

(c) A base-level that is stable or slowly falling."

Pam. 551.41(684).

STRUCTURES. Theory of.

37/185 SKEMPTON, A. W.
Settlement analysis of engineering structures . . . London, "Engineering," 1938.
8 p. illus. (photos.), diagrs.
Reprinted from "Engineering," September 30, 1938.
Pam. 624.131.542.

SURVEYING. Publications.

37/186 UNITED STATES. Government Printing Office.
Engineering and Surveying: levelling — triangulation; geodesy — earthquakes — tides: terrestrial magnetism . . . Washington, Government Printing Office, 1947. (Price list 18).
15 p.
Price list of U.S. Government publications.
Pam. 62+526.9 : 017.42 (753 Washington Government).

TOWN Planning.

37/196 OSBORN, F. J.
Town and country planning: a reader's guide . . . Cambridge University Press for National Book League, 1947.
11+p.

Pam. 711 : 016.

37/198 BRITISH Standards Institution, London.

... Light gauge copper tubes for water, gas and sanitation. London, British Standards Institution, 1944. (British Standard 659 : 1944).
8 p. tables, diagrs.
(In National Chemical Research Laboratory).

TUBES, Wrought Iron.

37/199 BRITISH Standards Institution, London.
... British Standard Specification for Wrought Iron Tubes and Tubulars, gas (light), Water (medium) and Steam (heavy) qualities . . . London, British Standards Institution, 1938. (British Standard No. 788 — 1938).
23 p. tables, diagrs.
(In National Chemical Research Laboratory).

Pam. 621.643.22 : 389.6.

WATER Heaters.

37/204 ILLINOIS. University. Engineering experiment station.
... Performance of an indirect storage of hotwater heater . . . by Alonzo P. Kratz . . . and Warren S. Harris . . . Urbana, University of Illinois, 1937. (Bulletin no. 37, vol. 44, February 11, 1947; Engineering Experiment Station, bulletin series no. 366).
42 p. tables, diagrs.

Pam. 697.4.001.4.

WELDING.

37/206 ROSSI, Boniface E.
Welding and its application . . . New York, McGraw-Hill Book Company, Inc., 1941.
ix, 343 p. photos, tables, diagrs.
A practical book describing all kinds of welding.

621.791.

WOOD Construction.

37/208 AMERICAN Society of Civil Engineers, New York. Waterways Division.
... Timber piles and construction timbers . . . New York, American Society of Civil Engineers, 1939. (Am. Soc. C.E. Manuals of Engineering Practice — No. 17).
48 p. tables.

Pam. 624.155 : 624.011.1.

37/209 AUSTRALIA. Council for Scientific and Industrial Research. Division of forest products.
... Building — frames: timbers and sizes . . . by A. J. Thomas . . . and Ian Langlands . . . Melbourne, Government Printer, 1941. (Technical paper no. 36).
45 p. (some col.), tables.

Pam. 694.54.

SOILS. South Africa.

37/176 UNION of South Africa. Department of Agriculture and Forestry.
... Soil groups and sub-groups of South Africa, by C. R. van der Merwe . . . Pretoria, Government Printer, 1941. (Chemistry series no. 165).
316 p. 16 plates (col.), photos, maps (col., folding, in back cover), tables.
This is approved for the degree of Doctor of Science in the University of Stellenbosch.

631.44(68).

TENDERS INVITED

THE following are particulars of the more important tenders which have been invited up to the time of going to press for public works by Government Departments, Provincial Administrations and Municipalities. In each case the date by which the tender must be submitted is given. While every endeavour will be made to maintain accuracy in these columns it is pointed out that readers using this information do so entirely at their own risk.

BUILDING AND ALTERATIONS :

Empangeni (N.P.) : Additions, repairs and renovations to Postmaster's residence. Tender No. P.W.D. 304. Secretary, P.W.D. Pretoria (Room 528) and District Representative, P.W.D., Pietermaritzburg. Due, 12/1/50.

Fort Beaufort : Two houses for medical officers at the Tower Hospital. Tender No. P.W.D. 301. Secretary, P.W.D., Pretoria (Room 528) and District Representative, P.W.D. Port Elizabeth. Due, 19/1/50.

