SOUTH AFRICAN ARCHITECTURAL RECORD

THE JOURNAL OF THE CAPE, NATAL, ORANGE FREE STATE AND TRANSVAAL PROVINCIAL INSTITUTES OF SOUTH AFRICAN ARCHITECTS AND THE CHAPTER OF SOUTH AFRICAN QUANTITY SURVEYORS

CONTENTS FOR JANUARY 1947

EDITOR, W. DUNCAN HOWIE

VOLUME THIRTY-TWO, No. 1

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FACTORY ADMINISTRATION BUILDING, "FIRST ELECTRIC CORPORATION OF SOUTH AFRICA LIMITED," NORTH ELEVATION

PORTFOLIO OF FACTORIES AND OFFICES

HAROLD H. LE ROITH, A.R.I.B.A., M.I.A., ARCHITECT

Photos: E. Robinow.

1947

FACTORY ADMINISTRATION BUILDING

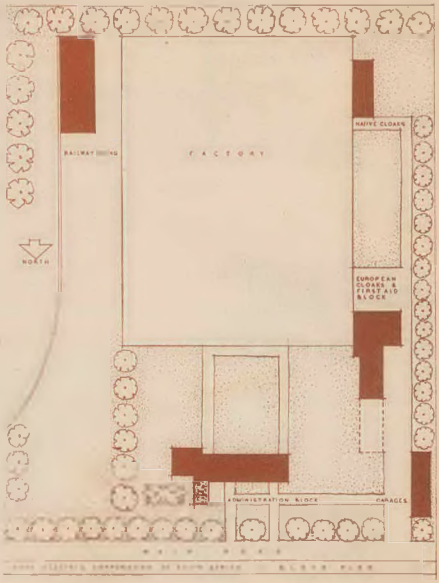
FIRST ELECTRIC CORPORATION OF SOUTH AFRICA, LTD.

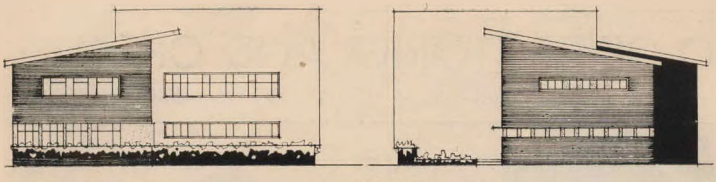
This building houses the offices of the First Electric Corporation of South Africa, Ltd. (with which is now incorporated the former Alpha-Harris Engineering Company). It is situated at Knights, near the site of the old Witwatersrand Deep Gold Mine, to the east of Germiston.

The planning of the entire scheme provides for future extensions which will eventually bring the buildings into a unified whole. The Factory, Administration Block, Cloakroom and First Aid Blocks and Garages will ultimately be linked up.

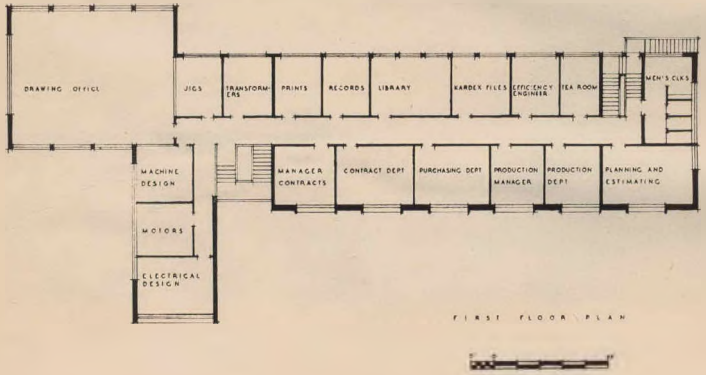
The Factory itself, built for the manufacture of electrical motors and transformers, is 135,000 square feet in extent, the overall dimensions being 450 feet and 300 feet. It is a steel framed structure with asbestos cement roofing, in conventional " saw-tooth " arrangement. Walls are of deep blue face-brick to a height of 8 feet, with corrugated asbestos sheeting above this. Immediately adjoining the factory on the West are the European and non-European Cloakroom and First Aid Blocks, which include extensive accommodation for doctors. There is also a Canteen for factory workers.

