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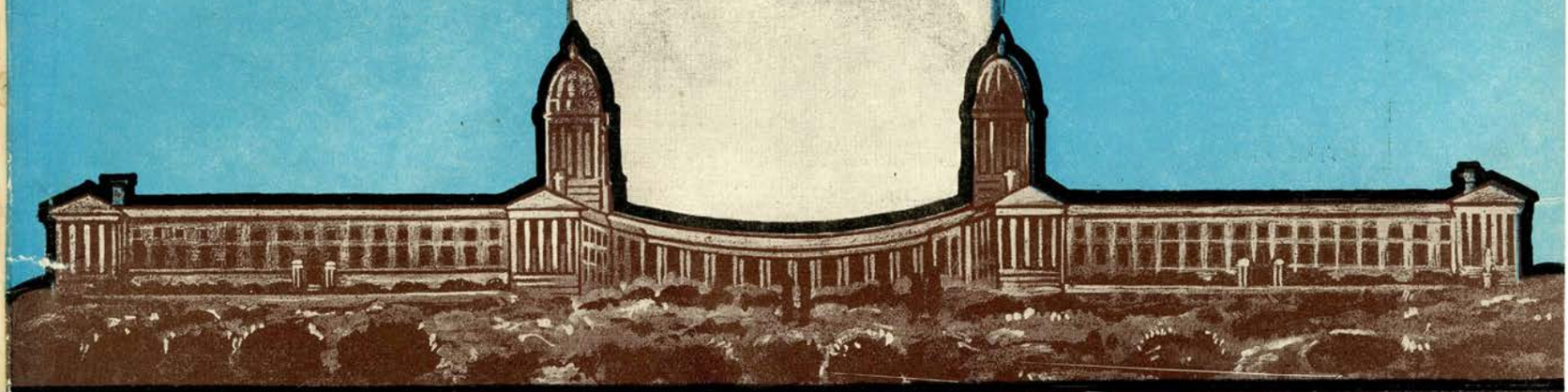
# PUBLIC WORKS OF SOUTH AFRICA



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# Public Works of South Africa

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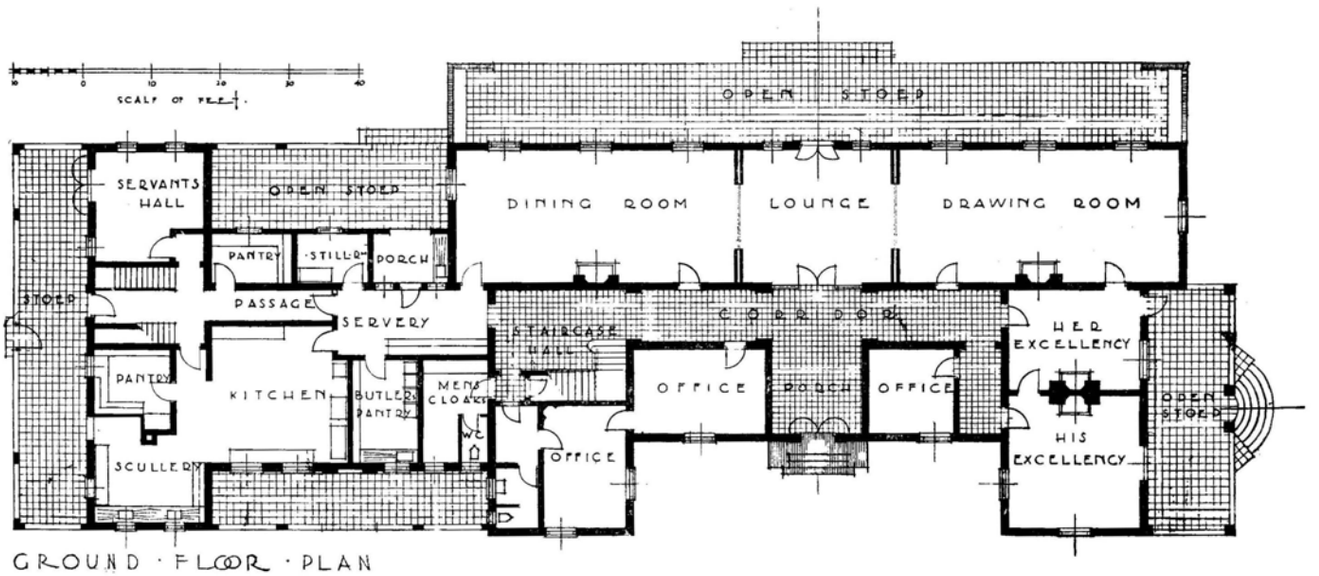



GROUND · FLOOR · PLAN

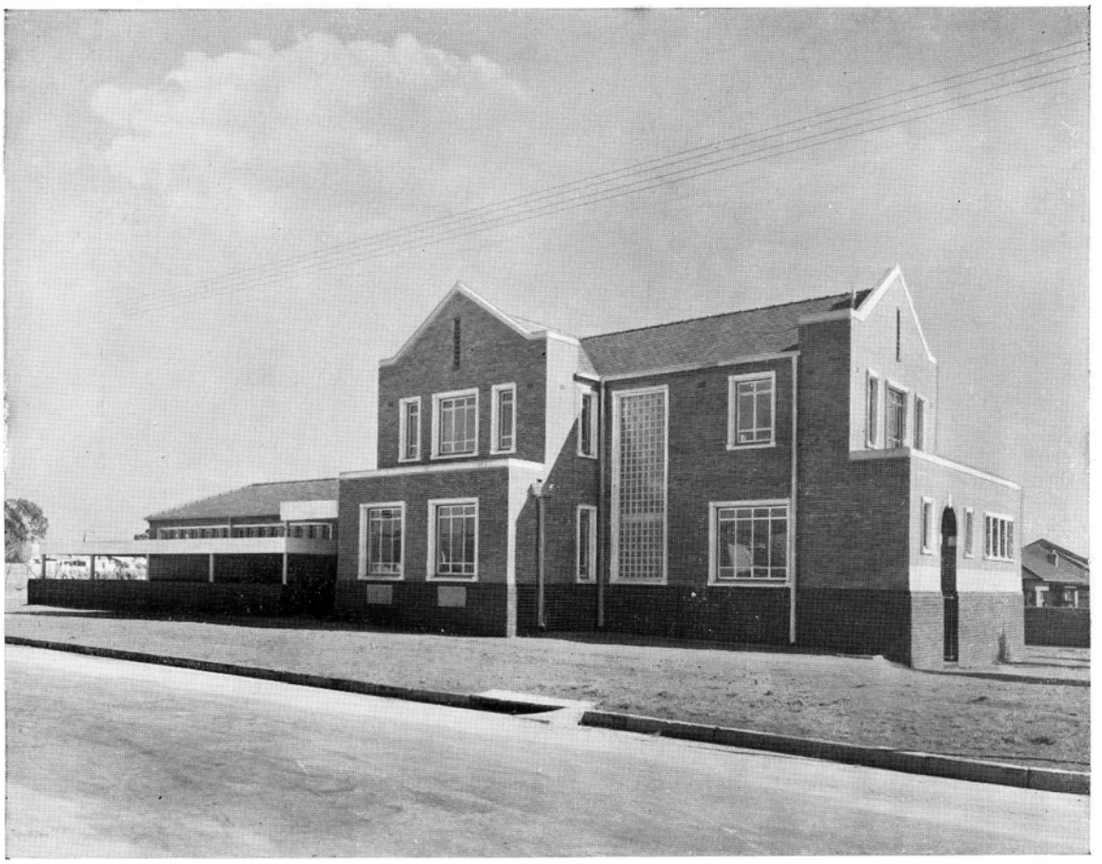
# Ground Floor Plan
# Of
# Governor-General's New Residence

# Start Made on Superstructure of Governor-General's Residence at Bloemfontein

SOME time ago we were able to present our readers with a south-west perspective and plans of the new residence at Bloemfontein for His Excellency, the Governor-General. We have now received from the Public Works Department the above perspective depicting the north-east elevation.

