

THE SOUTH AFRICAN ARCHITECTURAL RECORD

The Journal of the Transvaal, Natal and Orange Free State Provincial Institutes of South African Architects and the Chapter of South African Quantity Surveyors.

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Hon. Editors Professor G. E. Pearce
Rex Martienssen

Secretary A. S. Pearce

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Diorite Egyptian Statue

Fourth Dynasty

T H E J O U R N A L

The following statement has been received from the Registrar of the Central Council for publication in the journal:—

“The Council was unanimous in recording strong disapproval of editorial expressions such as contained in the February number of the “South African Architectural Record,” on the ground that such general expressions were an unjustified and unsubstantiated reflection on the profession of architecture in South Africa.

“The Council demanded an assurance from the proprietors of the “South African Architectural Record” that no similar articles be published.

“The Council, at the same time, forwarded a strong recommendation to the Provincial Institute concerned that a thorough investigation be made, in terms of Regulations 91 and 94.”

We are glad to know that the Central Council is satisfied that the “general expressions were an unjustified and unsubstantiated reflection on the profession,” and would welcome such an assurance were it not for the fact that a very large number of members of the profession do not share these views.

This is borne out by the decision of the Journal Committee who met to discuss the following resolution received from the Central Council:—

“That the attention of the Transvaal Provincial Institute be drawn by the Central Council to the allegations contained in the leading article in the February number of the ‘South African Architectural Record,’ with the strong recommendation that the matters therein referred to requires thorough investigation, in terms of Regulations 91 and 94.”

This resolution was very fully discussed by the Journal Committee, and it was unanimously resolved:

“That this Committee is unable to accept the view of the Central Council that, broadly, the expressions in the article referred to are unjustified and unsubstantiated. That this Committee regrets that the other Provinces have not availed themselves of the offer of representation on this Committee, and recommends that that offer be renewed.”

The resolution of the Journal Committee was in turn approved by a majority of the Transvaal Provincial Committee and has been forwarded to the Central Council.

We are glad to be able to state that the resolution of the Central Council was not unanimous in that the President of the Transvaal Provincial Institute did not support it.

The regulations referred to in the Central Council’s resolution refer to unprofessional conduct on the part of a member, which is an indication that the writer of the article is guilty of unprofessional conduct. We are surprised at such an attack by the Central Council on a member who is attempting to voice the views of the profession, and still more surprised to find that another article published in the “Architect, Builder and Engineer,” and which is a direct reflection on a particular section of the profession is not only approved by the Central Council but embodied in its minutes.

The Journal Committee feels that a quite unjust attack has been made not only upon the editors of the journal but also upon the contributors of the articles published therein.

We are informed that, in the opinion of members of the Central Council, insufficient attention is given by the journal to matters of general architectural interest, that too much attention is devoted to ultra-modernism, and that, as one member puts it, certain illustrations “have not the lightness of touch of the French nation, but savour more of Yankee obscurity.”

It is further stated that much of what is published could be described as "scissors and paste," that there is the whole world to go to for scissors and paste, and wiser editors would make a wiser selection.

One member was incensed because space could not be found for an article which, as he says, was a contribution of interest to the whole profession. As a matter of fact, the article in question was published after considerable trouble and expense, as one of the illustrations had to be re-drawn to make it suitable for reproduction. Others, it appears, are incensed because members do not agree with the award of assessors in competitions.

A member representing a Provincial Institute, which is in no way connected with the journal, suggested that the Central Council should take steps to prevent the publication of the journal by writing to the advertisers and stating that it was not the official organ of architecture in South Africa.

Now no one wishes to be drawn into an unfortunate controversy of this kind, but it has been forced upon the Journal Committee to reply to these statements.

It seems perfectly clear, from the information given to us, that the Provincial Institutes of Natal and the Orange Free State, and the Chapter of Quantity Surveyors, intend to withdraw their support from the journal unless its policy is changed.

All that we can say is that, whilst we sincerely regret such a step, we do not consider that this decision represents the views of the majority of members of these bodies, and we trust that the statements of their representatives will be very fully discussed by members before a decision is arrived at.

This journal has been built up from a quarterly to a monthly production in a comparatively short space of time. Financially, it is in a very sound position, and the number of its advertisers is steadily increasing. Its success is due in a large measure to the enthusiastic support which has been given to it by the younger members of the profession and students in the

Transvaal. Its articles have been reproduced in overseas journals.

Repeated efforts have been made to obtain articles and illustrations from other centres, and from older practitioners in the Union, but with little or no success. We are aware of the fact that the keen interest displayed in contemporary movements in architecture in different parts of the world comes from the younger practitioners. It is only history repeating itself, for each new movement in architecture, and, for that matter, painting and sculpture, has usually been the outcome of intense enthusiasm on the part of young men who, whilst understanding and appreciating what has been done in the past, do not intend to become mere servile copyists. If the older practitioners are not sufficiently interested in the journal to contribute and, with their greater knowledge, shall we say, to put forward their views and endeavour to check what appears to them to be revolutionary or bizarre, whose fault is it?

It is high time that the critics and members of the Central Council gave up these rather stupid expressions of "modern" or "ultra-modern," as applied to architectural design, and endeavoured to discover what the younger men were aiming at. They would very soon find that contemporary architecture was based upon reason, logic and common sense, which are characteristics of all great architecture in every period in history.

Mediæval architects were probably horrified when the first buildings showing Renaissance influences were erected, and similarly we know that the Italian architects spoke with contumely of the architecture in Northern Europe and dubbed it Gothic or barbaric. Ruskin, in his enthusiasm for Gothic architecture, thundered against the Renaissance and preached a return to naturalism, as he termed it, and so on.

The younger architects of to-day are better trained and, we venture to say, better scholars than the great majority of those of a generation ago, and are appreciative of the great possibilities offered them in the use of contemporary materials and the scientific equipment of buildings.

They do not intend to mask mechanical devices with the trappings of the past, nor do they intend to reproduce the forms used by the Greeks, beautiful as they may be, in materials which would only make a travesty of them.

The principles underlying the contemporary movement in architecture are far-reaching and are not confined to any one country, but climatic conditions are having their effect on the design of the buildings in each country.

But—and this is most important—a steadily increasing public demand is being made for up-to-date buildings, and the younger practitioners are rising to the occasion and supplying that demand.

It is pathetic, therefore, to read such expressions of opinion as those recently made by a writer like Mr. Hilaire Belloc and quoted in the "Architect, Builder and Engineer." Similar attacks were made by Ruskin on the contemporary architecture of his day, but these attacks have little or no effect on contemporary movements, and particularly the present day movement in architecture, which is one of the most progressive that the world has seen for centuries.

The Central Council has, by its attitude, thrown itself open to the most severe criticism, and we feel sure that that criticism will be forthcoming in, we hope, the friendliest spirit, so that the discontent which prevails in the profession to-day will be speedily overcome.

