

https://dspace.org/

South African Architectural Record: Journal of the Transvaal, Natal and Orange Free State Provincial Institutes of South African Architects and the Chapter of South African Quantity Surveyors

1936

Institutes of South African Architects and the Chapter of South African Quantity Surveyors

http://hdl.handle.net/10539/18845

South African Architectural Record; Journal of the Transvaal, Natal and Orange Free State Provincial Institutes of South African Architects and the Chapter of South African Quantity Surveyors. vol 21:1-12 p1-440

Downloaded from a DSpace repository. https://dspace.org/

THE SOUTH AFRICAN ARCHITECTURAL RECORD

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

5, Kelvin House, 100 Fox Street, Johannesburg. Telephone 33—1936.

Volume Twenty One Number Five, May Nineteen Hundred and Thirty Six

The editors will be glad to consider any mss. photographs or sketches submitted to them, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury they cannot hold themselves responsible for mss. photographs or sketches, and publication in the journal can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and mss. The Institute does not hold itself responsible for the opinions expressed by contributors.

Annual subscription per post £1 1 0 direct from the Secretary

Hon. Editors Professor G. E. Pearse
Rex Martienssen

Secretary A. S. Pearse

139 Greek Monasteries

141 The Traffic and Transportation problem in Relation to Town Planning

156 House Levson, Westcliffe

160 Parking Garages

168 Parking Garage • Durban

170 Correspondence

172 Professional Notes and News



The Courtyard of the Lavra

photo/Ralph Brewster
From the Geographical Magazine

GREEK MONASTERIES

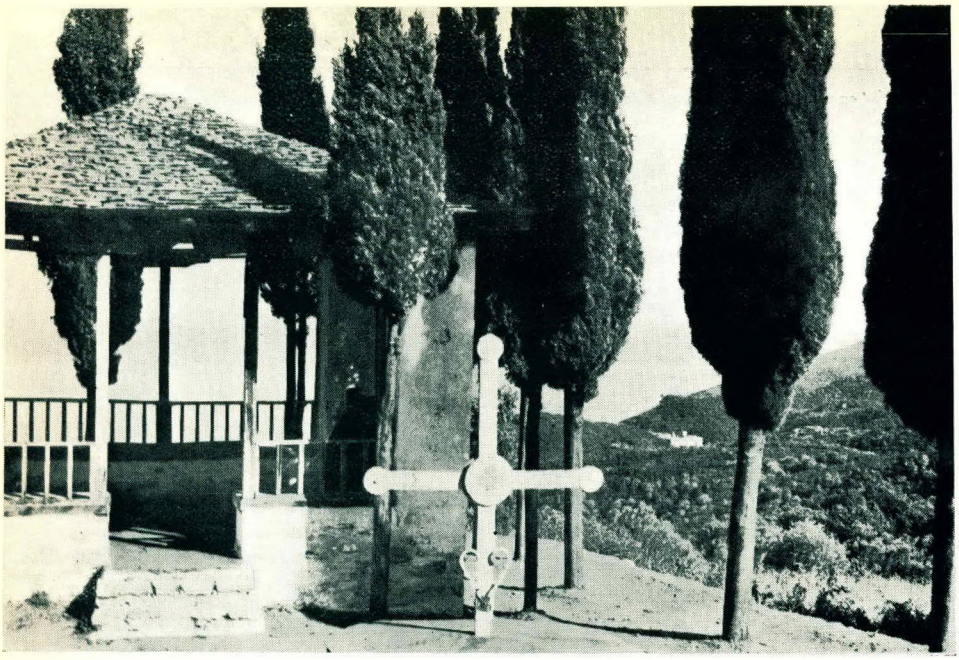
BY PROFESSOR H. J. W. TILLYARD D.Litt

Visitors in Greece often devote themselves entirely to the classical sites and ruins, and pay no heed to the monuments of the Middle Ages. This is perhaps justified by the greater historical importance of the older remains, but so much of the Byzantine tradition still lingers in the Greek churches and monasteries that a traveller may easily fancy himself carried back four or five centuries, when he enjoys the hospitality of the monks and shares in a life that is thoroughly mediæval in all its usages; and such an experience is certainly worth having. Most Greek monasteries have undergone much repair or even reconstruction, but the old spirit is nearly always maintained, with a result both venerable and harmonious. Details of plan vary greatly with the site and climate. The general notion is a range of buildings forming a quadrangle, with the chapel and a well or fountain in the middle. The entrance is often made through a strong tower, and many monasteries were built with an eye to defence, Sinai, for example, being an impregnable fortress. The cells are usually on the upper floors, while store-rooms, kitchen and refectory are on the ground level. Small chapels, often marked by a dome or vaulted roof, are often built into the upper storeys. In southern climes—for instance, at Patmos—a flat roof covers a good part of the main building. Wooden galleries, built out on struts from the outer wall, often form an easy communication from room to room. Nearly all monasteries have guest chambers, usually furnished with divans, on which a bed is made up, and adorned with biblical pictures or with photographs of bishops. The chapel is on the normal Greek plan, the apse, the central dome and the narthex being almost constant features. Unlike Greek parish churches, a monastic chapel contains stalls along the wall; in these the monks can sit down or, if standing, can rest their arms. The chancel is always divided from the nave by the rood-screen or the Iconostasis with its three doors. This screen is usually gilt and is nearly always adorned with sacred paintings. In the Greek church no graven images are allowed, and all representations of the body must be perfectly flat, even if drapery or a halo be embossed. The walls are nearly always painted in fresco or encrusted with mosaics.

Among the finest examples of mosaics are those at St. Luke's, in Central Greece, and at Daphne, near Athens. The domes are either roofed with bronze or, in smaller chapels, with stone roofing tiles. The stone window-frames and the caps of the columns, both interior and exterior, and the lintels, are often beautifully carved with conventional floral or animal designs, Greek crosses or other religious symbols. A small bell-tower sometimes adjoins the chapel. The bells are only rung on holy days; at other times a monk beats an iron bar or a wooden beam as a signal for the service. No regular peals or carillons are used. On the outside the chapel walls often show the alternate courses of stone and flat brick, familiar in Byzantine architecture, or else they are stuccoed and painted. Refectories, too, sometimes have frescoes, the most famous being at Laura, on Mount Athos. At Sinai some crusaders have graven their coats-of-arms on the refectory walls. At one end of the refectory is a desk, from which a monk reads aloud from some religious book during meals.

A grim sight at some monasteries is the charnel-house, where the bones of dead monks (after three years' burial in the overcrowded graveyard) are stored in sacks. In the Salonica campaign an R.A.M.C. man was court-marshalled for stealing some of these bones for private study.

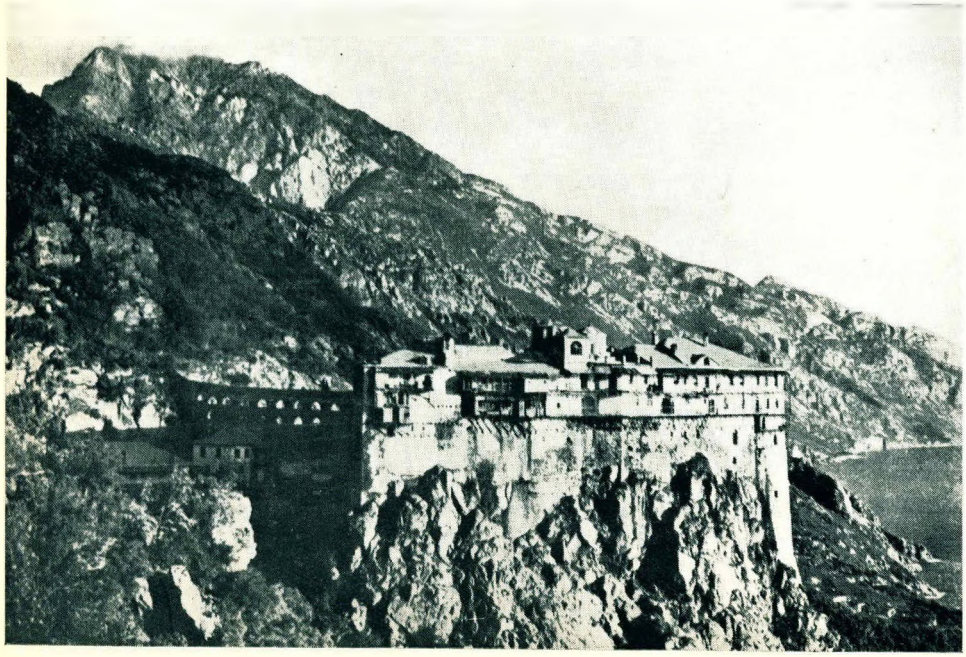
Some monasteries have a separate hostel for visitors. The library is usually on the first floor. Most of the monastic libraries are well arranged and have been properly catalogued. Monastery gardens are usually well cultivated and planted with fruit trees. The monks usually make their own wines and jam. At Athos many monks are fisherman. I saw one barter a huge octopus for a small loaf of brown bread. The feelers of the octopus are peeled and fried in oil and make a tasty dish. Many monasteries at Athos have their own harbours, which were fortified against pirates and Saracens by walls and towers, now mostly in ruins.



A Pavilion near Kayes

In Southern and Central Greece most of the monasteries are in lonely and mountainous spots, and often gave shelter in time of war or disturbance. There are very few nunneries in Greece: the most often visited is at Mistra, near Sparta, and that, I believe, was re-opened by some ladies from Athens about forty years ago, after it had been forsaken for many generations.

Greek monks are famous for their hospitality: the visitor is usually taken straight to the guest room and coffee and jam are offered to him, and arrangements are made for his night's rest. The fare is usually brown bread and vegetable soup, with plenty of oil in it, and resined wine to drink. If a long stay for purposes of study be intended, a letter of introduction from a prelate of the Greek Church, or from a Greek ambassador or minister, should be brought. A visitor should attend at least one service in the chapel, and may leave his offering in the plate or on one of the big candlesticks, where the tapers of the worshippers are set up. No organ or musical instrument is allowed in any Greek church. The monks sing in the traditional way, that is, solo or in union, while a drone is held by some of the other voices. Anyone who wishes may join in the hymn-singing. On the other hand the Russian monks sing in parts, and their choirs at Athos used to be much admired, although the modern Greek style of music is more distinctive. Greek monks are not at all dead to the outside world. Many of them are keen politicians and newspaper readers. Fortunately for us, they regard Britain as their best friend.