The residence is situated on a level platform halfway up the hillside between Arboretum and Signal Hill to the north of the town. The design is in the traditional South African manner with white plastered walls and gables. A special feature has been made of the flowered pergolas and long open stoeps. Local blue ironstone has been used for the foundations, and the roof is to be covered with plain-pattern Broseley red tiles. In the sketch is shown the large lawn bordered by flower beds and terraces of coloured shrubs. The lawn will be used for garden parties. The terraces will form a pleasant vista as they have been arranged to drop away down the hill to a belt of trees below. A swimming pool and tennis courts are included in the lay-out to the north of the house.

Tenders for the second contract were received last month, and the lowest has been recommended for acceptance. The amount involved is £19,243. A total of £3,000 is to be spent on electric lighting and cooking apparatus. The total amount of the grant was £30,000.



Alan Yates.

# New Benoni Clinic and Health Offices

# A NEW APPROACH TO CLINIC DESIGN

## ★ An Extension Of Utility In New Benoni Clinic & Health Offices

*AS an independent and self-contained unit, the modern polyclinic is, comparatively speaking, a newcomer to architecture in South Africa. It is therefore a subject of which it may be said that the full conception of its purposes and possibilities has not yet had time to develop socially or find its intrinsic expression in architecture.*

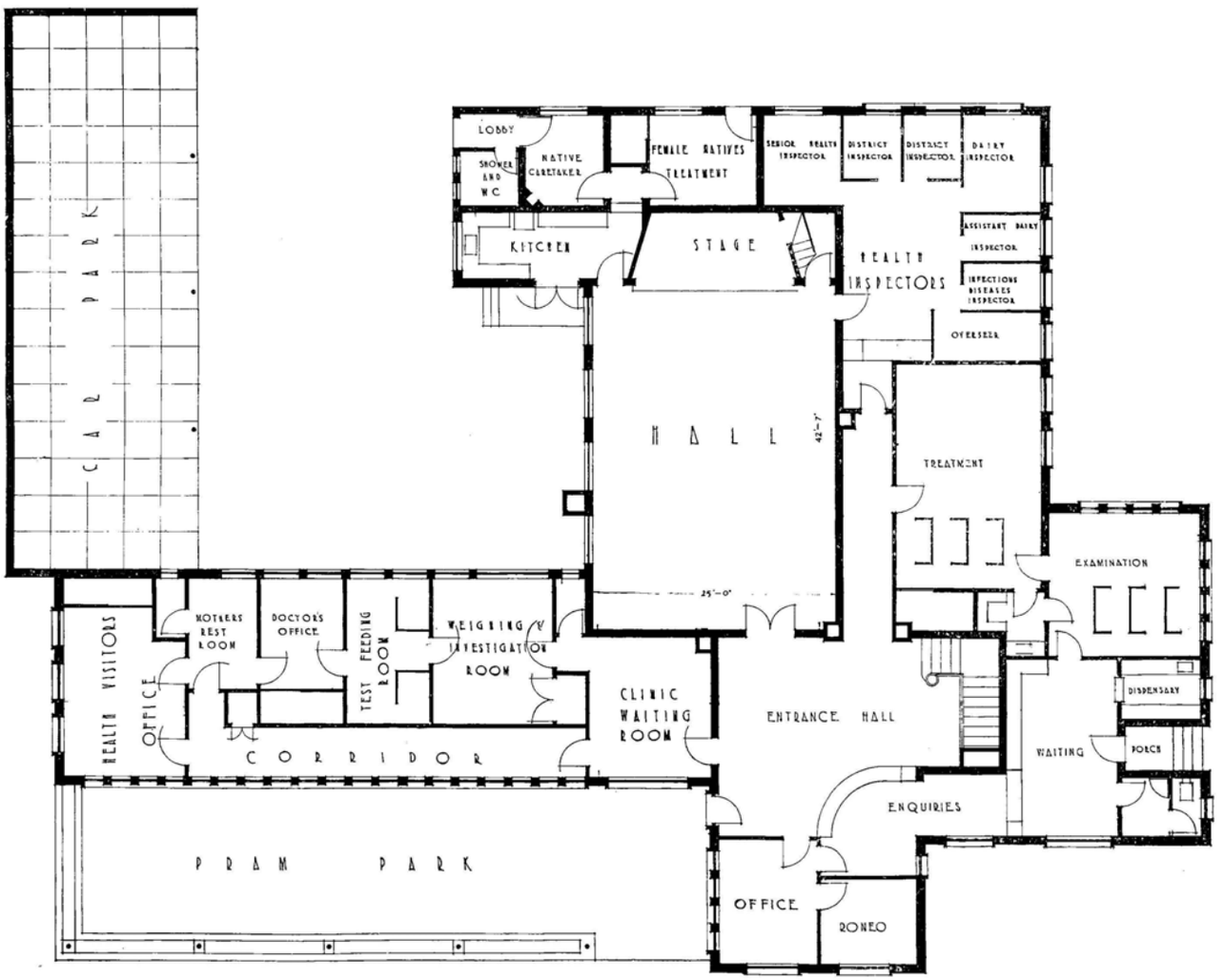
*Owing to its nature, the clinic presents a somewhat elastic subject to the architect for the reason that, although it may be considered merely as an offshoot of the hospital out-patients' department, it is capable of a wider extension of utility and a more intimate connection with the public. Up till recently the tendency in this country has been to regard the clinic as an independent branch of the hospital, with the result that the majority of these institutions perform a formal service and reflect a formal design.*

*It has been left to Benoni, where a new clinic has just been completed, to advance the subject a stage further by an extension of the utility of the institution through a more active conception of health work. One visible result of this extension has been the centralising with the clinic of all local activities relating to health, bringing under a single roof the administrative staff of the Benoni Public Health and Sanitary Departments, incorporating a local out-patients' department of the Boksburg-Benoni Hospital, and including accommodation for child welfare work, health inspectors and health visitors.*

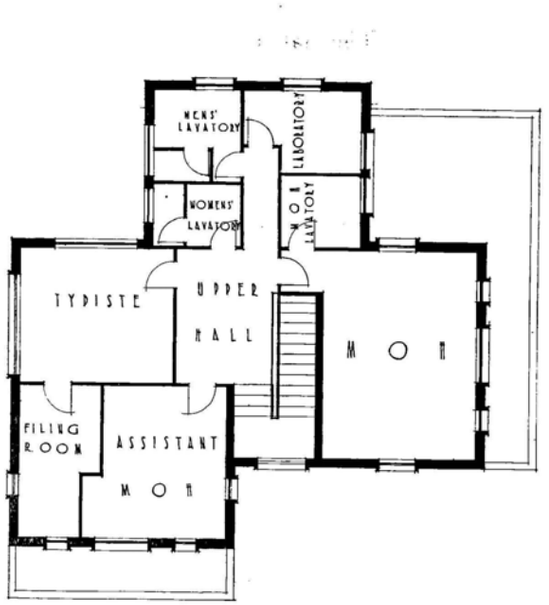
*This extension and centralisation has had an interesting reflection on the architecture of the new clinic and health offices; in effect, creating the problem of finding an expression for so many heterogeneous yet allied functions. For its solution the architect was assisted by the general policy of the Benoni Health authorities, who have adopted what may be termed a dynamic conception of health activity. Besides providing the usual clinic facilities and centralising health activity, their intention was to establish headquarters from which their "Through Education To Health" campaign could be effectively carried on.*

*A pointer to what was required architecturally was given by this motto. It suggested that the architecture of the headquarters must make an universal appeal, not academically, but psychologically, throwing health activity into the limelight and suggesting as far as possible its bright attributes of "progressive happiness". In short, the atmosphere of the building had to advertise the virtue and attractiveness of the activities conducted within its walls. This is something different from the natural principle of architecture, advertising a desired "state of mind" to be inculcated, rather than expressing a predetermined function. And yet it might be argued that it is the natural principle of architecture reorientated towards an innovation of function. In either case the conception of combining clinic facilities with those for extensive health propaganda is a new and important step forward.*

*For this reason the Benoni Clinic and Health Offices, completed in May, 1940, at a cost of £12,500, provides unusual interest both in its detail and in its general treatment. The architects are Messrs. Hawke, McKinlay and Sayce, who were ably assisted by Mr. George R. Groves, Clerk of Works.*




GROUND-FLOOR PLAN.