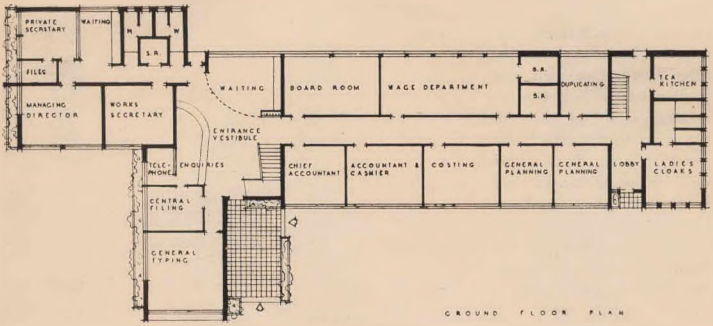
SITE PLAN





The plans of the Administration Block are of course, self-explanatory, but close study will reveal the very easy circulation, which is important in a building of this nature. The placing of the Managing Director's Office had to be such as to provide for a certain amount of quietness and seclusion, yet to be reasonably accessible from the Main Entrance Hall, and adjoining Secretaries' offices.





VIEW FROM NORTH-EAST

VIEW FROM NORTH-WEST

VIEW OF MAIN FACADE FROM ENTRANCE TERRACE

All the main offices benefit from North aspect, while strong rooms, record and print rooms, cloakrooms, library and tea room face South. On the upper floor, the Drawing Office, which is not obstructed by any columns, receives the major portion of its light from the South, with additional light from North and East.

The structure is of reinforced concrete, with the first floor slab of concrete, while the mono-pitch roof is of corrugated asbestos on wooden trusses. Ceilings to the first floor are of "Celotex." In order to provide for a clear span of 30 feet in the main Drawing Office, steel joists were used for the roof, the ceiling following the incline of these joists. The wooden rafters of the rest of the roofing project some 6 feet on the Northern side, and are tapered towards the facia board.

FINISHES

All facings are 2in. plum coloured bricks with raked horizontal joints. Plaster work is finely stippled "sponge" finish. Main Entrance Hall staircase in white terazzo. Floors are of "Armstrong's" Linoleum. Counter in Entrance vestibule is of Kejaat in natural finish. All windows are equipped with steel Venetian blinds.

COLOUR — Interior

Linoleum floors in corridors and offices are deep terra cotta, while in the Managing Director's Office, the floor is grey-black. Walls in Corridors are in primrose yellow, and ceilings in pale leaf green. Doors are painted French grey. Walls in the Northern offices are pale green, while on the South, they are a warm maize colour. Concrete flower box fitting in Entrance Hall is primrose yellow, while steel poles are white. Venetian blinds are cream coloured throughout.

COLOUR — Exterior

Concrete window surrounds are painted white, these contrasting with both the plum brickwork, and pale blue steel window frames. Lettering of wrought iron is white. The large staircase window is pale blue, while the blank West wall and frame to General Office façade is white. Plaster squares adjoining Main Entrance door are *eau-de-nil* green. Rafters and facia board are white. Underside of asbestos roof is sky blue.

THE MAIN ENTRANCE VESTIBULE

ABOVE: LOOKING TOWARDS THE MAIN STAIR. Floor, Terra Cotta Linoleum; Walls, Primrose Yellow; Ceiling, Pale Green; Concrete Flower Box, Primrose Yellow; Steel Poles, white.

RIGHT: LOOKING TOWARDS ENQUIRY COUNTER. Staircase, terazzo in white; chromium plated handrail; counter in Kiaat; glass screen to telephone cubicle, green; doors, French grey; facebrick wall, plum colour.