The Monastery of Simopetra

photos/Ralph Brewster
Geographical Magazine, London

THE TRAFFIC AND TRANSPORTATION PROBLEM IN RELATION TO TOWN PLANNING

By E. J. HAMLIN, D.Sc.

A Paper read at The Institute of Transport, Johannesburg, 20th February 1936

Introduction.

The object of town-planning has been very admirably expressed in Section 32 of Ordinance 11 of 1931 (Transvaal). This section reads as follows:—

"Every town-planning scheme shall have for its general purpose a co-ordinated and harmonious development of the municipality to which it relates (including, where necessary, the reconstruction of any area therein which has already been sub-divided and built upon) in such a way as will most effectively tend to promote health, safety, order, amenity, convenience and general welfare, as well as efficiency and economy in the process of such development."

In other words, town-planning is an earnest endeavour to exert a well-considered control on behalf of the inhabitants of a city or town over the development of their physical environment as a whole. The author believes that there is a growing appreciation of a town's organic unity, of the interdependence of its diverse elements, and of the manner in which the future of this great organic unit is controlled by the actions and omissions of the present population.

We are gradually learning how, in the complex organism of a town, our deeds of omission or commission may have most important effects which are completely foreign to the motives controlling the decision, and which will inevitably affect the future well-being of the town.

Town-planning stands for a broader outlook in planning for the future than has been the case in the past. It is essential to realise this to co-ordinate all the different aspects of the planning problem. It must take into account the influence of the width of streets and the depth of the blocks contained between the streets upon the character of the buildings. These, in turn, determine the amount of light and air and the privacy of dwellings. Further, the position of the railway will affect the zoning of factories, which in turn should control the character of housing in the vicinity. Yet again, the social and economic factors of the interrelation of educational and recreational facilities must be considered, as well as other combinations.

If town-planning is carefully considered, it has ramifications which are fascinating, inspiring and almost, one may say, appalling. There is so much "at stake," but the possibilities are wonderful. The ideal of a unified, intelligent and purposeful control of the town's entire development follows logically from the inception of the city or town as a social unit with its fate under its own control. Nothing which may become a part of the town, or which can affect its future, can be excluded from consideration. Town-planning embraces the most diverse branches of specialised science and technique applied to urban affairs, including most phases of engineering, sanitation, economics and finance, as well as every art which can minister to the happiness and welfare of its population.

A careful study of the planning of some of the ancient cities makes one marvel at the wisdom of the planners in those days. However, if one is candid with oneself, it makes one feel ashamed of the lack of foresight and recognition of the elementary principles of town-planning as exhibited in the design of many of our South African cities. The horrible grid-iron layout, with no consideration whatever of the contours, is uneconomic, not alone for the town, but for the owners of the estate to which it is applied.

Whether they like it or not, whether they realise it or not, a responsibility rests on the citizens of this generation for making or marring their town's future. It is essential that they use their collective energy and wealth in a conscientious endeavour to meet that responsibility as far as they can.

Town-planning can be conveniently considered under the five main headings shown in Figure 1. The sub-headings will help to indicate the general problem.

Means of communication is the basis for the continued existence of a town; improved methods of transport are the root of the modern phenomenon of the rapid growth of our towns. The success of any town is probably more dependent upon means of communication than upon any other physical factor under its control. The author has been asked to deal with this section of town-planning. He realises that it is a tremendous task, and one upon which he is not a specialist, but he hopes that the paper will stimulate interest. The author trusts his elementary treatment of the subject will be forgiven, but this method has been considered necessary because of the fact that those who deal with transport problems are not specialists in town-planning. It is a pity that they do not endeavour to understand the problems which the town-planner endeavours to solve. Each specialist is dependent on the other, and in South Africa a great deal of the work to be done by town-planners is to correct the conditions brought about by the lack of consideration of transport needs by those responsible for the conditions pertaining in our towns.

The author, however, wishes to put on record his great appreciation of the work done by the South African Railway Administration, which is endeavouring, as far as it is within its power, to assist local authorities. In Johannesburg there remains yet one serious problem to be solved, and that is further outlet to the north of the city.

Preliminary Investigations.

In considering any branch of town-planning, and more especially in the branch to which this contribution applies, the actual work comprises the following essential steps:—

(a) A study of the past and present conditions which in turn indicates the tendency of development.

(b) A survey of the pertinent facts and an estimate of the probable future changes in these facts.

(c) A definition of the object and purposes to be attained.

(d) The planning of the physical features to make them suitable.

(e) The bringing of the plans to completion through suitable legal and administrative machinery.

Each of the above steps is vital, but it must never be overlooked that every element in their physical environment affects people in two distinct ways—firstly, in the economic side, and secondly in the æsthetic side. The former determines their efficiency and the latter their enjoyment of life. Both these aspects must be most carefully considered when planning or re-planning any town.

The demands for beauty are, in a large measure, identical with those of efficiency and economy. During the solution of any town-planning problem there are many opportunities for choosing between decisions of substantially equal economic merit, but differing in æsthetic quality. This is the essential of town-planning.

Urban Transport.

Urban transport falls into two sections—transport necessary to enable the town to come into existence, or, in other words, the transport of concentration and the transport required for the movement of the people within the urban area and its immediate surroundings, and for the collection and distribution of commodities.

The aim of transport, whatever its form, was, by movement, to add to the value of the thing moved, and out of that value to earn for itself an adequate return.

In most towns or cities there is an insistent and ceaseless demand for increasing and better transport facilities. The burden of keeping pace with the demand is a difficult one to carry, and as the general public is never really satisfied, the burden will become increasingly difficult to carry. Only by intelligent study and planning can any transport system remain solvent and self-supporting.

Figure 2 shows a brief analysis of the various means of communication.

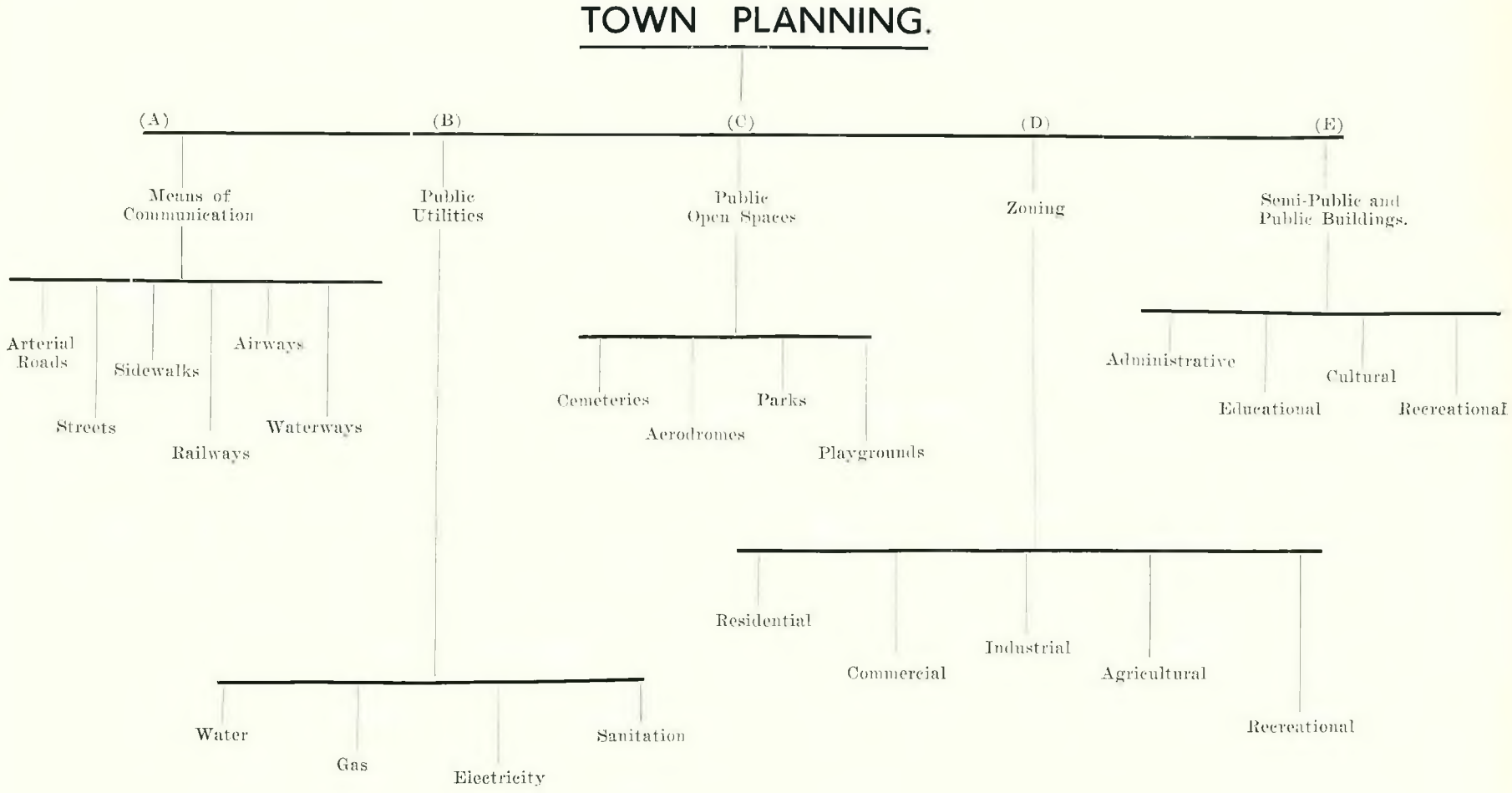

TOWN PLANNING.
(A)
(B)
(C)
(D)
(E)
Means of Communication
Public Utilities
Public Open Spaces
Zoning
Semi-Public and Public Buildings.
Arterial Roads
Sidewalks
Airways
Streets
Railways
Waterways
Cemeteries
Aerodromes
Parks
Playgrounds
Administrative
Educational
Cultural
Recreational
Residential
Commercial
Industrial
Agricultural
Recreational
Water
Gas
Electricity
Sanitation

FIG. 1.

A careful analysis of conditions pertaining to-day indicates that previous growth and expansion of cities were dependent primarily on railways. The introduction of the electric railway and tramways at a later date played an important part. To-day the motor vehicle and aeroplane are playing a still greater part, the former especially as far as suburban traffic and transport are concerned, and the latter in relation to inter-continental and city to city transport.

The motor car has made it possible for there to be a wider distribution of a city's population, and at the same time making it possible for a city to expand to a greater size than was previously possible.

Notwithstanding this fact, the motor, instead of being a factor in aiding decentralisation, has resulted in a greater concentration of traffic in the central area of cities.