FIRST-FLOOR PLAN.

***A Matter of Concept:*** A BRIEF REVIEW of the activities carried out by the Benoni Health authorities will explain more clearly the intention of the architect in turning from the usual concept of expressing function to one suggesting the more abstract atmosphere of efficiency, cleanliness and health.

In addition to providing clinic facilities and carrying out hygiene and sanitary services, the aim of these authorities is to create a health consciousness among the citizens of Benoni. This is to be achieved by interesting the people in health matters, firstly through a direct appeal to their curiosity, secondly by teaching them to be practical in warding off sickness and disease, and finally by creating a health centre or bureau to which people will address their problems as readily as travellers approach a tourist bureau.

To reinforce this aim and make it possible, it was necessary to erect headquarters which would be suitable for clinic facilities, and, at the same time, attract people through its organisation and architecture. In the abstract, something suggesting efficiency within an atmosphere of homely informality was required.

This extension in the functions of the Health Department necessitated certain additions in accommodation, one of the most important requirements being a suitable lecture hall. This hall is to serve also as a museum, for it has been arranged to house in special cases around the walls a permanent health exhibition, constituting a cheerful and instructive visual demonstration of the principles of hygiene and sanitation. Models and posters also will show how surroundings such as houses and working places, clothing, pets, etc., affect health.

In addition to this exhibition, the public will be instructed by means of health demonstrations and the showing of health films, for which the hall is equipped with complete cinematographic apparatus. Further, the public is to be encouraged to use the hall for all meetings connected with health matters, such as First Aid and Home Nursing classes, Social Welfare study groups, as well as the meetings of all trained health groups such as doctors, dentists, nurses, chemists, chiropodists, etc. The hall is to be open to boy scouts and girl guides as a venue for the study of First Aid and Hygiene, and to women's organisations for the study of Nutrition, for which purpose a model kitchen adjoins the hall. Schools are also to be encouraged to send their classes for lessons in Hygiene, and, finally, instruction is to be given to all those persons who handle public food in shops, hotels, restaurants, etc., on the ways in which food may be contaminated, how to avoid this and how to safeguard public health.

It will be seen from this that the Benoni Health authorities are adopting a very extensive programme, extending the utility of the clinic so far beyond its original bounds that a reorientation of conception in regard to architectural requirements was imperative.

* * *

***How the Idea is Expressed:*** THE building is on a corner site, facing Elston Avenue on the south and Rothsay Street on the east. In shape the plan is a blunt V, the wings of which are at right angles. These wings are single storey, but at the junction the building has a first floor, housing the Medical Officer of Health, his assistant, the clerical staff, a small laboratory and lavatory accommodation. The Elston Avenue façade contains the main entrance leading in from a covered pram park.

The elevations are carried out in 2″ light ironspot facing-bricks laid with deep joints and rising from a plinth of 3″ dark blue bricks. The gables and parapet walls have a coping of white polished terrazzo above aluminium-painted guttering, which in turn is set above a three-storeyed course of quarry tiles. The pram park is defined by a heavy concrete slab canopy, biscuit-coloured, supported on aluminium-painted steel columns rising from a blue brick flower-box wall enclosing the park. All door and window openings have white polished terrazzo architraves, the windows being steel frames set in teak surrounds within the architrave.

Further definition is given to this façade by a continuous glass brick panel flanking the gable. This also has a white polished terrazzo architrave, and serves to illuminate the enquiry office on the ground floor and the stairway from the intermediate landing upwards. There are no window openings on to the pram park, but a continuous row of clerestory lights above the canopy illuminates the south corridor in this wing.

The east elevation has a single gable containing a porchway entrance picked out by a blue brick arch with terrazzo key and base stone. The porchway entrance is further embellished by means of a pair of teak wicket gates. The arch above the gates is filled in with a scroll wrought-iron grille. All external doors are glazed with double or cross-reeded glass, and finished with dull nickel fittings and kicking plates. Rainwater and other pipes are hidden. A pitched roof covered with silver-grey slate tiles with red saddlebag arching contributes largely to the fine appearance of the building and helps to create a strong first impression of polish and neat workmanship.

* * *

***Accommodation and Plan:*** THE clinic and offices include quarters for all the administrative staff of the Public Health and Sanitary Departments, all clinic facilities for European ante-natal and infant welfare work, such as mothers' rest-room, test feeding-room, weighing-room, etc., a clinic for European venereal disease cases, an out-patients' department of the Boksburg-Benoni Hospital, a lecture hall to seat about 150 persons, a small laboratory, and a room for the medical examination of Native females.

***Ground Floor:*** THE main problem in planning was to combine these units under one control, and yet keep each separate and complete in itself. The plan finally decided upon is a blunt V with its wings at right angles and the angle partly filled in by the lecture hall and kitchen unit.

From the main entrance in Elston Avenue is gained a large entrance hall with enquiry counter. This hall leads off into a corridor and separate waiting-room serving the European ante-natal clinic in the west wing, the lecture hall in the centre and a corridor serving the Health Inspector's apartments at the end of the north wing. The stairway to the upper floor is in this hall.

These sections just mentioned are separated from the European venereal disease clinic which has its entrance and waiting-room on the Rothsay Street side. This waiting-room also opens over a counter to the main enquiry office. A dispensary and lavatory flank the porchway entrance, and, leading off the right-hand side of the waiting-room, is an examination room with isolated cubicles constructed on a square U-plan in brick partition walls. This room communicates with the out-patients' treatment room, also equipped with isolated partition-wall cubicles. Between these two departments, with separate access from each, is a urinal testing room.

In order to save space, the Health Inspector's office comprises one large room serving as a general office, with a public counter, and a perimeter divided off by brick partition walls into a number of office cubicles. This is permissible because health inspectors spend a good proportion of their time on outside duties.

At the rear of the building is a section for the treatment of Native females, and a Native caretaker's room, with lavatory and shower.

The yard is flanked on the west by a covered car park. Both the yard and its approach from Rothsay Street are tar-macadamised.

***Upper Floor:*** THE upper floor contains a central stair hall from which radiate the Medical Officer of Health's office with private lavatory, an office for the Assistant Medical Officer of Health, a filing room, a typists' room, a small lavatory, and a convenience block for males and females.

***Internal Treatment:*** THE internal finish is generally simple, relying for its attractiveness on colour and good workmanship. All mouldings that would harbour dust have been eliminated. The walls are covered with hard gypsum plaster, finished in cream and green. The floors are covered with marble-coloured linoleum, and the ceilings are of rhino board with round cover fillets. Lavatory and laboratory walls are finished with white-glazed tiles, and all internal doors are glazed in single panels with rough-cast wired Georgian ¼-plate glass.

In the office of the Medical Officer of Health there is a dado of raised teak panelling carried up to door height, the architraves to doors and windows being in teak also. In the office of the Assistant Medical Officer of Health the walls have green-painted raised wood panelling up to window-cill height.

In certain rooms, notably the lecture hall and treatment room, where cross-ventilation was not considered sufficient, a simple system of air-conditioning has been installed. Every room is heated by means of the electric tubular system and there is an abundance of hot water at the lavatory basins.

***Lecture Hall:*** THE lecture hall is large enough to seat approximately 150 persons. It is 25 ft. wide and 42 ft. 7 in. long. It has a recessed stage 8 ft. 6 in. deep, finished with a prescenium carried out in moulded gypsum plaster.