VIEW FROM SOUTH - EAST

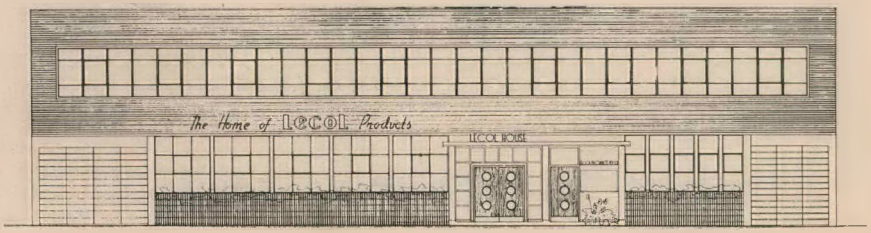
TAYLBRO HOUSE, 1945

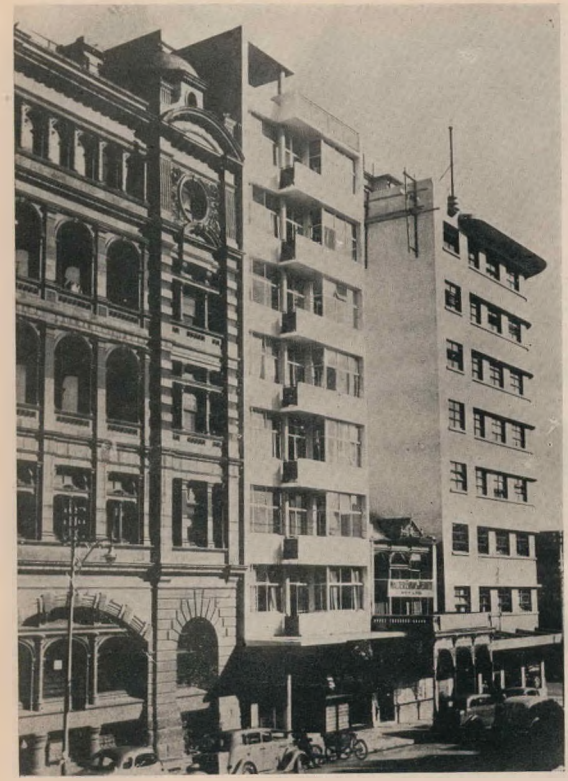
This is a seven storey factory and office building, in President Street. Windows are in continuous bands, and framed in 2in. concrete surrounds. The ground floor wall facing is in cream coloured terrazzo, as is the surround to the bay window feature. Facebrick is golden brown.

THE "LECOL" FACTORY BUILDING 1944

Situated in Eloff Street Extension, the factory is only the first portion of a very large project. The Eloff Street frontage is now 100 feet in extent, but will eventually be 150 feet, and the entire building increased in height with the addition of 4 further storeys. The factory manufactures fruit juices, and the planning of the building involves the dividing of floor areas into compartments for processes such as Peeling, Mixing, Bottling and Labelling, and also for Raw Materials, packing and storage. As the factory faces West, some form of deep recession was called for, and this is evident in the cantilevered projection of the upper floor over the ground floor, thus affording shade to offices below.

A feature of the upper floor windows is the asbestos cement fins, designed to diffuse the intense glare of the Western sun. These are painted a vivid blue, and result in a striking elevation. Facebrick on the first floor is golden brown, while on the ground floor the facebrick is blue-black with white joints. Underside of concrete hood is pale blue.