HOTPOINT HOUSE

JOHANNESBURG

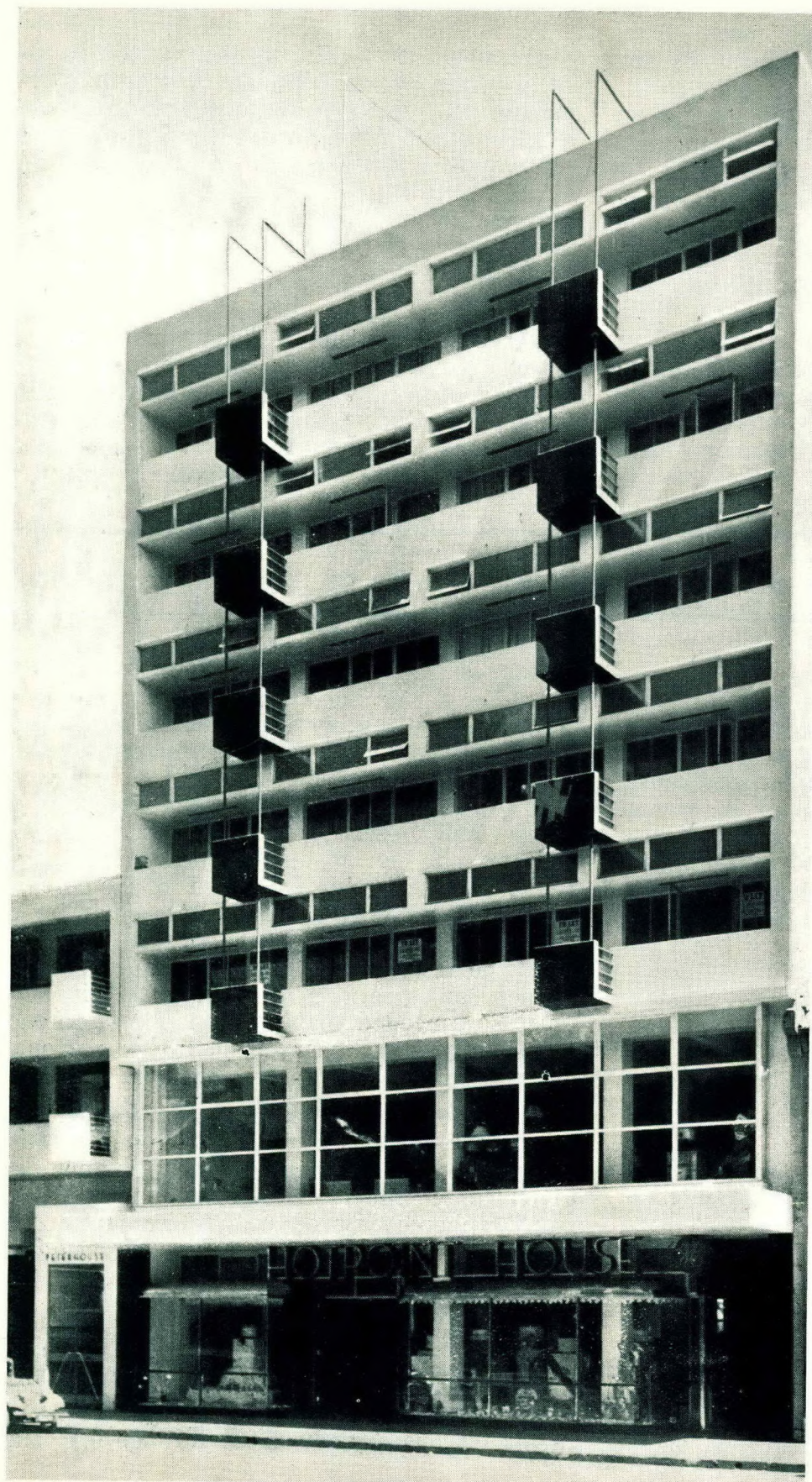
Architects: Hanson, Tomkin, Finkelstein

Architectural development in Johannesburg has reached a most anomalous stage. Enormous building activity has inevitably led to an almost total neglect of critical standards, or at least a most serious lowering of the normal standards. Buildings are frequently described in the press, to which no architect's name can be attached, and to which, certainly, no self-respecting one would put his name. But we have them all described in terms of unstinted praise—advertisers are not slow to take advantage of the kudos attaching to such outstanding "paper" merit. In this welter of confusion, however, certain facts have emerged which, though remarkable, are not receiving due notice.

In the first place, the long-standing controversy regarding the suitability of this or that style of architecture for this or that type of building has completely died away. No longer is it a question of which of the classical orders is the most "suitable," which can best be elongated hideously or perched uncomfortably as a crowning feature to some unfortunate building. These debates have miraculously dissolved into a little regretted historical past, and architects are (almost unwittingly, as it

were, so great is the rush) undertaking the task of creating a new world. Unfortunately, this great opportunity—for practical purposes the rebuilding of a youthful and vigorous city—is being totally lost. We are hopelessly equipped for the solving of our growing and urgent problems. Our town planning is of the patching type and, while it may certainly ease an impossible pressure here or there, it does not, we think, present a very convincing picture of an efficient and beautiful contemporary city. It must be conceded that the difficulties are enormous, but we must not allow this factor to obscure our realisation of an unpleasant truth.

And then, again, parallel developments in other parts of the world are little understood or appreciated. The requisite study has not been given to technical and art movements in the many spheres related to architecture. The efforts of the greatest intelligences working towards an almost fabulous future, are frequently derided but seldom understood. But here in South Africa architecture has not yet become a social problem, as it has in highly industrialised countries. That does not mean to say that it may not soon become a sociological factor—it has already made inroads into slum



Hotpoint House, Johannesburg
South Elevation
Photo George Abbott

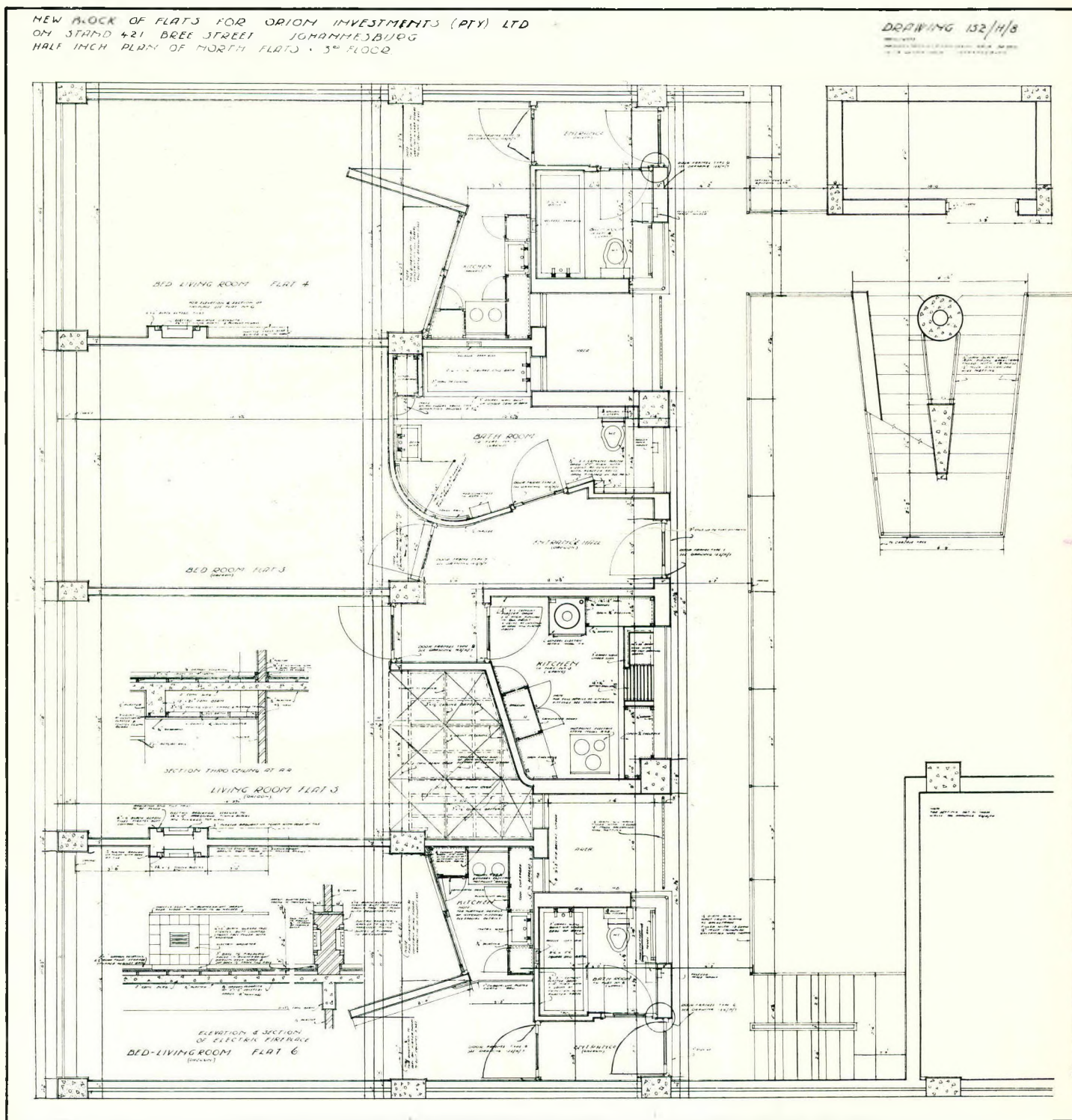
and native housing—the symptom of an inevitable trend. Now, therefore, is the opportunity for research and experiment. Instead, we find all building activity in commercial hands, and the architecture as unashamedly commercial as its sponsors. There is, certainly, a so-called modernism which exhibits itself in many hideous and malformed shapes, but there is more abuse than use of the splendid resources now placed in the hands of the arbiters of a changing world. It is refreshing, therefore, to find some attempt to give expression to a new technical and aesthetic idiom in a few of our city buildings.

In the building under review—Hotpoint House—many interesting experiments in planning, construction and general design have been made, and it is worth mentioning that it has been quietly absorbed into the public awareness, as far as it exists for these

things. The building contains the headquarters of a well-known electrical firm, as well as showrooms and flats above. The site is the normal internal Johannesburg type, with a comparatively narrow frontage to the street. Above the ground and first floors (occupied by the General Electric Company) the available space has been zoned into two blocks, separated by an adequate courtyard and linked by a well-placed lift and staircase. In detail—the street front contains, on the ground floor, the entrance to the upper floors and the shopfront. The latter has been treated in an unusual manner, in that the window cases have been given direction in relation to their functions, so that a long sloping side leads to the point of entry of the shop, while a wide curve defines its limit as separate from the building entrance. Uninterrupted windows here, as on the showroom floor, have been made possible by a cantilever-system applied to the entire street facade.



