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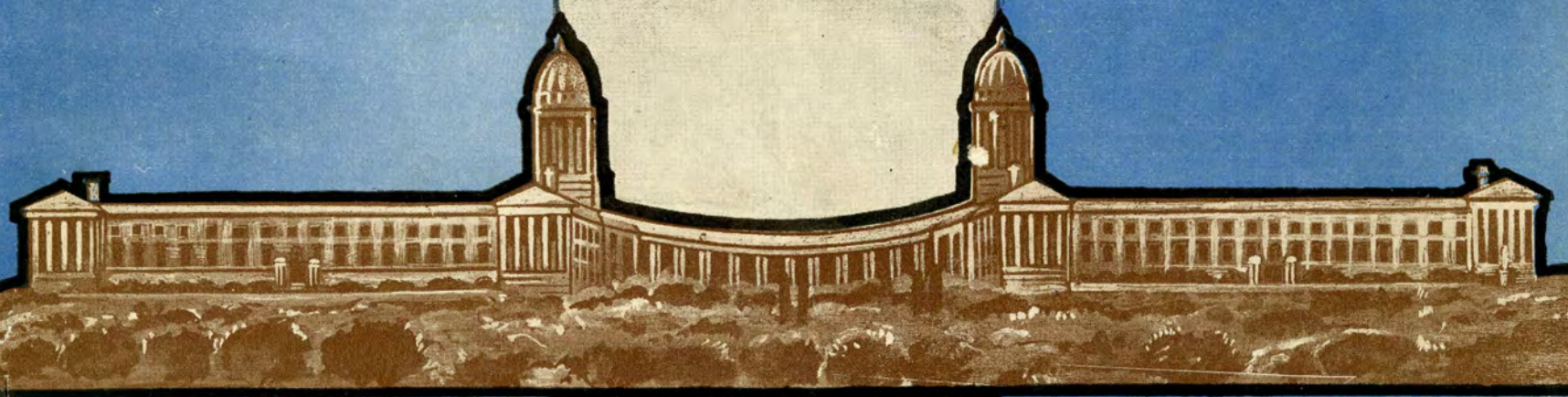
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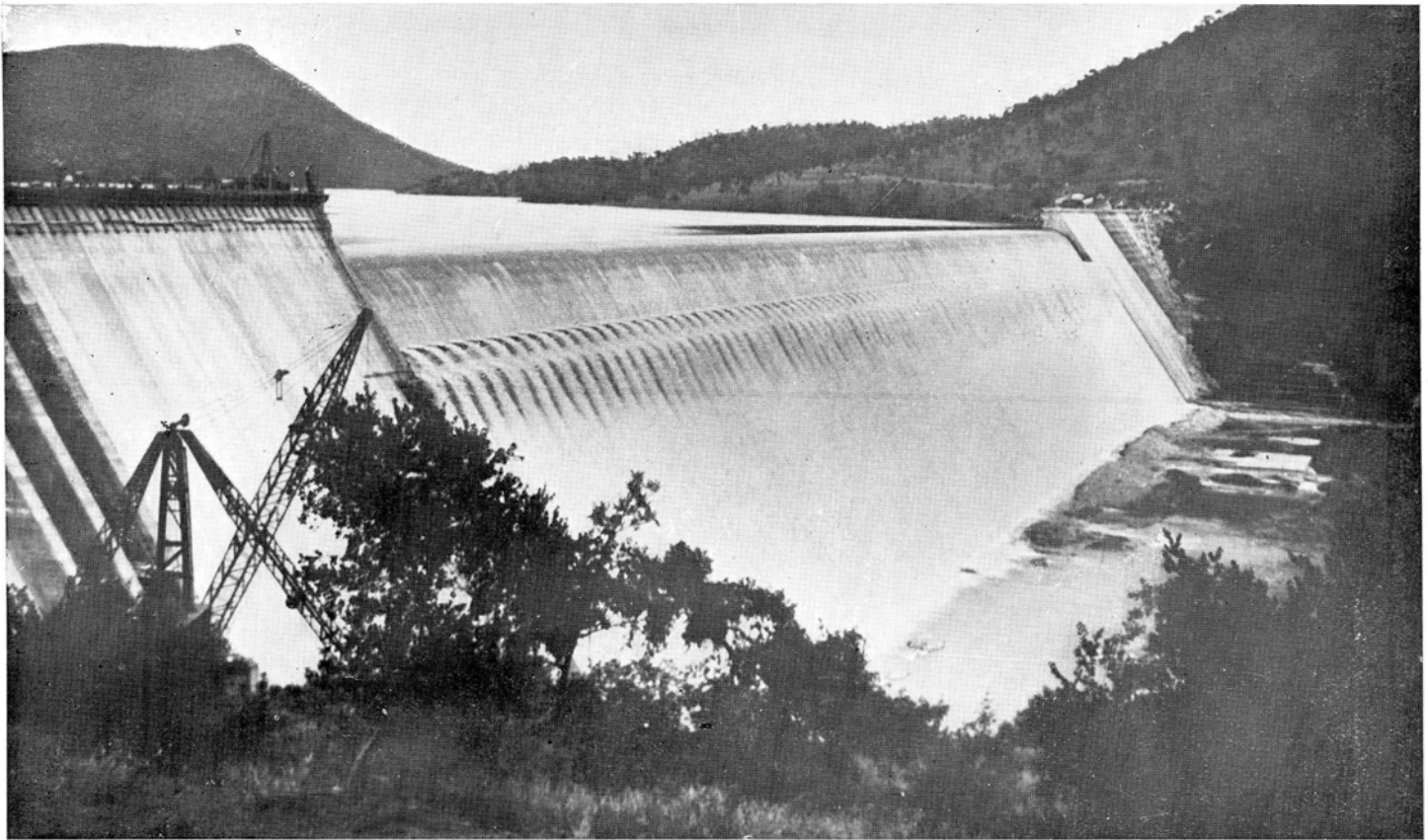
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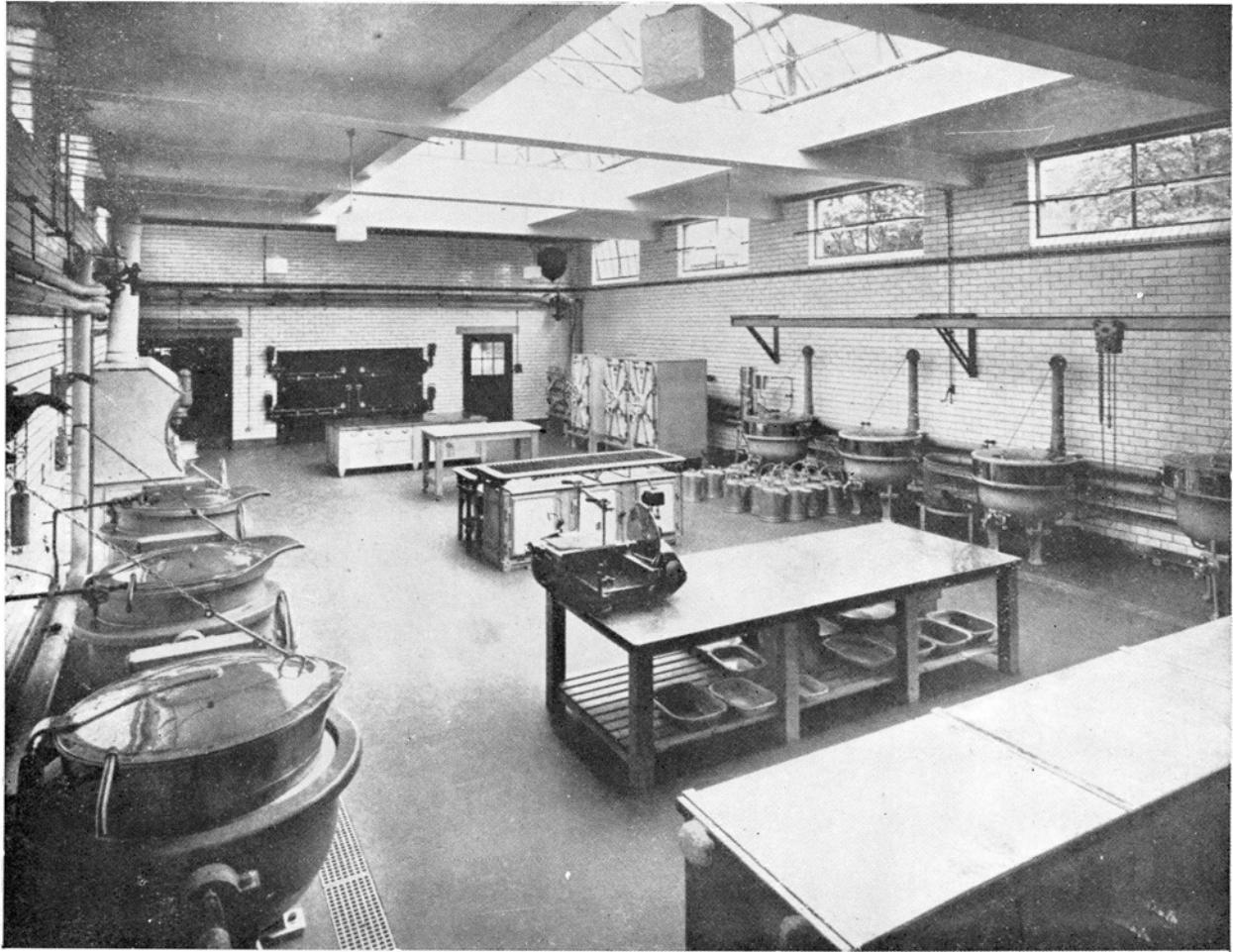


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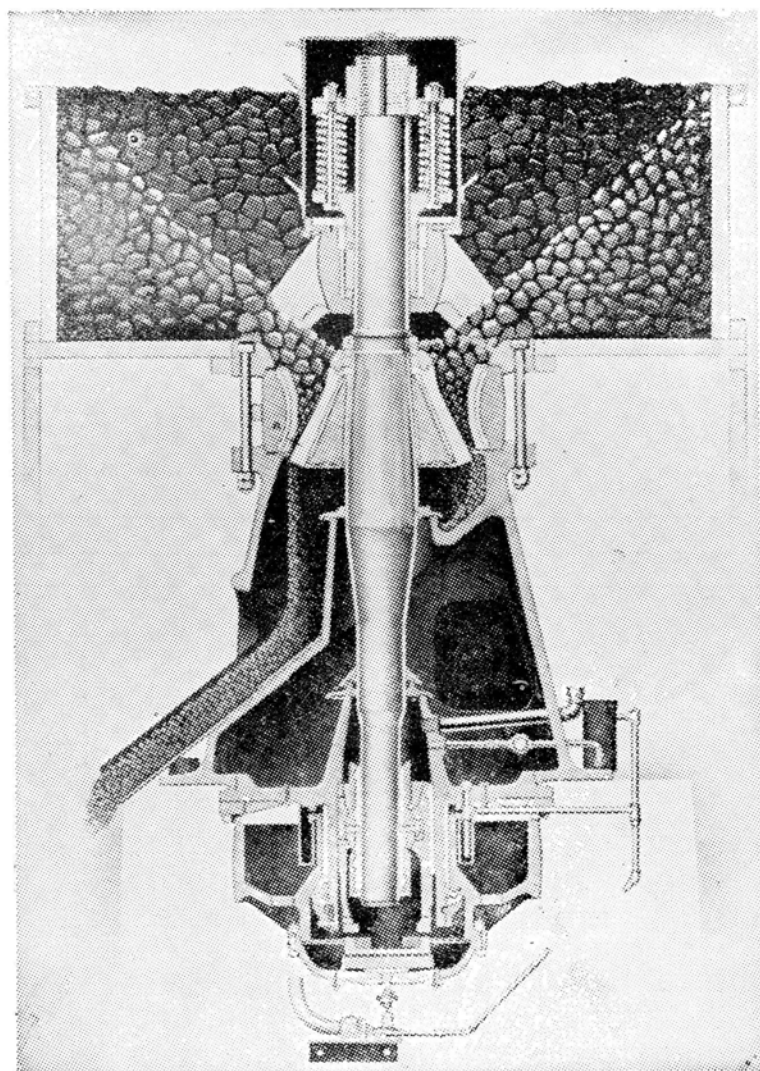
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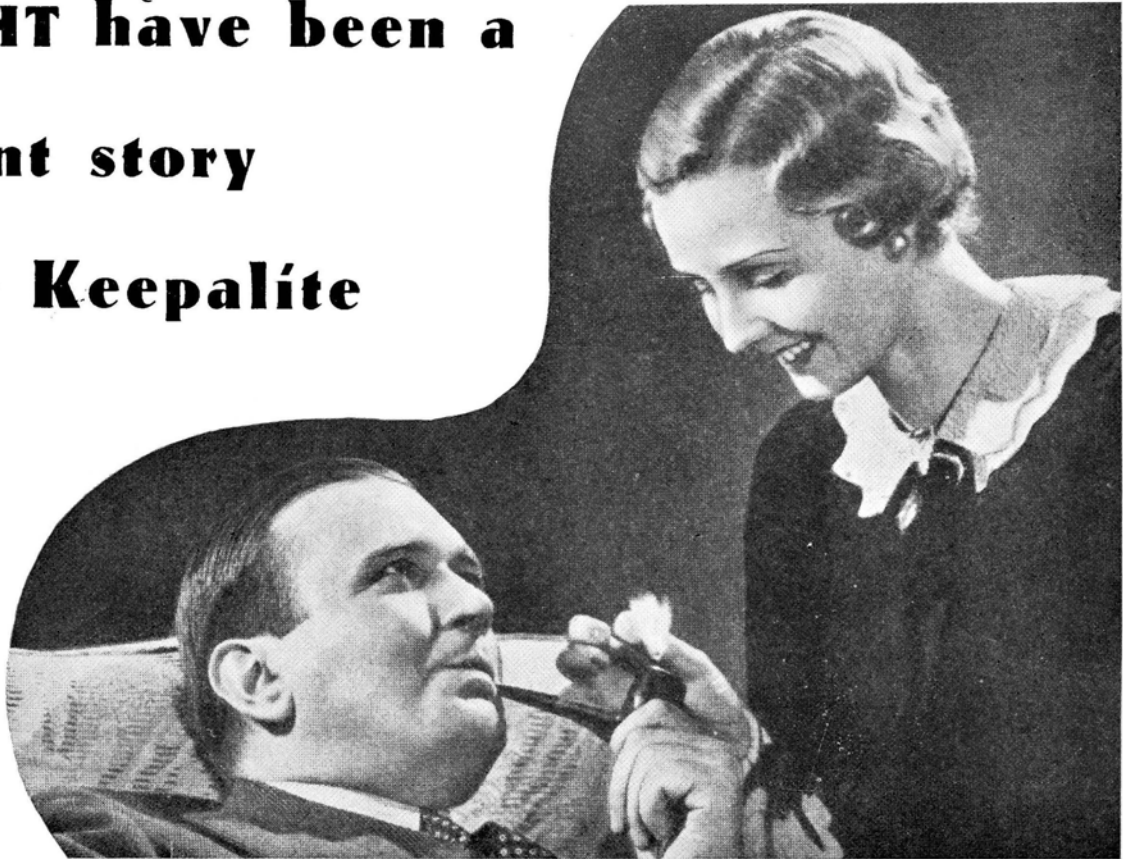
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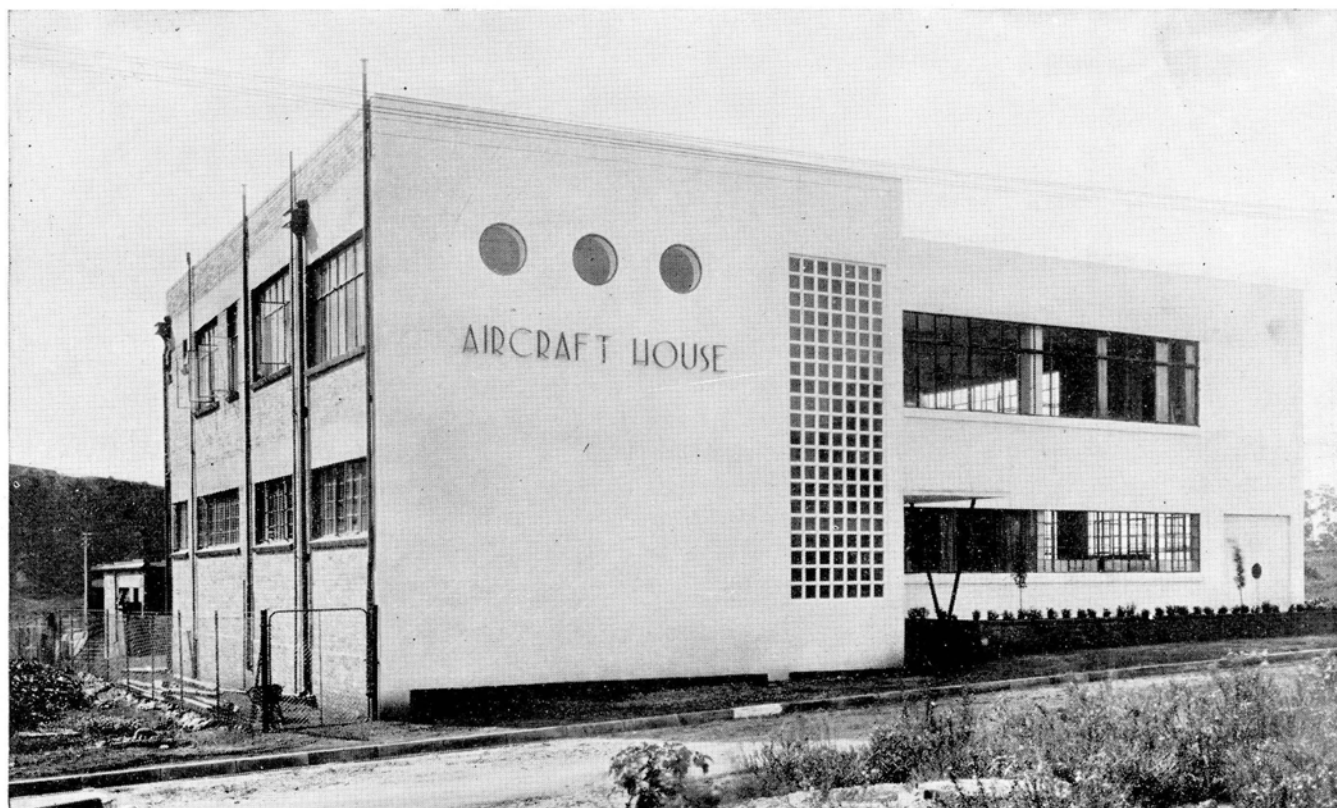
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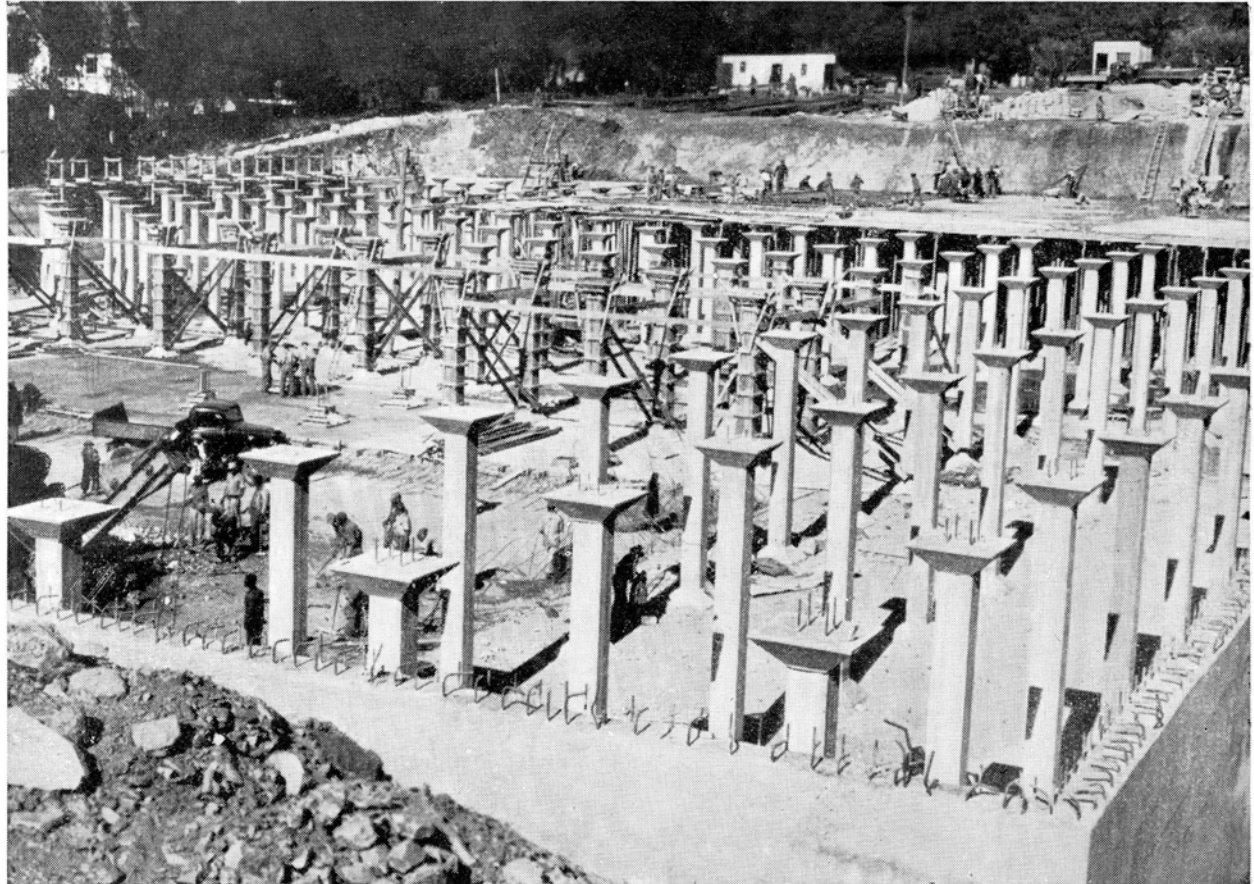
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“PUBLIC WORKS OF SOUTH AFRICA,” which is published monthly, is intended to keep the public up-to-date in regard to projects of the Public Works Departments of South Africa, Union, Provincial and Local Government, giving expression to the activities of each of these departments of service.

