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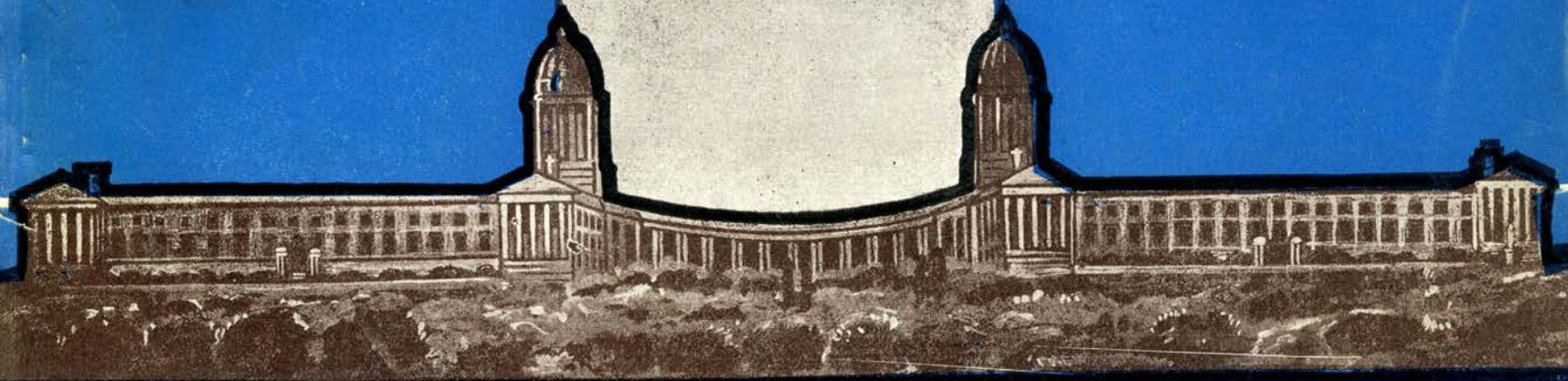
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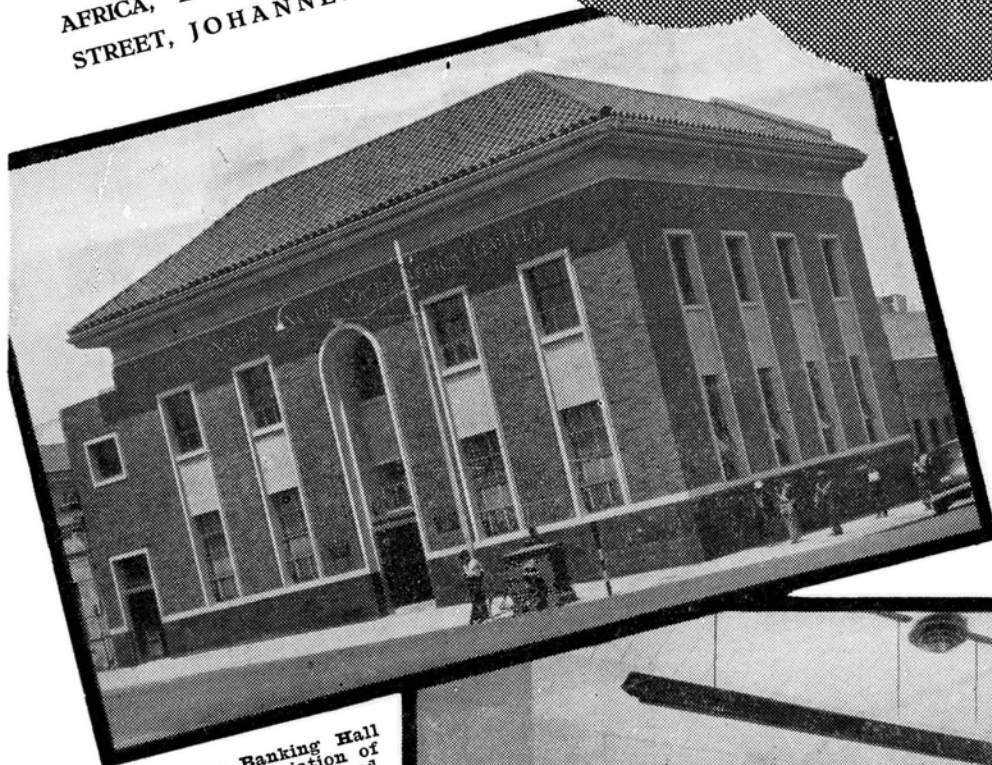
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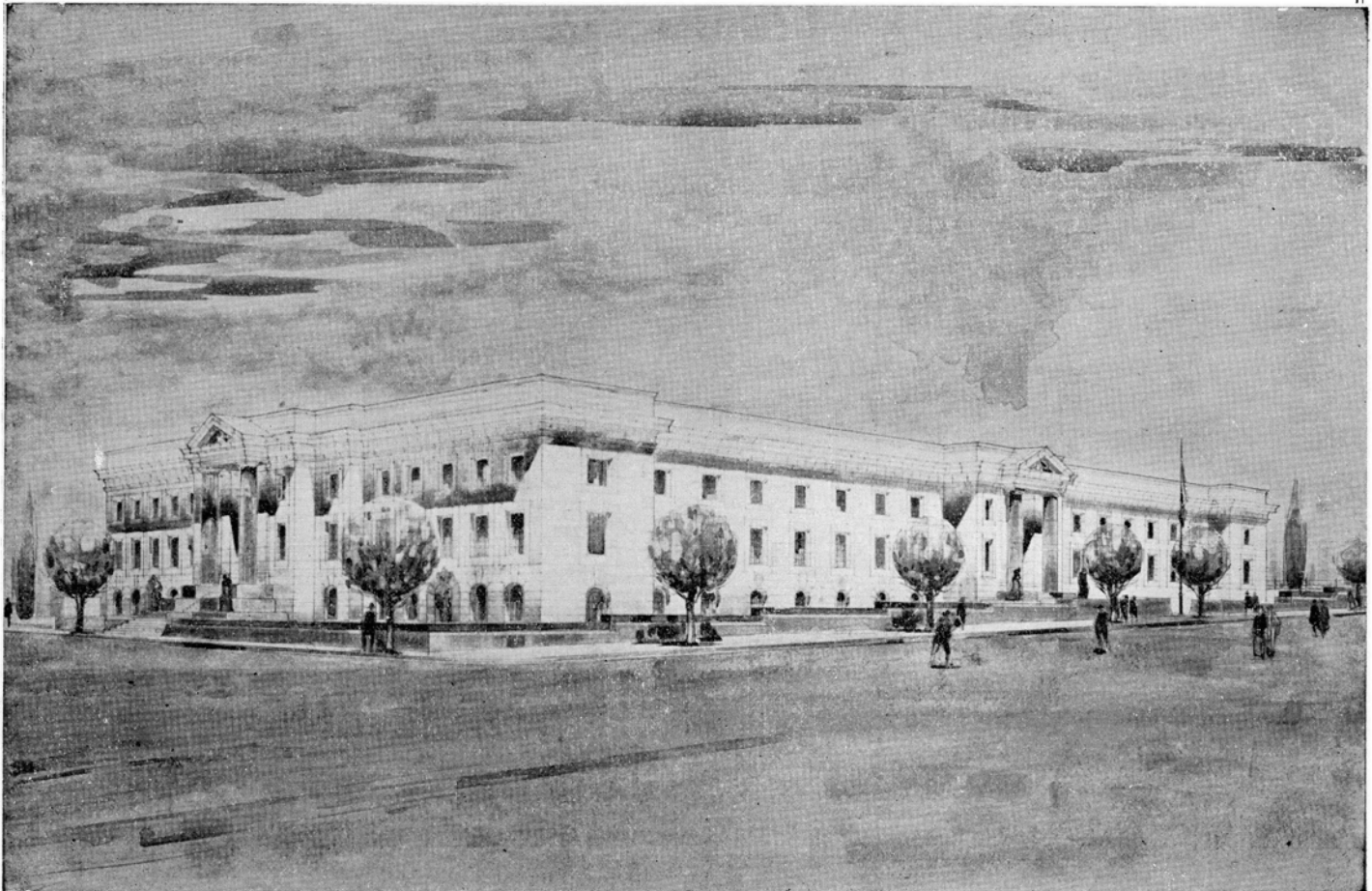
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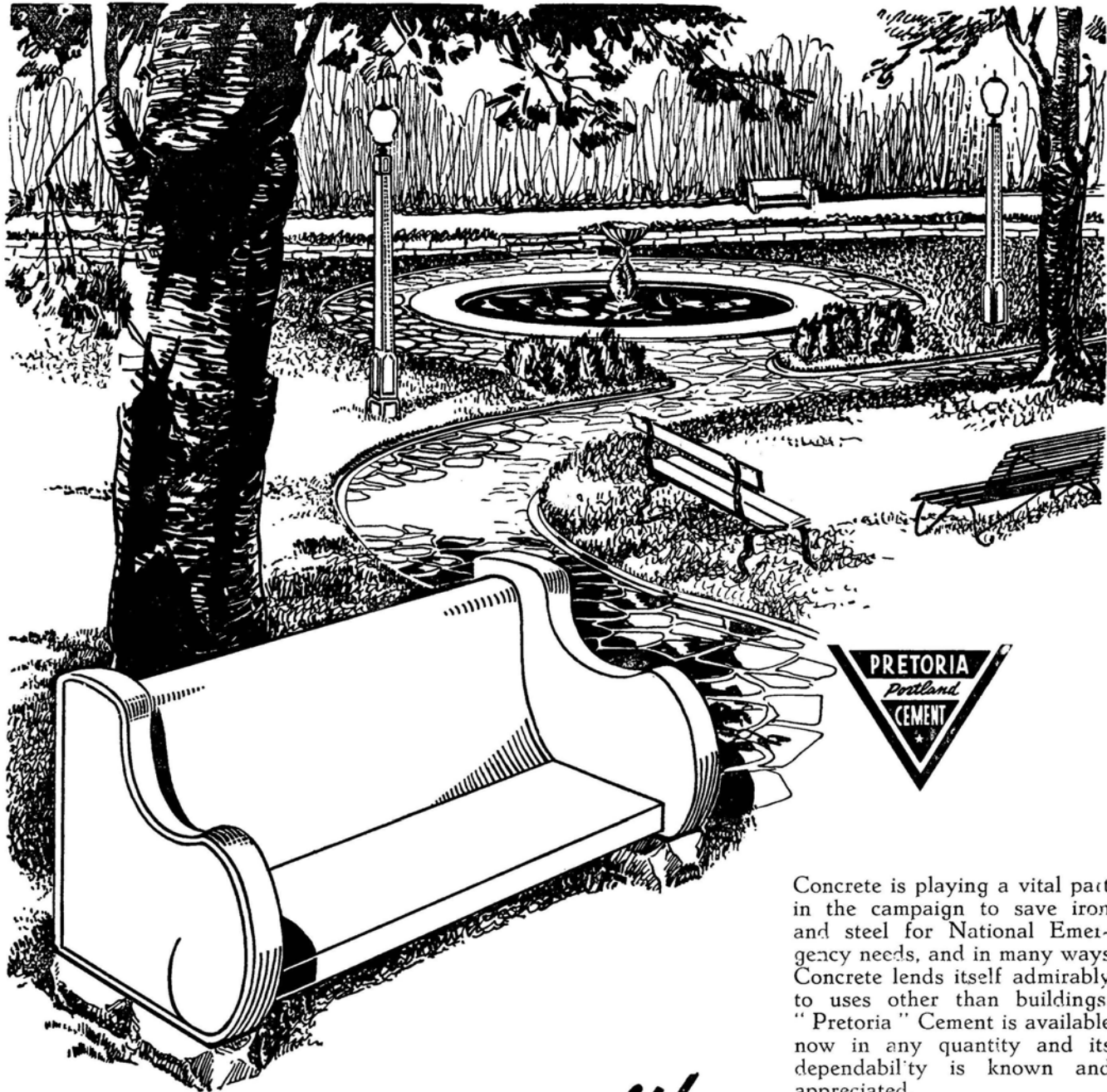
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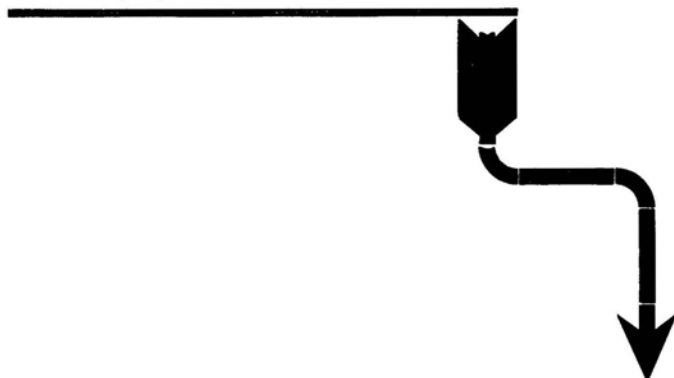
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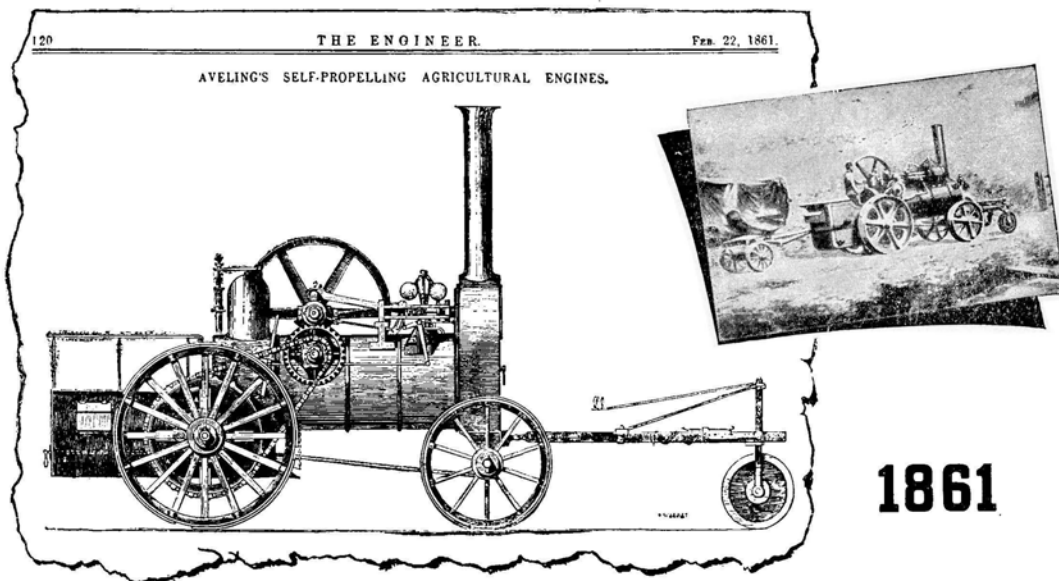
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ERIK TODD

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 these departments of service

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We regret to announce that the condition of the Building Industry has made it difficult for our advertisers to continue their support, and in view of this and other problems arising out of the war, it has been decided to suspend publication for the duration of war.

— THE EDITOR.



VIEW FROM THE NORTHWEST



MAIN ENTRANCE

NEW MAGISTRATES COURTS PRETORIA

THE new Magistrates' Courts at Pretoria, recently completed, form a notable addition to the monumental architecture of the city, to which the Public Works Department has contributed in the provision of Government buildings over a long period of years. Perhaps it would not be drawing invidious comparisons to say that the new building ranks among the best and most successful of the Department's works.

On approaching the building, one is immediately struck by its scholarly appearance. Whether this is due to the beauty of its white marble façade, to the subtle proportions of the order used, or to the general air of restraint and lack of the usual ornamental trappings with which one had (unfortunately) come to associate buildings of this nature, it is hard to say. The building gives an impression of refinement and erudition which savours more of a cultural monument than a structure built for the apprehension of criminals!

