man-made johannesburg

SOUTH AFRICAN ARCHITECTURAL RECORD

JANUARY 1952

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FOREWORD:

This Exhibition, sponsored by architects and organised by students of architecture, comes at a timely moment in the development of Johannesburg. The growth of the city—the heart of a great metropolitan area—has been a startling phenomenon, even in a country inured to the unexpected and the unique. That remarkable growth, spanning as it has done only a short period of years, has, nevertheless, not been an even or a consistent one. Indeed, sporadic intensive periods of building have, throughout its history, alternated with comparatively long periods of inactivity. The effects of two world wars, and of occasional widespread economic depression, largely account for the lulls which have occurred.

In addition, Johannesburg's development arises from, and has been contingent upon, the discovery and exploitation of the Witwatersrand's gold; this process, in its very nature, has undergone great fluctuations in tempo and volume. And, by some indefinable but sympathetic response, Johannesburg has taken on the quality, the very characteristics, of a city of booms and depressions, of hurried inflation and apathetic deflation. So it is that we have become accustomed in Johannesburg to the hectic moments of inordinate, if not always wise, growth, and the duller periods, when thought for the future should be given, but seldom is.

It is, therefore, appropriate to call this Exhibition timely. We are, at this time, witnessing an astonishing transformation of the Johannesburg scene. The rebuilding of many areas of the city, including its centre, is being embarked upon on a vast scale. In this undertaking, we find that the pattern of the past, modified, it is true, by the overall planning which has taken place in recent years, has left an indelible imprint. The resulting effect is a mixed one. The town planning, to which I have referred, is, for the most part and in the circumstances of Johannesburg's growth, negative in character. No great conception, such as distinguishes the finer examples of planned cities, underlies the statutory scheme for Johannesburg. No boulevards, no monumental approaches, no interweaving parks, no city squares are to be found here. We are confronted, rather, with solid masses of building, thinning out (and not too gradually at that) to the suburbs and industrial townships.

If, then, the city's town planning is unable to contribute in any substantial measure to its form and aspect, it is apparent that the visual accent is inevitably thrown onto its buildings. The public buildings, the commercial and business houses and institutions, the schools and churches, the factories and the homes of the people, together make up the total effect of the city; the degree of its attractiveness and liveableness is determined by the success or failure of those buildings. The Exhibition, "Man-Made Johannesburg," depicts the architectural resources of the city; it points to most of the good and some of the bad of the past, and indicates by so doing the direction towards which future building should move. It is for the architects of this city to visualize that future and to give expression to their vision. The Exhibition is aimed, too, and perhaps essentially, at bringing about a greater appreciation by its citizens of the architecture of their city, a greater awareness of the part that architecture plays in their lives and an understanding of the problems and aspirations of those to whom the task of building is entrusted. In this endeavour, the sponsors and organizers of the Exhibition have my best wishes, and I pay tribute to the initiative and energy displayed by all responsible for its presentation.

N. L. HANSON.

SYMPOSIUM:

NOTES FOR AN ADDRESS ON MAN-MADE JOHANNESBURG

N. L. HANSON, B.Arch., A.R.I.B.A., M.I.A

In the foundation of Johannesburg, the great city of to-day was clearly not envisaged — which is, of course, not a unique occurrence in the history of cities. Its mining camp origins gave a compactness and an oversimplicity to the first organized layout, which has left a permanent mark. The re-building which has taken place over the years has not meant a re-layout. On the contrary it has invariably led to overbuilding on existing sub-divisions and frequently to the building over of such open spaces as were originally included.

The character of the city's building has emanated from the fact that Johannesburg has always been a fortune-hunter's paradise and graveyard. In the early days this character led to the building of substantial 'magnates' homes and congested blocks of cottages, the latter to deteriorate to slums at a later date. In those times, building resources did not exist, so that 'houses' were imported in the form, basically, of corrugated iron, to which was added all the paraphernalia of the Victorian cast-iron age. By historical coincidence, the crude street pattern was in line with its contemporary American grid-iron (also redolent of the pioneer stage) which partly accounts for the affinity often noted by visitors.

The foundation of the city on gold has left an indelible stamp. Firstly, in the mines and their dumps penetrating and dividing the city; and, secondly, in the varied manifestations of rapid industrialisation during the first half of this century — a delayed Industrial Revolution in fact.

In parenthesis, it is to be noted that the tradition of the single detached dwelling was born in those expansive days. Johannesburg, however, missed the typical more leisurely growth of the towns of the Transvaal Republic, in their beginnings made spacious and therefore adaptable.

Post-Boer War British rule quickly gave practical and symbolic expression to British capital investment. Western European sophistication in the form of 'Milner's Kindergarten' (that group of brilliant imperially-minded administrators and professional men) was imported into the Transvaal. With it, Johannesburg received modern city government and an urban (and urbane) architecture. The noted architect Baker gave us his wide range of buildings — clubs, magnates' houses, official residences, public buildings, culminating in the seat of national government itself. A building industry was established, and the seeds of architectural tradition and education sown. This Indian Summer of imperialism (as I have called it elsewhere) lasted well into the twentieth century.

Only after the First World War were changes discernible. Expansion on the Witwatersrand, allied to general wartime and post-war industrial expansion, clothed Johannesburg with its metropolitan character, and ensured the permanency of development, however sporadic and unpredictable it turned out to be.

Architects turned vaguely to Europe at that time, but the hazy state of world architecture brought little to inspire or imitate. The last throes of the 'battle of the styles' were reflected, rather sadly, here. The Baker tradition, with all its merit, was similarly in its death throes. Tradition, however, had a tenuous hold, and what there was, was ripe for the discard.

In this climate, the first fully organized school of architecture started at the University of the Witwatersrand. Almost simultaneously, the repercussions of the contemporary movement in architecture began to be felt throughout the Western world, including South Africa. It was not long before the first students were aware of changes and participated in bringing them about here.

Johannesburg, considered as a whole, was now linked to its urban satellites to the East and West, and spread North and South over the justly famed ridges. Expansion to the South was industrial, to the North residential, with the result that, for the most part, working class suburbs, townships and locations and slums were established to the South, while the broad suburban development took place to the North. On this basis, the growth of modern Johannesburg has taken place.

Up to this stage conscious architecture was to be found only in the work of a small group of architects, chiefly in that of Baker and his school (Sloper, Leith, Pearse, Solomon, Marshall, Porter, Rees-Poole, etc.). The latter work represented, in reality, a direct importation ingeniously and sympathetically adapted to Highveld conditions and available and improvised techniques; but it was rooted in the past and truly traditional and conservative. The influence of the work of this generation, though leaving its historical impress, was, for the moment, entirely swept away in the spate of new buildings of a new purpose and character; flats, factories, office blocks, housing schemes, all on a much greater scale, replaced the individualism and academic preciousness of the traditional school. The engineering of buildings as a function apart from their architectural design, entered the picture, and, in truth, has dominated it ever since.

The Building Industry, until very recent years, has been orientated towards the traditional past, and has been slow to absorb technical departures and adapt itself to them. Although recognition is tardy, changes have indeed taken place in the organisation of the Industry, but we are still in a transitional stage, during which the technique of building lags well behind that of design knowledge and ability.

Johannesburg, almost alone in South Africa, entered into the contemporary movement in architecture — which means, in effect, that a small number of younger architects responded enthusiastically and expounded the principles, and, as occasion offered, 'inflicted' their experimental buildings on a somewhat reluctant public. Unadorned functionalism, ambitious in its search for new techniques and new aesthetic values, conveys the general approach of the group. In spite of a somewhat slow public and professional reaction, the basis, the prototypes, for a new decade in architecture, were evolved. Typical of Johannesburg, the little America, the vocabulary of this new architectural expression was commercialised, debased and misapplied. Nevertheless, the appearance of the city was transformed.

For better or for worse, the architectural resources built up over the decade 1930-'40 have proved to be those available for the new transformation of Johannesburg currently under way. The School of Architecture of the University of the Witwatersrand has, for the most part, produced the architects, and the development of the School is the history of the architecture of Johannesburg, of course, with the appropriate time-lag between study and practice.

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Thus we have a city heavily built up and being built up in the pattern of the original early mining town, a pattern carrying a load of building never envisaged; and, as far as the centre and the central periphery are concerned, creating corridor streets, themselves overloaded with mobile and immobile traffic. On the other hand, the metropolitan spread — industrial and residential — has dispersed the city over a very large area. The city thus builds up, in the traditional American fashion, from low widespread buildings (sometimes compact as in the Native locations, but always low) to the cliff-like centre and near centre of tall buildings and narrow streets (always remembering that the American analogy is relative, with a great stepping down in scale).

Of the centre, the words of Christopher Tunnard describing a typical American city may be quoted: "Within the city the ground plan is immediately recognized. Nothing is accidental, few streets will run askew. Dissatisfied with familiarity, we look up and here the skyline, which Le Corbusier and Thomas Sharp consider so important in any city, transforms the view. A broken line, blank side-walls, windowless in anticipation of a neighbour . . . huge signs on steel frames . . . At night, the tall buildings of the central city glitter with electricity, the rhythm changing as late workers leave and the cleaners move from floor to floor. These accidental views are a source of pleasure".

In Johannesburg, the drama is not heightened by juxtaposition of water — harbour or river or lake — or a natural setting of beauty; but the 'mine-dumps' are not to be despised in their enhancement of the scene, nor are the ridges, with their well-planted undulating slopes articulating the landscape. Architecturally, the city is still one of incongruous effect. Small and tall, Victorian and Modern, jostle one another in the innumerable narrow-fronted buildings, typical of the exuberant sub-division of the original town.

It is disappointing to record that the prevailing architectural quality of the new is often mediocre. It is in the nature of our cycles of building — developing quickly and proceeding feverishly — that superficialities and mannerisms, early acquired and retailed, prevail.

Maximum exploitation of small sites leads to the disease of 'Facadism' — accompanied by standardised planning, a plague of light areas and yards, ill-considered and ugly utilitarian backs and sides (waiting for the development mentioned by Tunnard). 'Facadism', at its worst, brings a rash of clichés, overworked motifs and meaningless 'applique' work, no different in kind from the too easily despised 19th Century buildings.