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A BRIGHT NEW YEAR.

THE appearance of this issue of *Public Works of South Africa* will closely coincide with the dawn of the New Year — the beginnings of, by all indications, another year of prosperity and progress, a year that promises to rival if not even to excel in its material and cultural accomplishments the year now closing. Progress and prosperity find some of their most strongly marked indications in the public works of the country, a circumstance that is strikingly shown in the first issue of this journal and even more noticeably in the present number. And if we accept, as we can hardly fail to do, the public works of our various forms of government — central, provincial and municipal — as a barometer of material progress, then we can in full sincerity and assurance offer our readers good wishes for a happy and prosperous New Year, with the realisation that our wishes stand a good chance of being in large measure realised!

In our good wishes, both to readers and to the business firms with whom we are becoming associated through our advertising pages, we are joined by the business management and publicity sections of *Public Works of South Africa*. The support which is being accorded to this journal on all sides, moreover, arouses in us the conviction that the present is only the first of very many occasions on which we shall have the pleasure of offering our friends our New Year greetings.

**A Happy and Prosperous New Year
to you all!**



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[See article on page 34.]

AERIAL PHOTOGRAPHY

ITS VALUE TO ENGINEERS AND OTHERS

★ A New Scientific Development with Great Possibilities.

DURING the past few years, development of the natural and artificial resources in South Africa has increased to such an extent that the time factor has become of paramount importance to those responsible for the engineering and constructional work required. In order to ensure the most efficient speeding up of development methods, it is necessary to improve the speed of the primary operation. Engineers will appreciate that this primary operation, whether for communication work, civil engineering or surface development, is surveying. It is my object, in this article, to show how surveying for all these purposes can be aided—and nearly always accelerated—by air photography.

As I have indicated above, the development of a country can be divided roughly into three general groups and we will consider these groups in the order in which they would naturally occur.

I. — COMMUNICATION.

Modern surface communication in South Africa has followed the natural historic development of the country, beginning with sea transport, and developing roads and railways as the needs of the country expanded. To-day, all three forms of communication are being developed equally, and all are dependent upon each other.

We will leave the question of harbour development until we discuss large-scale work later on, and look now at the growth of roads and railways. The fundamental requirement of a road is that it should serve as many people as possible. As the development of a country progresses, and industry of any kind increases in the districts served by roads, the necessity for quicker and more direct communication arises, and with it the question of multiplicity. The far-seeing authority who is responsible for the planning of a road system, therefore, is faced with the problem of designing roads which lend themselves to future improvements to the surface, straightening and multiplication with the minimum of waste.

In the last issue of PUBLIC WORKS OF SOUTH AFRICA a very interesting example of the practical value of air photos was given, in connection with the problem of the selection of a site for a bridge over the Orange River in very difficult country. In the present article the value of aerial photography is much more fully shown. The remarkable achievements in the application of the stereoscope to such photos and the consequent possibility of measurement of ground heights—and so of contouring for pipe lines and sewerage undertakings, new railway and road routes—will be especially appreciated by engineers in those fields.

To begin with, where centres spring up few and far between, the most economical form of road is one which, from some central place such as the main port or capital, winds its way to each little village in turn. The state of development of the district has not yet reached the point at which speed, or the saving of a little distance, is essential. By degrees, one centre, say, will grow in importance, due to the development of some particular industry over and above its neighbours, and it will become necessary to improve its communications with the capital. This may be done by creating a new road linking it almost directly with the larger centre, leaving the previous road to become a second-class road, continuing to serve the remaining places. It may, however, be impossible to improve on the original route, either on account of physical obstacles such as mountains, or because the expense involved would be out of proportion of the amount of time saved. In such a case, perhaps a good compromise would be obtained by straightening out a few deviations at comparatively small inconvenience to one or two villages, and tarring the main road. These are problems the solution of which could be anticipated by a reasonably good forecasting of the trend of development in advance.

A series of air photographs of the district in question, taken at quite a small scale, provides the necessary comprehensive data to attempt such forecasting.

The photographs could be laid out in the form of a mosaic, so that a pictorial map is presented to the observer. Now the whole district can be studied: the type of country, the vegetation, the concentration of

the population and the distribution of existing roads. For the planning of new roads to link up various districts, the most economical general route can be chosen from the photographs, having regard to the contours of the country in relation to cost and distance.

So much for the general reconnaissance type of survey from air photographs. Perhaps I have not stressed sufficiently the fact that air photographs show *everything* that appears on the surface of the earth. Unlike any conventional map (which is selective in its symbols), therefore, many details which would have an important bearing upon the problem in question can be studied, such as natural or artificial

the preliminary examination on a scale of something like three miles to the inch. This scale enables a reasonable economy to be maintained, both in the number of photographs used, and also in their cost, the area covered by one photograph increasing in inverse proportion to the scale used. Space does not permit a more detailed discussion of the uses of a preliminary small-scale air survey. Suffice it to say that the method may be applied with advantage in all types of country, from completely undeveloped and uninhabited tracts of land and the normal, partially developed, veld country which forms such a large part of modern South Africa, to highly populated and industrialised areas such as those surrounding a city.



AERIAL PHOTOGRAPH OF PLETTENBERG BAY, showing the Tzitzikama Forest Road, crossing the Keurbooms River.

[Photo by Aircraft Operating Company of Africa (Pty.), Ltd.]

vegetation, soils and rocks. With a little practice, general contours can be distinguished with the naked eye. One soon becomes accustomed, by the ordinary co-ordination of experience, to recognising valleys (because they probably have a river running through them) and hills and high country. The more accurate stereoscopic examination of air photographs will be discussed later.

The scale of the photographs for the above reconnaissance work will vary with the type of country to be examined, of course. As a general rule, however, in reasonably open country populated, say, by a farming community, one should be able to make

The next step in the process, having chosen preliminary routes and established rough estimates, is to examine the proposed improvements or alterations in greater detail; that is at a larger scale.

Air photographs will be taken in overlapping pairs, which enables the ground covered to be subjected to stereoscopic examination. The use of the stereoscope, which, in its simplest form, permits the observer to obtain a vertical view of the ground in its natural relief, has obvious advantages. The scientific development of the instrument has enabled actual measurements of relative heights to be made from the photographs. This, then, has increased the scope of

air photography, as it has placed a real economy in the hands of the engineer—the economy of being able to do a very valuable portion of his work in the office without the time and expense involved in visiting the site under discussion. With this possibility in mind, therefore, a greater appreciation of the information obtainable from air photographs will be obtained.

The type of question now to be decided is, perhaps, the exact locating of a deviation or straightening stretch of road, having regard to local obstacles, length and cost. It must now be appreciated that fairly exact measurements can be made from the photographs, which would now be on such a scale range as from 1/5000 up to 1/1000 or greater. From a surface examination a direct relationship between area, labour, distance and cost can be obtained—not only with regard to work on the roadway itself, but also with reference to any purchase of land or compensation for the removal of artificial or natural property which may be necessary. Then, from a stereoscopic examination, information as to grades and quantities can be obtained.

The relative cost of, say, making a deviation round a hill on a rock outcrop, or of cutting through it, can be assessed. The question of bridging over a spruit or of avoiding it, can be decided; and the length and slope of bridge approaches can be estimated, after having measured fairly accurately the depth of rivers or water courses below the general level of the road.

Much of the foregoing, which has been written with regard to road construction work, can be applied

to railway work. In fact, the general remarks about small-scale reconnaissance work and medium to large-scale estimate work apply equally to both methods of transport communication. Aerial survey has been an invaluable aid in several railway projects, more particularly in helping to choose the general routes through bush or mountainous country. In this respect, preliminary grading with the aid of the stereoscope has been the means of deciding the possibility or otherwise of negotiating a certain mountain pass, using a predetermined gradient. In such an examination

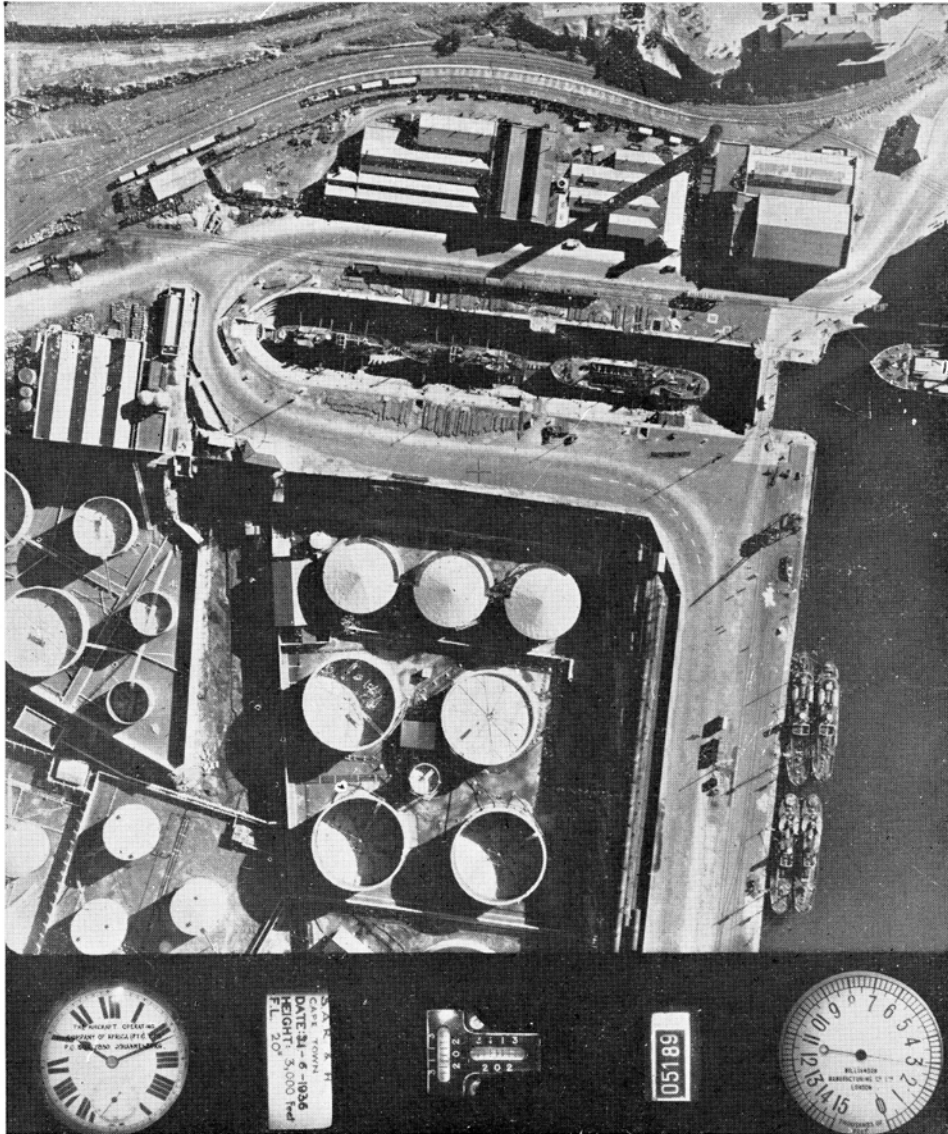
an estimation of the amount of viaduct work required in crossing ravines was also useful.

Before leaving the subject of communication, there is another aspect of it that is applicable in certain parts of the African continent, namely, river transport. In assessing the navigability of a river, much valuable time is saved if a strip of air photographs covering the waterway are taken and studied. Shoals of sand or rock can be identified, and, to a large extent, depths can be estimated by colour comparison. And more particularly, where there is a

sand bar closing the mouth of the river, currents can be traced by the drift of the sand, and the best method of combating such troubles can be suggested.

Now we come to the very large scale development work which is encountered now-a-days in connection with the industrial growth of modern South African ports.

The combination of road approaches and railway facilities is a necessary part of the design and development of modern harbour works. The biggest develop-



CAPE TOWN HARBOUR: GRAVING DOCK AND PETROL TANKS.

[Photo by Aircraft Operating Company of Africa (Pty.), Ltd.]

ment in this direction ever seen in South Africa is the present extension of the dock system in Cape Town. It will be an interesting study, therefore, to consider the part that a preliminary survey with air photographs can take — and indeed has taken — in such an undertaking.