Perhaps the key to the building's distinction lies after all in the fact that the proportions of the Greek Doric order were decided on as the basis of the façade. One has become so dismally accustomed to the Roman orders, multiplied *ad nauseam*, wherever the official mind has left its heavy impress, (is it because Gourlay has reduced them to mathematical formulae for the benefit of drawing-board slaves?) that the sight of the infinitely more beautiful Greek form is all the more pleasant and stimulating by comparison. The distyle porticos at the two main entrances to this building represent some of the boldest and at the same time successful examples of work in this idiom which we have seen for some time. The order itself does not follow the classical prototypes in every ratio and contour, for the capitals have a slight Roman flavour. Another variation from the type has been necessitated by a technical change: the main columns at the entrances are not constructed of solid marble, but consist of a brick core, finished in marble veneer. The veneer is placed in position round the core in three curved sheets. Where these sheets abut against one another, a small moulding has been introduced to cover the joint. The even beat of the arrises between the flutes is thus broken in three places by a double arris separated by a fine bead. These slight variations from the laws of the Medes and Persians do not, however, detract at all from the general beauty of the order; the violent contrast between the columns, which are faced in rich red Kairo marble, and the

white Marble Hall facing, appears rather stark and brutal, and its æsthetic propriety is a debatable point, but the red Hatherley granite base and massive flanking blocks to the entrance steps ameliorate the tension to a considerable extent, and assist materially in building up the harmony of the composition. For the whole building does achieve harmony—there is no note of incongruity in its forms or in the handling of its façades.

GROUND FLOOR

The main entrance doorway has a fine marble surround of satisfying proportion and delicacy of moulding and enrichment. Passing through the great teak doors, the visitor ascends a short flight of steps and arrives in the main Ground Floor Concourse, which gives access to the Petty Court and the five Criminal Courts. This concourse, divided down the centre by offices and witnesses' waiting rooms, is a broad and spacious gallery, amply provided with natural light and ventilation. The floors are finished in light buff rubber tiles, which besides providing a hard-wearing and attractive floor covering, greatly reduce noise, an important factor when the courts are in session. Hollow tile floor construction has made possible flush ceilings without interruption, and these add considerably to the general feeling of spaciousness. The dados are carried out in light facing bricks, which blend well with the general colour scheme. The walls above the dados and the ceilings are of white plaster. The concourse and main entrance hall have been provided with special brass hanging lampshades of great charm and delicacy.

The criminal courts are generous in size, and simply treated in klompje brick dados, with white walls and ceilings above. These klompje dados are quite a feature of the building, being laid in stretcher bond and pointed in white cement. The manner of laying and the uniform texture and colour bring out the full character of this type of brick. One feels that klompjes are more suitable for internal facings than the normal type of facing brick. The courts are well provided with natural light, each having four large windows facing internal light courts. The magistrate's bench is raised on a podium 2ft. 6in. above the floor of the court, and the public space at the rear of the court has a stepped floor, and is equipped with fixed teak benches, simple in design and solid in construction. The European and non-European spaces are separated

by teak screens. These screens are panelled in different patterns in the different courts, all in a very interesting manner. One example has been panelled in a single field of enormous size, with mitred corners. The great size of this panel achieves an astonishingly powerful decorative effect, of a similar order to the effect produced by the great abstract murals — without the colour, of course. The furniture and fittings in the courts have been designed to tone in with the general historical character of the work. The acoustic quality of the courts has been the subject of special care, and the ceilings and rear walls have been treated with "Limpet" sprayed asbestos, to reduce undue resonance and avoid echo. The result has been most satisfactory.

The Magistrates' entrance, in Schubart Street, is treated in the same manner as the principal entrance in Pretorius Street, having a distyle portico and ornamental doorway. Inside there is a small lobby which gives on to the Fountain Court. This court is entered through a pair of sliding doors in period style, surmounted by a roccoco carved fanlight. The court itself is carried out in Cape Dutch style, being less severe than the rest of the building, in fact endowed lavishly with applied ornamentation. The proportions of the court, as of all parts of this building, are pleasant, and the great amount of window-space facing into the court brings forcibly home to one the care and forethought which has been put into the problem of providing adequate light to the interior. Facing the entrance doors, which are surmounted by a pediment and flanked by wide fluted pilasters, is an exactly similar arrangement of pediment and pilasters, surrounding an empty niche. One wonders who will fill that honoured recess. Is it to be reserved for the painstaking architect out of whose patience and meticulous labour this noble building has grown? Or is it for the legal genius who succeeds in abolishing the Pass Laws? Anyway, one can imagine the young magistrate, coming to work in the morning, being spurred on by the thought that here, at any rate, he might settle down to his own particular niche. . . .

There is a fish pond in the centre of the floor of the court, carried out in slate, and provided with the fountain which gives its name to this part of the building. It is hoped that in a few months' time there will be water lilies and goldfish, giving life and movement to this little corner of olden times, cut off from the outside world.

The main staircase connecting the ground and first floors has a fine wrought iron balustrade executed locally in excellent fashion. The Natives' Stairs and Europeans' Stairs in the centre of the concourse also have fine wrought iron railings, but of simpler design. The Europeans' stairs have a small ornamental niche at their base which lends interest to their arrangement.

FIRST FLOOR

Passing to the first floor, the concourse is arranged similarly to that on the ground floor, giving access to

all the courts and to the offices of the clerk of the civil courts and the witnesses' rooms. The flooring is rubber, but on this floor it is carried out in a very appropriate and beautiful light green colour, which is even more successful in combination with the face-brick dados than the buff flooring on the ground floor. The ceilings are plaster-board and the joints have been protected by plaster cover strips. The flush surface of the ground floor ceilings is replaced here by a broken appearance which is rather worrying and unpleasant. One wonders why some such material as expanded metal lath and plaster were not used for these ceilings.

The civil courts are rooms of very gracious proportions, as usual very well lit, and having a quiet and restful atmosphere. The dados are klompje bricks, as in the criminal courts, with white walls and ceilings. The ceilings in the civil courts have been divided up by teak beams, corbelled out from the walls. These beams have the effect of apparently lowering the ceiling height, giving an air almost of intimacy to the room. The feeling here is of the eighteenth century, of gentility and manners and good breeding, of a civilisation which long ago went down before the brutal onslaught of the machine. These courts have been furnished in the style of the period, the furniture being carried out in teak. The doors are teak, as are all fixtures. An attempt to introduce variety in the design and panelling of the doors in the different courts has met with great success, some of the doors being of outstanding beauty. The acoustics are very good, sprayed asbestos having been used on the back walls.

The Chief Magistrate's Office situated at the north-west corner of the building, is a long oblong room, panelled in teak, which has been French-polished. The panelling is enriched by floral motifs, carved in teak by John Harcus. The ceiling is enriched by a plaster ornament, oval in shape with a fruit motif, modelled by Yolande Friend.

The Conference Room, adjoining the Chief Magistrate's Office, is similarly panelled in French-polished teak. This method of treating this wood tends to give it a somewhat sophisticated appearance, and detracts slightly from the intrinsic character of teak, which is so well brought out by oiling it. Again, John Harcus carved some delightful little panels at the window sills, using this time an acorn and oak-leaf pattern. He has also carved the Union coat of arms which is built into the panelling above the doorway. This carving, in high relief, is a really excellent work of art. The radiators are concealed behind bronze grilles, as in all panelled rooms. The ceiling to the Conference Room is treated in a similar manner to that of the Chief Magistrate's Office, having a circular moulding in the centre, with modelled floral pattern relief, and a square coffered border.

In both the Chief Magistrate's Office and the Conference Room, a note of incongruity is struck by the discordant orange colour of the steel windows. This bright and aggressive colour clashes badly with the subdued refinement of these two important rooms.

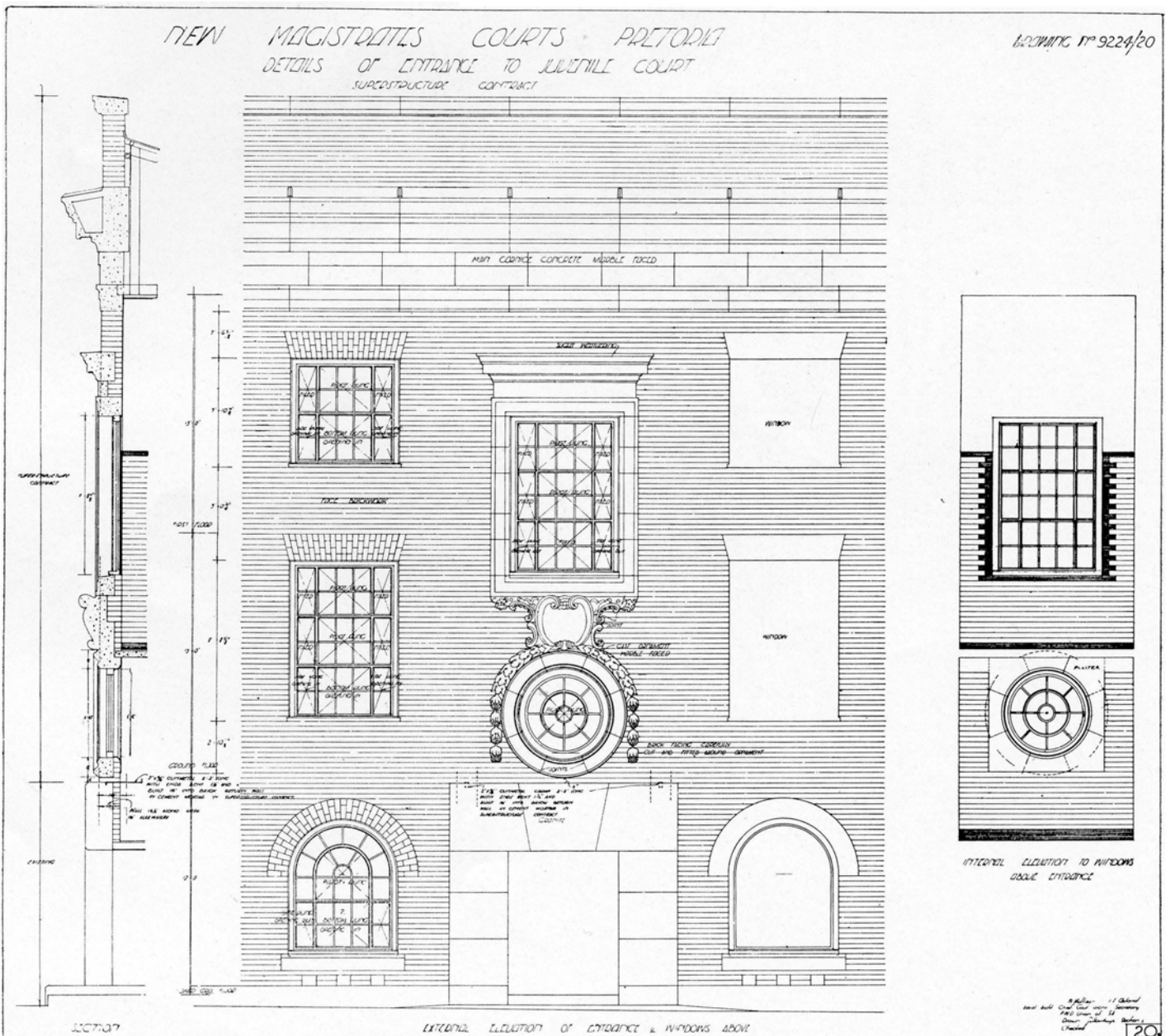
These orange windows are carried right through the first floor, and strike a discord in courts, offices, and concourses alike.

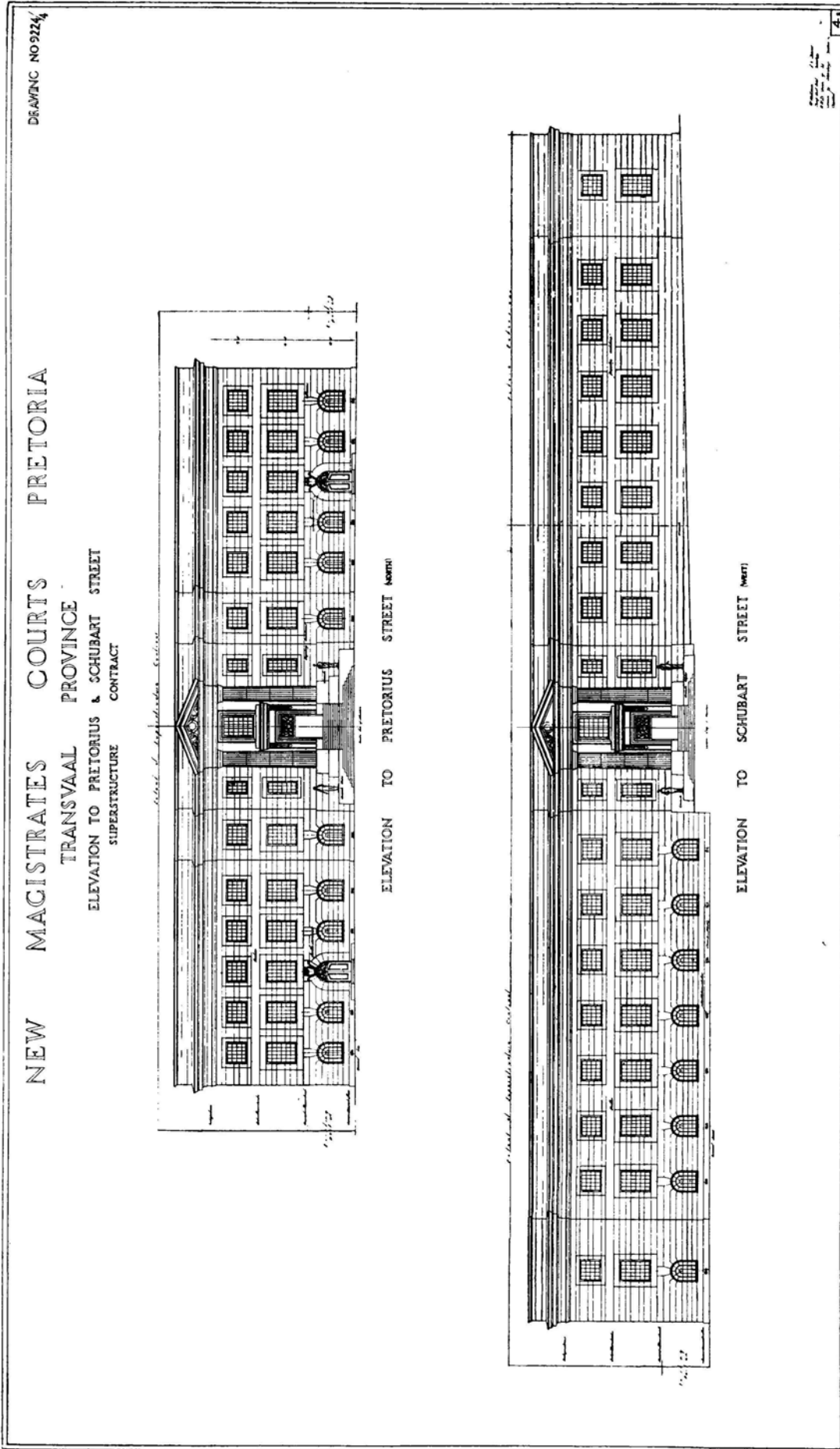
The Tea Room, which is situated on the north-east corner of the first floor, has a teak-panelled dado, unbroken by vertical divisions. This lightens the whole effect considerably, and gives an appearance more nearly approximating to modern flush panelling. One end of the room, leading into the library, is flanked by two Ionic columns in Kairo marble, with red Parys granite capitals. The granite imparts to the capitals a hard, cold appearance, which is not a very good expression of Ionic warmth and luxury; the shafts, which are monolithic marble, have been polished up and have a beautiful sheen which reveals the beauty of the veining to perfection. One wonders, however, why these two columns were ever put in this room, which is not over large, for they appear to be very much in the way, and of no apparent use.