Usually, the highest land values occur where there is the greatest concentration of persons. High land values, in turn, result in denser population and greater building bulk.

The provision of additional transport facilities in such cases often only means still greater concentration, instead of relieving the trouble.

The question naturally arose : " Were cities to go on growing continuously ? " There would appear to the author that, as far as transport is concerned there were two checks. The heart of a city became its weakest point. The circulating system of roads and railways might be expanded and multiplied, but at some point the heart would fail. The congestion in the streets of the central area would reduce the general speed of movement, circulation would be sluggish, and then degeneration would set in. Investigations have proved, most conclusively, that when vehicular traffic in a street reached a certain density in relation to a given speed of movement it ceased to grow. Naturally, the streets and railways of the central area might be widened and augmented, but there is a limit to this. The other check upon the growth of a city was the average speed of movement.

In the days of the animal transport the usual limiting distance was about 15 miles, and then the journey was not undertaken unless it was absolutely essential. To-day, with railways and motors, persons are able to live farther away from their place of business. There is, however, a time limit set to the daily journey for most people. The author realises that there are many folk in South Africa who go from Simonstown, Stellenbosch and Somerset Strand to Capetown every day, also from Randfontein or Springs to Johannesburg, and also from Irene to Pretoria, but the average time limit for the daily journey should not exceed 30 minutes of travelling time, plus a short walk at either end. The size of any city depends to a large extent upon the area which could be covered within the time indicated above.

Civic Survey.

Before any re-planning can be done, it is essential to have a civic survey. The author will exhibit the old survey of Johannesburg. It would be too costly to incorporate even the most important sections of the survey in this paper, but the author's Council has decided to publish it in book form, which will make it available for those interested. The author will demonstrate from the civic survey the importance of transport on any planning or re-planning scheme.

The sections of the civic survey which are of the most interest to the members of this Institution are those affecting traffic generally. The author, therefore, proposes to deal with the following as being the most important:—

(a) Traffic control.
(b) Parking.
(c) Parking garages.
(d) Height of buildings.

Traffic Control.

A great deal has been written about this subject, and it is not the author's intention to deal with it fully. However, it does appear that there is far too much confusion of ideas and ideals. It would appear to the author that there is a tendency to over-legislate, and at the same time for each local authority to " paddle its own canoe." The author is definitely of the opinion that there should be a sincere attempt made to standardise all regulations. Further, he offers the following advice:—

(a) Make all highway traffic regulations as uniform as it is humanly possible.

MEANS OF COMMUNICATION.

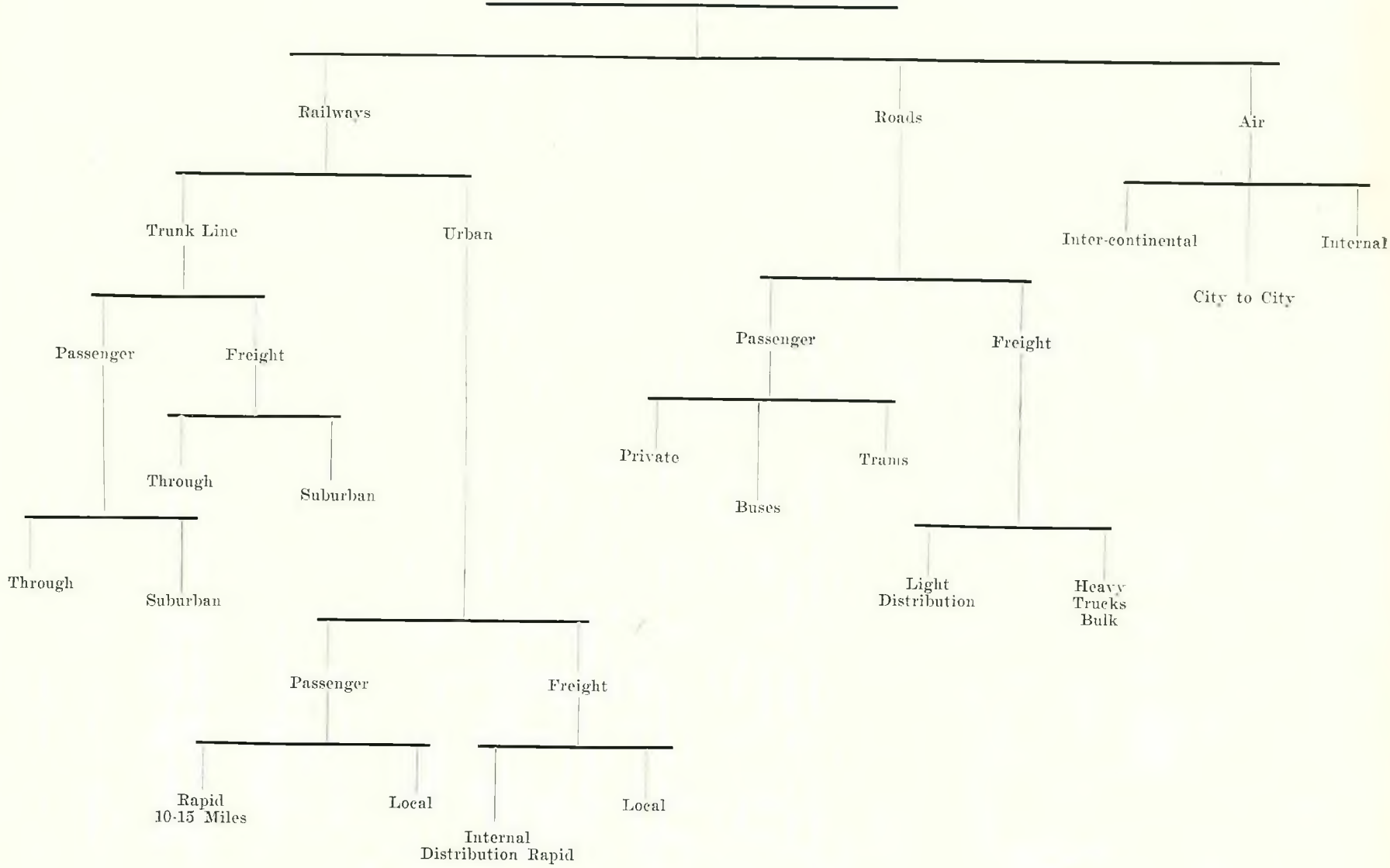


FIG. 2.

(b) Make all traffic regulations clear, or they will not be understood; reasonable, or they will not be obeyed; short, or they will not be read, and if they are not read, how can they be anything else but useless ?

(c) Do not try to regulate too much, or you will complicate instead of regulate.

(d) Profit by the past experience of others —do not be unwilling to learn.

(e) Adopt tried methods first, and improve on them if you can.

(f) Remember, at all times, that the secret of successful and economic traffic control is found only in the education of the people to be regulated in the regulations they are expected to follow.

Parking Problem.

This is a most serious problem—probably greater in South Africa than in most countries. It would appear to the author that one of the chief causes of this problem is the lack of provision of efficient public transport. It is only necessary for one to consider the conditions pertaining, say, in Oxford Street, London—one of the busy thoroughfares. Parking is prohibited between mid-day and 7 p.m. for longer than is necessary for loading and unloading, and for no longer than 10 minutes, except in connection with street repairs, building operations and furniture removal—taxis on ranks excepted. Investigations carried out show that stationary vehicles, other than buses, are less than 10 per mile of kerb.

The parking problem has been summarised as follows by a well-known traffic engineer, Mr. Henry Watson, in his book entitled " Street Traffic Flow ":—

" (1) The primary function of streets is to move traffic, and parking is legally on sufferance and is not a right. Legal rulings establish it that ' the King's Highway ' is not to be used as a stable yard.

" (2) Private and individual conveniences should be withdrawn, if conflicting appreciably with the public interests as a whole, i.e., with those of the majority of street users.

" (3) The great majority of street passengers in large cities is carried in public vehicles, and the relative importance of the private vehicle is often exaggerated.

" (4) Only a small minority of street users and patrons of shops (often even of high-class ones) can benefit by parking facilities.

" (5) The kerb parking capacity of streets surrounding large shops, even with short-time restrictions, is adequate only for a very small proportion of their customers.

" (6) Garaging is no inconvenience to long-time parkers, and the cost no burden to car owners.

" (7) Enforcement of time limits may effect little improvement in traffic flow.

" (8) Enforcement of time limits demand costly police supervision.

" (9) The prosperity of shops and other businesses in the centre of large cities is imperilled by traffic congestion making access thereto difficult. Parking restrictions, often opposed by their owners, would mitigate this danger.

" A certain opposition to parking restriction is contrary to public interests. More passenger minutes may be lost through parked vehicles than are saved by that facility. Thousands of pedestrians may be incommoded, and even endangered, by the parked vehicles of a few, even if only very slightly. That parking restrictions entail loss of trade has often been found to be untrue, and contentions of this type, in respect of establishments selling valuable merchandise to discriminating customers are hard to accept. The proportion of customers entering 71 large shops in seven leading American cities, who arrived by private car, was found to be only 15%. Modern traffic facilities have built up businesses in congested areas, and it may not be unreasonable to impose slight burdens to facilitiate it, for main street site values do not fall with parking restrictions. Yet opposition to such is frequently forthcoming from influential quarters, some times to the detriment of unrepresented road users. Not everybody desires free traffic flow and efficient transport, and trading interests, often well represented on local councils, are not always working to the advantage of the public as a whole."

Motor Vehicles in Johannesburg.

Table 1 gives details of the growth of motor vehicles in Johannesburg:—

TABLE I.

	Year 1921	Year 1926	Year 1931	Year 1935
Motor Cycles	3,634	6,650	5,315	5,435
Motor Cars	4,805	10,556	19,466	38,947
Motor Cars per head European population	1 to 31	1 to 16	1 to 10.2	1 to 5.7
Number of Passengers carried:				
By Tram	52,979,672	53,846,391	53,525,609	56,334,593
By Bus	—	—	4,316,541	9,250,246

From an investigation of the conditions in Johannesburg, it is noticeable that the areas served previously by railway or tram are more densely populated and developed than other areas laid out at the same time, or before them, but which were not provided with transport services. Since the provision of bus services in these latter areas, rapid development has taken place.

Transport facilities may be said to create land values. A tram track and service in a street which is or may become a business street will greatly enhance the value of the abutting land. Railways create values adjacent to the stations, especially about the termini.

Each mile of new line of transport service into undeveloped areas creates the possibility of housing within easy access to the city.