But the average building is of a more pleasing order, even though few buildings constitute architecture in the true meaning of the word. Sameness of demand, overall exigencies of investment and return, have produced a "typical and anonymous architecture"; not lacking grandeur and impressiveness in the mass, but, contrary to architects' express endeavours, losing identity and individuality in the process. Yet it is possible that the modern town, the industrial town, arising out of our present social and economic order, must inevitably take on the form of a "typical and anonymous architecture". Especially is this true of Johannesburg, where

buildings merge visually into one another along the corridor streets, with few open spaces to lend distance to the view.

Two trends are to be noted and encouraged, firstly, the increase in the scale of buildings. More and more buildings, covering whole blocks or large portions of blocks, are being built or projected, and, secondly, an increasing attention to the detail elements composing the building.

The first trend is in keeping with the development of modern technology, though on a microscopic scale in South Africa. It leads, however slowly, to the architecture of "continuous enclosure", the achievement of which becomes possible through man's increasing "control of environment" by mechanical means. I do not refer, of course, to the type of "continuous enclosure" which is rapidly coming about in our Hillbrow, where the provision of sun and air and view is designed and rationed by bye-law and regulation. The larger building unit or building complex should add much to the appearance and amenity of the city.

The philosophic base of the second trend — the added importance given to the architectural quality of the unit in building — may perhaps be found in the words of Gerhard Kallmann, writing of "Man-made America". He says "The demands of a mass society and the stratagem of standardisation as a condition of mass production cannot but lead in the direction of a typical and anonymous architecture. Whether it be the dispersed mass produced unit or the multiple organisation of large horizontal or vertical enclosure it is built of typical elements, in repeat rhythms. Design expression has retreated to important and unique articulations in focal areas. Here a juxtaposition of open and enclosed space of repetitive background and specific architectural object, of plant form, sculpture, floor patterns, may serve to dramatise the community occasion rather than the private moment".

He continues "However, at this stage, there are still attempts to incorporate individual expressiveness in large and frankly multiple elements. All too often the established order — which after all is the humanising act of design — is whittled down through complexity, ornamentation, over-texturing, in the name of humanisation" — a view to which I do not entirely subscribe, as we cannot so detach ourselves from the society in which we have our being.

And I wonder what Howard Roark (of "The Fountainhead" fame) would say of the dictum of Mies van der Rohe. "Greatness is not to express oneself but to do what history demands that it should be done at a given moment."

However, the repetition of design elements is becoming thoroughly characteristic of our street architecture. It leads, I think, to a distinctive civic character and offsets the worst effects of the total lack of a town plan. These words do not excuse the banality, copyism and distortion which are only too common in new buildings in this city.

The individual house still has a dominating place in the South African city, and this applies to the dwellings of the privileged as well as those built collectively for lower paid Europeans and Non-Europeans. The place of the individual house in modern architecture is somewhat scathingly dismissed by Kallmann, when he says:— "Although very handsome solutions for individualistic privileged dwellings have claimed perhaps more than their share of design effort and publicity, they are now of interest only as design experiment for more important problems". He quotes Chermayeff: "I believe that anybody who at this moment provides the simple thing called 'shelter' and who makes this a monument to himself is actually betraying the profession, because he is creating individual monuments at the expense of urban society as a whole . . . which puts paid to a great part of our practices! For myself, I attach little importance to the architectural significance of individual house design in our garden suburbs. These parts of the city will look after themselves.

a pattern carrying a load of building never envisaged . .
Photo: "Skyphotos"

Our *housing schemes*, however, especially Native housing schemes, call for the intervention of architects; the architects' design capacity and inventiveness in building method should be put to work in this field. You will know that architects in private practice and in the service of Local Authorities have done much in National Housing. But there has been no continuous application to the problem. First signs of awakening may be seen in the work of the Building Research Institute in the schemes prepared for Witbank and Springs Municipalities, in which integration of building and site, and a high standard standard in the planning of bath, are attempted.

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The architectural future, then, springs directly from the historical past and the resources built up in the past and now available to the public. Public support is needed for an improvement in the quality of the architecture for this, in no small part, is a question of economics. And public support is dependent upon the growth of a civic pride.

Civic pride usually springs from planning conceived on a grand scale. This we lack, unfortunately. But a few chances remain to us. Prof. Fassler will draw attention to our greatest opportunity in the re-development of the Kazerne area. Another I see in the building of the great station complex, which in its scale and function is to me a highly imaginative undertaking and one likely to develop the "pride and pleasure in civic form" which I have called for.

And then an answer must be found to the intensive building up and over-building of the city's centre and near-centre. The mobility factor — an increase in the speed and spread with which the city's population moves — seems to provide a partial answer, even though one of expecting only. The better and easier accommodation and movement of traffic I would place as a top priority and I would add to that the immediate planning and landscaping of the areas surrounding the city.

Clearly, we have to deal with a multiplicity of responsibilities and authorities. Co-ordination of effort on a metropolitan scale is needed to make this city not merely workable in the physical sense, but also an environment worthy of civilised life, in which cultural and aesthetic and spiritual values have their proper place. Architects have a notable part in this creative and regenerative task. I hope that they will rise to their opportunity.

SOME ASPECTS OF THE FUTURE PLANNING OF JOHANNESBURG

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Town planning has two important aspects. There is the technical, legal and administrative side of the subject on the one hand, and the emotional responses of human beings to the visual scene which is created, on the other. The latter may be expressed in another way by saying that people are very susceptible to the atmosphere of cities, their fondness or dislike of them, and their recollections are conditioned by a number of factors. This evening I propose to take a holiday from technics, law and administration, to concentrate instead on the emotional responses to which I have referred. Perhaps by following this path we may encounter some ideas, which will contribute to the future planning of Johannesburg.

There are five principal factors which help to form character, and consequently the impressions cities are capable of evoking. Historical associations are important; then there is the question of convenience, the condition and character of the inhabitants, the presence or absence of fine townscapes, and lastly the standard of city furnishings. Let me explain what I have in mind by discussing each in turn.

Cities which have long historical associations are also potentially rich in atmosphere. London is an example. The history of the development of England from Roman times is built into its fabric. It seems only yesterday that it was severely scarred during the Battle of Britain. This calamity, which fortunately ended happily, added a new and brilliant chapter to its remarkable record. London's richness of atmosphere derives from the innumerable buildings which are the residue of its historic past. For example, the Normans built the Tower of London. The Guildhall and Westminster Hall, both of which still provide an incomparable background and sense of spectacle on various state occasions, belong to the Middle Ages. Wren's dome of St. Pauls lifting high above the city, extolls the power and glory of the Renaissance. Charming residential squares in Bloomsbury, introduce the London of the Georgians; whilst the Houses of Parliament at Westminster recall the energy and aesthetic vacillations of the Victorian period. Further down the Thames, Waterloo Bridge and the Festival Concert Hall represent quite recent additions to the city scene.

To present a balanced picture, it must also be remembered, that London was damaged during the nineteenth and twentieth centuries by the endless tracts of industries, and monotonous rows of dreary soot blackened houses, which were permitted to accumulate in an unplanned fashion on all sides. Yet there is sufficient nobility and grandeur left in the central area, and its immediate environs, to make an enduring impression on visitors, and endear it to Londoners alike.

What has been said about the atmosphere of London is also true of Bath, the "Queen City of the West of England". It lies in a vast amphitheatre surrounded by hills of enchanting beauty. The winding Avon forms a silver thread along the valley floor. Known for the healing power of its thermal springs since Roman times, it survived the Middle Ages and blossomed as the resort of polite society during the eighteenth century. After Beau Nash, a famous master of ceremonies, and the Woods who established a fine standard of architecture in the residential crescents, which they planned and built, the cream of English Society danced in the Assembly Rooms, took the waters in the pump room, or bathed in the Roman bath. Amongst the quaint echoes of another century we find the rule, "that gentlemen of fashion never appearing in a morning before the ladies in gown and caps show breeding and respect". It is also amusing to picture eighteenth century ladies of fashion, immersed in the hot baths with handkerchief, snuff box and nosegay floating in a little basin alongside. Bath is still a well-known resort, and its rich atmosphere, like that of London, stems from a wealth of fine buildings and associations; a tribute to the society which made it famous.

Europe has many other cities which because of their historical associations are also very stimulating, each in its own way; especially for South Africans who live so much in the present, and are unaccustomed to the enriching effect of tradition. Two English examples have been mentioned. On the Continent it would be possible to add Paris, Lucerne, Florence, Venice, and a host of others.

Turning to Johannesburg, it is clear that considered from the point of view of emotional responses to an atmosphere deriving from an historic past, it has nothing to offer. It is still too newly born. It has so recently emerged from the chrysalis of the mining camp. It lacks, and during our time will continue to lack, that rich leavening of architecture and association, which, as has been shown, are so much part of London and Bath, and which endear them to residents and visitors alike.

Johannesburg cannot be blamed for its lack of history. Its administrators can be criticised however for neglecting to make the most of the public buildings which have been erected, and for not developing open spaces in relation thereto, to provide proper settings for them. Such a policy could have contributed towards the building up of atmosphere. Instead, the unplanned dreary monotony of central Johannesburg today may be contrasted with Pretoria where some care has been exercised in this regard.

Convenience was mentioned as a second factor contributing to the development of urban character and atmosphere. In short, cities which function efficiently, which permit freedom of movement on highways and sidewalks, and which are conveniently planned as regards places of work and residence, ancilliary facilities, and commercial and civic areas, will not be a source of constant irritation. In spite of the praise already given, London also suffers from congestion and inconvenience, and conditions there are only rendered tolerable, by an excellent system of underground transport. Nevertheless although it can be as frustrating as Johannesburg usually is, the richness of atmosphere to which I have referred acts as a compensating factor. The inconvenience of central Johannesburg has nothing similar to offset it, and it has therefore acquired the aura of a place in which people work of necessity, but from which they escape at the earliest possible moment. It follows from what has been said that well planned cities promote unhurried living. Impressions of them are thus free from that feeling of frustration so frequently associated with urban life today. There are few towns which achieve such perfection. Letchworth and Welwyn, two English garden cities, the former built at the beginning of this century, and the latter in 1920, come close to the mark. It is too soon to be able to ascertain how successful the new industrial towns recently laid out in the O.F.S. and the Transvaal will be from this point of view.