To begin with, the extensions and improvements to a docking system must be related to the existing system of approach by both road and rail, and must be able to be co-ordinated with existing sea roads for the smooth flow of shipping traffic. A series of large-scale air photographs, therefore, will not only picture accurately the original state of the whole system, but, if drawn out into map or plan form to a cadastral scale, is capable of being extended in similar form. It is, of course, essential to have an adequate amount of ground control, that is, fixed surveyed points which serve as a basic network for the correct alignment and orientation of the photographs. This cadastral control will have been fixed, undoubtedly, during the original planning of the system.

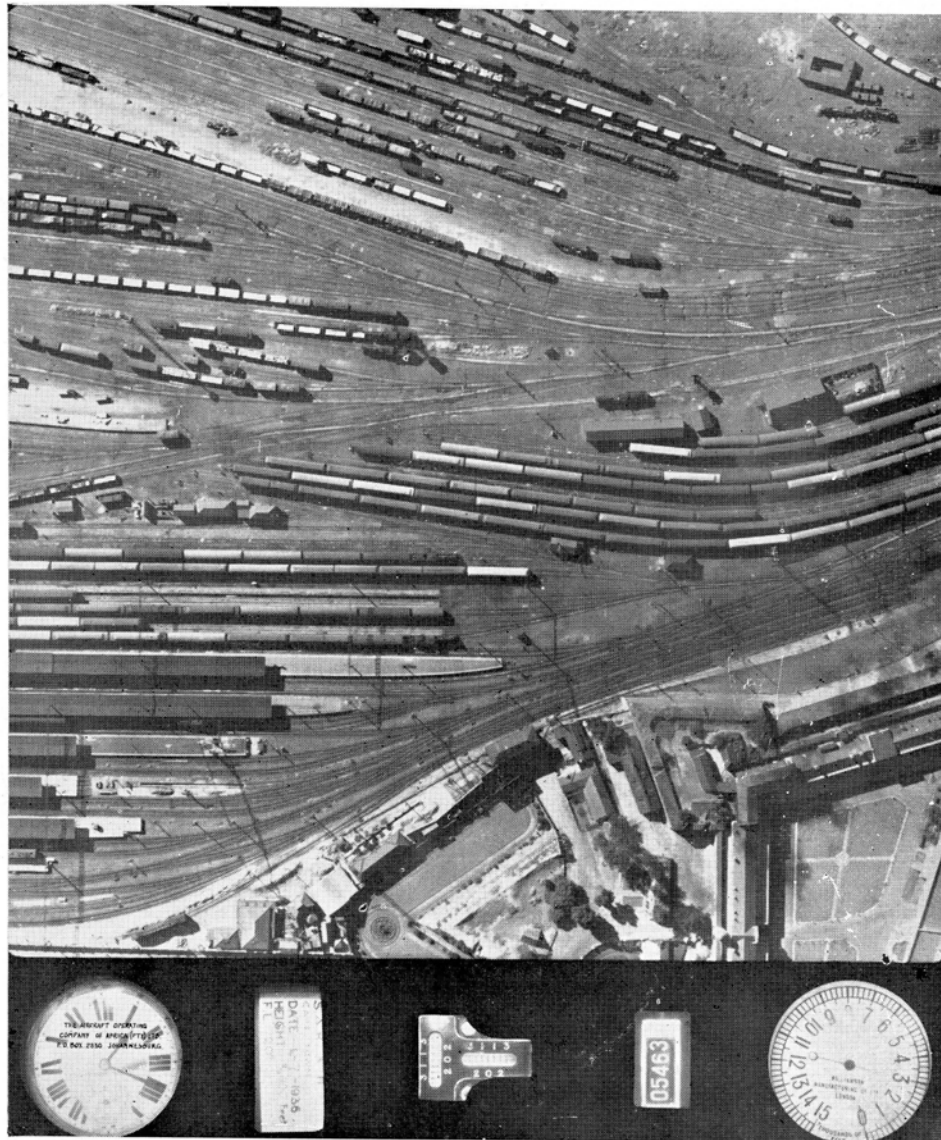
To re-survey new details from the original points becomes a very difficult task when one takes into consideration the interruption of the vast amount of traffic which is continually passing to and fro during the ordinary working day. The finest example of the assistance which can be rendered by air photographs is the comparison between the ease with which a measurement can be made across, say, fifteen lines of a busy railway and dock siding and the difficulty of making the same measurement on the ground with a chain or even a theodolite, having regard to

the almost continuous interruption of passing vehicular traffic. In a busy railway terminus, where the railway system is an integral part of the dock system of the harbour, development has often occurred rather as occasion demands instead of according to a preconceived plan. Consequently, although the basic cadastral survey of the area remains accurate, additions of sidings and extension lines have had to be built where necessary without the possibility of their conforming to the original survey. Large-scale air survey is sufficiently accurate to be able to do this work by direct measurement from corrected photographs.

II. — CIVIL ENGINEERING.

The logical development of industrialisation leads to activity in civil engineering. This includes water supply and sewerage, bridges and sea-retaining walls, and town planning. Probably the first problem to confront the Civil Engineer is that of water supply. If possible, it will always be easier to achieve a natural supply by gravity than to pump water from a distant source. The engineer looks, therefore, for ground slopes which will allow the fall he requires from the source at hand. A stereoscopic examination of medium-scale air photographs will readily reveal the prevailing slopes, discover the watersheds, and give the direction of natural flow. From this can be calculated the extent to which a district can be served from a given supply, and, equally important, what natural means of removing sewerage can be utilized.

In South Africa, where weather conditions are such that storms are apt to occur with sudden violence, the question of the ready disposal of



PORTION OF RAILWAY SYSTEM AT CAPE TOWN, ILLUSTRATING DIFFICULTIES ENCOUNTERED BY GROUND SURVEYING OWING TO OBSTRUCTION.

[Photo by Aircraft Operating Company of Africa (Pty.), Ltd.]

storm water is important; and here is yet another direction in which the engineer may be aided by his stereoscope in conjunction with air photographs. Natural spruits are shown, together with their watersheds, and the most direct means of diverting the storm water into them can be observed.

The subject of bridges has already been mentioned in connection with road and railway development, and the work of the civil engineer in this direction is intimately concerned therewith, so it would be but repetition to make further comments in this section.

Town Planning is a science which has become so important in recent years that it has developed into an activity independent of architecture or engineering. Air Survey has become an important ally to the Town Planner. The "birds-eye view" has been seized upon to enable planning to be made with suitable regard to symmetry — the symmetry of combined geometry and geography. The importance of being able to combine the outside field work with the office draughtsman's plans cannot be overstressed, and once again the air photographic map or "mosaic," in conjunction with intelligent use of individual photographs in the stereoscope, provides a solution to the problem.

III. — SURFACE DEVELOPMENT.

Intimately connected with the local work of the civil engineer, and as a natural corollary to it, comes the subject of Surface Development. By this we understand the provision of the essential services which cannot be undertaken locally. Into this category come



AERIAL PHOTOGRAPH OF ZANZIBAR, illustrating chaos owing to lack of town planning.
[Photo by Aircraft Operating Company of Africa (Pty.), Ltd.]

the engineer in solving his hydraulic slope problem. Much time can be saved by making the preliminary examination of the country by means of air survey, alternative routes can be worked out and in many cases the optimum route chosen in the office. Form lines can now be drawn on a map made from air photographs, with an accuracy which comes very near to actual contouring, and this in itself is an asset that the engineer will be quick to appreciate and use.

The question of power lines also involves a knowledge of the topography of the country over which they have to run, and the engineer will see that the foregoing remarks in connection with pipe lines are applicable in this case also. The greatest advantage in the use of air photography here lies probably in the facility afforded for estimating distance and cost.

In conclusion, there is one aspect of air survey which can be applied almost equally to all sections of

pipe lines for the supply or removal of water, power lines for the supply of electricity from a distant source.

The engineer, in constructing a pipe line, has two probabilities in connection with water supply. Either he can rely on a natural gravitational fall or he must rely on pumping. In either case, there is an optimum slope for the pipe line which will entail the least wastage of power on distance.

In general, the natural contours of the country over which the line must run can be used to advantage. The fact that stereoscopic examination of air photographs has reached a high degree of instrumental accuracy has placed this science at the disposal of

modern development which have been discussed, and which may, in certain circumstances, be extremely important. That is the legal aspect.

It is very often necessary to purchase property over which to run a new road, railway or power line, and there are many instances where a foreknowledge of these possibilities has led to exorbitant prices being demanded, and consequent litigation or arbitration.

Air survey provides a means of planning such development in advance and making the necessary estimates for acquiring rights of way either by rental

or by direct purchase of land. By the time the complete scheme has been evolved, the owners of the property in question can be approached and negotiations at current rates set in motion, without fictitious values having been placed on their property in the hope of forcing the hand of the Government or civil enterprise concerned in making the purchase. The saving of money in this way, both in land values and in litigation, constitutes a real national economy in public services, and the assistance rendered by air survey in this direction can, therefore, be looked upon as a national asset.

Some Important New Railways & Harbours Works

The entirely new works contemplated in the current financial year will entail an estimated total expenditure of some £13,500,000.

Details of the more important works are enumerated hereunder:—

Cape Town: Subway at Stuckeris Street	£70,000
Cape Town: New motor transport repair shops	30,000
Kalk Bay: Improvements to harbour	14,983
Maitland: Remodel yard	37,874
Observatory: New institute and improvements to sports ground, Liesbeek Park	29,080
Pinelands—Athlone: Doubling of line	21,100
Salt River: New carpenters' shop and wheel shop	70,000
Beaconsfield: New motor transport repair shops	26,584
Fourteen Streams: New high-level bridge	105,702
Mossel Bay: Extension of breakwater	51,750
Port Elizabeth: Improved traffic and loco. facilities	368,000
Port Elizabeth: Improved office accommodation	10,000
Port Elizabeth: New motor transport repair shops	25,000
East London: New erecting shop	50,000
East London: Remodel station yard	55,000
East London—Springfontein: Regrading of line	1,465,066
Bloemfontein: New timber stores	22,105
Hamilton: New station building and yard alterations	22,822
Naaupoort—Vaalriver: Eliminate curvature	80,000
New motor transport repair shops, Natal	16,000
Durban: Road bridge at St. Andrews Str.	14,500
Durban Harbour: Extend Island View wharf	121,238
Durban Harbour: Extend tug berth	41,869
Durban Harbour: New floating dock	183,121

Durban Harbour: Improvements	£1,921,592
Durban Harbour: New wharf for whalers and new repair quay at graving dock	59,101
Pietermaritzburg: New hostel	25,000
Waschbank—Uithoek: Regrading and deviation of line	29,199
Braamfontein: Regrade line to showground	30,000
Boksburg—Boksburg East: Quadrupling of line	28,750
Canada—Orlando: Improvements to line	81,516
Delmas: New station and yard alterations	12,218
Florida—Roodepoort: Third road	34,712
India Junction: Lowering of line	32,500
Johannesburg: New offices for Stores and Electrical Departments	45,000
Maraisburg: New station and yard alterations	13,900
Minnaar—Witbank: Doubling of line	69,294
Newclare: Remodel yard	26,451
Union—Volksrust: Regrade and deviate line	600,000
Pretoria: Extension of steel foundry	15,000
Waterval Boven: New Railway Institute	10,330
Witbank: Marshalling yard	38,885
Witbank: New Railway Institute	14,000
Zoekmakaar: New station building and yard alterations	10,000
Additional Road Motor Service plant and machinery	20,825
Additional aircraft	113,262
Airways: Blind landing equipment Port Elizabeth and Durban	15,000
Airways: Workshop machinery	12,000
Housing of Staff: Ownership scheme	1,000,000
New quarters, improvements to and replacement of quarters	338,224
New machinery for workshops and running sheds	208,301
Road Motor Services—276 vehicles	379,310
Establishment of flash butt welding depôts	60,000

NEW POST OFFICE GERMISTON TRANSVAAL SKETCH OF FRONT ELEVATION



(SKETCH BY W. B. T. NEWHAM.)

New Post Office for Germiston

Work has now begun on the construction of this new building, which will combine utility and art in some interesting features described in this article

By W. B. T. NEWHAM.

THE building contract for the new Post Office at Germiston has been awarded to Messrs. H. R. Otto (Pty.), Ltd., for the sum of £13,438, and a start is being made.

The site of the buildings is a very important one, being on the corner of President Street and Broad Street, and facing the main public square, next to the existing Police Quarters.

Designed with an eye to a minimum of maintenance and upkeep, Witkoppen granite has been specified externally up to the window cills, to the door surrounds, columns and yard walling.

The steel windows are large and well-proportioned, with horizontal sheets of glass to accord with the general horizontal feeling of the design.

The roof extends in an unbroken simple slope for the whole length of the building, and is to be laid with large slates from a South African quarry.

A feature has been made of the private boxes, by placing them on the inner wall of the 51-foot entrance loggia. Surrounded by a granite frame, and 13 feet back from the outside wall, they are well protected from the weather, and form an attractive central feature to the front façade. A pleasing feature, too, of the entrances which lead to the public spaces are the wrought-iron grilles.

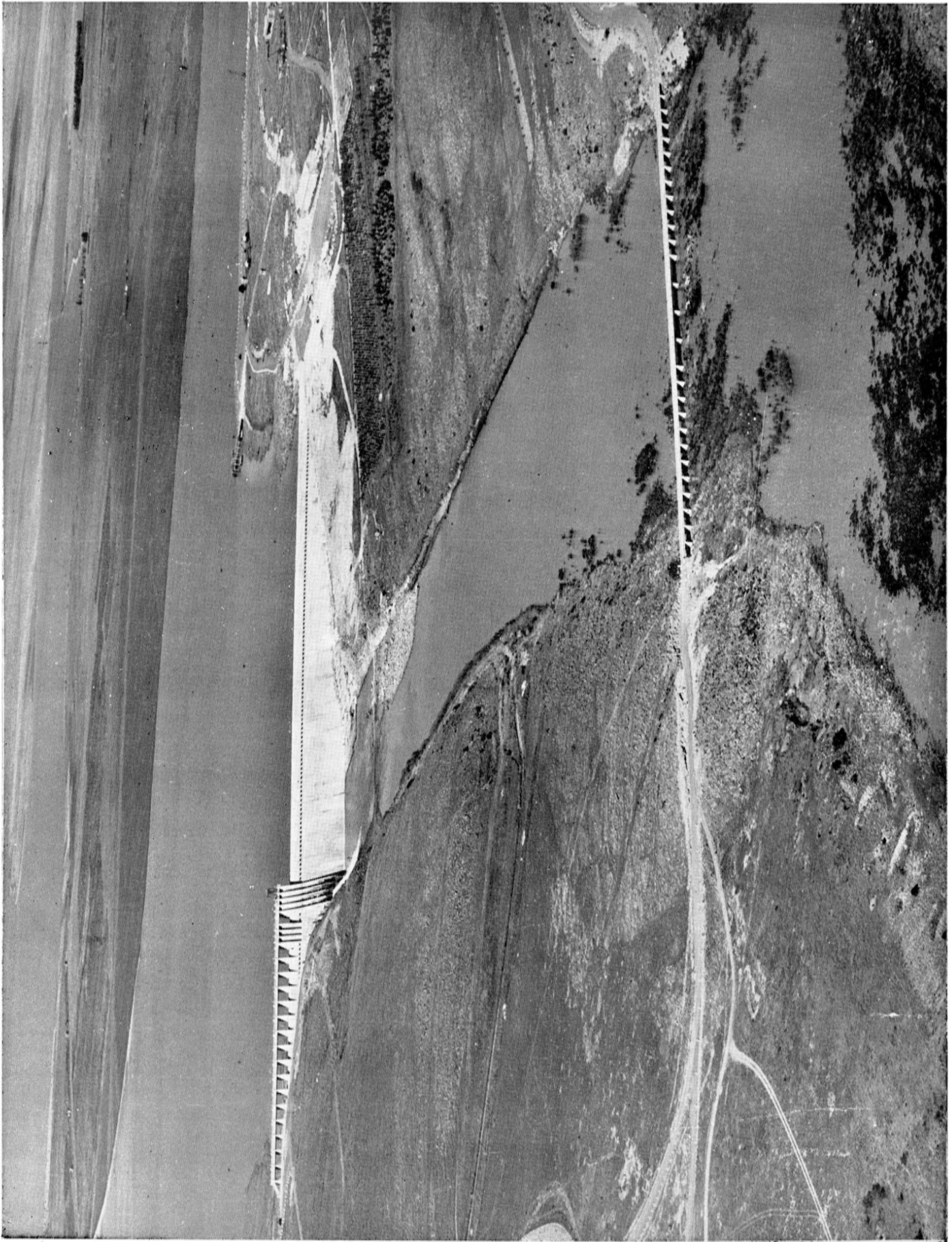
The European public space, 63 feet long by 21 feet wide, is well lit and is fitted with adequate counter space; while, beyond, the several rooms for messengers, telegraphs, C.O.D., etc., have been arranged.

The non-European public space, reached from the central porch on the Broad Street frontage, is also spacious and well ventilated. Having its own separate counter and writing ledges, it is separated from the European space by a dividing wall, in which the historic glass panels formerly a feature of the old Post Office of Republican days have been placed. Thus they are now seen by both sections of the public.

Call boxes have been arranged off the porch and loggias, and will be open to the public at all hours.

The general and administrative offices, viz., Postmaster's office, clerks, telephone accounts, male and female rest rooms, etc., have been grouped around a central area.

A through drive has been planned from President Street to Broad Street, enabling expeditious handling of mail matter. This has allowed, too, for the maximum use to be made of the site in the planning of the building.



[Photo by Aircraft Operating Company of Africa (Pty.), Ltd.]

THE VAAL BANK DAM.