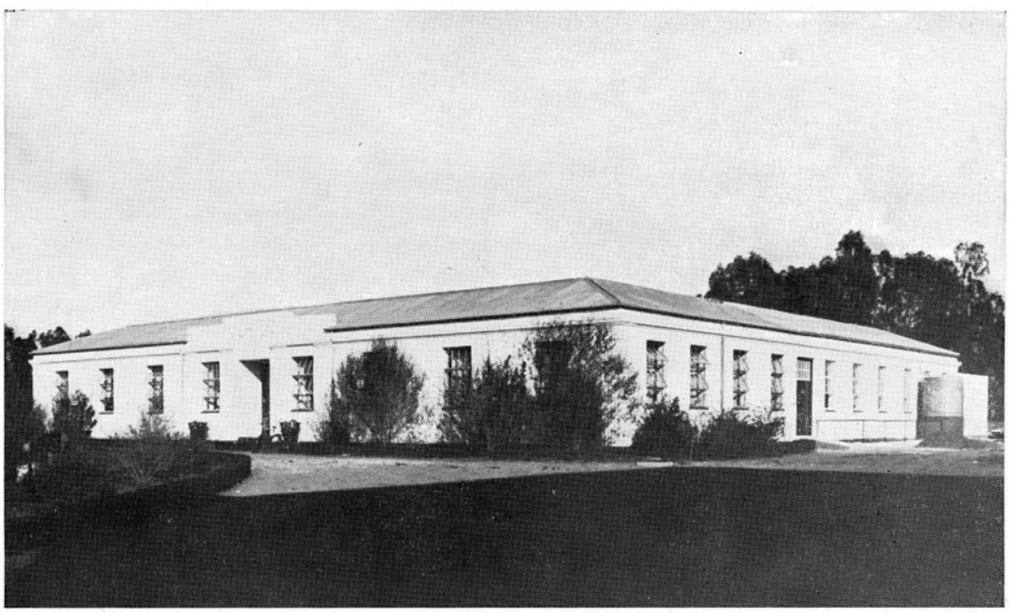
A very effective atmosphere has been created in this hall by the choice of quiet colours. The walls are panelled up to a height of 6 ft. in hardboard with vertical ¾ in. joints, the colour of the dado being French grey. The coping to the dado is in a slightly darker shade of this colour, which is repeated on the stage proscenium. Above the dado the wall is finished in ivory-coloured celotex acoustic plaster. Above the dado on the rear wall of the hall the finish is perforated celotex tiles 18 in. square. Apertures for cinematographic projectors are included. The back of the stage is fitted with a blackboard and a roll cinema screen. The floor is covered with linoleum.

In the north-west corner of the hall there is an entrance to the small kitchen, which is well equipped with solid built-in fittings, including an electric stove. The hall has a double-swing exit door to the yard and car park. Other doors to the hall are of the flush-panel type repeating the same shade of grey used on the dado.

This completes the description of the new Benoni Clinic and Health Offices. A basement has been included, allowing ample storage for chairs, noxious chemicals, records and accommodation for boiler plant and incinerator.

# HOW PROGRESS IN UNION'S WOOL INDUSTRY IS ASSURED

## A Review of the Scientific Research Work conducted at the Onderstepoort and Grootfontein Wool Laboratories



ONDERSTEPOORT WOOL LABORATORY.

THE production of wool to-day is one of South Africa's best industries. Besides affording an annual revenue of about £12,000,000 to the country, it represents an asset which will expand in direct proportion to the effort made to improve production and marketing. The qualitative and quantitative improvement of our wool clip is of vital interest to the industry, particularly because the competition of synthetic fibres in the manufacture of textiles has thrown out a severe challenge to natural wool, making it imperative for the South African wool farmer to co-ordinate an improvement in his clip with reduced overhead costs.

For this reason the Union Government has established research laboratories at Onderstepoort and Grootfontein. The Onderstepoort Laboratory has been established some time, and has already achieved results of a fundamental nature. It is now being extended, while that at Grootfontein is at present only in the course of erection.

The wool industry of the Union has been built up largely on the practical experience of the farmer who, until recently, had resort only to his knowledge and practice to secure the best results. To-day, when a total of £160,000,000 is invested in wool production, the farmer has the backing of scientific research.

The establishment of wool research laboratories is a comparatively recent one for it was not very long ago that all wool research work was centralised at the Government Laboratories at Onderstepoort, which are situated about 10 miles to the north of Pretoria. It was not long before the South African Wool Council realised the important part research was playing in the development of synthetic fibres for modern textile manufacture, and accordingly set out to encourage more research into the problems of the South African wool producer. The result has been the extension of the Onderstepoort laboratory and the erection of a new laboratory at the Grootfontein College of Agriculture. Both buildings were made possible because of funds created by a levy of 1s. on every bale of wool sold. The farmers were thus able and willing to contribute directly to the expenses of the scheme.

The laboratory buildings are not of much architectural interest, except in one or two structural details ; but the work they are performing is a highly important public activity which should find considerable interest among our readers.

Work at these two institutions will be mainly the study of wool from the producers' point of view. This differs from that in progress in overseas institutions where wool is studied from the wool manufac-

turers' point of view. The wool producer is more concerned with such subjects as breeding, nutrition, grazing and the effects of environment, as well as the classification of wool clips and the problems of marketing.

At the Grootfontein laboratories an extensive study of the breeding of Merino sheep will be made. These laboratories are ideally situated for this purpose, being in the Middelburg district, Cape, the centre of a big sheep-breeding area.

***Departments of Research:*** THE laboratories at Onderstepoort are very well equipped with the latest apparatus devised for the testing of wool. Research activity is divided among the following departments: wool washing or scouring and weighing rooms, chemistry laboratory, the humidity chamber in which work of a very delicate nature is performed under controlled conditions of humidity and temperature, a physics laboratory, a photographic section and a field department. Other accommodation and equipment includes an air-conditioning plant, stores and large rain-water tanks. Soft rain-water is essential for the washing or scouring of wool. There is, in addition, a small museum containing specimens of fleeces representing the yield of sheep in different states of health, other specimens of fleeces showing different stages of spinning, specimens of pure woollen material, and, by way of contrast, foreign cloth of synthetic manufacture.

***Washing:*** THIS department has developed considerably recently. The wool sent in by sheep breeders for testing is washed in soft rain-water and all fat, dirt and other impurities carefully removed. This is important, for the fleece contains large quantities of impurities, there being 20 per cent. by weight of lanolin or animal fat, and 8 per cent. by weight of potassium salts contained in the sheep's sweat dried in the wool.

Besides the necessity for cleaning the wool fibres thoroughly for the purposes of breeding and research, it is necessary also in analysing fleece in other ways. These impurities discolour the fleece, and it is important to discover whether the discolouration may be removed by washing. One type of discolouration does not wash out and consequently detracts from the value of the wool. After cleansing the wool, samples are handed over to research workers in other sections of the laboratory.

The analysis of these scouring liquors, as they are called, is showing that the wool yolk is a valuable source of potassium salts and other products which up till recently have been imported from Germany. There are few wool washeries in South Africa, but it has been shown that the scouring liquors obtained from those washeries at present operating in the country contain enough potassium salts to supply present South African requirements. The economic recovery of these salts and other by-products from the wool washeries is being investigated, and promising possibilities have been shown. Lanolin itself is an important substance which could be utilised in the manufacture of cosmetics, as it is recognised as a remarkable skin food.

***Chemistry Section:*** IN this section the chemistry of the Merino fleece is studied from nutritional, breeding and other aspects. Experiments are now in progress in which the sheep are fed on rations and the response studied.

Another line of work carried on in this department is the testing of textile materials for wool and other fibre content. This type of work has developed considerably recently, due largely to the wool propaganda campaign and wool queen competitions undertaken by the South African Wool Council.

*A corner in one of the Wool Research Laboratories showing on the right-hand side the continuous glazing to the Constant Humidity chamber. By means of an air-conditioning plant the air in this chamber is accurately kept at 65% relative humidity and 70° Fahrenheit.*

***Humidity Chamber:*** THIS is perhaps the most interesting part of a wool research laboratory. The humidity chamber is designed to provide air conditions which will enable the experts to conduct studies in constant temperatures of 70° Fahrenheit and 65 per cent. relative humidity. These conditions are essential as the work done has to be so accurate.