N o r t h E l e v a t i o n



Half Inch Working Drawing of Portion of Typical Flat Plan

Hotpoint House



Bachelor Flat
photo George Abbott

The entrance hall itself is notable for a bold experiment in the use of colour. With the limited space available, the wall surfaces have been given a breadth only possible by the handling, in a subtle manner, of contrasting and harmonising shades. A colour dimension has been given to walls and floors—in blue, green, biscuit, terra-cotta, with the brilliant contrast of black and chromium. The courtyard has been treated with the lightest possible feeling. The essentials themselves have been composed in a most satisfying manner—black surfaced corridors, aluminium railings, white painted walls and steel window frames, with a double-cantilevered stair as the focal point. It should be noted that all pipes have been concentrated and concealed in four wide and well-distributed ducts, easy of access and functioning, in addition, as ventilators to the kitchens of the single-room flats.

The flats themselves have been as freely planned as possible. Walls, shaped to the required function, are an essential element in the arrangement of these flats, and where rigid division in a confined space is not possible, zoning has been introduced by the use of the very decorative Venetian blind, running from floor to ceiling. Colour, again, has been given functional purpose, and illustrates what

aesthetic possibilities exist in a vigorous architectural use of this medium. The flats on the street front have been recessed from the building line—providing a continuous balcony to each flat and giving valuable additional privacy to them. The low ceiling to these balconies emphasises further the natural horizontality of the facade, and gives, in addition, an opportunity for the skilful use of concealed lighting. The small projecting balconies are faced with black glass. In these flats, as well as in all other parts of the building, the greatest possible amount of wall surface has been given to glass, used here as an intrinsic element in the shaping and developing of the room as a whole.

To sum up, Hotpoint House represents, at its broadest, an attitude. What has been done, however, is not enough. It carries with it too many limitations—of site, cost and many other conditions—but it manifests, at least, a realisation of the new aesthetic, of the possibilities inherent in the new structural materials placed at the architect's command. If this attitude cannot change, as yet, the face of our towns, at least it exposes the danger of an unwarranted complacency, and strongly illustrates the aims and duties of the contemporary architect.





The Courtyard ● photo Alan Wilson

Hotpoint House ● Johannesburg



photo George Abbott

B O O K R E V I E W

Die Geskiedenis van Boukuns • deur Gerard Moerdyk • J. L. van Schaik, Bepk., Pretoria

Perhaps no architect in South Africa has had such a wonderful opportunity of contributing to Afrikaans literature, and creating a wide public interest in architecture as Mr. Moerdyk, who has recently published a book on the history of architecture in Afrikaans. The author's work is well known in the Union, particularly amongst the Afrikaans-speaking population, and the architectural profession owes him a great debt for the services he has rendered both as a member of the Council of the Transvaal Provincial Institute and for the interest he has displayed in architectural education. For these reasons one hesitates to criticise a work which fills, or should fill, a long-felt want in this country, and yet one feels, after reading through the book, that certain statements are misleading and may create a wrong impression.

The first section of the book deals with the analysis of a building—its essential subdivisions—the different types of building—building materials and building sites, with special reference to South African conditions.

Section two deals with the origins of architecture, under which the author includes Prehistoric, Egyptian, Assyrian, Indian, Chinese, Japanese and Greek.

Section three is concerned with the styles of architecture—Roman, Byzantine, the Middle Ages, the Renaissance and Modern; whilst section four is devoted to Afrikaans architecture.

In the section dealing with materials Mr. Moerdyk says: "Art must be national in order to be good. This holds good for architecture just as much as for any of the other arts. Art must grow out of the soil itself; it must portray the characteristics of the nation which brought it about and must personify its ideals in concrete form. Now it is evident that the material with which it is built must be local in order to obtain the best representation of the geographical characteristics and the soul of the nation. By local is not meant that the material must be manufactured or found on the building

site itself or within a few miles thereof. What is meant is that the material which is used must be in accordance with the general character of the region where the building is being erected. Our Dutch forefathers taught us to adapt ourselves to our surroundings. They came from Holland, where almost every building was unplastered, but they soon realised that what is beautiful for Holland is not necessarily so in South Africa, and they plastered their buildings. This is owing not exclusively to the fact that the bricks of those days were unburnt and not too attractive; they immediately realised that the red brick colour was too hot for our climate.

"Practically all the old Dutch houses on the Peninsula are plastered, and what is more beautiful than the dark shadow of the heavy overhanging roof on the white plaster which stands out so beautifully against the bright sunlight of the wooded surroundings and the lighter shadow of tree and leaf?"

Surely Mr. Moerdyk will agree that it was through force of circumstances that plaster was used by the early settlers, and not because the colour of the brick was unsuitable in our climate. The beautiful golden yellow bricks imported from Holland and used in the Castle at Capetown, as well as in some of the larger dwelling houses, tone in with the surroundings, but the cost of import made them prohibitive. Had suitable clay been available for brick-making at the Cape, there is little doubt that this material would have been employed by the settlers who were accustomed to it in their home land. There are many examples of plaster farm houses with thatched roofs in Holland's countryside.

"To-day," the author continues, "one can get good bricks of all types and colours, but in nine cases out of ten it is still better to plaster the buildings. It is not necessary or even desirable to use smooth white plaster, because it is not always suitable; in treeless districts, especially, it is even worrying; but there are many types and colours to choose from. Undoubtedly the most beautiful are the different types of rough plaster which are coming more and more into vogue. The play of light and shade on a roughly plastered wall is not only pleasing but also very decorative."

One wonders whether the early settlers would admire the present-day attempts to reproduce the uneven plastered surfaces, which are undoubtedly the result of time and weather.

In dealing with the historical styles, Mr. Moerdyk, writing, as he says, for young people, might have created more interest in the subject if he had explained briefly the theory and origin of planning and the elements of architecture, instead of leaving so much to the imagination. A great deal of archaeological research has been published in recent years and architectural history, as a result, has benefited by it to such an extent that the subject can be made most fascinating to the layman. One is surprised, therefore, that the importance of early Greek civilisation, for example, and its influence on all subsequent architecture has been ignored.

Under the heading "Modern Architecture" the author, after dealing with the American skyscraper, refers to the work of Frank Lloyd Wright, who, as he says, "brought about an architecture which is marked by strict simplicity and straight lines, exceptionally suitable for modern methods of life, a style which is equally well adaptable for business premises, the factory, the school, flats and the private house; a style which received enthusiastic support from the foremost architects of Europe, especially in Holland, Germany and Scandinavia.

"This modern architecture," he continues, "is, however, only suitable for the land of its origin and countries with a similar climate. It is noticeable that in the West of America, in California and Mexico, with a climate much the same as ours, this style has been modified. The great bare wall surfaces, the many, and frequently enormous, windows, and the flat roofs of modern architecture are not suitable for a climate of long droughts, thunderstorms, clear skies and brilliant sunlight."

And yet the early architects at the Cape employed them.

"There are also architectural developments in the western parts of the U.S.A.—attempts to make buildings simpler—but another system is followed and a style is being developed which contains numerous Romanesque features, as

well as certain elements borrowed from the Red Indian tribes, a style which is generally known as Spanish mission, with its pergolas, overhanging roofs, rough plastered walls, small screened windows and simple domestic arrangements, which would, if amalgamated with certain characteristics of the old Cape-Dutch style, produce a solution to many of the building difficulties met with in our warm and dry districts."

This is a very questionable statement, and would no doubt be vigorously contested by our enthusiastic young modern architects, whose work is eminently suitable to our climatic conditions.

In the section dealing with Afrikaans architecture there are many surprising statements.

Referring to the origin and its subsidiary influences, the author states: "No architectural style or school of art is unaffected by what occurs around it or what preceded it, and although pure copy is to be despised, certain affinities are unavoidable."

After referring to the influence of the Italian Renaissance, and particularly the Baroque, on the rest of Europe he continues: "If we therefore make a study of the origin of our Cape-Dutch architecture, we must consider the Baroque as the foundation of our studies.

"The immediate ancestor of the Cape-Dutch gable is the Flemish-Dutch gable, and as such it is related to Baroque architecture, but the application of the gable, the harmonising as a whole, especially the development of the plan, is something which in that form is only found at the Cape.

"Each nation learns from her own attempts at building what fits best in her physical environment and with her peculiar mode of living, and out of that develops her own natural style. That is the underlying philosophy of architecture."

In dealing with the buildings, the author says: "The town houses, as well as the public buildings of this style, did not have gables, and were often double storied buildings. Here one detects the more classical adaptation of the French influence brought about by the architect Thibault."

Surely many of these town houses showing classical influences were erected before the arrival of Thibault.