A transport service may be so designed or used as to spread land values and population, assist to develop the area in the direction desired, and assist in preventing over-concentration and congestion in the central area.

Unfortunately, there is a great temptation to increase transport facilities in already congested areas because of the public demand. The provision of this only ultimately aggravates the trouble and results in expensive street widenings, underground or overhead services.

Traffic and transport routes should be designed so that there is fairly direct access from the residential areas to the business or industrial areas, or places such as sports grounds, and from the business to the industrial areas.

For through traffic, by-pass routes may be provided.

The whole design should be so that over-concentration in the central area is avoided. This is bound to happen where all transport and traffic routes radiate or pass through the centre, and no provision is made for cross routes.

By providing suitably designed cross routes, giving direct routes especially between the areas where people live and where they go to work, for recreation or for shopping, cross, or circular routes not leading to areas where a large number of persons frequently wish to be are of very little assistance in solving traffic or transport problems in relation to town-planning.

By the decentralisation of industry, as well as place of residence, and the development of local recreation and shopping centres, much transport waste and traffic movement may be avoided. The aim should certainly be to eliminate movement of persons to a minimum without in any way destroying their amenities.

The greatest amount of traffic in the central area is caused by the private car. One bus can carry 21 persons for the road space occupied by one car, but a bus occupies only about 1.5 times the space of a car in a traffic lane. Comparing the two vehicles, a bus transports approximately 12 times the number of persons that a car can for a given space occupied in a traffic lane.

An investigation in New York indicated, in a number of streets studied, an average use of 300 to 350 vehicles per moving lane at velocities of between 9 and 10 m.p.h. When the velocity exceeded 11.5 m.p.h. an average of 200 vehicles per moving lane was maintained in constant use.

The theoretical lane capacity of a roadway increases rapidly with the velocity up to 11.5 m.p.h., and then gradually decreases for any further increase in velocity.

The reason for this is that the faster the vehicles travel over 11.5 m.p.h., the greater the spacing between vehicles so as to allow of the vehicle being brought to a standstill.

When travelling at 8 m.p.h. a vehicle can be pulled up in 6 feet; 12 m.p.h. in 10 feet; 20 m.p.h. in 30 feet; 40 m.p.h. in not less than 100 feet.

Observed Average Spacing between Vehicles in New York.

Velocity in m.p.h.	Distance apart in feet.
8	25
12	35
20	60
30	100
40	160

It was found that trams in a roadway reduce the traffic capacity 25% on lanes affected.

Again it was found that robots also materially reduce the theoretical capacity of a road.

Parking Garages.

The author believes that a part solution of the parking and traffic problems is the erection of parking garages, either municipally owned and operated, or municipally built and leased, or privately owned and operated.

It must be admitted that street parking is dangerous, is a nuisance, and complicates the difficult problem of traffic control. Not only this : the general public will eventually demand that facilities be granted to them to garage their cars, more especially if public transport forces them to use their own private car to come to the city.

Effect of the System of rating on Parking Garages.

The author noticed that in the countries recently visited by him, in addition to parking garages, a great deal of use was made of privately owned open spaces for garaging cars. However, this was never the case where rates were levied on site valuation only. This is an important factor, which must not be overlooked.

Municipal or Private Garages.

The author realises that there are many schools of thought ready to express divergent views on this question. Several points must be considered, amongst which are:—

(1) Would it be better for the local authority to reduce its traffic control staff and use the savings towards the capital charges of parking garages ?

It is argued that the ratepayer has to pay salaries to officials to perform an impossible task if garage accommodation is not available. In addition to the payment of salaries, a large amount is taken from the motoring public in the shape of fines.

Would this money not be better used to provide the necessary facilities ?

(2) Should the local authority or private enterprise build parking garages ?

As has been stated above, the garage proprietors are afraid of the policy of the local authority being altered, and landing them with a " white elephant."

Some members of the general public are afraid that a monopoly will be created and parking fees will become a very heavy burden.

(3) Should the local authority build the garages and lease them under such conditions as would protect the public ?

It is argued that many local authorities provide all sorts of sporting facilities under this system, and there is no reason why parking garages should not come under the same category.

The author has his own views on these questions, but cannot at this stage give them. Suffice it to relate that Scheme (3) above is one well worthy of investigation by the local authority, the motor industry, the R.A.C. and the A.A.

Underground Garages.

There seems to be a mistaken idea that underground parking garages are more economical than above-ground structures. It is often overlooked that the cost of excavation must be added to the cost of the site. It may often be much better to buy a more expensive site in a better situation.

Design of Parking Garages.

(A) Economic Factors.

(1) First Cost.—The commercial success of every parking garage depends upon the proper balance of land, plus construction cost and the efficiency of the lay-out. The cost of the land has a most important bearing on the economic height of the building.

(2) Peak Load.—Sixty per cent. of the total capacity of a garage may arrive within half an hour in the morning. Speed of handling cars as they enter the garage during rush hours is of the utmost importance. There is nothing more annoying than to have to waste time.

(3) Chauffeur-driven Cars.—It is necessary to consider the provision of waiting rooms and their equipment for this type of car.

(4) Garage Survey.—Before commencing the design, a survey is necessary. The author was able to obtain particulars of the usual details required.

(B) Planning Factors.

The aim of good planning is maximum parking compatible with efficient inter-floor travel. The economy of any garage lay-out is determined by the smallness of the area devoted to aisles, passages, ramps, lifts and other non-productive features.

(1) Floors.—In planning parking floors, it is well to start with a sketch scheme giving the maximum number of parking spaces possible, ignoring lifts and service room. The essential structural features should then be added, so as to interfere as little as possible with car spacing.

(2) Single or Double Parking.—The ideal storage plan requires that every car space should have frontage to an unobstructed aisle. There are, however, conditions which make it advisable to introduce double parking. Double parking should never be greater than 25 per cent. of the capacity of any floor, and, when possible, it should be cut down to 10 per cent.

(3) Parking Space.—The author is indebted to several car agents who have supplied the details regarding various types of cars. From these it can be stated that the space allowed should be approximately a width of 6ft. 9in. and length 15ft. For convenience in design, the three-car bay has been found to be the most satisfactory.

(4) Entrances.—Garages should, if possible, have only one point of entrance and exit for the following reasons:—

(i) It simplifies checking in and out.

(ii) It increases sales in accessories department.

(iii) It is only necessary to have one enquiry office.

(iv) The cost of installation of garage doors is reduced.

(v) The garage entrance should be removed from street intersections.

(5) Roof.—Provision should be made for roof parking, not only because the additional space may mean more revenue, but it simplifies the problem of additional height at a later date.

(C) Construction Factors.

(1) Ramps.—A grade of 10 to 15 per cent. is general, but under exceptional conditions a grade of 20 per cent. may be allowed.

(2) Ramp Floors.—The surface should be fairly rough, but at the same time should be so constructed as to be dust proof. Asphalt floors are affected by oils and greases.

(3) Loading.—A live load factor of 100lbs. per square foot for a passenger car and light truck garage is both safe and economical. For a heavy truck garage the figure should be raised to 150lbs. per square foot.

(D) Ventilation.

The question of ventilation is of great importance, but the design of any efficient ventilating system depends upon so many factors that it cannot be treated adequately in this contribution.

(E) Lighting.

In the case of garages with ramps, the latter should be on separate circuits from floor lights, and should be controlled from the ground floor, so that they may be turned off when not needed. Lights should be arranged so as to give an even lighting for the whole floor of about two candle-power per square foot.

Garages with Lifts, not Ramps.

The author examined recently the plans for a proposed garage where lifts were to be used instead of ramps. Frankly, it was most expensive in design and very uneconomic in floor utilisation, because little rearrangement would save the cost of two-thirds of the mechanical equipment and give double the parking area. As the author holds a public position, it is hardly fair to give details of the plan in question, but it is necessary to indicate that garage design is one which requires particular knowledge, and that there is need for a specialist for this type of work in South Africa.

Mechanical Garages.

The author had the privilege of studying several types of mechanical apparatus for parking cars. The most popular type of machine is one that resembles a large conveyor. The cradles for parking the cars are supported between two endless chains which move vertically and transfer the cradles from one side to the other at the top and bottom of the travel. It would appear to the author that, although this system has many excellent features, it is not an economic proposition as far as South African conditions are concerned. If any member would like any information on this particular type of garage equipment, the author would be happy to supply it.

Height of Buildings.

In considering this question it is essential that it be realised that every municipal council and the officials it controls must treat every ratepayer in the same manner. It is unfair to allow one owner to erect a building to such a height that at a later date the council is forced to adopt one of the two following alternatives:—

(a) Refuse any owner privileges granted to any other owner.

(b) Expropriation of expensive city properties to accommodate the traffic.

From a study of the civic survey of Johannesburg the regional planning consultant and the author came to very definite conclusions. These were summarised as follows:—

"In considering the applicability of these conclusions to conditions in the Witwatersrand and Pretoria region, it must be remembered that not only are the streets in New York wider than those in Johannesburg (100ft. avenues and 60ft. cross streets in New York, as compared with an average width of about 65ft. in Johannesburg) but that New York is furnished, in addition, with an elaborate system of overhead and underground railways, which do not exist and probably never will exist here. The proposed electrification of the railways will naturally improve transport conditions, but in the central areas facilities for traffic must of necessity be considered in terms of street capacity alone. Moreover, having regard to the high value of property, street widening will be, in general, outside practical politics, and building bulk must therefore be regulated in accordance with the traffic capacity of the existing streets.

"For this purpose conditions in Johannesburg may be taken as representing the extremes with which we have to deal in the region. In the central area 45.8% is devoted to streets and public open space and 54.2% to building sites, of which 5.4% is occupied by internal courts. The average width of the streets is about 65ft.; the average number of storeys is 3.5 and the average proportion of site coverage is about 90%. The traffic capacity of the streets is at present fully taxed at the rush hours. It is much reduced by parking, but assuming this obstruction is removed, it is fair to assume that the traffic capacity will be not more than doubled, and that it will then be capable of serving buildings of not more than double the average height of the existing buildings.

"This seems to indicate that in the general interest it would be reasonable, in the central areas, to limit the average height of buildings to seven storeys, or, having regard to the reduction in the proportion of site coverage proposed below, to say eight storeys.

"In considering the proportion of site coverage, it is to be noted that whereas in Lower Manhattan 51.9% of the total area is devoted to streets and 48.1% to building sites, in the central area of Johannesburg only 45.8% is devoted to streets and 54.2% to building sites. Hence, the maximum of 80% site coverage,

recommended in the New York regional plan on the basis of building sites occupying only 50% of the total area should, in Johannesburg (and still more in Pretoria, where 69% of the central area is occupied by building sites), be reduced to not more than $\frac{50 \times 80}{54.2} = 73.8\%$ or, say, in round figures, 75%.