It has been found that air currents against the sides of the glass cabinets that house the weighing scales set up static electricity which interferes with the delicate weighing that has to be performed in this section.

These chambers are carried out with timber studding, rails and joists, etc., with cork insulation to the walls and floor. The ceilings are also insulated. The entire chamber is lined externally with pressed wood boarding finished flush, with polished metal stripping to the angles. The windows are of double-thickness plate glass, with an air space between the inner and outer sheets. A suitable air baffle has been provided to the door to the chamber at Grootfontein, as it was found at Onderstepoort that a rise in temperature resulted through contact with the outside atmosphere.

All the air in this chamber is changed approximately 50 times an hour, and the air-conditioning plant ensures an adequate supply of pure fresh air at the constant predetermined temperature and humidity mentioned above.

***Biological Studies:*** IN the biological department samples are studied from such aspects as fleece density or the number of fibres growing to the square inch of animal skin. It is interesting to note in this regard that the Merino sheep grows between 40,000 and 50,000 fibres per square inch of skin compared with the possible 1,000 hair fibres on man. Fibre length, quality and uniformity are also studied.

It has been shown in this department that fibre durability, felting property, specific gravity and fibre resilience can be influenced by breeding. This work has also been supplemented by studies on the correlation of characteristics, so that characteristics visible to the eye are correlated with those not easily determined by practice. For instance, where a breeder breeds for exceptional length, or a quick-growing wool, he is unknowingly influencing the basic characteristics of the wool. These characteristics are also influenced by crimping and other characteristics which are visible to the breeder. The extent to which tensile strength, felting property, specific gravity, resilience, whiteness and other factors are influenced by feeding is also being studied.

It has been shown that certain grass-veld wools, on account of the poor winter pastures, lack the desired tensile strength and tend to have a lower specific gravity than do wools from other areas. It has been shown also that Karroo wool is in general whiter than grass-veld wools, and for certain purposes is in keen demand by wool manufacturers. These problems are being further studied in controlled feeding experiments, one of the problems being to ascertain whether wool in areas where deficiencies occur may be improved by supplementary feeding. In general, the aim of these investigations is to enable the wool farmer to know how to influence from production aspects the basic characteristics of his wool. In this respect the wool producer is at a disadvantage compared with synthetic fibre concerns, which, as the result of intensive research, control the basic characteristics of synthetic products during the manufacturing process.

A further series of experiments conducted in this department is the study of the merits and demerits of plain-bodied and developed types of Merino sheep. Developed types are those which through generations of specialisation have certain characteristics such as heavy skin folds. This has become a controversial subject in recent years among sheep farmers in this and other countries. Australia, for instance, has reverted from the extremely developed, wrinkled or skin-fold animal to the plain-bodied animal. Skin folds affect uniformity and the sheep are difficult to shear. There are other characteristics associated with skin folds, for when sheep are heavily folded they are inclined to be small, and lack the drought-resistant powers of the well-built sheep. Other aspects, such as the commercial value of "good" and "weak" bellies, "good" and "weak" points, etc., are being investigated.

The biological department is also studying the inheritance of fleece characteristics such as fleece density, length, fibre fineness, uniformity, total wool produced and the body characteristics of the animal in relation to inbreeding and line breeding, as well as the influences of this on tensile strength, fibre durability, scaliness, cell structure and yolk production.

Studies on wool production from feeding aspects have been undertaken in collaboration with the nutrition department at Onderstepoort. The work entails grazing experiments on deficient winter pastures in grass-veld areas in relation to the food requirements of the Merino and its wool production. Other work has reference to mineral requirements of animals and their wool production.

Nutrition work is being developed to include studies on the food requirements of stud Merinos (or high producers) compared with flock or low-producing Merinos, and also the food requirements of different types of Merinos, for example, plain-bodied, developed, strong-woolled, fine-woolled, short dense-woolled, long loose types, etc. This is fundamental work which is of the greatest importance to sheep breeders and wool farmers, and must form an important basis for large-scale feeding experiments.

The work in the physics laboratory includes the testing of the resilience of the fleece and its pliability. In the first experiment a certain quantity of fleece is placed in an instrument which is fitted with a heavy metal pendulum. As the pendulum swings it compresses the fleece during a certain period of its stroke, being freed during the remaining period by an escapement device. The fleece naturally offers resistance to the pendulum, reducing its oscillations which are automatically recorded. When put through a formula the number of oscillations determine the resilience of the fleece.

The test for pliability is also of interest. In this a single wool fibre hardly visible to the eye is suspended from a rod in a small electrical apparatus. A small weight is attached to the free end in such a way that when the fibre breaks the weight presses down a pen on to a revolving drum on which is fixed a sheet of graph paper. The bar from which the fibre is suspended is then oscillated until the fibre breaks. The drum revolves slowly in accordance with the number of oscillations. The action of this machine is such that the fibre under test is bent backwards and forwards. Wool fibres withstand constant bending up to 7,000,000 times, whereas synthetic fibre will stand up to only 2,000 times.

***Photographic and Wool Measuring Section :*** THIS section is provided with dark-rooms, slide-preparation rooms and micro-camera cubicles. The latter instruments — micro-cameras — are of interest. This instrument is really a form of microscope in which the enlarged image is reflected on to a diffused glass screen so that the subject may be studied in comfort and without eye strain. The weight, thickness and characteristics of a single wool fibre, which is only one-sixth of the diameter of a strand of human hair, may be studied with ease. A further test carried out in this section determines the degree of whiteness of the fleece. The instrument for determining this is a simple arrangement in which the fleece is subjected to a strong ray of white light. The light reflected from the fleece is concentrated on a photo-electric cell which, as every one knows, offers less resistance to electric current when under the influence of light. The degree of current passing through the cell is measured on an ammeter. This reading varies with the amount of light reflected off the fleece, and accordingly determines its whiteness.

***Buildings :*** THE limited funds available for these services, coupled with the fact that the equipment and fittings to the laboratories had to be of the very best, necessitated the simple treatment of the elevations.

The main elevations have symmetrical fenestration with embellishments to the entrances. The windows are of an unusual type, the astragals to the lower portions having been omitted to render the wall benches in the laboratories free from shadows. This is of vital importance where microscopic observations are being made.

The buildings are planned round large courts which are laid out with gardens and lawns. The various laboratories and offices are well lighted and ventilated, and every possible consideration has been given to the comfort of the staff, and to the smooth working of the different sections of the institutions. The buildings are provided also with a library and offices, where research workers may refer to technical books and make reports on the tests which they have carried out in the course of their work.

The Laboratories were designed by the Chief Architect and staff of the Public Works Department, Pretoria, working in conjunction with the experts of the Department of Agriculture.

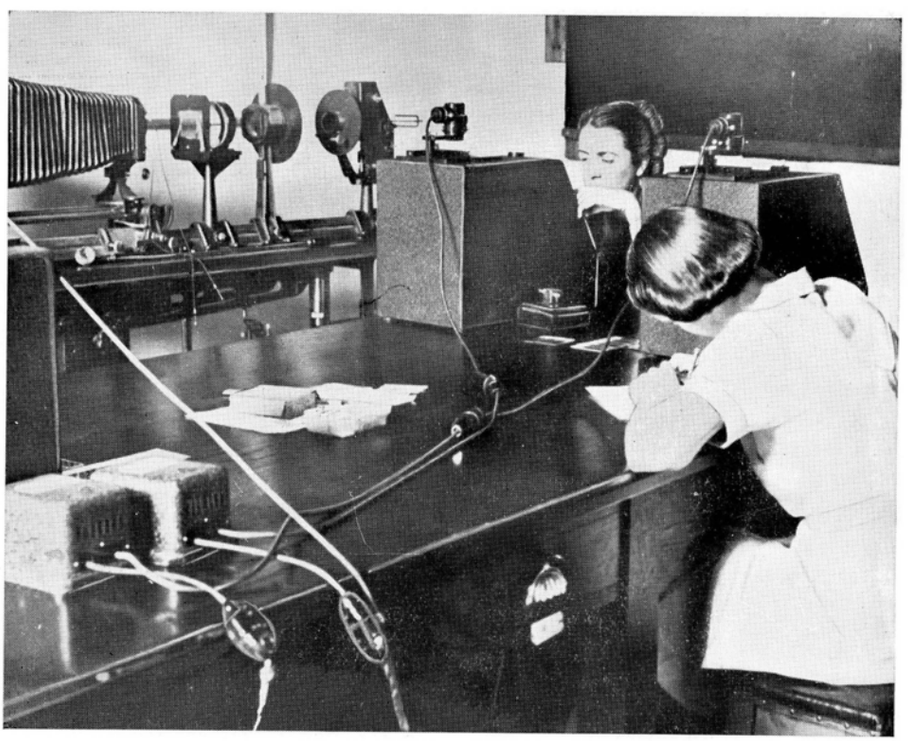


Photo: "The Farmer's Weekly."

