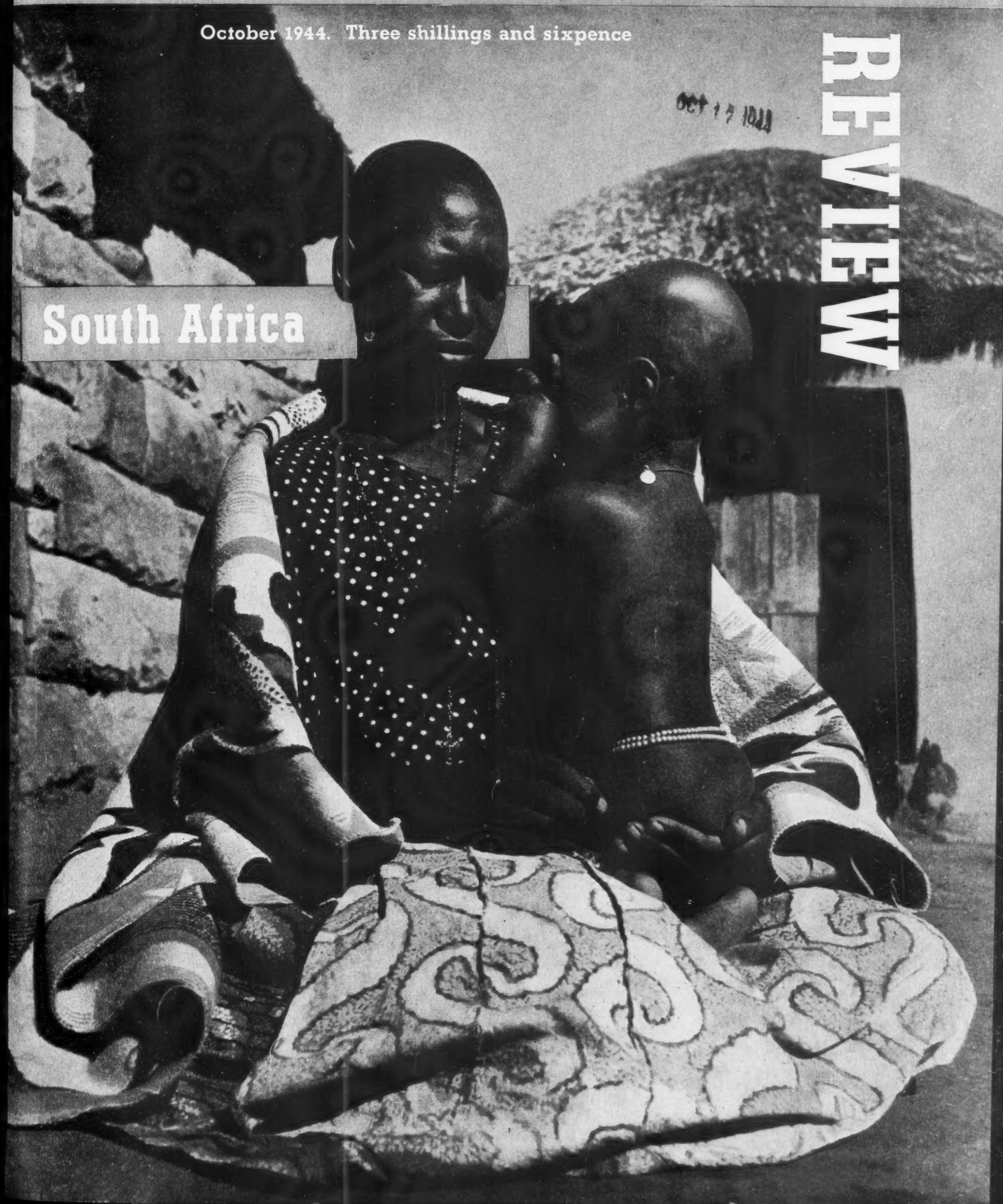
The ARCHITECTURAL REVIEW

October 1944. Three shillings and sixpence

South Africa



SOUTH AFRICA

The Architectural Review

CONTENTS OCTOBER 1944

SUBSCRIPTION RATE: £2 per annum, post free. An index is issued every six months, covering the period January to June and July to December, and can be obtained without charge on application to the publishers:

THE ARCHITECTURAL PRESS,
War Address:
45, The Avenue, Cheam, Surrey
Telephone: Vigilant 0087

Vol. XCVI No. 574

THREE AND SIXPENCE

INTRODUCTION

By the High Commissioner for South Africa

I have much pleasure in introducing this South African number of THE ARCHITECTURAL REVIEW and in commending its high standard of excellence.

The architectural development of a country usually supplies an index to its social and economic growth; but in South Africa the pace of development frequently became too rapid for bricks and mortar to provide such an index.

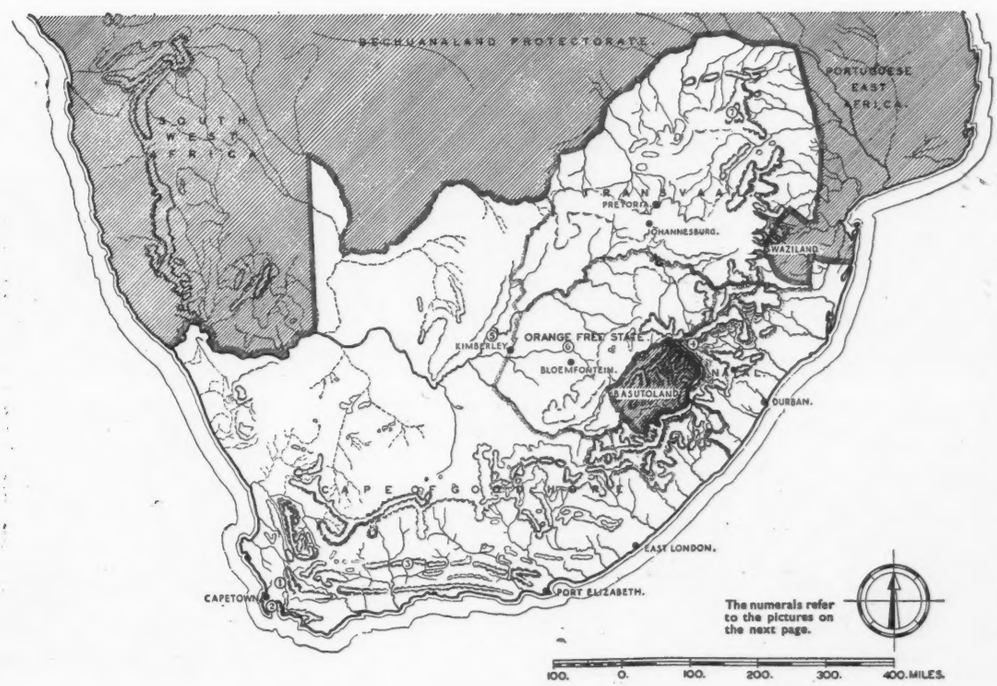
All the more reason to treasure the mature old Cape Dutch architectural tradition, whose pleasing features Herbert Baker not only rediscovered but successfully preserved in the numerous buildings with which he has graced the South African scene. Here in London these features have been embodied with great subtlety in South Africa House, although it was designed to harmonise with the other buildings overlooking Trafalgar Square.

The swift development of South Africa in the past half century—accelerated during the past decade—is to-day faithfully reflected in the appearance in our cities of the type of structure which is as much an engineering feat as an architectural achievement, and which is converting us into a race of sky-dwellers in spite of the abundance of solid earth we still enjoy. This architectural evolution along new lines has not yet done away with hovels in slum areas, jerry-building in mushroom townships and ribbon-development in prospering new districts, although South Africa, planning after the event as she is now forced to do, has already gone a long way towards checking all of them, thanks to the assistance and advice of an alert architectural profession.

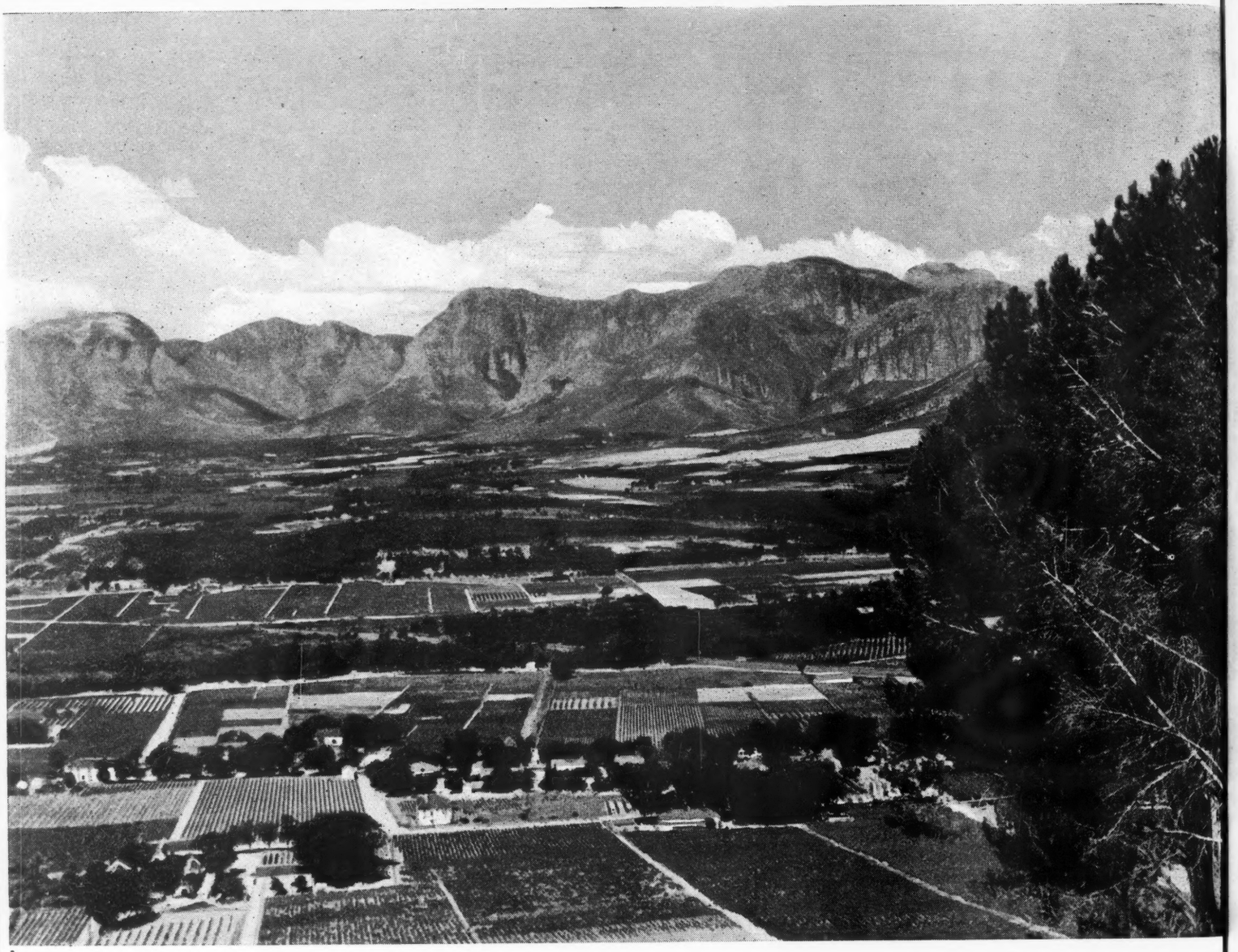
In this survey particular mention is made of Native housing conditions; and it may be of interest to remind THE ARCHITECTURAL REVIEW'S deservedly large circle of readers of the solid foundations which have been laid during the last few years for a new era in this respect, as a part of South Africa's post-war reforms.

Denys Reitz

September 1944

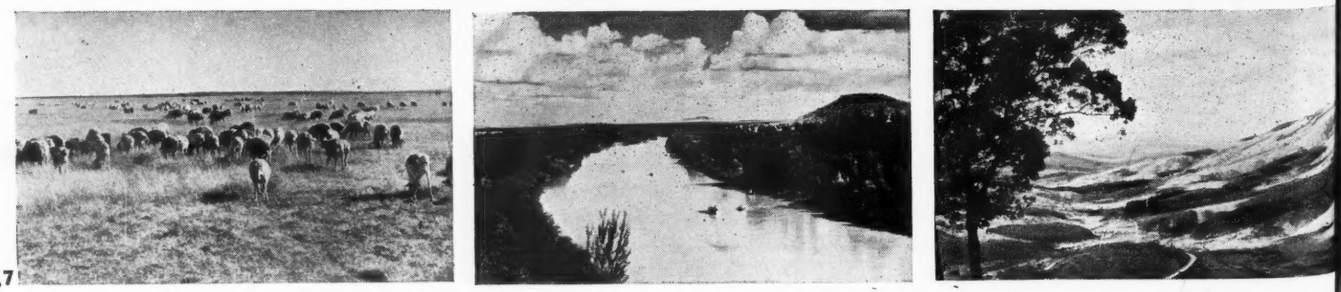


This number was prepared by the following members of the Transvaal Provincial Institute of South African Architects: M. Bryer, B.ARCH. (Rand), B.LITT. (Oxon.), A.R.I.B.A.; J. Fassler, B.ARCH. (Rand); N. L. Hanson, B.ARCH. (Rand), A.R.I.B.A.; and W. D. Howie, B.ARCH. (Rand). The joint authors and editors wish to acknowledge the assistance given to them by Mr. W. G. McIntosh, of Pretoria, and are indebted to Professor G. E. Pearse, Dean of the Faculty of Architecture, University of Witwatersrand, and to Mr. Gordon Leith for much of the information concerning architectural work done during the early years of the century, and to Professor L. W. Thornton White, of the School of Architecture, University of Cape Town, as well as to all architects who have submitted their work for publication in THE ARCHITECTURAL REVIEW. We wish to add to these acknowledgments our gratitude to Mr. Bryer, Mr. Fassler, Mr. Hanson and Mr. Howie for the great trouble they have taken in collecting, editing and writing this number. The cover was designed by Peter Ray from a photograph by Constance Stuart.



1

2,3,4



5,6,7

THE NATURAL SCENE

The destiny of South Africa lies ultimately in the nature and qualities of her land and people. But to a large extent it also depends on external factors such as the trend and influence of world affairs. This is most evident in times of war like the present one on account of the strategic situation of her territory. Southernmost threshold of a great continent, and marking at the Cape of Good Hope the confluence of two oceans—the Indian and Atlantic—it is bound to play an important role in the development of international relations. Physically the land of South Africa is one of simple, clearly defined features. Most of its area of 472,000 square miles consists of an elevated plateau of which the periphery breaks down in a series of mountain ranges near to the sea. The base of the plateau is bordered by an almost uniformly narrow littoral lying below 1,500 feet. Of the total area of the country only one-third, namely, the eastern sector, receives more than 25 inches of rain a year, the remainder being for the most part arid or, as the Hottentots called it, Karroo. With the exception of a small region of winter rainfall in the Western Cape, and a smaller one in the south, which has rain all the year round, 85 per cent. of the country has a summer rainfall and is consequently subject to a regular six months' drought. The adverse effect of this condition upon agriculture and forestry is heightened by the seasonal variability, the irregular distribution in season, and the intensity of precipitation, and also by high evaporation, all of which combine to denude and erode the soil, thereby lowering its fertility, which is inherently low due to the lack of phosphates. Moreover, the rivers, on account of the rainfall characteristics and high elevation of the country as a whole, are neither navigable nor suitable for large-scale generation of hydro-electric power. Irrigation of the land is possible only over a very restricted area amounting to perhaps 7 per cent. of the total area, of which less than 6 per cent. is cultivated to-day and probably not more than 15 per cent. is capable of cultivation. For the most part, therefore, farming is best suited to animal husbandry, while in different parts of the country, grain, vegetables and fruit are successfully grown, providing the basis for a farming industry which is becoming increasingly devoted to the production of protective foods. Timber, however, is extremely scarce, less than 2 per cent. of the total area of the land being covered with forests and plantations, which are confined by the rainfall conditions to the small well-watered region of Knysna, portions of the Eastern Cape and Natal, and along the Drakensberg Mountains. Along the coastline, a distance of some 2,000 miles, are fishing grounds with sufficient resources to support a permanent fishing industry on a considerable scale. Poor in surface resources, South Africa is nevertheless fortunate in that she is well endowed with mineral resources. She is one of the foremost gold-producing countries in the world, and her deposits of such minerals as iron and steam coal, limestone, asbestos, chrome and manganese, place her among the limited number of countries with a large resource base for heavy industry. Together with an ample power supply, which is derived mainly from coal, the available raw materials, both agricultural and mineral, provide a firm basis for manufacturing industries. Most of these are concentrated in a relatively small inland region in the eastern sector of the country where the richest mineral and agricultural areas lie. To some extent this distribution of the natural resources mitigates the severe transport conditions of the country, namely, the long distances to the seaboard and between the various parts of the interior, and the lack of inland waterways. But these conditions impose a permanent transport disability on South Africa, her bulk haulage requirements depending on a railway system which is State-owned and operated. Of her most important resource, the South African people, who number little more than 10 million, a little over two million are European, the remainder consisting of about 7 million Bantu, over ¼ million Asiatics, who are mainly Indians, and over ¾ million coloured, that is, Cape Coloured, Cape Malays, Bushmen, Hottentots and all persons of mixed race. Despite rapid urbanisation in recent years, probably two-thirds of this population are still rural. Small as it is in relation to the size of the country, probably as many as 400,000 Europeans and the mass of the non-Europeans live in poverty, without sufficient food, housing and education to enable them to contribute their proper share to the development of their country and to achieve a standard of living consonant with social welfare. It is in the task of alleviating this situation that South Africa must and will find her destiny.

1 *The fertile and populous valleys of the Cape, favoured with a Mediterranean climate, sustained the original inhabitants, strengthened their foothold on the continent, and with the Cape as base, enabled the pioneering of the hinterland to be undertaken. Over two centuries of cultivation have created the neatly patterned landscape of vineyards and orchards reminiscent of Europe whence the original settlers came.*

2 *The sea played an important role in the history of South Africa. Across it came the founders of the Cape, attracted by the recently discovered mineral wealth of the interior, and later, the financial and material resources of the world. To-day it is the principal vehicle for export trade and for coastal communications, while it is important economically for the extensive fishing industry it supports. Unrivalled facilities for recreation may be found all along the southern and eastern littoral.*

3 *The rugged escarpments bounding the plateau system of the Union presented formidable barriers to the Voortrekkers, whose resolution and land hunger overcame all obstacles and carried them through to the spacious plains of the interior. The Zwartberg Pass connects the Little and Great Karroos. It is an example of the extensive system of internal communication required to link South Africa's widely scattered communities.*

4 *The Drakensberg Mountains bordering Natal, mark the greatest elevation of the central plateau: eleven thousand feet. This region constitutes the main watershed of the Union. Rivers from Mont aux Sources flow swiftly to the Indian Ocean, and sluggishly across 750 miles to the Atlantic. This mountain chain creates a high precipitation in Natal but it also bars the ingress of moisture to the interior causing the dry conditions that prevail.*

5 *Upon such spacious plains the Voortrekkers established their widely separated farms. A measure of six thousand acres per man insulated them from their neighbours. Here they found the freedom they were seeking until their world was rudely disrupted by the events that followed: the discovery of gold. In such solitudes life was simple, hospitality generous, and wealth measured in cattle, sons and grandsons.*

6 *With a low rainfall and a high rate of evaporation, the urban communities on the main plateau depend for their existence on the conservation of all available water resources. Without control, rivers shrink to mere trickles during the winter months to become raging torrents after summer rains. The Modder River lies in the heart of the wide Veld some miles from Bloemfontein.*

7 *Magoebas Kloof in the Northern Transvaal highlands is a rare case of nature in a generous mood. Rushing mountain streams, warmth and dampness combine to produce a prolific growth of vegetation in all seasons. Sleek green mountain sides and extensive forest reserves create a landscape contrasting with the sterner quality of the typical South African scene.*

ARCHITECTURE FROM 1700 TO 1930

WESTERN EUROPEAN civilization has made its deepest penetration in Africa from the point most distant from Europe itself. The northern shores of Africa, bordering the Mediterranean, were geographically and economically part of the ancient world and, in the flowering of Egyptian culture, fulfilled an historical role. Elsewhere, the coasts of Africa were touched periodically, but the hinterland remained almost unknown and wholly unaffected for untold centuries. Economic pressure or expansionist hopes have generally been the motives underlying African exploration and settlement, conquest and exploitation. Firmly established European countries have sought in Africa new sources of raw material, new markets and, not least, new territory for colonial empire.

The story of southern Africa has its roots in antiquity. Abbé Breuil, now working in South Africa, points to evidence in the rock paintings of aboriginal tribes of visits by daring voyagers from Minoan Crete. Modern development, on the other hand, dates from the first Dutch settlement founded by Jan van Riebeeck only in the seventeenth century. The cultural heritage of South Africa in fact embraces both ends of this great span in time; and between the art of the Bushmen and Bantu and the homebuilding genius of the early Dutch settlers, there is a hiatus which has deeply scored present racial contrasts.

The first peoples to leave conscious records of their lives in the subcontinent did so with unsurpassable skill on the walls of their rock caves. They were probably for many centuries the only fixed inhabitants of a vast land. They developed no forms of building, for peaceful settlement was not possible under the conditions of life known to them. It was the virile marauders from Central Africa, the various sections of the Bantu race, who continually and persistently pushed forward into southern land and brought with them more advanced forms of primitive production and higher skills in simple crafts. Settlement, however, by the Bantu peoples did not take place until the modern era; in fact, migration from the north often coincided and came into conflict with the treks of the Boers—the restless frontiersmen of the Cape Colony—pushing ever further afield from the southern littoral. The indigenous art of the Bantu, not equal, perhaps, in form or technique to the remarkable paintings and engravings of the Bushmen, has taken on a traditional character—household goods, huts and kraals—in manufacture or constructional method and in æsthetic expression. The character persists to-day, particularly where the African is maintained in reserves or in the British protectorates and Crown Colonies; but the development of towns and the general changes in economy of the last century have disrupted tribal life and custom.

The present period is one of transition, which is proving difficult and complex in the social and political sense. As yet, no satisfactory place has been found for the urbanized African in the life and aspect of the towns. Indeed, the process is having the dual effect of unbalancing the traditional economy of the tribes, while at the same time creating an amorphous, disintegrated and ill-used urban population. The ancient crafts and customs of the Bantu are rapidly giving ground to the European ways of life, and much is being lost on the way. The reintegration of communities within the towns and on the farms offers, perhaps, the best hope of survival and revival of inherent genius in and capacity for self and group expression.

The history of the architecture of the white settler in South Africa shows a marked sensitiveness to the ebb and flow of the political life of Europe. It is a story of uneven development, of a sudden quickened impulse for good building alternating with long periods of inactivity, when the colony was in the economic doldrums, and short-term indifferent building when temporary booms were experienced. This fact makes it comparatively simple to indicate distinct phases in architectural development, although there are dangers in such a simplification. For there is a degree of continuity in the historical sense, and often the threads have been taken up after many years of deviation when, apparently, all previous experience and skill in building had been forgotten. The phases which might be mentioned here are: 1, the first 150 years of Dutch occupation; 2, the advent and establishment of British rule at the beginning of the nineteenth century; 3, the setting up of the Boer Republics towards the middle of the century; 4, the opening up of the mineral wealth of the hinterland, followed by the Anglo-Boer conflict for possession; 5, the political unification of South Africa, up to the Great War in Europe; and 6, the inter-war period of 1918-1939 (part of which comes within the scope of this article).

Dutch Occupation: 1652-1795

Building in South Africa had a propitious beginning. The early Dutch settlers brought with them a deep-rooted and flourishing cultural and craft tradition. They came from a land then at the zenith of its commercial power, and were equipped with the organizing ability and acumen proper to the dawning mercantile age. It was precisely the commercial basis which guided the Dutch in founding the Cape settlement for, at first, no more than a re-victualling station on the route

to India and the Far East and the establishment of a strategically important base were intended. But, as so often in South Africa, a combination of internal and external circumstances brought along the development of the colony at a rapid pace. There were the internal forces at work—the need to create reasonable conditions of life for the employees of the Company, the growing potentialities of a new land not lacking in attractiveness and the urge of the colonists to free themselves from the Company's restrictive

From *Eighteenth Century Architecture in South Africa*, by G. E. Pearse

discipline. External events, moreover, decisively affected the manner and speed of the colony's growth. The international struggle for power enhanced the strategic value of the Cape outpost, and it became essential for the Dutch to reinforce their hold by permanent settlement.

At that stage building took on the character of permanence. The small community, centred at the Castle, now expanded rapidly beyond its immediate confines. An attractive and imaginative layout for the houses, public buildings and gardens gave an impetus to building of an appropriate civic character, while the villages and the farmhouses, spread over the broad and fertile lands of the peninsula, developed a style and a technique in building in keeping with a magnificent setting.

Again, events in Europe had profound repercussions in the distant Cape. The Revocation of the Edict of Nantes brought Huguenot refugees to the colony. Well qualified technically, industrious and creative, they made a distinctive contribution in a period of widespread architectural activity. The Cape's direct link on the one hand with Holland itself, and on the other with the Dutch possessions in the Far East, brought a flow of craftsmen and of building materials, and of contemporary architectural knowledge to the expanding colony. Together, these influences initiated a century of achievement not yet equalled in South Africa's history. They brought about a compact and uniformly brilliant body of building, with the recognizable kinship that is the invariable symptom of a great period in art.

The direct stylistic influences were thus the gabled and shuttered brick houses of Holland (with their cleanly organized interiors), and the late Baroque architecture of Europe, which reached the Cape from both French and Dutch sources. There were, in addition, the material factors which had shaped the European styles, which were at first merely transplanted to the Cape. What could take root was the high standard of craftsmanship in design and construction characteristic of Dutch brick building and of French inventive capacity. But considerable difference in climatic conditions, in material resources and in the nature of the colonial settlement called for a rapid modification in technique and, as a consequence, in design approach. Thus the impossibility of producing hard weathering facing bricks meant a great restriction in the use of such face-bricks as could be imported, while the plastering of the exterior surfaces of buildings became a necessity. Malay slaves, brought from the East, proved excellent craftsmen and established a tradition for good workmanship which persists to the present day.

The greater freedom in design which plaster allowed led to sweeping changes in the shaping of the gable, and to its dominance in the horizontal composition natural to farm buildings. In fact, all the elements taken over from the architecture of Holland were used in pure or modified form, but in a new context. Gable, window, stoep, doorway and loft, though bearing a family resemblance to their prototypes, took on a different functional significance. The formative process is clearly to be seen in the use of local reeds for thatching, of indigenous yellow wood and stinkwood for some purposes and imported teak for other, of standard size panes of glass from Europe, of local "stock" bricks for walling and imported " klompjes " for special work.

To complete the picture, one must add to these considerations an equally important determinant—actual living conditions at the Cape. The temperate climate generally gave the opportunity for outdoor living, hence the development of the oak-shaded stoep which, incidentally, was used for a generous hospitality. Spells of hot weather encouraged the use of thatch for roofing and shuttered, widely disposed windows for the lofty spacious interiors. On the farms, the genius of the settlers for orderly arrangement showed itself in the grouping of the buildings needed to sustain the work of the farm as well as the social institutions of the time. The dominant farmhouse was usually flanked by the wine cellar, the slave quarters and the stables, and these, together with carefully treated adjuncts such as slave bell towers, pigeon houses and enclosing walls, formed a complex which the designers were particularly adept in grouping and siting. In an area little more than 1,000 square miles in extent, large numbers of such farm groups were built and, in many cases, remain intact to this day.

Civic architecture achieved an equally high standard. The town houses of the burghers of Cape Town, the public buildings and the churches, though by no means stereotyped, reached a degree of uniformity in fundamentals without which neither harmony nor monumentality is possible in city planning. The general scale, however, was homely, varying, in the houses, from the two-storeyed formal and lofty façades of those of the wealthier citizens, to the more modest single-storeyed type which the majority of townsfolk built for themselves. The simplicity of the wall surfaces of the latter was offset by gaily moulded parapets, capable of infinite variety. Eventually all were flat-roofed, as a necessary precaution against the ravages of fire. Undoubtedly, the town as a whole gained in appearance in the final result. To-day the atmosphere of historic Cape Town has, of course, been largely dissipated in the rapid growth of the modern city. It is a loss all the way along the line. The spaciousness of layout and the firm and imaginative handling of simple building forms and materials are qualities singularly lacking in the Cape Town of to-day. It is possible that the extension of the city on to a new foreshore, made possible by a large-scale reclamation scheme, will bring back a generous approach to land use and to civic amenity so characteristic of the original settlers. The more enduring values of country life have preserved many of the old homesteads and a greater consciousness of their national value has ensured the proper upkeep of many of them.

Their high architectural qualities have not always been fully appreciated; in fact, it was only at the end of the nineteenth century that interest was reawakened and efforts made to preserve a cultural heritage. Paradoxically, British imperialism, personified by Cecil Rhodes, brought about this quickened interest, and the first serious attempts at preservation. Although sporadic though valuable efforts to record what remains of the age of " Cape Dutch " had been made over many years, it was not until 1933, when Professor G. E. Pearse produced his monumental work, *Eighteenth Century Architecture in South Africa*, that an adequate co-ordinated account appeared. Here the buildings of Cape Town itself and of the adjoining farming districts are presented in a magnificent set of measured drawings done by John Fassler.

All in all, this was a period most fruitful of architectural achievement, in which a sound basis was laid for future development—in the exploitation of available resources and in their logical and efficient use; in a keen sense of national qualities which did not degenerate into a narrow insularity; and in a characteristic but imaginative approach to common architectural problems.