The Vaal River Development Scheme

Further Facts About a Great Undertaking

By **ERIK TODD.**



LAST month we published some interesting facts regarding the Vaal River Development Scheme.

We have now been able to obtain from the Aircraft Operating Company of Africa (Pty.), Ltd., an aerial photograph of the Vaal Bank Dam, which illustrates this magnificent piece of engineering, in a field so important to South Africa.

The concrete overspill wall, of gravity type, is constructed with a special-shaped back, which is intended to break up the overflow into spray and prevent the pounding of the water on the lower portion of the wall. The Vaal Bank Dam is the main storage of the whole development scheme.

During this month I visited Warrenton, where the diversion weir is situated, some 300 miles from the storage dam. It took 800 to 900 men approximately 3½ years to build this weir.

There are three main sluice gates to control the flow of the water down the river. These sluices are colossal contrivances carried by concrete pylons, rising up approximately 30 feet above the main control deck, and are worked on the counter-weight principle and can be quite easily raised or lowered by a couple of *umfaans*.

The gates controlling the flow of water into the main canal of the irrigation scheme towards Border are located at the side of the northern main sluice gate. The canal is roofed in from this point until it passes quite clear of the river. This will allow flood water to pass over it.

The control platform is carried about 200 feet above the roof of the canal on huge circular concrete columns. This treatment, together with the soft curve of the roofed canal, lends exceptional beauty to this, a purely utilitarian structure.

The main canal is now complete nearly as far as Mogogong, and will continue as far as Taungs. The survey extends, I believe, as far as Pudumoe. Although Taungs is only 40 miles from Warrenton, the main canal, twisting and turning to the contours of the country and tunnelling under two hills, will be about 75 miles long.

The whole of the district through which it passes is terribly drought-stricken, so much so that on the farm where I spent the night, there was not sufficient water for the drinking purposes of the household. Unfortunately this farm is located above the level of the canal, thereby missing its benefit.

At present there is a big settlement of workmen at Border, a small settlement at Pokwani and another at Taungs. These men are engaged in the laying of a network of canals, mostly concrete-lined owing to the sandy nature of the soil, the building of settlers' houses, and the construction of concrete bridges spanning the canals.

The Government has expropriated all the farms required for this development scheme, embracing an area of approximately 300 square miles, and is dividing up some of this ground into 30-morgen plots. Each settler will be given half a plot, with a house,

some farming implements, and an allowance of £5 per month for a certain period. If he proves that he can work his 15 morgen successfully he will be given the remaining half of his plot.

It is the Government's intention that all settlers shall ultimately purchase their property

and repay their loans.

The scheme seems sound in principle and an earnest endeavour to alleviate the lot of the destitute farmer by giving him a new start.

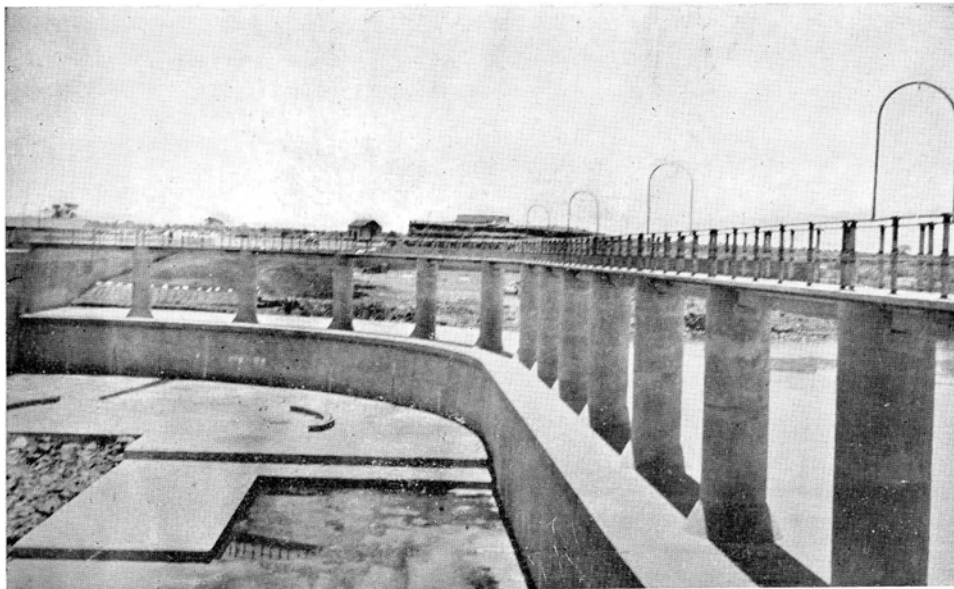


THE VAAL-HARTZ IRRIGATION SCHEME: CRUSHING PLANT AT POKWANI, WHERE THE PRODUCT OF THE TUNNEL WAS CRUSHED FOR CONCRETE AGGREGATE. (Photo: Erik Todd.)



WEIR AT WARRENTON.

(Photo: Erik Todd.)



ANOTHER VIEW OF THE WEIR AT WARRENTON.

(Photo: Erik Todd.)

THE VAAL-HARTZ IRRIGATION SCHEME.

Krugersdorp's New Post Office

By R. E. COLE-BOWEN.



THE site which has been chosen for the new post office at Krugersdorp is a corner one facing west and south on to Kruger and Ockerse Streets and situated just off Commissioner Street, which is the main thoroughfare through the town.

In order to take full advantage of the possibilities of the site, an L-shaped plan has been used, with public spaces and circulation offices in the southern arm, and staff accommodation with switch-room above in the western section.

The main entrance to the Post Office is from the private box and posting lobby, which is of generous proportions and faces Kruger Street. It may be interesting at this stage for the reader to note that provision has been made for the new system of letter clearance whereby mail posted after business hours is collected by a travelling van and is taken into Johannesburg direct.

Access to the European public space is through the posting and private box lobby. From the same source access is gained to the accounts and general office, and from there, if necessary, to the Postmaster himself.

The European public space is 66' x 20', and has a secondary entrance facing on to Ockerse Street. It is arranged in tandem with the 18' x 20' non-European sec-

tion, which is entered from an atrium off Ockerse Street.

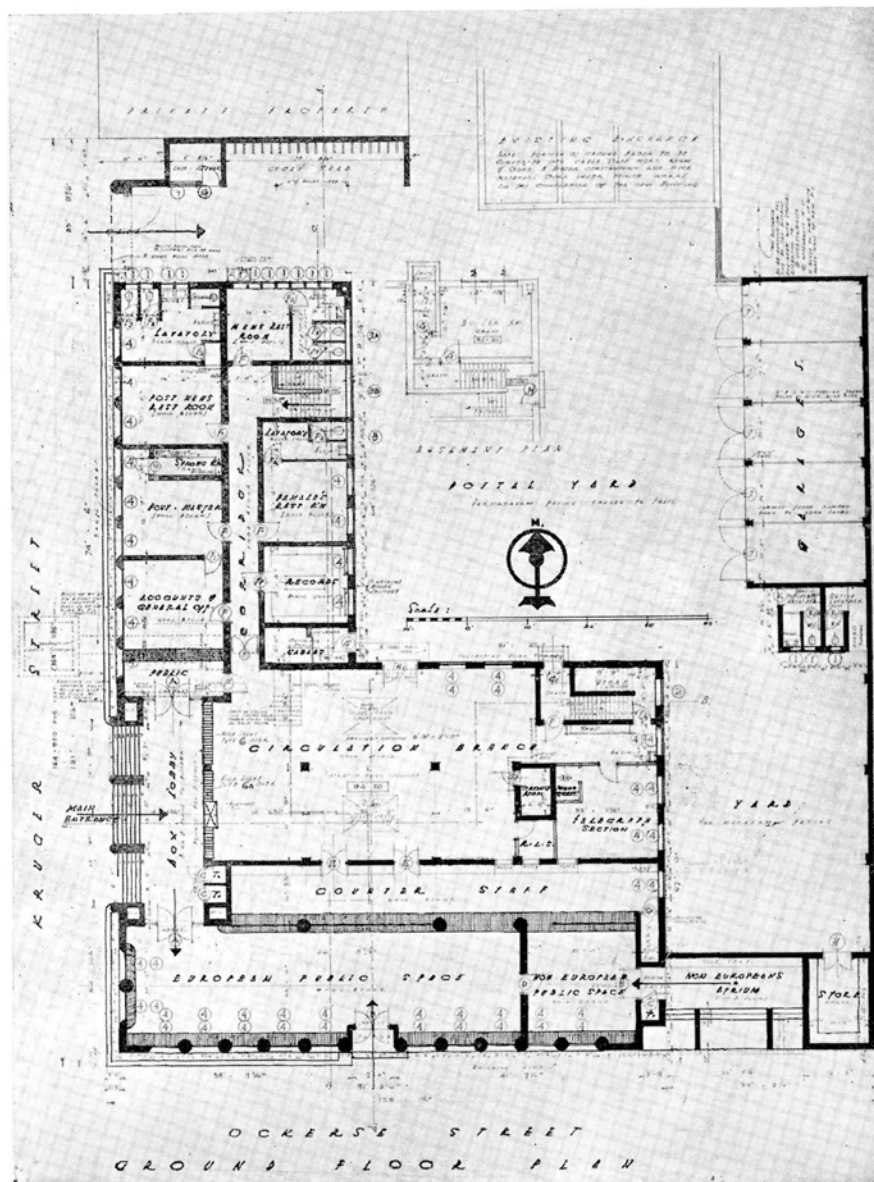
Both public spaces are treated acoustically and paved with wood blocks. An interesting innovation is the substitution of a glass-louvred screen surmounted by a brick wall for the conventional counter grille. This will give better visibility and therefore better supervision, while the wall above will serve to segregate the public from the voices and distractions of the staff space and circulation and telegraph branches.

The circulation branch, including telegraph, registered letter, and phonogram sections, with strong room and service stair, measures 74' x 32', and has top as well as side lighting. In addition to the above, there is a 10' x 74' space devoted entirely to counter staff and separated from the circulation branch by a dwarf wall and fittings.

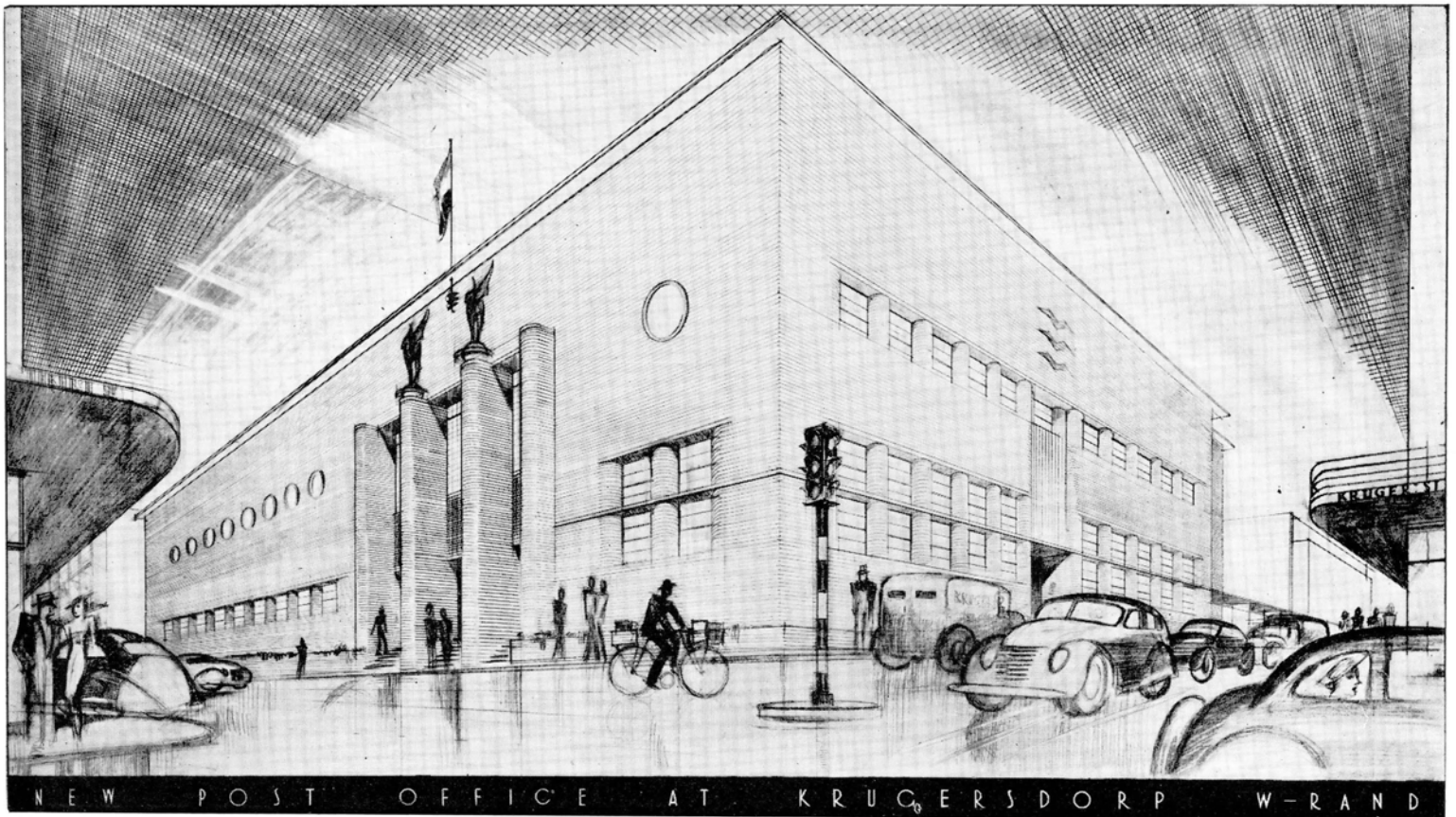
The Kruger Street wing contains accommodation for the Postmaster, accounts and general office, male and female staff rooms, record room, cable vault and duct, and staff entrance and stair off the postal yard.

The first floor is devoted entirely to the engineering section.

The 63' x 37' 6" switch-room for the selector mechanism of the automatic telephones is the principal unit on this floor. It is air-con-



KRUGERSDORP POST OFFICE: Ground Floor Plan.



NEW POST OFFICE AT KRUGERSDORP W-RAND
PERSPECTIVE SKETCH BY R. E. COLE-BOWEN.

ditioned, and is lighted on the west with double bull's-eye windows with air space between, and on the eastern side by glass bricks.

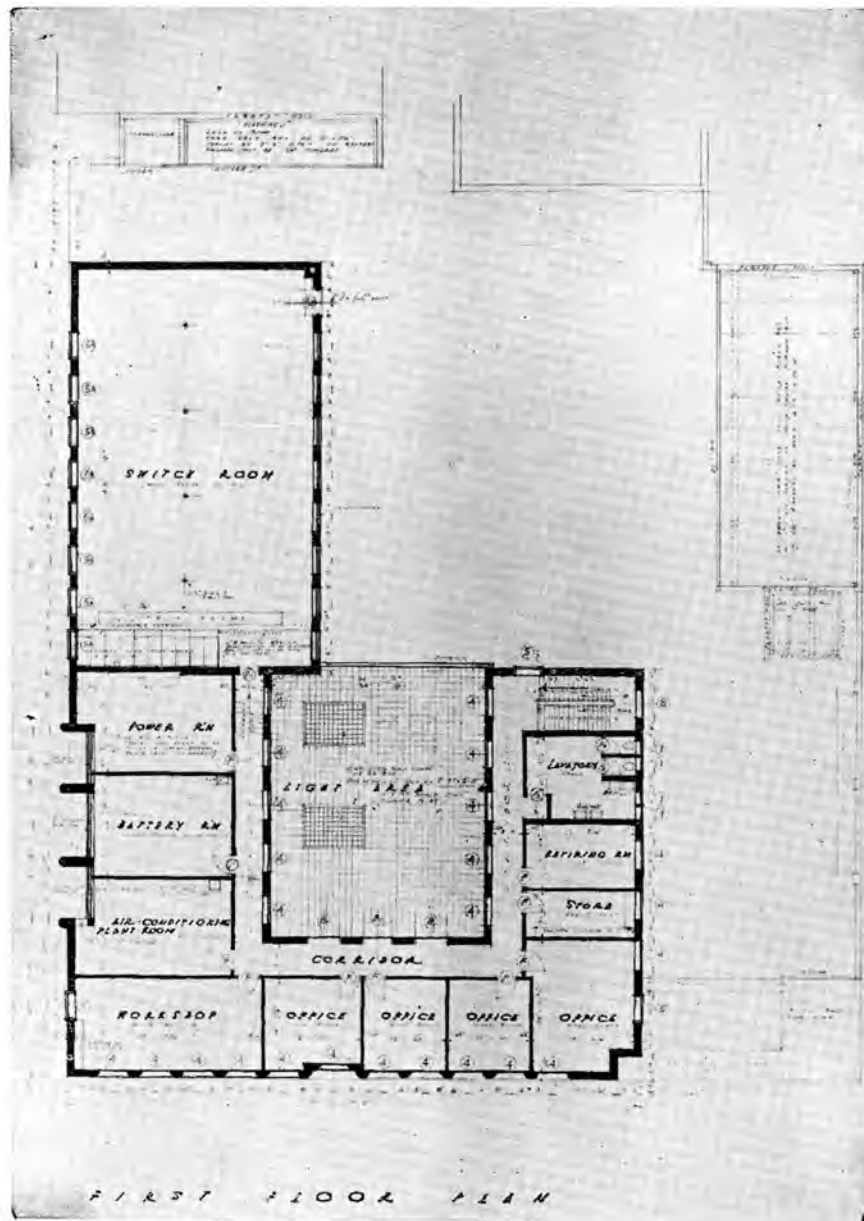
Adjoining the switch-room are the power, battery and air-conditioning plant rooms, with workshop. The remainder of the floor is given over to offices and returning rooms for the engineering staff.