Frankfort : New exchange, apparatus room and E.C. at the post office. Tender No. P.W.D. 298. Secretary, P.W.D., Pretoria (Room 528) and District Representative, P.W.D., Bloemfontein. Due, 29/12/49.

Kearnsney : Type Post Office. Tender No. P.W.D. 302. Secretary, P.W.D., Pretoria (Room 528) and District Representative, P.W.D., Pietermaritzburg.

Klerksdorp : Magistrate's residency. Tender No. P.W.D. 297. Secretary, P.W.D., Pretoria (Room 528), and District Representative, P.W.D., Johannesburg. Due, 12/1/50.

Pietermaritzburg : Faculty Building at the Agricultural Faculty. Tender No. P.W.D. 292. Secretary, P.W.D. 292. Secretary, P.W.D., Pretoria (Room 528), District Representative, P.W.D., Pietermaritzburg, District Representative, P.W.D., Johannesburg, District Representative, P.W.D., Cape Town, District Representative, P.W.D., Port Elizabeth, District Representative, P.W.D. Bloemfontein and Senior Inspector of Works, P.W.D., Durban. Due, 12/1/50.

Rouxville : New lecture room to school. Tender No. P.W.D. 303. Secretary, P.W.D., Pretoria (Room 528), and District Representative, P.W.D., Bloemfontein and District Representative, P.W.D., Johannesburg. Due, 17/1/50.

Stanger (N.P.) : New Post Office and residence for postmaster. Tender No. P.W.D. 296. Secretary, P.W.D., Pretoria (P.W.D.) and District Representative, P.W.D., Pietermaritzburg and District Representative, P.W.D., Johannesburg. Due, 19/1/50.

Newcastle : Government High School : Additions. (One month). Provincial Works Office, P.O. Box 138, Dundee. Tenders to be marked : "Newcastle Government High School : Additions." Due, 21/12/49.

ELECTRICAL EQUIPMENT, ETC. :

Beaufort West Municipality : One only electric hoist capable of lifting 2,000 lbs. at a rate of 20 ft. per minute through a total height of 15 ft. Elec. Engineer, Beaufort West. Due, 6/1/50.

Boksburg Municipality : Four 3-plate electric stoves. Four 30-gallon electric geysers. Four 2,000 watt inset electric

fires. Tender No. 73/49. Town Clerk, Boksburg. Due, 9/1/50.

Durban Municipality : Transformers. Tender No. E.2228. Electricity Department, Durban. Due, 20/1/50.

Johannesburg Municipality : Street lighting time controlled switches. Contract 43. **Low tension insulators.** Contract 45. City Treasurer, Johannesburg. Due, 16/1/50.

Pretoria West : Transformers. Specification 343. Controller of Stores, Pretoria West. Due, 16/1/50.

ENGINEERING EQUIPMENT, ETC. :

Salisbury Municipality : Construction of two new sewerage pumping stations. Contract C.1949. (Deposit of £2-2-0 — extra sets £1-1-0) Consulting Engineers : Stewart, Sviridov and Oliver, 66, Commissioner Street, Johannesburg. Due, 10/1/50.

Bloemfontein Municipality : (a) One 105 cubic ft. Fad. portable air compressor ; (b) One 210 cubic ft. Fad. portable air compressor. Tender No. 40-1949/50, City Engineer, Bloemfontein. Due, 16/1/50.

Bloemfontein Municipality : Waterworks extensions, Mazelspoort ; pipes, specials, joints and jointing material. Deposit, £2-0-0. Tender No. 24/1949. N. Shand, Esq., 806, Groote Kerk Bldg., Parliament St., Cape Town. Due, 3/1/50.

Bloemfontein Municipality : Supply, delivery and installation of pumping plant, and equipment at Mazelspoort. Deposit £10. Tender No. 25/1949. N. Shand, Esq., 806, Groote Kerk Bldg., Parliament St., Cape Town. Due, 11/4/50.

Bloemfontein Municipality : Waterworks Extensions : Supply, delivery and installation of equipment and materials for the filtration plant extensions at Mazelspoort. Contract 18/1949. (2 copies of contract documents on deposit of £10.) Consulting Engineer : N. Shand, Esq., 806, Groote Kerk Bldg., Cape Town. Extended to : 31/1/50.