"The farmhouses, with only a few exceptions, are single storied, with loft windows in the gables. All have gables, and give evidence of the pure Low-German influence as interpreted by the architect Schutte. But even here one finds the classical influence."

It is interesting to discover that Schutte, who, from records, appears to have been a builder, had an influence on the design of the country houses.

"In connection with the design and decoration of gables, the name of the sculptor, Anton Anreith, must be mentioned. Anreith is of German descent, and became infused with the Afrikaans spirit."

To what extent, we would like to know, as his work is strongly imbued with the spirit of classical sculpture and mythology.

In his historical survey Mr. Moerdyk states: "The beautiful old Dutch houses which are still standing to-day as examples of a genuine Afrikaans style of building did not arise immediately in that wild region around the landing stage. It took long years of work, study and planning to bring them about."

"It was not sufficient to know how the people in Europe built in order to build in South Africa. Artists, like the architects, Thibault and Schutte, and the sculptor, Anton Anreith, first had to unite their arts with the joint experience of the colonists with reference to building materials, climatic conditions, and the beauties of the surroundings, before the old Dutch architecture could be brought about."

And yet we find from Thibault's own drawings that his work at the Cape closely resembles the prevailing style of architecture in Europe at that time and is almost entirely influenced by it.

"Hardly had the Afrikaans architecture got under way when in 1806 it came to a sudden end. The old Dutch style had developed until practically only indigenous materials were used. Such a state of affairs was of no advantage to the new owners of the Cape because

England was already primarily a commercial country, whose progress and well being was dependent upon export. The building material needs of the Cape had therefore to be changed and a style of architecture adopted for which imported material was necessary. The style which was then adopted contributed nothing towards a natural development because it was dumped down here, lock, stock and barrel, out of a land with other climatic conditions and where the mode of living was totally different. This imported style profited our art, as far as art was concerned, nothing, because England gave all her thought to trade and economical development at that time, and altogether disregarded the fine arts, especially architecture.

"The imported building materials proved of machine manufacture, lacking individuality or aesthetic feeling. Thin bedpost columns, made of cast iron; corrugated iron for the roofs, and machine-made woodwork are characteristic of all the buildings erected from 1806 until quite recently. 'Shooting boxes' rose in place of old Cape-Dutch farmhouses, and an end came to an indigenous South African architecture."

The fine tradition established at the end of the eighteenth century in Europe and America was carried on after British occupation at least until 1830, when architecture in those countries was seriously affected by the intense industrial development which took place about that time. The early nineteenth century buildings at the Cape reflect a style which is equally common in Holland, England and North America. Many of them were erected to the designs of Thibault, who practised as an architect in Capetown until his death in 1815. Plastered walls, teak doors and windows and the heavy beamed ceilings were used, and it was not until well into the second quarter of the nineteenth century that the manufactured articles referred to by the author were imported from Europe. For example, the earliest patent for galvanised iron was taken out in 1837, and it was only after 1850 that galvanised corrugated iron appears to have been manufactured for export.

"Then came the great trek, and with the changed mode of living of the Trekkers a big change in the architecture of the South African. . . . The Trekkers, like the colonists,

were artists to a certain extent. Their architecture developed quite differently in the Transvaal and Orange Free State from that at the Cape, but the development was logical. Building material was different again, also climate, the physical formation and mode of living.

"The 'Hartebieshuis' is the first, and it is definitely necessary for those of us who wish to know something about our own architecture to look well at it. It is sturdily built and designed; the relationship of the part to the whole is good. It fulfils its purpose and serves as a personification of the simplicity, heartiness and determination which characterised the Trekkers. It was honest, too; there is no pretence of circumstances which do not exist, no ornament where ornament would have been foolish."

We should like to know in what respects the "Hartebieshuis" or "wattle and daub" house in the Free State and Transvaal is different from those erected by early settlers, whether Dutch or English, in other parts of the country, or other parts of the world, for that matter, and whether there is very much in it to be commended.

"Then came the second phase. The Hartebieshuis had to go—in the town anyway—and in its place another type came, of which a few examples are still to be found in our cities and towns. This type was a development along logical lines. The first stage of civilisation in a wild region was past. The trekker had become the burgher. He had, in future, to give his attention to town planning and town government, national and international politics and trade. His dwelling had from now on to be bigger and more impressive.

"Built right on the street, without a flower garden to give a feeling of seclusion, with an inviting stoep that ran the length of the front, the house looked what it was, the dwelling of a dependable burgher.

"With the construction of these houses the first imported building materials were used in the two republics, something which in time became necessary because the industrial development of the land did not keep pace with the wants of the population, and transport was

then already easier than in the days of the first colonists. This was a state of affairs which included a very undesirable factor, because with imported building materials the foreign was forced to the fore and the indigenous had therefore to be less strong. It is a great pity that the old houses which are typical of an important section of our history have to disappear one by one to make place for the less important but popular rectangular house which stands without character, without a link with the national life, and without telling anything of the people that live in it or built it.

"The old burgher houses certainly had their drawbacks, and the arrangement was in many cases not very good or convenient, but they are characterised by an atmosphere of restful dignity which is quite absent in the following type, the type of dwelling that belongs to the period up to just before the second War of Independence."

One wonders whether the houses of the second phase really mark an important step in South African architectural history. They are characteristic of similar types to be found in many parts of the world at this time.

"Suddenly the sturdy burgher dwelling is followed up by another type. Foundations are made higher, houses are decorated with niches and little towers and unnecessarily big windows, and the good old stoep is changed into a 'verandah' loaded with unnecessary ornamental woodwork. The ugly corrugated iron roof became generally used. Cheap imported building material was used, and the history, according to which the architecture of a nation must be built up, was totally ignored.

"The houses represent the period in which they were built—great excitement, speculation, sudden wealth, truly an unhealthy and transitional stage in the life of a nation."

What is stated about these houses can well be applied to the domestic architecture of most countries at the end of the nineteenth century. Very similar examples are to be found in the U.S.A. at this time.

"After the peace of Vereeniging no national architecture was brought about for years. The history of the Cape after 1806 was repeated in the Transvaal and Free State, at least as far as architecture is concerned. The conquerors regarded the regions they had taken as dumping grounds for their industries, and all efforts to develop national art were systematically opposed, with the result that the national architecture which already existed was pushed aside as of lesser importance and behind the times. Strangers were imported, and they built according to the traditions of their own countries—a good tradition where it belonged, but as far as South African architecture was concerned an exotic absurdity.

"Practically all buildings—dwelling houses, schools, public buildings, etc.—which were built during the first thirty years after 1902 are imitations of foreign buildings, without relationship to or link with the tradition, history or mode of living of the South African people.

"Only now is the South African beginning to think of tradition with relation to art. Everywhere art and culture societies are being formed and we are made conscious of the difference between foreign and indigenous. Slowly we begin to realise that we are very poor in genuine indigenous architecture.

"However, with study and persistence, it is possible to pick up the threads and go ahead and develop according to the principles laid down by the first colonists at the Cape and the Voortrekkers in the Free State and Transvaal."

One is surprised to read such dogmatic statements as these. As far back as 1890 Cecil Rhodes and Herbert Baker set to work to preserve the historic homesteads at the Cape, which were rapidly disappearing or falling into decay. At the same time we find some most interesting work being carried out by Dutch and English

architects in the Free State and the Transvaal, work which reflects the finest traditions then prevalent in Europe. Immediately after the Anglo-Boer War, Herbert Baker came to the Transvaal, and it was due to his influence that many industries, such as brick and tile making, were commenced. He first appreciated the beautiful colourings of our kopje stone and explored the possibilities of utilising indigenous materials to the fullest extent. It was almost entirely due to him and his partners that a fine tradition in domestic architecture was begun. Not only did he closely follow the tradition established at the Cape, but he went further afield and studied the domestic architecture in those countries with similar climatic conditions to our own, and from which the so called Spanish Mission style itself originated.

The tradition he established has been faithfully carried on by many brilliant South African architects, such as V. S. Rees Poole, Gordon Leith and the late J. M. Solomon, who were closely associated with him in his work and who owe much to him. To say, therefore, that "no national architecture was brought about for years" can hardly be substantiated.

The young South African architect to-day is keeping abreast of the times and is working on strictly logical and scientific lines in the planning of the home. Art has no boundaries, fortunately, and each generation, it is said, gets the architecture which it deserves. The contemporary home is the result of intense research and investigation on the part of the architect who does not hesitate to draw upon all sources for inspiration and adapt them to local conditions and requirements, just as the early architects of the Cape have done.

The book is illustrated with sketches and diagrams, chiefly by the author. One notices slight inaccuracies in the latter, but these will, no doubt, be corrected in later editions.

G.E.P.