Kairo marble window sills have been used in this room. The tea room is furnished with very delightful basket tables and chairs, enamelled light green, which look very fresh and inviting. The tea room has a little kitchen leading off the one end, which is adequate for its needs, though for some reason its dados have been painted a depressing and unsuitable battleship grey. One would think that white is the colour for hygienic conditions, (but perhaps this is an idea which has been conditioned by the operating theatre!).

The library, which may be entered off the corridor or off the tea room, is a rather small room, panelled in teak and equipped with glass-fronted teak cupboards. The wood in this room is oiled, and is fine in appearance. There are carved panels of South African flowers, and again the radiators are hidden behind bronze grilles. Altogether a pleasant and restful room.

The offices generally have wood block floors, dis-





temper walls and flush picture rails. The furnishings throughout are of the same high standard as the fixtures, designed in the period style with great care and sympathy, and display first class workmanship. The witnesses' rooms are all excellently lit and ventilated and provided with ample lavatory accommodation. One noted with satisfaction that the tiling in the lavatories had been carried to door height.

An inspection of the new Magistrates' Courts reveals at every turn the immense care and great pains taken over every detail. The detailing of dados, skirtings, the picking out of quoins and features in darker bricks, the fact that bottom-hung windows do not project into the passages, but open within the depth of the reveal, all point to the meticulous attention to detail which is characteristic of this building.

LOWER GROUND FLOOR

The remainder of the building is contained in the Lower Ground Floor, which is situated under the northern half of the ground floor, the fall of the ground from south to north having made it possible to insert an extra floor on the north side. This floor contains in the centre the main prisoners' marshalling corridor and cells, connected to the prisoners' yard on the east side of the building, and thence to the Central Police Station by means of a subway under the Native Public Entrance. The marshalling corridor is connected to the prisoners' docks in the criminal courts and petty court by means of short flights of steps. The colour scheme of this portion of the building is a grim battleship grey and white, although the Juvenile cells are more pleasant, having green dados and windows.

On the north-east corner of the lower ground floor is placed the Juvenile Court, with a European entrance on the north façade, and a Natives' entrance on the east side. This court has been furnished more in the style of an office than of a court, following the trend of modern ideas, and in order to avoid any apparent intimidation which might result under too rigorous circumstances. The Juvenile Magistrate's office has been painted in pale green, with marked success. Both the office and court have panelled teak dados.

Mention must be made of the two ceramic tile panels at the two entrances to the Juvenile Court. These panels, designed by Rosa Hope, of Pietermaritzburg, and executed by Ceramic Studios, Olifantsfontein, have a general background tint of buff, with white, green and blue as the remaining colours. The panel at the Europeans' entrance depicts the Juvenile Magistrate talking to a group of children standing round his desk. That at the Natives' entrance shows a Bantu pastorage. This panel is artistically very satisfying.

On the north-west corner of the lower ground floor, the District Surgeon's Offices are situated. These have their own entrance on the north façade. In the entrance porch is another panel by Rosa Hope, depicting a scene outside a child welfare clinic in a residential suburb. The same basic colour scheme as the Juvenile Court panels is used. These ceramic tiles,

also in an arched framework of red klompjes, are extremely successful.

The District Surgeon's Offices comprise waiting rooms, a number of consulting rooms, and a dispensary. These rooms have been fully equipped with every modern convenience in accordance with the latest hygienic practice. The dispensary is especially well fitted out and equipped.

The lower ground floor also houses the boiler room and air-conditioning plant. The boilers are thermostatically controlled, and fed by automatic screw-feed stokers. All the courts are supplied with fully conditioned air, cleaned and supplied at the right temperature and relative humidity.

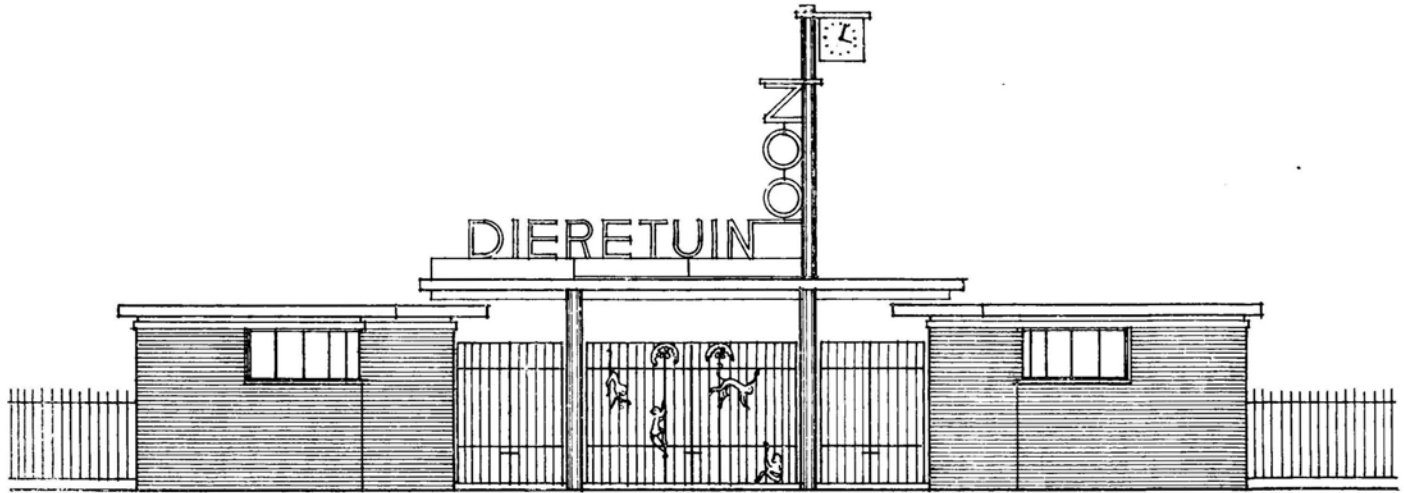


The east elevation is faced in red facing bricks and although it is a side elevation which faces on to prison yards, etc., the same care which has gone to the rest of the building has been expended on this elevation. The Natives' entrance to the Juvenile court is surmounted by an ornamented circular staircase window surrounded by a stone architrave and flat pediment over. The entrance doorway has a red Leeuwfontein granite surround.

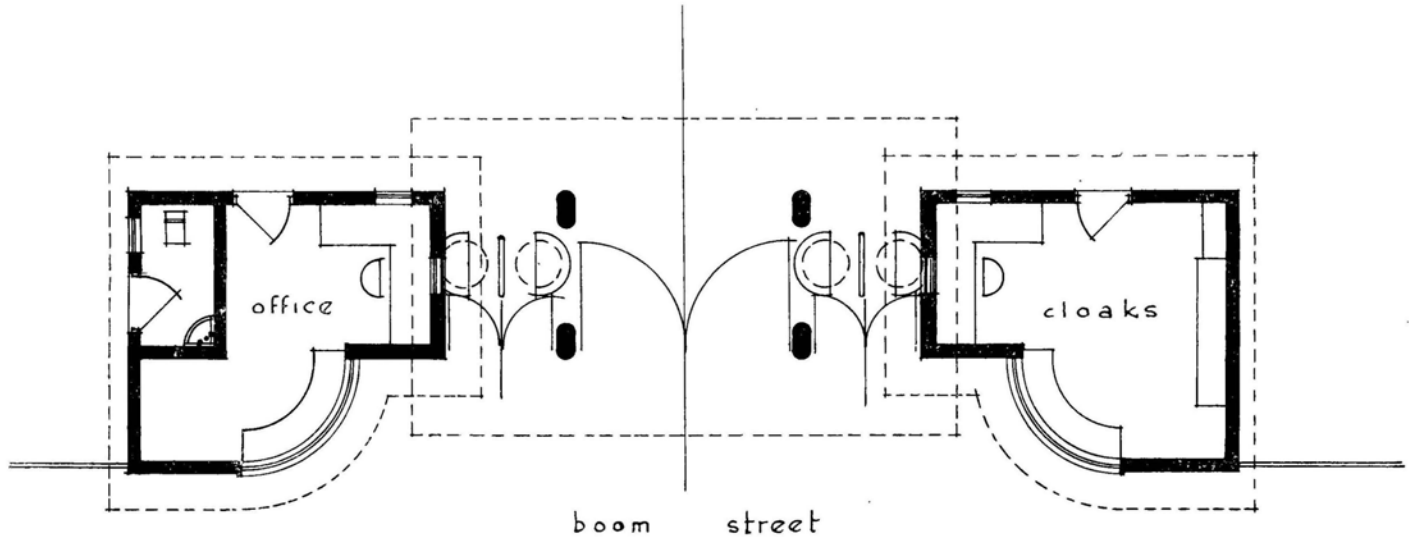
Of the south façade, nothing need be said. After all it is going to be added to when the building is finally completed. It is felt, however, that a coat or two of whitewash applied to its rough brick walls would have taken the edge off its present unfinished appearance.

Taken as a whole, the new Magistrates' Courts displays in every detail, a peculiar unity and completeness. This unity, which denotes Architecture, is the result of all the care and forethought, of all the specialist skill and knowledge which have gone into its making. It is a good building, an Architect's building, and although cast in a style which rightly belongs to an age before our own, this fact has not been allowed to interfere with the convenient planning of the building, nor with its modern appointments. The new Magistrates' Courts is in every way worthy of the best architecture of South Africa, and indicates that at a time when art and culture are at low ebb, when gross materialism is the usual criterion, the Public Works Department is continuing the high quality of its work, both in construction, finishes and detail, which it has established over many years of good building.

A description of this building at the start of construction was given in the January, 1939, issue of "Public Works of South Africa"



elevation,



plan

NEW ENTRANCE GATES FOR THE NATIONAL ZOOLOGICAL GARDENS, PRETORIA

NATIONAL ZOOLOGICAL GARDENS PRETORIA NEW ENTRANCE GATES

AN interesting addition to the public architecture of the Administrative Capital is to be seen in the new entrance gates to the National Zoological Gardens. The gates are the work of the Public Works Department, being the latest of a long series of improvements to the gardens which that department has undertaken during the last few years; and, although a relatively small structure, they are important by reason of their position at the main entrance in Boom Street, beside the Museum.

The group consists of a pair of large wrought iron gates which control the main carriageway. These are flanked on either side by a pair of smaller gates, also of wrought iron, behind which are turnstiles. Adjoining these on each side are two small offices, each with a cashier's window, facing the turnstiles. One of the offices contains a staff lavatory; the other is a small cloakroom for the use of the public, and is equipped with cupboards, pigeonholes, hat and coat hooks and a built-in seat.

The offices are built of brick, with reinforced concrete flat roofs. Primrose ironspot facing bricks were used externally, the interior being plastered and finished in distemper. Wood block floors have been provided. The buildings are equipped with horizontal batten external doors, a type which is more weather-proof than the usual vertically battened type. The windows are steel, and are equipped with safety bars made of wrought iron flats which are not only adequate for their purpose, but in addition extremely neat in appearance.

The driveway entrance and turnstiles are protected by a concrete flat roof which is raised above the level

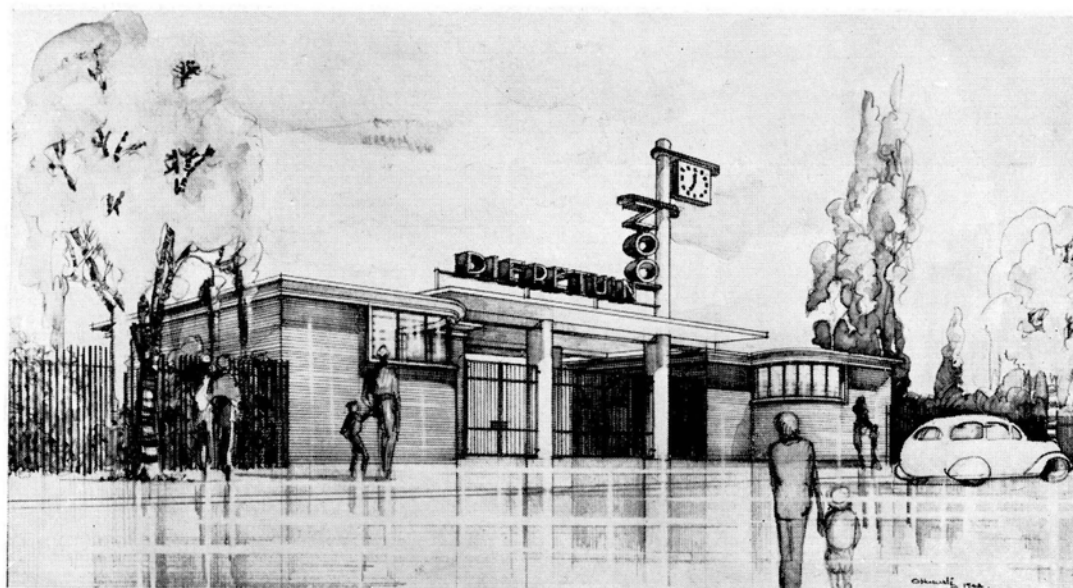
of the offices to permit heavy vehicles to use the entrance. An interesting feature of the roof construction to the offices, is the fact that the roof slab is completely isolated from the carrying beams and the brick supporting walls by two sheets of 18-gauge galvanised iron separated by a film of heavy engine oil. By this means the roof slab is enabled to expand and contract with temperature fluctuations quite freely, without imposing any strain on the supporting structure. Consequently there is practically no danger of cracks appearing in the brickwork due to the different expansion coefficients of brickwork and concrete.

The central slab is supported on four oval-shaped concrete columns, one of which projects through the slab, and in the form of a circular shaft with projecting concrete fins, supports both the designation sign and the electric clock, and forms the central feature of the design. The designation sign has well-proportioned lettering made up of 22-gauge sheet iron finished in enamel paint.

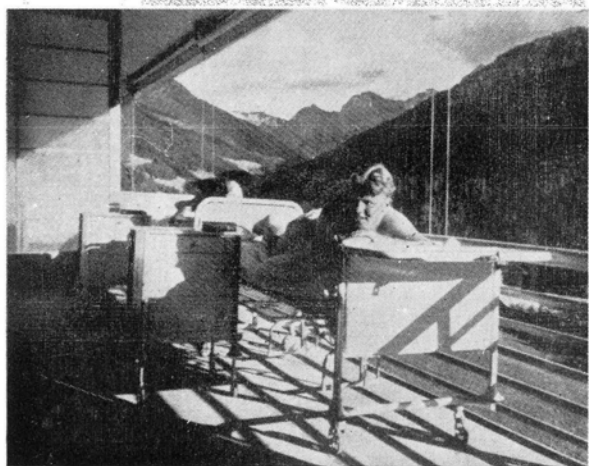
The main driveway gates are gaily decorated with a design of coconut palms and monkeys—a happy motif for such a position, designed to appeal equally to children and adults.

The gates and roof slabs are painted a bright orange colour, which tones in well with the ironspot facing bricks. The supporting poles and pylon are cream, and the clock and lettering are coloured cream and pillar-box red.

This little group of buildings achieves its purpose remarkably well, and indicates that the Department is fully alive to the trend of architectural development at the present time.



Perspective by
Oscar Hurwitz



SANATORIUM AT DAVOS SWITZERLAND

Rudolf Gaberel, Architect

Photo: Architectural Forum

AN APPROACH TO HOSPITALISATION

by Jac A. Joel, Dipl. Arch.