Enclosed by the L-form of the building and entered from Kruger Street, the postal yard is paved with tar-macadam, and has cycle sheds, garages, stores and a ladder rack.

a fore-standing podium, again to set the building to the slope of the ground.

The windows to the switch room are circular in shape and set in spun reinforced concrete pipes, two to each pipe, to insulate the switch-room. All the remaining windows are of 4' 6" x 4' 6" unit size, and are combined with semi-circular mullions of specially made bricks to form continuous or vertical units.

The main entrance is defined by four semi-circular-ended brick pylons. The two centre ones are surmounted by bronze effigies of the winged



KRUGERSDORP POST OFFICE: First Floor Plan.

Elevations.

The elevations of the building are in brick of a selected colour, relieved with white painted concrete cornice and fins used at window-head heights, and in the case of the Kruger Street elevation at cill-level to square up the building on the steeply falling street, and to line with hood over entrance gates to yards. Brick soil pockets are used on this elevation to form

springbok, symbolical of the functions of the building.

The whole entrance unit is set slightly back from the main wall face, and is still further defined by glass brick panels at first-floor level, and a running frieze in variegated brick, depicting an ox-wagon symbolic of the Great Trek and the discovery of the Reef, with the mine-dumps, headgear and buildings of the Krugersdorp of the present and the Krugersdorp of the future in the background.

The New Union Government Offices

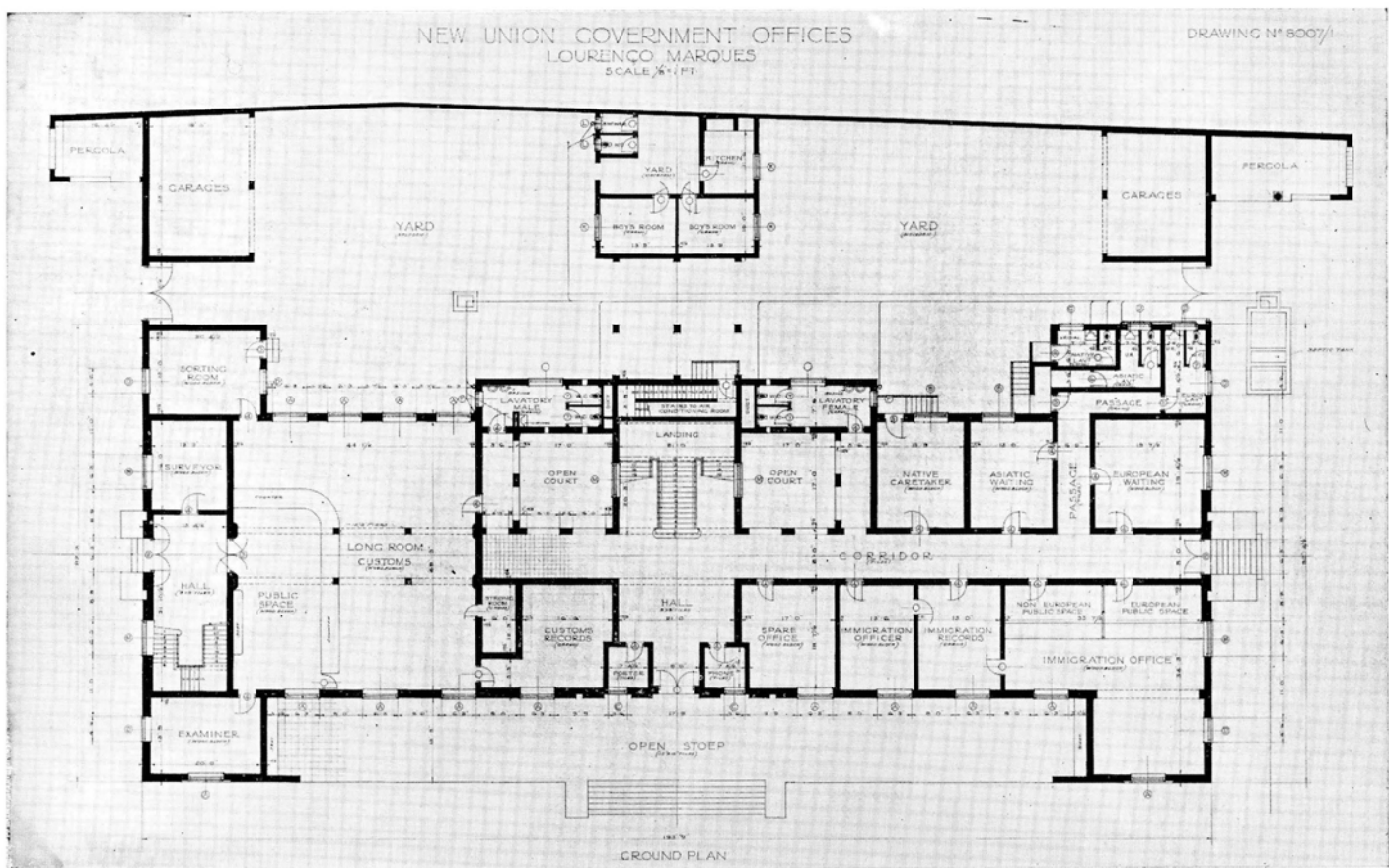
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LOURENÇO MARQUES

By TURNER NEWHAM.

IT was thought that this building, housing as it does essentially Government departments of the Union of South Africa in a foreign country, should be expressed in what has come to be known in these days as the South African monumental tradition. This tradition expresses the best of what was contained in

The fluted pilasters, with their foliated capitals, and the heavy-pattern Italian tile roof with its great overhanging eaves projecting four feet, the shaped sprockets over the coned and moulded cornice, combine to give an attractive and familiar expression.



GROUND FLOOR PLAN.

the 18th century architecture at the Cape and which was so well defined and expressed at the beginning of the 20th century by men of the Sir Herbert Baker school and others.

The whole scheme is in white plaster, on a base of local mountain stone, with all external woodwork, such as the shuttered windows, carved fanlights, and doors, in oiled teak.

In front of the building, the large open "voorstoop," 15 feet deep and 148 feet long, culminates at each end with flat-roofed single-storey blocks, with shaped wing walls placed above the seats at each end of the stoep, together with two historical groups, painted on tiles, expressing the starting out of the Voortrekkers under Louis Trichardt from the Cape, and their ultimate arrival at Lourenço Marques.

This work will be undertaken by South African artists, and manufactured by the Ceramic Studio at Olifantsfontein, Transvaal.

The side elevations facing the Praça de Marco and the Avenida da Republica, have been well considered, and the proportions work up to form a pleasing group in each case.

There is a modelled cartouche over each entrance to the recessed doorways.

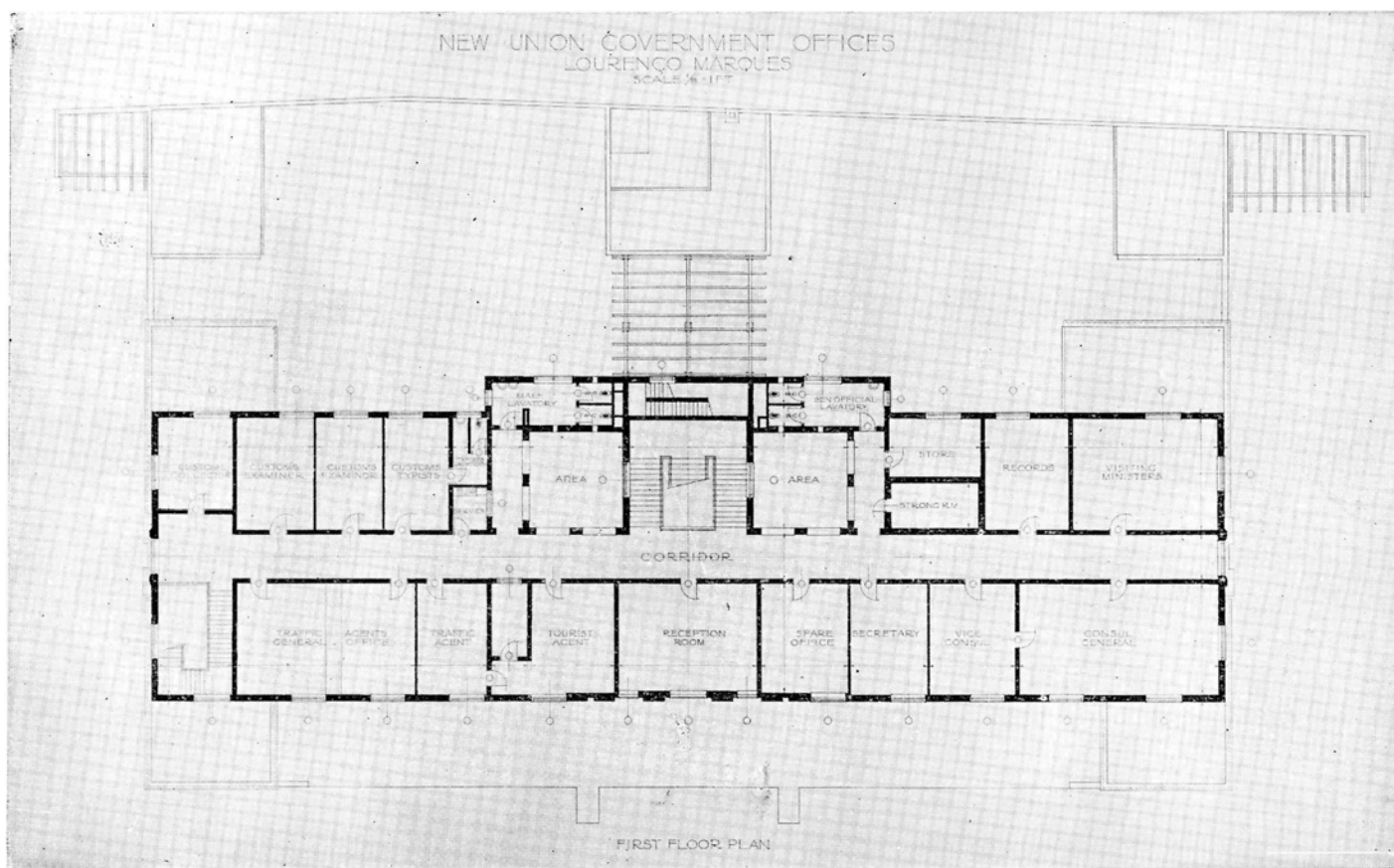
The back elevation, too, is quite interesting, having shaped parapet walling above the roof level on each side of the air-conditioning tower—again a touch of the familiar old Cape work.

in the staircase hall, but as yet it has not been decided which form it will take.

The planning of the new building has been conceived on broad and simple lines, giving a maximum of light and air.

On the ground floor the Customs, with its long-room, are on the left and the Immigration Office on the right of the main entrance staircase hall.

On the first-floor level, left similarly, are Customs, tourist, and traffic agents, while on the right are the Consul, Vice-Consul, visiting Ministers' room, etc. On the first floor also, immediately over the entrance hall, is a reception room for visitors.



FIRST FLOOR PLAN.

At each side of the building, towards the back entrances, pergolas and seats have been provided, which will be covered with brilliant flowering creepers. There is also a shade pergola in the yard, linking the out-buildings and garages with the main block.

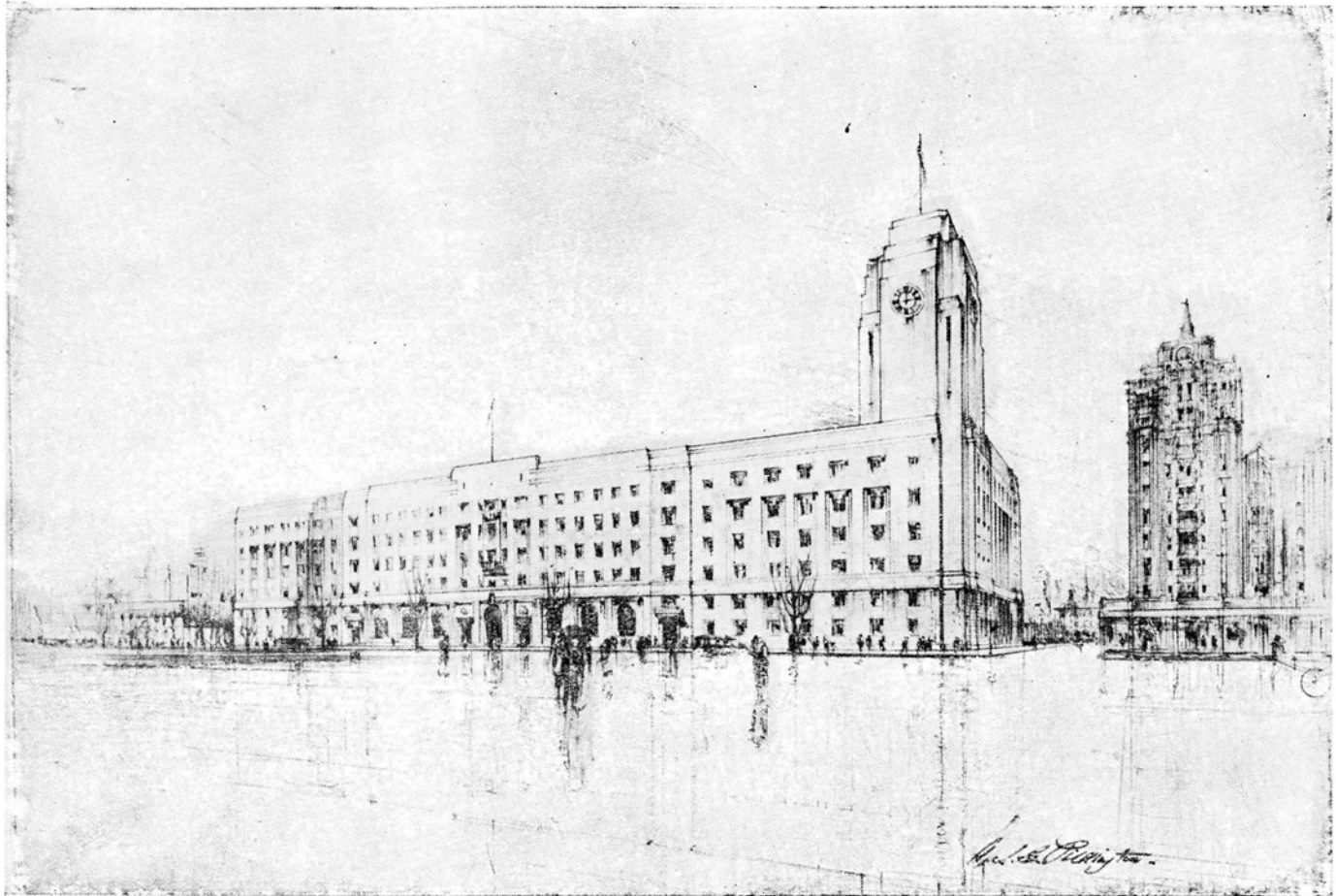
The Union Government has lately ceded to the Municipality of Lourenço Marques a 45-foot strip of their frontage to their site to enable the magnificent avenue of the Rua da Fonte to be extended right through to the square.

The proposed memorial to Louis Trichardt, the Voortrekker leader, will eventually be placed in the garden, or alternatively, inside the building, probably

It is proposed to have a mural painting, if funds will allow, on the staircase wall above the half-way landing, which will be visible from the entrance hall and also from the first floor corridor.

The whole building is to be air-conditioned and mosquito-proofed. Every care will be taken for the comfort and convenience of all connected with it.

Furnishings will be purpose-made throughout of selected South African hardwoods, while the materials generally in the job will be the best of their respective kinds, chosen in accord with the general policy of the Public Works Department, *viz.*, the minimum of maintenance and the maximum of durability.



JOHANNESBURG POST OFFICE AS IT WILL APPEAR WHEN COMPLETE.

Johannesburg's General Post Office

STORY OF THE EAST WING EXTENSION



By W. A. MACDONALD.

A remarkable sidelight on Johannesburg's rapid development is incidentally thrown by this story of the extension of the General Post Office. Already when the Hon. General Hertzog opened the new building in October, 1935, the necessity for an extension had become apparent. A new wing had to be added, and it is this wing which is the subject of the present article.

IN the Union Department of Public Works, the new General Post Office became known as a "Depression Service" — meaning, of course, that it was designed during the last depression period through which this country passed. Arising out of this unfortunate atmosphere there was a general feeling that the accommodation provided in the main building would satisfy Post Office requirements for many years to come. As usual, the critics were wrong; and by the time the Honourable the Prime Minister, General Hertzog, opened the building on the 15th October, 1935, this country found itself in the midst of a wonderful building boom. Actually it was found necessary to add a wing to the new building whilst still under construction, on the south-east corner of the site. It is the completion of this wing that comes under review in this article.