THE INFLUENCE OF ENVIRONMENT ON THE ARCHITECTURE OF EGYPT AND MESOPOTAMIA ● By PAUL CONNELL

In making a study of the ancient culture of any country or region, it is important not to lose sight of the circumstances of climate, geographical position, material wealth, sources of raw materials and the defensibility of the frontiers of the region being examined. The environment of the inhabitants is made evident in their social life, their religion and their individual wealth.

The race of people holding power in a land is also of paramount importance, as the characteristics of this race will make themselves felt in the art of the country.

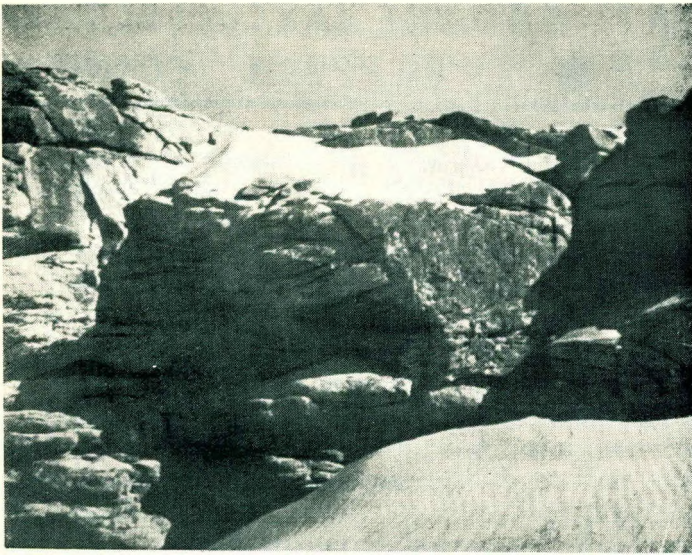
As far as concerns the ancient art and architecture of a country, the style in which the work is carried out, and also the state of preservation in which it is found to-day, largely depends on the climate and the raw material used. For instance, in a cold country, such as England, the remains of buildings in stone, flint and oak are to be found, since these materials were in great profusion and comparatively easy to get at. In a Western European climate the chief characteristic of buildings is their suitability for protection against wind, rain and cold, and their ability to make the best use of the small number of hours of sunshine per year, which is experienced in those lands. Hence the early buildings were always solid in construction, and generally possessed large openings in the walls for the admission of sunlight into the interior. Similarly, in a more northerly climate, such as that of Scandinavia, the buildings were erected chiefly of wood, which was obtainable from the pine forests which covered the lower slopes of the mountains, having steep roofs in order to allow snow to slide off when thawing, small eaves and wide windows to admit a maximum of sunlight. Again, in England, a comparatively flat country in which transport was simple, primitive life was tribal, small groups of people being banded together in villages, which were usually fortified against enemy tribes. This flatness of the country explains the large numbers of early British and Roman camps which are found on nearly all

elevated parts of the country. In Scandinavia the need for fortified posts is nullified by the fact that enormous ranges of mountains split up the country, and the life of the early and later inhabitants has been either pastoral or piscatorial, rather than feudal and military.

In studying the art and architecture of Egypt and the Middle East, it would be as well to compare their geographical situations and the nature of the countries themselves, before actually going on to speak about the life of the people in the period under discussion.

Taking Egypt first, it is seen in the accompanying map that this is a country decidedly of desert or barren formation, having protection in the west by the impassable Sahara Desert and in the east by, first, the Red Sea, then a comparatively steep escarpment, with a plain only a few miles wide between the sea and the mountains. This escarpment starts to the east of Cairo, with a branch forming the difficult Sinai Peninsula, and extends as far as the modern country of Somaliland, leaving only the strip of low-lying country, through which the Suez Canal now flows, as a possible gateway for a large body of armed men. The east coastal escarpment gradually slopes away westwards towards the banks of the Nile, which river appears to have worn away a considerable valley, 1,500-2,000 feet lower than the hills on the east or the plateau on the west. To the south, Egypt is guarded from invasion by large numbers by the plateau of Ethiopia and the impenetrable swamps and forests forming the Great Lakes and the sources of the Nile. To the north lies the Mediterranean, also an effective natural barrier to attack by any but small numbers of men.

Thus we have a land, guarded on all sides by a series of very effective natural frontiers, with only the Suez gap left over, forming a natural gateway. It is through this gap that the original settlers in the land came. They were probably Hemitic, who, while passing through a barren area during their shifting westwards, found the fertile Nile valley and settled there,



Rock Wall in the Sahara

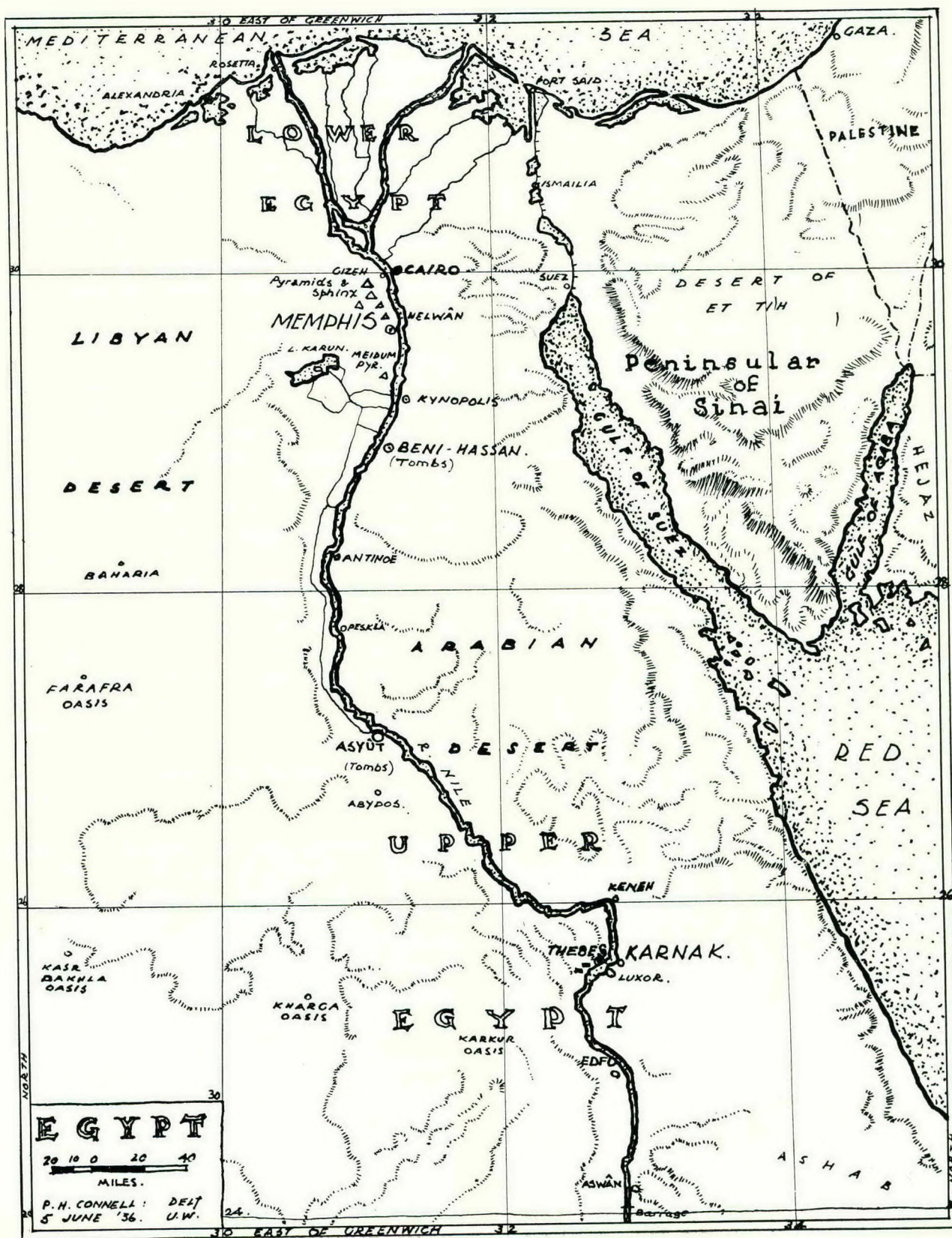
In 5,000 B.C. they were already highly civilised. The alluvial mud brought by the Nile is rich, and crops grow easily in it, provided there is enough water. Normally the Nile floods once a year, and failure of the Central African rains caused very grave distress amongst the early Egyptians. The effective strip of cultivation was 500 miles long by three miles wide. The earliest settlers lived in Lower Egypt, i.e., the Nile delta, which is extremely rich for cultivation, near the sea, and near enough to the Suez gap to permit of easy defence.

In considering Mesopotamia, we have a rather different state of affairs. The civilisation of ancient Mesopotamia is probably as old as that of ancient Egypt. It is very likely that some of the Hemitic peoples decided to settle in the plain of the Euphrates, while others of their brethren pushed on to Egypt and Europe.