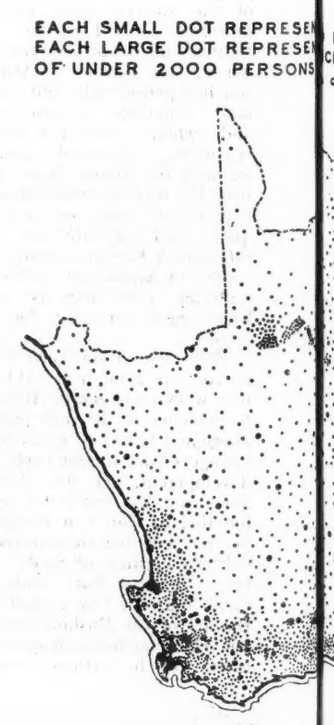
An account of a century of even architectural development tends, however, to give a rather one-sided picture of actual social conditions. In fact, development was closely linked with the economic status of the colony, and suffered as many vicissitudes. Agriculture, on which the small colony's trade depended, proved difficult and yielded no surplus at first. The Company's trade monopolies further reduced the possibility of accumulating the capital needed for increased production both in agriculture and in basic domestic requirements. Nevertheless, handicaps were overcome in time and periods of relative prosperity were enjoyed by the settlers. During the whole period of European colonization in South Africa, there have been recurrent economic and political tensions, the easing of which have had social repercussions of profound significance. From almost the beginning of the period under review, tensions of this nature revealed themselves. The difficulties of the burghers under Company rule soon led, against the will of the administration, to an expansion of the colony's boundaries. The more independent of the settlers or those most pressed by economic crises sought a self-supporting existence at the frontiers, became, in fact, the first " trekboers," famed in South African history.

At the frontiers, too, contact was made with Hottentot and Ama-Xosa tribesmen, and the long-drawn struggle between Boer and Bantu began. The attraction of rainbelts and the more fertile land within them pulled both trekking Boers and marauding and nomadic Bantu, and their meeting gave a glimpse of what was to be the major conflict in South African life. Land-hunger and a fiercely independent spirit thus motivated the trekkers to penetrate deeper into the arid interior; in doing so, the foundations of the modern state were laid and the character of its institutions and conflicts determined.

Of more immediate effect in the eighteenth century were events in Europe. The clash of the great sea powers of England and France in their programmes of colonial expansion and consolidation, directly affected Dutch policy at the Cape. The Seven Years War and the War of American Independence equally impinged on the lives of the colonists. Continuous fluctuation in economic condition, the administrative limitations of a monopolistic trading company and the degeneration of Dutch colonial power led to a series of crises, culminating in the final phase at the end of the eighteenth century. In 1795, the colony was taken over by a British military and naval expedition.

British Rule at the Cape

The Napoleonic Wars brought vital changes to the Cape. After a brief period, British rule was followed by the short-lived enlightened administration of the Batavian Republic. But the defence of



threatened imperial interests necessitated the early return of the British —an occupation finally ratified at the general peace settlement in 1814. Thus the destiny of South Africa became inextricably linked with the rising industrial power of Great Britain, predominant throughout the nineteenth century world. It is only natural that the highly organized political system by means of which England administered her home and colonial affairs should, from the outset, radically cut across the institutions and habits of thought prevailing at the distant Cape.

There were, of course, architectural consequences of the British occupation. The "Cape Dutch" style in town and farm building, although reaching the height of its development in the latter half of the eighteenth century, was sufficiently vital and deep-rooted to carry through to the first years of the new century. Troop and ship movements during the war stimulated trade and made possible increased capital investment in public works and private building. It is thought that flat roofs replaced the thatch of many town houses at this time. Certainly the older houses were freshened up and extensive alterations probably made in many cases. Public works reflected the change in government. The carefully conceived and sensitive forms of the late Georgian architectural period may be found both in minor alterations to existing buildings and in new construction. In addition, increased commercial activity—part and parcel of expanding British rule —led to the building of brick-faced warehouses and offices, the proper recording of which is awaited. Their orderly Georgian façades are wholly delightful—and expressive of changing trends in social structure.

War prosperity, however, was of a transient nature. Soon an inflationary tendency showed itself, and eventually brought about a financial crisis. Though not before considerable expansion in many directions—in wine and cattle farming, in an extensive public works programme and in general trade—had shown some advance in economy. Nevertheless, post-war depression in Europe hit the Cape severely, and exposed the backwardness and instability of external trade and internal production.

Five thousand British settlers, brought out in 1820, were placed on the land at the eastern frontier, but in a large measure succumbed to the natural hardships and the prevailing depression. Many drifted to the towns to form the nucleus in the Cape of the subsequent predominantly English urban population. Rural Dutch and urban English were in this way set in opposition—in the town and country antagonism characteristic of nineteenth century capitalist development. In the sphere of building, many existing white-walled, slate-roofed houses and cottages and terrace houses of marked English character testify to the growing influence of the British administration and the British settlers of that period.

For England, the Cape Colony was a poor financial investment. But there were further difficulties—inherent difficulties so fundamental that the story of South Africa in the nineteenth century and beyond may be said to be written round them. There were the sharp distinctions in the outlook and the institutions of a loosely organized colonial backwater and the purposeful government of a closely knit modern state which was the very symbol of the new and rising industrial society. The consequent disruption of tradition and habit in relation to land tenure and allocation, to taxation, to state control and interference and to legal restraints and administration caused deep cleavages between Dutch settler and British official. Particularly round the colour question, basically one of labour and class structure, were differences crystallized. Two systems, historically far apart, could not easily find accord. The further from Cape Town, the greater the disparity. The frontier communities, in their mode of life and in their attitudes had, almost from the founding of the colony, expressed an urge for release from narrow authority and discipline. With the government in the hands of an alien power, then strongly influenced by liberal moral values and economic necessity, the conflict became increasingly sharpened. The slave issue touched the very essence of labour-master relations, on which the social and economic life of the settlers was founded.

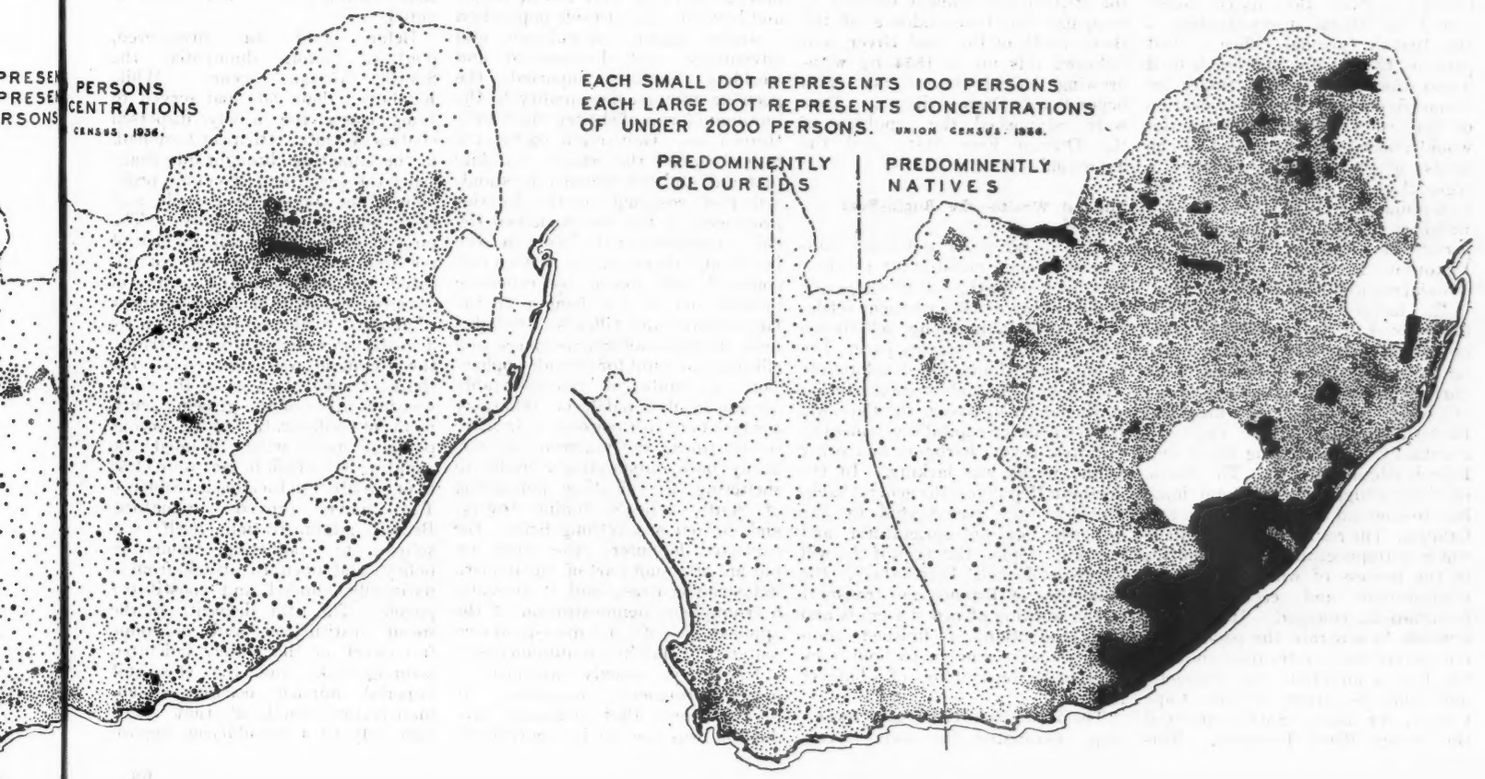
On the frontiers, too, where the Boers and Kafirs continually and in opposition to one another sought new land for settlement, the British administration struck difficulties. All attempts to limit or define the frontier failed and had to fail. Resistance to British rule, in fact to any centralized authority, increased in direct proportion to distance from Cape Town. The "trekboer" mentality had its origins in the very first days of Company rule, and was the driving force behind the heroic penetration of the unknown hinterland by generations of trekkers. The frontiers were in a continual state of flux. Permanent settlement in the perimeter regions never seemed to be possible, and the following half century of movement deeply disturbed cultural development. The building of homes of substantial and fixed character could not flourish. Only in the limited area near the Cape itself was the normal building activity of a growing community possible. But the centre of gravity of South African life tended more and more to shift from the coast to the interior, and it was the trekboer who first reached the great tracts of land beyond the Orange River.

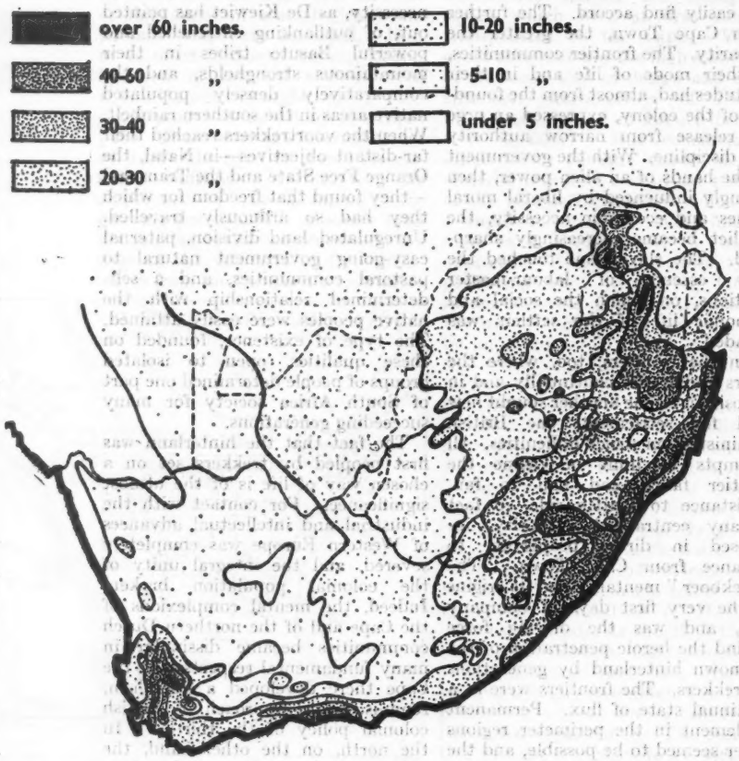
The Boer Republics

The direction of the Great Trek of 1836 was given by the tactical necessity, as De Kiewiet has pointed out, of outflanking entrenched and powerful Basuto tribes in their mountainous strongholds, and the comparatively densely populated native areas in the southern rainbelt. When the voortrekkers reached their far-distant objectives—in Natal, the Orange Free State and the Transvaal —they found that freedom for which they had so arduously travelled. Unregulated land division, paternal easy-going government natural to pastoral communities, and a self-determined relationship with the native peoples were easily attained. The type of existence, founded on these qualities, open to isolated groups of people determined one part of South Africa society for many succeeding generations.

The fact that the hinterland was first peopled by trekkers set on a chosen way of life is of the utmost significance. For contact with the industrial and intellectual advances of Western Europe was completely severed, and the integral unity of the colonial population broken. Indeed, the mental complexions of the Cape and of the northern Dutch communities became dissimilar in many fundamental respects. At the Cape there developed a liberalism, reminiscent in approach of British colonial policy of the thirties. In the north, on the other hand, the older outlook of the free burghers was fully maintained. But the cultural life at the Cape, though established by tradition, depended for its vitality, as all sound tradition does, on progressive change in structure and form, in conformity with changing historical factors. The Boers, who were in any case representative in the main of the fringes of the earlier Cape settlement, isolated themselves from the great social and economic upheavals of the time and were unable, in the first years of independence, to reconstitute a cultural and therefore a building tradition for themselves.

Possession of the interior had to be





ANNUAL RAINFALL

fought for. On the Highveld the Matabele were overcome and, in Natal, the savage resistance of the Zulus broken in 1839. The first independent Boer Republic was founded in Natal in 1838. The trekkers thus at one stroke gained an outlet to the sea and a strategic position in relation to the native peoples to the north and south, which allowed unfettered control. It was these very facts which soon brought about British intervention. The commanding maritime position of Port Natal might have involved a challenge to British naval and colonial power; further, Boer native policy jarred the liberal susceptibilities of the British Colonial Office. But perhaps the leading motive behind annexation was the opportunity for economic control which the isolation of Boer communities in the interior would make possible. Natal, which tends geographically to form a regional unit, thenceforward was predominantly British in character. Building reflected the transitionary period in technique and style of Victorian England, modified by colonial requirements and limitations.

The factors which prompted the taking over of Natal, however, were not confined to that territory. The native question loomed large in all parts of the country. A succession of Kafir wars on the unsettled Eastern Frontier of the Cape led eventually to the setting up of new British administrations. The Boers, in their struggle for pastoral land, had to contend with the Basuto and Griquas. The result of these conflicts was an interpenetration of settlement, in the process of which new social relationships and economic differentiations emerged. It was impossible to separate the problem of one part of the country from another. On this assumption, the energetic and able Governor of the Cape Colony, Sir Harry Smith, annexed the Orange River Territory. This action represented a trend in British colonial policy, however, which was at this stage to suffer a complete set-back. Punitive expeditions against the Kafirs, who understandably fought back against white infiltration on their lands and against the disruption of their tribal authority and organization, presented a mounting cost to British taxpayers. A reaction to increased colonial responsibilities had a twofold effect—the granting of self-government to many colonies and the withdrawal from unpromising new commitments. It was in this mood that, in 1852, the British Government decided to recognize the independence of the Boers north of the Vaal River, and followed this up in 1854 by withdrawing British sovereignty from beyond the Orange River. Thus were established the republics of the Orange Free State and the Transvaal.

Mineral Wealth—the Anglo-Boer Conflict

The liberation of the Boer communities made possible for the first time in the north, the development of definite areas of permanent settlement, attainable along self-chosen lines and at a self-chosen pace. The resources at hand for development were poor. The industrial expansion of England had passed the Cape by. Inducement for capital investment in railways, roads, harbours and other public works was lacking. In the northern Republics, the general backwardness was accentuated by the insularity of an agricultural and pastoral people. But even if the will to expand had been there, the difficulties of distance and transport of the working of raw materials and the production of finished commodities were enough to hold back large-scale construction of whatever nature.

The land, its division and ownership, dominated the social scene. The Boers were determined on a generous allocation of land to their wants. It was generous, inaccurate and wasteful, and retarded orderly and compact development and efficient working for not a few generations. The villages that sprang up reflected the generousness of the farm lands. There was virtue, however, in the broad squares, the market places and the main streets, wide enough to cater for the wagon and its span of oxen. The clean rectangular layouts were generally adequate for the demands of the day. It was only later when mushroom mining and commercial communities came into being, that the weaknesses of closely spaced land sub-divisions showed themselves. They were wide open to speculation and inflation. The inadequacy of main approaches and central free spaces became bars to rational planning only when towns of dimensions far greater than the trekkers could ever have conceived, sprang up. One more factor requires emphasis. The dispossession of the natives of their land, inevitable in the incompatibility of the respective economies of white settlement and tribal life, created a peculiar labour force, for which no appropriate outlet was easily found. Nor has this problem yet been satisfactorily resolved — a fact now painfully obvious in the face of South African towns.

The story of the transition from rural to urban communities is told in the discoveries of diamond and gold deposits in the last third of the nineteenth century. The sudden turn in the development of South African life—from an agricultural and pastoral basis to an industrial nucleus—dates from 1867, when the rich diamond resources of Kimberley were first unearthed. The economic effect, in a land which had thus far been almost by-passed by waves of immigration from Great Britain and the European mainland, was profound and lasting. Its most immediate consequence was a flood of fortune-hunters from all over South Africa and beyond. An unstable population —white digger, speculator and adventurer, and dispossessed and workless black — imparted the peculiar mining-camp quality to the minimum forms of shelter which were thrown up. Galvanized corrugated iron became the staple building material, and still remains the standard roof covering in the interior provinces; it has also remained the chief constructional item in the hovels and shacks of the African and coloured folk forced by economic pressure on to the fringes of the larger towns and villages. Its lightness, transportability, cheapness and efficiency account for its wide application, in spite of uncomfortably obvious insulation defects. Whatever the merits of corrugated iron in more recent times, the material has certainly been outstandingly useful in sheltering the floating population of South Africa's mining towns; and, in lieu of anything better, the neglected labourers who work in, but are often not part of, the modern industrial centres; and it provides a triumphant demonstration of the application of a mass-produced material to building requirements.

Kimberley quickly assumed a more permanent character. It became clear that diamond production was not to be short-lived, and was indeed destined to transform South Africa's economy. The founding of the first industrial community quickened the linking up of ports to hinterland, meant an enormous increase in trade internally and in the import of manufactured goods. The repercussions on the social plane were felt most directly by the tribal natives. In the coming to Kimberley of 100,000 natives over a period of twenty-five years lay the foundations of an urban proletariat, whose problems have complicated the structure and social relations of the new industrial centres, and for whom no proper and equitable place has yet been found. The problem of racial segregation—the antithesis of community integration—was narrowed down to urban dimensions.

Diamond mining, in its initial phases, was highly inefficient and unorganized. Inevitably its individualistic nature gave way to mining groups and companies, whose natural function was to work the pipes of blue ground for maximum profitability. In doing so, a division of labour, upon which profitability largely rested, was constituted—a division into well-paid skilled categories drawn from a fixed white population, and poorly paid unskilled labour, recruited from a migratory class of rural natives. The wide discrepancy between the two divisions of labour has permanently coloured all industrial activity in South Africa.

The mineral wealth of Kimberley attracted overseas capital to South Africa, but to exploit that wealth close co-ordination and control was needed. Cecil Rhodes devised the required instrument in the founding of his powerful De Beers diamond trust. Production was regulated and prices maintained. South Africa came into line with the expanding stage of capitalist development. The resultant amassing of great fortunes by South Africans enabled outward expression to be given to an active phase of British colonial policy. It was not, however, until the opening of the goldfields of the Witwatersrand that cultural progress may again be noted.

Before gold was discovered, political factors dominated the South African scene. While Kimberley diamonds had served to bring closer the widely dispersed centres of white settlement they had, at the same time, brought into sharp relief the social and economic problems of the country as a whole, and their political consequences. The poverty of the Transvaal, its lack of resources and its isolation, complicated and weakened the means of government. In 1877, at the moment of greatest weakness, brought on by a costly war against native tribes, the Republic was annexed to the British Crown. In a sense, the move was indicative of the growing sentiment for confederation of the various political units which divided the country, but which in fact were close to one another in their basic problems. The move proved premature. British administration itself was subject to conflicting trends in policy, and open to attack from a nationally minded and constituted people. The wide disparity in the social institutions and economic framework of the loosely federated farming folk, and the close-knit imperial minded occupation administrators could, at that stage, lead only to a smouldering opposi-

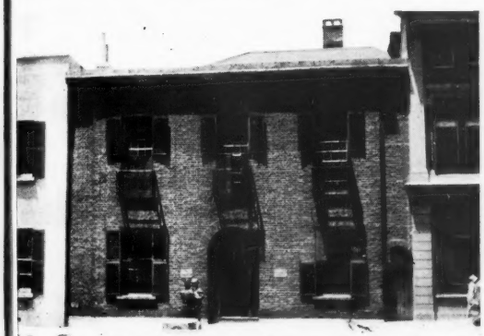
EIGHTEENTH CENTURY

8. *Typical Dutch house at French Hoek, Cape Province.*

9. *The slave quarters of Groot Constantia, Cape Town.*

10. *A Lutheran Parsonage of the eighteenth century at Cape Town.*

NINETEENTH CENTURY

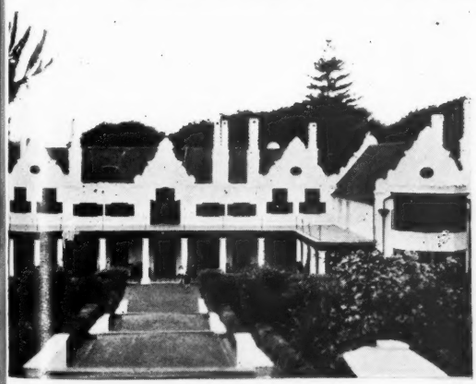


11. *Early nineteenth-century Georgian in a Cape Town street.*

12. *Early nineteenth-century barracks in Cape Town: regimented rows of windows.*

13. *Corrugated iron cottages of the nineteenth century are still seen everywhere.*

SIR HERBERT BAKER



14. *Groot Schuur, inspired by Cecil Rhodes, built by Sir Herbert Baker and lived in by the Prime Minister.*

15. *The Rhodes Memorial, Rondebosch, Cape Town. A grand conception in a magnificent setting.*

16. *A gate-keeper's lodge in Johannesburg, typical domestic architecture by Baker.*

17. *The Union Buildings, Pretoria, an impressive monument to national unity.*

18. *An interior by Baker and collaborators, in a Johannesburg town house.*

19. *Large hall in Government House, Pretoria, harmonious decorations, no pomposity.*

20

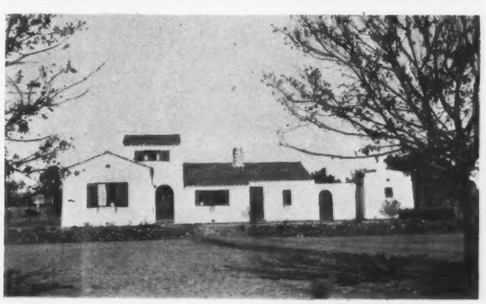
21

During the short peaceful lull that followed the last Great War, South African architectu especially that of town and country hous flourished greatly. As shown by the illustr tions, a fine heritage of houses has been l to South Africans, a heritage strangely enou still inspired by the imperialist mind of Ce Rhodes. Sir Herbert Baker had been Ce Rhodes's own architect. He and his follow translated British tradition in a South Afric Edwardian idiom.

Three main trends are discernible in t idiom, as typified in the monumental Uni Buildings shown, **20**. *The Classical, the Du and the Mediterranean strains are blended i a South African symbolism. In the Uni Buildings Baker's task was to create a nation memorial, a monument to a once divid people, who had come through bitter strife a unification of their divergent political ideals In his country houses, of which "Arcadia," is a fine example, he shows a lighter touch a successful adaptation of the Italianate w the South African landscape. His brilliant ba of followers built, in about twenty years, ma characteristic houses mainly for the privileg classes. Although their work was primar inspired by Baker, later developments show that the influence of Sir Edwin Lutyens was j as deep. His masterly handling of material consummate craftsmanship appealed to arc tects such as J. M. Solomon and Gordon Le even more strongly than the style of Baker. Built before the Great War,* **22** *to* **24** *refl three facets of Solomon's achievement. Lutyens imprint is apparent in the strik chimney stacks and the steep roofs. Y.W.C.A. building,* **22**, *exhibits a good mixt of the formal and the domestically appeali The diversity of Gordon Leith's output,* **25** *to is always dominated by a clear-cut personal Imbued with the traditional traits of his count he was, nevertheless, a great experimen Working on every kind of material, he carr out research in classical architecture wh was a guiding educational factor to younger architects, debarred from study during the war years. All his houses are happ integrated with their natural surroundin harmoniously proportioned and of well-spa fenestration.*

30 *illustrates the Springbok Hotel at Johann burg, the work of Professor G. E. Pearse, ow to this pædagogic genius, one of South Afri most influential architects.*

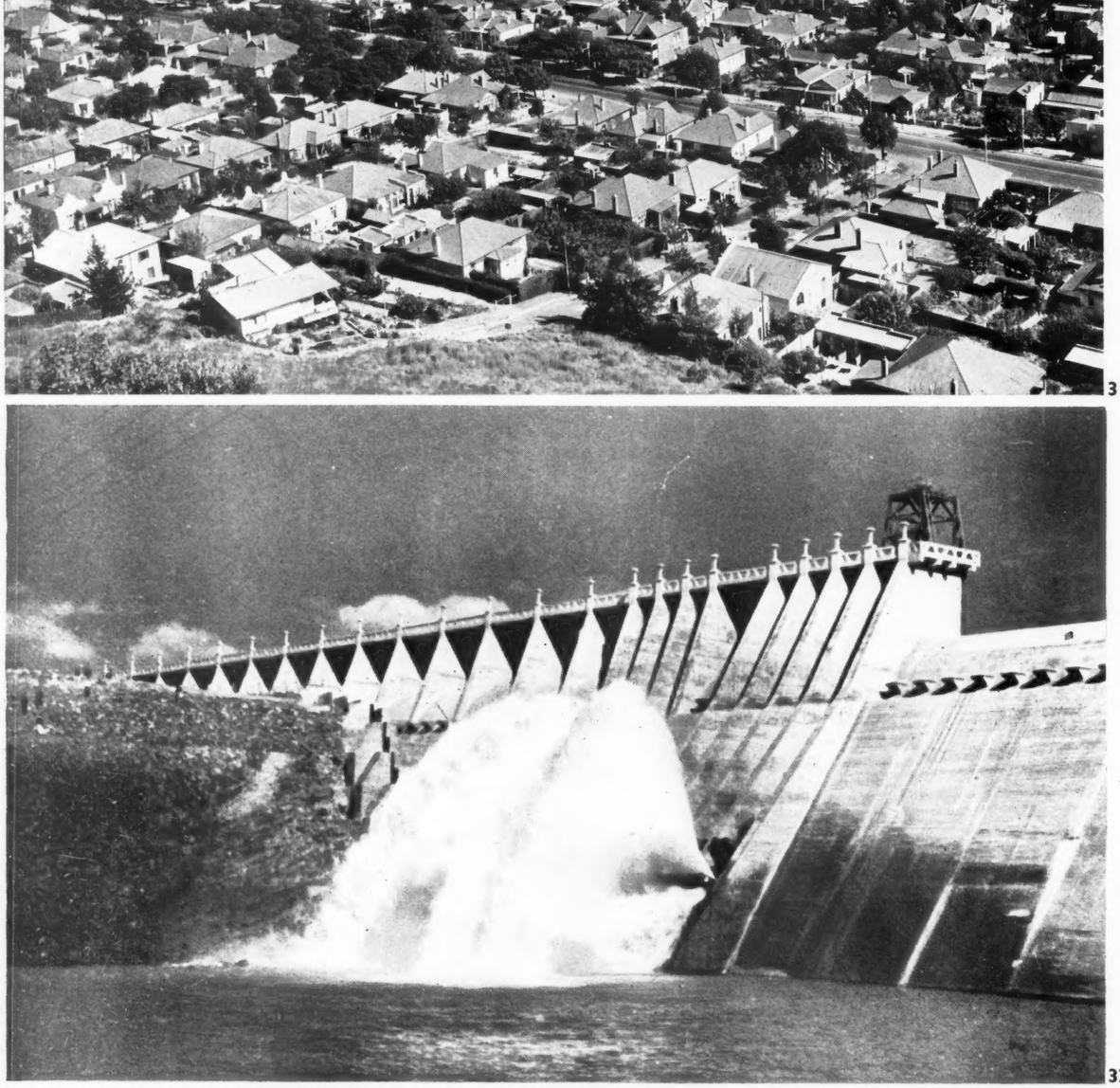
22
23
24



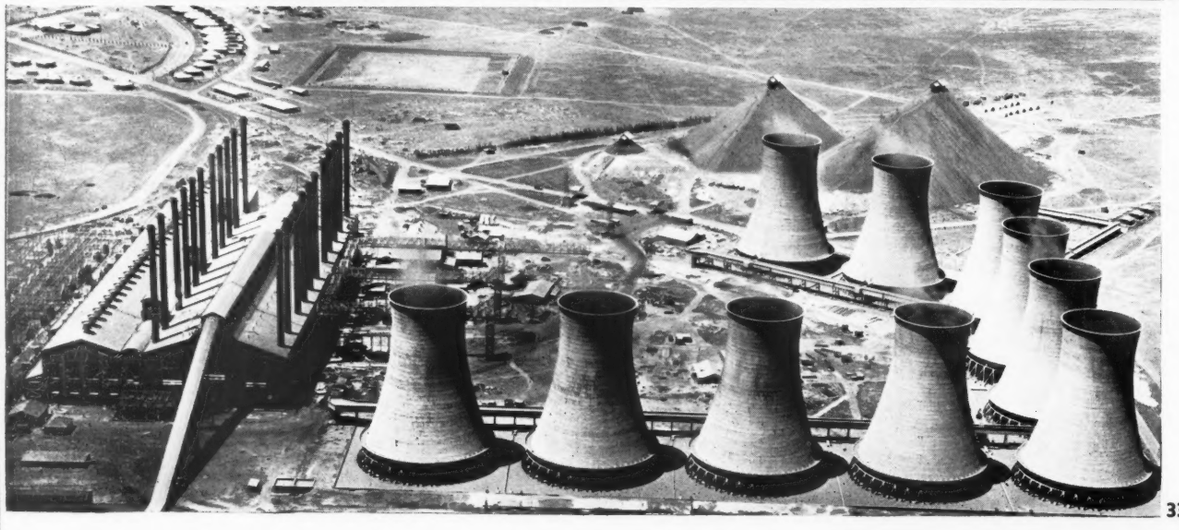
25
26
27

28
29
30

31



32



33

Modern industrialised South Africa has changed the face of large areas of the country. Gold and diamonds have advanced the urbanization of many districts. The housing problem, aggravated by the question of black and white, is gradually being tackled. **31** *is a typical Johannesburg suburb, patterning the countryside in a mosaic of low-built units. There is more national character in this than in* **32**, *the Vaal Dam in the Orange Free State, an example of international industrial style, and the Klip Power Station,* **33**, *which boasts of being the largest in the southern hemisphere.*

tion and discontent. After a short agitation and a brief struggle, the independence of the Transvaal was recognized in 1881, although the Republic remained for the time being under British suzerainty.