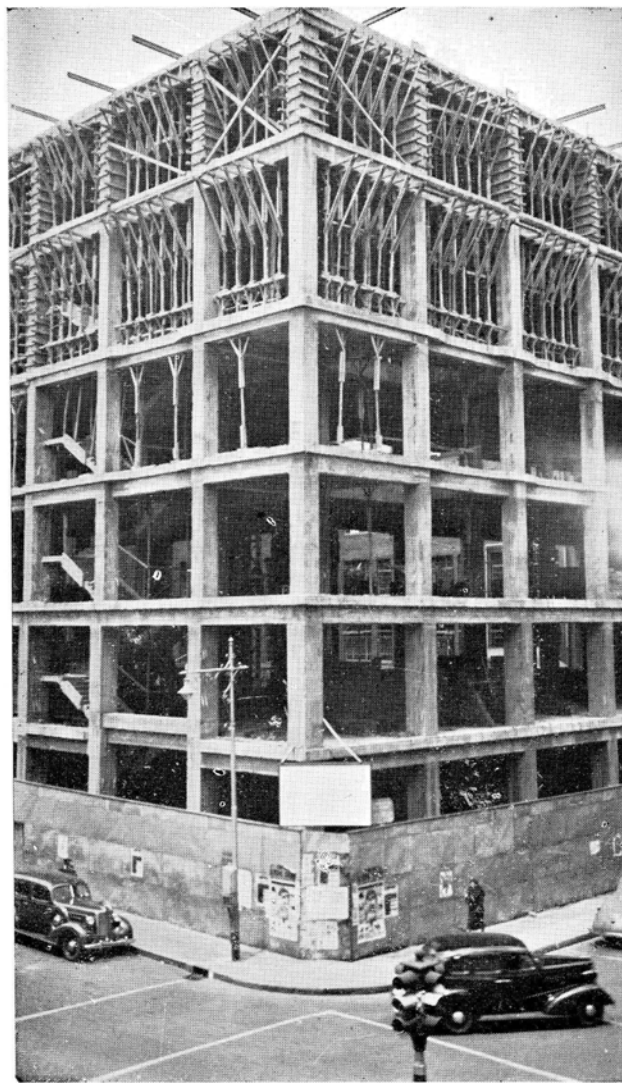
This portion of the site housed an important Johannesburg landmark, namely, the Telephone Exchange, built in 1906; it was a good design of that period, but a number of causes made its retention inadvisable. Firstly, the change over from manual telephones to the automatic system relieved the building of its original purpose as the latter was placed in the new building. Secondly, this

site was too valuable to accommodate a three-story building only; and, finally, extra accommodation was urgently required by the Post Office.

Towards the end of 1936 this old building — old only in relation to the city it graced — was demolished. In February of the same year working drawings were put in hand for the new structure, but so rapid was the expansion of the Telephone Section of the Post Office that drastic amendments had to be made to the plans before the middle of the same year. Eventually the contract for the foundations was let to Messrs. A. S. Perkins, of Pretoria, in March, 1937; and in May of the following year Messrs. Lewis Construction Co. were successful in obtaining the contract for the superstructure, which is in course of being built. This firm, I may add, were contractors for the superstructure of the main block. The cost of this wing will be in the region of £90,000.

When completed, it will house the Telephone Manager, the Divisional Engineer, and their respective staffs. The various floors have been allocated as follows:—

Basement. — Boiler room, transformer room, and a number of store rooms. The boilers will be fitted with automatic stokers, the



EXTENSIONS NOW UNDER CONSTRUCTION.



AERIAL VIEW OF JOHANNESBURG POST OFFICE.

installation of which tends to lessen the nuisance caused by smoke.

Ground Floor.—The accompanying sketch of this floor shows the main entrance at the north-east corner of the building off Smal Street. This entrance hall has been designed on liberal lines to accommodate the public, and has a staircase, two lifts, two public call offices, and the usual direction boards. The remainder of the floor is given up to the Postal and Engineering garages on three sides of the working yard, lavatory accommodation for the yard staff, and a night Post Office off Smal Street.

First Floor.—A sketch of this floor is also reproduced, and the arrangements for both the public and the staff are quite apparent. Here telephone accounts will be paid and enquiries regarding them made.

Second Floor.—In the original scheme the telephone contracts section was placed on the floor below, but the increase in staff made it necessary for this section to be divorced from the Accounts Branch, and it is now placed on the second floor. The remainder of this floor is divided up into offices for the Telephone Manager's staff.

Third Floor.—The Telephone Manager's personal office is situated here, together with the remainder of his staff.

Fourth and Fifth Floors.—These two floors will house the Divisional Engineer and his staff, together with a large lecture room, museum, laboratory, and conference room on the fifth floor.

Lavatories for the staff have been placed on a special mezzanine section on the south-east angle of the yard. These floors are served by a staircase, which also contacts the main floor.

Architectural Features.

The building is a reinforced concrete frame and designed by the Department's Structural Engineer's staff in close collaboration with the Chief Architect's staff.

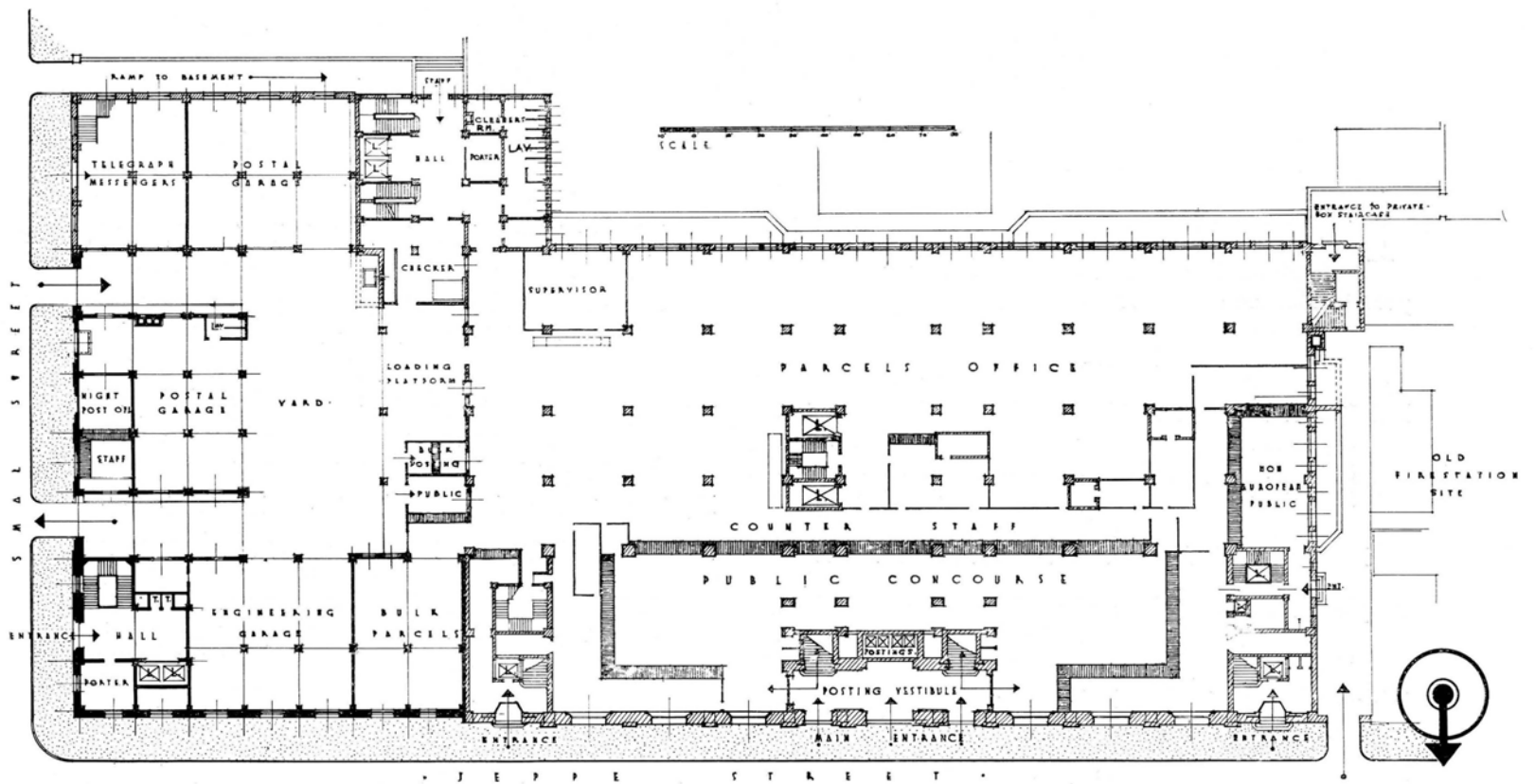
The treatment of the elevation of the new wing conforms with that of the main building, having a granite plinth and Flatpan Freestone from the top of the granite to the parapet. The style of architecture need not be elaborated upon, as the Post Office building is well known to Johannesburg citizens and visitors.

The fluted pilasters from the main front on Jeppe Street have been echoed in the recessed elevation at the carriage-ways in Smal Street.

Internally the finishing will not be as elaborate in the public spaces as in the main Post Office, owing to building costs, but I need hardly state that they will be up to the usual P.W.D. standard as far as wear is concerned.

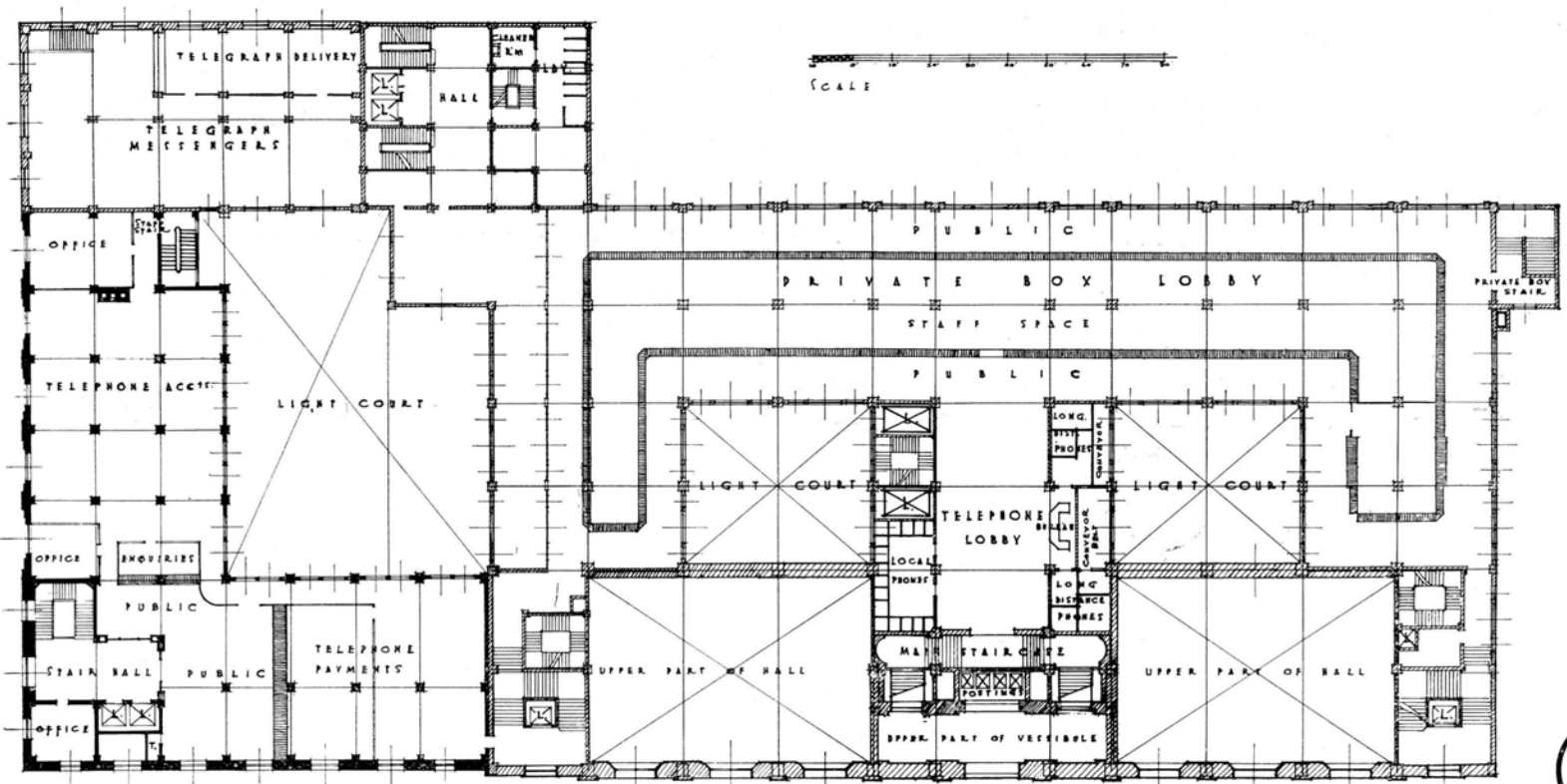
The addition now brings the new Post Office well over the half-million-pound mark, and it is obvious that the Fire Station site on the west side cannot be left much longer in its present undeveloped state.

The accompanying perspective shows the Department's completed scheme for the new General Post Office.



• GROUND FLOOR PLAN •

JOHANNESBURG POST OFFICE. THE PORTION SHOWN IN SOLID LINE IS NOW UNDER CONSTRUCTION.



FIRST FLOOR PLAN •

JOHANNESBURG POST OFFICE. THE PORTION SHOWN IN SOLID LINE IS NOW UNDER ERECTION.

Tenders Accepted

THE following are particulars of contracts which have been awarded. The name of the successful tenderer is given in each case, and, wherever practicable, the contract price.

BRIDGES.

Reinforced concrete rigid-frame bridge (construction of) over Eerste River at Faure: Murray & Stewart (Pty.), Ltd., P.O. Box 16, Salt River. £3,154.

BUILDINGS AND ALTERATIONS, ETC.

Single officers' cubicles and additions to gymnasium, S.A.M.C., Roberts Heights: G. Newland, Pretoria. £7,777.

Magistrate's residence, Robertson: A. Fransbergen, Cape Town. £2,056 3s. 9d.

Post Office, Umzimkulu: J. A. Scott, Umhlanga. £2,618.

Post Office and Automatic Telephone Exchange, Springs, alterations and additions: Halfacre & Powell, Benoni. £6,345.

Post Office, Germiston: H. F. Otto (Pty.), Ltd., Johannesburg. £13,438.

CENTRAL HEATING AND AIR-CONDITIONING.

Air-conditioning plant for Automatic Telephone Exchange, Tatfield: A. E. Barker, Johannesburg. £1,574.

Central heating installation for Hatfield Automatic Telephone Exchange: F. A. Sharman (Pty.), Limited, Johannesburg. £298.

Central heating installation for Benoni Post Office: F. A. Sharman (Pty.), Ltd., Johannesburg. £329.

Central heating installation for Florida Automatic Telephone Exchange: John Chisholm (Pty.), Ltd., Pretoria. £148 11s. 3d.

Air-conditioning plant for Florida Automatic Telephone Exchange: A. E. Barker, Johannesburg. £1,553.

COOKING EQUIPMENT, ETC.

Food-preparation machines and kitchen utensils for Nelspoort Sanatorium: Hubert Davies & Co., Ltd., Cape Town; Mewa Manufacturing Co., Cape Town; Belfast Warehouse, Ltd., Johannesburg; International House, Johannesburg; Trubshaw & Fraser (Pty.), Ltd., Johannesburg;

Hart, Limited, Durban; Macadams, Limited, Johannesburg; W. S. Mitchell (Pty.), Ltd., Durban; Chas. Westwood, Johannesburg; E. W. Tarry & Co., Ltd., Johannesburg; S. A. Scale Co., Ltd., Johannesburg; P. Henwood, Son, Soutter & Co., Durban.

Slow-combustion cooking range for Womens' Training Centre, Pretoria: Hillman Bros. (Pretoria), Ltd., Pretoria. £162 10s. 0d.

Equipment for Air Apprentices' Mess, Roberts Heights: A. E. Barker, Johannesburg; E. S. Mowatt & Sons, Johannesburg; Rogers Jenkins & Co. (Pty.), Ltd., Johannesburg; D. Drury & Co. (1930) (Pty.), Ltd., Johannesburg; Engineering Agencies (Pty.), Ltd., Johannesburg; Associated Engineers Co., Ltd., Johannesburg.

ELECTRICAL EQUIPMENT.

Cable markers (1,500) for Department of Posts and Telegraphs: Central Engineering Works, Johannesburg. £154 10s. 0d., f.o.r. Johannesburg.

Detectors for Department of Posts and Telegraphs: Sydney Thompson & Co., Johannesburg; and Siemens Bros. & Co. (British), Ltd., Johannesburg.

Insulators for Department of Posts and Telegraphs: Siemens Bros. & Co. (British), Limited, Johannesburg; and Armstrong, Ltd., Johannesburg.

(a) **Lighting plant**, (b) **battery with filling acid**, for Vaal-Hartz Irrigation Scheme: (a) Stewarts & Lloyds of S.A., Ltd., Johannesburg, £318 delivered; (b) Trevor Williams (Pty.), Ltd., Johannesburg, £330 delivered in bond.

1,000-k.v.a. transformer, Roberts Heights: Hubert Davies & Co., Ltd., Johannesburg. £519 10s. delivered.

Lighting plant (5) for various residences: Stewarts & Lloyds of S.A., Ltd., Johannesburg. Two for £174 10s. 0d. delivered East London; three for £269 5s. 0d. delivered Pietermaritzburg.