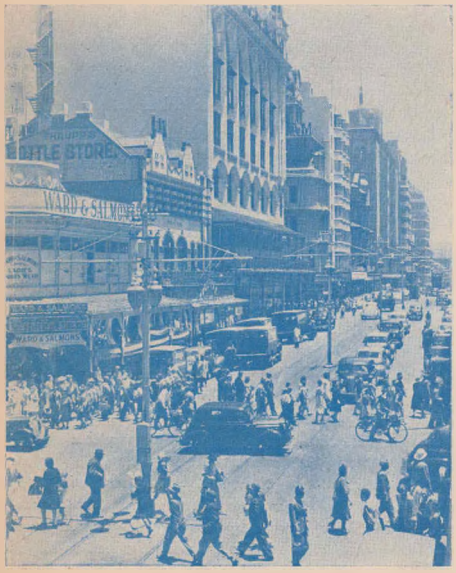
The formative influence which people have on the character of cities is possibly more noticeable to visitors than to themselves. In retrospect they play a very vital role. Who has not relished and remembered the humour and rich accent of London's taxi drivers, the courtesy and efficiency of her Metropolitan police force, the conservatism and reserve both in dress and manner, of the people who flow in and out of her business areas each day? In quite a different vein, there is the vivacity of the French and Italians, or the misery of the depressed classes in Spain, rendered even more unpleasant by the absence of sanitation. At the entrance to the United States stand New York's rudely efficient customs officials. These remarks, however, need to be taken a stage further, for the significant point to be remembered is that cities are merely the outward expression of the societies responsible for their creation. The whole character and condition of the people is written into them for others to read who understand. Unpopulated, cities merely become empty echoing shells. It is the inhabitants who animate them so that they become according to Mumford's delightful phrase "the place where the diffused rays of many separate beams of life fall into focus". Now what does Johannesburg tell us about its people? An answer is suggested by the contrast which exists between pleasant suburban houses set in well developed gardens, and the congested central area with its almost

complete lack of civic amenities. The conclusion can reasonably be drawn that the people of Johannesburg lack a sense of values. They are prepared to concentrate their activities on making an attractive environment for themselves, and accept without protest the untidiness, the lack of dignity and of civic amenities of the central area. The absence of any pressure of public opinion to impress upon the governing authorities the necessity for developing proper civic facilities for Johannesburg, so that the town will be worthy of its position as the financial centre of Southern Africa, shows the extent of public indifference in this matter. The pursuit of wealth, and the enjoyment thereof, appears to be the main theme of life, and every effort is bent in that direction. There are signs, however, of a developing cultural tide, but it is still too weak to stem the flood of materialism which prevails everywhere.

Turning now to consider the reference to townscapes: this word is a new addition to town planning terminology. It is meant to convey the idea of city scenes which form attractive compositions made up of architecture, streets, paved areas, verdure and the atmosphere. Such compositions can be created on the basis of a loosely arranged, or uniformly grouped series of components, as is the case in mediaeval towns. Alternatively, the components may be related in a very regular or formal manner. Town planners need not set out to achieve a continuously stimulating townscape from one end of cities to the other. I doubt whether such an object could succeed in any case. But it is important for the general environment to be satisfactory. It can even be neutral in feeling, but it must contain a number of points of heightened interest to give it charm and emphasis.

the untidyness, the lack of dignity of the central area . . .

Photo: S.A.B. & H.



The centre of Johannesburg planned on the basis of a grid iron, offers little relief visually from the typical scene which prevails everywhere; that of a street perspective. The majority of these scenes are unsatisfactory because the horizontal lines of windows and parapets and cantilevered slabs over sidewalks, converge and focus on a patch of sky low on the horizon, or alternatively on something inconsequential. In very few cases do suitable buildings terminate these repetitive street prospects. The station terminates Eloff Street pleasantly. The New Law Courts terminate Kruis Street, but are off centre with it. This ill fitting arrangement is worse than no terminal feature at all. The Union Corporation's office block closes Hollard Street effectively, and the Library is on the axis of the City Hall. Gardens at this point provide a welcome green oasis in a densely built up area. Hollard Street also provides some relief with its tall plane trees, because trees of any description occur so rarely in the central area. It is significant that the few places which have some visual richness are all associated with deviations from the rigidity of the grid iron plan.

There are three well-known townscape compositional forms. Two have been touched on already. There is the type which depends on a street lined with buildings of regular height, ending on an important terminal feature. Washington and Paris offer many examples. This kind of arrangement is a formal one and the composition is characterised by its balance and regularity. The technique is still applicable in appropriate circumstances. The second basic compositional form is associated with the informal type of town plan characteristic of Mediaeval times. A typical arrangement is a street curving somewhat irregularly, enlivened along its length by a number of tall features, usually towers and spires. High Street Oxford, curving in front of Queen's, and on past All Souls College as far as St. Mary's Church, express this quality admirably. The third type of composition depends on the arrangement of a series of buildings of regular form enclosing, or partly enclosing, a sequence of open spaces. The city of Bath, and Nash's plan for Regents Park illustrates this kind of composition very well. The method is the basis of quite a few contemporary town plans, one of which is the new town of Harlow designed by Frederick Gibberd.

Some reference to atmospheric effects is needed to complete this description of townscapes. In England, the outlines

of the visual scene in town and country are softened by a haze, which has the effect of interposing a fine veil between spectator and view. As short a distance as the width of Trafalgar Square is sufficient. Some exquisite effects arise in this way. The beautiful townscape at the head of the flight of steps at the end of Waterloo Place overlooking St. James Park, and on towards the spires of Westminster is a very fine case in point. Offering a complete contrast is the stereoscopic quality of our High Veld atmosphere, especially after rain. This sharpness of line and form which is typical of South Africa, engenders a feeling of immense space.

The fifth and final factor contributing to the atmosphere and character of cities has been called City Furnishings. This term sounds rather odd at first hearing. It has come to be associated with equipment incorporated in towns either for the protection of the public or for its convenience and information. Protective barriers, seats, lighting standards, refuse receptacles, signposts, traffic notices, public telephones, bus shelters, fountains, sculptures, memorials and so on, are all classified under this heading. Their role as character forming components is important because of their prominence in the foregrounds of townscapes. They thus enjoy an importance out of all proportion to their size. A basic criterion governing the design of these furnishings is, that they must be appropriate for the purposes they have to serve. Further the materials employed must be used honestly. An example of the misuse of a material may be found in the benches installed in our municipal parks. In the construction of these, cast iron has been made to simulate rustic timber. Whilst some city furnishings used in Johannesburg are open to criticism, a lack of civic pride accounts for the complete lack of others such as fountains and sculptures. The city of Zurich in Switzerland offers an object lesson in this respect. The high standard of its city furnishings, the wealth of sculptures — none of it too obtrusive — and the number of fountains near places where people congregate, even if only to board trams or buses, contribute to its beautiful atmosphere. It is a town in which the care lavished on all of the things its citizens see or use suggests a high standard of civility.

It is clear if attention is now concentrated on Johannesburg central, excluding suburban areas, that the visual scene is deficient in character forming elements. Objectives which should be pursued in the immediate future, and which if achieved will materially improve matters are the following:

(a) Efforts should be made in collaboration with the Public Works Department to site any new buildings which government departments require to the best advantage. For example, a new Supreme Court building is needed as well as a building to replace Marshall's Square Criminal Investigation Department. Both of these new structures could be sited with advantage near the Magistrates Courts, on part of the ground the power station occupies at present, when this utility is moved to a new site east of the town. The possibility of incorporating office blocks to form part of this group to accommodate legal practitioners would also have great advantages, and needs to be borne in mind. These buildings should be grouped to form a new city square, intimate in scale, and ideal for the lunch hour use of office workers. It should be arranged to avoid the separation of buildings from the open space by eliminating roadways which usually bring this about as may be seen in the case of Church Square, Pretoria or the Library Gardens. The slope of the ground across the power station site would permit the provision of extensive underground parking facilities without difficulty. The development of a centre of this type conveniently related to the New Magistrates Courts could introduce a fascinating new point of interest into the central area.

(b) As verdure is so noticeably absent from the central area the policy of developing as large a park as possible near it should be formulated. In this regard attention must be drawn to Hyde Park, Regents Park, and St. James Park, London, or the Bois de Boulogne and Parc Vincennes in Paris, Central Park some 843 acres in extent in the heart of New York, Jackson Park and the spacious lakeside development in Chicago or Fairmount Park, 3,800 acres in extent adjacent to the business centre of Philadelphia. As much of the Kazerne area as can be made available and ground released when the Abattoirs and Market are moved elsewhere should be reserved for this purpose. The possibility of making this park the beginning of a green wedge running north west to Emmarentia should be kept in view.

(c) The reconstruction on the east front of the City Hall when the old Post Office is removed should also be taken advantage of to introduce a new layout containing a city fountain which could be of a memorial nature. The rather dreary stretches of grey cement paving slabs in front of the City Hall should be removed and replaced with a more imaginative treatment incorporating changes in tone value and patterning.

(d) Suitably qualified sculptors should be commissioned to contribute to the suitable embellishment of our parks and open spaces. Free standing pieces are not called for in every case. The design of entrance piers to a park or city square can be enlivened by the inclusion of appropriate allegorical low relief carvings and so on.

(e) Only city furnishings of the highest standard of design should be purchased or built into positions where required.