IN a sane, logical and also humanitarian approach to the problem of building up a happy, healthy and virile people, the establishment of isolated buildings, however skilfully arranged and equipped they may be, can be no answer in itself.

It is only an answer to part of the problem, and socially the easiest part.

Sick people requiring attention are present in the community, and the primary function of a hospitalisation system is to furnish them with the housing and accommodation, food, nursing and medical attention which their circumstances require and to place them under conditions conducive to their recovery.

No scheme can be successful unless it is so designed and orientated to the minimisation, neutralization and removal of actual, possible and probable sources of infection.

Low standards of living, slum housing conditions, malnutrition, excessive inbreeding and the lack of knowledge or means to make use of preventive medicine and the elementary rules of hygiene, make fertile ground for the incubation and dissemination of disease and produce a strain weak in resistance and an ultimate drain on Society.

This is a major social problem and can only be remedied by a vigorous and far-reaching policy.

Every man, woman and child should have a decent living, clean and adequate housing, good and wholesome food and sufficient and varied clothing, with leisure enough to live a creative and fuller life.

This means that all fear and dread of the future should be removed. Old age should be comfortably provided for and arrangements and facilities should be easily understood and readily available to all for the prevention or minimisation, treatment and cure of disease and physical deficiencies.

A complete organisation for the care of the health of a people can only be undertaken by the State on a scale such as would be sufficient, and can be resolved into three parts:

- (a) Preventive.
- (b) Curative.
- (c) Convalescent.

The following is a suggested basis for its organisation:—

a]. Preventive Clinics

Under the direction of a central administration the early teaching and propaganda of preventive medicine, hygiene and methods would be taught and demonstrated in the schools and community centres.

The proper dissemination of this knowledge is

highly important. The old adage applies with terrific force: "Prevention is better than cure."

Clinics would be established as centres for skilled advice and help in minor cases. All dental work, inoculations, pre-natal attention, post-convalescent advice and the diagnosis and treatment of venereal disease would be undertaken.

These clinics, varying in size, would be established all over the country with a laboratory attached in the larger centres.

b]. Curative Hospitalisation

In the second group, the aim would be for the establishment of a network of hospitals based on the distribution of the population and the centre in which the unit was placed.

The little dorp or farming centre would have a small unit or nursing home in conjunction with the clinic, catering for general cases and with accommodation for general diseases, isolation, minor surgical cases and maternity.

All more serious medical and surgical cases would be taken to the larger and better equipped and organised units or Cottage Hospitals placed in the larger towns.

The critical medical and major and highly complex surgical cases would be treated in the big units or General Hospitals located in the principal towns.

These units would be big enough to contain the equipment necessary and to provide the highly organised care and attention which such cases require.

c]. Provision for Convalescence

The third group is of great importance. It will be the stage in which the sick who have received their primary curative treatment will continue the process amidst surroundings which will be conducive to their complete recovery, and so be refitted to take their rightful place in Society.

These convalescent centres would be farms developed and equipped to continue the treatment in suitable climatic conditions under the control of specially trained staffs, and would include occupational therapy.

Teaching and research facilities would be established in all three groups in co-operation with the universities and State laboratories—schools to be attached only to the General Hospitals.

The same equitable treatment is visualised for non-Europeans. No real hospitalisation scheme can be developed for one section only of a community. Disease knows no colour bar.

When State Hospitalisation comes to be accepted, a full scheme should be worked out and developed in its related parts under the control and direction of a central administration.

The Architect should be called upon to play a vital part, as his is the skill which has been trained, disciplined and cultivated by an intensive academic and practical education, towards planning and designing buildings and surroundings to provide greater and more intensive physical and mental enjoyment, and so to provide the background for a fuller and more cultural scheme of living.

Immediate Requirements

Before such a scheme could be put into working order, the pressing and immediate need must be met, which is the provision of buildings under the curative group in the Nursing Home and Cottage Hospital class.

To prepare standards from which to work the following empirical notes are given for those who may be called upon to prepare designs.

Site. The site should be one reasonably isolated from noise and free from industrial waste and odours.

The provision of a plentiful supply of good clean water is essential and the disposal, by a well designed drainage system of waste and soil matter is of primary importance.

Where there is no connection to a working sewerage system, the size of the site and the nature of the ground must be such as to readily and aseptically absorb the effluent from the treated sewage.

The location should be on rising ground with an easy gradient from South to North and such that all buildings may be orientated to the North.

Valleys, damp ground and excessively windy places should be avoided.

Easy access from the area which the Hospital serves must be considered. The convenience not only of patients, but also of visitors and staff must be taken into account.

General layout. The Hospital may be roughly divided into four parts.

- Administration.
- Ward units with treatment rooms.
- Kitchen and services.
- Staff accommodation.

Until such time as clinics are established a fifth division is necessary, that of out-patients.

These are cases requiring attention and possibly medicines, but not serious enough to be detained overnight or for any length of time as in-patients.

The administration should be in such a position as to easily control the working of the whole scheme.

The ward units and treatment rooms should be designed on an open plan so as to make the most of the light and air of a sunny and pleasant climate.

A jig-saw-like jumble of enclosed spaces tightly compacted round small light wells is a rigid and unimaginative method of providing accommodation,

but it is not the approach of skilled technicians nor is it a sane and efficient solution to the special social problem which in the face of a changing society, demands to be free and easily adaptable.

The Kitchen and related services should be so arranged as to efficiently serve the ward units and to be away from the general flow of traffic.

If it is desired to accommodate staff near their place of work, they should be so arranged that in their off-duty and recreation time they should not, by the arrangement of their quarters, be made to be conscious of the proximity of the Hospital.

A separate building connected to the hospital by a covered corridor is the best arrangement.

The roadways should be of a good construction free from dust and designed for an easy flow of traffic. There should be separate entrances for the ward units, kitchen and staff quarters.

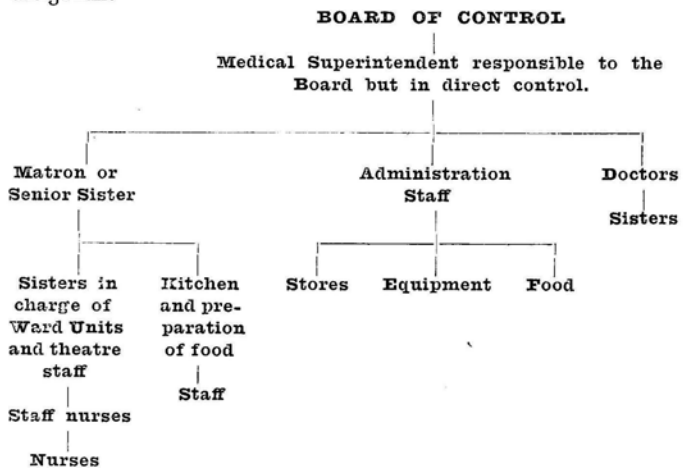
The ground round the hospital should be simply laid out in lawns and trees.

Pretty gardens and lovely natural surroundings are for the convalescent farms.

The staff quarters should be set in their own gardens with plenty of flower beds, trees, shrubs, lawns and recreation space.

Before proceeding to a detailed analysis of the plan it will be necessary to examine the working of the hospital.

This will be readily appreciated by reference to the diagram.



The key to the internal control is the organisation of ward units.

This is the accommodation for a number of patients which can be conveniently grouped together and controlled by one sister.

This number can be set down at 26 with an absolute maximum of 33.

Establishments of from 33 beds to 104 beds, that is 2 to 4-ward units, may be classified as Cottage Hospitals, and the term Nursing Home applied to units of 12 to 33 beds.

In the following notes a Cottage Hospital is considered.

Many of the features discussed apply to large General Hospitals, but the approach and planning

cannot be the same because of the difference in the economical functioning of both types.

The General Hospital caters for a greater number of patients, thereby permitting the cell of hospital organisation, a ward unit, for each particular type of case.

One may be for male medical, and another for female surgical, yet another for children and so on. The Cottage Hospital, within its small limits, may have to provide accommodation for all groups of patients requiring hospitalisation.

Adult male and female medical and surgical cases require the same accommodation, but children, maternity and isolation demand further consideration.

Thus it can be seen that the calls upon a Cottage Hospital are such that the scheme provided should be easily and readily adapted to meet these changing needs, and still maintain the basic organisation.

Provision for extensions should always be allowed for, but it must be appreciated that the economical limit to which a scheme can be extended is directly dependent on its administrative and catering facilities.

In arriving at the size of the kitchen a generous estimate should be made of the likely increase in patients for the next five years and the higher number taken as the basis.

The guides laid down apply with equal force to a Nursing Home.

Plan Analysis

In the space of this short article the relationship of the various elements can best be indicated by a diagram with a subsequent elaboration of the portions marked.

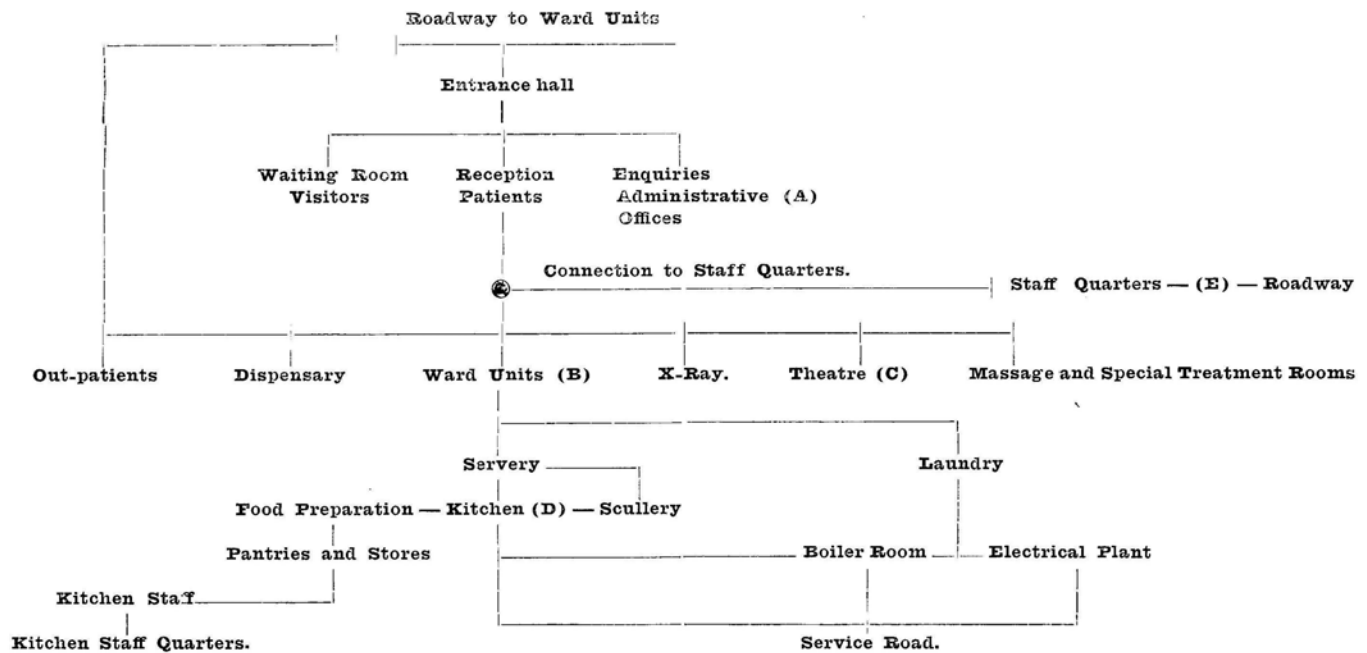


Diagram illustrating relationship of elements in the hospital

Administration

(A) A suite of three offices and records room, one for Superintendent to be used also as a Board Room. Area 300 sq. ft. One as a general office for a typist and a clerk. Area 250 sq. ft. One for Matron. Area 150 sq. ft. Records Room. Area 100 sq. ft.

Ward Unit

(B) Plans of adaptable and fixed types of ward unit are given. The difference in arrangement should be noted.

The scheme illustrated (top, next page) is taken from a back number of "Public Works" and is the ground floor plan of the Chronic Sick Home at Rietfontein.

Incidentally, here is a quotation from the text in that same issue on the Sick Home:

"The generosity of South African people to their poor and destitute is so well known that it hardly comes as a surprise to find to what extent the charity of the Transvaal Provincial Administration has enabled scores of aged people to live in comfort and happiness, despite their poverty and the affliction of some disease or other."

This seemingly magnanimous attitude is one which should be opposed to the utmost; such philanthropy is a relic of the "poor house" days. In a civilised State all people are entitled to every care and consideration as regards their health.

In the fixed type, large wards are shewn, which are economical in first cost and easily supervised and controlled but are very depressing to the patient who loses the privacy and quiet of smaller wards. The comfort, convenience and helpfulness of the environment is of far greater importance to the patient than any economy of first cost and upkeep.

In both cases the unit as indicated is controlled by a Sister who in addition to the administrative work keeps in her room a store of medicines. Cupboards then should be provided along one wall about 4ft. high with glass shelves and with glazed sliding doors.

The Duty Room or Nurses' Station is the general meeting place and work room of nurses.

Along one side of the room should be placed cupboards as for Sister's room. A wash hand basin easily supplied with disinfecting fluid is necessary.

The duty kitchen should be fitted up to prepare light diets and should be supplied with a small range, refrigerator and sink and drainer and cupboard space for crockery and light foods.

The sluice room should be fitted with means of cleaning and sterilizing bed pans and urine bottles. A mechanical apparatus is to be preferred. A rack for clean bed pans and bottles is required and a sink and drainer for cleaning mackintoshes with hanging rails for drying and storing.

Lavatories. These should be provided in each ward unit planned in blocks and properly cross ven-

tilated. For patients male and female each: two w.c.'s, two bathrooms, two basins.

For staff, male and female, each one w.c., one basin and a small cloakroom.

For service, a small room fitted with a slop sink.

A lavatory unit each for male and female visitors is required in the general scheme.

Linen Rooms. A room of 48 square feet fitted with batten shelving for the storage of clean linen and another room of similar size but without shelves for the dumping of soiled linen.

Wards. The number and arrangement of beds in wards will decide the size of rooms.

For the comfort of the patient the ward should be such that he can obtain the necessary privacy.

Six beds to a room each provided with a screen and so arranged that the patient is not forced to look into the light is on the fringe of comfortable accommodation.

This will give a room of 27ft. long by 20ft. wide which is of a good proportion and can be made very pleasing in appearance.

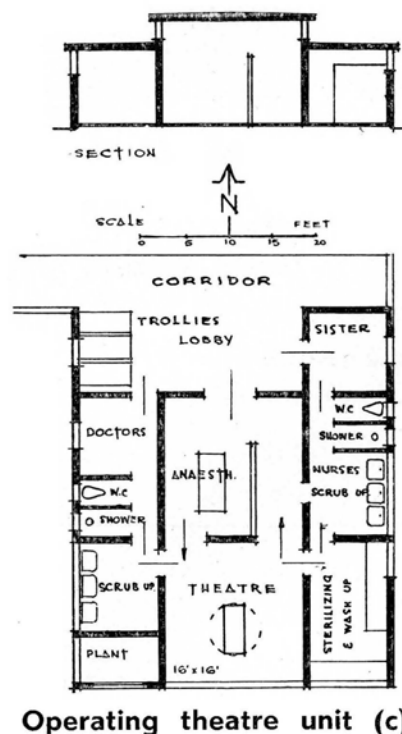
The major accommodation should be in single and two-bed wards.