Fraserburg Municipality : Supply, delivery and erection of the following : (a) One D.C. generating set ; (b) switch panel for same. Technical data re generating set : 40 kw., 240-volts, 2-wire, Diesel engine. (Deposit of £2-0-0). Town Clerk, Fraserburg. Due, 30/1/50.

Parow : Citizens' Housing League Utility Co., Epping Garden Village, C.P. Supply and installation of new sewage pumps, motors and fittings in sewage pump house. Contract, 7/1949. Manager, Private Bag, Parow, C.P. Due, 1/2/50.

Pietermaritzburg : Provincial Stores Block, Pietermaritzburg : Supply and installation of Goods Lift (one month). Provincial Works Office, 33, Longmarket Street, Pietermaritzburg. Tenders to be marked : "Provincial Stores Block, Pietermaritzburg : Goods Lift." Due, 28/12/49.

ROADS :

Provincial Administration : Construction of approximately 6.8 miles of Earthworks, Drains, Drainage Structures, etc., including a 100 ft. reinforced concrete bridge, and approximately 650,000 cubic yards of excavation between Emberton and Sterkspruit, on National Route 3, Section 1, Durban-Pietermaritzburg. Contract No. 8/NR. (60 days). Provincial Roads Engineer, P.O. Box 417, Pietermaritzburg. Due, 28/12/49.

Provincial Administration: Construction of approximately 7.1 miles of earthworks, drains, drainage structures, etc., including 125 ft. reinforced concrete bridge, and approximately 320,000 cubic yards of excavation between Sterkspruit and Cato Ridge, on National Route 3, Section 1, Durban-Pietermaritzburg. Contract No. 9/NR. (60 days). Provincial Roads Engineer, P.O. Box 417, Pietermaritzburg. Due, 28/12/49.

WATER AND IRRIGATION EQUIPMENT, ETC.:

Germiston Municipality: Natalspruit Disposal Works.

Water pipes and fittings. Tender No. 4/1950. Town Engineer, Germiston. Due, 4/1/50.

Pretoria Municipality: Hercules water supply: Water meters and sluice valves. Contract E/1949. Town Clerk, Pretoria. Extended to 5/1/50.

Mqanduli (C.P.): Improvements to water supply, including erection only of 20,000 gallon steel tank and supporting tower for Gaol and Governor's buildings. Tender No. P.W.D. 300. Secretary, P.W.D., Pretoria (Room 528) and District Representatives, P.W.D., Port Elizabeth, and Johannesburg. Due, 12/1/50.

TENDERS ACCEPTED

AIR CONDITIONING AND REFRIGERATION PLANT, ETC.:

Supply, delivery and erection of air-conditioning plant for the new carrier repeater station, Paarl, Department of Public Works. Tender No. 24/1/237. P.W.D. 246. H. G. Sketon and Co. (Pty.), Ltd., Cape Town. £2,762 8s.

Supply, delivery and erection of ventilating plant in the Photogrammetric Room of the Trigonometrical Survey Office, for the Department of Public Works, Pretoria. Tender No. 24/1/1817. P.W.D. 277. U.A.C. Engineering Co. (Pty.), Ltd., Brakpan. £335 3s.

BUILDING AND ALTERATIONS, ETC.:

New gaol and gaoler's quarters, Idutywa, for the Department of Public Works. Tender No. 24/1/843. P.W.D. 247. R. A. Bruce and Sons, Umtata. £35,485.

New gaol and quarters, Port Elizabeth, for the Department of Public Works. Tender No. 24/1/1703. P.W.D. 264. O'Brein and Campbell (Pty.), Ltd., Port Elizabeth. £30,217 5s. 1d.

New office block for Native Affairs Department, Kuruman. Tender No. 24/1/824. P.W.D. 271. J. H. Nienaber and Sons, Mafeking. £21,772.

Additions to public offices and post office, Kuruman, for the Department of Public Works. Tender No. 24/1/824. P.W.D. 270. F. L. Haas, Pretoria. £10,850.

Additions to public offices, Griquatown. Tender No. 24/1/753. P.W.D. 275. F. L. Haas, Pretoria. £10,747.