*A section of the dark room at the Onderstepoort Laboratories showing staff at work with the micro-cameras. With these instruments the thickness and characteristics of a single wool fibre may be determined by direct readings. The enlarged picture of the fibre is thrown on to a calibrated screen before the operator.*

# 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 application should be made, are given.

## AIR-CONDITIONING.

**Air-conditioning plant** for New Magistrate's Courts, Pretoria: supply, delivery and erection (P.W.D. tender 687); P.W.D., Pretoria (Room 531). **22nd August.**

## BUILDINGS AND ALTERATIONS, ETC.

**Alterations and additions and installation of waterborne drainage,** at Gaol and Gaol Hospital, Middelburg, Tvl. (P.W.D. tender 705): P.W.D., Pretoria (Room 531). **1st August.**

**Additions to School for Coloured Children at Pietermaritzburg** (P.W.D. tender 709): P.W.D., Pretoria (Room 531), and District Representative, P.W.D., Pietermaritzburg. **7th August.**

**Additions to Hertzogville School, O.F.S.:** Secretary, School Board, Boshof. **2nd August.**

## CHEMICALS, LABORATORY EQUIPMENT, ETC.

**Fruit tree spraying material** for Stellenbosch-Elsenburg College of Agriculture, Stellenbosch (tender S.O. 988): Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **15th August.**

**Thermostats and control thermometers** for Onderstepoort Laboratory (tender S.O. 1025): Union Tender and Supplies Board, 271 Visagie Street (P.O. Box 371), Pretoria. **3rd October.**

## COOKING EQUIPMENT, ETC.

**Electric cooking apparatus and refrigerators** for Hospital, Ladysmith: supply and delivery (P.W.D. tender 713): P.W.D., Pretoria (Room 531). **9th October.**

**Electric cooking apparatus and refrigerator** for New G.P.O., Bloemfontein (P.W.D. tender 714): Particulars as above. **10th October.**

## DRAINAGE AND SANITATION.

**Installation of waterborne drainage,** and alterations and additions, at Gaol and Gaol Hospital, Middelburg, Tvl. P.W.D. tender 705): P.W.D., Pretoria (Room 531). **1st August.**

## ELECTRICAL EQUIPMENT.

**Battery (20-cell),** supply of (P.O. tender 875): District Stores Superintendents at Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, P.O. Pietermaritzburg; Controller of P.O. Stores, Room 77, G.P.O. Annexe, Pretoria. **22nd August.**

**Blended mercury vapour and tungsten electric light fittings** for New Post Office, Bloemfontein: supply and delivery (P.W.D. tender 694): P.W.D., Pretoria (Room 531). **22nd August.**

**Cable** for G.P.O., Cape Town: supply and delivery (P.W.D. tender 688): Particulars as above. **22nd August.**

**Wireless transmitter and receivers** for S.A.R. & H. Administration (tender 2808): Railway Stores at Salt River, Uitenhage, East London, Durban, Bloemfontein, Pretoria: and Chief Stores Superintendent, Park Chambers, Johannesburg. **19th August.**

**Distribution boards, switches, fuses, etc.:** supply and delivery to P.W.D., various centres (P.W.D. tender S.32): P.W.D., Pretoria (Room 513). **3rd October.**

**Generators, magneto, motor-driven,** supply of (P.O. tender 880): District Stores Superintendents, Johannesburg, Cape Town, Port Elizabeth, East London, Durban, Bloemfontein; Divisional Controller, P.O. Pietermaritzburg; Controller of P.O. Stores, Room 77, G.P.O. Annexe, Pretoria. **10th October.**

**Crude oil engine lighting plant** for Agricultural College, Glen, O.F.S.: supply and delivery (P.W.D. tender 710): P.W.D., Pretoria (Room 531). **10th October.**

## FURNITURE, FITTINGS, ETC.

**Steel fittings for library** in Census and Statistics Office Block, Pretoria: supply, delivery and fixing (P.W.D. tender 712): P.W.D., Pretoria (Room 531). **8th August.**

## HOSPITAL AND SURGICAL EQUIPMENT.

**Portable X-Ray Plant** for Eshowe Hospital: Provincial Accountant, P.O. Box 373, Pietermaritzburg. **14th August.**

**Theatre equipment** for Non-European Block, Port Shepstone Hospital: Particulars as above. **21st August.**

**Self-propelling invalid chair** for Hill Crest Hospital, Natal: Particulars as above. **25th September.**

## LAUNDRY EQUIPMENT.

**Laundry machinery, steam disinfector and electric motors** for the Krugersdorp Mental Hospital (P.W.D. tender 711): P.W.D., Pretoria (Room 531). **10th October.**

## REFRIGERATING PLANT.

**Refrigerators** and electric cooking apparatus for Hospital, Ladysmith: supply and delivery (P.W.D. tender 713): P.W.D., Pretoria (Room 531). **9th October.**

**Refrigerator** and electric cooking apparatus for New G.P.O., Bloemfontein (P.W.D. tender 714): Particulars as above. **10th October.**

## ROAD-MAKING EQUIPMENT.

**Ploughs** for Tvl. Prov. Admin. (tender 102/1940): Controller of Provincial Stores, P.O. Box 857, Pretoria. **7th August.**

**Rotary scrapers** (Fresno) for Tvl. Prov. Admin. (tender 103/1940: Particulars as above. **7th August.**

## MISCELLANEOUS.

**Blueprint machine** (P.O. tender 876): District Stores Superintendents, Cape Town, Durban, Johannesburg, Bloemfontein, Port Elizabeth, East London; Divisional Controller, Pietermaritzburg; Controller of P.O. Stores, Room 83, G.P.O. Annexe, Pretoria. **15th August.**

**Specialised metal work** in meigh metal, manganese bronze and stainless steel (sub-contract "A") for G.P.O., Cape Town (P.W.D. tender 656): P.W.D., Pretoria (Room 531); and District Representative, P.W.D., Cape Town. **1st August.**

**Specialised metal work,** comprising steel partitions, etc. (sub-contract "B") for G.P.O., Cape Town (P.W.D. tender 658): Particulars as above. **1st August.**

**Spring steel** for S.A.R. & H. Administration (tender 2796): Railway Stores at Salt River, Uitenhage, East London, Durban, Bloemfontein, Pretoria; and Chief Stores Superintendent, Park Chambers, Johannesburg. **16th September.**

**Copper and steel plates** for S.A.R. & H. Administration (tender 2797): Particulars as above. **23rd September.**

**Wheels and axles** for S.A.R. & H. Administration (tender 2641): Particulars as above. **30th September.**

**Lifts** for New G.P.O., Cape Town: supply, delivery and erection (P.W.D. tender 682): P.W.D., Pretoria (Room 531).

**Electric passenger lift** for G.P.O., Pretoria: supply, delivery and erection (P.W.D. tender 647): Particulars as above. **8th August.**

# Tenders Accepted

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

## AIR-CONDITIONING AND CENTRAL HEATING.

**Central heating installation** at Grootfontein Wool Research Laboratory (P.W.D. tender 569) : A. E. Barker, Johannesburg. £862.