(f) The present practice whereby suburban shopping centres merely introduce a fragment of the central commercial area into the residential scene needs to be checked. The popular arrangement of building flats above shops, which is such a feature of these centres, is entirely unsatisfactory. From the economic point of view, this type of plan has advantages. It fails completely, however, to provide a good environment for people living in areas, where flats bring about higher population densities. The appalling atmosphere which can result, may be seen in the flat and shop lined stretches of Louis Botha Avenue. One solution would be to group shopping units on their own, and to build flats on independent open sites nearby, overlooking suburban parks. This would ensure that some amenities in the way of outlook and open space, are conveniently accessible to flat dwellers.

(g) The New Law Courts absorbed one of Johannesburg's precious open spaces. Reference has previously been made to the unsatisfactory siting of the building in relation to Kruis Street. After the erection of the New Supreme Court Building, the New Law Courts should be permitted to sink into obsolescence with a view to its ultimate removal, and the restoration of the open space in a part of the town which badly needs one.

(h) Perhaps the most important problem which requires urgent attention is the provision of a new civic centre for Johannesburg, accommodating a new City Hall, museum, and possibly, art gallery as well. The solution will depend upon the acquisition of a large area of ground in a suitable position. Financial consideration will therefore inevitably be serious, but whatever the cost, the problem cannot be staved off much longer, if the city is ever to have a centre worthy of itself. It must be pointed out that Johannesburg is going through a phase of intensive rebuilding, and unless the problem is dealt with energetically to take advantage of opportunities which undoubtedly exist, these will be lost for all time. Clearly, public opinion needs to be awakened and mobilised in support of this scheme.

In conclusion it may be said quite fairly that Johannesburg has reached its lowest ebb from the visual point of view. Intensive speculative building has clothed it with square miles of buildings which bear every evidence of having been designed and built in a hurry. Except for suburban areas it possesses little civic atmosphere, and its inhabitants must come to realise that the deficiencies which are everywhere evident in this respect stand as permanent criticisms of their own lack of feeling, sense of values and administrative ineptitude.

man-made johannesburg

THE EXHIBITION :

By JACQUES MORGENSTERN, B.Arch., A.R.I.B.A., M.I.A.

The aim of this exhibition is to review, for the benefit of its citizens, their man-made city — Johannesburg. It is not the intention, however, to present this review merely as a pictorial record, but rather as a critical analysis, from the architectural point of view.

Johannesburg has, through many phases of intense building activity, grown from a small mining town into a busy commercial centre within a very short time. Events taking place in Europe were destined to have their repercussions here. The Industrial Revolution, which changed the course of European development came, though somewhat later, with no less force to South Africa and consequently to Johannesburg. The results — architecturally speaking — are still in evidence to-day: old houses still exist built from plans that were imported in toto from England; there are cast iron railings and canopy supports from the 19th Century, imported at a time when building activity was flourishing and materials were difficult to obtain. Then there was the Baker influence which was the beginning of a school of architectural design of long duration — the influence of an English tradition of oak beams and leaded lights for domestic work, and of classical symmetry and classical features like pilasters and, cupolas for monumental work. The early 30's brought the influences of the Bauhaus as well as that of the dynamic personality, Le Corbusier, with its early ruthless unyielding functionalism and pure forms. And to this day, trends developed in South America and Europe, different forms of concrete and steel construction, are filtering their way into structures that are demanding new requirements and new methods of approach.

Thus "Man-made Johannesburg" is not only a survey of the work achieved in the architectural field, but a record of the changing needs of an increasingly intricate and ever more complex community. Requirements have changed — building uses have changed.

To-day after some interruption during the war years, building activity is continuing at an unprecedented rate. Old land marks are rapidly disappearing and are being replaced everywhere by complex structures springing up simultaneously in various parts of the city. Hardly a street is left unaffected. What is the result? The layman sees building after building going up — he sees various forms, types of constructions, finishes, materials; he sees buildings, buildings everywhere going up at a tremendous rate — there is no time to stand back, contemplate, criticise — he is bewildered. To feel part of this endless activity is no doubt exciting, even exhilarating, but it is none the less confusing. From all appearances there seems to be a lack of discrimination, a lack of understanding and a general lack of co-ordination and discipline in the creation of this new urban environment. The general, perhaps hardly conscious, attitude is — "Quo Vadis?" Where is all this leading us to?

Le Corbusier once said that to find a solution it is necessary to state the problems. Let us state the problem. Our problem is to discover some purpose behind this seeming confusion and hence, to find a solution we must take stock, review the present situation and the circumstances which led up to it. Perhaps an underlying trend can be found, taken up and clarified, in the light of our present day needs.

The needs to-day are many and varied. There are first the primary, consistent trends to be sought, which apply to all buildings — economy of means, solving the problem in the most direct fashion, good finishes to ensure good weathering and economic maintenance, harmony to ensure a pleasant individual appearance and a pleasant street vista, form, proportion, honesty of expression, etc. and them the diverse trends which are consistent for the same types of buildings — clear floor spaces in factories, flexibility in offices, economy of services in flats and so on.

The exhibition takes the form of a series of photographs which, after a brief historical survey pointing to the types of buildings of earlier periods, trace the present day developments in the various fields of architectural endeavour in our city. It is difficult to present a comprehensive picture, since of necessity only isolated examples can be shown. But these examples have been chosen with a view to showing the trend rather than with a view to attempting to cover the field of architectural achievement. The selection of examples, with their comments,

should make it apparent how, through a process of trial and error, certain elementary principles are being consolidated; how the early Baker school was followed by its antithesis, a militant period with functional and mechanistic tendencies discounting the human being in his individual and social aspects and finally by the present synthesis — the biotechnic period which, by introducing the human element into functional planning, attempts to make good earlier deficiencies.

A critical survey presented in photographic form must of necessity seem superficial, but if, from these fragmentary glimpses of the total architectural effect, a certain trend becomes apparent, the purpose of the exhibition will have been served.

The present bewilderment is a condition aggravated by *laissez-faire* or perhaps by the fact that people have not been given sufficient opportunity to learn to understand and overcome this bewilderment. There is a great gap in understanding between architect and layman. The architect works at a feverish rate to meet present day requirements and on the other side of the hiatus the layman sees shuttering, scaffolding and very soon a finished product. And of these there are too many to look at simultaneously to permit of critical evaluation. We cannot but agree with Lubetkin that one of the factors that inhibits proper understanding of contemporary architecture and hinders the establishment of a canon of criticism is the absence of agreed aims and principles. Some positive attitude to architectural aims is what we hope will emerge from this.

Ours is an attempt to orientate the mind and open more eyes. By accustoming the eyes and the mind to examine the buildings around us and by acknowledging the vital part architectural thought can play in the scheme of things, it is not impossible that a new movement might be started — a movement under the inspired leadership of the profession for a public ever more discriminating between good and bad in man-made Johannesburg.

THE LAYOUT OF THE EXHIBITION COMPRISES THESE SECTIONS.

INTRODUCTION: After an indication of the factors which characterise a city the visitor is invited to consider critically the past, the present and the future.

HISTORICAL: The background of contemporary Johannesburg seen in relation to its rapid development from the dusty mining camp of the 80's.

THE SUBURB: A series of panels illustrating the growth and complexity of the scene.

FIRST: Domestic architecture has been influenced by the past genius of men like Sir Herbert Baker and J. M. Solomon, and later by the European functionalism of the early 20's.

SECOND AND THIRD: Examples of the contemporary suburban dwelling.

FOURTH: Architecture in low cost housing—economy arising from good planning.

FIFTH: Flats—an essential aspect of urban life; the need for amenity and open space.

SIXTH: Schools, churches, hospitals—serving man's needs.

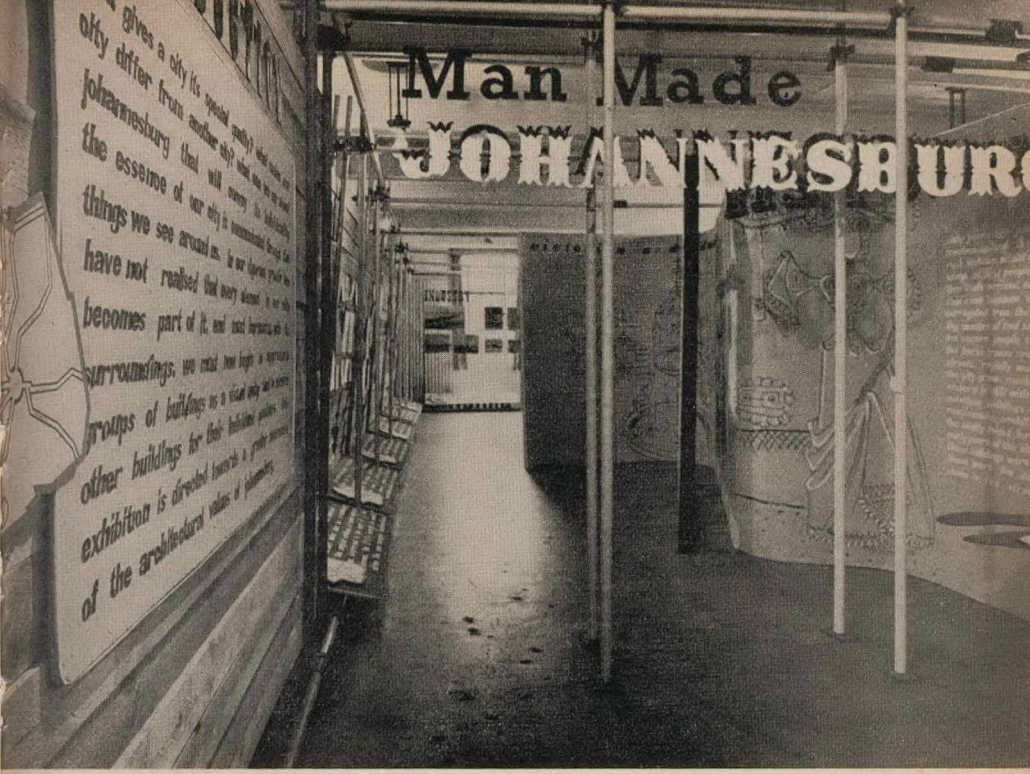
INDUSTRIAL: Architectural merit may be found in industrial developments which sustain the growth and importance of the city.