Proposed conversion, repairs and renovations for Sheltered Employment Project for disabled ex-volunteers, Wentworth Camp, Durban. Tender No. 24/1/1775. P.W.D. 273. Short and MacDonald, Durban. £4,814.

Additions, repairs and renovations to public offices, and repairs and renovations to Magistrate's residence, Port St. John's. Tender No. 24/1/132. P.W.D. 259. E. G. Hall, Umtata. £1,948.

General repairs and renovations, etc., at the Aeradio Station, Maun. Tender No. 24/1/1164. P.W.D. 276. W. H. Hirst and Son (Pty.), Ltd., Pretoria. £1,800.

New exchange, apparatus room, E.C. and petrol store, Marquard. Tender No. 24/1/1781. P.W.D. 265. B. H. Welken, Bloemfontein. £1,216 17s.

Erection of three cells and garage at the police station, Port St. John's. Tender No. 24/1/132. P.W.D. 262. D. T. H. Russell (Pty.), Ltd., Umtata. £1,188.

FIRE BRIGADE EQUIPMENT, ETC.:

Seventy couplings, for the Department of Public Works. Tender No. 24/1/1349. P.W.D. S.378. W. S. Thom (Transvaal) (Pty.), Ltd., Johannesburg. £1 17s. 6d. each, and **seventy-two fire extinguishers**. £7 3s. 9d. each.

Two hundred lengths fire hose, in lengths of 75 ft. Tender No. 24/1/1349. P.W.D. S.378. General Fire Appliances Co., Ltd., Johannesburg. 2/9d. per ft.

Ninety-six fire extinguishers. Tender No. 24/1/1349. P.W.D. S.378. H. Alers Hankey, Ltd., Johannesburg. £12 15s. 6d. each.

HOSPITAL AND LABORATORY EQUIPMENT, ETC.:

Two microscopes for the Onderstepoort Laboratory. Tender No. 25/1/74. Optical Instruments (Pty.), Ltd., Johannesburg. £119 14s. 6d. each.

Two laundry trucks for the Westkoppies Hospital, Pretoria. Tender No. 25/1/1075. S.O. 3671. Forlezer (S.A.), (Pty.), Ltd., Johannesburg. £19 10s. each.

Fifteen laundry trucks for the Westkoppies Hospital, Pretoria. Tender No. 25/1/1075. S.O. 3671. Forlezer (S.A.), (Pty.), Ltd., Johannesburg. £16 10s. each.

Hospital equipment and surgical instruments to the Central Medical Stores, Pretoria. Tender No. 25/1/12/4. S.O. 3631. Timber and Allied Agencies (Pty.), Ltd., Cape Town. M. L. Hatrick, Johannesburg. A. Keller, Johannesburg. B. Owen Jones, Ltd., Boksburg.

ROADS:

Tarmacadamising of areas at Bitcon Road, Postal Engineering Yard, Johannesburg. Tender No. 24/1/1106. P.W.D. 281. Tarmac Asphalt Requirements (Pty.), Ltd., Johannesburg. £2,504 17s. 1d.

Repairs and resurfacing of existing tarmacadam roads and pathways at the National Zoological Gardens, Pretoria. Tender No. 24/1/1583. P.W.D. 283. Pretoria Asphalt Contractors, Pretoria. £530 16s. 8d.

Ten thousand, seven hundred gallons bitumen for road-making for the College of Agriculture, Cedara. Tender No. 25/1/552. S.O. 3699. Colas (S.A.), Ltd., Durban.

Grading, drainage of site and tarmacadamising of roadway for Sheltered Employment Association at Woodbrook Camp, East London. Tender No. 24/1/1757. P.W.D. 258. Asphalt and General Contractors, Ltd., Port Elizabeth. £955 9s. 2d.

WATER AND IRRIGATION EQUIPMENT:

Softening of water supply at the Witrand Institution, Potchefstroom. Tender No. 24/1/753. P.W.D. 274. T. H. Bolton (Pty.), Ltd., Potchefstroom. £15,245.

SAVE PRECIOUS WATER

By Using Our $\frac{1}{2}$ " & $\frac{3}{4}$ " Automatic Self Closing Drinking Water Taps

IN SOLID BRASS OR CHROMIUM PLATE

Closes Automatically and cannot be left running



If we have done nothing more than interest you sufficiently to try this waste prevention water tap, we shall have done a service to the country in helping to conserve water.