Like the Nile Valley, Mesopotamia consists of a flat alluvial plain, hemmed on all sides by natural frontiers. Unlike the Nile, however, the plain of the Euphrates varies from 200-300 miles in width, instead of about 50. In the east it is flanked by the rugged mountain barrier, which had the disadvantage of enabling Persians or other races to muster in strength to conduct raids into the plains, and, moreover, was not easy to defend by a race of plainsmen. It served its purpose in preventing a mass influx by any race until after the decline of the

Babylonian civilisation. To the north lie the mountains of Asia Minor, which cut Mesopotamia off from Europe. To the south lies the Persian Gulf and to the west the deserts of Syria, Nefud, Nejd and Arabia. A desert is an ideal form of natural frontier, as, owing to lack of water, it effectively stops mass raids or invasions by soldiers, but permits of small bodies of men, such as caravans, passing to and fro for reasons of trade. It is probably this reason that caused Mesopotamia to become so fabulously rich. A glance at the map will show how, at the different periods in the history of both Egypt and Mesopotamia, there was a Middle East city directly on the trade route from the then capital of Egypt to Central Asia or India. Thus the early towns of Chaldea were able to exact duties upon merchandise, spices, etc., proceeding from Asia to Memphis. Furthermore, there is a series of waterholes along the line Baghdad-Damascus, which would no doubt have assisted traders from Babylon to Thebes.

As far as we know, Egypt was the first land in which an organised civilisation occurred. This was first shown in such things as the domestication of animals, cultivation of crops, use of irrigation and the erection of permanent dwellings. In other words, the life of a settler and agrarian rather than that of a nomad and hunter. The population in 4000 B.C. was about 5,000,000. Tribal or village life and politics developed into provincial and finally into State life. The King, or Pharaoh, was supreme monarch, with power of life and death, and absolute control over all subjects. The earliest dated civilisation is known as the Ancient Empire and stretched roughly from 3400-2160 B.C. The capital of this empire was Memphis, a few miles south of Cairo. This kingdom was directly descended from the earlier settlements of Hemitic peoples in Lower Egypt. The greatest monuments handed down to us from this period are the Pyramids, of which there are about one hundred. The most famous are those of Cheops (the Great Pyramid), Chephren and Mycerinus, at Gizeh. They were tombs in which they placed the bodies of kings. Their function was to provide a structure strong enough to keep the royal body from sacrilege and pillage until the day of its resurrection. In this purpose they have failed, having been broken into by Arabi, for the gold which covered the ornaments and effigies in the tombs,



and by archaeologists, who came to probe the deeper and more subtle secrets which they contained. The erection of these monuments was on a stupendous scale, an example of which may be given by saying that the Pyramid of Cheops contains 3,500,000 cubic yards of material. The absolute power of the Pharaohs at this time, and the presence of a large number of slaves, made this feat possible. Sandstone, in blocks, accurately cut and fitted, was used in the construction of the building. The whole was covered with red granite and polished. This granite had to be fetched from the neighbourhood of Aswân, so some idea of the stupendous amount of work involved may be gathered.

In the Middle Empire, 2160-1788 B.C., the Pharaoh was absolute head of all matters of religion. It was in this time that the temples at Karnak were built. The fundamental plan of an Egyptian temple consists of an open court, into which the public were allowed, then a hypostyle hall, which was lit indirectly, either by clerestory windows or by some other means. After the bright sunlight of the court, the dim light of this hall gave a mysterious impression, and no doubt filled the worshippers with awe. Lastly, there was a small chamber at the back, known as the sanctuary, to which only the King and priests had admission. Thus the social position of the Pharaoh had a very definite effect on the general arrangement of the temple.

In this period the capital of Egypt moved from Memphis, in Lower, to Thebes, in Upper

Egypt. This was due to the fact that there became a radical change in the Pharaoh's power. After the Fourth Dynasty (2900 B.C.) the King no longer held the offices of sovereign and vizier, but the viziership was given to an influential or distinguished subject. This led to rivalry between the great nobles, and by 2625 Egypt had degenerated into a series of feudal states, all at war with one another.

The royal family of the Eighth Dynasty was unable to keep its states in order, and open war broke out between rival barons. Later on Egypt seems to have developed into a republic, and there are records of a social upheaval only comparable to the Russian Revolution of 1917. Out of all this disorganisation a powerful noble family was eventually able to found the Ninth Dynasty and assume the title of Pharaoh. The headquarters of this family was Thebes. This explains the movement of the capital to a position so far distant from the original in a comparatively short time. Later on, at the end of the Middle Empire, Lower Egypt became overrun by Asiatics, who finally conquered the whole of the country and put a temporary stop to the line of Pharaohs.

In 1588 B.C. the New Empire was founded, in which the old line of kings once more came into power. A decadent period set in in 1150 B.C. and lasted till 324 B.C., when the country was finally overcome by the Persians. In the latter half of this decadent period there was a revival of the Ancient and Middle Empire arts, under



Temple of Philae



Temple of Kom-ombo

the Ptolemies, of which we have many examples to-day. The temple at Edfou is a well-known example. The religion apparently remained the same at this late date as it was in the early days. The most characteristic feature in Egyptian architecture is the lintel. This was the obvious method of covering an opening in a wall, as stone was to be had in large quantities. The flat roof was employed, as there was very little rainfall and a large percentage of sunshine. Some of these roofs, supported by columns, covered an enormous area.

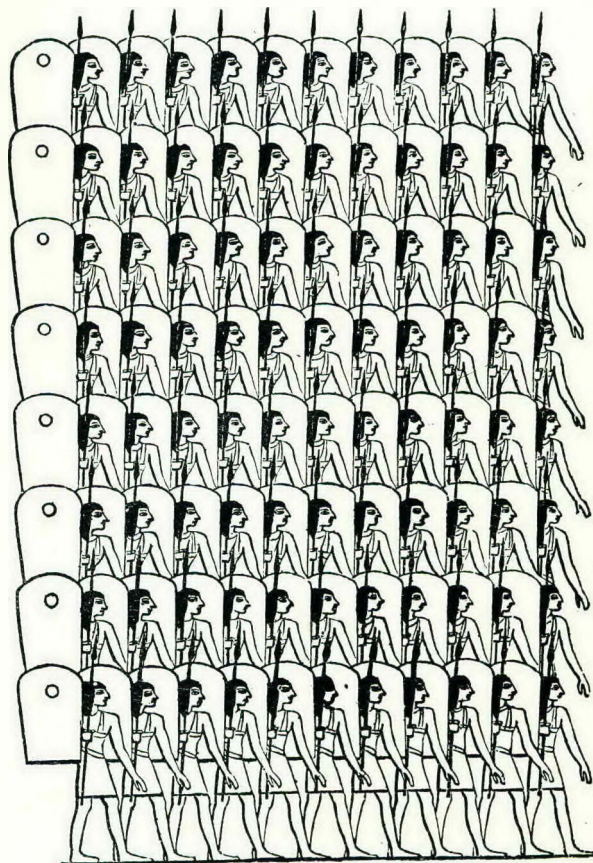
The art of Egypt was very standardised in content, this mainly being due to the fact that the sculpture and drawing had to do with religion and the after-life, all of which affairs were regulated by the King. The Egyptians had a technical skill which is still unsurpassed. Their drawings were all flat, perspective not being used for æsthetic reasons. As regards sculpture, the materials used were acacia and sycamore, woods which were to be had in the Nile Valley; limestone, sandstone, red granite (used for sphinxes, obelisks and colossi) and alabaster. From the Arabian Desert Mountains basalt, diorite, red porphyry and copper were obtainable. All statues in hard stone were polished with crushed sandstone and emery.

In Mesopotamia rock was very difficult to find, but owing to the floods which frequently occurred in the Tigris-Euphrates valley clay was obtainable, and brick became the chief medium of building. The earliest civilisation was that of Chaldea, of which Ur was the capital. The surrounding land being quite flat, the important buildings, such as palaces, etc., were built on an artificial mound made of brick and faced with hard bricks. These mounds served the dual purpose of emphasising the King's palace and of providing effective defence against enemies.

The other kingdom in Mesopotamia was Assyria. Chaldea and Assyria alternated between peace and fighting each other. One state would be vassal at one time and sovereign a few years afterwards. The people, fighting continually, never developed the peaceful civilisation of Egypt and the consequent perfection in art resultant on years of interior peace. Their art was crude in conception and garish in execution, mainly depicting battle, murder and

sudden death. They appeared to take a delight in portraying hunting scenes with the dying animals emitting their final groan, and bleeding rapidly to death.

The chief architectural feature of the Assyrian period (150-606 B.C.) was the palace. A fine example exists at Khorsabad. Owing to the lack of stone for columns or wood for beams, the chief material was brick. The palace consisted of a series of long corridors, comparatively small living rooms and a large number of open courts. There were three main courts: the King's Court, the Harim Court and the Service Court. The vault is the probable hall-covering, and circular arches were used for doorways. The walls were immensely thick, and there were no windows, due to the terrific heat of the sun. The doors were relied on to provide sufficient light for the interior of the room.