NATIVE HOUSING: A review of the great problem of housing the urban non-European.

THE CITY AREA: The growing metropolitan area with its problems of traffic and transportation, individuality and the collective impression.

TOWNSCAPE: The civic scene and the importance of good design.

CONCLUSION: A comment, with an indication of future possibilities.



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1. THE EXHIBITION ENTRANCE.
2. THE REGIONAL PLANNING SCREEN.

3

3. THE HISTORICAL SECTION.
4. THE TOWNSCAPE SECTION.
5. THE INDUSTRIAL SECTION.
6. GENERAL VIEW OF THE SUBURBS SECTION.

THE ILLUSTRATIONS

7. JOHANNESBURG AND OLD MINE DUMPS.
8. THE FIRST HOUSE IN JOHANNESBURG.
9. THE OLD RAND CLUB BUILDING.

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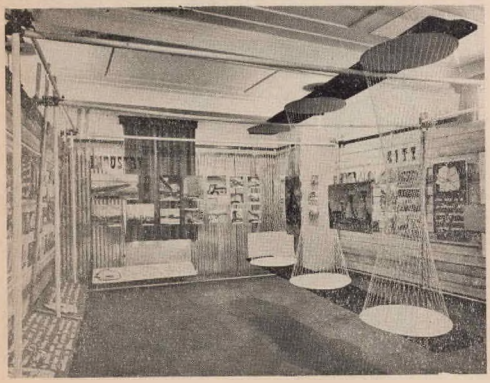

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The old Rand Club, a new one in course of erection

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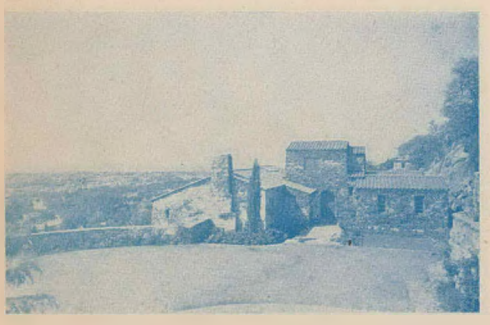

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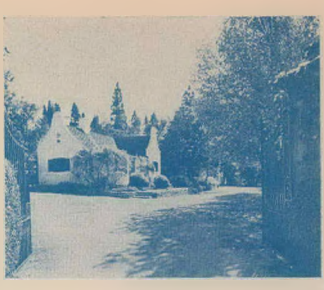

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TRADITIONAL

10. "NORTHWARDS," PARKTOWN.
11. HOUSE LEITH, HOUGHTON.
12. HOUSE KENNEDY, LINKSFIELD.
13. THE LODGE, "NORTHWARDS."
14. JOHANNESBURG PUBLIC LIBRARY.
15. INSTITUTE OF MEDICAL RESEARCH.
16. "HOUSE HARRIS," LOWER HOUGHTON.
17. "HOUSE HANSON," LOWER HOUGHTON.
18. "HOUSE STERN," LOWER HOUGHTON.
19. "HOUSE MARTIENSSEN," GREENSIDE.

MODERN

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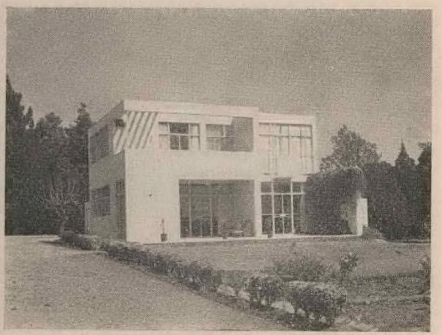
15

MAN-MADE JOHANNESBURG



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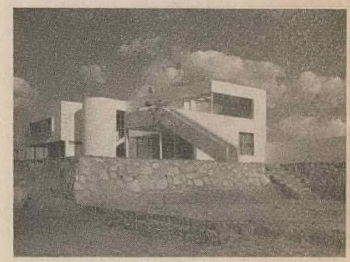

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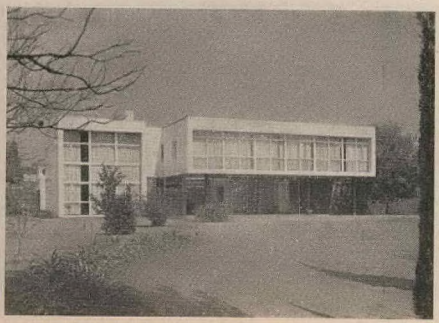

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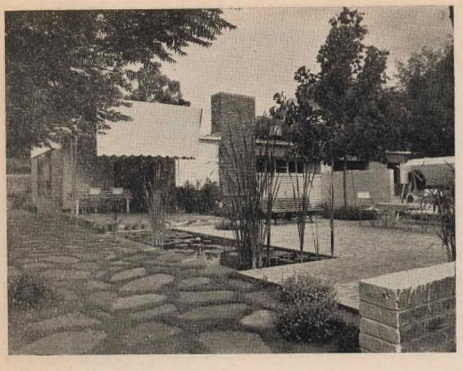

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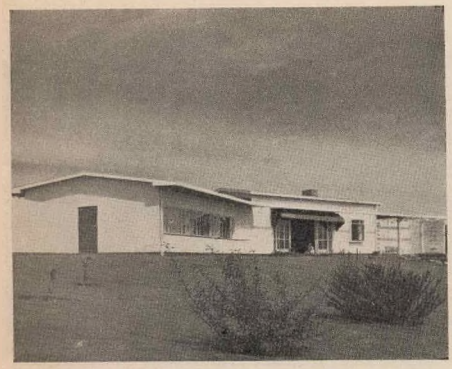

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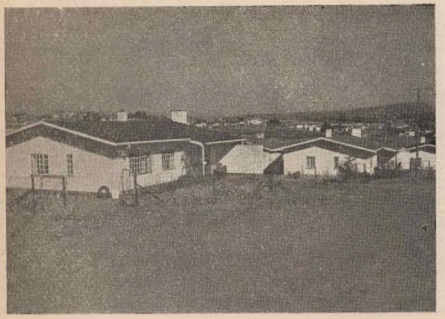

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20. HOUSE AT CRAIGHALL.
21. "CASA BEDO," WAVERLEY.
22. "PLOVERS," BRYANSTON.
23. NATIONAL HOUSING, PARKHURST.
24. RAND EPILEPTIC ASSOCIATION HOUSING.
25. PRAGER HOUSE, LOWER HOUGHTON.
26. AVALON COURT, YEOVILLE.
27. PETERHOUSE, CITY.
28. AITON COURT, HOSPITAL HILL.

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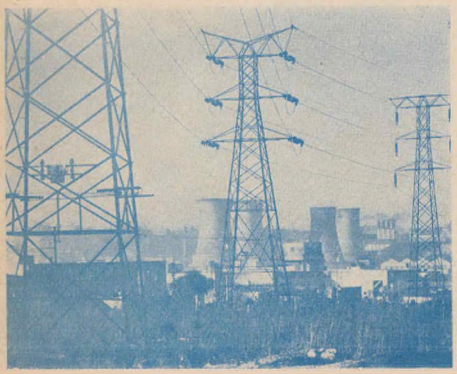
29. HIS MAJESTY'S BUILDING, CITY.
30. ESCOM HOUSE, CITY.
31. MEDICAL CENTRE, CITY.
32. "POWER LINES."

32



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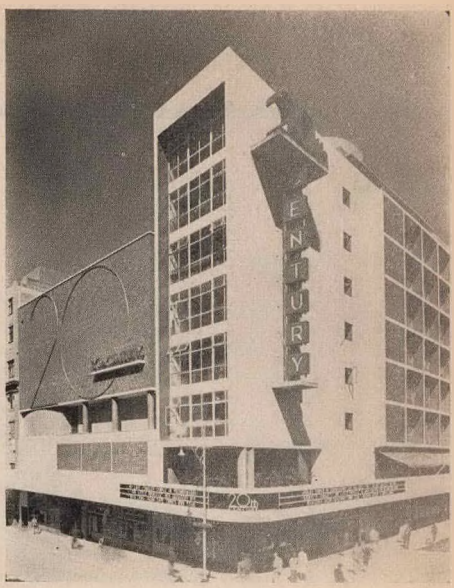

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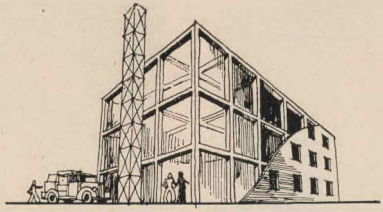
33. PLAZA CINEMA, CITY.
34. 20th CENTURY CINEMA, CITY.
35. VENETIAN BLIND SPECIALISTS (PTY.) LTD., BRAMLEY.
36. PROSPECT GOODS YARDS.

36

MEN AT WORK : THE COMPONENTS



BUILDING

TOWNSHIP OWNER

APPROVED

LOCAL AUTHORITY

OWNER

ARCHITECT

BUILDER

- FINANCE
- BANKS
- BUILDING SOCIETY
- THE SITE
- ESTATE AGENT

THE DESIRE TO BUILD

- DRAUGHTSMEN
- QUANTITY SURVEYOR
- ENGINEER
- CONSULTANT

SCHOOL OF ARCHITECTURE

- EMPLOYERS' ASSOCIATION
- TRADES UNION
- SUB-CONTRACTORS
- MERCHANTS
- MANUFACTURERS
- RAW MATERIALS

BUILDING RESEARCH

OF THE BUILDING INDUSTRY . . . .

By GILBERT HERBERT, B.Arch., Dip.T.P., A.R.I.B.A., M.I.A.

In this special issue of the South African Architectural Record we present a survey of the "Man-made Johannesburg" exhibition recently presented in the Johannesburg Library under the sponsorship of the Transvaal Provincial Institute of Architects and the Students Architectural Council of the University of the Witwatersrand.