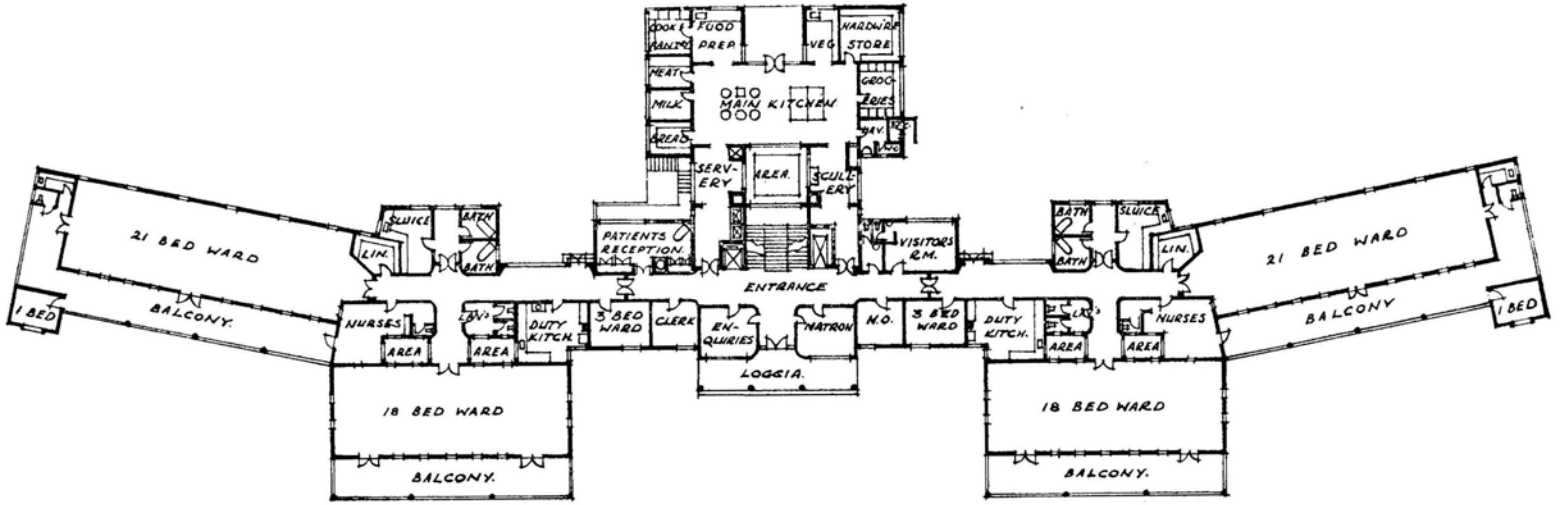
The provision of ablution facilities in wards is important.

The medical and nursing staff should have the ready means of washing and sterilizing their hands and there should be some provision made for the nurses to draw water and empty basins without having to traverse long distances.

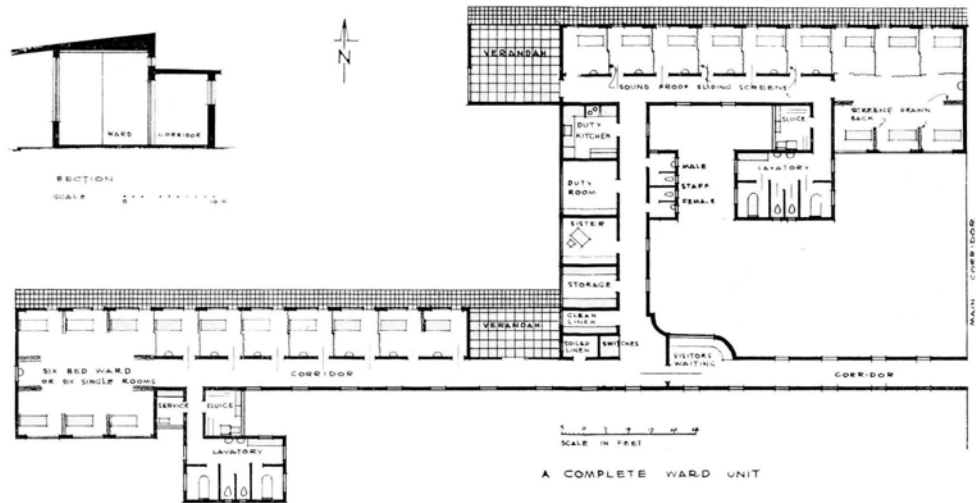
The floor to ceiling height should be proportioned to the size of the room.

Windows should be such as to give adequate ventilation while directing the flow of air in a direction





GROUND FLOOR PLAN : RIETFONTein CHRONIC SICK HOME



A FLEXIBLE TYPE OF WARD UNIT — (B)

to minimise draught, but the primary purpose of the window, that of admitting light, must not be overlooked.

The size and placing of the windows should be determined by the requirements of the enclosed space beyond and not by a preconceived and applied pattern of solid and void called the Elevation.

No amount of broken surfaces and applied ornament can make up for the natural light lost to rooms by the method of first considering "The Plan" and then "The Elevation." The scheme must be considered as a three-dimensional project.

The glass line of the window should not be more than 2ft. 7½in. from the floor and the head of the window should be as near the ceiling as possible. The actual glass area, not the overall area of the window in clear and unobstructed walls, should be at least 15% of the floor area.

Where verandahs occur this proportion is to be increased. This is a rule of thumb method and must be used with caution.

All windows in wards should be fitted with venetian blinds so that the amount of light can be controlled by the patient.

In the provision for isolation cases single-room units can be arranged with visiting over open verandahs. Each room should have a wash hand basin and facilities should be available for sterilization.

Accommodation for children is similar to that for adults except that the area to be provided per patient may be reduced.

The decoration in children's rooms should be light and gay.

Operating Theatre Unit - (C)

A plan is given on page 24. In the theatre unit the surgeon enters his room directly off the corridor.

His undressing, robing and ablution facilities are arranged in the order needed, which means that he enters the theatre in the proper condition.

The theatre sister and nurses also have their series of work, change and ablution rooms.

An anæsthetic lobby and separate exit are provided for easy circulation at rush periods.

Kitchen and Service Unit - (D)

The conditions are very variable and must be considered on their merits. Provision must be made for the storage of groceries, vegetables, meat, dairy products and fish and for facilities not only to cook but to prepare and serve food and also to clean up and store cooking and eating utensils.

In the case of cooking by coal or anthracite ranges, storage must be provided for fuel and arrangements made to refuel and clean the ranges without passing through portion of the working space where food is being handled. A separate boiler room should be attached for provision of hot water.

Subsidiary rooms to the kitchen should be planned so as not to cut up the wall space by an innumerable

number of door openings. These rooms can be conveniently arranged off a corridor. In the kitchen ample table and working space is essential. The type of equipment should be considered and space provided accordingly.

In the complete four-ward hospital an area of 450 sq. ft. for kitchen and preparation space and a scullery of 11ft. x 7ft. should be sufficient.

Staff Accommodation - (E)

If provision is being made for accommodation of nursing and medical staff on the premises, the Superintendent and male doctors should have separate houses. For lady doctors separate flats can be attached to the Nurses's Home.

The Matron and Sisters should have their own flats and each nurse should have a separate bedroom of at least 11ft x 9 ft. 6in. in the clear with built-in fitted cupboard, dressing table and wash hand basin.

Large rooms for recreation should be included, and the whole scheme should be so arranged as to provide for comfortable living rather on the lines of a good hotel than of an institution. Apart from a question of ethics, nursing requires a great deal of hard work and sacrifice, and consideration shewn in the comfort and welfare of those engaged will be amply reflected in their work.

In the space of this article it will not be possible to discuss materials and finishes but an appeal can be made to architects and hospital administrators to consider the proper use of colour and lighting. There is a feeling of hopelessness and the impression of the dreary inevitability of life in the unimaginative, conservative and non-intellectual use of colour in most of our present buildings.

The dark greens, chocolate browns, cream and yellow portray the institution and a certain type of official mind.

There should be a conscious and intellectual striving for a balanced effect of sympathy, excitability, fun and laughter in the choice and application of colour.

In the artificial lighting, the system of only providing illumination at night is a poor use of the possibilities which electricity offers. The lighting must be designed with the building as part of the colour scheme and finished, so as to produce the contrasts and effects which are physically and psychologically required.

In selecting the equipment of the hospital only the best that modern skill and technics can make is considered. The building should reflect this high standard of efficiency.

The equipment is the result of much research and intimate co-ordination of highly skilled doctors, scientists and technicians and is constantly being revised through the development of further research and intensive study.

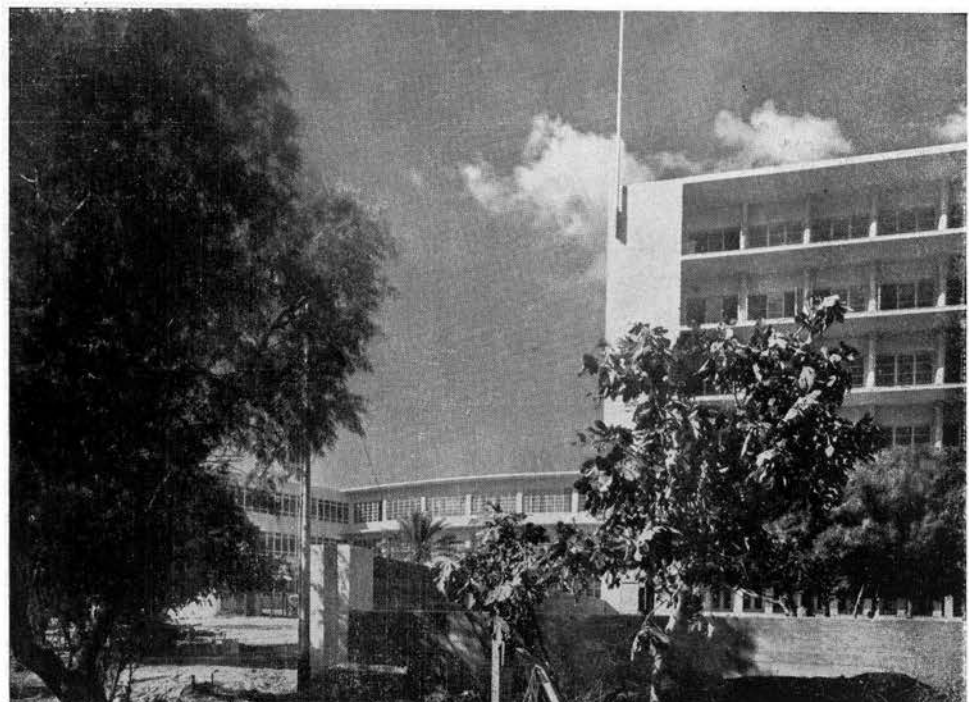
Hospital building must keep pace with the technical developments of the day and reflect as did the best architecture of the past the technical perfection of its time. The present stage of our technical development makes possible the use of concrete, steel, glass, plastics and even wood and bricks in a lyrical architecture of lightness and poise. This can only come about in the same way as the equipment is perfected—by further research and intensive study, and architects generally must discard the rule of thumb methods, drop their preconceived ideas, take nothing for granted, but go back to first principles and be prepared to investigate and analyse the needs for which they are building

and try to appreciate what they really can do for society. This means research and intensive study.

If hospitalisation is to become a vital force in the life of the people the research and intensive study will have to be undertaken and a scientific basis established for the design of its buildings.

The buildings and surroundings are the stage set and background for the development of a progressive social environment in which the prevention of the incidence and spread of disease and the treatment of the breaking down of the human frame and mind are part of the social consciousness and a lasting contribution towards our responsibility to the future.

G O V E R N M E N T H O S P I T A L A T
H A I F A P A L E S T I N E B Y
E R I C H M E N D E L S O H N



P h o t o g r a p h :
A r c h i t e c t u r a l R e v i e w

SOME ASPECTS OF THE RECONSTRUCTION PROBLEM

By PAUL CONNELL, B.A.R.C.H.

FOR some time there has been a widespread demand for reconstruction, for the replacement of the present rather unsatisfactory condition of our homes and cities by something more fitting to the modern man, for better surroundings, which will not only cater for our more fundamental needs, but in which the higher aspirations and ideals of humanity will have a fair chance of fulfilment on a mass scale. The war has given point to this demand, in creating opportunities for rebuilding by the forcible demolition by enemy action of many of the obstacles that stood in the way of improvement. At the same time the war has brought to the surface many grave inefficiencies in the social body and revealed the urgent necessity, not only for reconstruction but for an organised national plan which will result in the progressive raising of the standard of living, in the parallel development of town and country to create an environment favourable to humanity, and in the extensive distribution of the benefits of modern civilisation to all sections of the community.

In view of the fact that reconstruction is neither to be merely an academic exercise for young architectural students, nor (we hope) limited to verbal flatulence by Parliamentarians, but is a matter concerning the happiness and security of individual men and women, it is essential to consider the kind of human material on which the makers of the new civilisation have to build. It is good to note that the war has revealed afresh their essential vitality, exemplified in the reaction of the population of London to the blitz. Their will-to-live, under the strain of constant bombing, ejection from shattered homes, in crowded and uncomfortable quarters, has evoked the admiration of the civilised world. The myth of decadence and supineness is exploded. Those people suffered paralysing fear, physical distress and misery, but far from a listless loss of morale, these things revealed a strong community spirit, a healthy and helpful flow of criticism, and a grim humour. The people have been awakened out of the apathy to which a hundred years of economic exploitation and a social policy of *laissez-faire* had reduced them, at first to some extent by the war of 1914–1918, and much more by the present one. They have criticised the Government and seen their criticism seriously considered, and reforms instituted. The possibility of a better world after the war is constantly brought

before the community, in platform speeches and in parliament. In South Africa, social reforms, economic development, and even a State planning council have been promised. The war has fostered this mood for planning and reconstruction which has now received the consideration of statesmen. The people are offered better things and their natural desire for a fuller and more complete life receives impetus.

The necessary social background and common desire for a great reconstruction programme have come into existence, and society has a right to expect that national planning for social improvement will be placed in the hands of competent experts. It is the duty and privilege, and the grave responsibility, of the scientific, technical and intellectual leaders of our country, and of those who do the actual "planning" — the moulding of the environment, the designing of the stage-set for the drama of life — that is the architects and town planners, to give the people a lead and to show what can be done, and must be done, to turn the "good life," the goal of modern civilised man, from an ideal into a social fact.

It is a tremendous responsibility, and leads to a colossal programme, but the people expect boldness and above all, a solution. Our planning must, therefore, be of a high order. The nation's best brains must co-operate in the formulation of the plan; the country's resources, raw materials, industries and manpower harnessed, developed and utilised in its execution. Every device of modern technology which can contribute to the building up of a better civilisation must be made use of, and all that retards, that obstructs, that sabotages the progress of reconstruction must be ruthlessly discarded, without compromise.

The inefficient and generally unsatisfactory state of our present-day civilisation (quite apart from wars and similar upheavals) is a commonplace, even to the man in the street. While we are concerned primarily with re-building, the roots of the problem exist in the present state of affairs, and it is necessary to look into the existing conditions in order to discover those factors which have been responsible for the disorder and inhumanity, so that they can be avoided (or abolished) by the builders of the new civilisation.

THE UNPLANNED CITY

The moment an investigation is made into the problems facing us today, serious shortcomings are exposed in the pattern of our lives. Youth's natural expectations of a life full of interest with a fair chance of achieving security and happiness are all too often slowly and inexorably crushed beneath a deadening burden of hard facts: the physical exhaustion of the long day's labour, the drab dullness of the suburban home or the filth and degradation of the slum, the costliness of education and culture and the lack of leisure for it. Under present conditions even work ceases to be anything more than a means to an end, except for the more fortunate few, for the majority never see the end of their labour nor have any part in the distribution of its product. For them, "real" life begins in the evening after the factory gates have clanged shut, and then it usually consists, not of actually living, but of looking on, at the movies, in the mass attendance of professionalised sporting functions, or in merely drinking in the contents of the more scandalous newspapers. Many seek refuge in escape by avoiding the problems of living in sterile conventionality and a trivial round of social engagements (this method is favoured by the more well-to-do), or by the more obvious avenues of alcohol and dope.