The political manœuvring and vacillation of the next five years took place against a background of economic depression, which threatened to submerge the undeveloped Transvaal once more. But a sudden transformation took place in 1886, when the world's richest goldfields were discovered on the Witwatersrand. A factor of the greatest significance, both immediately and later, for the future of the Transvaal and South Africa as a whole, lay in the nature of the gold-bearing reefs, which were workable and payable only in the hands of a large-scale, fully capitalized and equipped industry. The individual staking of claims, by which early Kimberley and subsequent diamond fields were opened up, was here not possible. The character of first development was dissimilar in all respects but that of personnel. The capital and experience garnered in diamond production were transferred to gold mining, and the Kimberley magnates moved north with their fortunes.

The setting for industrial production, financed by overseas capital, was singularly incongruous. The rural society of the Boers, their small, drowsy administrative centre at Pretoria, which lay within forty miles of Johannesburg and the historical background of the Republic, made the new community a foreign and unwelcome social element and a casteless neighbour. All possible grounds for disagreement were present, every conceivable contrast. Nevertheless, gold mining brought prosperity to the Transvaal, to the Republican Government itself, and a degree of economic independence previously undreamt of. Controversy centred round the transport issue. Imported goods were essential to the life of the "landlocked" Republics. Their entry into the country, their transportation over the long distances from coast to inland destinations and the financial aspects involved in both, were debated and fought over while separate states remained. The Transvaal was now able, however, to link up with Portuguese Delagoa Bay, and ease its most pressing difficulty.

It was in this period, too, that considerable internal expansion became possible. To the cosmopolitan mining town of Johannesburg came the products of industrial England and North America. With the goods, prevailing taste and fashions were imported. The late Victorian, from music hall to aspidistra, gave the note in civic and domestic amenities. Every foot of the buildings, apart from the mud which bound and faced the brick walls, contained material carried by sea, by rail and by wagon over immense distances. It was primitive prefabrication on a grand scale. Assembly processes were of the simplest. Wood frames, corrugated iron walls and roof and, later, sliding sash windows and panelled and glazed doors all arrived virtually ready made for use. With more substantial building, a style, or better perhaps, certain features, emerged to fit local conditions. The verandah for an outdoor escape from stuffy interiors and for protection against the heat and sudden rains of the summer months became a fixed element in all "better" building for houses, shops and offices alike. The bungalow was the standard type for the small houses that clustered round the crowded central area of the town. The magnates sought breathing in new suburbs which are now slum or semi-slum districts. They built mansions in the grand Victorian manner, embellishing the pretentious façades with imported cast iron and ornamental woodwork. Cast iron, in fact, flooded the market and became the leitmotif of the street architecture of all larger towns.

The whole of the Transvaal showed the effects of goods flowing through channels once more opened to world supply. The ideal of the trekkers for unfettered, devout and simple outdoor life, in which small groups of men were united by the bonds of occupation, outlook and the common interests consonant with such a life, was rudely disturbed. The modern processes of production, the complexities of labour and capital, and the unbalance of a changing world, were transmitted at a single blow to the Republic. And the most obvious reflection of foreign influences was to be found in the homes and buildings of towns and villages. Pretoria contained proportionately almost as much corrugated iron, cast iron and the other paraphernalia of the era as the home town itself of the "Uitlanders." For it is an undoubted fact that, in the circumstances of their lives, the Boers did not, and probably could not, in the time given, develop even the elementary material of building, quite apart from a fitting architectural expression of that material and of their social system.

They were not unaware of the need for such a development. In an endeavour to eschew all things British, they turned to the European country nearest to their outlook and tradition—to Holland. The ties of blood and language and religion were powerful incentives to seek closer cultural links. Numbers of Hollanders came to the Transvaal, and formed the nucleus of a more efficient civil service. They assisted in placing education on a sound footing, in founding a working public administration and in the undertaking of widespread public works. Though the planning of public buildings did not rise above the general level to be found in Europe at the time, yet the experienced technique of the Hollanders meant an enormous improvement in the training and skill of building artisans. Many of the buildings remain solid landmarks of Republican days. They stand in many small towns throughout the Transvaal and on Church Square in Pretoria itself. Locally produced materials were frequently used with discretion and some sense of fitness. The short-lived days of the Republic did not allow progress of any lasting significance.

A full understanding of later developments requires the correlation of events during this period at the Cape and in the Transvaal. Responsible government had been granted to the Cape Colony in 1872. The following twenty years saw a measure of co-operation between Dutch and English, particularly in the sphere of party politics. Its basis was a realization of a community of interests—at the rare moments when the future of the country as a whole could be viewed without passion. Certainly, if the country was to develop along modern economic lines, the problems of the two groups of the European population inevitably merged. The cleavage recurred only when two different ways of life came into opposition. The long view of the tense years at the close of the century is that the very presence of the mineral wealth of the interior, revealed by the irony of history, by those seeking to escape the power of the new industrial age, made possession of the Transvaal the cornerstone of imperial policy in South Africa as a whole. Not that other inflammatory material was lacking. Native policy, territorial expansion, outlets to the sea, citizens' rights, tariff policy were all centres of heated controversy. But none of these, alone or together, would have brought on open conflict with such speed.

Imperial policy found its expression in Cecil John Rhodes. He was, on the one hand, the supreme entrepreneur of diamond and gold mining interests in South Africa and, on the other, a political power, in a sense representative of British colonial outlook and tradition. His was no narrow view of South Africa's destiny. With him, imperial ambition overstepped sectional sentiment and, indeed, immediate inalienable rights. The Colonial Office did not always find it expedient to endorse his actions, sometimes conceived and carried through with impetuosity and ruthlessness. Rhodes worked consistently for political confederation by agreement—which was possible only by racial co-operation between Dutch and British. The growth of Dutch political consciousness and leadership at the Cape made such co-operation feasible, although there has always been and is a body of opinion, ultra-nationally based, opposed to the "imperial" connection in any form.

The united South Africa that eluded negotiation and compromise was brought about by the violence of the Boer War. After bitter and prolonged fighting, the country settled down in 1902 to a somewhat uneasy peace. Uneasy because great problems remained unresolved. Chief amongst these, the racial questions involving Bantu, Boer and Briton; and the full range of complexities contained in the relations, social and economic, between these primary groups.

Unification of South Africa

Rhodes played some part in most of the changes of those times. He had at an earlier date sponsored the settlement and permanent protection of native reserves, still the pivot of South Africa's native policy. His role in the establishment of the mining industries, which were perforce based on Anglo-Dutch skilled and African unskilled labour, has already been noted. Of more immediate interest here is the strange fact that it was Rhodes who paved the way for a Dutch, or more properly a South African cultural renaissance. Though English born, he had a great love for the quality and subtleties of the South African scene. He found the quintessence of that quality in the Cape Peninsula itself, in the fine building and rounded culture of the early Dutch settlers. The heritage of town and country houses, their furniture and equipment, was in a shameful state of disrepair and disintegration. Rhodes determined to salvage and restore whatever could be reached. A chance meeting with the architect Herbert Baker, enabled him to encourage the study of the early buildings and, after purchase, to reconstruct some of the more notable farmhouses.

Closeness to such an attractive and virile architecture, in a setting little changed from the days of Company rule, understandably induced patron and architect to attempt to resuscitate the style, in building the house of Rhodes himself and those of others of his circle at the Cape. Period revivals are, of course, easily attacked, but there is much to show that neither Rhodes nor Baker took a superficial view of the task of restoring architectural values lost for the best part of a century. Baker's own background fitted him well for work in the domestic field. His training in England, in the office of Ernest George & Peto, particularly qualified him for this work. He was as thoroughly imbued with the English vernacular of Kent and Sussex as his contemporary (in the same office), Edwin Lutyens. A knowledge of the foundation of the vernacular in skilled craftsmanship, in the full and logical exploitation of materials at hand and in a dynamic tradition, focused Baker's attention on to essentials. Thus he seized on building skill still to be found at the Cape—in the plasterers, the wood and metal workers, the tilers—to establish a high level of interpretative technique.

But Rhodes saw further ahead. This was the era in South Africa of imperial expansion and consolidation, the power of which demanded monumental and permanent expression. How better than in building? Baker was despatched to study ancient buildings in Mediterranean lands, to equip himself with the complete vocabulary of the "classical" architect. It may fairly be said that Baker took full advantage and rose to his opportunities, though it was chiefly after Rhodes's death that these came in full measure.

Baker moved to the Transvaal after the Boer War. Reconstruction and expansion were in full swing under the efficient direction of Lord Milner, whose deliberate policy it was to train and sponsor a group of younger men for high administrative posts in the imperio-economic system. Baker, too, was fortunate in the patronage of Milner, and his practice thrived as the resources and influence of the "kindergarten" rapidly increased. He had with him the architect Sloper, who was keenly sensitive to every nuance of the Kentish vernacular, and together they built many large houses for the newly arisen managerial and administrative class. For the mines had quickly assumed the character of a large-scale industry, in which ruthless efficiency and economy of operation were associated with scientific method and research. The industry had its political counterpart, observable in the close alliance of responsible personnel—the guarantee of official acceptance and continuity of policy. Conditions favoured the "Rhodes" approach to building and a relationship, quite in the Renaissance manner,

subsisted between patron and architect. In the result, Baker enjoyed virtually a free hand—which, it must be said, is not always conducive to a sound architectural discipline.

The Transvaal was, of course, poor in building tradition. There was some building of a fair standard before Baker's arrival but, broadly speaking, it was to a moderately glorified mining camp that the eager young architect came. While building technique and historical background had tenaciously survived at the Cape, in the Transvaal there was to be found neither the one nor the other. Baker's own equipment, however, was of considerable range and strength. But primarily it was the material of building which was lacking. The architects rapidly overcame this handicap. They performed a proper function of the architect in setting standards of quality and dimension in manufacture and, in doing so, founded the production end of the building industry in the Transvaal. In addition, the import of materials, always an integral part of South African building, was speeded up and directed along more appropriate channels. Timber for all purposes, glazed tiles, window glass, metal ware and roofing shingles were unobtainable except by import. Nevertheless, much could be done even at that period in local manufacture. Brick and tile making was quickly under way but, more than that, Baker, in his attachment to the vernacular, looked around the setting of his houses for the materials at hand. He revealed the beauty of the refractory kopje stone of Johannesburg's many ridges. By a judicious blend of this medium with steep-pitched pantile or shingle roofs, elegantly detailed, organically positioned plum-red brick chimneys and simple casement-type teak windows, Baker evolved a personal style reminiscent, it is true, but firmly and imaginatively controlled.

A lack of architectural discipline has already been referred to. Perhaps Baker suffered from an embarrassment of opportunity. In the short space of ten years he used his abundant architectural vocabulary in an amazing diversity of ways. Though he himself retained a degree of mastery over the richness of his material, it seems likely that the potential strength of an organic approach to plan and structure, and to their architectural integration, was largely dissipated. While it is true that general standards of building rose, it is equally true that an architecture close to the South African people and their problems was not achieved. Baker's work bore the unmistakable stamp of the social relations of his own epoch. The ascendancy of one group of society gave him his plentiful opportunities, and his architecture is fully illustrative of the liaison. Stress is laid on this fact here, not as a point of criticism or because the relationship is in any way exceptional, but rather because the later fundamental changes in economy and thus in social relations placed entirely new demands before the architect.

The Baker tradition was not clear-cut or well-defined to all outward appearance. It was, in fact, confusing and misleading in its diversity. The unity of expression and cohesion of purpose which the early Cape builders bequeathed and of which Baker himself was so conscious, were not immediately apparent in the twentieth century renaissance. Yet there was in Baker's work, below surface values, a hard core of real achievement, the value of which did not die and which, indeed, found new life in the training and forming of the first architects of the contemporary movement in South Africa.

None understood better than Baker the inherent relationship between building, site and setting, between the subtleties of the interior arrangement of living space and its exterior extension. In this respect, at least, he perpetuated and furthered the Cape Dutch tradition. The interiors of his houses recalled the restraint in proportion and surface of the early Dutch builders, while a consistency in the design and workmanship of fittings and furniture was meticulously observed. The loggia, paved courtyard and inevitable stoep were of a character particularly suited to Highveld conditions, and were appropriately and skilfully incorporated within the accommodation of the house. A reflection of this advance in planning technique is clearly to be seen in many of the houses carried out by the contemporary school. The gardens, too, of Baker houses and of some of his large projects merged magnificently with architecture and landscape. His achievement in this direction closely paralleled the Lutyens houses and gardens of the same period. Baker's gardens were, perhaps, even more remarkable in that he worked without precedent under strange and unfavourable conditions. He created a horticulture of indigenous types and carefully chosen exotics, with which he blended architectural formality and arrangement with the greatest skill.

Building, as always, followed the curve of mining prosperity. Mining itself, because of its central place in South Africa's economy, was a prime factor making towards the unification of a country still deeply divided by historical circumstance. The colonies of Natal and the Cape were self-governing, while the Transvaal and the Orange Free State came now under direct British rule. The prosperity of the country as a whole flowed from the working of the mineral resources of the Transvaal. Successful working, however, involved the harnessing of the labour resources to be found, not in the Transvaal alone, but in all the southern African territories directly or indirectly linked to the British Crown. The pressure for unification sprang to a great extent from economic expediency if not necessity, but over and above such pressure, the nature of British colonial policy held the promise of the first step towards union—self-government for the ex-Republics. When it came in 1906, it was merely the preliminary to the final act, for which negotiations were entered into in 1908. Union was effected in 1910.

The achievement of national status was an expression of converging trends, in the spheres of internal politics, economic development, social relations and imperial policy. Converging but not coincident, for the ravages and bitterness of war could not be erased in a single generation. Nevertheless, the significance of union was that the democratic instruments of government for the total white population had been laid down. To commemorate fittingly the historical fact (and to cope with a greatly enlarged national administration) a programme of public works was initiated. Chief amongst these were the celebrated Union buildings at Pretoria.

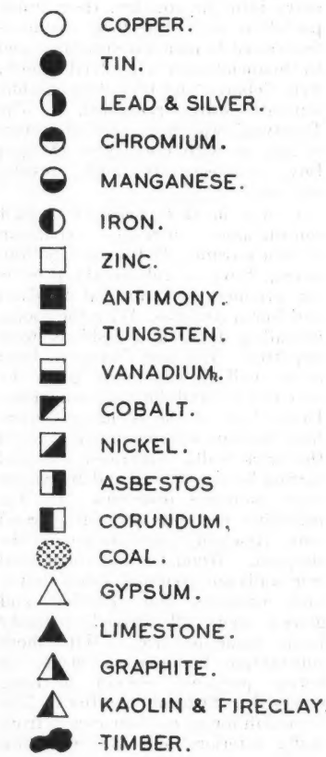
The architect, Herbert Baker, was uniquely qualified to undertake this great project. His contact with the tradition of the early settlers of the Cape, his training in the building craft of the English countryside which linked up with and expanded into the supreme achievement of Wren, and his close familiarity with site and atmosphere of the architecture of classical times, gave him the required background. Moreover, he had achieved remarkable results under the actual conditions of work in the Transvaal. The design problem to be faced was compounded of diverse elements. The building was both monument and administrative headquarters; it was the symbol of national self-government but within an imperial framework; and it represented a unity of peoples only just emerging from the aftermaths of violent conflict and, in a sense, of different worlds.

It is difficult to measure the success of Baker's solution. Fortunately, the architect had just completed one of his finest houses—"Arcadia" in Johannesburg. In it he recalled in a particularly happy manner the white-walled, tile-roofed houses of the Mediterranean littoral. Similarity in climate and terrain made his free South African adaptation appear very much at home. The formal quality of the Italian villa, which yet retains its domestic flavour, can be traced in the Union buildings, even though the scale is stepped up to monumental proportions. To say that the building fulfils its multifarious purposes only in the symbolic sense, that it is Wren in parts, Cape Dutch in another and Classical Greek in yet another, is to frame an indictment in terms of modern architectural criticism. And yet no one who has actually experienced the living atmosphere of the approach, of the central amphitheatre and the colonnades can deny its almost complete functional success. A study of the assured mastery with which the whole composition is moulded to its site, and with which the architectural elements are bound together, confirms and strengthens the first impression of a fully rounded, superbly executed piece of creative architecture.

A history of South African architecture up to the point now reached may with some justification deal primarily with the houses and buildings which the predominant class of society provided for itself. On the whole, the leisure and resources, and the privileges, needed for cultural expression and advancement belonged to a small proportion only of the heterogeneous South African society. At rare moments and in special circumstances a more widespread flowering of cultural life may be observed. It was, for example, geographical compactness, the comparative evenness of social level of the burghers of the Cape during the last twenty-five years of the nineteenth century, which favoured the growth of a clearly defined and generally adopted style in building. The increasing complexity of South African life, the dispersal of population over wide tracts of unknown land, the presence in great numbers of savage peoples and their gradual absorption, and the sub-continent's sudden alignment with the external world's industrial economy, did not, for over a hundred years, favour a similar growth.

Although the Union buildings ushered in a new era in South African politics, it represented, architecturally, the end of an epoch, not its beginning. Cultural differentiation on a class basis was thus far a phase of a predominantly rural economy, the scope of which was somewhat enlarged by maritime contacts. The opening up of the hinterland and the discovery and working of its mineral wealth, displaced the established economy in favour of one, part rural, part industrial. But in the development of the country, the large-scale industrialization, which rapidly followed mining operations, was fundamental. The differentiation of classes now takes on a new aspect, in conformity with a predominantly industrial economy.

When translated into architectural terms, the new economic framework postulates a different direction and a more comprehensive field for building. The scale alone of operations tended to swamp the limited volume of what was essentially craft building. The specialized nature of this latter work, its rare quality of design and construction, reached its peak in the Union buildings. Of course, it did not stop there but, parallel with its continuing though declining life, the mass provision of houses and buildings became the paramount requirement. For the trend towards urbanization, which dates from the first rush for diamonds at Kimberley, was now being steadily and consistently accelerated. The growth of towns was architecturally significant, success or failure largely depended upon ability to absorb and



interpret technological advance. In this respect it is more correct to look for the roots of urban growth in the wood and iron shacks of the mining camps than in the somewhat attenuated tradition revivified by Baker and his school.

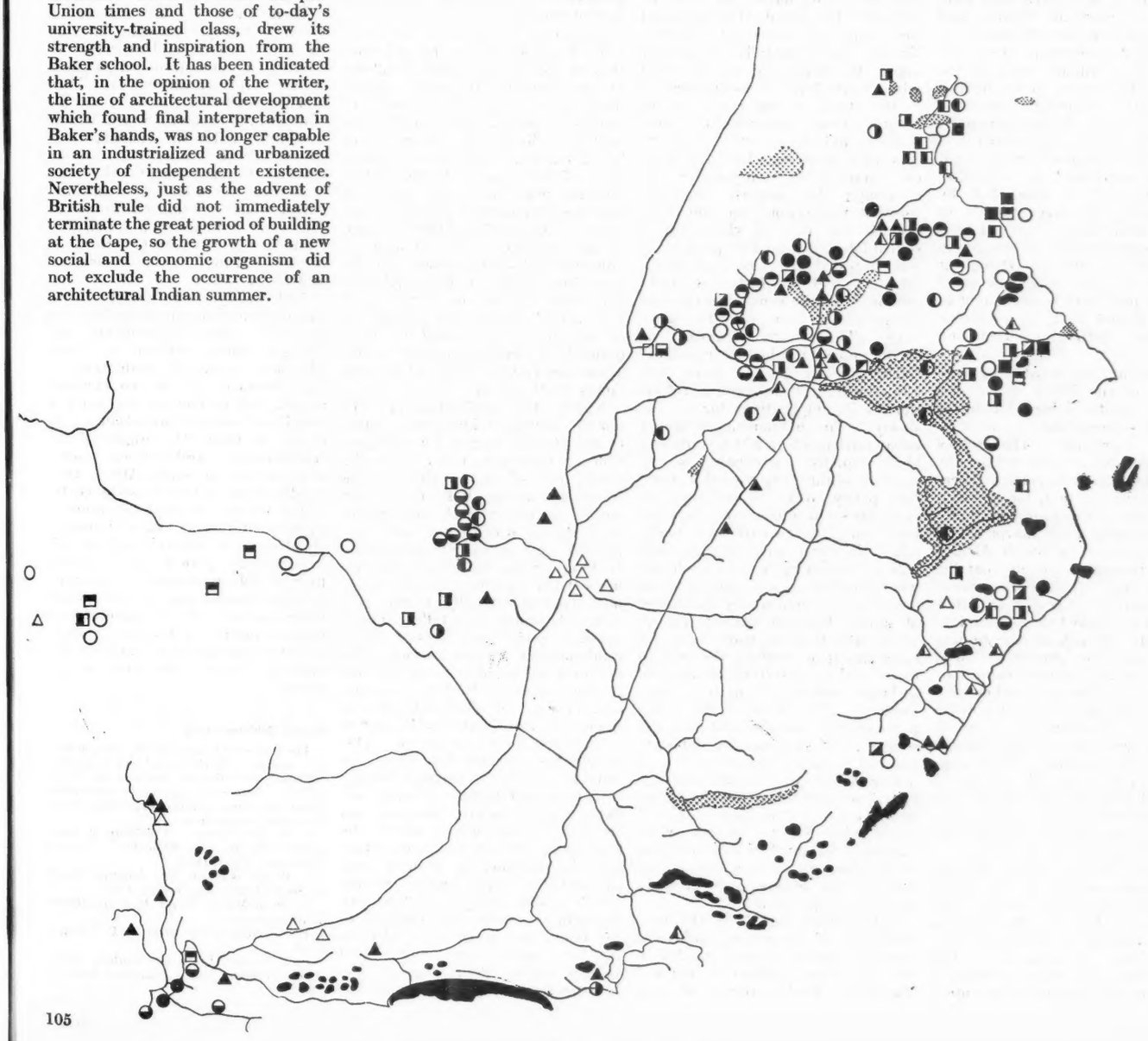
At one time Johannesburg was very conscious of its "Baker" houses and buildings. In the days before the Great War, it was possible to come on colonies of his houses, particularly, of course, in the suburbs appropriated by the wealthier citizens. Gradually these colonies have been submerged by waves of houses for a rising middle class, until to-day it is mainly the connoisseur who knows and seeks out Baker work. Fortunately, most of the larger houses have remained in the hands of the original owners, and are well preserved. (There are exceptions, the most distressing being "Arcadia," which should have enjoyed the status of a national cultural asset.) Fortunate also was the existence of a Baker school. Baker, when planning the Union buildings, gathered round himself a brilliant coterie of younger architects. Identity, or at least, similarity in outlook, and for a considerable period, of purpose, may justify calling this group a "school." The generation of architects between those of pre-Union times and those of to-day's university-trained class, drew its strength and inspiration from the Baker school. It has been indicated that, in the opinion of the writer, the line of architectural development which found final interpretation in Baker's hands, was no longer capable in an industrialized and urbanized society of independent existence. Nevertheless, just as the advent of British rule did not immediately terminate the great period of building at the Cape, so the growth of a new social and economic organism did not exclude the occurrence of an architectural Indian summer.

The Post-Great War Decade

The whole of the Baker school did not survive into the post-Great War period. Before the war, architecture of considerable competence and charm had been accomplished. Strange to relate, the trend of this work, in its best phases, was not derived in detail from only Baker's manner. There was a much closer association with the work of Edwin Lutyens, Baker's English contemporary. Lutyens had been in South Africa after the Boer War and had, during his visit, designed the Art Gallery and the War Memorial in Johannesburg. There are differences in the techniques of two architects who started from the same background and whose careers have so often converged. These are not easily defined. Obviously Baker had in him a deeper grasp of South African tradition and adapted himself more easily to the difficult conditions of the Highveld. His work, however, showed a somewhat heavier touch, useful enough, it is true, in building above the domestic level in scale. To the limit to which the domestic scale could be carried, the delicacy of detail and the unequalled sense of material and craftsmanship out of which the work of Lutyens was compounded, were irresistibly attractive to the younger architects of the day. His leading disciple in South Africa prior to the Great War was the late J. M. Solomon, a man of rare attainments. The small houses which Solomon carried out were illustrative of just those Lutyens qualities which had commended themselves to the whole group. The white-walled cottages with steep pantile or shingle roofs boldly surmounted by beautifully detailed chimneys, are clearly of Lutyens derivation, even though the Baker touch is not entirely absent. In town building he left one admirable example in the headquarters of the Y.W.C.A., Johannesburg, in which a formal façade recalls the mature domestic flavour of his small houses, and yet impresses by its achievement of correct scale and by its scholarly restraint in the use of classical motives.

There were many other able members of the school who came into their own after the Great War. Amongst these must be mentioned Professor G. E. Pearse, whose pioneering work in architectural education is later referred to; V. S. Rees-Poole, whose domestic work in Pretoria has retained the freshness and breadth of Baker's best smaller houses; F. K. Kendall at the Cape, at one time Baker's partner, who maintained the link with the Kentish vernacular; and Gordon Leith, South Africa's best known architect of the traditional school.

Leith's early work in a special way held the promise of progressive change in line with technological advance. Although in general he used the traditional materials of building, he combined a keen structural sense with a deep feeling for the nature and characteristics of the South African setting. His houses, with which this short note is concerned, cover a surprising range in style and technique. The Lutyenesque influence is unmistakable, but the impress of his own strong personality is equally evident. Of the many varieties of small house which flowed from his hand, the most interesting are those which take the "Arcadia" line—low-pitched tile roofs, white plastered walls, arcaded loggias, shuttered windows and light wrought



ironwork. Leith's handling of these familiar forms is by no means conventional Baker. Their appropriateness for the Transvaal house of the dilettante (using the word in its best sense) was given point by correct siting, generous "spread" and a three-dimensional architectural discipline.

It was this aspect of Leith's practice which bridged across the gap in the training of architects during, and for some years after, the Great War. For the first university students, guided into the channels of the Baker tradition by Professor Pearse, the openness of plan, the breadth and quality of fenestration and wall surface, made an immediate appeal. One of the roots of the contemporary movement may be found in this early contact. Moreover, Leith experimented widely with the materials at hand, and even beyond the immediately accessible. Such experiment, however, was directly related to study taken to the limit that opportunity gave. Ability to research is an academic attribute. Leith, though the possibility of academic training was not there, showed talent for true research in his original investigations and reconstructions in Rome. The precedent was not lost on the succeeding generation. In the first school of architecture (at the Witwatersrand University) classical studies—and other equally important aspects of architectural scholarship—were continued. The brilliant work of the late Rex Martienssen in the field of Greek city planning and the Hellenistic house is internationally known. This continuity, which is so apparent to a close observer, is not generally recognized or admitted. Nevertheless, it is true that by diverse ways, by direct contact or subtle implication, the contemporary architectural movement in South Africa, immature though it still may be, and whatever other influences may have been brought to bear, is linked back to preceding generations, both immediate and remote.

To sum up, the substantial contribution of the Baker school was made in a limited sphere, but under favourable circumstances for individual expression. The school had remarkable success within the related Lutyens convention. There is justification, in fact, for the view that this convention found a happier and more competent interpretation in the hands of its South African disciples than amongst any parallel group in England. The unevenness of industrial development in South Africa, the co-existence of rapidly accumulated wealth at the mining centres and the prevailing rural standards of life, induced conditions favourable for the production of a small but compact body of notable building, semi-vernacular in origin (and by circumstance both English and Cape vernacular). Such conditions did not generally prevail in urbanized England, then in its heyday of industrial power, nor do they apply with any force to the changing South African society of to-day.

A more detailed review of the architectural output of the school would demonstrate and support this article's central thesis. Tradition in building cannot be sustained and, indeed, loses its meaning if the historic forces by which society is formed are not brought to bear upon it. The pressure of history is opening up the resources of the world to ever-growing numbers of its peoples. The resources themselves continually increase in range and adaptability. More and more human beings are brought into the processes of production and will consequently share in their benefits. In South Africa these tendencies are to be observed in microcosmic form. They make headway slowly against an ingrained conservative outlook on race relations. An outlook which is the inevitable product of some centuries of strife and violence, during which the pioneering white was thrown up against a primitive black people. The conflict was engendered by both similar and mutually destructive imperatives. Land hunger and land poverty were for long points of similarity, but with permanent settlement entirely new complexities entered South Africa's social life.