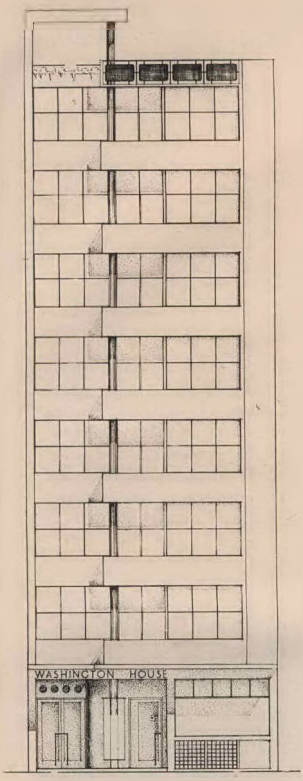


WASHINGTON HOUSE, JOHANNESBURG 1938

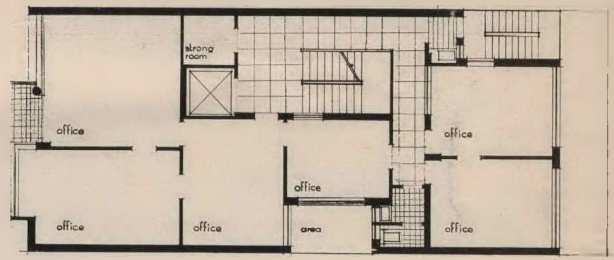
One of the earlier examples of the "modern" movement in office architecture, Washington House, has lost none of the freshness and sparkle which characterised it in 1938.

The extremely narrow frontage of 30 feet, is a relic of the division of land by Johannesburg's early surveyors, and presented many problems in planning. The Typical floor plan includes 6 large offices, strong rooms and cloakrooms. The ground floor includes a large shop and tea kitchen. The 7th floor was designed as the drawing office for the architect's own use, and includes a separate typist's office and waiting space. The entire building is now painted cream, but the original colour scheme was white, with the continuous column blue, and steel balcony panels maroon. It is interesting to note the successive generations of building in the photograph.

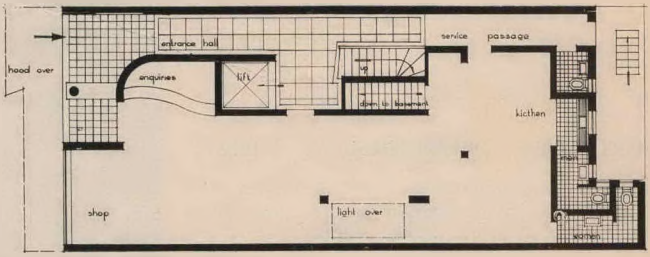
WASHINGTON HOUSE, JOHANNESBURG



NORTH ELEVATION



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN

STEEL AND BARNETT'S FACTORY 1936

Constructed at the time of Johannesburg's great "building boom" contemporary with the Empire Exhibition, this building is important as being the first example of continuous bands of windows taken round a curved corner, in Johannesburg. The building is painted white, and is characterised by boldness and directness of approach.

DELMARK HOUSE, JOHANNESBURG, 1937

One of the early factory buildings in the city. The very large proportion of glass, and the plastered walls has given the structure a feeling of lightness, which is accentuated by one of the first examples of continuous fenestration to the staircase unit.

THREE SMALL FACTORY BUILDINGS

LEIPOLD GRINKER AND PARTNERS, MM I.A., ARCHITECTS

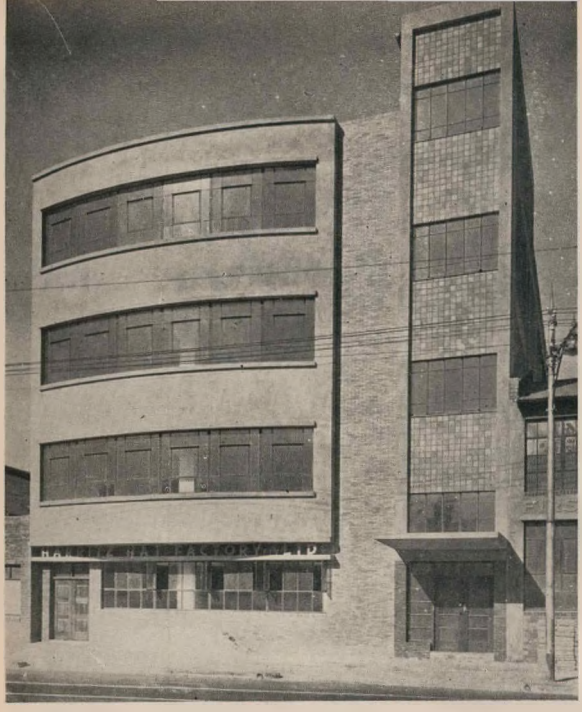
Photos: C. K. Grant.