This is a black picture, but in essence it outlines the condition to which metropolitan civilisation has reduced the lives of the majority of men. Its effects, of course, are worse in some regions than in others, and on the whole, due to a number of economic and historical factors, South Africa stands in a better position today than many of her contemporaries. Nevertheless the conditions which have brought about the dreadful industrial towns and dehumanised metropolises of other countries are present within the economy of this country, and indeed four-fifths of our population live habitually below the bread line, under conditions of intense spiritual depression and for the most part without the organised escape-mechanisms available to the European and to the masses overseas.

Despite the overwhelming monotony and meanness of metropolitan life there is strong evidence of a powerful resistance to its devitalising character. Children play in the alleys among the ashcans; lovers laugh amid penury and hunger; a poet's genius flowers in the stricken colliery-town; a peoples' leader is born in a tenement.

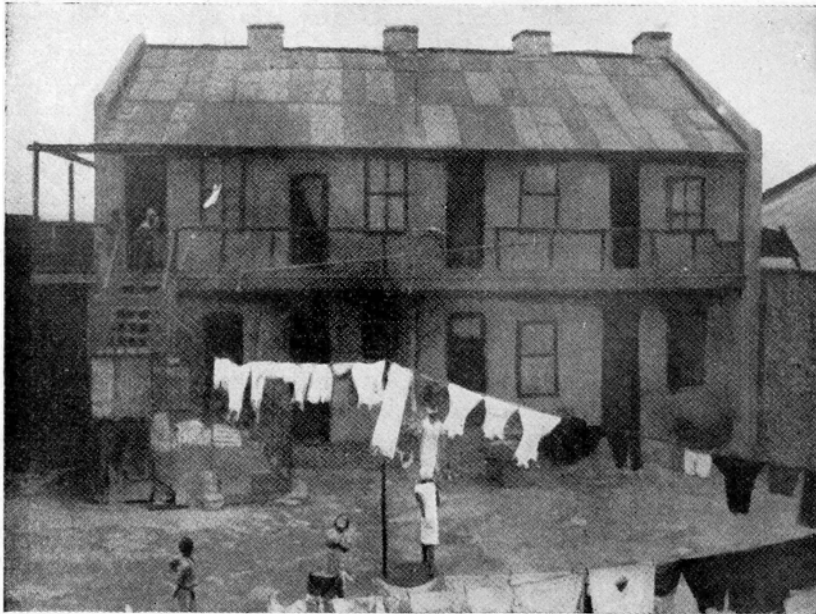
It is precisely this resistance, this efflorescence of the forces of life in anti-vital circumstances, which gives us encouragement in our endeavour to create an adequate setting for healthy living for the masses in the immediate future—that is, immediately after the war. For we are not building for a degenerate race of listless robots, but for a people who have shown that they can achieve considerable human happiness and vitality in the most unfavourable atmosphere. There is every reason to suppose that in a favourable

environment such people will be perfectly capable of living a full and mature life. By "favourable environment" we include those economic and social factors without which the building of better material surroundings is impossible. The debasement of life in modern times is in no small degree caused by the deterioration of our surroundings which has progressively taken place over the last hundred years. There are also economic factors which are the origins of both the debasement of life and the deterioration of the environment.

Primary causes of the exhausting complexity and perplexity of modern city life are the arbitrary arrangement of the various parts of the city—its commercial, industrial and residential areas, the disordered confusion of its buildings, which follow from a century of haphazard development and non-planning, and the agglomeration of population in urban centres. All these phenomena are the resultants of an economic order based on the concepts of free trade, free competition, private enterprise for private (not social) ends, profit being the driving force and the "natural" reward of enterprise. There is no space here to digress into the philosophy of capitalism or to analyse its historical development, but the visible and tangible consequences of such uncontrolled "free" development are apparent in every street of every great and small town.

The ragged skyline of the modern city is an expression of the unplanned juxtaposition of structures of every size, description and varying function. The effect on the eye is harassing. In mediæval times a similar conglomeration of buildings, for instance round a market place, possessed a unity of appearance by reason of the common technological method applied to all buildings. This characteristic building technique imparted a similarity of form and texture, a similar organisation of window and wall, unifying the composition despite the picturesque jumble of roofs and diversity of heights. In our day the complexity of shape and height in adjacent buildings (result of economic conditions) is aggravated by the further complexity of decorative treatment. (Expression of the search after "individuality"—philosophical by-product of private-enterprise economy.)

The subdivision of the city into small plots whose extent of street frontage becomes an index of their commercial value had its roots in the mediæval town, where the dwelling-house served also as workshop, counting-house and often partial warehouse as well. Streets were pedestrian footways; each householder kept his small strip of paving in repair. A present-day village street often exhibits the same basic structure. In the days before wheeled traffic, and in small uncongested communities today, such an arrangement would be satisfactory enough, but in the modern town the same form persists with little change, despite the development first of horse-drawn and then mechanical vehicular traffic, and despite the phenomenal growth of the size of cities which has multiplied the number



A SOUTH AFRICAN SLUM DEGRADATION OF LIFE

of business frontages to absurdity. True, rare cases do occur where a number of plot-owners are public-spirited enough to pool their interests in their individual plots for the sake of the rational development of a whole city block, but this is the exception rather than the rule.

The result has been twofold: First, the block is cut up into small lots on each of which is erected a building which has nothing at all to do with its fellows. Each of these buildings has a "street" façade—the posh façade—boldly or truculantly facing the world. As each façade must express the owner's individuality, opulence, taste (good or bad) and what not, the final result is nothing but confusion. The avoidance of monotony by such manifestations of individuality serves only to create a further monotony of muddle. In most of our streets there is neither the geometric discipline of renaissance planning, nor the picturesque grouping of basically similar units as found in the mediæval city. Where such are to be found it is either as survivals, or in the form of a conscious attempt by the local authority to introduce "town-planning" by palliative methods.

The second result is a multiplication of dark, damp and airless courts, ducts and "areas" in the interior of every block, the sum of which represents a considerable proportion of the total ground area. These courts are the sole daily prospect of large numbers of luckless commuters. Frequently their theoretical effectiveness is so nullified by the height of the structures surrounding them that workers on the lower floors are compelled to work under artificial light throughout the day, lowering their vitality and destroying their eyesight.

The development of the motor-car, without corresponding adjustments in the layout of the city, has

brought about the nonsensical jumble and confusion of pedestrian and wheeled circulation which has made the street both unpleasant and dangerous. Traffic noise, the blare of hooters and crescendo of revving engines in the canyon-streets further add to the physical and psychological irritations of the office worker.

A further feature of the uncontrolled growth of the town during the last 100 years has been the distribution of industrial and commercial nuclei over the whole urban area. The complication of traffic which has resulted is seen today in the great volume of surface transport, the network of subways and elevated railways, and the miles of suburban lines necessary to keep the city functioning. The tendency of populations to cluster round the towns—the centres of wealth and culture—has had the effect of increasing this complication to such an extent that in the larger towns frequently two or even three hours of the worker's day are taken up in travelling between home and workplace.

SUBURBIA

Small wonder that the instinct is to escape—to flee from the great, tiring, inhuman, mechanical monster called the city, Metropolis. The individual seeks freedom and peace by setting up his home on the outskirts of the city at the frontier of the countryside. The metropolitan land-speculation companies joyously follow, scenting "expansion," and within a few years a further 10 square miles of garden-city (illusion of freedom) are added to the city's vast agglomeration, a further three miles of suburban railway, an extra half-hour's travelling every day.

As the suburb becomes built over, the illusion of escape evaporates and instead of the joys of the

countryside at the front gate to compensate for the hard disciplines of the working day, there remains only the dead dullness of the dormitory district. Cultural and recreational facilities and most higher educational institutions remain in the centre of the city. Those who desire recreation, mental stimulation or communal activity are compelled at the end of the day's work to hurry home, snatch a hasty meal and race back to town to be in time for the start of the evening's programme, or else to stay in town for the evening meal. The citizen sees too little of his home and family and is deprived of the full biological and psychological satisfactions of active participation in family life. The man who either cannot afford, or is too weary, mentally or physically, to return to town for relaxation finds no cultural facilities in the dormitory suburb, beyond possibly a small movie house. He probably stays at home listening to the radio. The home becomes divorced from the city's life, an island of enforced individuality. Civicism declines. People become less and less accustomed to communal activity and collective responsibility, and become all the easier prey for unscrupulous political adventurers. A far cry indeed from the civic dignity and stability of the despised middle ages!

THE BACK COUNTRY

In contrast to the complexity and exhausting turmoil of life in the modern city, and in sharp opposition to the mechanical decencies of civilisation (electrical appliances, waterborne sewerage, central heating, etc.) associated with city life, the agricultural worker continues his ageless life of toil in conditions little better than those of five hundred years ago. True, the well-to-do farmer can afford to import from the town many of the comforts of modern life, but the majority of countrymen live in crude squalor. Undoubtedly the countryside has its compensations—the fragrant breeze caressing the cornfields, the smell of earth fresh-turned under the plough, the kindly blue bowl of the sky. Many would hold that the peasant is far better off than his more civilised brother, yet the lower standard of life in the country, the yokel's slowness of wit and elementary interests are notorious. The truth is that under our present economy the back-country does not yet enjoy many of the benefits of machine-civilisation (even if it has escaped some, though not all, of its evils), nor has it kept pace with contemporary thought and culture. The difference in the levels of culture and material comfort has resulted in a distinct rift between town and country. The mutual relations of the two separated sections of the community become unsympathetic, suspicious and finally mutually unintelligible. Such a division may have grave social and political consequences: Examples: Spain, South Africa.

The foregoing are some aspects of our civilisation at the present time. Modern technics (the product of an economic system which has developed our complex and highly-organised society, from the simpler form of feudalism, but is now faced with the inevitable problems of its own inherent contradictions), harnessed to an inadequate social philosophy, have produced the modern city, so inimical to human life in its present form, but at the same time modern technics gives us the tools with which we can build a new civilisation based on the respect and nurture of life in all its forms, and particularly human life. Our pre-occupation with merely mechanical perfections is insufficient and we must turn our minds to the individual and social problems of living if we are successfully to create better surroundings and a higher standard of life for all. These aims must form the driving force behind any attempt to plan for the future, for far from being Utopian dreams they are realisable objectives, and any lesser objective than the highest that scientific research and technological development can achieve for us is unworthy of serious consideration. There are signs in many parts of the world that they are indeed becoming the driving force behind improvement programmes, local, regional and governmental.

The serious pass to which the old order has brought us, and the urgent need for planning and rehabilitation have of course been long recognised by many authorities, for instance the Government of the U.S.S.R., President Roosevelt's Administration in the U.S.A., the American Bureau of Reclamation, the Tennessee Valley Authority, and by bodies like the C.I.A.M.,* the Swedish Co-operative Societies, and individuals like le Corbusier, Lewis Mumford and very many others. The general public was beginning to realise that things had been allowed to drift too far, and there has been an increasing degree of interest in finding methods to combat the decline. The outbreak of the second world war has postponed to some extent the tackling of the problem, but has increased the popular demand for reform—for reconstruction, for a new start, but this time with vastly improved technical knowledge, with the benefit of the best of human intelligence, working in co-operation; the ideal a higher standard of life in the mechanical and biological senses; the means, public works (in the sense of organised programmes which will benefit the whole community as opposed to a disjointed and unrelated development to the profit of a few individuals).

The problem involves the following programme:

1. To reorganise the urban environment so that the city dweller can live a fully-developed life, biologically and psychologically balanced, amid surroundings which are no longer divorced from nature.
2. To break down both the cultural and physical barrier between town and country by means of controlled regional development, by sound

* Congrès Internationaux d'Architecture Moderne.

agricultural policy, and by the distribution of mechanical utilities (electric power, irrigation, flood control, etc.) over the countryside.

3. To spread the benefits of modern scientific and technical knowledge through the whole community, so that all shall benefit and be able to play a vital part in the forming of the new civilisation.

THE IDEA OF PLANNING

Contrasted to short-term policies which try to patch up the present state of things by palliative methods which, however, do nothing to remove the causes of the decay of cities and the denudation of the countryside, and opposed to empiric and arbitrary development schemes based on erroneous economic premises (whether these be merely well-meant attempts by untrained bodies or the despotic commands of dictators), we have the concept of scientific thinking and planning.

The idea of pre-designing a habitable area or tract of country is as old as the history of civilisation. Nowadays the same idea has taken on a new form and new meaning. Instead of the classic procedure: the absolute ruler issuing his orders for grandiose monuments to his own glory or his state's martial prowess, (monuments often of great plastic significance but little social usefulness), we have now the idea of a number of penetrating and studious minds working together to produce a scheme for living which is for the general benefit of the community, both in the immediate future and for succeeding generations. Extraneous considerations of prestige, of national or political exhibitionism no longer carry much weight but are giving place to the more enlightened and fundamental scientific attitude of mind. This objective way of thinking, a cool seeking out and evaluation of the relevant factors, devoid of historical or sentimental associations, is a characteristic of progressive thought today among civilised men. Such an attitude, applied to all facets of the planning problem, economic, sociological, psychological, structural and architectural, will safeguard against false reasoning in any of these compartments.

It is clear that planning is more than the simple decision by an authority, central or otherwise, to improve this or that area, to move this or that bloc of workers to better localities. There must be co-ordination. The objective is a better life and a higher civilisation for everybody, and to achieve this end the various planning activities of all local authorities and of the State authority, must be tied into the general scheme for the whole community. Only in this way will the whole nation benefit concurrently.

The scope of the plan, its execution, the speed of its progress and the degree of its success are dependent on the state's economic strength, on its raw materials, industrial and agricultural development and on the quality and quantity of its manpower. These factors must be investigated and the first basis for any rational planning scheme is the economic survey.

No improvement schemes (except where conditions are so bad that immediate temporary relief is essential) should be attempted until the economic position has been sized up and thoroughly understood by the planning executive, and a programme and timetable of projected development laid down.

The economic survey involves a large number of subsidiary investigations, which can be broadly classed under three headings:

- (1) The resources of the natural region.

These include the study of climatic conditions: temperature range, humidity, rainfall, seasonal variations, prevailing winds, etc. Geographical characteristics: Rivers, flood control, erosion, condition of soils; forests, and areas under cultivation, pasture, desert; the study of methods of agriculture and likely methods of improvement; fisheries and marine resources; geology and mineralogy.