The rapid urbanization of South Africa has already been referred to. In thirty years after the Boer War the percentage of the total population in urban areas rose from 23 per cent. to 31.4 per cent.; 25 per cent. of all the whites and natives in the Union live in nine principal towns. The production of gold was responsible for the emergence of a metropolitan region on the Witwatersrand, which now has a population of over one million. The Great War increased the scope of industrial activity. Though fundamentally dependent upon the prosperity of the gold mines, South Africa's economy tended in the stress of war conditions to become more self-sufficient. Secondary industries attempted to cope with an increased local demand for commodities, temporarily unobtainable by import. Progress was not remarkable, for one thing because the flow of the required skilled labour for modern production was impeded by race and social attitudes and by historical background. All the same, considerable advance has been recorded since 1918. The growth of towns has become an established phenomenon.

The phenomenon is there, but adjustment to it and even a realization of its implications have come slowly. The permanent nature of urban settlement, in which white and black equally participate, is the negation of the controversial segregation policy, officially enshrined in many laws and restrictions. Segregation may be precariously maintained in rural areas by the dual policy of reserving land for exclusive use by natives, and encouraging or enforcing the continuous movement of labour between market and reserve. But these measures have not succeeded in restraining the drift to towns and the resultant creation of a large nucleus of native urban dwellers. The needs of the white population in essential and domestic services, and in secondary industry, induced a partial disintegration of native tribal life, through contact, experience and ultimate absorption in towns. A "civilized labour" policy, designed to protect white exclusiveness, must end by civilizing native labour. Urban life is the medium for change, its educative power is irrepressible.

Urbanization has been the concomitant of increased industrial activity. South Africa's wealth in minerals is not confined to gold and diamonds. Vast resources of iron, coal, manganese and chrome have encouraged the growth of a powerful steel industry which reached the stage of large-scale production in 1934. The repercussions are dealt with subsequently. At this stage it is sufficient to indicate the revolutionizing effect steel production is likely to have on a conservative building industry. The organization of building assumed a concrete shape in pre-Union days. The skill of immigrant English and Scottish artisans augmented the existing personnel of Hollanders (of Republican importation). Generally, craftsmanship was of a high order, and well geared to the then current needs. Contracting firms of all-round capacity, as well as individual craftsmen of great interpretative ability, gave an efficient combination of trades. More particularly for Baker's work was a combination of this calibre demanded. The bulk of building, of course, lay outside the specialized nature of the Baker houses. A Johannesburg of late Victorian and Edwardian aspect arose on the site of the former mining camp. Then, as in the following years, individual commercial enterprise dominated the building scene and architecture of more than commercial value was rare indeed. Real estate and not the architectural profession guided the growth of Johannesburg.

Important for the later history of town development was the relationship of skilled to unskilled labour in the building industry. Racial distinctions, part and parcel of economic policy, were rigidly observed. Recognized categories of labour allowed a high level and a low level of technique with few intermediate gradations, and these in any case not open to a predetermined class of permanent unskilled workers. If this rigidity in the division of labour is read in conjunction with the prevailing crafts tradition (though even here skill has deteriorated), it is clear that an extensive programme of national scope would be both difficult of realization and costly. These are critical issues at present facing South Africa.

Neither the architecture of 1910 nor the building industry are capable of adjustment, merely by modification or enlargement, to meet the needs, not of one section of the population alone, but of a whole nation, a major part, numerically speaking, of which lives under depressed and unhealthy conditions. In building, an industrial potential has existed for ten years and more, but remains virtually unexplored. And yet, unless it is fully utilized, pressing social needs even of a minimum type cannot be met. The architectural problem is equally one of realignment with the industrial age, now in an advanced state in many countries of the world, but of recent birth in South Africa. This article has attempted to show the influences that have shaped a society, of which architecture is only one facet. That society, however, has no stable form within which the relationship of each part to the whole can be confidently defined and planned for. The critical decade which followed the Great War did, nevertheless, reveal the direction to be taken for progressive change. Neither agriculture nor gold mining could alone support the heterogeneous population and advance its conditions of life. The migration from country to town of the earlier years of the century held, for the masses involved, no certainty of permanent and gainful employment. The enlargement of the industrial basis now promised wider opportunity and greater security.

The emergent composite urban communities were symptomatic of a change in social and economic emphasis. That change abruptly terminated the architectural Indian summer of the Baker school. The stage was now set for city expansion. But the source of expansion was not directly or solely industrial—it was more the commercial counterpart of an all-powerful mining industry. And, as yet, race discrimination, rooted as it was in age-old prejudices, obstructed a balanced development. Architecture had not found its proper base in industrial production and in stabilized social relations. The future could be faced uneasily with a complex heritage, out of which at least three incentives for future action have here been traced.

There is the Bantu tradition—the cultural unity of a tribal society which still persists or to which the detribalized African is still close, if only in time. For this virile race, the city must provide a place, not apart from the whole but integrated within it.

Then there is the culture of Western Europe, brought first by the Dutch settlers and expressed by them in a magnificent language of architectural form and content. Their building took on a character and life of its own, to become a South African tradition. After the vicissitudes of the nineteenth century, the tradition enjoyed its renaissance in the work of Herbert Baker and of the brilliant school which crystallized around it. The sound principles on which it is founded will continue to guide and inspire rising generations of architects.

And, finally, there are the forces which spring from the industrial era, and the social adjustments and changes which conform to them. The new means of production, at first deceiving in its meretricious aspect, had in fact an undreamt-of social and cultural potentiality. In it can be found the origins of the contemporary architectural movement which, in South Africa, took sudden shape in the industrial centre of the Union. A short ten years of experimental work have followed. Whatever the achievement of this transitionary period, it is certain that a full reorientation in architectural thought and practice, which takes account of the cultural and physical needs of a developing people of varied background, tradition and outlook, remains the task of the future.

Select Bibliography

The following books deal in a comprehensive manner with the Social and Economic, Political and Racial Problems of South Africa. Interested readers are referred to them for a more detailed exposition of the historical background.

C. W. De Kiewiet, *A History of South Africa—Social and Economic*. Oxford University Press, 1942.

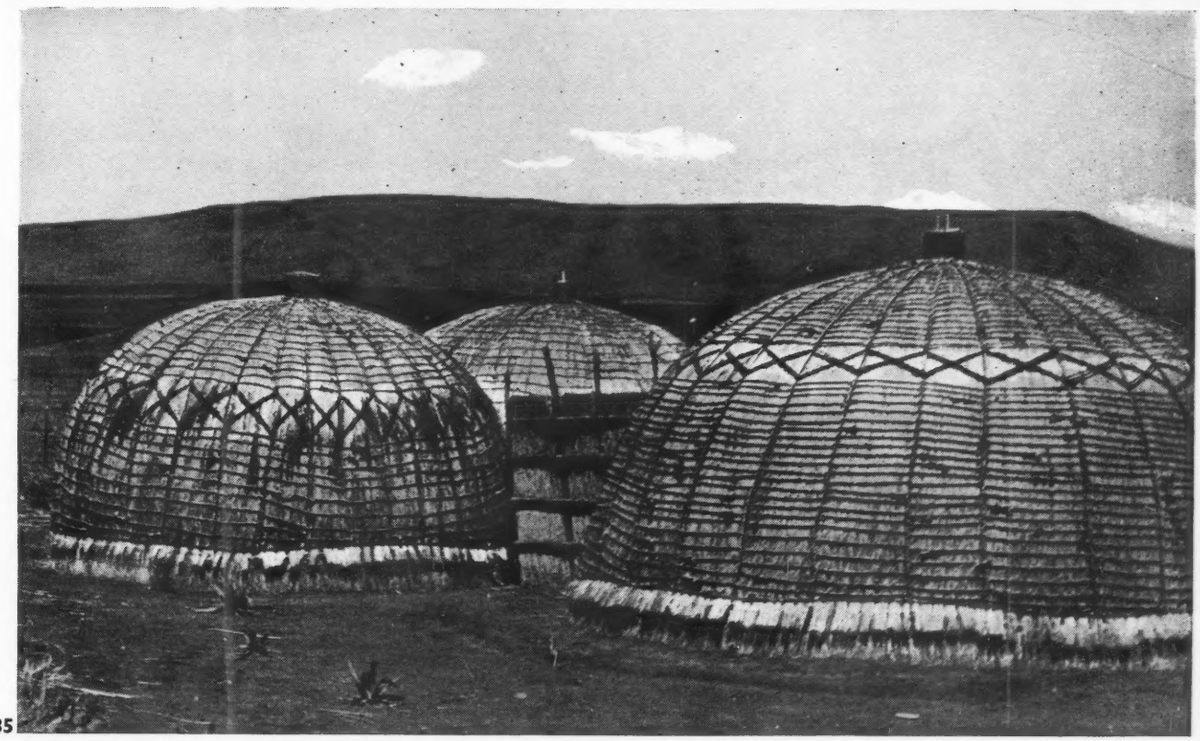
C. W. De Kiewiet, *The Imperial Factor in South Africa*—Cambridge, 1937.

W. M. McMillan, *Bantu, Boer and Briton*. London, 1929.

E. A. Walker, *The Great Trek*, London, 1934.

G. E. Pearse, *Eighteenth Century Architecture in South Africa*. Batsford, London, 1933.

34



35

NATIVE HOUSING

34 Native Kraal in Pondoland. The South African native reserves embrace some of the finest lands on the East and South-East coasts of the Union. Here the inhabitants subsist by primitive animal and crop husbandry; and since the wealth of the people is measured in terms of the number of cattle owned, the high density of population is accompanied by serious overstocking of the countryside. Unscientific methods of grazing and agriculture are thus rapidly wasting the natural riches of the territories. On the other hand, any immediate economic development of these areas would be fraught with difficulty owing to the poor road and rail communications that link them with the rest of the country. The reserves have thus become the depressed rural areas out of which the inhabitants are forced through economic pressure from time to time to seek a temporary livelihood in the cities, returning again, in many cases, when improved financial circumstances permit.

36

35, 36 Zulu Huts in Natal. The migration from country to town involves a transition from a society which, in spite of the deficiencies that exist, is regulated by customs and tribal ties; a society which affords many charming illustrations of the innate skill and craftsmanship of the people manifested particularly in their architecture, so vividly portrayed in the essentially stereographic qualities of the domed grass-woven huts which rest so lightly upon a relentless landscape; and in their plastic arts, epitomised in the delightfully primitive pottery and the spontaneous decoration of the hand-plastered mud hut. **40** shows in more detail the grass-rope and reeds used to construct the dwellings of the natives in Basutoland.

37

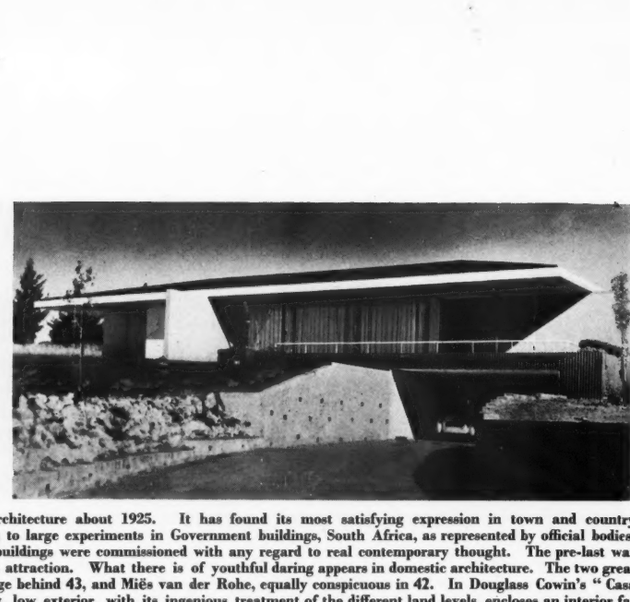
37 Alexandra Township. The breadth and freshness of the countryside is exchanged for the misery, squalor and the grinding poverty of the life in the "locations" that may be found on the outskirts of most South African towns. Alexandra Township is near Johannesburg. The low economic level of the natives in these urban concentrations automatically fosters overcrowding as the only solution whereby the cost of renting shelter may be met.

38 Alexandra Township. In rare cases natives are permitted to own land adjoining the European urban areas. Upon it, as a rule, they can only afford to erect the meanest of structures. Many of these townships so constructed are without any adequate system of sanitary services and water supply. Such depressed urban areas form ideal breeding places for disease and crime which heavily overtax the resources of the adjoining European areas.

39 Orlando Township. Sometimes the Municipal authorities intervene, and sub-economic housing schemes are erected to alleviate the living conditions of native workers. The atmosphere of these, unfortunately, is very often devastatingly dreary. This certainly applies to Orlando Township near Johannesburg. It is patent that, unless immediate efforts are made to develop the skill and intelligence of the native people so that they may be enabled to rise to higher levels of achievement, thus gaining greater economic security, very little progress will be made.

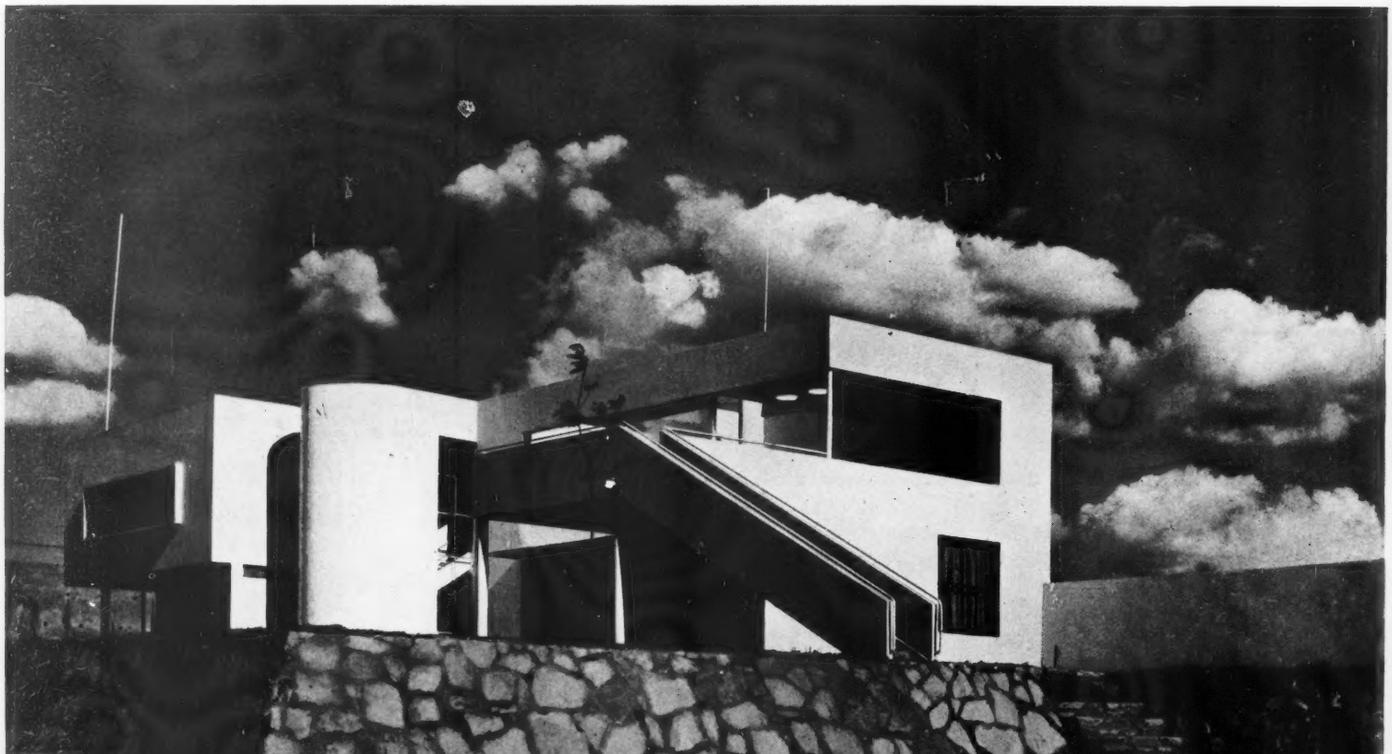
38,39

40



41, 42

The contemporary style appeared in South African architecture about 1925. It has found its most satisfying expression in town and country houses. Unlike Brazil, where official approval was given to large experiments in Government buildings, South Africa, as represented by official bodies, frowned on new ideas and new forms. Very few public buildings were commissioned with any regard to real contemporary thought. The pre-last war style of the Baker-Lutyens generation has not yet lost its attraction. What there is of youthful daring appears in domestic architecture. The two great sources of inspiration here were Le Corbusier looming large behind 43, and Miës van der Rohe, equally conspicuous in 42. In Douglass Cowin's "Casa Bedo" at Waverley, Johannesburg, 41 and 42, the long, low exterior, with its ingenious treatment of the different land levels, encloses an interior far removed from the panelled parlours of the Voortrekkers. The wall of the living room is covered by a poster-montage mural which allows of easy changing. The colour scheme is terra-cotta, green, white and black, with fittings in Oregon pine stained green. 43 is the Stern House at Johannesburg, by Martienssen, Fassler and Cooke. It is now nearly ten years old, yet still one of the most radically modern houses. Its vigorous outline dominates the vastness of its surroundings and shows outstandingly individual characteristics. The garden stair with its railings characteristically ship-shape, and the bedroom wing with its terrace are supported by slender concrete shafts which add lightness to an otherwise massive design. Further details and plan are shown on page 126.



43

CONTEMPORARY BUILDING

SOUTH AFRICA advanced in the van of the architectural renaissance which spread throughout the world with such unprecedented rapidity between 1920 and 1940. The fact that the Union may claim to have been amongst the first members of the British Commonwealth of Nations that responded vigorously, requires explanation in this survey at least as far as South African architecture is concerned.

In Europe and the United States of America where the new architecture was finally shaped, great pioneers such as Gropius, Miës van der Rohe, Le Corbusier and Frank Lloyd Wright crystallized a new philosophy based on tendencies which, although obscured by the crushing overburden of revivalist and Beaux Arts traditions, nevertheless extended back in an unbroken vein to the opening phases of the nineteenth century. These tendencies were developed and further enriched by each master according to his own particular genius. The new architecture so created was thus deeply rooted in an immediate past notable for the industrialization of England, Europe and the United States. The period was rich with experiment in the evolution of new structural methods and building techniques, and led eventually to a closer rapprochement between architecture and engineering, the integration of architecture and industry, and culminated at the beginning of the twentieth century with a critical examination of the very qualities of space itself. Viewed broadly in this light the evolution of contemporary architecture, particularly in Europe, was thus an organic process sufficiently firmly founded to become the starting point of a powerful new tradition.

No such absolute continuity may be found in the architectural development of the Union, for, as already shown, social, political and economic forces caused severe fluctuations. The new æsthetic, as developed in Europe and originally applied in South Africa, may thus be regarded as a superimposition on the many cross currents that held the field prior to 1930. This superimposition on a system which lacked the industrial framework of Europe and the United States, and which depended upon an advanced building technology for its fulfilment, engendered a condition of instability which was clearly demonstrated by the events that followed the entry of the Union into the present war. Yet the fact that the Union although an undeveloped country from the social and economic points of view, distant some six thousand miles from Europe and the United States, could find a place in the new architectural evolution, necessitates a general survey of the factors which favoured the development of the movement internally.

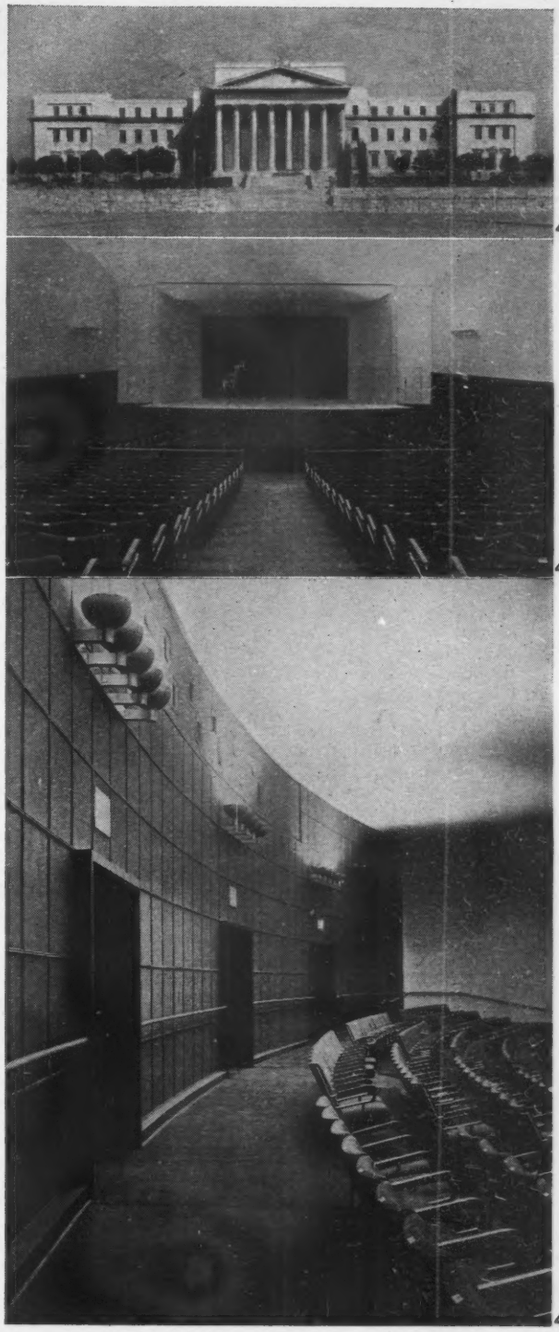
In this connection it is significant that contemporary architecture developed vigorously in Johannesburg, the present centre of the Witwatersrand goldfields in the Transvaal. Several factors contributed towards this end. In the first instance, Johannesburg was separated from the Cape, the old cultural centre, by a thousand miles of sparsely inhabited country. At this distance the Cape traditions were weakened. The disintegration was further accelerated by the discovery of gold which was followed immediately by extensive immigration drawn from all parts of the world, the greater part of which concentrated at the scene of the discovery. The Boers who had trekked from the Cape and who constituted a cultural link with the past were thus seriously outnumbered by the foreigners who settled alongside them. The attachments of the newcomers lay beyond the borders of the Union, principally in Europe and the United States. This spiritual link between the Witwatersrand and the external world was accentuated by the use of gold as the standard of international exchange. Moreover, the future of the goldfields and of South Africa became indissolubly linked with the price of the metal. The consistency of the ores and the enormous area they were found to cover enabled forecasts of the probable life of mining enterprises to be made. Thus with a future reasonably assured, Johannesburg passed from a mining camp to a permanently established and rapidly expanding city. A University College was founded which later included a School of Architecture. The liberal tradition of this institution enabled the contemporary movement to flourish as early as 1926. The School of Architecture was also fortunate in that the director, Professor G. E. Pearse, and the first senior lecturer, Mr. A. S. Furner, acted as editors of the *South African Architectural Record*. When Mr. Furner relinquished his position he was subsequently replaced by the late Dr. Rex Martienssen, who assumed the joint editorship with Professor Pearse. The vigorous editorial policy that was then instituted made the journal a valuable medium for propaganda for it brought the new world of painting, architecture and sculpture to the notice of all practitioners throughout the country. It was also readily accessible for the publication of executed work and treatises. The policy of the editors was severely opposed at the time, but later recognition from external sources in Europe and the United States vindicated it.

The break occasioned in the profession by the last world war also had a bearing on the early local development. Johannesburg was a prosperous and expanding community. These two factors stimulated building activity greatly, and as soon as students graduated from the university they filled the gaps in the profession, many commencing practice on their own behalf. Enthusiasts of the new architecture were thus brought directly into contact with the building public. It was fortunate that local authorities raised no serious objections to the unusual character of the buildings that soon began to make their appearance. Unusual that is, as compared with the general character of building at the time.

Although South Africa is situated at a considerable distance from Europe, yet its geographical relationship with the Continent is much more favourable than that of dominions such as Australia and New Zealand. While it is true that modern methods of communication maintain all parts of the world in close touch with one another, yet in architecture the importance of actually experiencing the fabric of buildings cannot be denied. For this, South Africa was sufficiently near the sources to enable students and architects to travel overseas, contact architects working in the new medium and visit their works. A link particularly with Europe was established in this manner from 1925 onwards.

In the building industry the striking disparity between the wages paid to unskilled native labour and skilled European labour, unskilled labour earning from 10 per cent. to 30 per cent. that of skilled,[1] as compared with Great Britain, where the wages of unskilled labour are 50 per cent. to 75 per cent. those of skilled, coupled with the undeveloped state of industry, meant that a great variety of materials and equipment could be imported and embodied in buildings and yet maintain the cost of construction within economic bounds. The prevailing "civilized labour policy"[2] further assisted in maintaining the state of unbalance. But, while such a policy was advantageous to building in one direction it also retarded it in another, particularly in the construction of subeconomic housing schemes for natives, where costs were forced up to an unnecessarily high level by the employment of skilled European labour in their construction. The result follows naturally. Housing for natives has not been carried out on anything like an adequate scale to cope with past and present requirements. The position continues to grow more critical each year.

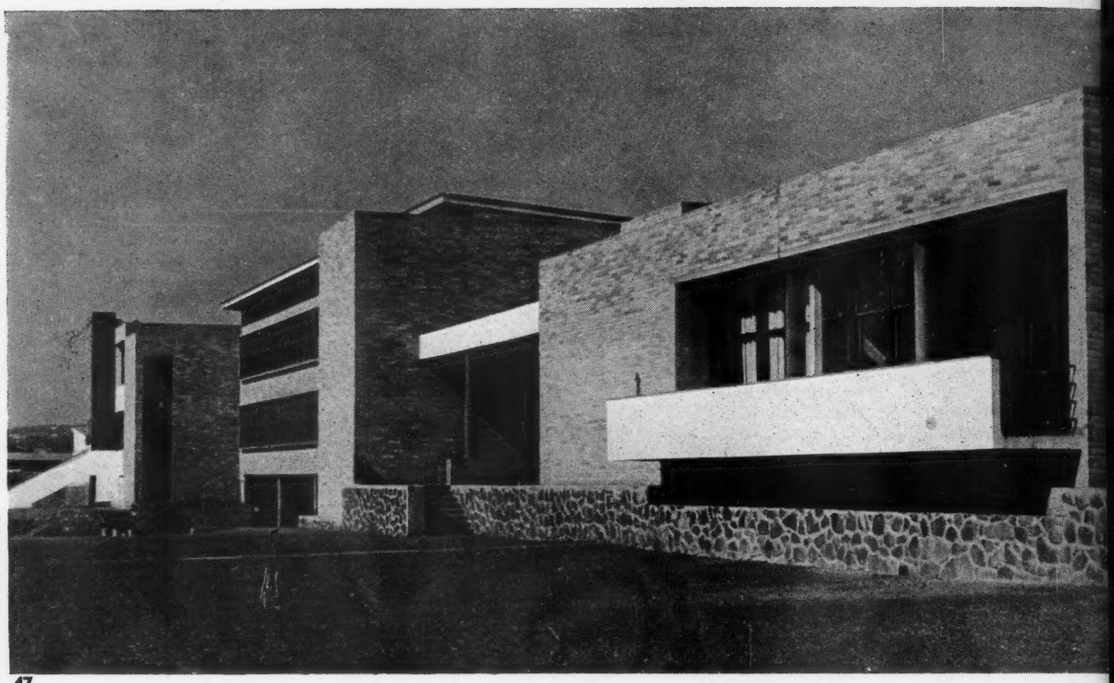
The beginnings of new movements whether in architecture or the allied arts are usually initiated by individuals or groups of individuals who instinctively respond to and express the spirit of the ages in which they live. This process operated very clearly in South Africa where the contemporary movement was primarily initiated by the late Dr. Rex Martienssen. A man of conspicuous literary talent, and great breadth of learning, he worked as a student in the accepted Baker and



The University of the Witwatersrand, Johannesburg, became the nucleus of many cultural activities, including a School of Architecture founded soon after 1926. *As an official edifice, the exterior of this University College displays the familiar neo-classic, heavily pedimented frontage inevitably associated with public institutions. Behind the facade, the architects Williamson and Cowin (Consultant: Professor Pearse) were allowed to break with tradition and introduce the style of our century. The contemporary spirit here won its first victory over officialism.*

[1] *A History of South Africa*, by C. W. De Kiewiet, Oxford, 1942.

[2] "The formation of the 'Pact' Government of the Nationalist and Labour parties in 1924 led to a more resolute effort to protect white society against the challenge of the natives. Its civilized labour policy spelt the exclusion of natives from certain kinds of work and also from the opportunities for development which depended on them. The exclusion received the popular name of Colour Bar, and the Colour Bar signified the entire complex of obstacles, some of them legal and administrative, others conventional and spontaneous, which were opposed to the rise of the native population in the industrial and economic life of the white community. Its strength came both from the force of statute and the power of public opinion." De Kiewiet, *A History of South Africa*.



47

Lutyens tradition, but later during his studies turned his attention to the contemporary brick architecture of Holland which impressed him greatly during a visit to Europe in 1925. Martienssen's enthusiasm spread to his colleagues, W. G. McIntosh and N. Hanson, and in concert the trio formed the nucleus round which the later development was built. Between 1926 and 1930 the group maintained close contact with Europe by a further visit on the part of Martienssen and Hanson and by study of the many publications on contemporary architecture which appeared in growing volume at the time. The Dutch romanticism was soon displaced by the more vital philosophy of Gropius and Miës van der Rohe. The ripples of enthusiasm inspired by the group spread out amongst the student body so that by 1930 the school was thoroughly permeated with the spirit of the Bauhaus. Under the liberal direction of Prof. Pearse, the reorientation took place freely. Martienssen and Hanson subsequently commenced to practise in Johannesburg and McIntosh in Pretoria. A beginning was made in the domestic sphere and the two cities became focal points of the new movement.