The exhibition is devoted to the presentation of the achievements of more than half a century in the field of building; it deals with the results of man's courage, inspiration and endeavour. But behind the exhibition lies another story, a story which deals, not with results, but with effort and labour. The exhibition tells of *what* has been built in Johannesburg since its mining camp days. Although that remains the principal theme of this issue, it will be here supplemented by an attempt to tell of *how* and *by whom* it was built. The field is vast, for building endeavour is many-sided. If we are to tell the story of the making of Johannesburg, we must tell the story of the various organisations, trades and professions which, through their connection with land and finance, materials and labour, design and construction, form an essential part of every building enterprise.

To this end we have invited several bodies to contribute short articles especially written for this "Man-made Johannesburg" issue. The diversity of scope of these articles, ranging from the organisation of professional bodies to the financing of building projects, indicates the wide front upon which Building operates, and the enormous number of people who are actively, or indirectly, concerned in it. This series of articles, dealing with the organisation, history and activity of the various bodies connected with the building industry, although showing the wide-spread ramificaricns of the industry, is nevertheless far from complete. What would be needed to round out the picture is a supplementary series of statements in human terms, telling the story of the individual people whom the various bodies may represent, but do not replace. Building, it is true, may be a story of real estate, finance, industry, by-laws, statistics; but we must not forget that it is also the story of human hopes and needs, of human creation and endeavour.

If this story of building Johannesburg were to be complete, it should tell of the mergers and syndicates, negotiations and hagglings, bargains struck and pressures exerted, shares sold and companies formed, before the finances of a large building project are arranged: and it should also tell of the painfully slow saving, that doing without long-wanted luxuries, the years of flat-dwelling or house-renting, that precede the accumulation of the necessary amount of capital for the average middle-class home. Something, too, should be told of the wavering and the doubts and the sudden failures of courage — to build? to buy? to rent? to continue living with mother? — before the fateful decision is made.

Nor is the story complete unless it tells of a long day's work under the hot Johannesburg sun, of aching back muscles and of pouring sweat, of sandwiches and a billy of tea and a quick look at the Mail or the Transvaler, of difficult foremen and impossible demands, of dust-laden air and the sweet scent of freshly sawn timber that works cleanly and planes smooth. The story of building is the story of Jan the bricklayer whose father and grandfather before him were not artisans but farmers, before boys succumbed to the lure of the city; it is the story of Harry the carpenter, whose father was a Pole, and who liked to do things with his hands; it is the story of Nkamando, whose father was a headman in the green fields of the Transkei. The story of building is not only the story of bricks and mortar, but of strikes and lockouts, negotiations and awards. It is the story of a new way of life, of the industrialisation of a people.

If we are to tell the story of building, we must not talk only of the Institute and the Chapter. We must tell too of Andy, who worked day and night for five years, in order to save the necessary money to come to the School of Architecture. We must tell of the years of study and the years of heartbreak, the projects that fall through and the commissions that are lost: we must tell of the fight for integrity, the fight against prejudice. Our story must show the architect in all lights: the suave diplomat handling so deftly his client's wife, who knows nothing about architecture but knows what she likes; the ruthless sleuth tracking down clues

in the Case of the Smoking Chimney; the temperamental artist discarding crumpled reams of butter paper in the elusive search for perfection in design; the harassed mathematician in the baffling processes of penultimate certificates.

We would need, in a complete story, to find out something about the men who devote years of study to the problems of disease in timber, or discolouration of paints, or shear forces in steel. We would have to tell of the men who dig the clay and burn the bricks; who sell the sandpaper and the ceiling board; who make the windows and who forge the steel; who drive the lorries and work the cranes. We would have to spend an eight hour day with the mechanic at his bench, the clerk in his office: we would have to be out all day with the estate agent, dealing with building's very foundation, the site.

To make our story complete, we must know more about men, and how they feel. We must understand the burning joy of creation, that activates the architect and the craftsman: we must know the pleasures of ownership, to understand the intense thrill which the potential home-owner feels at the turning of the first sod. We must learn to differentiate between the house-warming party, which is the symbol of *having*, of possession, and the roof-wetting ceremony, which is the symbol of *doing*, of accomplishment.

To tell the story of the building of Johannesburg fully and completely, each of these stories must be told. This issue is just an introduction: it is, so to speak, only a synopsis of the record of achievement which is the story of Man-made Johannesburg.

THE INSTITUTE OF S.A. ARCHITECTS

The Institute of South African Architects was created by Act of Parliament (No. 18 of 1927). There had previously existed separate Institutes in the four Provinces of the Union. The passing of the 1927 Act thus unified the Architectural Profession in South Africa; and, by providing the educational and professional qualifications necessary to obtain registration, enabled Architecture to take its place as one of the learned Professions.

An important provision in the Act is the statutory protection of the title "Architect." It is an indictable offence for any person not statutory registered as an Architect, in any way to indicate that he is an Architect within the Union.

The Institute, through its Board of Education, has continuously concerned itself with the progress of Architectural Education. Chairs of Architecture have been established in the Universities of the Witwatersrand, Cape Town, Pretoria and Natal, where students may obtain a degree or diploma in Architecture, and thus qualify for registration under the Act.

Because of the importance attached by the Institute to Architectural Education, permanent representation on its Board of Education is given to the four Universities above mentioned, and to the Union Department of Education.

The Institute grants four annual Post-Matric. Bursaries for students outside a University centre. Thus every year one such student is enabled to attend each of the four Universities.

The South African Institute is affiliated to the Royal Institute of British Architects (the parent Architectural Body in the British Empire), and is permanently represented on the Council of the R.I.B.A. In appreciation of the standard of Architectural Education in South Africa, the R.I.B.A. no longer conducts its own examinations in South Africa, and has in effect vested its authority in the South African Institute's Board of Education.

The Institute is governed by a Central Council, on which are represented the four Provincial Institutes, the Chapter of S.A. Quantity Surveyors, and the Union Government. Matters affecting the Profession as a whole in South Africa, fall under the jurisdiction of the Central Council; and each of the Provincial Institutes, and the Chapter, is responsible for the administration of its own affairs. Administratively, a simile may be drawn from the Act of Union, which brought into being the Union Parliament and the four Provincial Councils.

When the Register of Architects was originally compiled (in June, 1928), 506 persons were admitted to membership of the Institute: Transvaal, 295; Cape, 148; Natal, 54; O.F.S., 9. As

at the end of March, 1951, these numbers have increased to: Transvaal, 523; Cape, 330; Natal, 137; O.F.S., 32; total, 1,022.

From its realisation that Architecture is a national asset, the Institute has maintained a continuous contact with Governmental, Provincial and Local Authorities; with Public and semi-Public Bodies; and with the National Federation of Building Trade Employers. For the same reason, the Institute has designed, for use by Registered Architects, a (copyrighted) Official Notice Board for buildings in the course of construction.

For several years the Institute has whole-heartedly co-operated with the Minister of Health and Housing and his Directorate of Housing, in the design and provision of National Houses. The Institute continuously co-operates, by means of a Standing Liaison Committee, with the S.A. Bureau of Standards.

Amongst the Institute's official publications are "The South African Architectural Record," a monthly magazine devoted to matters architectural; and an informative Official Year Book (containing a complete list of the names and addresses of all Registered Architects and Quantity Surveyors in South Africa; the Act and Regulations; etc.)

THE CHAPTER OF S.A. QUANTITY SURVEYORS

The Chapter of South African Quantity Surveyors ("within the Institute of South African Architects") was brought into being by Act No. 18 of 1927. It is the legal successor to the former South African Institute of Quantity Surveyors, formed in 1908. The title "Quantity Surveyor" is also statutorily protected in South Africa.

The Chapter has permanent representation on the Central Council of the Institute and on the Institute's Board of Education. Vitally interested as it also is in professional education, the Chapter has been responsible for the provision of degree and diploma courses in Quantity Surveying at the Universities of the Witwatersrand, Cape Town, Pretoria and Natal, leading to registration under the Act. South Africa is the first (and perhaps the only) country in the world where such University courses are available.

As a national body the Chapter is governed by a Board, elected annually by its members throughout South Africa. In 1928 the Chapter had 140 members; as at March, 1951, this number has grown to 296.

The Chapter is the author of "The Standard System of Measuring Builders' Work in South Africa." Its assistance and advice to the Institute in such matters as the Standard Form of Building Contract, and National Housing, have been of inestimable value. It is affiliated to the Royal Institution of Chartered Surveyors of Great Britain.

THE NATIONAL FEDERATION OF BUILDING TRADE EMPLOYERS IN SOUTH AFRICA

At a time like the present, when the existence of employers' organisations in the various spheres of commerce and industry is taken for granted as a vital necessity in the application and the administration of Legislation regulating trade interests and labour relations, it is difficult to appreciate fully the sincerity of purpose and vision which inspired the pioneers in the organisational development of the Building Industry to bring about the formation of the National Federation of Building Trade Employers in South Africa as far back as 1904.

The Federation was founded long before legislation after the style of the present Industrial Conciliation Act was contemplated. Its primary aims were to provide voluntary machinery for the co-ordination of the activities of its affiliated Associations on a national basis and to promote better relations between employer groups in the Industry and the various interests with which they ordinarily came into contact. Basically, and notwithstanding the legal recognition now afforded to organisations of this nature, the Federation and its affiliated Master Builders' Associations are still dependent on the voluntary co-operation of employers who have the interests of the Industry at heart.

The activities of the Federation can be sub-divided into four main categories. In pursuing these various activities it relies on the active support of affiliated Associations, which all pursue the same ends in varying degrees. Firstly, it is a function of paramount importance to promote and maintain cordial relations with the Government, the Railway Administration, Provincial Administrations, Local Authorities and other public bodies. It will be readily understood to what extent cumbersome requirements imposed by public bodies, without a proper appreciation of the problems of the Building Industry, can be retarding factors in the construction of building projects. In this respect the Federation has achieved a great measure of success in ensuring a realistic approach to building programmes and in gaining the co-operation and confidence of these bodies. In additions, this organisation has successfully defended the claim of private enterprise, as represented by its members, to undertake under competitive conditions the many building projects financed from public funds.