ALSO MADE AS A PILLAR TAP FOR WASH BASIN USE



MANUFACTURED BY:

West Rand Engineering Works

(PTY.) LTD.

LITTLE BIRMINGHAM, KRUGERSDORP

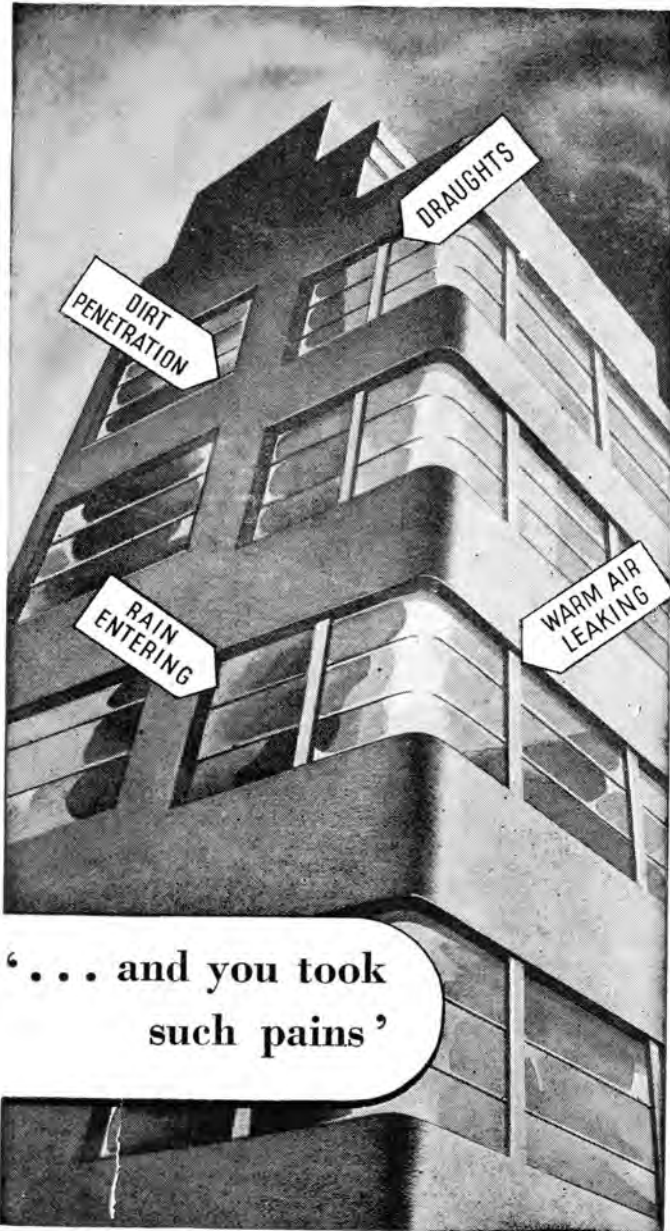
Telephones 66-2101/4

P.O. Box 76

AGENTS:

SOUTHERN AND NORTHERN RHODESIA: J. Clack & Co., Ltd., Salisbury, Bulawayo and N'dola.

BELGIAN CONGO: Messrs. Tecobel, P.O. Box 1467, Elizabethville.



The painstaking work of Architect and Builder will neither keep the weather out — nor the warmth in — a building if failure occurs in the jointing around the windows. Joints sealed with SECOMASTIC remain weathertight indefinitely. SECOMASTIC does not crack, run or lose adhesion, but remains permanently plastic and resilient. It is thus capable of taking up movement in a joint due to contraction or expansion, shock, vibration or structural settlement. SECOMASTIC is the ideal material for building and sealing wood and metal windows. Rapidly and neatly applied by SECO hand or patent pneumatic gun, SECOMASTIC saves money, both during and after erection.

SECOMASTIC
for Joining & Sealing

Regd. Trade Mark



Write for free illustrated literature to the Sole Agents for South Africa:

HERBERT EVANS & CO. LTD.

88, Pritchard Street, Johannesburg
and at Pretoria and Bloemfontein



BRUYNZEEL DOORS



For details:

BRUYNZEEL

PRODUCTS

(S.A.) (PTY.) LTD.