Early in 1931 Martienssen joined the staff of the School of Architecture, and became a joint editor of the *South African Architectural Record*. The importance of this journal to the movement has already been referred to. By 1933 contemporary architecture was firmly entrenched in Johannesburg and Pretoria. The end of an economic depression in that year heralded a sharp increase in building activity providing opportunities for graduates who were beginning to practise independently. At this juncture the two cities began to make their independent contributions although initially closely following the continental idiom. An important change of influence now occurred. Gropius and the Bauhaus receded slightly into the background to be supplanted by the dynamic of Le Corbusier, whose influence remained paramount until 1939. A manifesto called *Zero Hour*, published by Martienssen, Hanson and McIntosh in 1933, brought the South African development to the notice of Great Britain and gained the first recognition overseas. It is interesting to recall the reactions of THE ARCHITECTURAL REVIEW[3] to *Zero Hour* at the time of its publication. "South Africa," it said, "has leapt forward with a startlingly and beautifully produced paper called *Zero Hour*, containing illustrations of the work of Gropius and Le Corbusier as well as an interesting house in Pretoria by Gordon McIntosh. This is the final answer to those who imagine that colonial architecture is in a more Neo Renaissance state than it is in England." The ascendancy of Le Corbusier's influence was consolidated by visits Martienssen and Hanson made to Paris, followed later by students on tour in Europe during the summer vacations. The Swiss master became such a force on the Witwatersrand that in a letter addressed to Martienssen we have an indication of the manner in which he reciprocated the accord. "It is a very moving experience," he said, "to turn over the pages of your *South African Architectural Record*. Firstly, because one is so amazed to find something so vital emanating from a distant point in Africa which lies beyond the equatorial forests; but yet more because one can discern so much of youth's faith in it, such solicitude for architecture, and so fervent a desire to attain a cosmic philosophy."

In 1936 the student body began to participate in the evolution of the local movement. The late Kurt Jonas was the prime mover. He came to Johannesburg from Germany where he had been studying law at the University of Berlin. At an early stage in his architectural studies he began to contribute papers on a wide range of architectural and allied subjects to the *South African Architectural Record*. His keenness for collaboration led to the introduction of group work in design amongst his colleagues, a tendency, it is interesting to record, which also manifested itself about the same time in England. Together with Martienssen he organized a very successful congress on Abstract Art in 1936, followed by another on town planning in 1937. The importance of Jonas to the movement does not rest on any executed work, for he died soon after graduating while engaged on important research in Palestine. His principal contribution lay in the broader horizon he established for architecture to embrace social and political factors. He constantly emphasized that æsthetic considerations alone were not sufficient to achieve significance in the art.

The influence of Douglass Cowin now remains to be estimated. A South African graduate of Liverpool University he returned to Johannesburg and established an extensive domestic practice. To commence with he remained independent of the local school and worked out his own approach, electing in the main to accept the limitations on planning which pitched roofs imposed. Nevertheless, Cowin evolved an idiom which was very individual and fresh, suited local climatic conditions very well, and exerted considerable influence on later domestic architecture in Johannesburg. As his style matured it converged towards the more eclectic philosophy of Martienssen and his colleagues, who in their turn were impressed by the excellent character of his work.

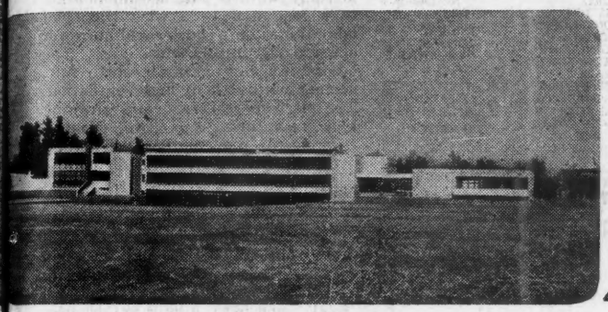
The preceding survey has broadly delineated the salient influences that shaped contemporary architecture on the Witwatersrand, and has also recorded the architects who established it on a firm basis. The emergence of Le Corbusier as the central influence of the pre-war years shows an interesting parallel with contemporary architecture in Brazil, a country situated geographically in the same relationship with Europe as South Africa. But whereas contact in South Africa was maintained by visits to France, Le Corbusier travelled to Brazil himself and exercised a strong stimulus to architecture there. The effects of such a visit were realized on the Witwatersrand, and prior to the war Le Corbusier was invited to visit the Union as the guest of the local group. Growing international tensions frustrated the proposal. A further contrast exists between the two countries. The Brazilian Government encouraged the movement, and the medium was thus sympathetically received in competitions for large public buildings. Government departments in South Africa on the other hand discouraged innovation, and no public buildings of any importance have been erected in the new medium. The movement, however, flourished in spite of official neglect.

The process by which contemporary architecture spread into various fields of building activity may now be examined. Before the present war the proportion of the total number of buildings in all classes designed by architects was small. No doubt conditions in this respect matched those in Great Britain. Of the small proportion designed by architects a still smaller fraction passed to members of the contemporary school. A beginning was made initially in the domestic sphere and a few houses were built. It is logical that the house should have formed the starting point, for the complexity of the problem, comparable with its size, the theme of man in space, has fascinated architects throughout the world. In the case of Frank Lloyd Wright, for example, it occupies the central place in his life's work. The normal process by which architectural commissions are received also favoured this beginning. In the exchange of ideas between the architect and his circle of friends, the burning enthusiasm of the architect encouraged a bold spirit here and there to give him a free hand. From the modest beginnings in Johannesburg and Pretoria sufficient ground had been won up to 1939 to raise substantially the general standard of domestic architecture in the two cities.

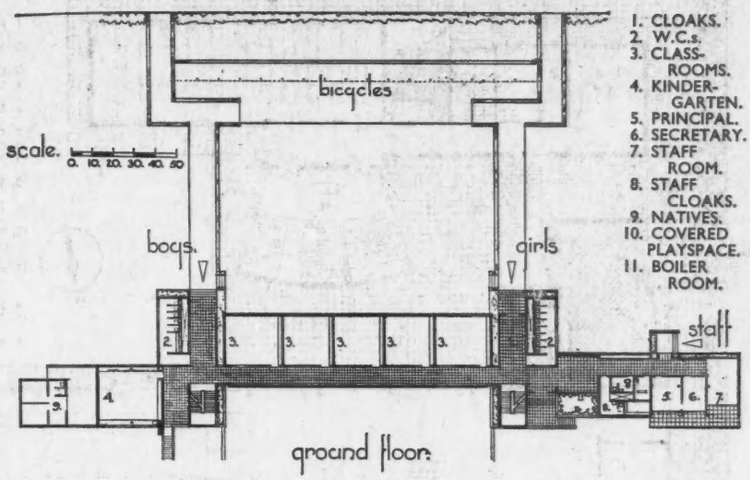
[3] THE ARCHITECTURAL REVIEW, October, 1938.

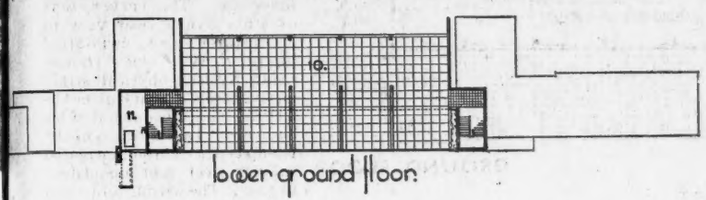
TWO SCHOOLS

In nearly all countries school authorities are among the readiest to try out the advantages of contemporary design. There is something very gratifying in this fact which is true of Britain as well as France, Holland, Sweden, Brazil and the rest. In South Africa, too, the official distrust of the modern idiom does not wholly apply to educational architecture. The rapid growth of population, especially in urban areas, calls for ever more school buildings, and at least some of them are as bold as the boldest of South African private houses.



48





SCHOOL AT PRINSHOF, PRETORIA

V. S. Rees-Poole

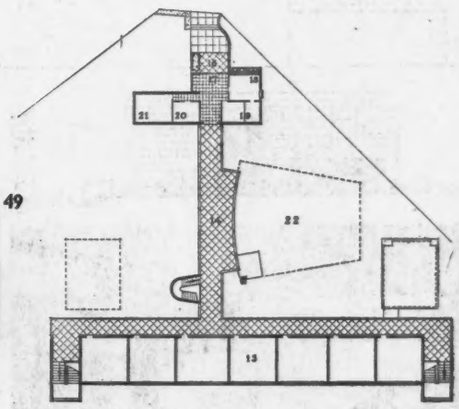
The advancement of education is well furthered by this school in Pretoria. It is a school leased to private practitioners by the Provincial Administration. The elevations shown are of the north front. All the classrooms face south, to avoid direct contact with the sun and to obtain an even illumination. The building is faced with bricks, colours ranging from fawn to off white. The woodwork is of teak. The roofing of the main building is of corrugated galvanized iron. The classrooms have bright colour schemes—blue, pink or green—staff rooms are in yellow. Great stress has been laid on colour and its influence in differentiating the functions of the several units of the school. Another notable point is the russet brown non-slip surfacing applied to all stairs.

AFRIKAANS PRIMARY SCHOOL, LANGLAAGTE NORTH, JOHANNESBURG

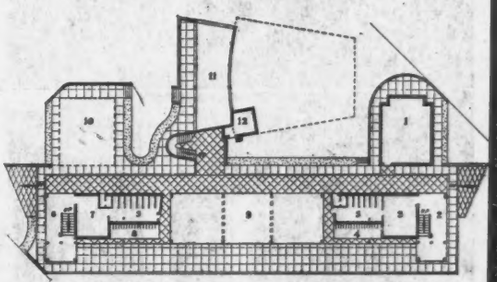
H. H. Le Roith

The school stands on a difficult site sloping diagonally at a steep angle from east to west. The classrooms again face north. There is a separate kindergarten apart from the rest of the school. It is placed on the ground floor to avoid young children falling on stairs. The lavatory accommodation is being shared at present for economy reasons. The building is mainly constructed of a reinforced concrete frame, brick clad with a smooth finish. The lean-to corrugated asbestos roofing is a typical South African feature, while the central "cut out" gives shady protection from the hot African sun.

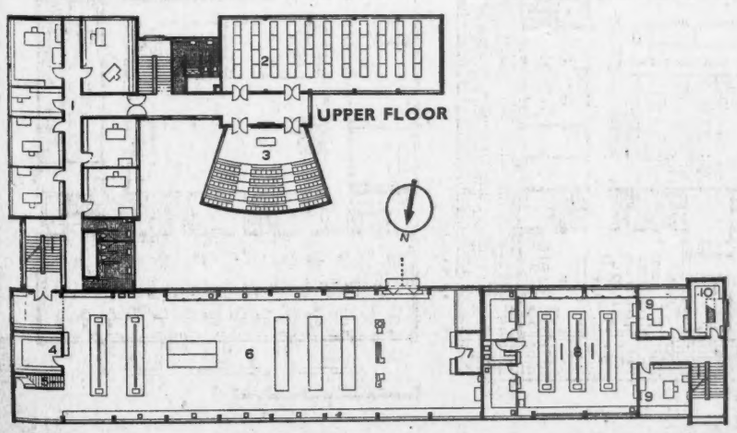
49



1. KINDER-GARTEN.
2. BOYS' ENTRANCE.
3. BOYS' COATROOM.
4. BOYS' BICYCLES.
5. LAVATORIES.
6. GIRLS' ENTRANCE.
7. GIRLS' COATROOM.
8. GIRLS' BICYCLES.
9. FUTURE CLASSROOMS.
10. FUTURE KINDER-GARTEN.
11. FUTURE LIBRARY.
12. BOILER ROOM.
14. FOYER.
15. CLASSROOMS.
16. ENTRANCE PORCH.
17. ENTRANCE HALL.
18. PRINCIPAL.
19. STOCK ROOMS.
20. SICK ROOM.
21. TEACHERS' ROOM.
22. FUTURE ASSEMBLY. HALL.



UNIVERSITY

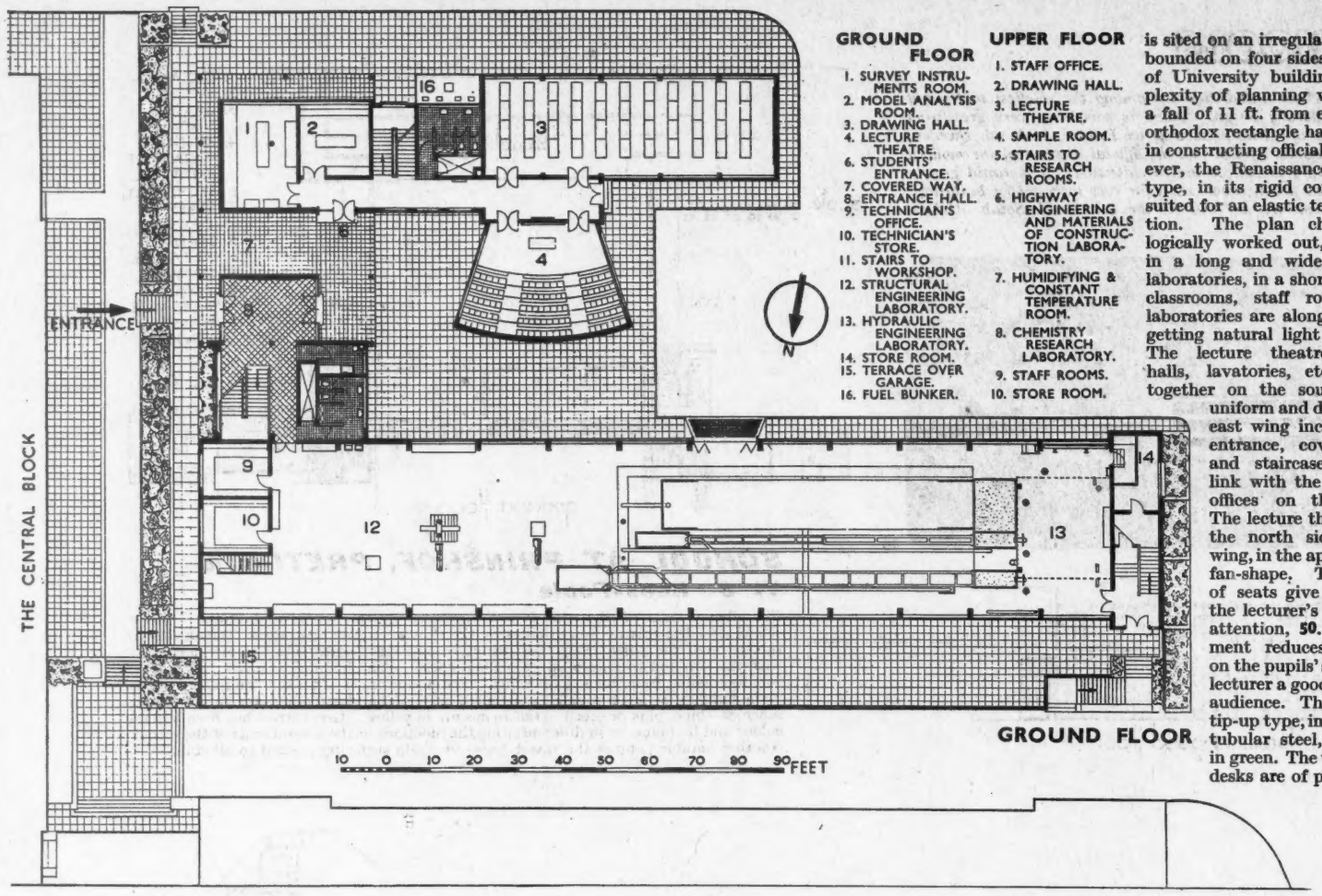


HILLMAN BUILDING, UNIVERSITY OF WITWATERSRAND

F. Williamson and N. T. Cowin

Collaborators: G. E. Pearse and W. D. Howie

The building is designed to house the departments of Civil Engineering, Mining and Surveying and an Organic Chemistry Research Laboratory. It



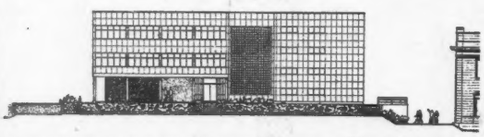
GROUND FLOOR

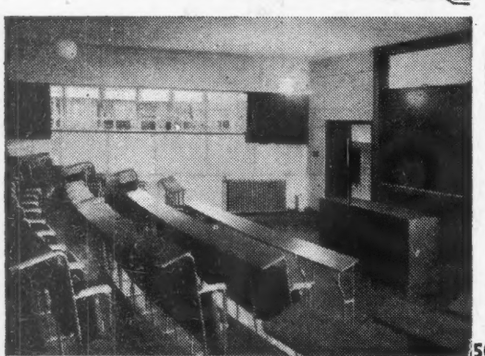
1. SURVEY INSTRUMENTS ROOM.
2. MODEL ANALYSIS ROOM.
3. DRAWING HALL.
4. LECTURE THEATRE.
6. STUDENTS' ENTRANCE.
7. COVERED WAY.
8. ENTRANCE HALL.
9. TECHNICIAN'S OFFICE.
10. TECHNICIAN'S STORE.
11. STAIRS TO WORKSHOP.
12. STRUCTURAL ENGINEERING LABORATORY.
13. HYDRAULIC ENGINEERING LABORATORY.
14. STORE ROOM.
15. TERRACE OVER GARAGE.
16. FUEL BUNKER.

UPPER FLOOR

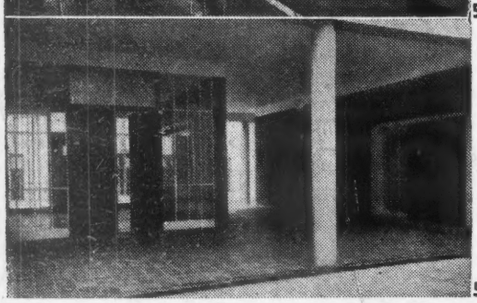
1. STAFF OFFICE.
2. DRAWING HALL.
3. LECTURE THEATRE.
4. SAMPLE ROOM.
5. STAIRS TO RESEARCH ROOMS.
6. HIGHWAY ENGINEERING AND MATERIALS OF CONSTRUCTION LABORATORY.
7. HUMIDIFYING & CONSTANT TEMPERATURE ROOM.
8. CHEMISTRY RESEARCH LABORATORY.
9. STAFF ROOMS.
10. STORE ROOM.

is sited on an irregular piece of ground bounded on four sides by other blocks of University buildings. The complexity of planning was increased by a fall of 11 ft. from east to west. An orthodox rectangle had been *de rigueur* in constructing official buildings. However, the Renaissance Palazzo prototype, in its rigid conventions, is ill-suited for an elastic technical organisation. The plan chosen instead is logically worked out, accommodating in a long and wide wing the chief laboratories, in a shorter and narrower classrooms, staff rooms, etc. The laboratories are along the north side, getting natural light and ventilation. The lecture theatres and drawing halls, lavatories, etc., are grouped together on the south side, getting uniform and diffused light. The east wing includes the main entrance, covered porch, **51**, and staircase, a connecting link with the laboratories and offices on the upper floors. The lecture theatres project on the north side of the south wing, in the approved Corbusier fan-shape. The curved tiers of seats give a clear view to the lecturer's desk, facilitating attention, **50**. This arrangement reduces physical strain on the pupils' side and gives the lecturer a good command of his audience. The seating is of the tip-up type, in chromium plated tubular steel, seat upholstery in green. The writing tables and desks are of polished teak.





50



51

DENTAL SCHOOL AND HOSPITAL UNIVERSITY OF WITWATERSRAND

N. T. Cowin and G. E. Pearse ***Collaborator: J. Fassl***

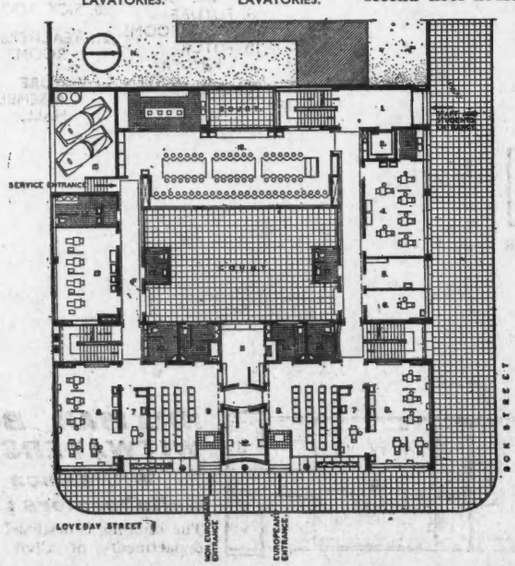
GROUND FLOOR

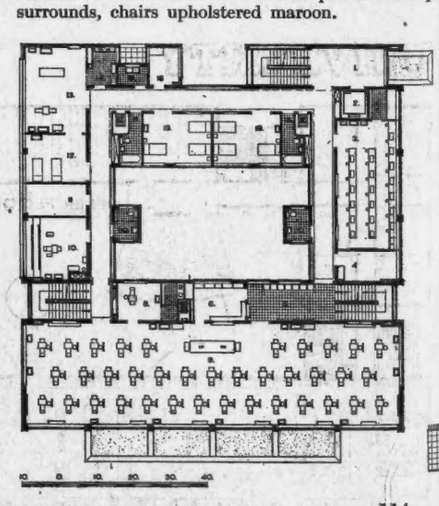
1. ENTRANCE HALL.
2. LIFT.
3. PLASTER ROOM.
4. PROSTHETIC SURGERY.
5. STAFF ROOM.
6. X-RAY SURGERY.
7. PRE-EXAMINATION SURGERIES.
8. EXTRACTION SURGERIES.
9. WAITING ROOMS.
10. PATIENTS' LAVATORIES.
11. MATRON.
12. ALMONER.
13. GENERAL SURGERY.
14. STUDENTS' LAVATORY.
15. STAFF GARAGE.
16. MECHANICS' LABORATORY.
17. STAFF LAVATORIES.

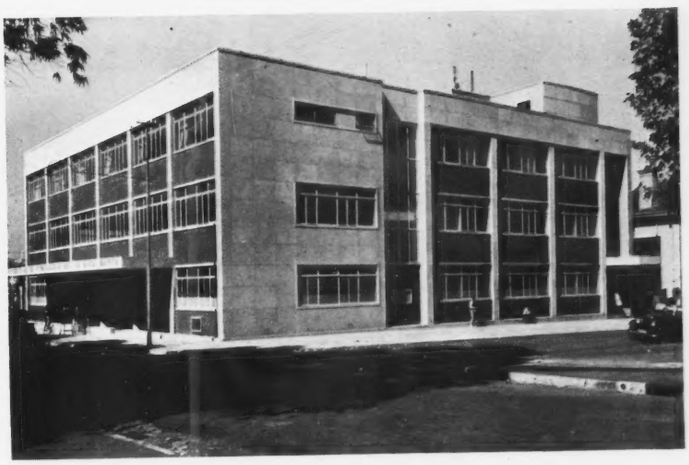
FIRST FLOOR

1. STAIR HALL.
2. LIFT.
3. PHANTOM HEAD ROOM.
4. STAFF ROOM.
5. WAITING SPACE.
6. ALMONER.
7. DARK ROOM.
8. X-RAY SURGERY.
9. CONSERVATION SURGERY.
10. DEMONSTRATION SURGERY.
11. WAITING ROOM.
12. RECOVERY ROOM.
13. OPERATING THEATRE.
14. SCRUB UP ROOM.
15. SINK ROOM.
16. DUTY ROOM.
17. CLOTHES & LINEN CUPBOARDS.
18. BATHROOMS.
19. WARDS.
20. STAFF LAVATORIES.

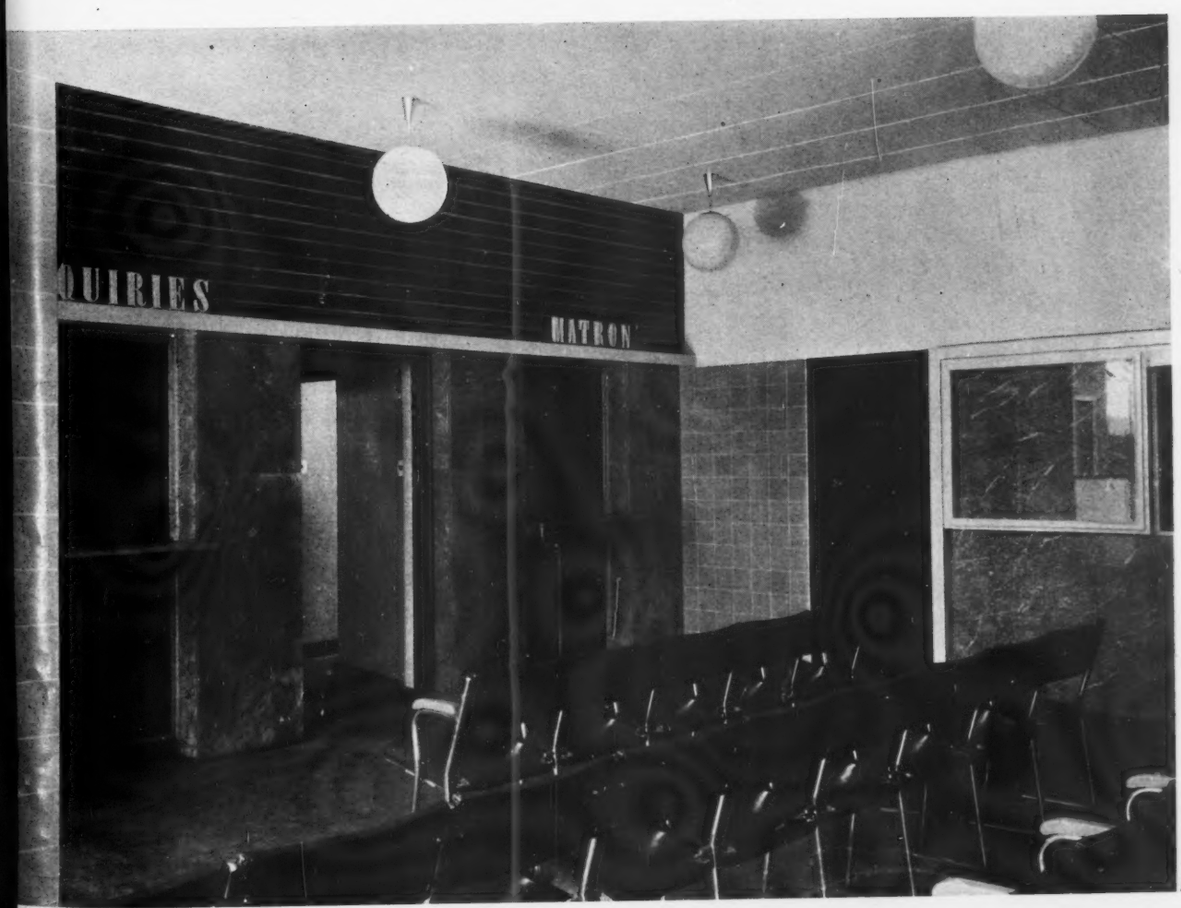
The Department of Dentistry offers facilities for dental treatment on extensive scale for the poorer classes and for the training of professio dentists. The several services are located round a central courtyard. surfaces are made as impervious as possible for hygienic reasons. Hence extensive use of glazed tiles and marble for interior wall finishes and concr slabs for the exterior. **52** is a view from north-east with staff and studen entrance on the right, and European and non-European entrances on the l The spandrels below the windows have purple-face bricks. The plan of t building is suited to the working hours of the hospital. After prosthetics a extractions are dealt with, the surgeries close down and the conservati surgery, **53**, operates for a morning and afternoon session. There is a circu tion programme for non-European patients on the north side, similar to th for Europeans, who can cross the enclosed courtyard. The X-ray room at t foot of the stairs also serves non-European patients, who can cross this spa without interfering with their white fellow sufferers. Operating theatres a wards for extractions, a facial surgery, a waiting room, recovery roo bathroom and sink room are all on the first floor. The Phantom He room is used for preliminary instruction in conservation technique. T second floor houses the academic training department. **54** is the Europe waiting room on the ground floor. Purple-face brick hatches of teak and birch. Marble panels set in plast surrounds, chairs upholstered maroon.