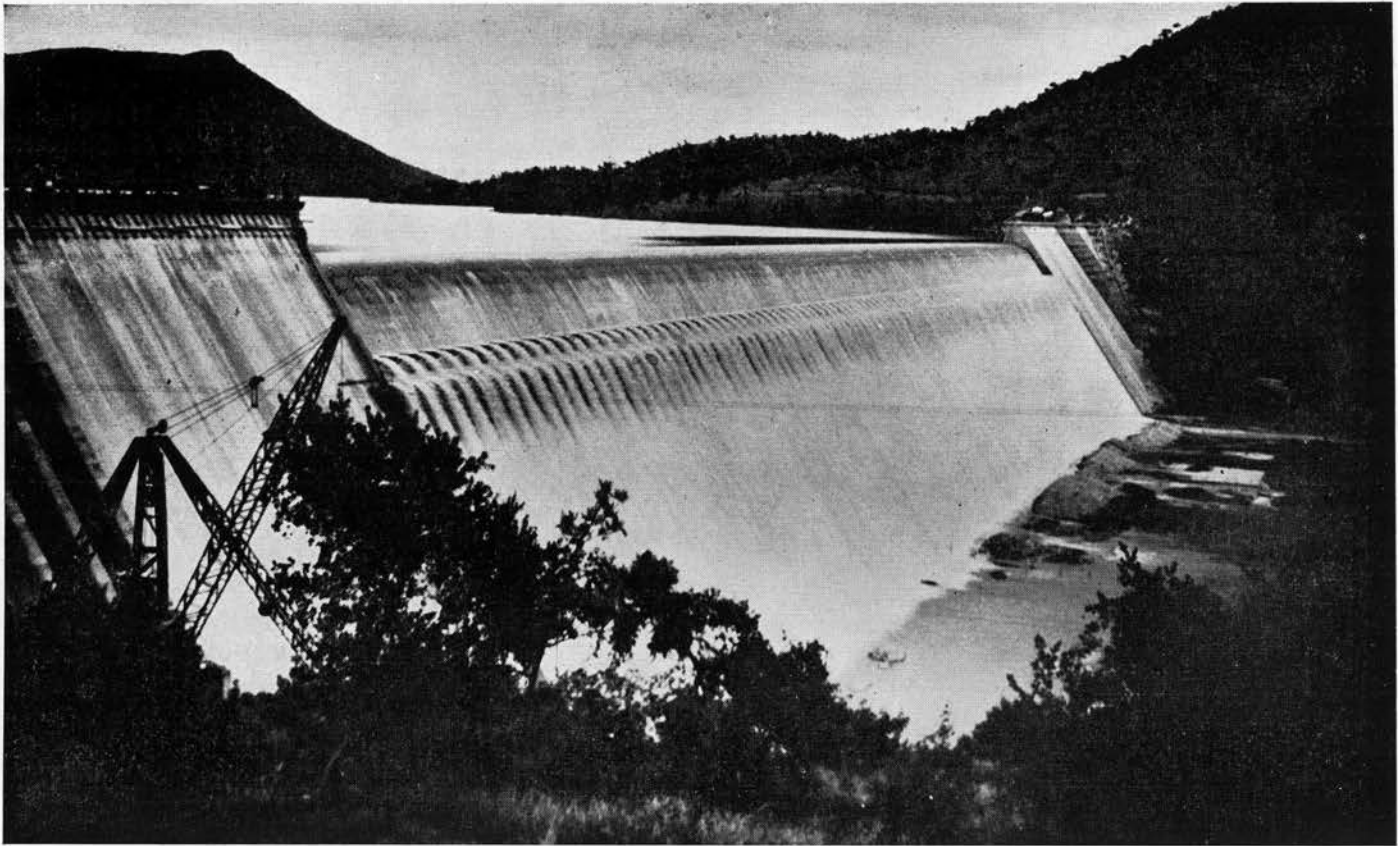
- (2) The resources of industry.

This would include: basic and heavy industries, mines, secondary industries, light industries, both existing and potential; investigation into the country's commercial position: its export and import trade, the home market, enumeration of new industries necessary for balanced economic development.

- (3) The population resources.

Under this heading the available manpower for industry and agriculture would be studied and classified into areas, quality, ethnical characteristics, cultural level, etc. The number of people engaged in commercial and bureaucratic work would be investigated and classified. By such methods an estimate of the probable productivity of the nation could be gradually arrived at. The community's purchasing power must be discovered, so that a just relation between production and consumption can be worked out.

These things are found to be possible in war time, as we are experiencing. The efficient methods of war must be applied to the arts of peace and civilisation. The whole field of economic theory and practice will have to be studied, and unbiassed answers to existing (and future) problems found: solutions which will be the result of the application of the scientific method to these problems. It will have to be decided, in the light of experience in the practical application of economic theory in various parts of the world, whether, for instance, private enterprise, unfettered, is capable of building up the new civilisation and the new environment. In the light of our investigations into the state of the contemporary city, private enterprise does not seem capable of building a decent world. If this is so, it must be decided what minimal changes, or control, are necessary to enable reconstruction to be carried out successfully. Certain steps seem immediately essential: private ownership of, and speculation in land are root causes of urban disorder and congestion. Future town development must be freed of this tremendous impediment to good planning. The socialisation of the banks and of certain industries is desirable. Eventually it may be necessary to postulate the complete socialisation of all means of produc-



AGENT OF CIVILISATION

LOSKOP DAM

Such dams as these represent the first steps in the process of national rehabilitation; they are valuable assets to Society, serving an important social function: irrigation and land settlement. As such they are positive agents of civilisation. But their social value would be greatly increased were they constructed, not as isolated schemes, but as part of a deliberately planned drive to develop the country's resources. The role of planning is to see that all such projects are developed concurrently with the other civilising factors such as scientific farming, electrification, improvement of communications and the development of vacational regions. By such a process of correlation the benefits of modern civilisation are evenly distributed, and the country's economy becomes more stabilised. Scientific planning carries us in one bound within reach of the good life.

tion. This is the economic basis of socialist planning in U.S.S.R. The United States of America, however, have initiated tremendous projects for social advancement without making this final break with the past. The eventual success of their system has yet to be demonstrated, and the issue is by no means certain. These problems must all be studied, and a socially sound policy and realisable programme of works formulated in the light of such research.



The danger of leaving such highly technical matters in the hands and under the control of professional politicians whose aims and ideals must inevitably be adjusted to suit short-term party policies, is sufficiently obvious. For the successful fulfilment of the large-scale reorganisation of the world on more efficient and humanitarian lines, a continuous, long-term programme is necessary. The only body which can give a mandate for such permanent activity is the general public, whose demand for better conditions must be satisfied. The only organisation capable of efficiently directing such a complex project is an organisation of disinterested and objective investigators — such as are produced by our Universities year by year and thereafter as often as not wasted on socially unproductive work — employed by the state on a permanent basis, whose duties will include not only investigation, classification and advice, but also the presentation of the plan to the people for discussion, the dissemination of propaganda for better living and better surroundings, and the education of the public in the aims and possibilities of the higher order of civilisation which science can bring to pass.

We have seen that planning is a very wide and far-reaching activity which requires the collaborative work of large numbers of experts. The services of many classes of scientists are brought into its orbit: geographers, geologists, economists, sociologists, psychologists, biologists, physicists and chemists, biochemists, doctors, educationalists, engineers, architects and many other workers find their place in the new activity. The very extent of the work involved indicates clearly that it is too vast to be entrusted to one group of specialists: the town planners or architects, or the town engineers. The work embraces the whole nation — its resources, its people, their customs, institutions, habits and predilections. It is too much even for a single central authority to deal with and cannot be left in the autocratic hands of a few men, whether they be those of a state department, a board of businessmen or a panel of architects. No individual or centralised group can possibly hope to absorb all the knowledge required to produce workable development schemes for the whole nation. The working out of the plan in detail must evolve on local and regional authorities, subject to the guidance and criticism of the central board or department of professional research workers.

What is required, then, is a national planning department which will work in closest collaboration with the nation's economic advisers, equipped with the

very best brains available. The function of this department would be to lay down the general planning policy, and to institute educational propaganda for planning and better living. The planning authority must have power to control the eventual form of all projects submitted by lesser authorities, to ensure their keeping in line with the general policy, due allowance being made for local tradition and preferences. The actual work would be carried out, much as at present, by local enterprise, only instead of fortuitous and haphazard development, we shall have substituted planned reconstruction on scientific lines.

It is true that such an organisation is not fool-proof, and is open to abuse. The crux of the matter lies in the type of individual to be appointed to posts in the central planning authority. The staff of this authority must be of the highest intelligence, socially progressive, scientific in outlook and possessing a greed for experiment and for the search for objective truth. There can be no place for the timid, the reactionary, the bungler, the drone. The standard is high. As we look around at our towns today, we become forcibly aware of the necessity for far higher standards than are common today. Who is to set the standard? There is one institution which (except in certain Fascist countries) has not lowered its absolute standards for the temporary approval of reigning political parties or systems: the Universities. The University exists for the pursuit of knowledge, and judges the quality of its students by absolute standards. Approval and recommendation by a University is suggested as the criterion in the selection of applicants for positions on the central authority.

PLANNING TECHNIQUE (1) SURVEY

The technique of planning resolves itself into three major parts: Survey, Planning, Execution.

The first stage, survey, involves the putting into effect of all the economic and social investigations outlined above. A great deal of field work must be done, both by the central authority, and by all the regional, urban and other local authorities. Much personal inquiry and study must be undertaken by individual planners, and frequent meetings held to sift the results of the survey, to interpret statistics, to discuss the findings of the investigators and discover gaps in the required mass of data.

Much of the necessary statistical information exists already in the form of numerous government publications, year books, etc., but a great deal of knowledge still needs to be pieced together, and further, individual first-hand contact between the planner and the people and terrain of his country is a necessary prerequisite to good planning. The help of other government departments may be profitably enlisted in the gathering of information, for instance: the department of education has means for local research at its disposal which are not usually utilised. A soil survey of Great Britain was recently carried out with the aid of school children. The departments of health, native affairs,

justice, agriculture and labour can render great assistance in population and natural resources surveys. The departments of commerce and industries, mines and railways can help in the compiling of data relative to the industrial strength of the nation and distribution of industries over the land.

A further aspect of the first or preliminary stage is the investigation of public opinion, the degree of awareness and the current conditions among the different sections of the population. This involves the searching of public opinion in debates and lectures, and the first tentative discussions on the aims and possibilities of reconstruction. The essential link thus formed between planners and public is an illustration of the application of experimental scientific methods to a practical problem, and safeguards against anti-social trends in any line of thought or action by the planning authorities.

The education of the public by press, radio, documentary film and poster in higher standards of hygiene and taste, in respect for life and nature, in the appreciation of their national and regional heritage, to fit them for the vastly superior environment of the new towns and villages which rational reconstruction will bring about, must be initiated at the outset, concurrently with the surveys to prepare the ground for the actual planning.

This preliminary stage of survey and research, collection of data and preparation for action can be started at once, and indeed must be, if we are to provide the better conditions so repeatedly promised to those who are at present defending civilisation, within the lifetime of their generation.

Gradually the research work of the central authority combined with the statistical investigations of specialists and the social surveys of regional and civic authorities, will complete the required picture of the economic and cultural resources of the country. On the basis of the facts so gathered, the economic plan for the nation can be worked out. The physical development of agricultural regions, the replanning of existing towns and the creation of new ones, the control of rivers and the provision of national utilities—electricity supply, highways, airports, vacational resorts, etc., whatever the authority under which these things are actually designed and carried out, all form part of the national economic plan.

(2) FORMULATION OF THE PLAN

The next stage, the actual planning, can be commenced as soon as all the essential data and statistics have been collected in convenient form. First, the steps in which the plan will be put into effect: two, three or five-year stages, varying in different regions and according to the size of the different projects. Then the areas to be developed, the towns to be made once more fit for human occupation, the rivers to be harnessed in each stage, will be decided by the economists on the basis of the economic and social surveys. The needs of local and regional units will be considered at this stage (on the basis of the local and regional sub-surveys), and the whole develop-

ment programme for the particular stage in question will be laid down. The resulting programme of works must then be discussed between the economists and sociologists and the town and country planners and the architects of the central planning authority, and final decisions as to the scope and details of projected works taken.

The plan has now to be put into effect. The central authority has a fully worked out plan of action before it. This plan, of course, will have been worked out in such a manner that the standard of life will be raised as evenly and equitably as possible throughout the country, so that no one region will be able to gain unduly at the expense of other regions. This would mean that in the early stages the greatest development would take place in distressed areas and in the most backward rural districts. Later the less debased towns and the richer farming regions would receive their share of the improved conditions. In a few years, the whole country's culture and civilisation would be roughly equalised, and as the plan progressed, raised to a higher level as a whole.

The areas and cities to receive attention being agreed upon, contracts would be entered into between the chief planning authority and the local municipal or rural authorities. These in turn, being close to the problem and in touch with the people affected, would work out plans which would be referred to the central authority, on the one hand, and to the people on the other, for examination, comment and criticism. The central authority would pass the plans through to other interested departments: electric grid administration, watershed control, irrigation department, highway and railway authorities, etc. Adjustments would be made, and final approval obtained. The local authority would then put the work in hand in any manner deemed suitable to the class of work, and the conditions in the area concerned: either by tender, or allotment of the work; by the local authority itself; or in conformity with some State conservation or rehabilitation scheme, according to circumstances. There is no reason to suppose that local private enterprise has anything to lose by being harnessed to a planned scheme of national regeneration. There is no possible case for a continuance of the policy of *laissez-faire*, of entirely "free" enterprise without plan. Such a policy can only lead to a repetition of the present state of chaos. If our aims are to succeed, we have simply got to get down to it and prevent that attitude of mind which drifts on, leaving things to chance, from having any further voice in our public life.

Concurrently with the preparation of detailed plans, there arises the important question of continuous contact with public opinion and the education of the people in the mechanical, physical and social bases of their culture.

This is a very big problem indeed, and it includes, among other things, the whole question of the architectural framework of our age. There can be no question of imposing any particular type or style of architecture upon the community. I do not intend

in this discussion to go into the problem of the architectural character of post-war reconstruction. This question requires a great deal more space than can be allotted to it here, but a few remarks on this point are not out of place. I am not going to discuss at length the competitive claims of neo-classicist apologists and the moderns for a place in the sun. There cannot be any question of rivalry between scientific architecture and the fortuitous choice of fancy-dress which is all that is left of a great artistic tradition. The perpetuation of the styles, even at their best, is but a wilful resurrection of dead art, which belonged to a culture which died (or was killed) shortly after the beginning of the industrial revolution. The new architecture belongs to the machine age. Not to the old, crude machine age of the nineteenth century, but to the new machine age of the twentieth. It is a living part of the biotechnic civilisation now unfolding before our eyes, and in the full enjoyment of which we shall all be living — if we have the energy and determination and foresight to build it during the next ten or fifteen years. The new architecture is an integral part of our age, and will be a dominant form in the environment of tomorrow. But in the immediate post-war execution of the plan, room must be left for transition and psychological adjustment.

The "idea" of modern architecture is still not too acceptable to many people who have not yet made the necessary mental adjustment to the age in which they are living. Such people would in any case resist any change which threatens their own familiar and comforting conceptions of home, town and life. (Yet it is a striking thing which I have often noted in practice, that when such people are shown inside actual

PUBLIC EDUCATION

MUSEUM OF MODERN ART, NEW YORK CITY



Page 36.

examples of good modern work for the first time, their reaction is almost invariably one of pleasant surprise, and often downright enthusiasm.) There seems to be a psychological resistance to change which will have to be overcome, but which in the meantime cannot be ignored.

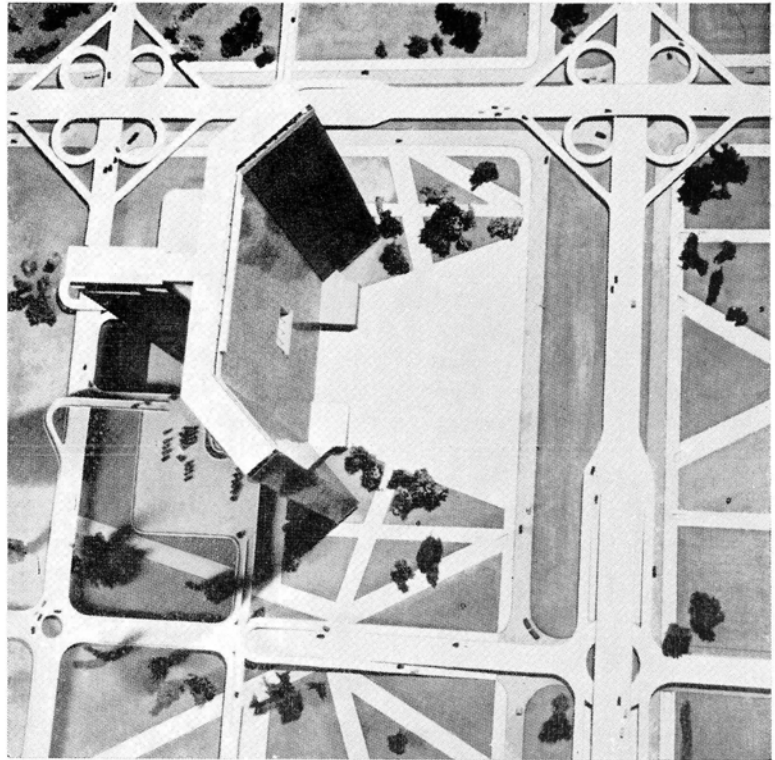
It would be a poor policy for the planners to lower the highest standard of their work in order to overcome this temporary difficulty. The people must be given the very best that scientific knowledge and human ingenuity can provide, not only in the environment as a whole, not only in the economic organisation of society but in their very homes, schools and workplaces. The new technics of building can alone provide this standard. The architecture which has arisen out of the new technics is our new architecture: what is known for want of a more explicit name as Modern Architecture. Modern architecture and modern building techniques such as prefabrication, built-up panel walls, welded steel frames and sheet steel decking, are the only methods which can solve the technical problem of rehousing after the war. The old methods are so slow and cumbersome that they have no hope of catching up on the housing shortage.