Egyptian Heavy Armed Troops

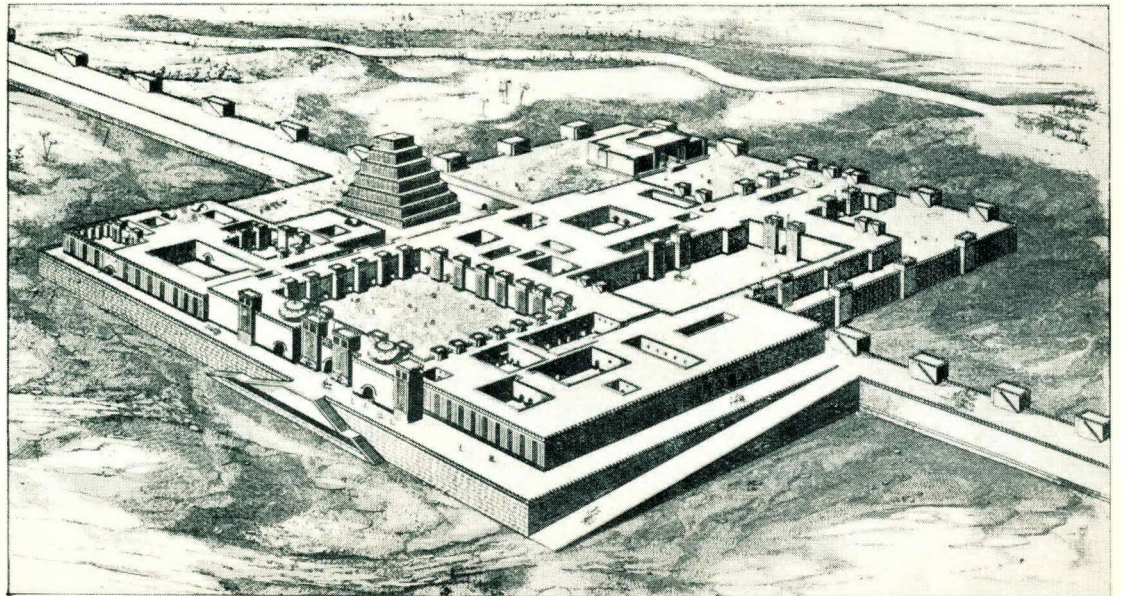
The Assyrians were great astronomers and pursued an intense study of the heavens. Hence, in most Assyrian palaces, there was an observatory. This usually took the form of a ziggurat, or stepped pyramid, and formed an integral part of the palace building.

A very noticeable feature of Assyrian sculpture was the winged human-headed bull, which creature was often portrayed as guarding entrance doorways, and, in fact, holding up the arch. These appear to have had a religious significance, as they are nearly all of a pattern.

As regards interior decoration, walls were faced with burnt brick, covered with enamel or alabaster slabs to a height of eight feet above the ground. The alabaster slabs were covered with low-relief pictures of the bloodthirsty scenes enumerated above, or of the battles or gods. Glazed tiles in colour were also used, and some very beautiful work has been found in this medium.

The whole of Assyrian art and architecture is characterised by that extravagant, rather bizarre, splendour which one associates with a somewhat unstable prosperity. This is only natural, as there was always strife internally among the states, and men who live by blood and battle usually have an inclination for royal extravagance when at home. Egypt, on the other hand, having been long a settled land, not relying for its wealth on dues levied on passing merchandise, or on waging war, had developed an art far in advance of Assyria or Chaldea, an art more pleasing, more subtle and of finer technique.

Thus we have two countries, not far apart from one another, having similar geographical positions, similar boundaries, and having been prosperous and civilised about the same time, but which have each produced a purely individual art, due entirely to the difference between the respective circumstances and the environment of their peoples.



Restoration of Palace of Sargon at Khorsabad 720 B.C.



ELSA DZIOMBA • SCULPTOR
By Kurt Jonas

Dziomba—this is not, as one might be led to believe, a programmatic pseudonym taken from the Bantu, but the Polish version of a French name. Huguenot ancestors had emigrated to the eastern provinces of Germany, had mixed with the half-German, half-Slavonic peasantry. In Elsa Dziomba, sculptor, the heritage of both sides is alive: the heavy, soil-bound repose of the peasants of the wide plains of Eastern Europe and the animated formality of the Latin races.

The art-baiting of the Third Reich forced Elsa Dziomba to emigrate. South Africa became a second homeland, and the native a new source of inspiration which has already brought forth some work that will stand as a significant contribution to South African plastic art.

Take the negro head, for instance. H.C.F., the highest common factor, it is called. And not purely by chance. When a photo of this head was shown in a native school everyone of the boys thought he recognised his neighbour. "That's you," they shouted, "no, you; no exactly like you."

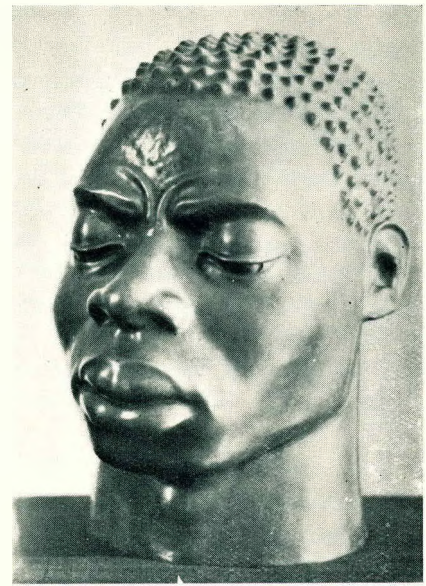
A telling story, and a true one at that. It proves more conclusively than any analysis could, that something essential has been achieved here. It is not the head of a native X (how could it be, since, of course, Dziomba had no model for it?); it is the very essence of the race, filtered and concentrated, freed of everything accidental, distilled and compact—in one head H.C.F. A very deep, very humane understanding of the native, the subject, is combined with an extremely cool artistic approach. The psychologist might trace the mixed heritage. . . .

Art, Elsa Dziomba holds, should not be cut off from its roots, elementary life. It should not be abstract in the sense of being form only. It ought to express something of the inherent qualities of the creator and something of the human meaning and significance of the object as well. But abstract it must be in the sense that it does not copy nature, but abstracts from its accidentals and accessories, until synthetic reproduction and abstract re-creation of nature and man results.

I could imagine, though I do not know, that Dziomba would but little appreciate Léger's abstract paintings. Yet the "Woman with the Red Vase" would certainly appeal to her as a perfect expression of what it is her aim too to express.

Something more could be said about the purely sculptural material quality of her work. The first thing that struck me was the solidity of it, its bodily quality. There were tendencies in modern sculpture to break away from this three-dimensional corporeality to something that one hoped would be "four dimensional." There is a straight line of development running from Rodin's serial marble over Archipenko's perforation to the kinetic plastic of Moholy-Nagy and his school. A vain attempt to break the laws of one art and transgress into the field of another. Dziomba, although trained in Berlin and Paris, is quite untouched by these tendencies. To her plastic art means the expression, by means of solids, of all that is in the artist. The less the artist encroaches on the block-like quality of his material the better. It is characteristic of this attitude that Dziomba, when working in clay, does not build up the head or figure by slowly adding to a small piece of clay, but by cutting out of a big block, as it were a block of stone. This gives to the two bronzes illustrated, the negro head and the "young girl," with its fine, restrained twisting movement, a truly sculptural quality which is seldom found in bronze-work.

Yet, to my mind, the "woman's head" marks a still further progress in the development of the artist. For here she has gone into the field of human passion and has created something truly pathetic (Greek for painful) without violating the laws of plastic expression. This, indeed, is a great achievement, for there are but few examples where the attempt to express pain, desperation to tears, utter hopelessness by purely formal means has been successful. To us the Laokoon-group, which for the late 18th century was the sum total of tragic art, is just an example of how it cannot be done. Laokoon simply expresses personal, individual pain. The



H.C.F.

tragic masks of Aeschelian tragedy express super-individual, one is almost tempted to say "collective" pain and suffering. So conventionalized are these masks of the early, the truly classic Greek period, that just their abstract conventionality, the purely formal reproduction of something extra-formal, raises them to the realm of the absolute. The "woman's head," to my mind, has the quality of these Greek masks.

It is to be hoped that an exhibition of Elsa Dziomba's work might soon give to those interested the opportunity of judging this remarkable young artist by seeing her work in its three-dimensional reality. For, unfortunately, the photo will always belie the piece of sculpture, and the more it relies on mass and not on line, that is, the more truly sculptural it is, the more it will be misrepresented by the illustration.