Cable for Department of Posts and Telegraphs: Southern Engineering Supply (Pty.), Limited, Johannesburg; G. H. Langler & Co., Ltd., Johannesburg; British Insulated Cables (S.A.), Ltd., Johannesburg; Siemens (S.A.), Limited, Johannesburg.

Wire for Department of Posts and Telegraphs: B. C. Myers, Ltd., Johannesburg; Vickers and

Metropolitan Carriage (S.A.), Ltd., Johannesburg; and Dorman Long (Africa), Ltd., Germiston.

Copper wire for Public Works Department: Steel Sales Co. of S.A. (Pty.), Ltd., Johannesburg.

REFRIGERATING PLANT.

Refrigerating cabinet for Government Chemical Laboratories, Johannesburg: Seligson & Clare, Ltd., Johannesburg. £419 16s.

Refrigerating plant, New N.C.O.'s Mess, Artillery Training Depôt, Roberts Heights: H. Polliack & Co., Ltd., Johannesburg. £216.

Refrigerator for Westbrook and Groot Schuur Estates (tender 24/1/1028): S.A. General Electric Co., Ltd., Cape Town. £112 delivered, duty paid.

ROADS AND ROAD-MAKING EQUIPMENT, ETC.

Road surfaces, Army Ordnance yard, Cape Town: Asphalt Paving & Contracting Co., Cape Town. £240 13s. 4d.

Road ripper for Vaal-Hartz Scheme: W. S. Thomas & Co. (Pty.), Ltd., Johannesburg. £88, f.o.b. New York.

Yard and path surfaces, Police Barracks, Worcester: Griffiths & Inglis (Pty.), Ltd., Parow. £440 3s. 4d.

Bitumen Emulsion: Patlansky Bros. & Schauder, Port Elizabeth; Shell Co. of S.A., Ltd., Johannesburg; Engineering Agencies (Pty.), Ltd., Johannesburg; African Bitumen Emulsions (Pty.), Ltd., Durban; Colas S.A., Ltd., Johannesburg; Vialit Road Products (Pty.), Ltd., Maitland; Texas Co. (S.A.), Ltd., Johannesburg.

Transvaal Provincial Tender No. 105 of 1938: (1) De Beers Crushers, Springs; (2) Denver Stone Crushers, Johannesburg; (3) Capital Granite and Slate Quarries, Johannesburg; (4) Cleveland Crushers, Limited, Cleveland; (5) (a) African Lime Works, Johannesburg, (b) Reef Crushed Stone Co., Johannesburg; (6) West Crushers, Limited, Krugersdorp; (7) Strong and Moore, Limited, Johannesburg; (8) Hume Pipe Co. of S.A., Ltd., Germiston; (9) Premier Crushers, Pretoria.

Transvaal Provincial Tender No. 106 of 1938: (1) Colas, S.A., Ltd., Johannesburg; (2) Fowler Tar Spraying Co., Ltd., Johannesburg; (3) Road Emulsions (Pty.), Ltd., Johannesburg; (4) S.A. Road Supply (Pty.), Ltd., Johannesburg; (5) Steel Sales of S.A. (Pty.), Ltd., Johannesburg; (6) Dundee Coal Co., Durban.

Transvaal Provincial Tender No. 126 of 1938: Thomas Barlow & Son (S.A.), Ltd., Johannesburg. (1) caterpillar No. 11 Auto Patrol,

mechanical power operated motor grader with 3-cylinder 45 h.p. caterpillar D-6600 diesel engine). £1,231 (in bond, f.o.r. Durban).

Transvaal Provincial Tender No. 153 of 1938 (17,600 grader blades): W. S. Thomas & Co. (Pty.), Ltd., Johannesburg. £14,177 8s. 4d. (f.o.r. in bond, East London).

Transvaal Provincial Tender No. 162 of 1938 (patent trip trucks, track complete with steel sleepers, etc., and points for 18 in. gauge rail): Orenstein & Koppel (S.A.), Ltd., Johannesburg.

Transvaal Provincial Tender No. 163 of 1938 (steel bucket teeth): (1) Edgar Allan & Co. (S.A.), Ltd., Johannesburg; (2) Steel Sales Co. (S.A.) (Pty.), Ltd., Johannesburg.

Caterpillar diesel crawler tractors: E. G. Nyman (Pty.), Ltd., Maitland, C.P., £1,004 each, f.o.r. Union ports; S. S. Palmes (Pty.), Ltd., Port Elizabeth, £1,004 each, f.o.r. Port Elizabeth and East London.

Wheeled tractors: P. Andrag & Sons, Cape Town. £505 each, f.o.r. Cape Town, Port Elizabeth and East London.

Trailer water-carts: F. H. Phillips & Co., Huguenot, C.P. £156 10s. each, f.o.r. Huguenot.

Diesel road roller: £785, f.o.r. coast ports.

Three-ton motor trucks: General Motors S.A., Ltd., £229 10s. each, f.o.r. coast ports.

Five-ton motor trucks: General Motors S.A., Ltd., £572 each, f.o.r. coast ports.

Hoists: (1) Leyland Motors S.A., Ltd., Cape Town; £669 5s. 0d. each, f.o.r. Cape Town, Port Elizabeth, East London. (2) Grosvenor Motors, Ltd., Salt River, C.P.; £639 13s. 6d. each, f.o.r. coast ports. (3) General Motors S.A., Ltd., Port Elizabeth; £634 each, f.o.r. coast ports.

Broomwade B.W.D. 600: Hubert Davies & Co., Ltd., Cape Town. £35 each, f.o.r. coast ports.

Ingersoll Rand J.A. 45: £39 10s. each, f.o.r. coast ports and Johannesburg.

Sullivan L.2: Dowson Dobson & Behr, Ltd., Cape Town. £39 10s. each, f.o.r. coast ports.

Climax pump jacks: Stewarts & Lloyds S.A., Ltd., Cape Town. £32 13s. 6d. each, f.o.r. Cape Town.

1,200-gal. Oddy Tanks: General Motors S.A., Ltd., Port Elizabeth. £726 10s. 0d. each, f.o.r. coast ports.

Explosives for use on National and Provincial Roads: for Cape Western Districts, Cape Explosives Works, P.O. Box 734, Cape Town. Cape Midlands Districts, T. W. Harvey-Hulme, Port Elizabeth. Cape Border Districts, Dyer & Dyer, East London. For all areas, Rolfes, Ltd., Elandsfontein.

SURGICAL AND HOSPITAL EQUIPMENT.

Food trolleys for Nelspoort Sanatorium : Butterworth Productions, Durban. £52 10s. each, f.o.r. Durban.

WATER SUPPLY AND IRRIGATION EQUIPMENT.

Sluice gates (50), Pongola Settlement : F. A. Poole (Pty.), Ltd., Pretoria. £105, f.o.r. Pretoria.

Engine-driven centrifugal pumping plant for Settlers Estate, Pietermaritzburg : Stewarts & Lloyds of S.A., Ltd., Pietermaritzburg. £126 15s. 0d., f.o.r. Durban.

Windmill, tank and tankstand for Police Station, Naauwpoort : G. North & Son, Limited, East London. £121 1s. 6d.

Windmill, pump standard, tankstand, etc., for Police Post, Ntabamhlope : Stewarts & Lloyds of S.A., Ltd., Pietermaritzburg. £216.

Borehole equipment, windmill, etc., for Police Post, Oliviershoek : Stewarts & Lloyds of S.A., Ltd., Pietermaritzburg. £267 10s. 0d.

Pump, motor and starter for G.P.O., Durban : Rogers Jenkins and Co. (Pty.), Ltd., Johannesburg. £121 delivered.

(a) **Water turbine and pump**, (b) **supervision of transport, erection and test run**, (c) **pumping main**, for Irrigation Department : Stewarts & Lloyds of S.A., Ltd., Pretoria. (a) £581 9s. 0d., (b) £49 10s. 0d., (c) £304 15s. 9d. (f.o.r. in bond Port Elizabeth).

Boring for water on farm Kalkgat : E. H. A. Rohrbeck, Pietersburg.

Boring for water at Government Institutions in O.F.S., Cape Eastern and Transkei : McNamara Shot Drills, Ltd., Kempton Park.

Borehole equipment, windmill, tankstand and water reticulation system, Oliviershoek Police Post : Stewarts & Lloyds of S.A., Limited, Durban. £164.

Water sprinkler for Mental Hospital, Pretoria : S.A. Iron and Galvanising Works, Langlaagte. £39 18s. 0d.

MISCELLANEOUS.

Registered letter cubicles for G.P.O., Durban : Barlow & Sons (S.A.), Ltd., Johannesburg. £1,587 5s. 0d.

Steel fire-resisting cupboards, Master of Supreme Court, Pretoria : S.A. Steel Equipment Co. (Pty.), Ltd., Johannesburg. £165 0s. 6d.

Rooter for Irrigation Department : Robertson & Moss, Ltd., Johannesburg. £320, f.o.r. in bond Port Elizabeth.

Diesel-engined tractor and spares, transport and test run : W. S. Thomas & Co. (Pty.), Ltd., Johannesburg. £1,341 10s. 0d.

Lawn mowers and transport carriers for Public Works Department : Mangold Bros., Johannesburg.

Safes for Public Works Department : Associated Engineers Co., Ltd., Johannesburg. (a) 50 for £876 5s. 0d., (b) 30 for £621, (c) 10 for £215— all f.o.b. English port.

Air compressor for Onderstepoort Laboratory : Stewarts & Lloyds of S.A., Ltd., Pretoria. £127 13s. 6d.

Punching and shearing machine for Potchefstroom Trade School : Tower Industries, Johannesburg. £165, f.o.b. Hamburg.

Fencing for Dohne Experimental Station : Van Aswegen & Scheepers, Stutterheim; and H. C. Wattrus, Bellgrove.

Steel stationery cupboards (10) for Department of Posts and Telegraphs : Thos. Barlow & Sons (S.A.), Ltd., Johannesburg. £125, f.o.r. Germiston.

Tenders Invited

THE following are particulars of the more important tenders which have been invited, up to the time of going to press, by Government Departments and Provincial Administrations. In each case the date by which tenders must be submitted, and the office to which they should be addressed, are given.

BRIDGES.

Highway Bridge over Wilge River, Witbank District (construction : Transvaal Provincial Tender 239/1938) : Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria (particulars at Room 12, 2nd floor, De Villiers Buildings, Pretoria, or Provincial Secretary, P.O. Box 383, Pretoria). **4th January.**

Bridge steelwork : Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Provincial Roads Engineer, P.O. Box 417, Pietermaritzburg). **11th January.**

BUILDINGS AND ALTERATIONS, ETC.

Hotel (erection and completion) at Hutchinson, C.P., for S.A. Railways & Harbours Administration : Tender Board, S.A. Railways & Harbours Headquarters, Johannesburg. **9th January.** (Plans and all particulars at offices of Chief Civil Engineer, Room 2, S.A. Railways & Harbours Headquarters, Johannesburg; System Manager, Cape Town; District Engineer, Beaufort West.)

Witpoort School, Wolmaransstad (additions and repairs) : Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria (particulars at Room 2, 3rd floor, de Villiers Buildings, Bureau Lane, Pretoria). **4th January.**

Women's Hostel (erection of) and **Heidelberg Normal Hostel** (additions to) : Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria (particulars at Room 2, 3rd floor, de Villiers Buildings, Bureau Lane, Pretoria; or Messrs. Roos & Roos, Quantity Surveyors, 105/8 London House, Loveday Street, Johannesburg. **4th January.**

Grabouw Secondary School (additions) : Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets, Cape Town (particulars from Secretary, School Board, Caledon; or architects, Messrs. Black & Fagg, 85 St. George's Street, Cape Town). **17th January.**

Tiger Valley Primary School (additions) : Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets (particulars from

architect, Mr. M. Adams, National Mutual Building, Church Square, Cape Town). **10th January.**

Pinelands Primary School (additions) : Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets, Cape Town (particulars from architect, Mr. L. Marriott Earle, Colonial Orphan Chambers, Church Square, Cape Town). **13th January.**

Estcourt Indian School (additions) : Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from P.W.D., Pietermaritzburg). **4th January.**

Kindergarten Class Room (erection of), Upington Primary School : Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets, Cape Town (particulars from Secretary, Gordonia School Board, Upington; or architects, Messrs. Louw & Louw, 600 Sanlam Building, Cape Town, and 130 Main Street, Paarl). **6th January.**

BUILDING MATERIALS (MISCELLANEOUS).

Bricks, stand, stone, etc. (supply of : tender S.O. 1032) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **5th January.**

Steel Windows for Kareepoort Settlement, District Brits (tender S.O. 1037) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **5th January.**

Reinforcing rods for Natal Provincial Roads Department : Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Provincial Roads Engineer, P.O. Box 417, Pietermaritzburg). **11th January.**

CENTRAL HEATING AND AIR-CONDITIONING.

Air-conditioning installation at New Aquarium, Sea Point, Cape Town (supply, delivery and erection : P.W.D. tender No. 108) : Secretary, P.W.D., Pretoria, and District Representative, Cape Town. **5th January.**

Air-conditioning plant for New Magistrate's Courts and Government Offices, Johannesburg (supply, delivery and erection : P.W.D. tender No. 107) : Secretary, P.W.D., Pretoria. **12th January.**

Central heating installation at New Automatic Telephone Exchange, Bloemfontein (supply, delivery and erection : P.W.D. tender 118) : Secretary, P.W.D., Pretoria. **26th January.**

Air-conditioning plant at Automatic Telephone Exchange, Bloemfontein (supply, delivery and erection: P.W.D. tender 121): Secretary, P.W.D., Pretoria. **26th January.**

COOKING EQUIPMENT, ETC.

Electric cooking equipment, food preparation machines, and refrigerator, for Natal Mental Hospital, Pietermaritzburg (supply and delivery: P.W.D. tender 132): Secretary, P.W.D., Pretoria, and District Representative, P.W.D., Pietermaritzburg. **2nd February.** (Entered also under "Refrigerating Plant.")

Heat storage cooker (supply, delivery and erection) and **cooking utensils** (supply and delivery), for Natal Mental Hospital, Pietermaritzburg (P.W.D. tender 131): Secretary, P.W.D., Pretoria, and District Representative, P.W.D., Pietermaritzburg. **2nd February.**

ELECTRICAL EQUIPMENT.

Radio receivers, short wave (P.O. tender No. 697): District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **12th January.**

Electric lighting plant, 850-watt, for Border Experimental Station, Dohne (supply and delivery: P.W.D. tender 124): Secretary, P.W.D., Pretoria. **19th January.**

Transformer and high and low tension switchgear for Automatic Telephone Exchange, Benoni (supply and delivery: P.W.D. tender 120): Secretary, P.W.D., Pretoria. **26th January.**

Telex switchboard system (supply of): District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **9th February.**

Electric fittings for the Castle, Cape Town (P.W.D. tender 111): District Representative, P.W.D., Cape Town. **12th January.**

REFRIGERATING PLANT.

Refrigerating plant for Sanatorium, Nelspoort, C.P. (supply, delivery and erection: P.W.D. tender 122): Secretary, P.W.D., Pretoria, and District Representative, P.W.D., Cape Town. **26th January.**

Refrigerator (and electric cooking equipment and food preparation machines) for Natal Mental Hospital, Pietermaritzburg (supply and delivery: P.W.D. tender 132): Secretary, P.W.D., Pretoria, and

District Representative, Pietermaritzburg. **2nd February.** (Entered also under "Cooking Equipment, etc.")

ROADS AND ROAD-MAKING EQUIPMENT, ETC.

Tarred roadway surface to Highway Bridge over Orange River, at Bethulie, O.F.S. (P.W.D. tender 138): District Representative, P.W.D., Bloemfontein. **12th January.**

Road maintenance plant and equipment for Cape Province National Roads (tender F.115/1938): Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets, Cape Town. (Details of requirements in Cape Province *Official Gazette* of 9th December.) **20th January.**

Major plant for construction of National Roads in Cape Province (tender F.116/1938): Cape Provincial Tender Board, Industry Buildings, cnr. Loop and Castle Streets, Cape Town. (Details of requirements in Cape Province *Official Gazette* of 9th December.) **13th January.**

Mechanical plant for Provincial Roads Department, Natal: Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Provincial Roads Engineer, P.O. Box 417, Pietermaritzburg). **18th January.**

SANITARY AND SEWERAGE WORK.

Water-borne sewerage (installation of) at Germiston High, Goede Hoop and Eendracht Schools, Rand East: Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria. (Particulars at Room 2, 3rd floor, de Villiers Buildings, Bureau Lane, Pretoria.) **4th January.**

SURGICAL AND HOSPITAL EQUIPMENT.

Bedside lockers, ward screens, instrument cabinet, anaesthetist's table, sterilising drums, bentwood arm-chairs, for Eshowe and Newcastle Hospitals: Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (tender forms, etc., from Provincial Accountant, P.O. Box 373, Pietermaritzburg). **11th January.**

Bowl steriliser and steam-heated instrument sterilisers for Grey's Hospital, Pietermaritzburg: Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Provincial Accountant, P.O. Box 373, Pietermaritzburg). **15th February.**

Stainless tea ware and ward utensils for Government Hospital, Durban: Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Provincial Accountant, P.O. Box 373, Pietermaritzburg). **25th January.**

Drugs and surgical sundries: Chairman, Tender Board, P.O. Box 358, Pietermaritzburg (particulars from Medical Superintendent, Government Hospital, P.O. Box 977, Durban). **4th January.**

WATER SUPPLY AND IRRIGATION EQUIPMENT.