**Central heating installation, etc.** (P.W.D. tender 584) : John Chisholm (Pty.), Ltd., Pretoria. £1,135.

**Air-conditioning plant** for Automatic Telephone Exchange, Johannesburg (P.W.D. tender 576) : A. E. Barker, Johannesburg. £1,545.

## BUILDINGS AND ALTERATIONS, ETC.

**Additions and alterations and installation of waterborne drainage,** Government Buildings and Post Office, Middelburg, Tvl. (P.W.D. tender 627) : Stanford's, Ltd., Witbank. £706 11s.

**Governor-General's Residence (superstructure, etc.),** Bloemfontein (P.W.D. tender 635) : J. R. Moffet (Pty.), Ltd., Bloemfontein. £19,243.

**Aeradio Station** at Slangkop (P.W.D. tender 639) : Buckland & Eaton, Cape Town. £9,460.

## CHEMICALS, LABORATORY EQUIPMENT, ETC.

**Giemsa's (azureosin) solution** for Onderstepoort Laboratory (tender S.O. 773) : Surgical Instrument Co., Johannesburg.

**Nitrogen, oxygen and acetylene** for Department of Agriculture (tender S.O. 838) : African Oxygen & Acetylene (Pty.), Ltd., Germiston.

**Nodular worm remedy spoons** for Onderstepoort Laboratory (tender S.O. 931) : Deputy Master, Royal Mint, Pretoria. £42 2s., f.o.r. Pretoria.

## COOKING EQUIPMENT, ETC.

**"Esse" stoves** (2) for Witrand Institution, Potchefstroom (tender S.O. 925) : W. R. Boustred, Ltd., Johannesburg. (1) £95, (2) £116, both f.o.r. in bond Durban.

## ELECTRICAL EQUIPMENT.

**50 magneto switch-boards** (tender S.O. 890) : Rogers, Jenkins & Co. (Pty.), Ltd., Johannesburg. £3,737, f.o.r. British port.

**Loading coil pots and building out condensors** (P.O. tender 855) : Siemens Bros. & Co. (British) Ltd., Johannesburg.

**Cable** for Department of Posts & Telegraphs (tender A.L. 261) : Standard Telephone & Cables, Ltd., Pretoria. £1,265 1s., f.o.b., London.

**Copper wire** (50,000 lb.) for Department of Posts & Telegraphs (P.O. tender 858) : Bartle & Co., Johannesburg. £2,201 9s., f.o.b., Liverpool.

**Cable** for Department of Posts & Telegraphs (tender A.L. 265) : Standard Telephones & Cables, Ltd., Pretoria. £224, f.o.b. London.

**Standard and frequency measuring equipment** (P.O. tender 859) : United Africa Electric "Uniafel" (Pty.), Ltd., Cape Town. £586 16s., f.o.b. New York.

**Cable** for Department of Posts & Telegraphs (tender A.L. 262) : £5,194 18s., f.o.b. London.

**Cable** for Department of Posts & Telegraphs (tender A.L. 250) : Stratford Engineering, Ltd., Johannesburg. £280, f.o.b. London.

**Motor and motor-panel** for Laundry, Bloemfontein Mental Hospital (P.W.D. tender 595) : Wilson & Herd, Ltd., Johannesburg.

### LAUNDRY EQUIPMENT.

**Vertical steam boiler and feed pumps** for Grahamstown Mental Hospital (P.W.D. tender 579) : Fraser & Chalmers (S.A.) Ltd., Johannesburg. £446, f.o.b. British port.

**Laundry machines, etc.,** for Mental Hospital, Bloemfontein (P.W.D. tender 595) : (1) Griffin Engineering Co., Ltd., Johannesburg ; (2) James B. Hackett, Cape Town ; (3) Bell's Asbestos Eng. (Afr.), Ltd., Johannesburg ; (4) D. Drury & Co. (Pty.), Ltd., Johannesburg ; (5) Tullis (S.A.) Ltd., Johannesburg.

### WATER SUPPLY AND IRRIGATION EQUIPMENT.

**Tanks** (100) for Vaal-Hartz Settlement (tender S.O. 881) : Hofman Bros (Pty.), Ltd., Johannesburg. £277 10s., f.o.r. Kazerne.

**Boring for water** (Irrigation tender 92) : McNamara, Ltd., Kempton Park.

**Boring for water** (Irrigation tenders 109 and 110): McNamara, Ltd., Kempton Park.

**Boring for water** (Irrigation tender 134) : McNamara, Ltd., Kempton Park.

**Hand pumps** (20) for Department of Native Affairs (tender S.O. 878) : National Pump & Eng. Works, Johannesburg. £250, f.o.r. Kazerne.

**Boring for water** (Irrigation tender 132) : D. M. Maré, Springs.

**Boring for water** (Irrigation tender 133) : D. M. Maré, Springs.

### MISCELLANEOUS.

**Telephone booths** (P.O. tender 864) : (1) Asbestocement Mfg. Co., Ltd., Newtown, Johannesburg ; (2) Halse & English Cement Industries, Malvern, Johannesburg.

**Fencing Material** for Vaal-Hartz Settlement (tender S.O. 954) : (1) African Gate & Fence Works (Pty.), Ltd., Johannesburg; (2) Moshal Gevisser (Pty.), Ltd., Durban.

**Battery locomotive** for State Alluvial Diggings (tender S.O. 821) : Sydney Thomson (Pty.), Ltd., Johannesburg. £905, f.o.b. Liverpool.

**Fencing material** for Grootfontein College of Agriculture (tender S.O. 966) : (1) Woolf Engineering Co. (Pty.), Ltd., Bloemfontein ; (2) Otto Landsberg & Co., Cape Town ; (3) S.A. Wire Co., Ltd., Durban ; (4) Cyclone Gate & Fence Co., Ltd., East London ; (5) Moshal Gevisser (Pty.), Ltd., Durban.

**Vibrating screen** for State Alluvial Diggings (tender S.O. 839) : Guest, Sykes, Ltd., Johannesburg. £199 5s., f.o.b. New York and British port.

**Vacuum cleaners and Fillery floor-polishers** for Government Buildings in Bloemfontein and Kimberley (P.W.D. tender 577) : Fillery's Home Utilities (Pty.), Ltd., Durban.

**Fencing material** for Department of Irrigation (tender I.D. 218) : (1) Patlansky Bros. & Schauder, Port Elizabeth ; (2) Moshal Gevisser (Pty.), Ltd., Durban ; (3) Woolf Engineering Co., Ltd., Bloemfontein.

**Fencing wire** for Irrigation Department (tender I.D. 239) : Hunt, Leuchars & Hepburn, Ltd., Pretoria.

**Chevrolet 133-in. wheelbase chassis** for Transvaal Provincial Administration (tender 44/1940) : Alderson & Flitton, Pretoria. £252 0s. 9d. each, f.o.r., in bond, Port Elizabeth.

# BUYERS' GUIDE

**ACCOUNTING MACHINES:**
National Cash Register Company of S.A. (Pty.), Ltd.

**AIR COMPRESSORS:**
Hubert Davies & Company, Ltd., Johannesburg.
Stewarts & Lloyds of South Africa, Ltd.

**AIR SURVEYS:**
Aircraft Operating Companw of Africa (Pty.), Limited, Johannesburg.

**ART METAL:**
Fredk. Sage & Co. (S.A.), Ltd., Johannesburg.

**AUTO-TRUCKS:**
Stewarts & Lloyds of South Africa, Ltd.

**AUTOMATIC TELEPHONES:**
Automatic Telephones (S.A.), Ltd., Johannesburg.

**BOILER MOUNTINGS:**
Stewarts & Lloyds of South Africa, Ltd.

**BRICKS:**
The Brick & Potteries Co., Ltd., Johannesburg.
John J. Kirkness, Pretoria.
Vereeniging Brick & Tile Co., Vereeniging.
Hume Pipe Co. (S.A.), Ltd., Cape Town.