"This is the basis, viz.:—An average of eight storeys on 75% of the building site, which we recommend should be adopted, therefore, in framing the height and bulk restrictions in the central areas. To adapt the average height restriction to the width of individual streets, it is necessary to prescribe it in terms of the width of the street. The proper proportion is obtained by dividing the average allowable height of buildings (8 storeys x 12ft.=96ft.) by the average width of street (65ft.), which gives a proportion of 1½ to 1. In other words, the height of buildings must not exceed 1½ times the width of the street on which they abut. If such a regulation were to be applied without qualification, it would tend to result in a uniform height of building throughout each street, which, although it has advantages, also has disadvantages, from the architectural standpoint, and is unnecessarily restrictive. Hence, always provided that neither the maximum allowable bulk of the building nor the maximum height at the street frontage is exceeded, it is reasonable to allow some latitude in the matter of total height. This can best be accomplished by allowing, subject to the above provisos, an increase in height of, say, 3ft. for every foot that the main walls of the building are set back.

"To summarise these suggestions, it is proposed that in the central areas future buildings should be subject to the following height and bulk regulations:—

"(a) Not more than 75% of the site to be occupied by buildings. (A higher percentage should be allowed on corner sites.)

"(b) The height of a building at the street line is not to exceed 1½ times the width of the street on which it mainly abuts.

"(c) The bulk of a building is not to exceed the number of cubic feet obtained by multiplying the superficial area of the proportion of the site which may be built on, by a height equal to 1½ times the width of the street forming its main frontage.

"(d) Subject to provisions (b) and (c), the total height of the building may be increased by 3ft. for each foot that the main walls of the buildings are set back."

It may be interesting to give details of heights allowed in other cities in the world. These are given in Table 2 (overleaf):—

From a careful examination of these details it will be gathered that the eight storeys suggested for Johannesburg is in excess of that allowed in most European cities—much more than in the heart of London.

Types of Vehicle for Public Transport.

In reviewing the present position, it is necessary to take into account the relative capital cost, gross revenue, track and route mileage, the number of vehicles required and the passengers carried for the different classes of cities, and, indeed, for each different route in each city.

In the smaller communities the investment required for tracks, sub-stations, lines, equipment, etc., to operate a tramcar service, is out of all proportion to the revenue received, while in the larger cities, by reason of the greater density of traffic, the continuance of a tramcar service on the heavier lines seems to be entirely justified. This is very well indicated by statistics recently published, which show that inter-urban operation and communities under 25,000 population represent 35.8% of the total route mileage and carry only 10.6% of the passengers, with 13.6% of the total revenue. By contrast, the thirteen larger cities operate the same mileage (35.8%), carry 61% of all the passengers, and take in 57.8% of the revenue. In the 80 intermediate cities the situation lies between these two extremes, these cities operating 44.1% of the route mileage, carrying 28.6% of the passengers and taking in 29.9% of the gross revenue.

A general statement which may be deduced from these showings is that in the smaller communities and light traffic lines of larger communities, transport having low capital cost is important, even at some disadvantage in direct operating cost, while in the more dense

TABLE 2.

Height Restrictions.

City.	Maximum Height of Building.
Berlin	Width of street, or 5 storeys.
Frankfort	Width of street plus 2 metres, but not to exceed 20 metres.
Munich	Width of street, or 5 storeys.
Hamburg	30 metres.
Dusseldorf	Width of street, or not over 20 metres.
Cologne	Width of street, or not over 20 metres.
Birmingham	100 feet.
Sheffield	Width of street.
Chicago	200 feet.
Boston	$2\frac{1}{2}$ times width of street, but not over 125 feet.
Washington	160 feet.
Toronto	130 feet.
Johannesburg	1—2-3 times width of street, but not over 140 feet. (Buildings may be erected to greater heights, provided the cubic contents remain as above.)
Capetown	120 feet.
Durban	1—2-3 times width of street, but not over 140 feet.
Port Elizabeth	None.
East London	None.
Pietermaritzburg	Under consideration.
Pretoria	None.

communities direct operating cost becomes of primary importance, with the blending off from one to the other through the intermediate zones.

To determine the answer as to best equipment for any given local station, it is necessary that a definite engineering study be made on the basis of local conditions.

The vehicles now generally recognised by transport operators as having a place in their scheme of things include taxicabs, petrol or crude oil motor buses, trackless trolley buses and electric tramcars. It is also recognised that each of these vehicles has certain inherent advantages and certain inherent disadvantages, and that no vehicle contains all the desirable elements, and that each of them, when applied to its own proper sphere, will make a better relative showing than other classes of equipment under the same conditions.

In judging the relative desirability of various classes of equipment, there are three (3) distinct groups of interests which must be taken into account, i.e., the transport undertaking, the user and the general public.

It may be stated that in light service a maximum number of comparatively small vehicles, in spite of a comparatively high seat mile cost, should be used to maintain the necessary frequency of service. In the heaviest of traffic, larger capital expense and larger units are justified by the increased revenue available and the lower direct operating cost per seat mile.

It can be inferred from the foregoing that for the lightest of services, because of its lower capital cost, the petrol or crude oil bus is preferable; on the heaviest services, in spite of the tremendous capital cost, electric trains are justified; on the intermediate services, which form the vast majority of local conditions, there is a field in the heavier traffic for the tramcar; while in the lighter end, where the relatively high operating cost of the motor bus is not justified, the trackless trolley finds its field.

The results which have been obtained in attracting patrons by the use of modern equipment of various types indicates that operating cost per mile or per seat mile should not be given too much consideration in selecting new equipment. If a modern transport service will attract 50% more passengers, 10 or 15% higher first cost per mile or per seat mile may be justified. Nevertheless, it is worth while to analyse the relative operating costs of the various types of equipment.

Without attempting to show exact values, which, as a matter of fact, will vary for each application, it can be shown that there is a distinct field for each type of transport. For the lighter service, running up to a maximum peak hour density of about 700 passengers, the petrol or crude oil bus will be the cheapest. In the range between 700 passengers and 3,000 passengers per hour passing the peak point of the line, the trackless trolley will probably show the lowest cost. Above 3,000 passengers per hour peak load the tramcar is cheaper than the trackless trolley.

In considering vehicles of a fixed type, as, for instance, a petrol bus or a trackless trolley, the operating cost per mile naturally increases with the size of the vehicle. On the contrary, however, the cost per seat mile reduces.

To achieve the minimum operating cost, therefore, the largest vehicle consistent with reasonable headway should be used. However, considering the picture broadly and taking into account the increased revenue which may be attracted by more frequent headway, it is entirely possible that a greater number of smaller vehicles may be required, particularly in lighter service or on short runs, in order to attract passengers, even though the overall operating cost be higher.

Based on the necessity for frequency of service, longer lines will justify larger vehicles with less frequency of service, while shorter lines, because of the frequency of service required, may, of necessity, require the use of smaller units, with higher per seat mile costs. The length of line and other conditions being the same, the smaller vehicle should be used in the lightest traffic density ranging to the largest feasible equipment in the zones of heaviest traffic.

These conclusions are based solely on the cost of giving transport under the various specified conditions. This, of course, is a very important point to the transport undertaking, but actually

his purpose is to make a return on his investment, and it may very well be, and often is, in fact, true, that sometimes the cheapest operation is not the most profitable. In these days of competition with the private motor-car, the quality of service rendered to the travelling public may determine the amount of riding and, therefore, the profits, so that under some conditions the equipment which has the best appeal may turn out to be the most profitable, even at a somewhat higher per mile or per seat mile cost.

It is true that people do not take short rides for pleasure. Local riding is practically all necessity riding—the handling of people going to and from their places of business, shopping, etc. Nevertheless, the question as to whether a particular rider patronises public transport or drives his own motor-car may depend very largely upon the character of service offered.

Relative Advantages and Disadvantages of each type of Transport.

The relative advantages and disadvantages of each type of transport have been stated on many occasions, and it is not considered to be within the scope of this paper to deal with them. The important factor is that it must always be remembered that each type has its own sphere of application and that the subject must be carefully considered.

When a decision is made, then it is essential that roads be planned so that the type of transport selected can be accommodated.

Roads.

When the main traffic routes of the city have been planned it is then possible for the engineer to design the whole road system to meet the present and future needs of the traffic. It will be possible to deal with this question from the economic point of view to the great advantage of the general ratepayer.

To allow any transport undertaking to grow haphazardly is wrong from every point of view.

By-Pass Roads.

The advisability of laying down by-pass roads depends upon many considerations, such as requirements of traffic, trade and building developments, etc.

There have been many opponents to by-pass roads because they were supposed to affect the trade in the centre of the city. Careful investigations have proved this to be wrong.

From the point of view of commercial and business activities, it has been proved that the creation of a by-pass road is an advantage. The by-pass road clears the principal streets of traffic which has no other object except that of making rapid progress through the streets. The by-pass road allows the streets to be left free for the circulation of local traffic that has a definite purpose in the town.

To be effective, a by-pass road must not greatly increase the distance to be covered by the vehicle using the road.

Airports.

The effect of aerial transport in town-planning problems is very difficult to predict, but it would appear to the author that it may tend to a certain amount of decentralisation.

Summary of Recommendations.

(1) There must be close co-operation between the local authority, commerce, public transport undertakings and motorists.

(2) Flats must provide for at least 25% more cars than tenants, failing which either municipally-owned garages must be provided, or private enterprise must supply the demands.

(3) Commercial firms, in the business area, should endeavour to arrange for all loading and off-loading of merchandise to be done on the premises.

(4) Where large blocks of offices exist, provision should be made for parking the cars of tenants. Failing this, public or private garages must be provided.

(5) It must never be overlooked that the streets are provided and maintained for the benefit of the ratepayers as a body. Streets are not for the exclusive use of persons who wish them for use as parking garages. The public have a right to use their cars for shopping; if cars cannot be parked to enable shopping, either public or private enterprise must supply parking facilities.

(6) Efficient public transport is essential, even if it only covers working expenses, because the better and more efficient public transport is, the less use will be made of private cars to come to town.

(7) There is a need in South Africa for a specialist to deal with these problems if economic success is to be achieved.

Conclusion.