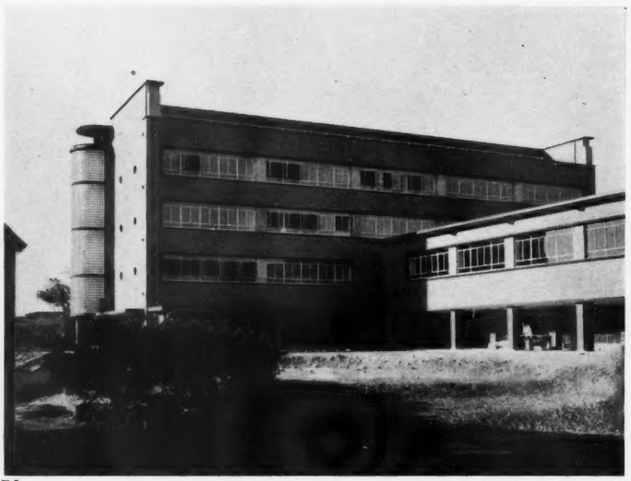


52,53

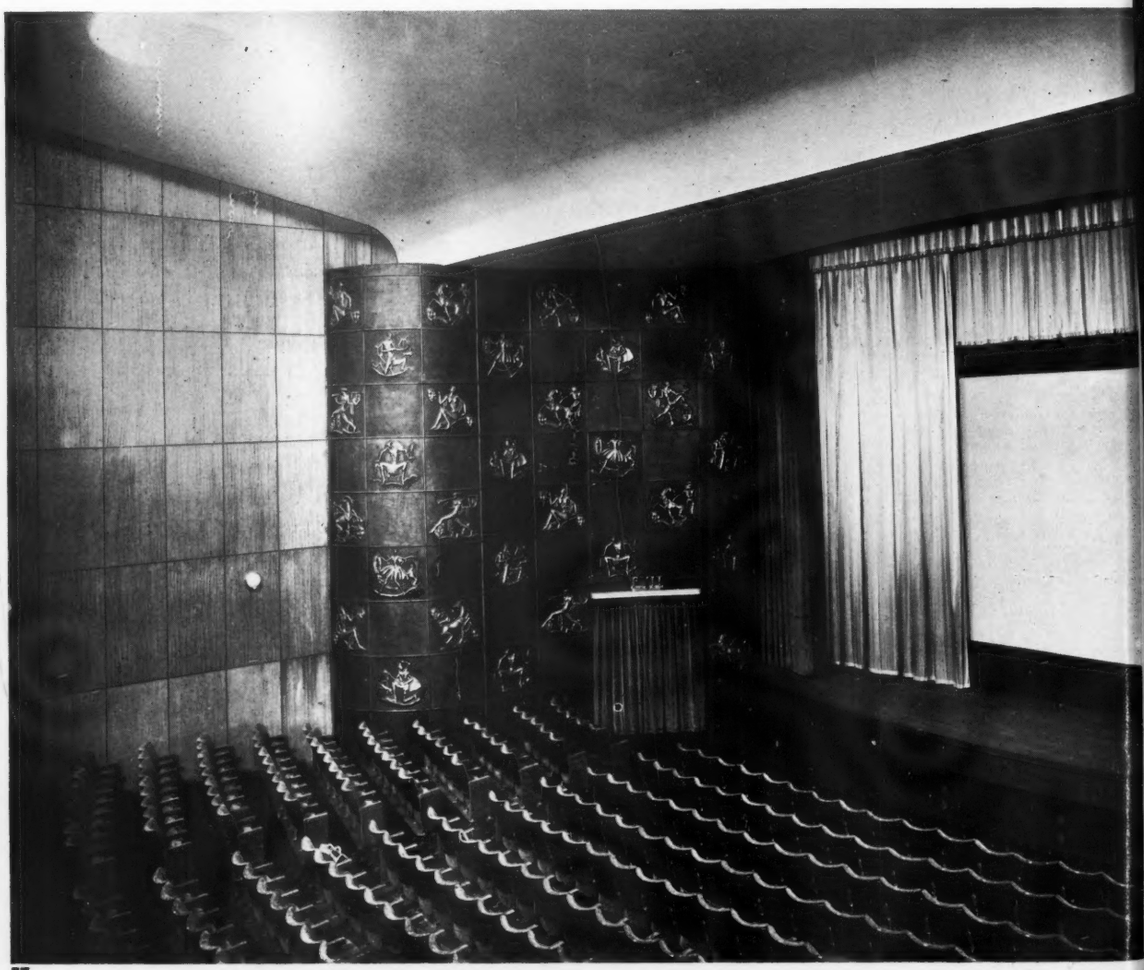


54

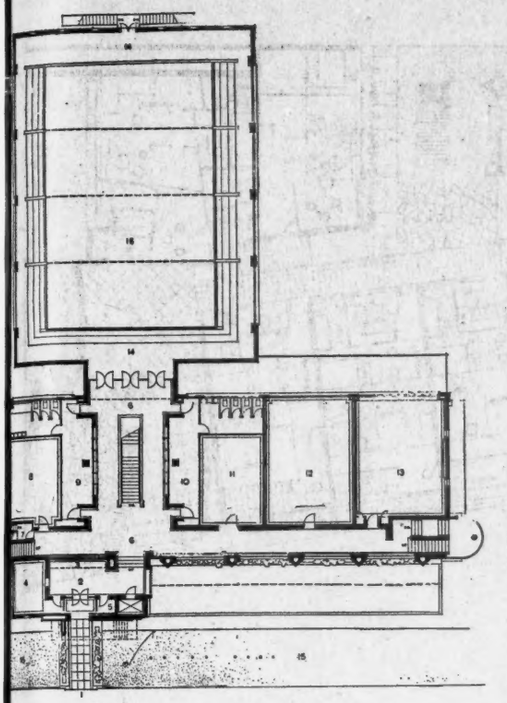
55

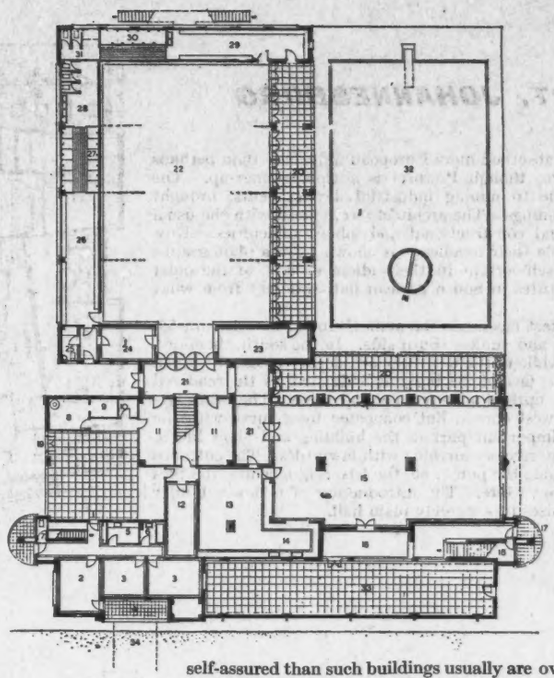


56



57





FIRST FLOOR
(Street Level)

1. ENTRANCE BRIDGE.
2. ENTRANCE HALL.
3. CLUB NOTICE BOARD.
4. CARETAKER'S OFFICE.
5. TELEPHONE.
6. MAIN HALL AND CORRIDOR.
7. ENTRANCE TO CARETAKER'S QUARTERS.
8. COMMITTEE ROOM.
9. MEN'S CLOAKS.
10. WOMEN'S CLOAKS.
11. BOOK STORE.
12. COMMON ROOM.
13. COLLEGE COUNCIL.
14. GYMNASIUM GALLERY.
15. GRASS BANK.
16. UPPER PART OF GYMNASIUM

GROUND FLOOR

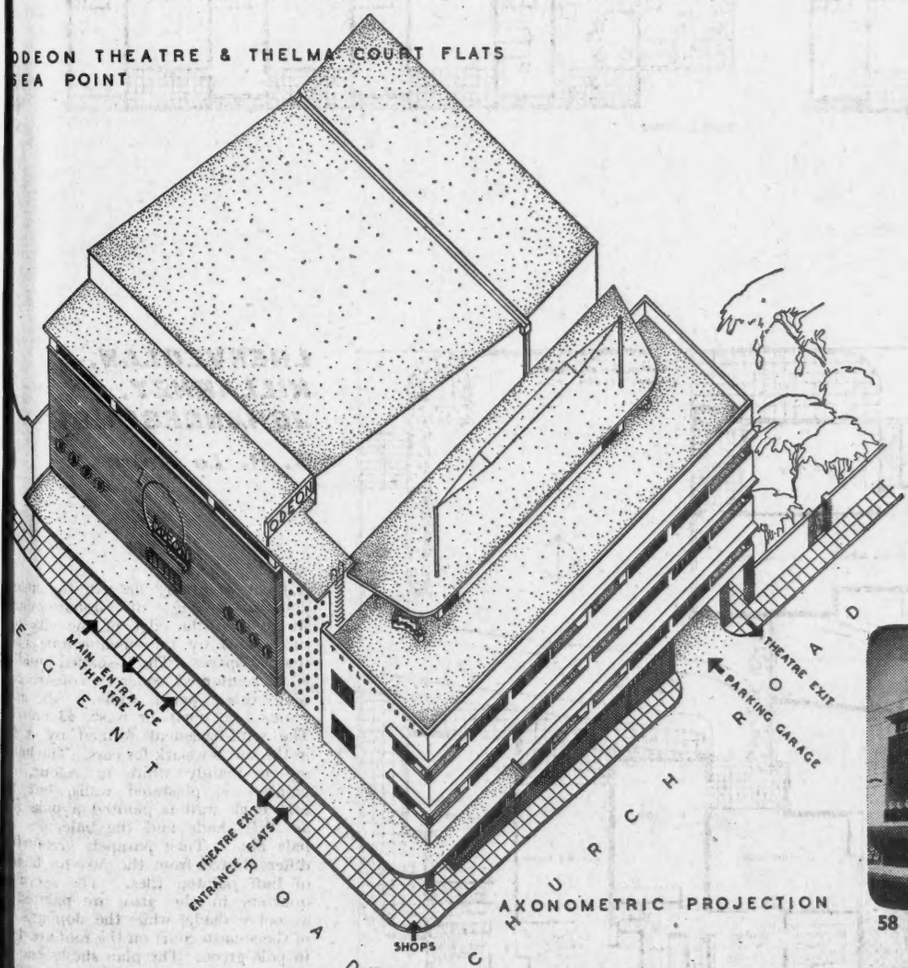
1 to 7. CARETAKER'S QUARTERS.
8. BOILER.
9. FUEL.
10. STORE.
11. CHAIR STORE.
12. PANTRY.
13. KITCHEN.
14. SCULLERY.
15. REFECTORY.
16. LOBBY.
17. STUDENTS' ENTRANCE.
18. METER ROOM.
19. SERVICE ENTRANCE.
20. COVERED TERRACES.
21. HALLS.
22. GYMNASIUM FLOOR.
23. GYMNASIUM APPARATUS ROOM.
24. GYMNASIUM INSTRUCTOR'S OFFICE.
25. GYMNASIUM INSTRUCTOR'S DRESSING ROOM.
26, 27, 28. WOMEN'S CHANGE ROOM.
29, 30, 31. MEN'S CHANGE ROOM.
32. FUTURE SWIMMING POOL.
33. OPEN COURTYARD.
34. ENTRANCE BRIDGE OVER.

NATAL TECHNICAL COLLEGE, DURBAN CLUBHOUSE

Ing, Jackson and Park Ross

In England this building would be called the Students' Union. It is large for its purpose, more self-assured than such buildings usually are over here. The brick exterior, **55**, has a distinctly Dutch flavour—not Colonial Dutch, but Dudok Dutch. The street level of the building corresponds to its first floor. From the entrance hall the main staircase downwards is reached, which leads to a hall on the ground floor, the circulation centre. Turning right from here one reaches the refectory, which has also a separate entrance and staircase further west. Going straight on, the largest hall of the building is entered, the gymnasium, a splendidly appointed room, surrounded by ample changing and apparatus rooms. It has a covered terrace in the west, **56**, connecting it with a future swimming pool.

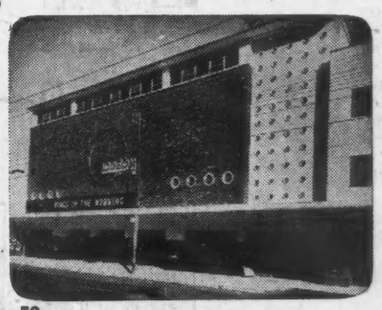
ODEON THEATRE & THELMA COURT FLATS
SEA POINT



ODEON CINEMA SEA POINT, CAPE TOWN

Max Polikansky

This building fulfils a dual purpose. The Odeon Cinema is on the left, Thelma Court, a block of flats, on the right. The compact site has good frontages towards two streets. Access to the Cinema is from the one, the windows of the flats face the other, which has also the Cinema exit, and the covered passage to a parking garage. A long canopy shelters the front of Cinema and flats, **58**. It has deep-coloured glazed tiles with ingenious insets for advertisements and a white upper part. Above this the front is of brick, contrasted against the rendered front of the flats. The main staircase has porthole windows, a motif repeated in the Cinema facade. The theatre, **57**, is wood panelled with a gay chequered rhythm of square figured panels.



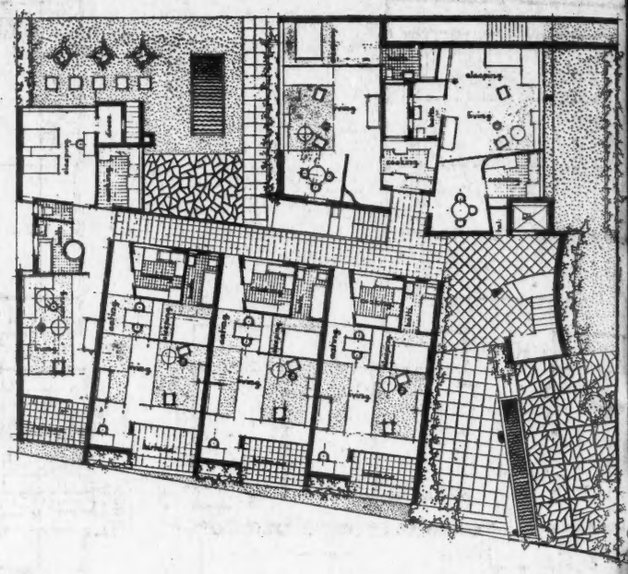
58

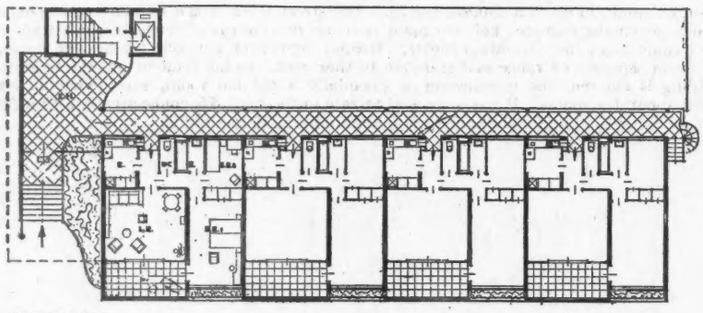
RADOMA COURT, JOHANNESBURG

H. H. Le Roith

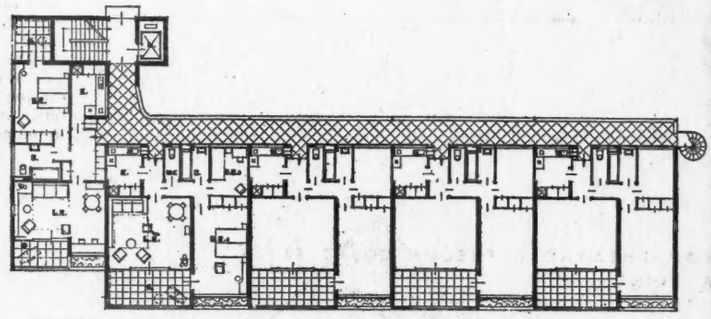
The City of Johannesburg has absorbed more European influences than perhaps any other South African town, though Pretoria is a close runner-up. The expansion of these towns, due to mining industrial developments, brought about the expansion of flat buildings. The architects were faced with the usual problems of restricted sites and constructional and labour difficulties. How successfully they have overcome their handicaps is shown by the photographs on the facing page—flats as self-certain in their idiom as any of the older continents. Yet there are features in South African flats different from what is to be found in Europe.

In Radoma Court, the architect has made the main theme of his exterior, **59**, the contrast of sunny west side and sunless south side. In the south, therefore, banded windows are possible, while in the west they are deeply recessed. Even the balcony fronts lie behind the face of the building indicated by the rendered top and bottom strips and the upright piers connecting them. The staircase-tower is isolated in the south-west corner, but connected by a curve with the south wall. Colour plays an important part in the building and gives life to the surface planes. The balcony recesses are blue with fawn tiles. The entrance porch is deep plum colour. Inside the porch, **60**, the lettering is white, the tiles are pale grey, floor black, doors white. The introduction of a flower border set low against the wall humanizes this severely plain hall.





GROUND FLOOR.

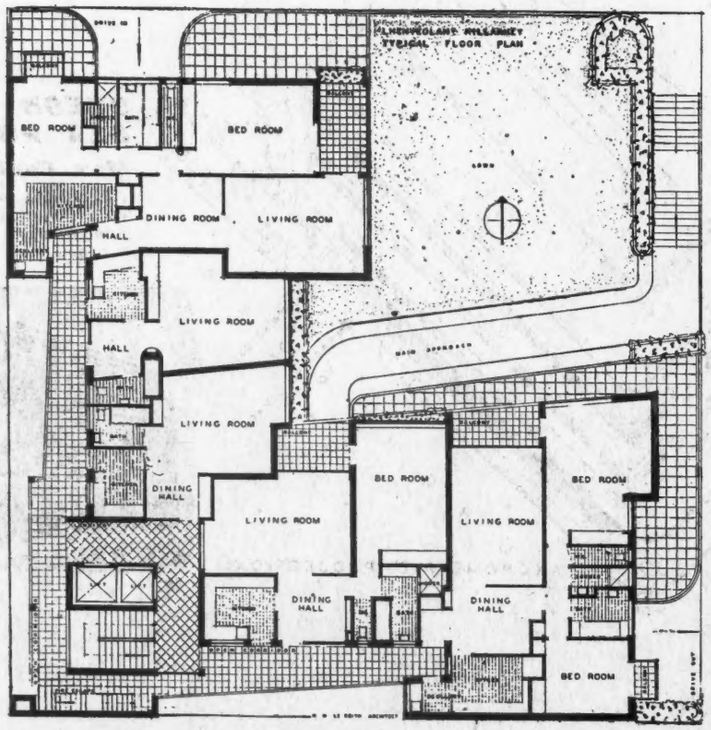


TYPICAL FLOOR.

MARCHIE MANSIONS, PRETORIA

Aubrey Nunn

This block of flats is the predominant unit in a large scheme which includes four small blocks of maisonettes, two on either side, forward of the large building. The whole is placed into a generous garden. The design, with its interaction of the recessed but higher left part and the long evenly stretching one on the right, is one of the best in Pretoria, **61**. The windows are set back to gain the shadow and protection of the overhanging balcony slabs. The balconies are red brick with vertically striped blue and greyish-white canvas curtains. The walls are white. The entrance hall, **62**, links up with the garden view. It has walls of cool grey marble and a crazy-paved marble floor with rust terrazzo for the joints. The ceiling is white; doors are of teak. The plant corner and the crazy pavement are a pleasant continuation of outdoor character into the interior of the building.



LHENVEOLAN, KILLARNEY, JOHANNESBURG

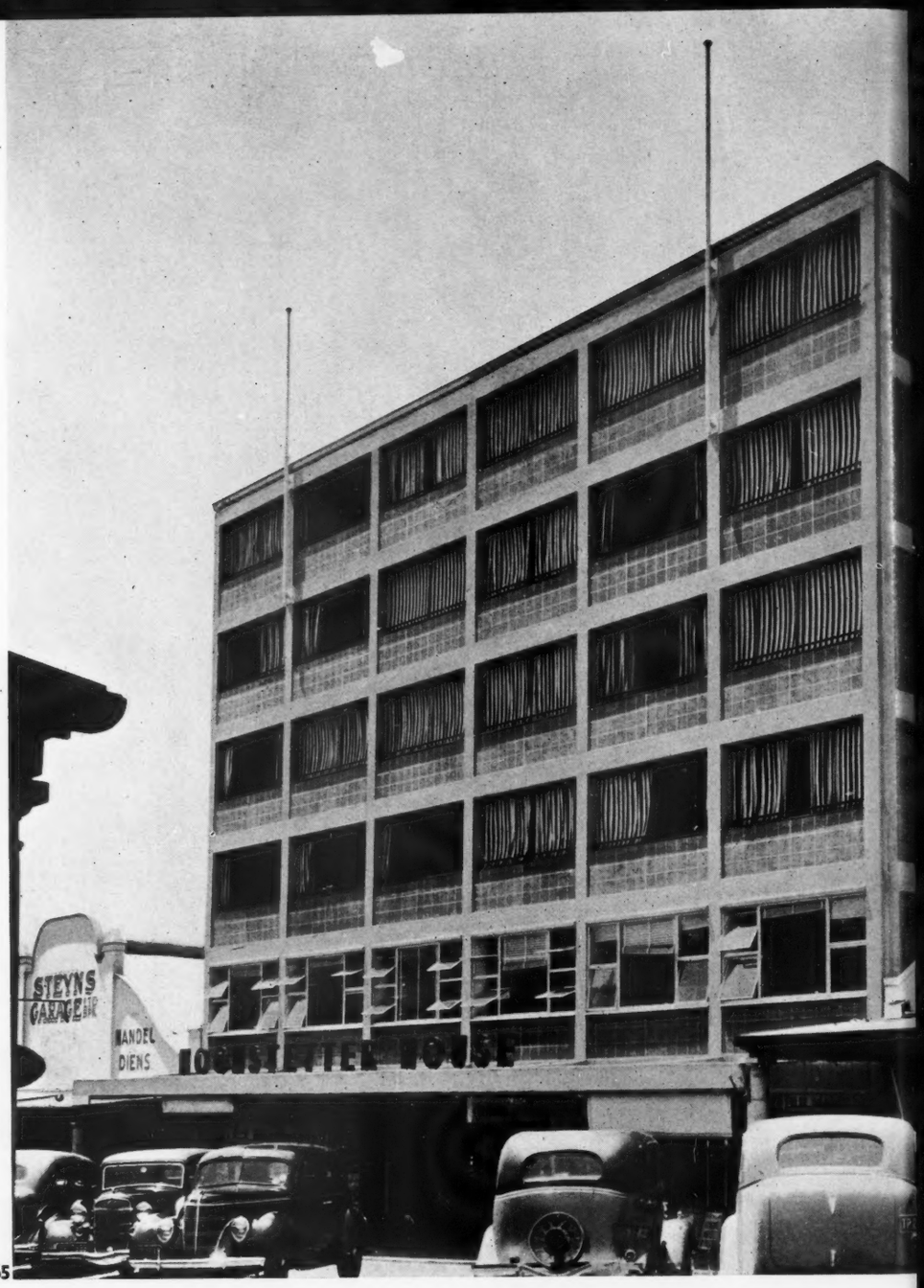
H. H. Le Roith

A block of luxury flats in the metro politan setting of Johannesbur situated on the edge of the city a surrounded by the open country a wooded spaces. The L-shaped buildi is of reinforced concrete constructi with brick panel walls. All ma rooms face north or west, **63** and The semi-basement formed by a f in the site is a park for cars. The buil ing is mainly white in colour, o painted on plastered walls, but t east back wall is painted a pale *Ri de Nile* shade and the balconies a pale blue. Their parapets are furth differentiated from the rest by facin of buff painted tiles. The servan quarters in the attic are painted an ochre shade, while the sloping sid of the squash court on the roof are do in pale green. The plan shows one- four-room flats, that is, more varie of accommodation than is usual more mechanically designed blocks flats. Access to the flats is by op galleries on the south and east.

60

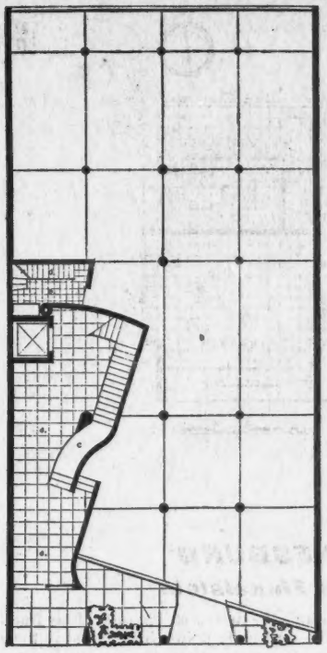
62

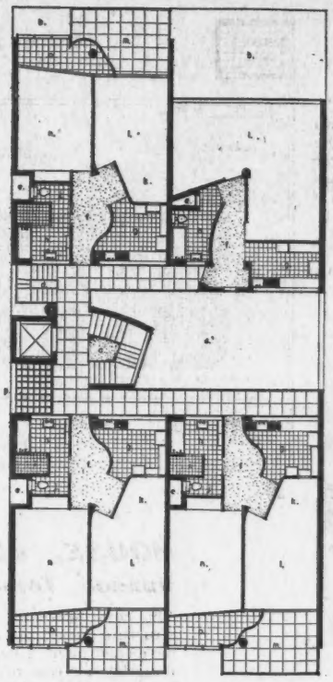
64

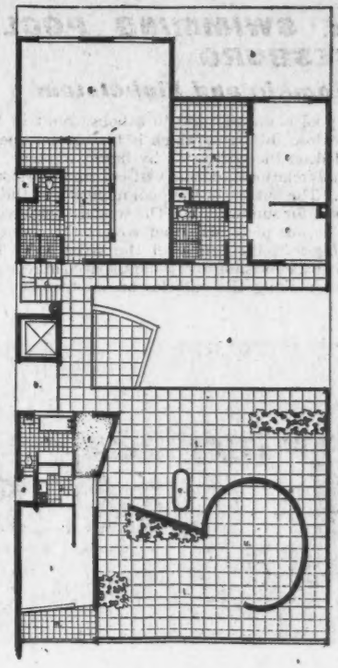


65

66







GROUND FLOOR

a. ENTRANCE HALL.
b. GARAGE.
c. MAIN STAIR
d. FIRE ESCAPE.
e. YARD.

TYPICAL FLOOR

a. COURTYARD.
b. AREA.
c. MAIN STAIR.
d. FIRE ESCAPE.
e. DUCT.
f. ENTRANCE HALL.
g. KITCHEN.
h. BATHROOM.
i. SHOWER.
j. W.C.
k. DINING RECESS.
l. LIVING ROOM.
m. VERANDAH.
n. BEDROOM.
o. SLEEPING PORCH.
p. GLASSCRETE LIGHT

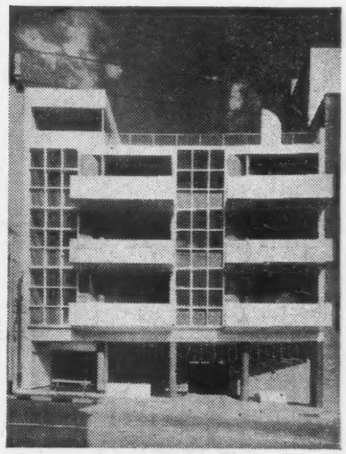
TERRACE FLOOR

a. COURTYARD.
b. AREA.
d. FIRE ESCAPE.
e. DUCT.
f. ENTRANCE HALL.
g. COOKING RECESS.
h. BATHROOM.
i. SHOWER.
j. W.C.
l. LIVING ROOM.
m. VERANDAH.
q. NATIVE GIRLS.
r. NATIVE BOYS.
s. YARD.
t. TERRACE.
u. SOLARIUM.

READING COURT, JOHANNESBURG

Hanson, Tomkin and Finkelstein

One of the most uncompromising pronouncements in South Africa of the spirit of the nineteen-thirties. A complicated ground plan with plenty of curves and odd angles. Access to the flats is from open galleries on two sides of an inner courtyard. In the front, the accent on light and shade is sharply defined by the deeply jutting balconies and the geometric division of the chequer-board window frames. The roof is reached by the fire escape and comprises the Native service rooms, a square-blocked caretaker's flat and an immense solarium. The sweeping line of this and a semi-curved pipe duct give the roof a distinctly nautical appearance. Each floor contains three two-room flats and one bachelor flat. The bachelor flats have 24 by nearly 24 ft. living rooms, with glass walls the entire south front overlooking Johannesburg. The other flats are provided with 12 by 12 ft. recessed balconies in front of the living rooms and glazed sleeping porches in front of the bedrooms.



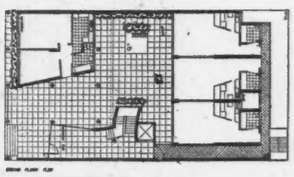
67

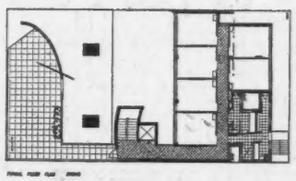
OCHSTETTER OUSE, PRETORIA

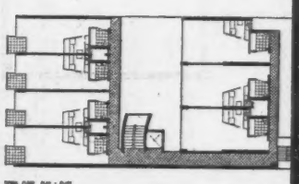
ubrey Nunn

is five-storied town building contains on several floors shops, offices and flats. e architect was tied by the depth and entation of the site, which faces west. chose the simplest cubic form and ated his design in a severely formal nner. By thoughtful proportions and contrast of materials—tiled recesses and iped blinds—and by the introduction of e ground-floor canopy with its metal tering, he succeeded in making this plain nt æsthetically successful.

68







AITON COURT, JOHANNESBURG

W. R. and Angus Stewart and Bernard Cooke

A block of flats on a suburban site which is really two separate blocks with a connecting tower. This plan was adopted to provide a practical solution to most exacting requirements. The essence of the problem was to give every flat a northern aspect, and to ensure that they should enjoy northern sun for the greater part of the day. A great deal of accommodation was required in this block. It was found impracticable to contain all the flats desired in one single unit. This is why the flats were divided into two units, a front and a back block. A set of calculations was drafted and the result was that a courtyard of generous size could be afforded with the two blocks on either side. By reducing the height of the front block a sufficiently large daylight angle was obtained to enable the sun to illuminate the windows of the back block right down to the lowest flats. The low front block is linked to the high rear block by the tall lift and staircase shaft placed in the centre, and further interlocked by corridors running in either direction. The low front elevation is raised right off the ground by a series of pillars. This floor has only the caretaker's flat and the entrance hall. The facade is given surface variation by the projecting balconies set off by glass walls. A curved solarium wall encircles the roof. The back block is a straight box-like structure, severe in its lack of ornamentation. The central staircase tower has a delicately curved face

OUNT SHERIDAN, OHANNESBURG

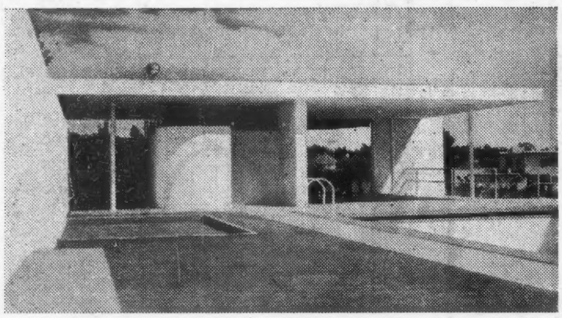
H. Le Roith

block of three-roomed flats with exceptionally interesting elevations. Reinforced concrete frame with brick panel alls, plastered and oil-painted. The face-icks are golden-brown, the tiles around crance *Eau de Nile* green. The tile ttern of the balconies is buff painted. To ch flat belongs car-parking space in the sement and a servants' room in the attic.