May I, as an attempt at a concluding judgment, state that in my opinion the illustrated pieces of sculpture belong to that class that suffers from two-dimensional reproduction—that, to put it plainly, it is good sculpture.



ELSA DZIOMBA

RATIONAL DESIGN OF STEEL BUILDING FRAMES

In connection with a paper on this subject, given by Professor J. F. Baker, M.A., D.Sc., A.M.Inst.C.E., before the Institution of Civil Engineers on Tuesday, April 21, we have received the following statement from the Institution:—

For more than thirty years the steel frame has occupied an increasingly important place in building construction. As far back as 1909 regulations were drawn up governing its use in London. These regulations contained in the London County Council (General Powers) Act, 1909, not only served as the model on which were based the Codes of Practice governing the use of steel in buildings of almost all other countries in the world, but remained in force for twenty-three years. Long before the expiration of that period the development in the manufacture of steel and the advance in the technique of steelwork made engineers feel that the regulations were unduly restrictive, and this led to the appointment of the Steel Structures Research Committee in August, 1929, having as members representatives of the Institution of Civil Engineers and of the British Steelwork Association, under the ægis of the Department of Scientific and Industrial Research.

The Committee was in existence for more than six years, and in that time it considered more than 150 reports from investigators. The first and second reports of the Committee were published in 1931 and 1934 respectively. It was found at the time of the Committee's inception that the rules governing the use of steel in buildings were so unsatisfactory that it was felt desirable, in view of the considerable period which would elapse before the results of the full research programme were available, to draw up recommendations for a Code of Practice, based on knowledge existing then, which would remove many restrictions.

The use of the design method based on the recommendations made by the Committee in their first report, which had been accepted practically unchanged by the London County Council and recommended to local authorities by the Ministry of Health, in addition to being embodied in the British Standard Specification No. 449, issued in April, 1932, by the British

Standards Institution, has resulted in the production of safe structures. This was due, in the main, to the assumption of values for the superimposed loads which were greater than those actually applied in the structure. The main problem facing the Steel Structures Research Committee was to produce a method of design having a rational basis, taking into account that with greater knowledge there would be opportunities of making further economies in material.

Professor J. F. Baker, in his paper, gave an outline of the Committee's work, so as to assist the engineer wishing to appreciate the complete investigations before studying the details contained in the two reports already published, and in the final report to be published shortly.

Although, he said, strange as it might seem, there was no information of any value as to the real behaviour of framed structures, the contradictory assumptions made in design had drawn attention to the beam-to-stanchion connections. One of the first tasks put in hand, therefore, was a laboratory investigation of their behaviour by Professor C. Batho, of Birmingham University. At the same time, an experimental steel framework was erected at the Building Research Station at Watford, which consisted of six stanchions, the bases of which were bolted down to a concrete raft, and of twenty-one beams, all 8 in. by 4 in. by 18 lbs. steel joists. The stress distribution was found by measuring the strains at a number of sections of the members, and this was done by the Maihak extensometer. "This instrument consists of a central receiver and a number of gauges, the essential part of each gauge being a 12-centimetre length of high-tensile steel wire, stretched between two knife edges which are clamped to the member under test. A small electro-magnet fixed above the gauge wire is connected to the central receiver. By pressing the morse-key in the receiver the gauge-wire is caused to vibrate and the note is heard in a pair of headphones. A standard wire, similar to the gauge-wire, is contained in the receiver, and by adjusting the tension in the standard wire until the two notes are the same, a measure of the tension in the gauge-wire is obtained from the reading of the graduated head of the micrometer adjustment."

While the work on the experimental frame was of great value, it was realised that different conditions might exist in actual full-scale frames, and the Committee were most fortunate in having the steel framework of the Museum of Practical Geology in South Kensington placed at its disposal by H.M. Office of Works. This enabled them to obtain access to a framework which was completed before any clothing was added. The frame of the Geological Museum was of five stories, part of it consisting of a series of galleries around a central well. Sixty-four gauges were attached to sixteen sections of the stanchions and beams. The measurements of the strain when load was applied to the framework, and the reduction of the observations were, for this particular building, in the hands of Dr. Oscar Faber, and a full report of the work had already been issued. Early in 1933, by the courtesy of Messrs. Dorman, Long and Co., access was obtained to an hotel building which was then in the early stages of construction. This enabled tests to be carried out on two parts of the frame, but as the structure was being erected under ordinary commercial conditions only a short time was available for each test. The tests on this building gave such valuable data that it was considered desirable to carry out further work on a building of a slightly different type, and the Committee were fortunate in being able to find the type of building required in an office block. Further tests were also carried out on the light steel framework of a block of residential flats, when the observations were confined to the beams.

A true assessment of the dependability of the observations was a matter of the first importance in work of this kind, where the actual behaviour of a structure was being determined. Great attention was accordingly paid to this. The three buildings tested behaved normally under load, in that appreciable restraining moments were developed at the ends of the beams, with corresponding bending moments in the stanchion-lengths. It was found that the method of stress-analysis developed could be made to give a reliable estimate of the stresses in a frame even when it was clothed. Information was obtained concerning the behaviour of bare and cased connections, the partition of moment between stanchion lengths, the effect of floors and of stanchion-casing and walls, etc. At the same time a detailed investigation of the behaviour of typical beam-to-stanchion connec-

tions was made in the Civil Engineering Laboratory of Birmingham University by Professor C. Batho.

The more important points brought out by the experimental investigations could be summarised as follows:—

(a) Standard types of riveted and bolted beam-to-stanchion connections are capable of transmitting large bending moments, with the result that appreciable restraining moments are developed at the ends of a loaded beam in a steel-framed building. The connections themselves may be treated as units, and the relatively large stresses developed in them by the moments are not a source of danger.

(b) Although there was some variation due to workmanship in the behaviour of connections made to the same design, it was possible to set out a lower-limit curve for each type of connection, enabling a safe estimate of the restraining moment to be made.

(c) The moment transmitted through a connection from a loaded beam develops bending moments in the stanchion which are many times greater than those taken into account to-day.

(d) The bending moments developed in a stanchion due to load applied to a beam are appreciable, not only in the stanchion-lengths to which the beam is attached but also in those more remote.

(e) The ratio of maximum bending moments in the stanchion-lengths above and below a loaded beam can be very different from that of the stiffnesses of the stanchion-lengths.

(f) The addition of floors, walls and stanchion-casing to a frame does not bring about any fundamental change in the behaviour of the frame.

(g) Concrete casing can increase the rigidity of connection appreciably in the working range.

(h) The presence of clothing decreases the maximum stresses in the steel beams of a frame, but it may increase the bending stresses in the steel cores of the stanchions.

(i) The methods of stress-analysis developed could be depended upon to give a true picture of the distribution of stress in the steelwork of a frame even when it was clothed.

The Steel Structures Research Committee had endeavoured to produce a method of design which, while simple enough to be applied in ordinary practice, was based on an accurate estimate of conditions in the structure. The Committee's object would not have been

attained if the final method for proportioning a stanchion, however sound its basis, was too complex to be used conveniently in the design office.

A number of practising engineers were good enough to give the First Simplified Method worked out a trial in their offices. They were, however, of the opinion that while designers had no difficulty in applying the method, the time taken in proportioning a stanchion was prohibitive. To produce a method acceptable to the designer, further simplification was necessary. It was fortunately found possible, without any serious sacrifice of economy, to prepare one set of curves giving the permissible end bending stress which would ensure safety, whether bending was in "single" or "double" curvature.

There was no doubt that the investigations had added much to the store of knowledge of the behaviour of steel structures. Means were now available for basing the design of a steel building-frame on the true behaviour of the structure under the loads which it was its function to sustain. The method put into the hands of the designer a powerful weapon enabling him to attack any problem with a confidence which he could not have when using existing methods.

From "The Builder," London

Professional Notes and News.

Mr. G. F. C. Stegman, A.R.I.B.A., M.I.A., has commenced practice at 11, Tudor Chambers, Church Street, Pretoria, Phone 5995; 6, McRobbs' Building, Market Avenue, Vereeniging, Phone 30; and Exchange Buildings, Klerksdorp, Phone 247. Trade catalogues will be appreciated.

The firm of Messrs. Rhodes-Harrison and Fyvie, architects, has opened an office at No. 63, Fourth Floor, Prudential Assurance Building, Fox Street, Johannesburg.

The firm of Tucker-Bruce (Gordon Tucker and Robert Bruce) will remove their offices to 61-62, Stanley House, corner Commissioner and Loveday Street, Johannesburg, as from the 1st August, 1936.

THE MARK OF THE MODERN SHOP

View of one of the Jaeger showrooms in Regent Street, London, showing aluminium doors to wall fixtures. Designed by Mr. & Mrs. J. Duncan Miller and carried out by Cookes (Finsbury) Ltd



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