The author has endeavoured to indicate the importance of one section of town-planning. South Africa is passing through a period of prosperity, and the time is opportune for real effort to be made. An endeavour has been made to stress the fact that every town must be considered as a great organic unit. The periods of either national or personal prosperity usually result in national or personal extravagance, instead of wise spending. It is admittedly difficult to convince the ratepayers of most cities or towns to take a long view, but the task is worthy of the best endeavours of councillors and their technical officials. Each succeeding generation will judge us by the result of our endeavour.

The author appeals for a study of the principles of town-planning by all, so that there will be an appreciation of the great value of this science. The author sincerely believes that the result will be of tremendous value to the future citizens of South Africa if the fundamentals of town-planning are applied to our cities and towns. Some may say that the ideal cannot be attained, but unless we have high, unselfish ideals we fail in our private lives, and surely we shall fail in our civic and national life unless we endeavour to apply the highest ideal to our civic and national life.

HOUSE LEVSON, WESTCLIFFE ● COWIN AND ELLIS, ARCHITECTS

The client had chosen a difficult Westcliffe site, sloping rapidly to the south, access being from the north and the main vista the west. Moreover, the architects had to adapt their scheme very largely to existing foundations, which had been laid according to plans prepared by another architect.

Taking into consideration these limiting conditions, the architects must be congratulated on their achievement, which is all the greater because of the necessity for strict economy. (The final cost of the house, without painting, which was done by the owner, was £1,500.)

The original requirements were: A very large photographic studio, a living room with dining alcove, one bedroom, bathroom, kitchen, laundry, garage and servant's quarters.

Good use has been made of the differences in level, studio, garage, etc., being arranged on the lower level, whilst living and bedroom are on street level. From the entrance hall a staircase leads down to the studio, which has ample light from the south. The garage is built out to the west, forming a delightful loggia and terrace in front of living and dining room. (It must be noted that the dining room was originally designed only as an alcove connected with the living room. The somewhat inorganic separation is one of a number of alterations asked for during the course of the job.)

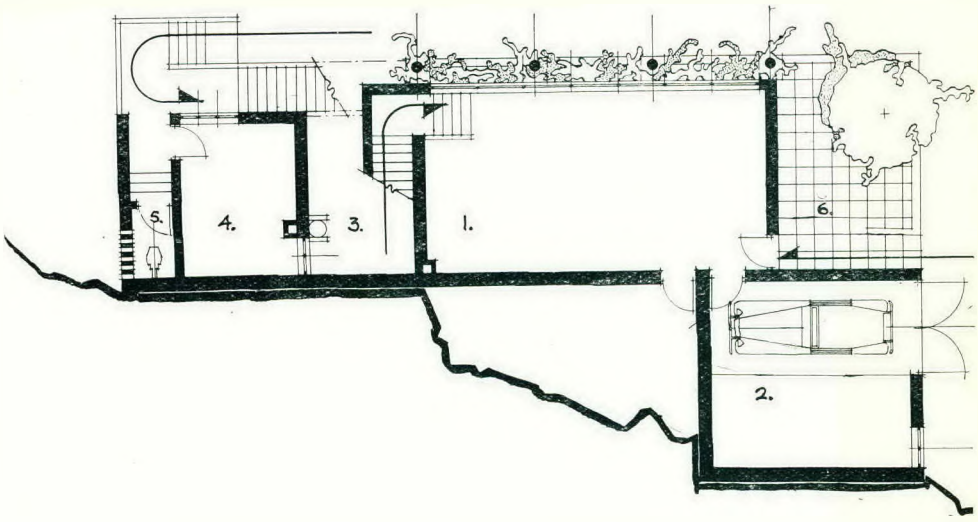
The living room is remarkable for the fine way in which the view has been made an integral part of the composition. The setting and elegant sub-division of the north window is particularly pleasing.

So is the arrangement of the bedroom and bathroom, but here, on the other hand, the fenestration is open to criticism. The small type of window as used in the bedroom has come to be looked upon—in the vocabulary of standardised modern architecture—as the proper outward expression of minor elements. Hence, to use it for the main or only bedroom might easily result in a misinterpretation of the whole exterior composition, quite apart from the fact that the suitability of this type of window for this type of room might be argued.

Apart from such minor points, House Levson is remarkable as much for easy circulation and efficiency inside as for crisp, competent handling of the outside. Among the small houses built recently it stands out as an example of how smoothly and unaffectedly the idiom of modern architecture is adaptable to complicated problems of site and construction.