28 Marlborough Road (off Eloff Street Extension),

Springfield, Johannesburg

Telephone 32-2854



**SPECIALISES IN
MATERIALS**

for

**PUBLIC
BUILDINGS**

and

SCHOOLS

MARBLE WORK ▽ WALL and FLOOR
TILING ▽ TERRAZZO WORK ▽
ASBESTOS CEMENT ROOFING and
RAIN WATER GOODS (S.A. STANDARD)
REINFORCED CONCRETE PIPES ▽
LINOLEUM: HARDFACED and CORK
▽ GURNEY ELECTRIC RANGES ▽
P · W · D · - STANDARD HARDWARE

CENTRAL AGENCIES

AND IMPORT CO. (PTY.) LTD.

INCORPORATING ST. JOHNS MARBLE CO.

CAPE TOWN - JOHANNESBURG - DURBAN - PRETORIA - PORT ELIZABETH - EAST LONDON - PORT ST. JOHNS



REDUCTION PLANT, LIBANON GOLD MINE

ROBERTS CONSTRUCTION CO. LTD.

CIVIL ENGINEERS AND CONTRACTORS

HEAD OFFICE — JOHANNESBURG — P.O. BOX 6280

TRASVAAL — O.F.S. — NATAL

The Brick and Potteries Company, Limited

Manufacturers of the following :

- " HERONMERE " BRICKS
- DOWN DRAUGHT KILN FACING BRICKS
- GOLDEN BROWN FACING BRICKS
- HOFFMAN KILN BRICKS
- SPECIALS

Prices will be furnished on application to:

THE SALES MANAGER. 'Phone 33-4158/9.

Head Office :

TRUST BUILDINGS,
Cor. Fox and Loveday Streets,
JOHANNESBURG.

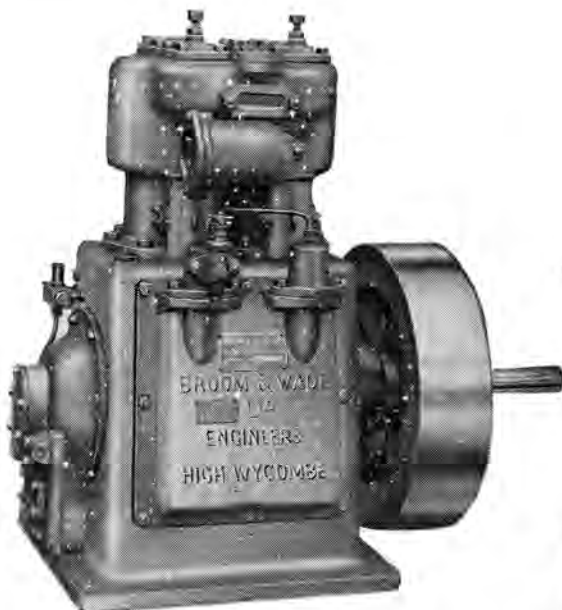
'Phone 33 - 3414.

Works :

STEVENS ROAD,
Off Eloff Street Extension, Booyens,
JOHANNESBURG.

'Phones 33 - 4158/9.

P.O. Box 155.



50 years to perfect

FOR over half a century Broom and Wade have specialised in compressed air tools and equipment. When you select "Broomwade", you're getting quality of a kind that only long experience can produce.

"BROOMWADE"

AIR COMPRESSORS AND PNEUMATIC TOOLS



BROOM & WADE (S.A.), Pty. Ltd.

Managers: Baldwins (S.A.) Ltd., 10th Floor, Maritime House, Loveday Street, Phone 34-2971, P.O. Box 1189, Johannesburg. Branches in Cape Town, Port Elizabeth, East London, Durban, Bulawayo and Salisbury.

LAINING

BUILDING AND ENGINEERING CONTRACTORS

MARITIME HOUSE · JOHANNESBURG



BUILDERS IRONWORK

Gates, Gratings, Firestairs, Balustrades, etc.