ALFIN HOUSE, JOHANNESBURG

The construction is a simple beam-and-slab system with one row of centre columns. The base of the building up to Ground Floor lintol is in thin blue black bricks. The remaining brickwork is in 2" brown brick with wide recessed joints. Plastered bay is finished in cream.

The illustrations show three elevational treatments for factories erected on restricted sites, 50 Cape Feet wide, in each case. The plans need no special comment, being simple straight-forward rectangles. The two high buildings each have the stair hall and lift situated on one side at the front of the building. Clients indicated preference for face brick finish to keep maintenance costs to a minimum.

On account of existing building control regulations, the window sizes had to be reduced consdierably below what was considered desirable. The factories are nevertheless well lit.



HARRITZ HAT FACTORY

Construction is of the "mushroom" system, designed to carry heavy loading. Face bricks are 2" light brown; the panels between the stair windows are faced with golden brown quarry tiles. The bay window projects over the pavement, and is slightly curved in plan.

SEAL PAINT BUILDING

This is an office extension to an existing building. The windows on the street elevation face West, and have been kept narrow and high to keep these offices comfortable.
The main wall surface is in 2" plum coloured brick with wide horizontal joints, and the quarry tiles are dark red with white joints. The plaster trim is painted pale apple green, and the gates silver aluminium.

THE SOUTH AFRICAN BUREAU OF STANDARDS

COMMITTEE ON BUILDING REGULATIONS AND CODES

The attention of the Bureau has been directed to reports appearing with ever increasing frequency in the Press regarding the need in South Africa for some organisation, such as a committee or board, to study the existing laws, bye-laws and regulations relating to building industry, and to undertake the task of codifying, simplifying and modernising this great mass of legislation. In particular the fact has been stressed that building legislation in South Africa needs to be made more elastic, so that the very latest ideas in building may be utilised without resulting in a contravention of laws or bye-laws, many of which were in any case framed with an entirely different purpose in view. Those who have been advocating the establishment of such a committee have been influenced by the hope that, with judicious relaxation of legislation, particularly legislation which has been rendered obsolete by modern discoveries, the country's building programme will be greatly accelerated.

The object of this statement is to make known the fact that such a committee already exists. In March, 1945, the Institution of Structural Engineers appointed a special committee known as the Committee on Recommended Building Regulations. This committee was taken over by the Standards Council in September, 1946, and re-named the Committee on Building Regulations and Codes. The committee has been actively engaged for eighteen months in drawing up a model set of building regulations, and hopes to complete its task by March, 1948. Further particulars will be found in the attached detailed statement.

THE COMMITTEE ON BUILDING REGULATIONS AND CODES, ITS PROGRAMME AND ACTIVITIES

Even before the end of the war the Government's housing policy was subject to severe criticism in many quarters. This volume of criticism has, if anything, increased considerably since the termination of the war. In particular the Governmental authorities were criticised for failing to make adequate provision for the housing of returned soldiers. At the same time it has been stated that the needs of the ever-growing population of the country were also not being taken adequately into account. Many of the criticisms levelled at the authorities were no doubt inspired by the thought that due cognisance was not being taken of overseas developments in the building industry. Many of the criticisms were made through ignorance and failure to appreciate the fact that lack of suitable materials in the country was one reason why the discoveries being made overseas could not be applied in South Africa. The Institution of Structural Engineers, a body intimately associated with building, considered that there was a definite field for investigation into problems relating to materials and building methods. It was felt that there might exist materials in South Africa the possibilities of which were not being adequately exploited. It was also felt that there were actually cases where obsolete building regulations were causing unnecessary delays in the erection of houses to satisfy public demand. The Institution therefore decided to appoint a special committee, to be known as the Committee on Recommended Building Regulations, to investigate the whole matter of building regulations at present in force in the Union.

COMMITTEE ON RECOMMENDED BUILDING REGULATIONS

This committee has now been actively engaged for some eighteen months in preparing a model set of building regulations, of such a form that they can be used throughout the Union of South Africa. The committee is taking due cognisance of the latest developments overseas in the building industry. For example, all publications of the British Ministry of Works Codes of Practice Committee are studied by the committee the moment they are received from overseas. All new ideas in regard to methods and materials are receiving the fullest and most careful consideration in the light of South African experience and conditions. The committee is gradually working towards its object of producing a set of building regulations which will be purely South African and which will bear comparison with any set of building regulations in the world, if it does not in some respects even surpass these.