Still, the psychological problem remains and must be faced. Modern architecture can achieve a really highly-civilised frame for the lives of modern people. The community has a right to such a civilised and civilising background, as it has a right to good health, to social security and old-age pensions. Education can help a great deal in breaking down the misunderstandings which exist between modern architecture as it is and the popular conception of it. Again, the press, radio, documentary film and poster form handy tools, but by far the most powerful weapon for familiarising the people with the potentialities of the new architecture is direct contact between the architects and planners and the people for whom they plan. This is best achieved by giving the people of a locality a direct stake in their own local development, by submitting the projected plan to them in public meetings, for debate and criticism. This, aided by lecture tours, films and exhibitions carried out by the central planning authority, will give the community a direct interest in the growth and development of their own architectural background. Such a procedure would guard against any suggestion of the arbitrary imposition of an unfamiliar and unpopular architectural "style" on an unwilling population. No doubt, in some cases, transitional work will result from such co-operation, but if viewed in the form of an experiment, many valuable principles may emerge, which will contribute to a further stage of maturity in architecture.

(3) EXECUTION OF THE WORK

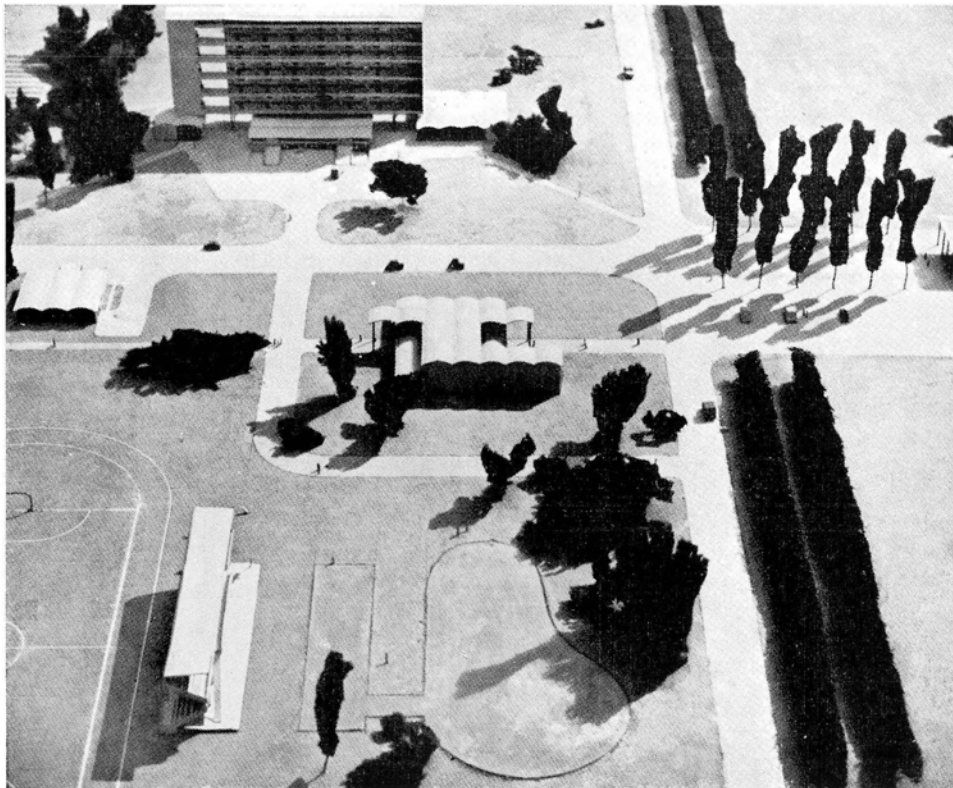
The third stage of planning, execution of the work, cannot be discussed at length here. Much would depend on the decisions of the local authorities. Under the present system a great deal of work would no doubt be let out to private practitioners, both in town and country; some would be carried out by the muni-

TOWN



BIOTECHNIC CIVILISATION

The machine is made to serve the needs of human life



COUNTRY

cialities themselves; other work would be undertaken by Government departments: public health work, Government buildings, irrigation works, roads, etc., for instance. The central planning authority would bear the responsibility for the general progress and policy of the work, and also keep an eye on the technical proficiency of the men directly responsible for each individual portion of the plan.

It rests upon us as architects, engineers and other technicians, then, to equip ourselves for the task ahead of us. We must perfect our technique, and probe the bases of our architectural philosophy, to discover our own attitude to the future of this country in which we live, for it is the efficient and progressive technician who is destined to play a vital part in the building of the new civilisation. The inefficient, the muddle-headed, the obstructionist, are playing a losing game.

A final word concerning the execution of the plan: I cannot stress too heavily the necessity for maintaining the objective scientific attitude in all fields of research, and in the actual piecing together of the plan. The whole plan must be constantly regarded as a great experiment. Many mistakes will undoubtedly be made: the inhabitants of our new living-units and standardised farmhouses will soon enough let us know when we are off the rails! This element of free criticism by the population is an essential part of the scientific experiment; if the planners regard it in this light, there is a good chance that mistakes will mostly be limited to the early years of the planning era.

Life itself is a vast laboratory and we are only at the beginning of the process of working out a *modus vivendi* for the machine age. Flexibility and adaptability are essential planning principles in the present transitory period. Even the towns must be designed so as to be capable of adjustment to new conditions. The improvement in standards of comfort and the increase in safe driving speeds in motor cars since 1932, to name only one thing, is tremendous: indeed, there are hardly any points of comparison between the two standards. That is ten years' growth. Much greater and more far-reaching changes will take place during the next twenty years. It would be a negation of the purpose of planning to lay down a technical standard of, say, 1942, and to postulate that standard as the level of civilisation for the next quarter-century. The new civilisation must benefit continually from its own technological progress. New processes, new materials, new methods of intercommunication, more efficient patterns of social and economic organisation, advances in psychological and medical knowledge, must all be woven into the plan as the work proceeds.

These few ideas on the question of planning merely serve, it is hoped, to introduce the subject and to show the necessity of thinking ahead, and thinking clearly, at the present time. The problem of our day—that of utilising our technical knowledge and

resources, not in mass destruction, but in the provision of happy and economically secure lives, amid the pleasantest and most civilised and healthy surroundings for all our people, irrespective of class, colour or opinion; in town and country alike, must be faced up to by all thinking people. The popular demand for planning at present gripping the imagination of the world, the acute housing shortage which will appear again as soon as the war is over, and the necessity of preventing a disastrous agricultural decline such as followed the first world war in many parts of the world, together give us a unique opportunity to approach and tackle this great social problem, whose end is nothing less than the building of a new civilisation on a higher physical and intellectual plane.

But we shall have to fight for it. There is much opposition which will have to be combated: the power of vested interests; the bitter reaction of the exploiting class; the political evil of fascism with its attendant mental and physical bondage; the ridicule and inertia of obstructionism and bureaucratic apathy. Again, within the circle of modern engineers and architects there exist many misconceptions, and there are many serious disagreements on points of design technique, and even on questions of principle, particularly in the field of town-planning. Against these things we have ranged the whole potential might of machine technology; the great ideal: the good life, the life of security and comfort with increased leisure for the more creative pursuits; and finally the will of the people giving us the power to act.

A State planning council has already been promised. When the time comes for the opportunity to be given us to build up this land into the superb setting for human life which it is certainly capable of being, we must be sure that we are able and equipped to carry out the task set us to a socially and technically successful conclusion.

ACKNOWLEDGMENTS:

- For the illustration of a South African slum: Johannesburg Utility Company's Brochure: "To Hell with Slums."
 For the photograph of Loskop Dam: "Rand Daily Mail."
 For the illustration of the Housing Exhibition, Museum of Modern Art, New York City: The Architectural Forum.
 The illustrations on page 37 are from Max Bill's publication of the work of le Corbusier and P. Jeanneret, 1934-1938. Published in Zurich 1939.

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 "City Planning: Housing." Vols. I, II, and III, by Werner Hegemann. 1938.
 "La Ville Radieuse" by le Corbusier. 1935.
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 "Town Planning" by Thomas Sharp. Pelican Books, 1940.
 A study of the publications: "The Architectural Review," "The Architects' Journal" and the "Architectural Forum" will be found to be of value at the present time.



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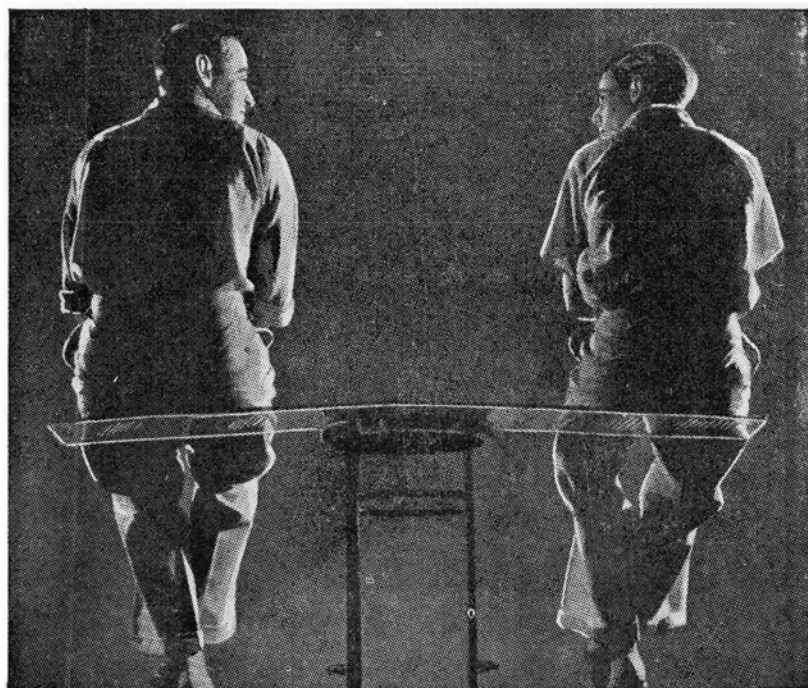
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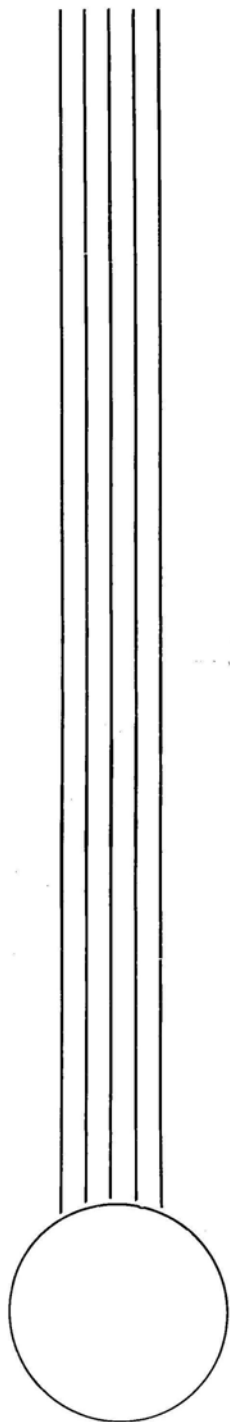
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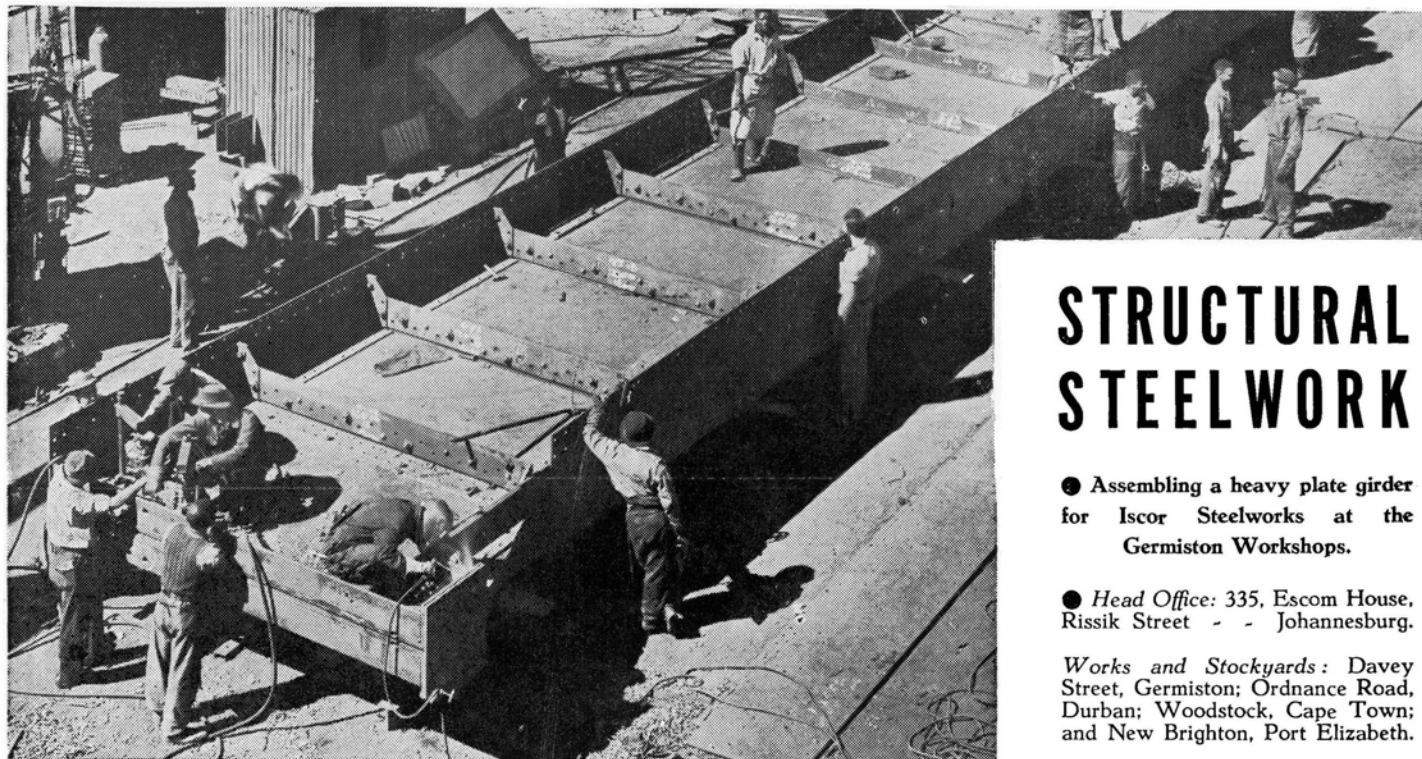
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