WROUGHT STEELWORK

SLIDING DOOR GEAR

Coburn System for Sliding and Folding Doors
For Garages, Stores, Houses and Institutions

SAFES

Standard and Made to Order

**STRONGROOM and WALLSAFE
STEEL DOORS AND FRAMES**

To Fire and Insurance Regulations

STEEL WINDOWS

Standard and Purpose-made

**CASEMENT WINDOW
FITTINGS**

Casement Stays, Casement Fasteners, Fanlight
Stays

(In a variety of finishes)

STRUCTURAL STEELWORK

Burglar Bars and Window Grilles

G WILLIAM'S

F. GWILLIAM LTD.

ENGINEERS & METAL CRAFTSMEN

(Established 1899)

Corner MOOI AND DURBAN STREETS, JOHANNESBURG

Phone 22-4755

Tel. Add. "SAXON"

P.O. Box 5659

DORR EQUIPMENT

for Water Purification



DORR EQUIPMENT is directly applicable to the treatment of both municipal water supplies and industrial water for power generation and general process work. The type of treatment may range from simple turbidity removal to water softening; coagulation for the removal of other impurities; and the Dorco D-1 System for the partial or complete removal of mineral salts in solution.

Edw. L.
BATEMAN
(Proprietor)

FOUNDERS BUILDING, 34 AMESHOF STREET, BRAAMFONTEIN, JOHANNESBURG

P.O. Box 1671

Phone 44-4311

PERCY BILTON (S.A.) LTD.

London • Los Angeles • Johannesburg

Building Contractors
Civil Engineers
Property and Industrial Specialists

P.O. BOX 2887
PHONE 22-0437

BEDOLU HOUSE
TROYE & MAIN STS.
JOHANNESBURG

MANUFACTURERS OF :

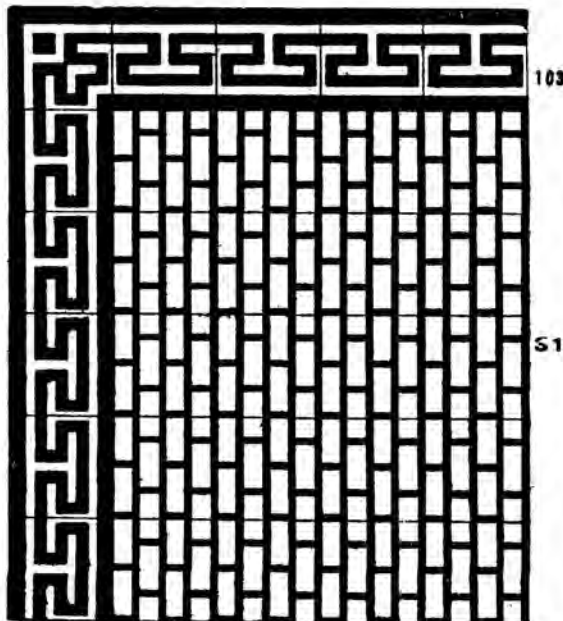
CEMENT & TERRAZZO FLOOR TILES, WALL TILES & STEP TILES

•
*These may be made to your individual
specification in a large range of colours*

•
For further particulars apply to :

UNION FLOORING TILE FACTORY

6 Long Street (Jeppes South) Johannesburg
Telephone 24-2179



LAING & ROBERTS (PTY.) LTD.

CONSTRUCTORS OF "ROBCONCO" HOUSES

WE ARE PRODUCERS OF HOUSES OF
QUALITY IN QUANTITY.

HAVING

IN COURSE OF ERECTION 2,670 HOUSES

ERECTED 3,600 HOUSES

AT THE RATE OF 80 HOUSES WEEKLY

MUTI HOUSE, 217 COMMISSIONER STREET, JOHANNESBURG

Telephone 22-3940

RAND EARTHWORKS CONSTRUCTION Co. (PTY.) LTD.

EXCAVATION

AND GENERAL

CONTRACTORS

2nd FLOOR, THOMPSON HOUSE, 124 MARSHALL STREET, JOHANNESBURG.

Phone 33-8527.

P.O. Box 8694.