COMPOSITION OF THE COMMITTEE

The committee functions under the chairmanship of Lt.-Col. G. A. Clark, A.M.I.C.E., of Johannesburg. It has a large technical personnel, and in addition has a number of sub-committees dealing with various special aspects of the building industry. Every effort has been made to ensure that this committee is as representative as possible. The following bodies *inter alia* have nominated representatives:

The four provincial administrations;
The Department of Public Works;
The South African Railways and Harbours Administration.
The Department of Forestry;
The Department of Irrigation;
The National Building Research Institute—Council for Scientific and Industrial Research;

The Institute of South African Architects;
The Chapter of Quantity Surveyors;
The National Federation of Building Trade Employers;
The Chamber of Mines;
The Electricity Supply Commission;
The Victoria Falls and Transvaal Power Company;
The South African Iron and Steel Industrial Corporation;
The South African Cement Manufacturers' Association;
The South African Reinforced Concrete Engineers Association;
The Transvaal Structural Engineering Association;
The Transvaal Clay Manufacturers' Association.

In regard to investigational work, the committee has appointed a number of sub-committees of technical experts to study special aspects of the building regulations and codes. As the necessity arises additional sub-committees will be appointed. The following sub-committees are already functioning:

Brickwork;
Foundations;
Loads and Stresses;
Materials;
Reinforced Concrete Design;
Structural Steel Design;
Timber;
Walls.

It may be mentioned that the committee with its sub-committees consists of the best brains in the country on both the theoretical and the practical sides of the building industry and may therefore be regarded as a reservoir of experience and knowledge.

SOUTH AFRICAN BUREAU OF STANDARDS

After eighteen months of work, it was felt that the activities of the committee were expanding to such an extent that the technical follow-up work and the secretarial work arising from the deliberations of the committee and its various sub-committees could no longer be coped with by an organisation working on a purely voluntary basis. It was therefore decided that the South African Bureau of Standards should be asked to assist in this work. The committee was accordingly taken over in September, 1946, by the Bureau. The latter body is a State organisation established under the Standards Act, No. 24 of 1945. Its principal function is to promote standardization in industry and commerce. It will be appreciated that the preparation of a uniform set of regulations and code of building practice is an important aspect of standardization.

An important factor is that the testing laboratories of the Bureau are at the disposal of the committee. This will greatly assist the committee in its investigations, and will also facilitate the checking of overseas specifications to ascertain whether they can be successfully adopted for South African use.

PROGRAMME AND AIMS OF THE COMMITTEE

With the impetus given by the assistance which the Standards Bureau can render, it is hoped that the work of the committee will now be greatly expedited. The possibility of using new materials and methods is being constantly examined. It should however be realised that it is not the committee's intention to adopt any overseas specifications without first giving the matter the most careful consideration. Overseas specifications are not necessarily good specifications. There will also be cases where an overseas specification cannot be used because South African conditions are dissimilar. Another important consideration is that the young South African manufacturing industry should be given an opportunity of having its products accepted for South African use, provided they are satisfactory for use in this country.

The committee welcomes any suggestions which interested bodies and persons in any part of South Africa may wish to put forward, especially with a view to expediting the solution of the present housing problem. With this in mind, a recommendation has been made that in particular cases existing building regulations and bye-laws should be relaxed or suspended, under adequate safeguards, in order to permit of the use of new materials and new methods of construction in the Building Trade. The prime object of the Committee must, however, be borne in mind, namely, to see that no materials and methods are used which do not give the householder a good and honest product for his money.

In regard to the fact that the committee has not hitherto made its activities widely known, it may be stated that the usual reticence of professional men has prevented it from advertising its activities unduly. It is now however felt that it is essential for Government and all interested persons to be informed of the committee's labours. Its aim and object is to produce a model set of building regulations and a standard building code which can be applied in all parts of the country. It intends that the regulations and code shall be such that all workmen will know exactly what standard of work is to be attained, and all builders will know the standard of production at which they must aim.