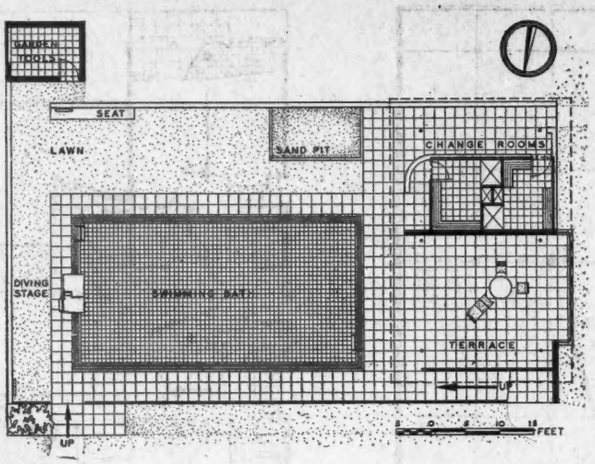
PRIVATE SWIMMING POOL, JOHANNESBURG

Hanson, Tomkin and Finkelstein

The swimming pool is an addition to a house built in 1935. Two vertical walls enclose the bath, which is further screened from the road and bounded on the north side by flights of steps. The outer and inner spatial relations of the vertical and horizontal planes are well defined. The outline of the pool merges into the open space of the terrace used for sunbathing. The western end gives shelter to the bathers. The one-piece slab roof covers the changing rooms, which are arranged in the centre of the structure. The slab is supported merely by some slim steel pillars, spaced at regular intervals within this area, making the cubicles an unobtrusive subdivision of the whole.



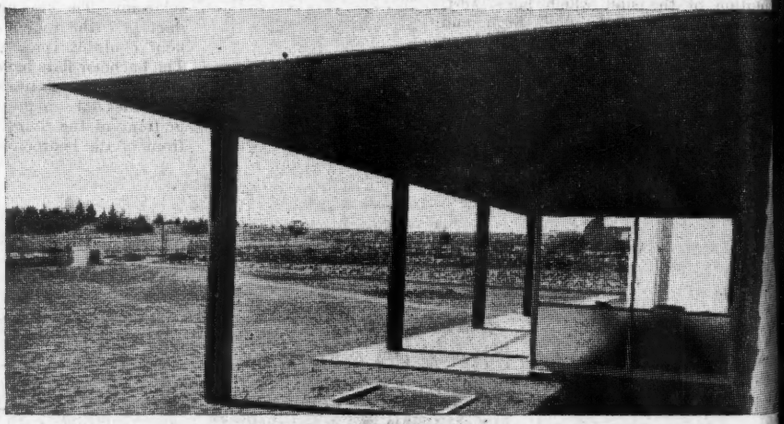
69

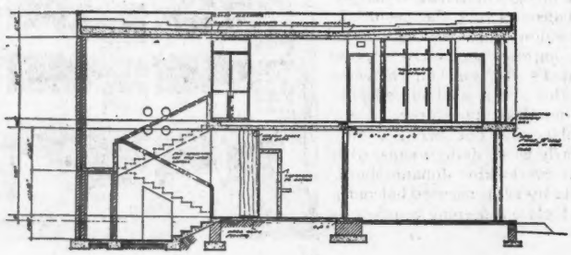


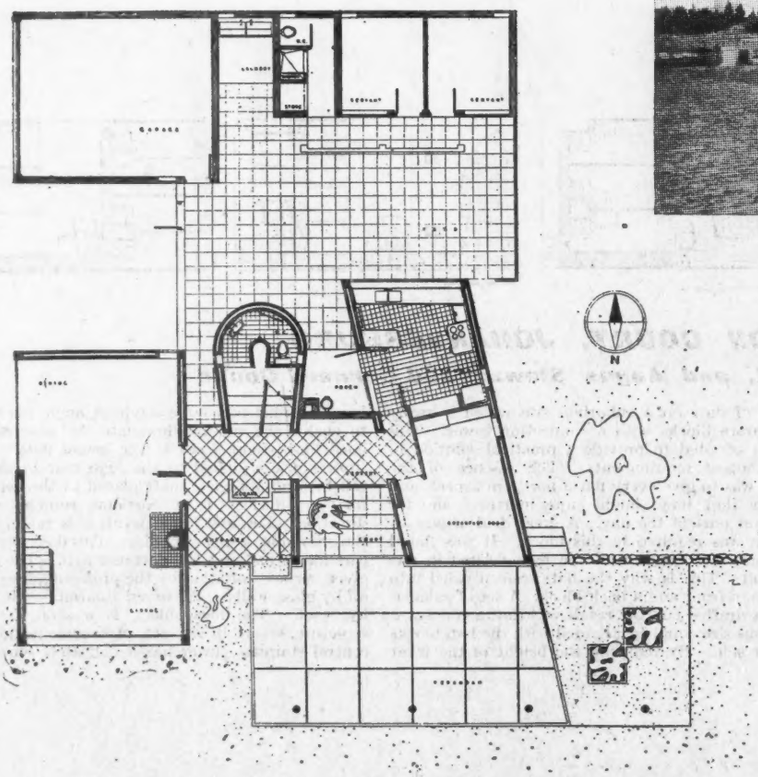
HOUSE, JOHANNESBURG

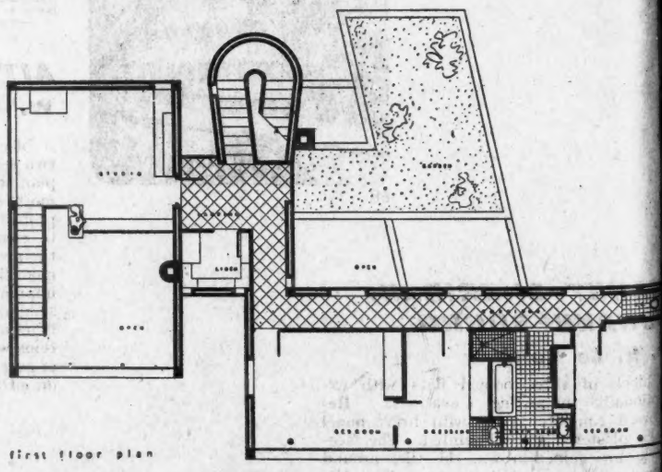
Hanson, Tomkin and Finkelstein

This house was built for Mr. Hanson, the architect, himself. It is frankly an experiment in fo structure, space and surface. The four main points formulated in the plan are : a clear logic developed plan, a flexible system of construction, the use of the most practical constructi materials for ease of handling and low cost, and the creation of an harmonious relation between the confines of the house and the outside province of Nature. The plan is divi into three zones : the living, sleeping and service spaces. The living zone deals with eat study and relaxation. The living room is at the east end of the house, its n wall entirely open by a concrete grid window, **71**. It runs (on the Corbusier exam through two floors. Behind it is the dining recess on the ground floor, the study ab The sleeping zone is raised in a single rectangular cube, the rooms all face north are linked by a south corridor. Behind the corridor is a roof garden above the kitc The service zone is a one-story unit connected to the living space, on one side, and on the ot with the void below the bedroom wing. It comprises the entrance hall, staircase, kitchen, ser and breakfast room, a logical and extremely practical arrangement. The vertical and horizo circulation " arteries " can be studied in the section on the left. The local conditions indic the employment of reinforced concrete framing. Home-produced materials are scarce and sk Afrikaans labour difficult to obtain. Great care was taken in finishing the details of the ho The exterior walls are of whitewashed brick, the windows have steel frames painted white and s sills. The columns supporting the bedroom wing are painted plum-red, the verandah soffit green. The entrance surround is of corrugated asbestos, painted light blue, the rubble wal the far end of the verandah (right in **71**) is of *kopje* stone, brown and grey with black joints.

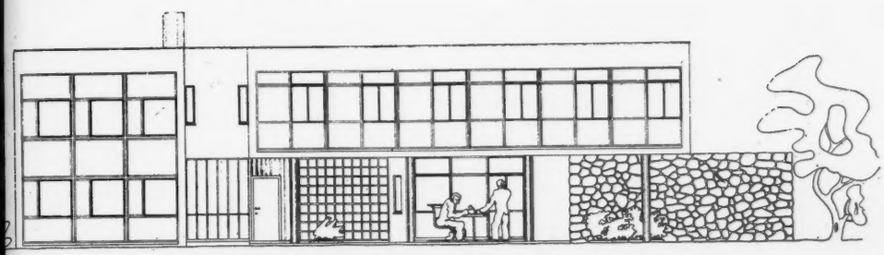






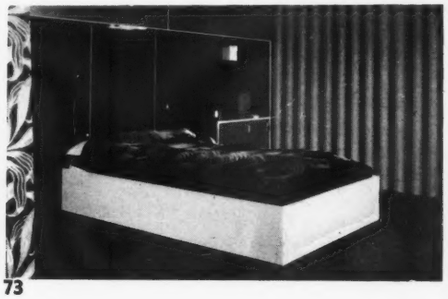


first floor plan



7

72

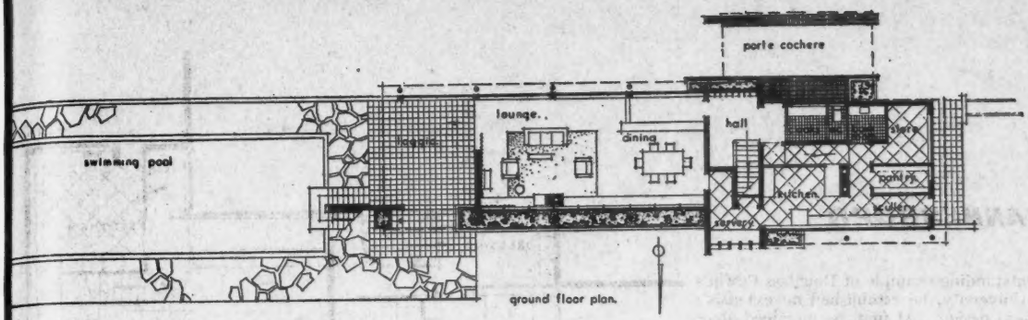


73

74

75

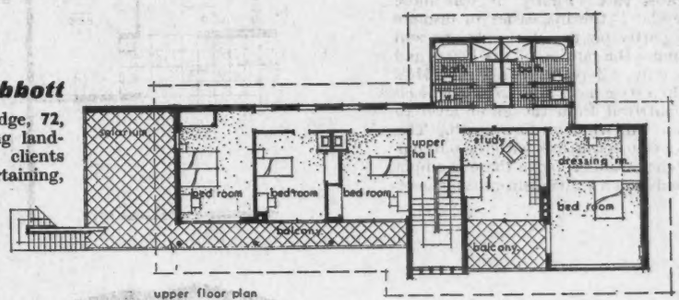
76

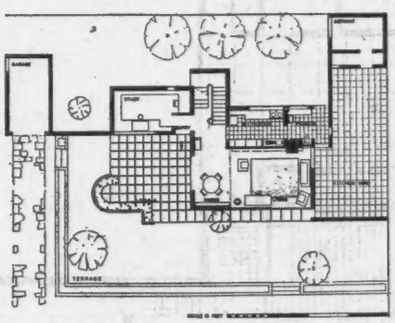


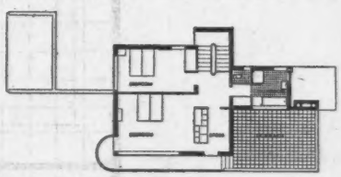
PPING LODGE, IORNINGSIDE, OHANNESBURG

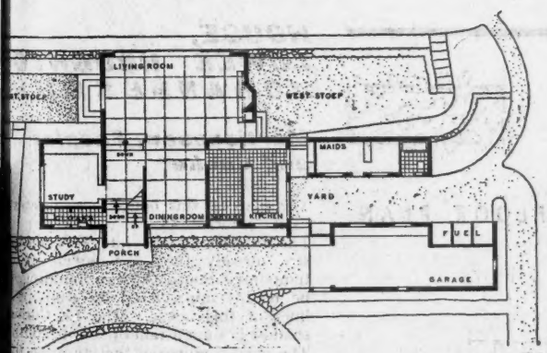
, Cowin and G. Abbott

e long quiet frontage of Epping Lodge, **72**, mmands wide views over the rolling land-pe north of Johannesburg. The clients ed for a very large lounge for entertaining, ite separated from the study, and th a smaller living room for the mer's every-day use. The horizontal nes of the house are further phasized by the contrast of white gh-cast and dark green painted ck. An internal concrete frame pports a corrugated asbestos-pped roof. The columns are painted terra-cotta shade. The north-east vation, **74**, shows a nautical-looking arium and a railingless stairway m the bedrooms down to the imming pool. Its landing can be ed as a diving board. The interior, is the bedroom, bounded on the st side by a corrugated asbestos ll screen. The colour scheme is in vy blue and white.





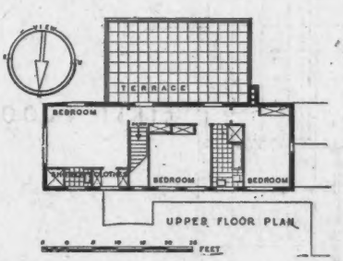




GREEN VALLEY, CONSTANTIA, CAPE TOWN

L. W. Thornton-White

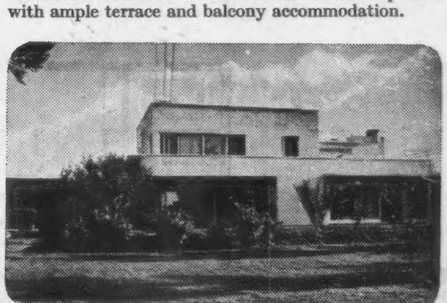
e house, **76**, is situated fifteen miles out from Cape Town on an ample site having a slope of one-in-six wn from north to south, with magnificent views over the Constantia Valley and the distant False y. The reconciliation of space requirements, cost, contours, prospect and aspect resulted in a long row plan with all the working parts of the house on one level, steps up from this level to the entrance l steps down to the lounge, with bedrooms and terrace on an upper floor, seven feet above entrance level. gain maximum sunshine, internal walls, stair risers and balustrade were omitted, **75**. Conversely, the north wall a hood and the eaves were calculated in projection to prevent any sun whatever falling on the plate glass during the five summer months. The construction is composite. The main walls are brick, plastered and painted. The main internal support is a steel column carrying a heavy insulated S.J. The main ground floor ceiling is of fibre board in a flat plane, with inverted beams. This allows a reinforced concrete slab carrying the boarded floors of the bedrooms, but this technique changes to wood sts and boarding covered with asphalte and concrete tiles on the terrace and to steel tees, boards and pper for the hoods. The roof is of boarding and bitumen, ready to receive the copper sheeting for which g designed. The windows are plate glass in steel casements, except the main lounge window, which has k sashes sliding horizontally in a reinforced concrete frame-rk. The internal and external lining spaces (east and st stoeps, the latter with direct kitchen service) are d together by a rough stone retaining wall and a birch lounge r of the same tone and colour values as the outside soil. this floor, colour internally is built up of a colour scheme liberately discordant with the strong greens and browns of Constantia Valley. A monochromatic harmony of pale and p maroons for walls, ceilings and curtains contrasting h a pale blue face-brick internal wall from entrance door to nge window and grey-blue chairs over maroon and white ted wool carpets. The colour range of the birch floor is ended into Alaskan birch and walnut doors, the mahogany, k and limba fittings.



HOUSE IN BROOKLYN, PRETORIA

W. Gordon McIntosh

This is a typical house for an average higher middle-class South African family. The economic factor in building is closely connected to the structural system adopted: traditional weight-bearing brick walling. The architect has created a satisfactory formula from the minimum resources available. The ground plan gives full measure to terrace and verandah. The steel columns that support the reinforced concrete ceilings give effective constructional line to the whole. Dining and living rooms are combined, the study is kept separate from the two. The kitchen has its own porch and roomy backyard with the servants' room at its far end. Bedrooms are upstairs with ample terrace and balcony accommodation.

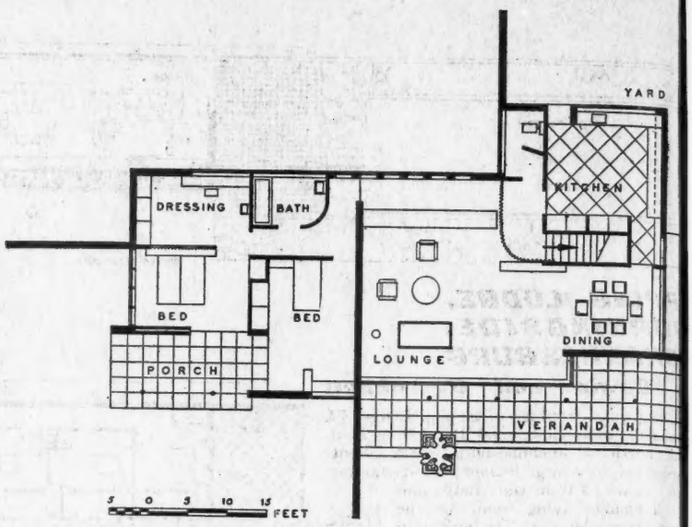


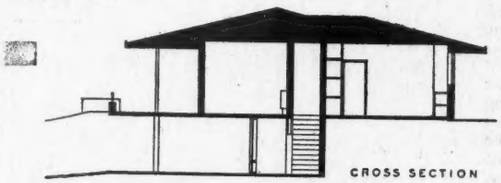
77

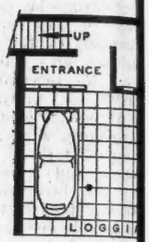
HOUSE, WAVERLEY, JOHANNESBURG

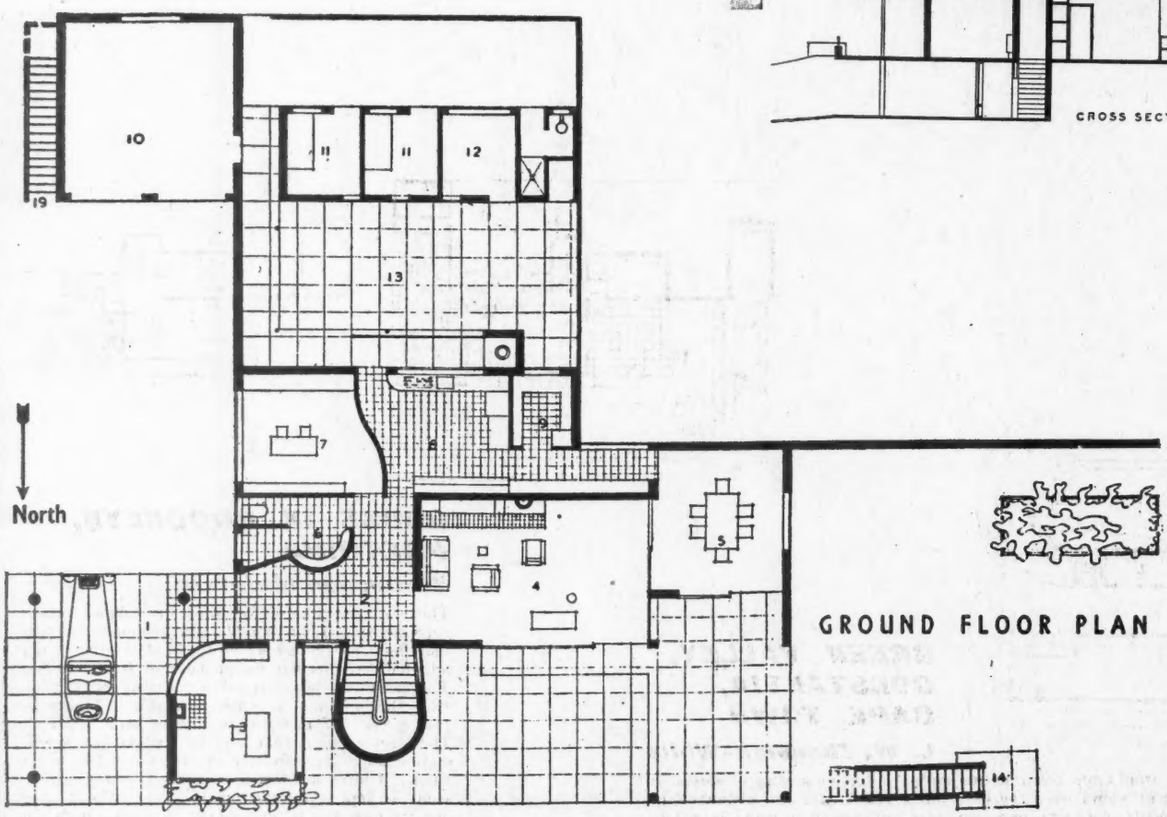
Douglass M. Cowin

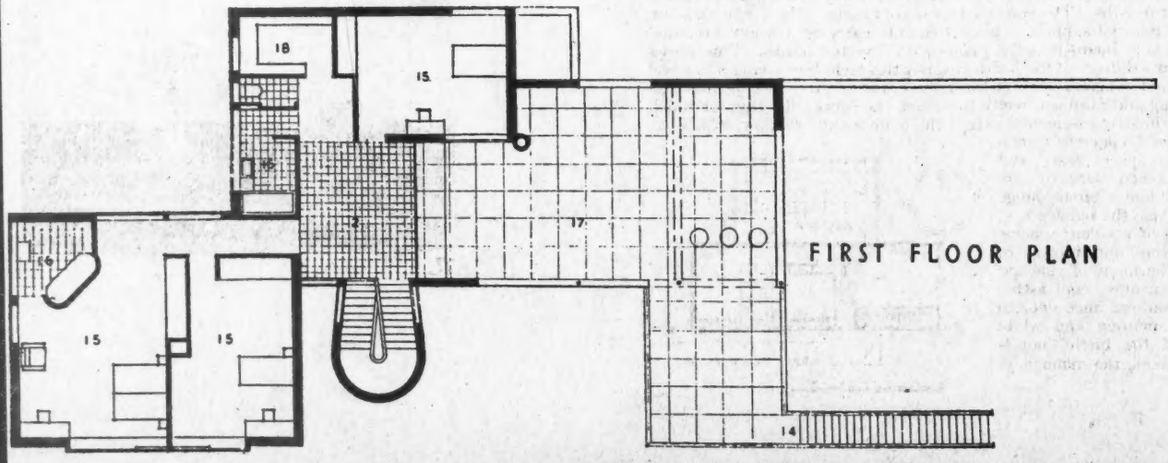
This house, whose exterior is illustrated **42**, is an outstanding example of Douglass Cowin's ability. A South African graduate of Liverpool University, he established an extensive domestic practice and was in the vanguard of modern design. At first, he remained aloof from the extremists. The low-pitched roof demonstrates this. Firstly, it was more economical; secondly, more crack-proof than one large slab; thirdly, easier to insolate without exorbitant cost. It is applied as a lid resting partly on the steel columns and partly on the brick and concrete walls. These steel columns, the outline of the house and its roof and the function of the walls as light screens only, all point to a strong Miës van der Rohe influence on Mr. Cowin. Later he designed in a style more akin to Martienssen (see below). The approach to the house is carefully contrived from the lower level to simplify the service from the kitchen to the dining room. All windows face north. The large glass wall on the north side of the living room acts as a connecting link with the outdoor world. The services of the house are all electric. Under the entrance loggia there is ample space for cars. The bedroom suite has a wide sleeping porch and a convenient arrangement of bedroom, dressing room and bathroom.











HOUSE, LOWER HOUGHTO JOHANNESBUR

Martienssen, Fassler and Cooke

The plan of this house is as interest as its exterior, **43**.
The influence of the late Rex Martie sen, already then the doyen of c temporary South African building, be readily appreciated on studying lines of this house. The Le Corbu shadow lies unmistakably on its contou The curved ellipse of the staircase to hinges the two main components, living and sleeping, into a welded ent The stairway leading to the upper fl seems to rise upwards with a spirit flying buoyancy. The exterior has painted white finish over cavity brick w with steel columns supporting the w over the roof terrace. This has a cover of concrete paving slabs, which mee the low brick-faced plinth that for the base of the house. Unusually effect is the 40 ft. long screen wall defining view. It gives direction to the eye a also sets off the beauties of the outlo The spacious living room is entir surrounded by plate-glass walls. T fireplace is in a rich terra-cotta colo the colours of fabrics and décor carried out in a subtle scheme of pl grey and cream. The keynote of entrance hall is a pair of fine dou doors leading to the living room. curved hall also gives access to the stu cloakroom, nursery, kitchen and stairs. The dining room is connected the kitchen by a long servery with continuous table running underneath window. The bedrooms are in a delic shade of green and the nurseries painted blue with a lavish equipment fitted cupboards.

The ensuing expansion into the sphere of flat building was also a logical step. Here, however, the restricted city sites, and the necessity of using them to the best advantage both from the point of view of financial returns and living amenities, presented the contemporary architect with an opportunity of demonstrating the soundness of his planning approach. The investor responded accordingly, and a fair number of flat buildings were executed, some examples of which are illustrated. Another factor which fostered a demand for new buildings of a highly technical character, grew out of the rapid advance of the sound film which rendered many of the older cinemas obsolete throughout the country. In this stimulating field contemporary architects were fortunately commissioned to design cinemas in some of the larger cities and of these it has been possible to include at least one.

The most important work was carried out between 1932 and 1939, in the few categories outlined above. For the rest, contemporary architecture was diffused over the remaining field of building activity. There is a small number of schools, hotels, factories and garages, but for the reasons stated previously no public buildings were designed. It is significant that the greatest measure of success was mainly confined to spheres closely related to living and recreation. In a limited manner contemporary architecture proved capable of meeting the requirements of two important aspects of the life of this century. The achievement was certainly very limited, for the potentialities of application on a national scale in the fields of housing and town planning still remain unexploited, and necessarily must await the termination of the present conflict.

So far the basic principles of the local movement have remained undefined, yet it is important to state these briefly although their general context will be familiar to most architects. A final estimate of the South African development cannot be attempted without reference to the objectives. The primary task in any project was concentrated on stating the problem clearly in order to gain a complete picture of the factors involved—material, technical, economic, psychological, etc. Then structure and its æsthetic expression were carefully studied as the comments on the subject in *Zero Hour* show. Here it was stated that, " we have steel, reinforced concrete and glass. These in themselves constitute the structural essence of the architect's technique. They form intrinsically a strong æsthetic which conditions the plastic arts. These three fundamental materials are capable of a collective interpretation which defines within structural limits the extent of their æsthetic potentialities. The problem is to form a rationale and endow it with a metaphysical quality." Volume was defined by wall, door and window dispositions influenced considerably by the experiments of Miës van der Rohe. Emphasis was given by a rich polychromy designed to accent the qualities of the space created. Dealing more specifically with the house, sites were organized to provide the best amenities for living, and approaches zoned to avoid encroaching on the garden which was regarded as the external living space. Furniture and equipment were embodied in the fabric of structures in the form of built-in fittings, the design of these in turn constituting complex problems in arrangement which gave scope for imaginative treatment.

Movable furniture, wherever the architect could influence its choice, closely followed overseas developments. From about 1933 to 1936, Breuer's steel types were widely employed, and before the war Aalto's bent wood was becoming increasingly popular. It is interesting to recall that the demands in this direction on the part of architects affected local markets very strongly, and considerable changes occurred (although much of it was misguided) in the field of mass-produced furniture. After 1933, a corresponding simplification of form took place in lighting fittings, ironmongery and building accessories generally. Since these were imported from countries such as Holland and Czecho-Slovakia, their design reflected the Bauhaus influence which had already spread throughout Europe. New demands on local markets also extended to other fields. The increasing use of glass stimulated a demand for its supply in all the new forms that were beginning to make their appearance overseas. Glass brick walls, glass facings and glass of all types became embodied in the expanding South African vocabulary. Inevitably failures attended some first applications in practice due mainly to a lack of experienced skill in the building industry. Plywoods, metal-faced or plain, and laminated board were used in increasing quantities for the machine-made internal fittings and furniture, which were manufactured entirely in the factory and spray shop, and were merely delivered and fitted into prepared positions at appropriate stages in construction. In their search for materials which would form impervious surfaces when used in buildings, South African architects covered similar ground to their English contemporaries. The first houses and buildings were finished externally with plaster, painted or colour-washed. It was soon apparent that local climatic conditions caused such a finish to perish very rapidly, and with the object of reducing maintenance costs, and further of preserving the freshness of the architecture, other solutions had to be found. The later work illustrated shows how facebrick work (a material of which many excellent varieties are produced in the country), precast concrete facing slabs and glazed tiles achieved a greater measure of permanence. Internally, stainless steel was employed extensively in kitchens, and in some projects for door and window frames. The choice of suitable South African materials was very limited. For example, the Union's timber resources are meagre and, notwithstanding increasing afforestation, they can at best only satisfy a fraction of the local demand. Most of the timber and timber by-products are therefore imported. The country, in fact, is only able to supply the materials for the carcasses of buildings. For their completion, items such as mechanical equipment of all types including lifts, electrical installations, plumbing accessories, ironmongery, sanitary fittings, glazed tiles, steel window sections and fittings, had to be imported from the United States, Great Britain and the Continent. South Africa possessed immense labour resources although these were mostly unskilled, and some raw materials, but the undeveloped state of industry precluded any form of prefabrication. Before 1939 a little progress had been made. New demands stimulated the opening up of a number of industries which began to manufacture plywoods, laminated board and doors, stainless steel sinks, light fittings and steel door frames. The new forms steel windows began to assume, coupled with the many variations required to fulfil specific requirements in buildings, stimulated advancement in the constructional field and brought local manufacturers into line with similar technical developments overseas.

The crisis that occurred in the Union's building industry when the war and limited shipping virtually cut off overseas supplies need not be enlarged upon here. The last four years have incurred a constantly mounting deficit in essential building which will require careful organization on a wide basis in the industry, to make up the leeway when hostilities cease. The fact that Britain and Europe will also need enormous quantities of materials to make good war-damaged cities, and similar deficits in national building, will not help the position. South Africa will be forced to canalize some of the new industrial potential that has been built up since 1939 for war supplies, to produce the means for reconstruction.