CROSSLEY Crude Oil Engines

COCHRAN Economic Boilers

ERICSSONS Telephone Equipment

GENT'S Electric Clock Systems

PERMUTIT Water Treatment Plants

MACHINE TOOLS Metal & Woodworking

ASPHALT Contracting



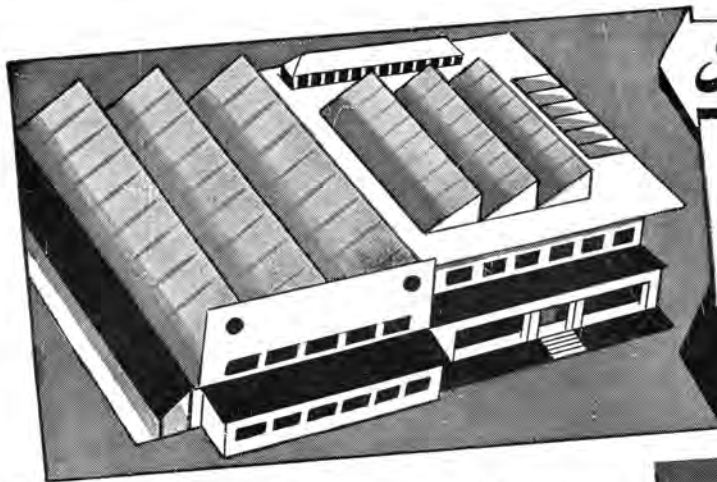
ROGERS-JENKINS & Co., (Pty.) Ltd.

JOHANNESBURG

CAPETOWN

DURBAN

PORT ELIZABETH



Shield Your Roof

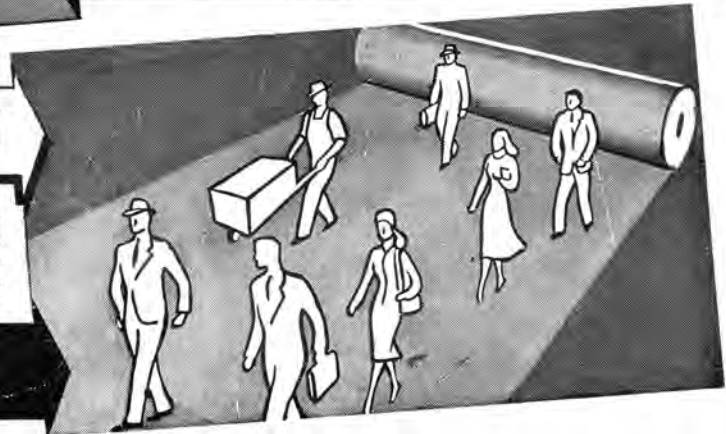
Coolite, the Aluminium Shield for all roofs — factory or residential. The ideal roof protection from Hot Sun. Has been known to reduce interior temperatures as much as 15% and spreads twice as far as ordinary roof coatings.

COOLITE

Protect Your Floors

Mastipave, resilient to thousands of feet which walk over it daily, is the ideal flooring for office or factory. Having an innate ability to heal itself, even when cut, Mastipave gives years of excellent service while keeping an attractive look. Easy to lay in either plain or squared formation, Mastipave is the ideal floor covering for all heavy-duty floors.

MASTIPAVE



HUNT LEUCHARS & HEPBURN, LTD.

Baltic Buildings, 42 Anderson Street, P.O. Box 47, Johannesburg.

Head Office: Durban

Branches at: Pretoria - Lourenco Marques - Germiston - Brakpan - Klerksdorp.

WIRE INDUSTRIES STEEL PRODUCTS AND ENGINEERING CO., LTD.

49, COVENTRY STREET, OPHIRTON, JOHANNESBURG,
SOUTH AFRICA.

Telephone :	33-9534
Telegrams :	"Castings"
P.O. Box	8799



Manufacturers of :

Also
at :

CAPE TOWN
DURBAN
PORT ELIZABETH
EAST LONDON

STEEL WINDOWS, DOORS AND FLYSCREENS,
PRESSED STEEL DOOR FRAMES AND WINDOW
SURROUNDS, GATES AND FENCING, SCREENING,
WHEELBARROWS, ETC.

REINFORCING AND STRUCTURAL
ENGINEERS

iii.



VENEERED PLYWOODS

VENEERED PLYWOODS (S.A.) (PTY.) LIMITED

Mills: BOKSBURG EAST, Telephone 52-1769

Showroom: 22, BOK STREET, JOHANNESBURG, Phone 44-7191

iv.