Secondly, the Federation can regard with satisfaction the good relations which exist to-day between its members and the professions. These respective groups constitute the Building Industry in its broader sense, and it is as much in the interest of the building owner as of every individual contractor, architect or quantity surveyor, that there should be the fullest measure of co-operation between Master Builders' Associations, the Institute and the Chapter. In recent months important negotiations between these bodies have once more shown a keen appreciation of the responsibility of the Industry towards the community as a whole.

Thirdly, the Federation is entrusted with the important task of guiding its affiliated Associations in all matters falling within the sphere of labour relations. The negotiation of conditions of employment is a matter to be approached with the greatest caution, having regard to the competitive nature of the Industry, the claims of labour and the interests of prospective building owners. It is equally important that a reasonable supply of labour should be maintained if building programmes are to be handled expeditiously and, notwithstanding the present acute shortage emphasised by an abnormal post-war development, a major contribution has been made in this direction by the training of apprentices and learners, under emergency legislation, and by an immigration drive sponsored by the Federation.

Finally, a great deal of time is taken up by the regulation of internal relations between the sub-sections constituting the Industry, including the manufacturers and suppliers of materials, and between individual members. Obviously internal harmony is essential if a united front is to be presented to the outer world, and the importance of the functions of Master Builders' Associations in this respect should be self evident.

While this brief review of the activities of the Master Builders' Associations affiliated to the Federation cannot possibly embody a complete survey of the aims and objects of these organisations, it is intended to give some indication of the joint effort which is necessary behind the scenes to ensure that the interests of all persons and groups associated in the execution of any building programme are properly recognised and co-ordinated. In this major task the Federation has consistently played its part and, in making their contribution to "Man-made Johannesburg", the members of the Federation have given full expression to the co-ordinated efforts of all these interests.

AMALGAMATED UNION OF BUILDING TRADE WORKERS OF SOUTH AFRICA

The story of the Building Workers' Industrial Union of South Africa, changed in name to the Amalgamated Union of Building Trade Workers of South Africa since May 1951, extends far beyond the formation of this Union. Men of various crafts of Bricklayers, Carpenters, Painters, Plasterers, Plumbers and Stonemasons, of all nationalities, worked on the Old Magistrates' Court, the Rissik Street Post Office and Government Buildings in Pretoria before the Anglo-Boer War and other jobs that are now part of the large demolition programme of Johannesburg, Pretoria and other towns.

Many of these men joined the Boer War exodus to the coast towns, returning later to their former occupations. They experienced the effect of the building booms and depressions of the Post-War periods, gladly transferring to the East and West Rand Mining and Reef Towns development, which followed the 1905-1909 depression in building.

Building artisans of those days often related first hand experiences of crude working conditions, bad job organisation, piece work rates, prejudices of the immigrant, the chancer and botcher, the jealousies among men, the driving and firing methods of employers and the difficulties of understanding the raw Native labourer. This forms part of the constant anguish of the various tradesmen to get a square deal. Task work of laying so many bricks on the wall or mine engine bed, the masons' piecework rates on foundations, the loss of fortnightly wages on Saturdays applied to all trades and caused many problems.

1910 heralded the unification of the four Provinces and with it new public and private buildings of a prescribed standard, and affording building tradesmen an opportunity to display their craftsmanship, having more time and a settled state of mind to work normally. Jobs were of longer duration, exchange of thought and discussion on the need to protect their standards and eliminate bad conditions and for the reduction of hours to reduce unemployment more constant. Closer co-operation was necessary as the few existing Building Trade Unions with overseas constitutions and working rules were ineffective.

The desire to form one Union for building trade workers was delayed some five years, due to the founders moving about the Union, and to the 1914 first Great War depression in building.

However, the effort to organise all trades in the Building Workers' Industrial Union of S.A., was launched in Pretoria on 16th September 1916, with three Bricklayers members from the Operative Bricklayers Society, five Carpenters from the Amalgamated Society of Carpenters and Joiners, three Painters from the Pretoria Painters Union, three Plasterers from the Operative Plasterers Union, three Plumbers from the Operative Plumbers Union and five Stonemasons from the Operative Masons Society, the foundation members at that inaugural meeting.

300 tradesmen joined this first Branch in Pretoria by December 1916. New Branches followed at Benoni, Durban and Johannesburg in April 1917, and subsequent development was rapid and widespread. Its activity was as virile as its appeal to Building Trade Workers.

Building workers wages of 2/6 per hour were increased due to rising costs in the first World War by strike action and resulted in a basic wage of 4/3 per hour for a 44 hour week in 1922. The attack on Cost of Living Allowances in 1922 by the Government and employers involved a loss of 4d. per hour during Martial Law Regulations in 1922 with a 6d. per hour loss for Painters. The depressions of 1928 and 1932 brought a further all round wage reduction to 3/- per hour. The 3/6 wage was restored after constant negotiations in Johannesburg in 1934.

The second World War 1939-1945 years renewed the struggle for cost of living allowances of 1d. per hour in 1941, 2d. in 1942 with the famous Walker Award on limited profits for employers, an annual holiday with provisions for security in a Benefit Pension Fund. This Award was considered illegal by the employers and thrown out by a Supreme Court Judgement, but was subsequently carried out as a Gentleman's Agreement.

The Botha Wage Board Arbitration followed in 1946 and increased C.O.L.A. to 7d. per hour. The 1947 Building Workers Strike of nine weeks stabilised the basic wage at 3/9 per hour for a 40 hour week to 1951, C.O.L.A. of 1/5¾d. per hour in 1947 rising to 2/6 per hour at present, adjusted by a half-penny an hour increase or decrease on each 1.2 points variation of the Index Figure published monthly by the Census and Statistics Office over the basic 100 points of 1938. The Walker Award Benefit and Pension Fund for sick pay, and guaranteed payment for inclement weather were safeguarded and has given much relief to workers and satisfaction to employers on a sound security scheme operating today.

The Union's Constitution provides for sick, unemployment, provident, strike, lock-out, victimisation and tool benefits, second to none in the Trade Union movement, with legal assistance for wage and workmen's compensation claims.

Other amenities in living standards called for much vigilance and active participation in legislation affecting apprenticeship, unemployment, workmen's compensation, industrial agreements and other vital matters affecting the lives of our members. The Union was active on the Juvenile Advisory Boards and had two representatives on the 1921 Apprenticeship Commission, which drafted the 1924 Act, and also introduced and sponsored the ex-Soldier C.O.T.T. Trainee Scheme.

The Union opposed most strenuously the partial training of native ex-soldiers as building artisans in 1946 and resented the introduction of the Native Building Workers Bill in 1950 as an unsatisfactory form of training of artisans to work at low wages

Many members served on Municipal Councils, School Boards, Provincial Councils, local Trades & Labour Councils, National Conferences, International Conferences, Building Control Boards, Bureau of Building Research and Standards, Conciliation and Arbitration Boards. We have had Mayors, Members of Parliament, and a Senator, as well as Clerks of Works in our ranks.

Some 41,000-odd building trade artisans were recorded as members from 16th September 1916 to date. The casual nature of the Building Industry is indicated by the movement of artisans over the 35 years. In the present boom period for instance, 500 men join the Union in each quarter of the year and as many are lost each year. Many artisans, including the C.O.T.T. Trainee, chiefly through insecurity, transfer to more stable employment in Municipalities, public and commercial organisations.

Our constant effort and aim to maintain a standard of craftsmanship has had severe shocks. The first Great World War caused the initial damage, breaking up the apprenticeship training of thousands of lads. The vast changes in building methods in the present concrete age, its repetitive sameness, lacking any semblance of ornate character, has done away with all aspiration, or pride of the trained building artisan in the expression of craftmanship.

We feel now that we are only pawns in the great game of erecting the many skyscraping shells of habitations termed flat dwelling, simple, repetitive, plain, inornate structures with no purpose to characterise the ideals of the community, for an aimless commercial and concrete age, in which the building worker has no say.

THE TRANSVAAL SANITARYWARE AND HARDWARE MERCHANTS' ASSOCIATION

The Transvaal Sanitaryware and Hardware Merchants' Association, now fourteen years old, has always endeavoured to inculcate among its members that their work is "service", service to the building industry in particular.

What is this service? It is something more than just supplying goods and financing the builder. It is work which requires a high technical knowledge, for many a time a builder has found a certain line of goods not available and has been pleased to discuss with the merchant alternative lines. It also requires from the merchant a keen knowledge permitting him to guage trends and stock the goods accordingly. Furthermore since quality plays and will continue to play an important part in the building industry the merchant is required to know quality and this also presupposes a knowledge of the method of manufacture of many goods, as also their component parts.

Thus it is seen that the merchant engaged in the sanitaryware and hardware business is required to be a person, who, in addition to knowing and understanding the economics of high finance, is also required to possess a high technical knowledge which will stand him in good stead in his business dealings with his customers. Then again it must be remembered that the merchant, in his role of "entrepreneur", is of the greatest usefulness to the builder. For the merchant, again guaging the trends in building, must stock thousands of lines, so that he can at once supply the builder with whatever the builder requires. It is this ready availability of stocks carried by the merchant which is perhaps the great benefit to the builder. The builder knows that he need not carry stocks of building materials but can rely on the merchant to have these available. Furthermore because of the quantities of each line

ordered by the merchant the keenest prices are available and the benefits of such buying are passed on to the builder

There is another aspect of this "service" which is frequently overlooked. Many builders, despite their own experience, will frequently discuss with the merchant the costing of a tender. The merchant can guage the quantities and the prices of the materials he handles and give the builder the benefit of such knowledge. In these days of high and severe competition this is a "service" which cannot be ignored. It is also just possible that through his wide experience the merchant may be able to show the builder where he is perhaps overestimating or even underestimating and this ready willingness to help the builder typifies the old adage — "two heads are better than one".