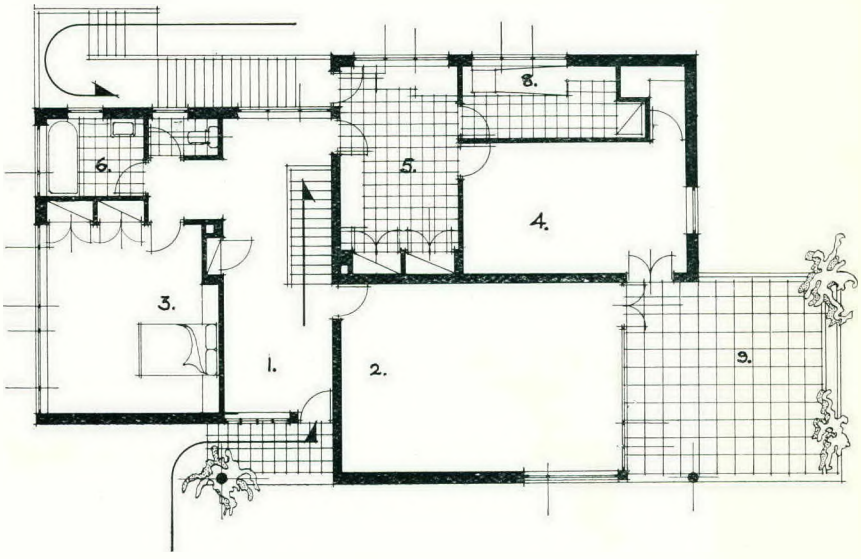
Lower Ground Floor Plan

1. Studio
2. Garage
3. Open Yard
4. Servant
5. Toilet
6. Terrace

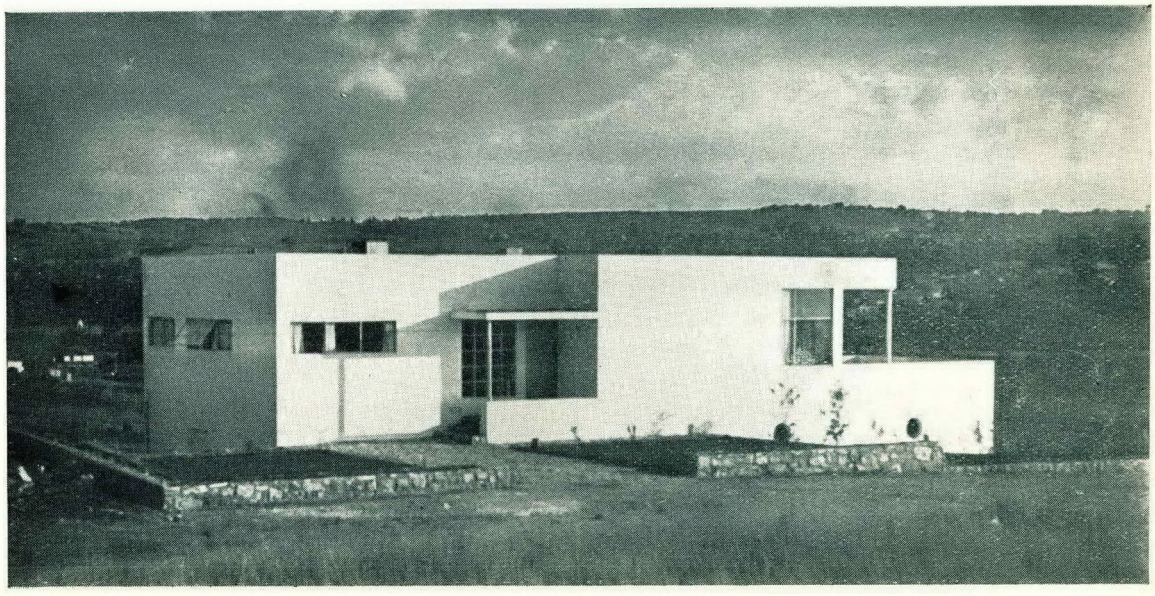


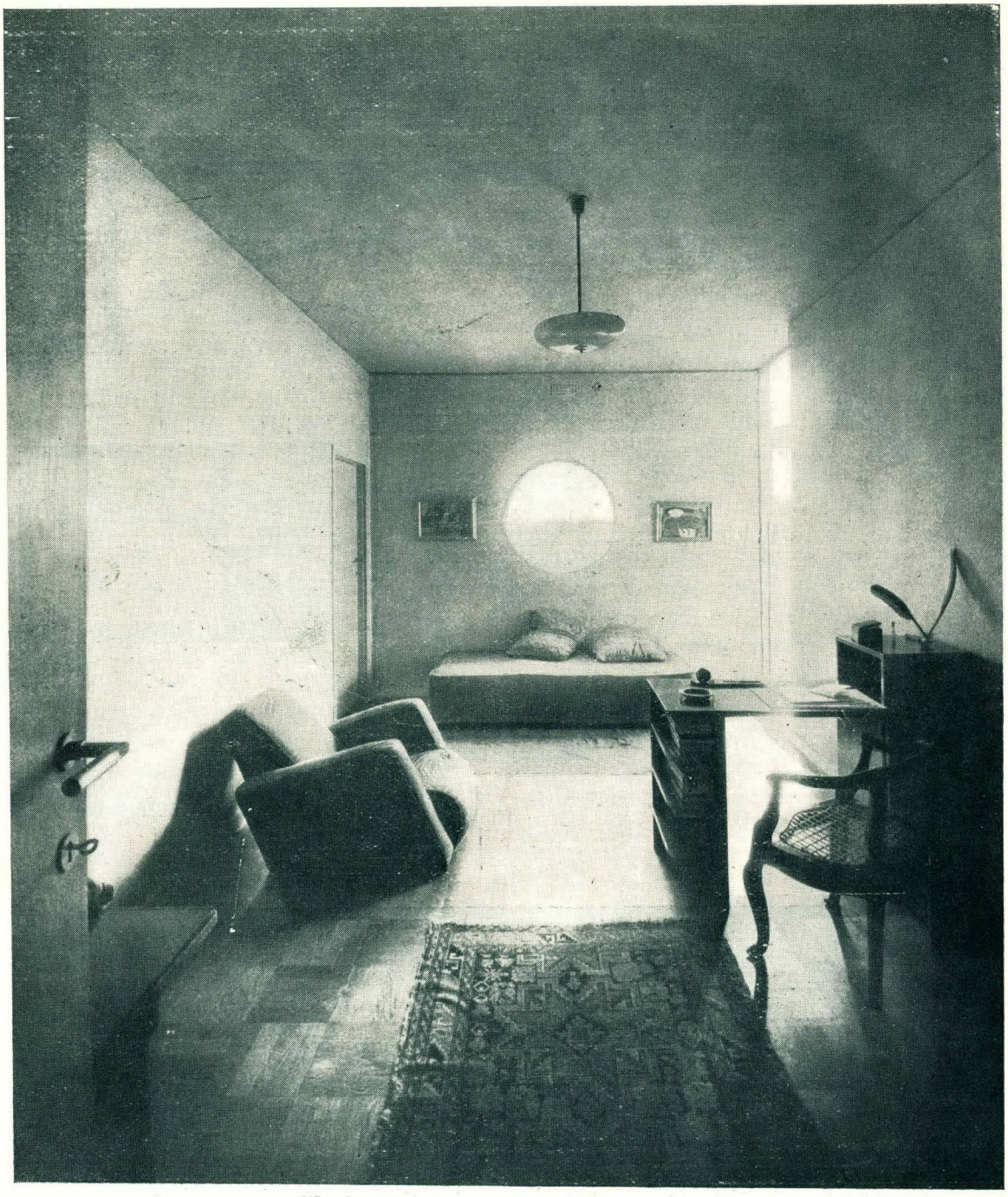
Ground Floor Plan

1. Entrance Hall
2. Living Room
3. Bedroom
4. Study
5. Kitchen
6. Bathroom
7. Toilet
8. Scullery
9. Terrace

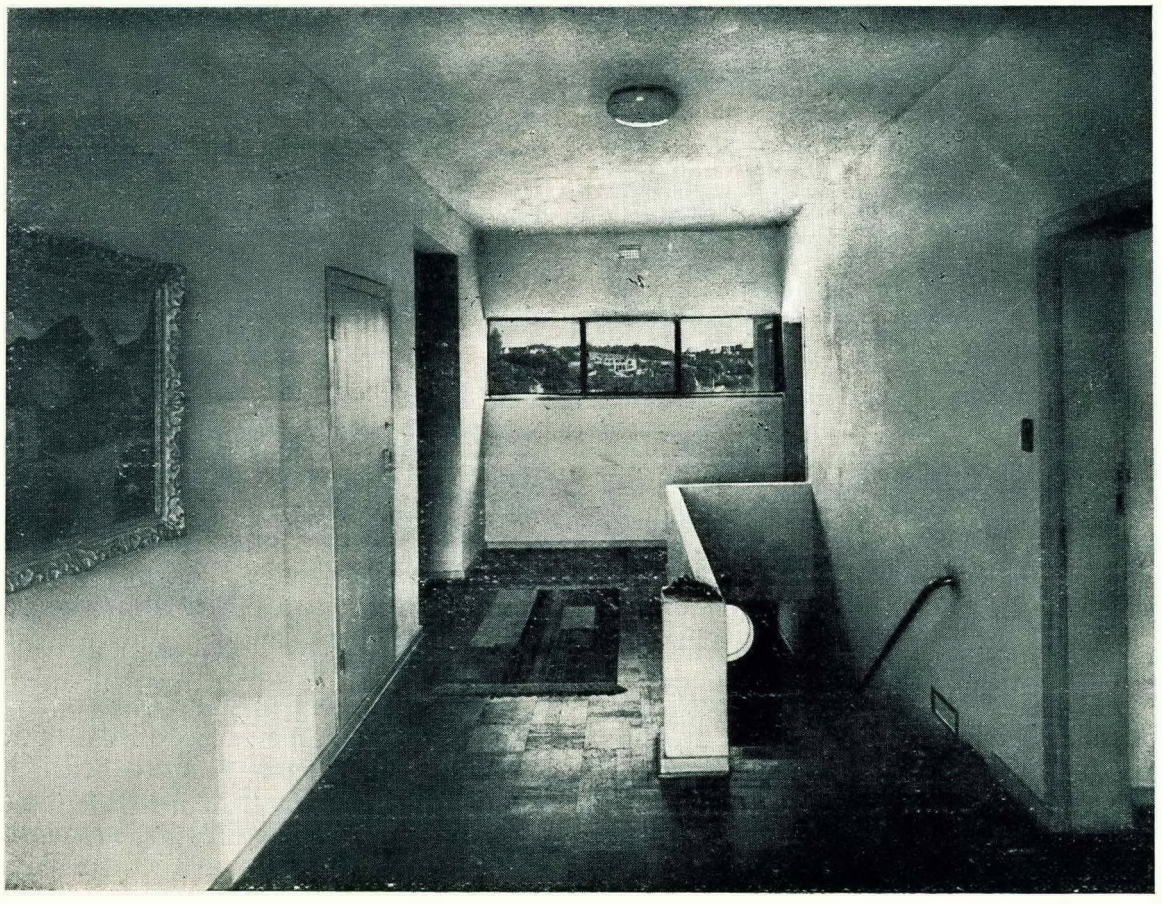


North Elevation

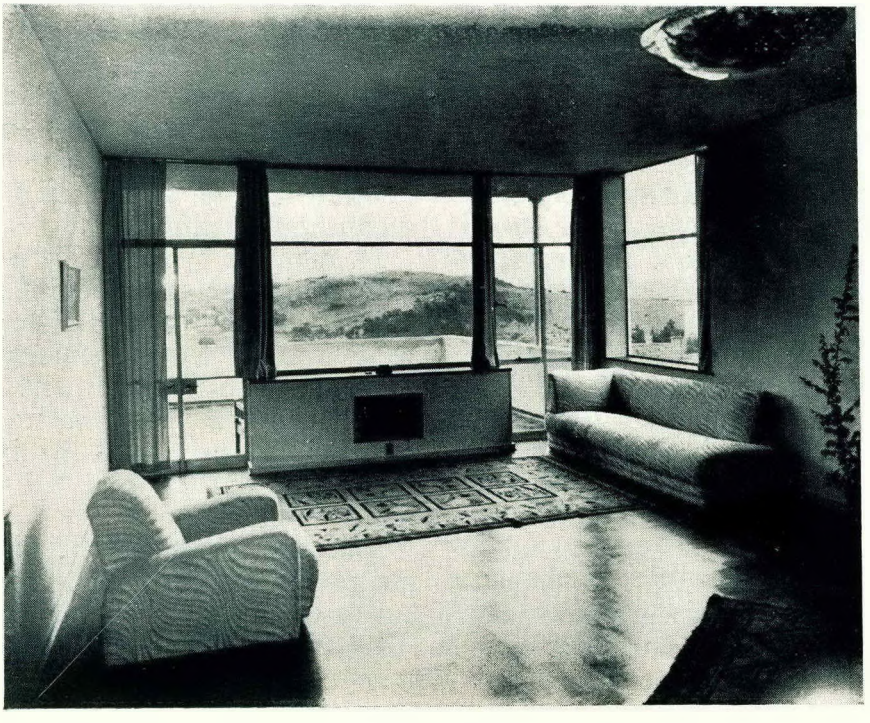




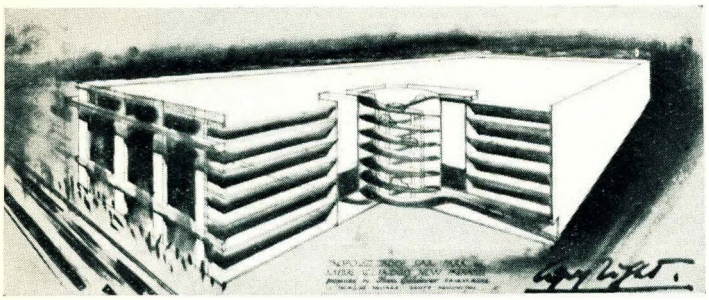
The Study



The Entrance Hall



The Living Room Window



Proposed Car Park for Selfridges

PARKING GARAGES

By THEOPHILE SCHAERER, F.R.I.B.A.

The most important consideration for a public garage, such as the municipality intends to erect, is its position in relation to the business and shopping centre of any town.

The more centrally such a garage is situated the more expensive will be the ground on which it stands; and if this is too expensive the scheme cannot be made to pay.

A further very serious and most important consideration is the easy ingress and egress from the garage. It is absolutely useless to have a garage centrally situated if, as soon as a car comes out of the garage, it discharges into a busy thoroughfare which is already taxed to capacity with its ordinary traffic.

During twenty years' stay in London, in which I daily drove a car in all parts of the city, and in frequent trips to practically all the large cities on the Continent, such as Paris, Berlin, etc., as well as in the U.S.A., I have had ample opportunity of studying the traffic in these various centres.

Some of the first parking garages erected in London were in or very near Piccadilly and Westminster. They were well patronised for a time, but very soon those in the immediate neighbourhood of Piccadilly and the Regent Palace Hotel became less popular. Patrons soon found that they were not only difficult of access, partly due to the narrowness of the streets and very sharp turns, but mainly due to the fact that this particular neighbourhood was, during most of the day and part of the night, so extremely overloaded with ordinary traffic that it was difficult to get into the garages and still more difficult to get out of them.

The more alert motor drivers soon found that it was far more expedient and entailed less patience and nerve-racking experience to go further afield and put their cars in a garage further away from the great traffic centres.

The same applies to other large towns, especially Paris and in the U.S.A. Those garages which are in the immediate neighbourhood of Broadway, Fifth Avenue and the great hotels between Fortieth and Fiftieth Streets are by a long way not so popular as they used to be shortly after their erection; and their popularity decreased in the inverse ratio as the traffic in this locality increased. The most popular garages in New York to-day are those in the vicinity of Central Park, where the roads and avenues are wide and where there is ample opportunity to get near the garage and away from it quickly and without being held up in a traffic jam.

A further most important requirement and necessity for a parking garage is to have ample space on the ground floor for patrons to leave their cars in the rush hours to be stored or parked temporarily while the owner leaves at once to attend to his business elsewhere, pending the garage attendants parking his car on an upper floor.

In most of the American garages the patron leaves his car on the ground floor, the ramps being used only by the attendants or by patrons well known to the management as reliable drivers. The management and the speed with which the various wishes and requirements of patrons are attended to in these garages is really marvellous, and the service garages are really excellent.

The more ample the space provided for storage of cars during the rush hours, for both traffic entering or leaving, and the more suitable the parking arrangements, the better will the garage be patronised.