FACETS OF THE BRITISH HOUSING PROGRAMME

CHELTENHAM'S NEW ALLUMINIUM HOUSING ESTATE

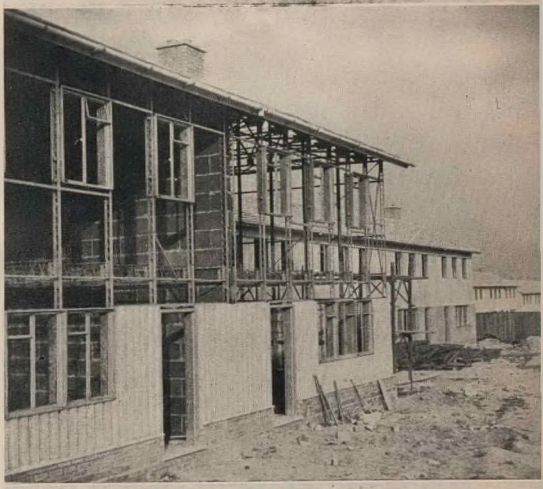
Local Authorities all over Britain have been highly interested in the Cheltenham Corporation's housing programme. In just over eleven months an estate of 173 aluminium houses has been completed and occupied, and most of the gardens neatly cultivated.

Fox

STEEL HOUSES, MEADWAY ESTATE, BIRMINGHAM

A great effort was made in Birmingham to have 800 permanent houses ready by Christmas and roofs were going on at the rate of 70 per week. The steel house is one of the types being built, in which the roof carried on the light steel framework is erected first and the remainder of the house continuing irrespective of wet weather.

Topical



TEMPORARY HOUSING AT WOBBERLY, COVENTRY

Coventry, the city which brought into common usage the word "coventrated" after the massed air blitz during the war, has now an ultimate target of 20,000 houses. While carrying on this long-term policy of new housing, 4,000 families made homeless during the war, are being accommodated in the temporary aluminium houses. Permanent houses are being roofed at the rate of two each day.

Photo: "Star"

THE STUDENTS' FORUM

THE HISTORIC BUILDINGS OF JOHANNESBURG - 7

CORNER HOUSE

By Cyril A. Stoloff, Dip. Arch. IV

The "Corner House", originally called Eckstein's Buildings, is situated on three stands, with frontages to Commissioner, Simmonds and Market Streets. The building is as famous a city landmark to-day, as it was when first erected in 1903.

The first Corner House, on the same three stands, was a wood and iron structure, and was utilised as the first Stock Exchange from 1889, until its demolition in July, 1902. Excavations were started, and the ground prepared to receive the new building towards the end of 1902. Serious work was begun, with the erection of the steel frame, on April 1st, 1903.

In making the excavations, pits were dug in the hard, decomposed sandstone to an average depth of about 22 feet below the level of the footpath. In the pits were placed concrete bases to take the main stanchions of the building, which are 50 in number. Some of these stanchions support a load of 400 tons. All the floors throughout the building are of breeze concrete. The roof is 12in. thick, constructed of concrete covered with bitumastic sheeting and tiled on top.

The building is equipped with 5 lifts, one of which, the goods lift, is capable of a speed of 200 feet per minute, and will raise at this speed an article weighing 3,600 lbs., while the other four passenger lifts are capable of a speed of 250 feet per minute, and will carry a load of 2,400 lbs. The goods lift has a floor area of 30 square feet, and the passenger lifts an area of 35 square feet. The capacitey of the passenger lifts is 12 persons.

The building, excluding the basement, contains 240 large floor areas in its 9 floors, these being divided into offices. In 1904, the drawing office of Messrs. H. Eckstein & Co. occupied an entire wing on the top floor. Messrs. Grocott and Sherry, the Stationers, established themselves on the ground floor, corner of Commissioner and Simmonds Streets, while the National Bank of South Africa was established in the ground floor portion on the corner of Simmonds and Market Streets.