The Transvaal Sanitaryware and Hardware Merchants' Association is also a constituent of the South African Federated Sanitaryware and Hardware Merchants' Associations and as such continues the spirit of co-operation already outlined by also serving on sub-committees which are at present busy with proposed specifications. The fact that the authorities recognise the usefulness of the merchant in this direction shows that the merchant is also continuing his "service" to the builder for it is in the interest of the builder that the latest methods of building should be known to him. This necessarily implies that, with standardisation, methods are apt to become simplified and this again helps the builder.

Thus we see the many directions in which the builders' merchant helps the builder. All a good example of the dovetailing process, showing how the merchant has become most necessary to the builder to assist him in the work which lies before him.

NATIONAL BUILDING RESEARCH INSTITUTE

The National Building Research Institute was established in 1946 as one of the four major laboratories of the Council for Scientific and Industrial Research. It was set up to fulfil a need for organised research facilities in one of man's largest and most heterogeneous activities, the building industry. In setting up the Institute, South Africa was keeping pace with common world pattern since the Building Research Station had been established in England in 1922 and similar laboratories had been founded in Canada, India and Australia immediately after World War II.

It is the object of the Institute to provide information and research services for the South African building industry and the fields covered embrace the work of manufacturer, builder, architect and engineer. Its functions have already covered a wide field of building, ranging from dam building to small house construction. Free information service is provided in the form of an inquiry service and many building practitioners refer their technical inquiries to the Institute's specialist officers. This free service covers inquiries which can be answered directly from the experience of the officers, or by reference to the information in the Library. Where the problems are wider than this and require special investigation or tests, charges to cover the cost of the work are raised.

The special fields of study at present being followed in the Institute are as follows:—

Architecture: This Division is primarily engaged upon the problem of defining the needs of man in relation to his buildings and planning to meet these requirements. The work is supported by sociological services, which with subjective quantitative surveys, indicate the needs of man and possibly future trends, which must be provided for in the design.

The Division is at present paying much attention to Native Housing, and in particular, considerable work is being devoted to the lay-outs of Native Townships. In the attempt to save costs, investigations into increasing the density of development has led to practical applications of this work with a view to gradually establishing a solution; in this field the second experimental town is at present being constructed by a leading local authority. In addition, work is being conducted on the relationship of the pattern of living to the design of Native houses. Attention is also being paid to the question of reducing costs of buildings and services.

Functional Efficiency of Buildings: This Division conducts research on man's environment in buildings and the relationship between the structure, the climate or environment and the comfort of the occupants (thermal, visual and audio comforts). Particular attention is being paid to heat transfer in buildings under conditions of high solar radiation and high diurnal temperature variation. Research on natural and artificial lighting is also in hand and a fully equipped mobile acoustics laboratory is available for the testing of the acoustics of buildings.

Materials of Building: This Division conducts research into the general problems of materials and to date, the greatest attention has been devoted to the production of slag cement from South African blast furnace slags and to the prevention of expansive plaster and mortar failures. Both these major projects are nearing completion and sound plastic mortars and plasters and satisfactory blast furnace slag cements in South Africa have been shown to be feasible propositions.

Soil Mechanics: Foundations for buildings are the principal field of research of this Division and it has already brought to light the extraordinary heaving movements experienced by buildings in many parts of South Africa. The phenomena underlying these movements are being studied in great detail and considerable field experimentation is under way.

Structural Engineering: The major work of this Division is concerned with finding methods of designing buildings to resist the movements experienced with expansive soil foundations. Work on reinforcing the walls of buildings to resist cracking is already well advanced.

It is impossible to give full details of the whole work of the Institute in a short paper and only the more important national projects have been listed above. Besides these, considerable work is being devoted to many other fields of investigation, e.g. the corrosion of concrete sewers, the general behaviour of foundations on saturated clay soils, etc. The Institute welcomes inquiries and reports of failures, as these are frequently the beginnings of new lines of research, and throughout the work practitioners are invited to co-operate.

THE ASSOCIATION OF BUILDING SOCIETIES OF SOUTH AFRICA

The evolution of Building Societies goes back a long way, in fact to the Industrial Revolution in Britain. Before that time the British Isles had been mainly agricultural, but with the radical change to a highly industrialised country the need for housing in the towns grew apace. The drift from the rural areas to the towns had started and has continued up to the present. The employers in industry needed the workmen but cared little for their other needs, the most important of which was accommodation.

By reason of the mushroom growth of the industrial areas the workers were forced to live under cramped and most insanitary conditions. The first housing problem had arisen and it was only the foresight and ingenuity of a handful of people that this problem was solved.

Necessity is the mother of invention, and out of the dire need for housing at that time arose the Building Society movement. Tribute must be paid to those who first conceived the idea which has led to the Building Societies of to-day, and which have provided homes for over 100 years.

In those early years, as to-day, it was realised that the need for housing was immediate. Nothing would be done for many years if each person desirous of building was to wait until he had saved sufficient to build his home. The only solution was by the mutual effort of those concerned. If their resources were pooled and there were sufficient subscribers, a house could be commenced immediately and another as soon as further funds had been accumulated. Thus in due course each contributing member obtained his house. It is accepted that some had to wait longer than others, but at least a start was made.

Present-day Building Societies do not operate in exactly the same way but they certainly serve the same purpose and at the same time encourage thrift by reason of the facilities they offer for saving. Originally the Societies actually built the houses, hence the name "Building" Society which obtains to-day. The name is probably misleading, as the present-day Society does not build but only makes available the finances to enable others to build. The current practice of accepting

investments from the public at large and from these monies granting loans for the building or buying of homes had enabled Building Societies to contribute more freely to the building up of the country.

The first South African Building Society was established in Natal in 1858 and the movement spread from there to the Eastern Cape, Kimberley and the Transvaal in succession. The movement satisfied a real need in the country and its usefulness can be judged by the progress made. The total assets of all Permanent Building Societies at present is in excess of £260,000,000, out of which a total of more than £210,000,000 was owing by 135,520 borrowers for loans granted for the building or buying of property. These figures give no indication of the volume of business done, nor do they indicate the extent to which Societies have assisted in building up this country.

During 1950, £18,000,000 was advanced by Building Societies for the erection of new buildings. This amount was almost entirely for the erection of new dwellings and flats. The main province of Building Societies is residential accommodation and it can be justly claimed that our suburbs have only been made possible through Building Society finance. Without the facilities for borrowing sufficient money to erect suitable homes, the development of the suburbs would have been delayed and the standard of design and workmanship would not have been so high.

Building Societies cannot lend the full amount required for the building of houses and flats, being restricted to a loan of 75 per cent. of the reasonable value of the complete project. Thus it is still necessary for the potential home-owner to save the necessary deposit before he can make a start. The accumulation of funds under present-day conditions might seem impossible to many, but even with the enormous resources at their disposal Building Societies are at present unable to satisfy the demand for loans. This must surely prove that, despite present-day costs, thrift is not only possible but is widely practised.

The funds invested by the public are looked upon as trust monies and a prudent lending policy is therefore essential. It is this care in the granting of loans that has resulted in a better type of house being built. The valuation placed on a property to be built is not the actual cost of land, materials and labour, but the price it will eventually command in the property market. By insisting on good design and a high standard of workmanship Building Societies have contributed a great deal towards the sound development of Johannesburg and the country as a whole.

Building Societies do not restrict themselves to construction loans; in fact, the greater proportion of the loans granted in any one year is in respect of existing dwellings which have changed hands. The original building of a home is financed by the Building Society, which in due course is able to assist someone else in the acquisition of that dwelling. The figures for 1950 show that apart from the £18,000,000 already mentioned for building loans a further £46,000,000 was loaned for the purpose of acquiring existing properties, a total of £64,000,000.

The progress and development of Johannesburg is something we can all be proud of and credit is due to all those who made it possible.

CITY OF JOHANNESBURG
CITY ENGINEER'S DEPARTMENT

In the interests of Johannesburg and its citizens it will be realised that a minimum standard must be laid down for the control of buildings within the boundaries of the city. The Johannesburg Building By-Laws have been designed for this purpose.

The earliest reference on record of any Building By-Law existing in Johannesburg dates back to 1891 when plan No. 4 was submitted for approval to the Chairman and members of the Sanitary Committee for a semi-detached cottage on Stand 449, Bree Street, Johannesburg. The architect, Mr. Clayton, M.S.A., in a covering letter requested that the offence committed in not providing a separating firewall between the cottages be waived by the Committee. These references to By-Laws in Mr. Clayton's letter were extracted from the

"Gezondheid's Regulations" prepared by the "Johannesburg Gezondheid's Comitè", the local authority existing in Johannesburg at that time to whom full power was giving to frame and administer Building and Health By-Laws.

In 1901, subsequent to the Boer War, radical changes took place in the administration of local affairs. Under the provisions of the Johannesburg Municipal Proclamation of 1901 all powers previously held by the "Gezondheid's Comitè" were removed and were vested in the Lieutenant Governor of the Transvaal and subsequent to the South Africa Act of 1909, in the Administrator of the Transvaal. In 1903 a revised set of Building By-Laws was compiled and it is these by-laws with their periodic amendments which form the basis of those in operation in Johannesburg at the present time.

The City Engineer's Department plays its role in Johannesburg in the administration of the Building and Drainage By-Laws and more recently the Town Planning Scheme in which certain requirements are laid down regarding:—

(a) The use of land and the height and coverage of buildings erected thereon

(b) The structural safety and fire protection of all buildings and matters affecting the health of the occupants of such buildings

(c) Safeguards to be taken during building operations.

In order to administer by-laws of this nature plans of any proposed building development have to be submitted to the City Engineer's Department where they are circulated and scrutinised by the various branches concerned for approval. The approved plans are then filed and referred to by the Inspectorate Staff during building operations.

Since its establishment in 1891 many plans have been dealt with by the City Engineer's Department. To date no less than 209,000 plans for various building projects have been approved. By reference to the graph printed below one is able to guage this great development, particularly over the pre-war and post-war periods. This graph has been prepared from information collected over the last fifty years relating to the number of plans passed per year and the estimated cost of building for that particular year.