In the structural sphere reinforced concrete predominated. This was due to the undeveloped state of the iron and steel industry. Small sections were manufactured, but rolled steel joists of a suitable size for framing had to be imported. It was consequently more economical to employ the local products which served ideally for reinforcement. Fortunately cement was manufactured in adequate quantities throughout the country. But whilst the ideals outlined in *Zero Hour* concerning structure were realized to some extent in larger projects, the construction of houses with a few exceptions was a compromise between the system in which walls performed the supporting function, and that in which a structural frame served. Walls were thus very largely built of brick and consequently could not attain a lightness commensurate with that of scientifically constructed screens designed to protect and insulate and only sufficiently rigid to support themselves. Advances overseas in heating, ventilation, and insulation were soon adopted in South Africa. The increasing number and complexity of services in modern buildings led to a close study of their requirements since these very often constituted important limiting factors in planning. Some of the solutions illustrated show the extent of the provisions made for their accommodation. In this regard the distribution of services in a manner which concealed them and yet provided ease of access represented a considerable advance on the period preceding 1925, when these were more or less left to work themselves out on the site. The detailed construction of flat roof waterproofing was also considerably revised as a result of the failure of existing methods. A new industry for the preparation of facing slabs was encouraged, together with suitable fixing techniques.

The building industry and architectural profession are so interdependent that brief reference must be made to the former. In the early stages of the Transvaal Republic, contractors and artisans were recruited from Europe and the British Isles, and they naturally brought the fine tradition of craftsmanship that is so widespread in those countries, to the Transvaal. The public buildings erected during Paul Kruger's presidentship reflect this tradition as well as those constructed in the period following the establishment of Union. Sir Herbert Baker continued the tradition, and fostered it by introducing new materials such as facebrick, the refactory kopje stone which he used so much in his domestic work, shingles, roofing tiles of various types and wrought iron. The Public Works Department of the Union Government, a body responsible for the design of most public buildings, has endeavoured to maintain the standard set in those early days.

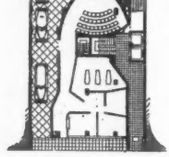
The enormous expansion the building industry has undergone since 1920 has been followed by a deterioration in the standard of skill. In a recent paper on the industry, Mr. Haddon, the President-in-Chief of the Institute of South African Architects, dealt with this aspect. He stated, " It is unfortunate that in the period 1920–1939 the average skill progressively declined because of the fluctuations, in the shape of booms and depressions, in building. During a boom period the shortage of skilled labour resulted in inadequately trained, in many cases completely untrained, men flooding the industry to satisfy the craze for speed, and more speed, in the erection of buildings; the desire of the building owners to be first in the field, to get the quickest and highest returns for their investments, blinding them to the ultimate result —bad building. In periods of depression, the competition amongst members of the contractor class, in particular between the smaller contractors, forced the use of these unskilled or by now partly trained artisans, at low wage rates, often illegally, to the exclusion of the properly trained men. The result was an unfortunate lowering of the average skill." There is also the fact that the building trades failed to attract suitable recruits owing to the insecurity of employment. The great discrepancy between skilled and unskilled rates of pay has already been referred to. This state of affairs inevitably serves to maintain a very low level of skill in the latter, that is, in the native class. The position is aggravated by the absence of training facilities to enable unskilled workers to rise to higher levels. There is also an almost total absence of facilities for research into building methods coupled with the development of new South African materials. Yet this research aspect is of extreme importance to the country if a real effort is to be made to solve the native housing problem, in which the most stringent economy of construction to provide the maximum accommodation is vital.

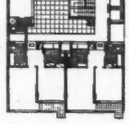
The facts outlined above indicate that the development of contemporary architecture with its demands for greater precision in construction and finish, came at an unfortunate time when skill was on the decline in the building industry. The difficulties experienced by architects at the time in improving the standard of finish and introduc-

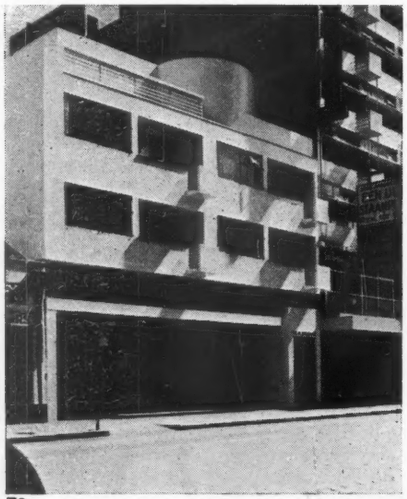
FUNERAL PARLOUR AND FLATS

Martienssen, Fassler and Cooke

Though Rex Martienssen was only one of the three collaborators who found this unique solution to a complex planning problem, his sure touch is clearly visible in the strength and tautness of the outline. His influence on South African architecture can hardly be over-estimated. Both his spiritual leadership and his guidance in æsthetic matters have been of paramount importance in establishing a contemporary architectural style. Although a pioneer, he was also a keen student of historical sequences and keenly appreciated the work done by Baker and Lutyens. His friend Léger said of him: "His work on the Greek idea of space is remarkable, the views he expressed therein are entirely original." It is interesting to observe his own development. At first a whole-hearted Romantic, he gradually turned away from the picturesque towards a severely classical interpretation, verging on the austere. "He analysed every problem with profound insight, he was an architect in theory as well as in practice," said one of his friends. The somewhat unusual planning task of combining an undertaker's establishment with a block of flats was set the architects in 1935. They solved it skilfully by bearing in mind the psychological factors involved. The separation of the flats from the undertaker's is clearly emphasized by the deep recess in the facade treatment, faced in deep black tiles. The entrance to the flats projects forward to bring it into line with the frontage of the flats, thus stressing their connection. The mourners are completely secluded in the area of ground and mezzanine floors.







78

ing new methods of construction were considerable.

A point has now been reached in this survey where an estimate of the achievements and deficiencies of those febrile years between 1933 and 1939 may be undertaken. To commence with, it may be stated unequivocally that the present war ended a definite period for building in South Africa; a period during which the enthusiasm of youth brooked no obstruction, but crusaded untiringly to establish new architectural values; crusaded to demonstrate the fascinating potentialities planning on a large scale opened to humanity, when full use was made of the technological resources of this remarkable age. The atmosphere of the years between 1933 and 1939, for the architects who experienced it, was charged with a tension probably similar to that in which all new movements boil over from the crucible of human evolution. But the desire to create significant architecture had of necessity to be confined to a narrow field, contrary to the general desire to extend it to the wider problems of human environment. As 1939 drew near, the conflict between the architect with his new vision, and the growing realization of his impotence in shaping the environment of society, sharpened with the approaching collapse of Europe.

In attempting to form an estimate, the purely negative aspects will be dealt with first. Of these the most important concerned the unavoidable schism between architecture and the community, a condition arising from the economic factors which governed the architect's employment. The development that succeeded in taking place was therefore very much a matter of chance, and depended, at the beginning, on the tenacity of the few initiators, who were bold enough to sweep aside the barriers of prejudice that hampered experiment. Secondly, the powerful drive that imparted the initial impetus to the movement focused too rigidly on the European idiom. There it was the natural flowering of a growth which as previously described had its roots in the nineteenth century. Furthermore, the new architecture in Europe was shaped in the hands of skilled craftsmen. In South Africa, on the other hand, the industrial shortcomings and the inferior standard of building skill that prevailed, rendered the European objectives difficult of attainment although a great deal was achieved with the limited means at the architect's disposal. The low standard of skill gave rise to frequent failure through lack of experience where new processes or methods were attempted. Thirdly, the European idiom applied as it was directly to South Africa did not initially pay sufficient regard to local climatic conditions, for although the Union is relatively close to the Equator, 30° south latitude, yet the general altitude of the high veld, approximately 5,000 feet above sea level, tempers the heat of summer and conversely causes the cold winters that prevail. The quality of sunlight, however, remains intense, and while the principle of freely relating house and garden was fundamentally sound, not sufficient regard was given to methods of varying the light intensity transmitted by the glass screens to the interior, other than by the use of curtains. A perusal of the work illustrated will show how a greater measure of protection was given to later schemes by recessing large glass areas from the external faces of buildings. In this connection it is interesting to compare the elaborate variable and fixed sunblinds used in contemporary Brazilian architecture and designed to deal with similar conditions. South Africa and Brazil lie approximately on the same latitude and the average annual temperature of Rio de Janeiro and Durban are almost identical. The climate of central Brazil, however, lacks the moderating influence of a raised plateau. An interesting example of an element borrowed from Europe which proved redundant in the Union was the solarium. This element was extensively embodied in houses and flat buildings during early stages of the development. In actuality they were rarely used because on an average, space in South Africa is more generously distributed and sunshine uninterrupted for months on end. No special provisions were therefore necessary to make the most of it. A more successful application of the solarium may be found in later flat buildings where it was related to comprehensive recreational facilities that were provided for tenants.

Of the negative aspects the first, that is the schism between architecture and the community, was unavoidable under the circumstances that prevailed, and the second and third understandable when they are considered in relation to the great effort made to place contemporary architecture on a firm footing. The main drive was exerted in that direction, and it was impossible at the time to concentrate sufficiently on achieving a truer South African expression.

The positive achievements on the other hand are important in relation to future developments. Firstly, the buildings illustrated generally indicate a high order of planning ability. In many cases diverse difficulties such as restricted sites and poor aspects had to be circumvented and considerable ingenuity was displayed in solving such problems while simultaneously maintaining a high standard of architectural quality. It was this fact, the ability to solve problems cleanly and logically, that clearly demarcated the contemporary school from what had gone before. The excellent results that flowed from a logical approach gave rise to a general improvement in planning in spheres quite removed from the contemporary school. Undoubtedly the noticeable change in the general character of buildings and houses in Johannesburg and Pretoria, and it must be remembered that large portions of the two cities were rebuilt and extended between 1930 and 1939, owes a great deal to the new approach that was being worked out not only locally but overseas. Although on the surface a complete break had been effected with the past, yet it is important to record that Martienssen and his colleagues were nevertheless the keenest students of that past and deeply appreciated the significant qualities of the early work at the Cape, and the later work of Lutyens, Baker, Solomon and Leith. Much of the feeling for materials and delight in careful detailing in their buildings was carried over, and emerged again in the work of the contemporary school. The second important achievement concerns the success that was attained in creating an environment harmoniously related to the requirements of contemporary living. The experience gained here will be of immense value for future development. Finally, the stimulus given to local industry together with the demands made for greater precision in building have been previously dealt with.

From the preceding survey it is clear that the interruption occasioned by the present war has brought a fuller understanding of the implications of a South African architecture related to the conditions of our complex society. Future progress not only in architecture but in the economic life of the country as well, is bound up with the successful resolution of the vast social and economic problems that darken the horizon at present. And yet these problems must be solved if South Africa is to advance in company with the rest of the world.

In conclusion, the future prospects of the South African movement remain to be examined. In the educational sphere the Witwatersrand School of Architecture has recently been joined by two others: the first at Cape Town, under Professor L. W. Thornton-White, and the second at Pretoria, under Professor A. L. Meiring. Since 1938 the Cape school has been playing an increasingly important role in the architecture of the Peninsula. The evolution there has followed much the same line as that in Johannesburg. Graduates are now beginning to emerge, combining with an interested section of the profession, and forming a strong nucleus that is concentrating on the study of contemporary architectural problems. In addition, a strong link has been forged with the local building industry. The Pretoria school, which was originally an offshoot of the University of the Witwatersrand, became an independent establishment in 1942. All three centres are endeavouring to broaden training to create an awareness of the social and economic factors that are bound up with significant architecture, and are also endeavouring to equip students adequately from a technical point of view to be able to deal with the increasing complexity of modern building. The Witwatersrand School has inaugurated a post-graduate diploma in town and country planning and a similar extension of courses is being worked out at Cape Town. A comparatively large number of architects equipped to play their part in the post-war world is thus emerging from the three centres. Should adequate steps for reconstruction be taken by the Government, then there is no doubt that contemporary architects will be capable of creating a new urban and rural pattern that will be worthy of the highest traditions of the country and resonant with the technology of the present century.

The war ended a period for building in South Africa, but the cessation of hostilities may herald the opening of a second and more vital stage.

ANTHOLOGY

On the relativity of taste

Perfect beauty, indeed, taking *perfect* in its most strict, and *beauty* in its most comprehensive signification, ought to be equally pleasing to all ; but of this instances are scarcely to be found : for, as to taking them, or, indeed, any examples for illustration, from the other sex of our own species, it is extremely fallacious; as there can be little doubt that all male animals think the females of their own species the most beautiful productions of Nature. At least, we know this to be the case among the different varieties of men, whose respective ideas of the beauty of their females are as widely different as those of man, and any other animal, can be. The sable Africans view with pity and contempt the marked deformity of all Europeans ; whose mouths are compressed, their noses pinched, their cheeks shrunk, their hair rendered lank and flimsy, their bodies lengthened and emaciated, and their skins unnaturally bleached by shade and seclusion, and the baneful influence of a cold humid climate. Were they to draw an image of female perfection, or a goddess of love and beauty, she would have a broad flat nose, high cheeks, woolly hair, a jet black skin, and squat thick form, with breasts reaching to her navel. To us imagination can scarcely present a more disgusting mass of deformity ; but perhaps at Tomboctoo the fairest nymph of St. James's, who, while she treads the mazes of the dance, displays her light and slender form through transparent folds of muslin, might make the same impression ; and who shall decide which party is right, or which is wrong ; or whether the black or white model be, according to the laws of nature, the most perfect specimen of a perfect woman ? The late great physiologist, John Hunter, used to maintain (and I think he proved it), that the African black was the true original man, and all the others only different varieties derived from him, and more or less debased or improved. If so, what more infallible criterion can there be for judging of the natural taste and inclination of mankind, than the unsophisticated sentiments of the most natural and original of the species ? We can neither weigh nor measure the results of feeling or sentiment ; and can only judge whether they are just and natural, or corrupt and artificial, by comparing them with the general laws of nature ; that is, with the general deductions, which we make from the particular operations of nature, which fall under our observation : for of the real laws of nature we know nothing ; these deductions amounting to no more than rules of analogy of our own forming.

RICHARD PAYNE KNIGHT (From *An Analytical Enquiry into the Principles of Taste*, 1805)

MARGINALIA

Anthology and Cover

Payne Knight's way of disproving the validity of general laws of taste was not new, when he put it forward. Voltaire in his *Philosophical Dictionary* of 1764 had said exactly the same ("black oily skin, flat noses . . . "). If to us the woman and child on the cover, in spite of flat noses and woolly hair are decidedly beautiful, the reason is that the last century has taught us to consider forms æsthetically and not only associationally. Curiously enough, it was the same Payne Knight who discovered for Britain this new use of the eye. Picturesque Beauty, he wrote, is simply beauty isolated from sentimental associations and regarded exclusively as a visual phenomenon. Hence he could admire even "the blended variety of mellow tints" in the carcass of an ox. However, he did not extend his discovery into the field of pure form. He kept it confined to matters of colour. This further step belongs to the Roger Fry era in æsthetics, and one needs Knight's as well as Fry's point of view to appreciate the beauties of African arts and African races.

Photographers

Acknowledgments are due to the following photographers for the following illustrations :

Cover, 36, 40, 74	ConstanceStuart, Pretoria.
1–9, 15, 34	South African Railways and Harbours.
10, 57	Cape Times.
13	Professor L. W. Thornton-White.
17, 19, 20, 61, 62	A. Yates.
37, 38	Libertas.
45, 46, 53, 54	Archit. and Engineering Photographic Services.
56	Ballance Studios.
64	South African Press Service.
75	K. Hall Gardner.

Many of the buildings illustrated have been discussed in more detail in *The South African Architectural Record*, volumes for 1933 to 1943.

Save Us Our Ruins

The following letter appeared in *The Times* on August 12 :

Sir,—We should like to invite your attention to a proposal first advocated, we believe, by THE ARCHITECTURAL REVIEW, that a few of our bomb-damaged churches should be preserved in their ruined condition, as permanent memorials of this war. Already the authors of "A Plan for Plymouth" have taken up this idea to the extent of selecting the ruined church which, they feel, would be "a fitting memorial to symbolize the city's grief . . . " and on April 28 your correspondence columns contained a specific suggestion for London.

There will probably be a wide measure of agreement that many of the memorials put up after the last war were unworthy of the men whose sacrifice they commemorate. That a vast gulf of feeling should have lain between the experience and the memorials was in any case inevitable. In this war conditions have been different. England has itself been in the battle and London is still in it. Could there be a more appropriate memorial of the nation's crisis than the preservation of fragments of its battleground ?

It is proposed that work on the selected ruins themselves should be confined to the minimum essential to preserve them from further decay, but that they should be surrounded by lawns, flower-beds and flowering trees, with seats for those in search of quietness and rest. The churches themselves would in many cases also permit the use for open-air services in the summer months, for which the climate of this country is far more favourable than is sometimes supposed. Thus, in addition to the commemoration of this war's dead through the preservation of a few tangible fragments of distinction, we should be able to provide in some measure for the needs of our successors for spiritual refreshment and physical and mental relaxation.

If the general proposal which we are advocating is accepted, the question which are the most appropriate ruined churches to preserve should at once be faced. The final choice will, of course, rest with the church authorities and the appropriate committees. It is hoped that the Fine Arts Commission will also be consulted. Those churches which have not been too severely damaged will no doubt be restored. Others, more seriously injured, will in many cases be restored too, on account of their local or national prestige. But others again have been so far destroyed that their restoration could be nothing more than a mockery of their former selves. Such churches must either be removed altogether or remain as ruins. If the former course were too widely adopted we believe that a potent source of emotional experience would be lost to future generations.

The time will come—much sooner than most of us to-day can visualize—when no trace of death from the air will be left in the streets of rebuilt London. At such a time the story of the blitz may begin to seem unreal not only to visiting tourists but to a new generation of Londoners. It is the purpose of war memorials to remind posterity of the reality of the sacrifices upon which its apparent security has been built. These church ruins, we suggest, would do this with realism and gravity. While being kept as gardens suitable for meditation or relaxation, in the heart of the city, each could act at the same time as a specific memorial, one to the seamen of the convoys, another to men of the 8th Army, a third to the air crews of the R.A.F., a fourth to the women in the services, a fifth to a regiment ; the names of the fallen being inscribed on their ruined stones. And in the City of London one church at least should be set aside for a memorial to the thousands of Londoners who died in the blitz for whom those walls of calcined stone were once not monuments, but tombs.

Yours faithfully,

MARJORY ALLEN OF HURTWOOD, DAVID CECIL, KENNETH CLARK, F. A. COCKIN, T. S. ELIOT, H. S. GOODHART-RENDEL, JULIAN HUXLEY, KEYNES, E. J. SALISBURY.

An impressive array of names, nicely balanced between church, art, architecture, sociology and science. After this it can be hoped that the Bishop of London's Commission will take action, and that we may yet see St. Mary-le-Bow or St. Clement Danes as a memorial of war destruction and a memorial to the visual revival of our age.

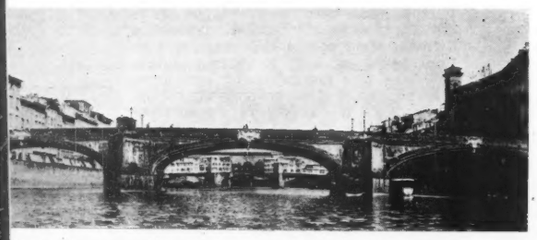
Caen and Rouen

At the time of going to press no official War Office report has yet come to hand on damage to historic buildings in France. Not even the name of the distinguished scholar in charge of inventories and advice on repairs must be disclosed. That however seems, as usual, only to refer to British scholars. Americans are less jealous of personal kudos, and Capt. B. Lafarge has been mentioned in the newspapers as Adviser on Monuments and Fine Arts to the American Second Army.

He told *The Times* that at Caen the fourteenth century church of St. Pierre has the roof burned, the spire down and four bays gone ; the Hôtel d'Ecoville, that gem of pure Early Renaissance, was completely gutted ; the Hôtel de Thau destroyed ; and of the old half-timbered houses only two remain. Of the chief treasures of the town, the two Norman Abbeys, he only said, on July 18: "It is to be hoped that they will survive the present German bombardment." They are damaged ; that much is certain from photographs.

Recent photographs of Rouen are less eloquent. But damage there must be extensive. *The Times* correspondent said that St. Maclou is "largely ruined," the cathedral "partly gutted," and that St. Ouen has also had a bad time. If this is true, then French Flamboyant will have had an irretrievable loss. No other French city was so rich in examples of that style as Rouen.

And what about Lisieux, and Coutances, and Jumièges, and Lessay, and the dozens of charming Romanesque village churches of Normandy ?



Trinity Bridge in Florence was perhaps the world's most beautiful bridge. Its exquisite elegance is typical of its age, the age of Mannerism. Ammanati designed it, and it was completed in 1569. The retreating Germans blew it up. The Royal Engineers for the time being have replaced it by an achievement as typical of this century as Trinity Bridge was of the sixteenth: the Bailey Bridge, supreme in speed of erection and economy of materials. The remaining fragments of Ammanati's work look as though reconstruction might be possible without the loss of too much of the original character.

Lutyens Memorial

The following letter was published in *The Times* on August 22. It has our sincere support. Compared with other countries, Britain has done deplorably little to record the work of its great architects, especially those of the last fifty years. No Voysey *œuvre* was published at his death; no Mackintosh *œuvre* at his. Let the same mistake not be made again now.

TO THE EDITOR OF *THE TIMES*.

Sir,—We believe that all those interested in the arts of our nation will wish to contribute to a memorial to the late Sir Edwin Lutyens, the greatest architect of our time. Hence a committee, set up to consider the best form such a memorial could take, has concluded that the publication of a book in three or more folio volumes covering all aspects of his work would provide the most fitting monument. It will be a permanent record for future generations of the incomparable achievement of this master, and will have great practical value for students not only in this country but, we hope, throughout the world.

Mr. Christopher Hussey and Mr. A. S. G. Butler have agreed to act as joint authors and editors of these volumes, which will contain plans, detail drawings, and photographs, as well as analytical notes intended to illustrate the genius of Sir Edwin and his high position in the historical sequence of architecture. Subscribers to the memorial fund will be entitled to copies of the work at privileged rates, which will be determined later having regard to the response to this appeal and the cost of publication. Moreover, we hope in addition to found an annual scholarship at the School of Architecture of the Royal Academy to be known as the Lutyens Scholarship. This further object, however, can be achieved only if the amount subscribed is sufficient. Donations to the memorial fund will be gratefully acknowledged by the hon. treasurer, Viscount Esher, at the office of the Lutyens Memorial, 13, Mansfield Street, W.1.

Yours faithfully,

JASPER RIDLEY (Chairman), W. H. ANSELL, CRAWFORD AND BALCARRES, ESHER, MEREDITH FRAMPTON, GREENE, EDWARD MAUFE, HUBERT WORTHINGTON.

13, Mansfield Street, W.1.

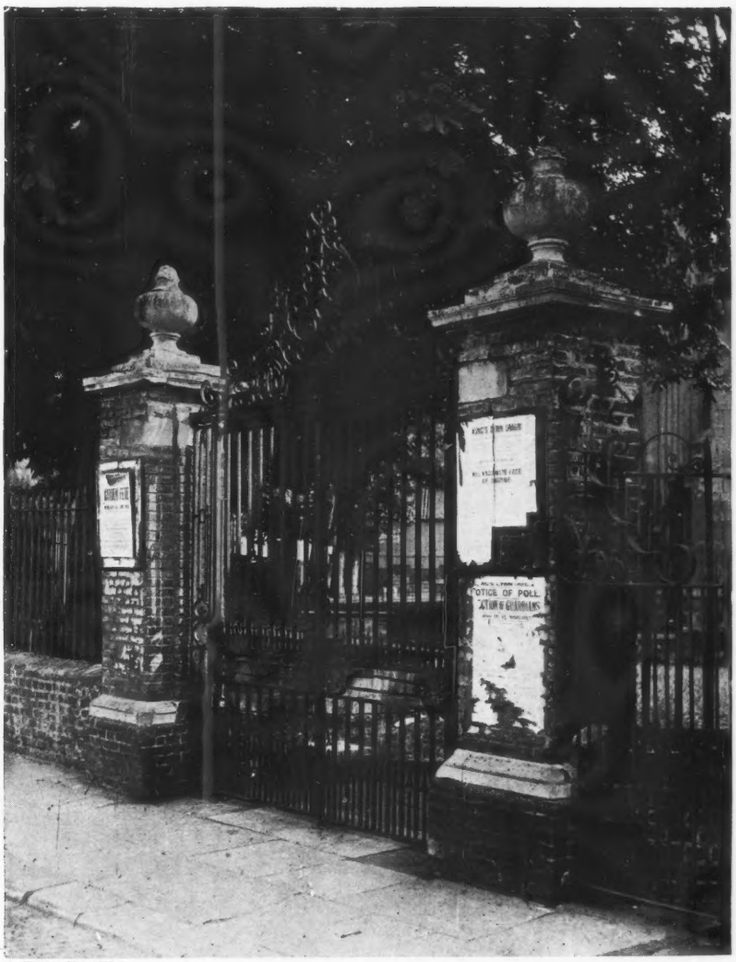
Poor Piper

Here is Mr. James Agate, *ex cathedra* of the *Daily Express*. He is speaking of John Betjeman's and Geoffrey Taylor's anthology *English, Scottish and Welsh Landscape*, 1700–1860 (Frederick Muller, 1944), and in particular of the sixteen original lithographs by John Piper,

> "illustrations in a scheme of burnt umber, burnt sienna, and burnt porridge. These are, to my eye, as hideous as they are untrue. Take the lithograph of Gordale Scar, which I have seen in many moods. But then, unlike the artist, who is called Piper, I have not had the misfortune to approach it through what would appear to be a veil of mustard gas."

Of course, Mr. Agate is not supposed to give expert advice on what is good or bad in art. Still—if a man of his reputation and popularity can still write like that on John Piper, THE ARCHITECTURAL REVIEW has still much spadework to do.

[continued on page xlviii



L. E. Walker, Photo.

GATES, ST. NICHOLAS' CHURCH, KING'S LYNN.

IT is likely that the smith who wrought these gates in 1749 was a Lynn man, because they retain the full vigour of design and workmanship which, elsewhere, declined as the 18th century progressed. A reason for this local resistance to the decay of craftsmanship is that the smiths continued to use Swedish iron, brought direct by sea to the port ; this iron was not in convenient strips which tempt the craftsman to sloth but in 'billets' or blocks, and so even the most simple forms had to be forged into shape, thus sustaining the essence of the blacksmith's craft. The difficult jobs of waterproofing have contributed most to the experience, extending over more than thirty years, upon which the technique of using 'PUDLO' Brand waterproofer is based.

continued from page xlvi]

Gloag-Read-Kennedy

What can be done to improve the standards of industrial art in Britain? Many answers have been given, all satisfactory up to a point. The manufacturer must reform his ways, the public must insist on better design, the school must teach visual standards, the art school must establish courses in design. One thing is certain: design influences sales, at home and abroad. The Americans have proved that. What they have not succeeded in proving is that good new design always beats bad.

Manufacturers therefore need at the moment less coaxing into extensive preparatory work for new post-war ranges of design than convincing that better design may be a paying proposition. The method of doing that is to introduce to them designers sufficiently competent and perhaps also sufficiently self-confident to overcome their distrust of anything that may smack of art. Schools do this job only rarely, organisations such as the National Register of Industrial Art Designers or the Industrial Art section of the F.B.I. try to do it. More effective seems to be the work of advertising agencies in the same direction. John Gloag was probably the first to realise the power placed into the hands of practitioners in publicity. His firm, Pritchard, Wood and Partners, has since several years before the war regarded it as part of its job to improve the æsthetic qualities of clients' products by putting them into touch with suitable artists and architects.

Then a year or two ago the Advertising Service Guild created the Design Research Unit for very much the same purpose, and appointed Herbert Read as its head. Now news has been received of a similar organisation formed by Sir William Crawford. The new company is called Sir William Crawford and Partners, Industrial Research and Design. Warnett Kennedy is Director of Research. He has a panel of designers, some scientists and some artists (Ashley Havinden, Oscar Berger). As against the other two firms which stress the role of the consultant or retained designer, the new firm appears to place more emphasis on the resident panel competent to solve any problem that a client's special line of business may set. Both methods have pros and cons; but there is no need to argue. All three organisations and more will find ample work as soon as the war is over.

Reorganised S.I.A.

The Society of Industrial Artists was incorporated in 1930. It has now been reconstituted so that industrial designers can work semi-autonomously for the furtherance of their own aims as against those of commercial artists (with whom, however, contact is retained through a joint council). The preliminary work so far done concerns an educational programme, a code of professional practice, scales of remuneration, the organisation of annual exhibitions, congresses, meetings, etc. The S.I.A. is in close touch and full sympathy with THE ARCHITECTURAL REVIEW's *Design Review*. One point needs special emphasis. The prospectus says: "Plans have been prepared to ensure that membership of the S.I.A. implies a high standard of technical competence analogous to that required for membership of the R.I.B.A." The last sentence of the prospectus is: "The immediate need is that every industrial designer should apply for membership"—and, it may be added, that it should only be granted to those who deserve it. For that has in the past proved the crux about such organisations as the S.I.A., the Design and Industries Association and the National Register of Industrial Art Designers. They all have been too much in need of subscriptions or too proud of numbers to attain a reputation for uncompromisingly high standards. Unless the S.I.A. can be really exclusive it cannot fulfil its excellent and most decidedly necessary function.

Uni-Seco and Cemesto

Messrs. Uni-Seco Structures Ltd. point out to us that the Seco system of unit construction is not making use of resin-bonded plywood, as stated in our August number, Marginalia, page xlviii. The units are asbestos cement sheets enclosing a wood wool and cement core, the whole being retained in a light timber frame.

Also Celotex of London correct a statement on page 56 of the same number. The Cemesto system of framed construction uses a core of Celotex insulating board with asbestos cement facing on both sides.

A Loss to the A.A.

It is with the greatest regret that we announce Mr. Frederick Gibberd's resignation from his post of Principal of the Architectural Association School of Architecture. He has held this key-position for two and a half years and has done most valuable work in reorganising the syllabus and inspiring the work of the students.