On each floor the building is fitted with a strong room, and in the case of the first and second floors, the strong rooms are lined with steel. In the basement there is provision for the accommodation of bicycles, reached by descending a ramp. The basement includes six fireproof strong rooms, as well as the electric transformers, generators and boilers. The building is fitted with its own electric light and power station, which includes two 150-h.p. marine type water-tube boilers, two steam electric generating sets of 75 Kw. each, and one electric accumulator. The roof is fitted with a tank (capacity of 37,000 gallons) for the building's water supply and also for fire purposes. The structure is steam heated throughout. At the time of erection in 1903 facilities included a water-borne sewerage system.

The windows on the outside of the building number 493, and there are 590 windows for borrowed light inside the building. The total weight of the structure, including foundations, is in the neighbourhood of 20,000 tons, excluding furniture or occupants. The total height from bottom of foundation to top of finial of the dome is 181 feet 8 inches, while the height from footpath to the roof of the caretaker's quarters is 125 feet. Façade treatment is bold and overpowering, with great projecting cornice at 9th floor level, and balconies to 2nd floor. The stone is a deep grey colour, and has weathered well.

To-day it is extremely interesting to note the following information connected with materials and quantities in 1903. The materials used were :—

239	tons of steel in foundations.
1,220	tons of steel in frame, fire-escape and stairway.
1,731,000	bricks.
5,400	casks of cement.
1,100	tons of sand for cement masonry.
20,904	feet of telephone wire.
15,620	feet of electric bell wire.
61,710	feet of electric light wire.
23,650	feet of insulating tube, for electric light and power wires.
400	feet of electric power wire.

The Corner House was for many years the highest building in South Africa, and in 1903 faced onto the old Market Hall in Market Street. To the left of the photograph, can be seen portion of the old Palladium Theatre, another of Johannesburg's early landmarks.

CONTEMPORARY JOURNALS

"THE ARCHITECTURAL REVIEW," October, 1946.

This is a special issue devoted to a review of good Industrial design. It appeared concurrently with the "Britain Can Make It" exhibition, but in presenting side by side with the British counterpart a selection of well-designed things from various parts of the world it seeks to provide an exhibition showing comparative standards of international design. It includes in a wide range of exhibits, kitchen and bathroom equipment, furniture, gas and electrical appliances, textiles, pottery and glassware.

"THE ARCHITECTURAL FORUM," October, 1946.

This is a special number which is prepared to show how the design trends of post-war building have varied from prewar standards. The "Forum" surveys the United States and shows a surprisingly large number of completed works, with evidence of *new talent cropping up in widely divergent places*. Contemporary design is shown to dominate industrial work and to be spreading rapidly into all the other fields as well. The survey includes buildings for communications, work, living, education, health services and trade.

"ARCHITECTURAL RECORD," October, 1946.

The new Plan for Rotterdam, accepted early in 1946, on the basis of which much work has commenced, is discussed by Earle Draper, Jn. Following this is Le Corbusier's new plan for the heart of the little French town of St. Die, which was destroyed by shell fire during the war.

Building Types Study 118 is on Churches. The planning of the modern church is discussed and many examples and projects for church buildings are illustrated.

"Architectural Engineering" includes Robert L. Davidson's article *The Better Wall is Coming; Lightweigh Fine Protection for Sheet;* and *Air-Entraining Portland Cement* by C. L. Davis.

"PROGRESSIVE ARCHITECTURE — PENCIL POINTS," October, 1946.

The fine houses illustrated are all by well-known architects. The first three are additions to the interesting co-operative group at Snake Hill by Carl Koch, in collaboration with Hudson Jackson and Robert W. Kennedy, the others are by Frank Lloyd Wright, in Michigan, and Wurster, Bernardi and Emmons, in California, respectively. The Airport Hotel is discussed in relation varying conditions of traffic.

"Materials and Methods" includes *Lightning planned to function properly* by Wm. H. Kahler of Westinghouse; and *Sun Control Devices based* on examples collected by Richard Neutra.