Pumping plant and electrical machinery for Towoomba Pasture Research Station, Warmbaths (tender S.O. 1030) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **5th January.**

MISCELLANEOUS.

Motor cutter (boat) for Government Guano Islands (tender S.O. 1015) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **16th February.**

Sea water, fresh water and compressed air installation at New Aquarium, Sea Point, Cape Town (P.W.D. tender No. 109) : Secretary, P.W.D., Pretoria, and District Representative, P.W.D., Cape Town. **5th January.**

Concrete mixers, portable, for Irrigation Department (Irrigation tender 206) : Controller of Stores, P.O. Box 277, Pretoria; Circle Engineer, P.O. Box 23, Cape Town; Circle Engineer, P.O. Box 3020, Port Elizabeth; Circle Engineer, P.O. Box 1018, Durban. **12th January.**

Inter-office communication system for Department of Justice (supply of) : District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **19th January.**

Fire pots (supply of: P.O. tender 706) : District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **12th January.**

Steel cabinets (supply of: tender S.O. 1049) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **19th January.**

Workshop machinery for Pretoria Dépôt, Department of Defence (tender S.O. 1039) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **26th January.**

Hammer mill, plough, circular saw bench and chaff cutter to Rust-der-Winter Settlement (tender S.O. 1053) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **12th January.**

Windlass for Native Affairs Department (tender S.O. 1050) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **12th January.**

Diesel locomotive for State Alluvial Diggings, Alexander Bay (tender S.O. 1051) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **2nd February.**

Carriage fittings for S.A. Railways & Harbours (tender No. 1891) : Tender Board, S.A. Railways & Harbours Headquarters, Johannesburg. **16th January.*** (See note below.)

Structural steelwork, etc., for S.A. Railways & Harbours (tender No. 2007) : Tender Board, S.A. Railways and Harbours Headquarters, Johannesburg. **30th January.*** (See note below.)

Wrought iron chain shackles for mooring for S.A. Railways & Harbours (tender No. 2010) : Tender Board, S.A. Railways and Harbours Headquarters, Johannesburg. **23rd January.***

(NOTE.—In the case of the three foregoing items, forms of tender, with full particulars, are obtainable from Stores Superintendents at Salt River, Uitenhage, East London, Durban, Bloemfontein, Pretoria; and Chief Stores Superintendent, Room 46, S.A. Railways & Harbours Headquarters, Johannesburg.)

Channels, reinforced concrete, for Department of Posts and Telegraphs (P.O. tender 699) : District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **5th January.**

Office wall-clocks (supply and delivery: P.W.D. tender S.4) : Secretary, P.W.D., Pretoria. **26th January.**

Coin-collecting boxes, telephone (P.O. tender 702) : District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, Post Office, Pietermaritzburg; Controller of Post Office Stores, Room 77, G.P.O. Annexe, Pretoria. **26th January.**

Lathe for Divisional Trigonometrical Survey, Moybray, C.P. (tender S.O. 1031) : Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **5th January.**

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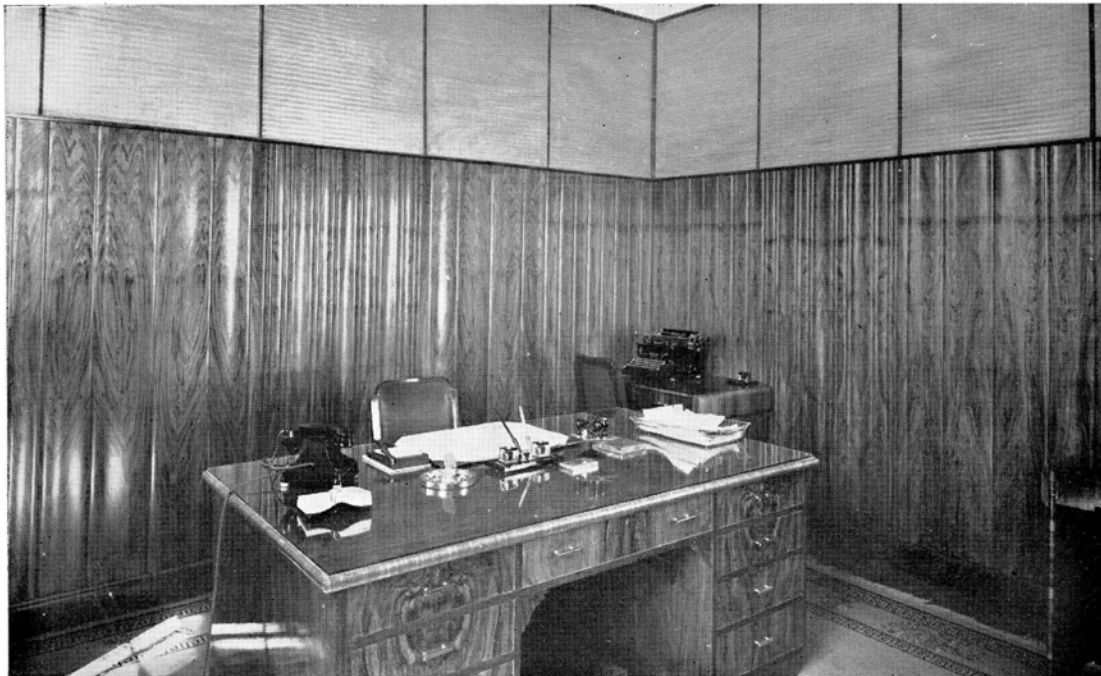
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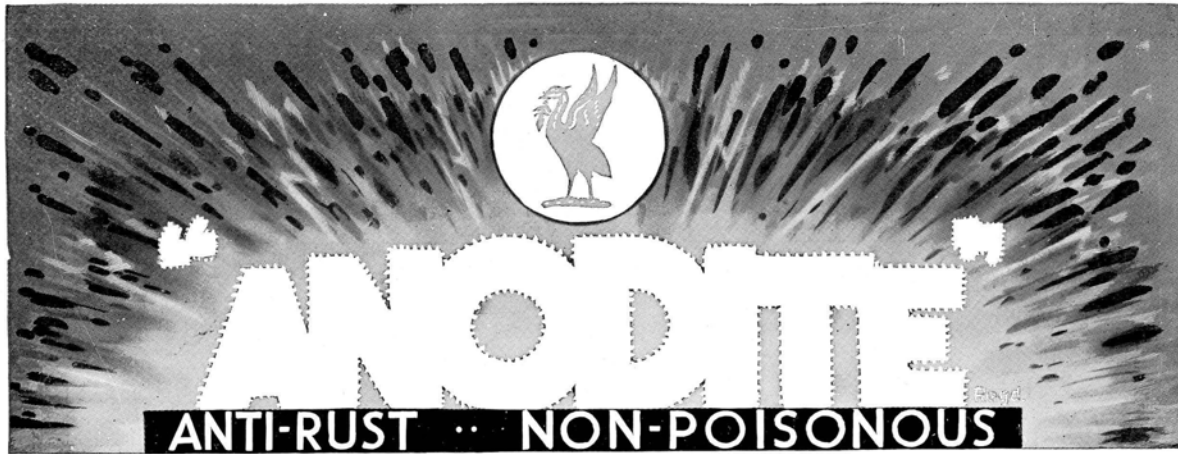
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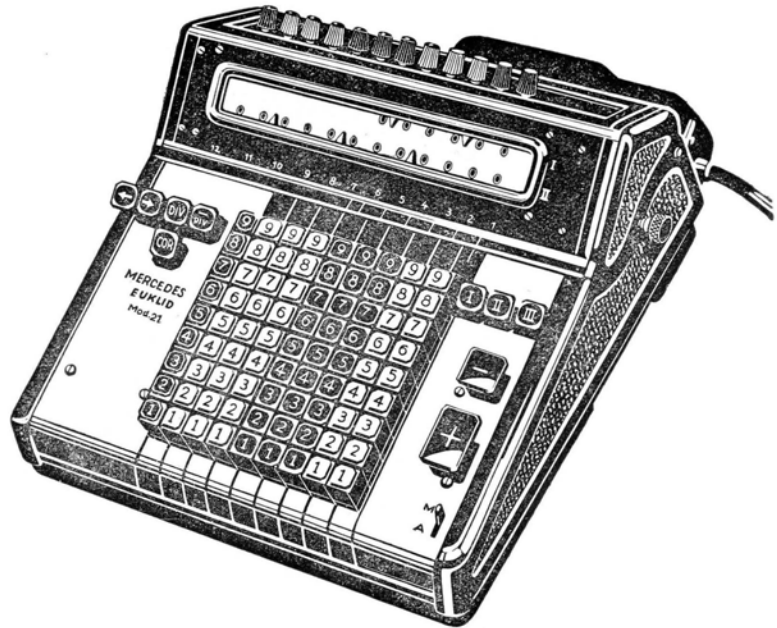
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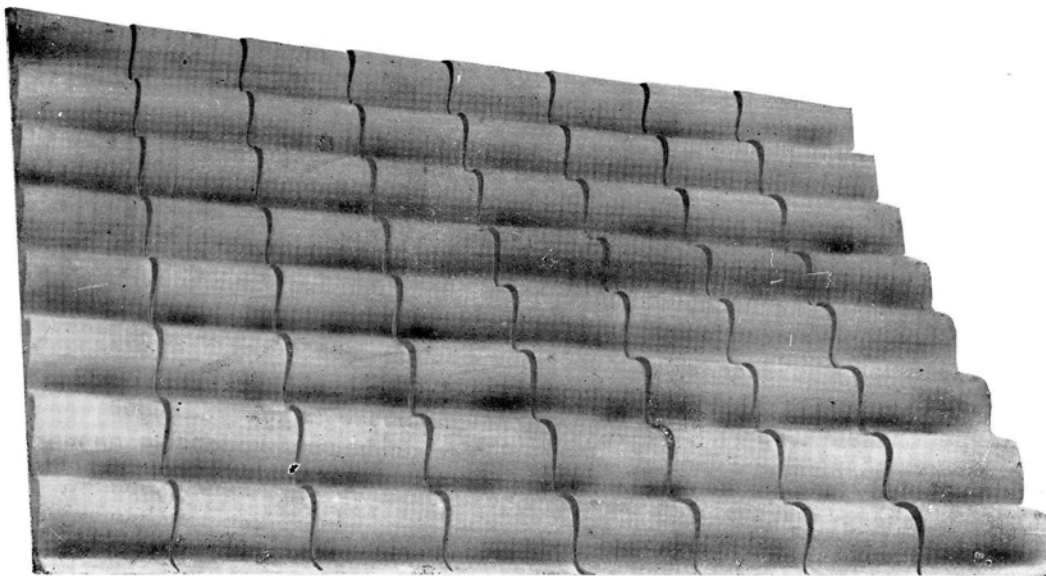
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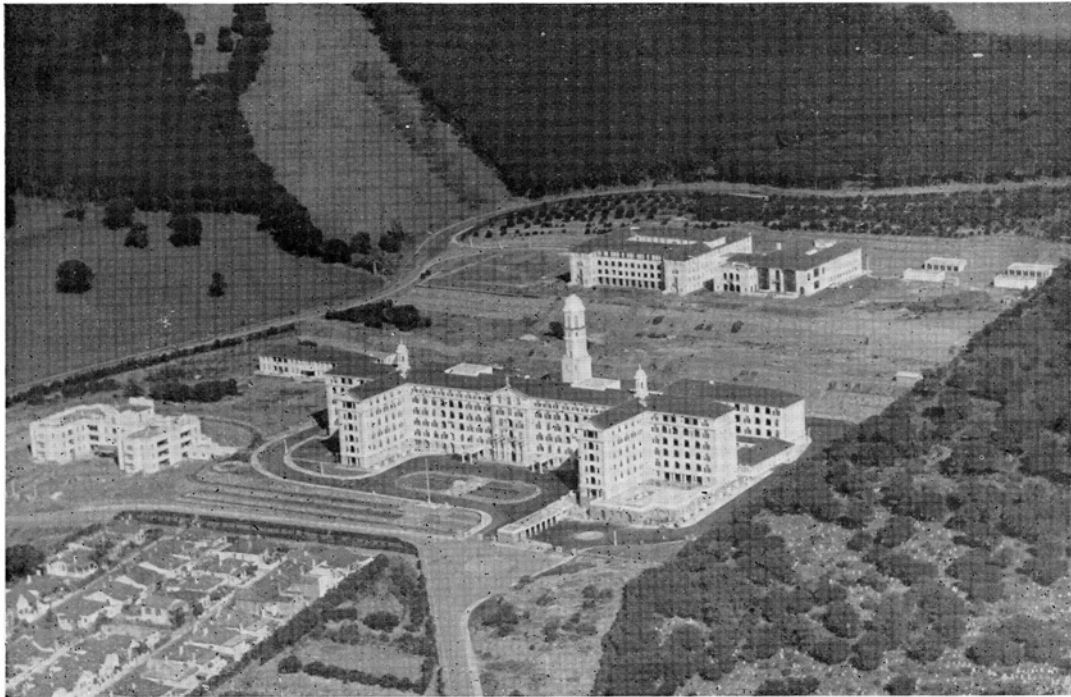
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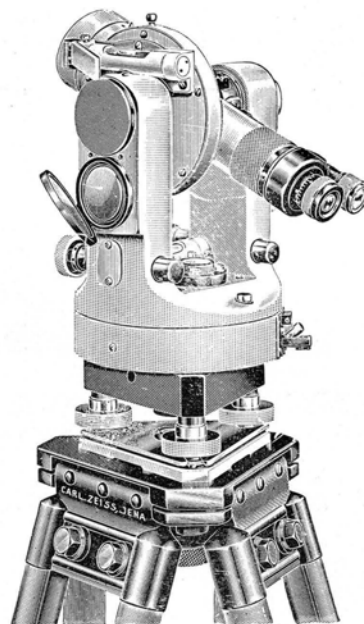
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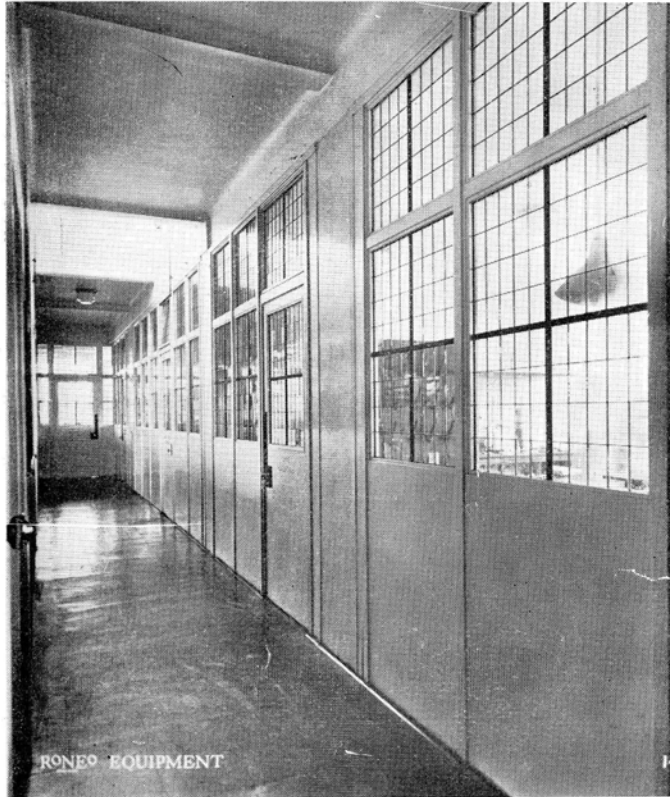
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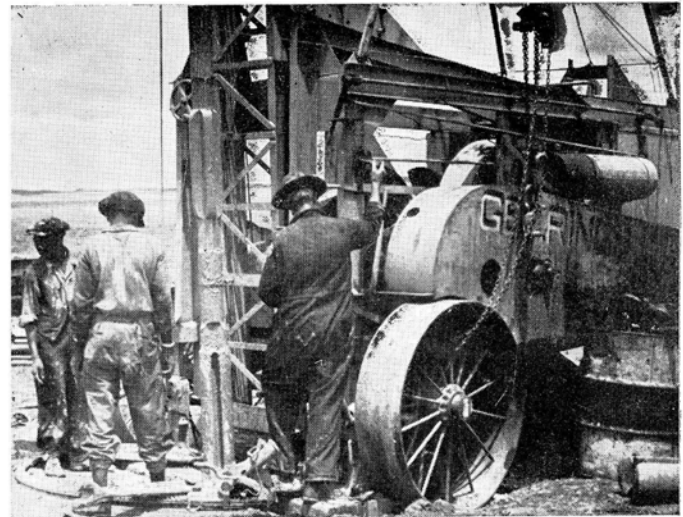
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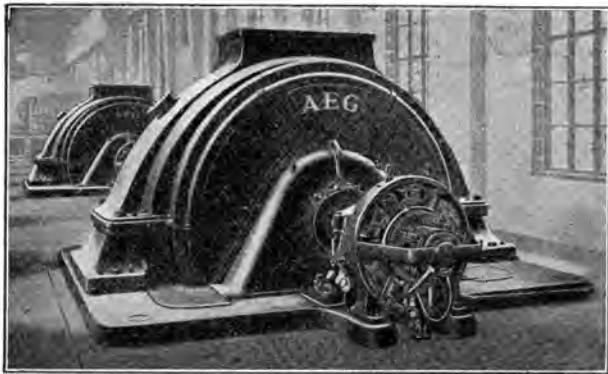
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