**BRICK-MAKING MACHINERY:**
W. S. Thomas & Co. (Pty.), Ltd., Johannesburg.

**BUILDING CONTRACTORS:**
F. C. Holton, Krugersdorp.
Wm. C. Cowie & Sons, Port Elizabeth.

**BUILDERS' MERCHANTS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Feder Products (Pty.), Ltd., Johannesburg.
Rhodesian Timbers, Limited, Johannesburg.

**CEMENT:**
Pretoria Portland Cement Co., Ltd., Johannesburg.
Concrete Association of South Africa, Johannesburg.
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Rhodesian Timbers, Limited, Johannesburg.
"Snowcrete" — Hunt, Leuchars & Hepburn, Ltd.

**CHAIRS:**
The Globe Chair Factory (Pty.), Ltd., Durban.

**CONCRETE MIXERS:**
Hubert Davies & Company, Ltd., Johannesburg.
Seligson & Clare, Ltd., Johannesburg.

**COOKING APPARATUS:**
Ashwell & Nesbit, Limited, Johannesburg.

**CRUSHERS:**
Hubert Davies & Company, Ltd., Johannesburg.
W. S. Thomas & Co. (Pty.), Ltd., Johannesburg.

**CULLAMIX & COLORCRETE:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.

**DOORS (STEEL):**
F. Gwilliam (Pty.), Limited, Johannesburg.

**DOOR FITTINGS:**
F. Gwilliam (Pty.), Limited, Johannesburg.
Kirkwood & Sons, Ltd., Port Elizabeth.

**ELECTRIC RANGES:**
Durban Falkirk Iron Co., Ltd., Durban.

**ELECTRICAL ENGINEERS:**
The British General Electric Co., Ltd., Johannesburg.

**ENGINEERING CONTRACTORS & IMPORTERS:**
Victor Kent (Natal) (Pty.), Ltd., Durban.

**ENGINES (Oil and Other):**
Hubert Davies & Company, Ltd., Johannesburg.
Stewarts & Lloyds of South Africa, Ltd.
W. S. Thomas & Co. (Pty.), Ltd., Johannesburg.

**ELECTRIC-GENERATING PLANT:**
Hubert Davies & Company, Ltd., Johannesburg.
Stewarts & Lloyds of South Africa, Ltd.

**EXPLOSIVES:**
African Explosives & Industries, Ltd., Johannesburg.

**FIRE APPLIANCES:**
Stewarts & Lloyds of South Africa, Ltd.

**FLOORING:**
Feder Products (Pty.), Ltd., Johannesburg.
Broudo's Saw Mills (Pty.), Ltd., Industria.
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Mazista Slate Quarries, Ltd., Johannesburg.
Rhodesian Timbers, Limited, Johannesburg.

**FURNITURE & FIXTURES:**
Peach & Hatton, Ltd., Durban.
Thesen & Co., Ltd., Durban, Cape Town and Knysna.
Broudo's Saw Mills (Pty.), Ltd., Industria.

**GLASS:**
Herbert Evans & Co., Johannesburg.
Rhodesian Timbers, Limited, Johannesburg.

**HARD BOARDS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Kirkwood & Sons., Ltd., Port Elizabeth.

**HYDRO-ELECTRIC PLANT:**
Stewarts & Lloyds of South Africa, Ltd.

**HYDRAULIC RAMS:**
Stewarts & Lloyds of South Africa, Ltd.

**IRONMONGERY:**
Kirkwood & Sons., Ltd., Port Elizabeth.
Umgeni Iron Works (Pty.), Ltd., Durban.

**JOINERS:**
Broudo's Saw Mills (Pty.), Ltd., Industria.
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Rhodesian Timbers, Limited, Johannesburg.

**MACHINERY & IMPLEMENT MERCHANTS:**
Seligson & Clare, Ltd., Johannesburg.
Guest, Sykes, Ltd., Johannesburg.

**METAL WINDOWS:**
Crittall-Hope Metal Windows (South Africa), Ltd.

**OILS:**
C. C. Wakefield & Co., Ltd., Jonannesburg.

**OIL & STEAM PURIFIERS:**
Stewarts & Lloyds of South Africa, Ltd.

**PAINTS:**
Lewis Burger & Sons (S.A.), Ltd., Johannesburg and Durban.
Herbert Evans & Co., Johannesburg.
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.

**PIPES — CONCRETE:**
J. Wright & Sons., Limited, Durban.
Hume Pipe Co. (S.A.), Ltd., Cape Town.

**PRINTING BLOCKS:**
Electric Process Engraving Co., Johannesburg.

**PLYWOODS:**
Furniture Enterprises (Pty.), Ltd., Johannesburg.
Plywoods, Ltd., Parow, C.P.
Raymond Plywood (Pty.), Ltd., Johannesburg.
Rhodesian Timbers, Limited, Jonannesburg.

**PUMPS:**
Patrick Murray (Pty.), Ltd., Durban.
Guest, Sykes, Ltd., Johannesburg.
Stewarts & Lloyds of South Africa, Ltd.

**REINFORCED CONCRETE:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
A. S. Joffe, Johannesburg.
Industrial Construction Co. (Pty.), Ltd., Johannesburg.

**REFRIGERATION:**
Guest, Sykes, Ltd., Johannesburg.

**ROAD MACHINERY:**
W. S. Thomas & Co., Ltd., Johannesburg.
Guest, Sykes, Ltd., Johannesburg.

**ROOFING MATERIALS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
John J. Kirkness, Pretoria.
Mazista Slate Quarries, Ltd., Johannesburg.
Hume Pipe Co. (S.A.), Ltd., Cape Town.
Guest, Sykes, Ltd., Johannesburg.

**SAW MILLS:**
Broudo's Saw Mills (Pty.), Ltd., Industria.

**SHOP-FITTERS:**
Fredk. Sage & Co. (S.A.), Ltd., Johannesburg.

**SLATES:**
Mazista Slate Quarries, Ltd., Johannesburg.

**STEAM VALVES (high pressure)**
Stewarts & Lloyds of South Africa, Ltd.

**STEEL CEILINGS:**
Herbert Evans & Co., Ltd., Johannesburg.

**STRUCTURAL STEEL:**
Dorman, Long (Africa), Ltd., Johannesburg.

**STONE-WORKING PLANT:**
Bellamy & Lambie, Johannesburg.

**STONE-CRUSHING PLANT:**
W. S. Thomas & Co., Ltd., Johannesburg.

**TIMBER MERCHANTS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Rhodesian Timbers, Limited, Johannesburg.
Kenya Timbers, Ltd., Johannesburg.
Furniture Enterprises (Pty.), Ltd., Johannesburg.
Broudo's Saw Mills (Pty.), Ltd., Industria.

**TEAK WINDOWS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Broudo's Saw Mills (Pty.), Ltd., Industria.

**TUBES & FITTINGS (Steel):**
Stewarts & Lloyds of South Africa, Ltd.

**TURBINES & PUMPS:**
Stewarts & Lloyds of South Africa, Ltd.

**TUBULAR STEEL POLES:**
Stewarts & Lloyds of South Africa, Ltd.

**TYRES:**
Firestone, S.A. (Pty.), Ltd., Port Elizabeth.
India Tyre & Rubber Co. (S.A.) (Pty.), Ltd., Durban.

**UNIFORM MANUFACTURERS:**
H. J. Henochsberg (Pty.), Ltd., Johannesburg.

**VALVE & WATER SPECIALITIES:**
Stewarts & Lloyds of South Africa, Ltd.

**VENTILATORS:**
W. S. Thomas & Co., Ltd., Johannesburg.

**WALLPAPERS:**
Herbert Evans & Co., Ltd., Johannesburg.

**WATERPROOFING:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.

**WIRE & RAILINGS:**
The "Premier" Gate, Fence & Wire Co., Ltd., Cape Town.

**WOOD-FIBRE BOARDS:**
Hunt, Leuchars & Hepburn, Ltd., Johannesburg and Durban.
Selinite Products (Pty.), Ltd., Rossburgh, Natal.

**WOOD PRESERVATIVES:**
S. Harding, Johannesburg.
B. Saphra, Johannesburg.

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