The foregoing illustrates beyond doubt that there must be ample possibility, in the streets surrounding the garages, to get into them and get away without interfering with the usual traffic.

There is no doubt, therefore, that several garages, with reasonable capacity of, say two hundred to three hundred cars, in well selected positions, are far superior to one garage of one thousand cars, and therefore I have come to the conclusion that the large garage scheme which I prepared for Johannesburg, whilst still resident in London, and which was published in the "Sunday Times" in March, 1935, would be unsuitable for local conditions, even if the ground was available for it, which is another impossibility.

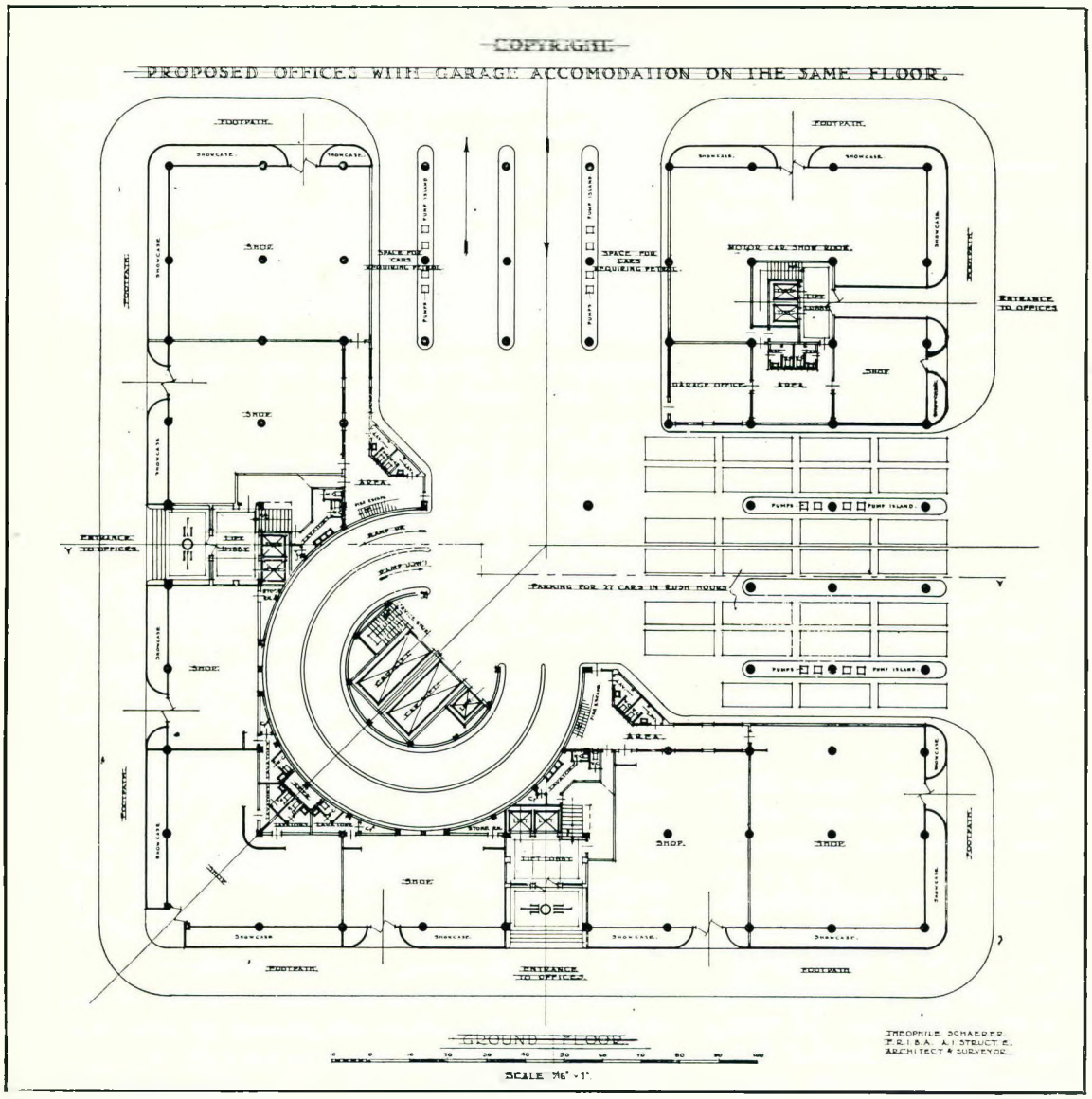
The question of the number of cars per garage is one of the most difficult to solve with existing conditions in Johannesburg. Great care must be exercised not to bring too many cars to one spot, otherwise confusion will be considerably increased.

The streets of Johannesburg are, generally speaking, fifty feet wide, and with the sidewalks taken off only about thirty feet remains.

The majority of the cars in Johannesburg are large American cars, from eighteen to twenty feet long; therefore, there is only room for about ten cars per building block, which are nearly all two hundred feet in length. If one assumes that cars discharge from a garage at the rate of one every thirty seconds; only ten cars get out in five minutes at the best, and they will take the length of the whole block in the street, in other words from one cross street to another. This, of course, is only possible if there is very little or no ordinary traffic in the street in front of the garage. If one further takes into consideration the habit of the local driver in keeping to the centre of the road, in other words, driving in Indian file, you will see that in ten minutes sufficient cars are discharged from the garage to fill Pritchard Street from Von Brandis Square to Rissik Street, or any other street running parallel with that street. In the foregoing no allowance is made for any robot stopping the ordinary traffic; therefore, you will see, it would take, if all went well, about one hour to discharge one hundred cars from a garage situated in a busy street in the centre of the city. This, of course, is provided that the cars were handled very efficiently both inside and outside the garage.

Anyone who has seen the tower garages, operated by lifts only, in the large towns of the United States of America, will realise that this type of garage is most unsuitable for the purposes of Johannesburg. In my opinion, any garage in a busy street dependent upon lifts, will not work satisfactorily unless there is ample space on the ground floor for the parking of cars in rush hours so as to allow for both ingress and egress during the temporary slowing down of ordinary traffic. The same applies to the entrance of the garage. If at all possible, a garage should at least have entrances and exits to two streets, or possibly to more, so that the traffic can be switched round and diverted according to necessity. This again requires space for turning on the ground floor, which is very seldom available. From all the foregoing it is clear that the centre of a town with narrow and frequent intersections of streets like Johannesburg should be reserved for ordinary traffic and shopping, and parking garages should be provided on the circumference or at a reasonable distance from the centre.

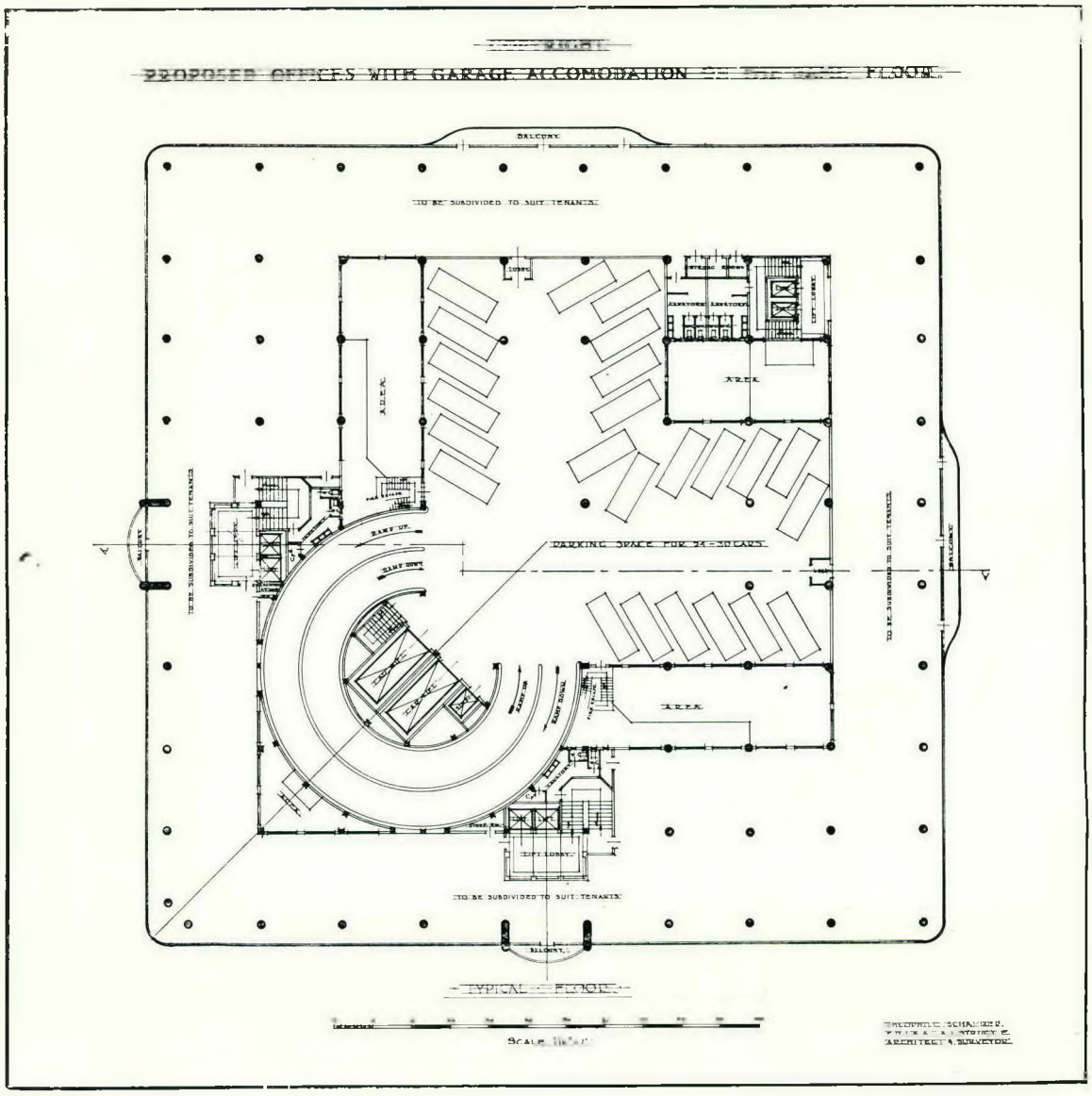
The greatest drawback to this is, of course, the almost ingrained objection of the average Johannesburger to walking, if only for a short distance, say half a mile. This walking of short distances is an absolute necessity in any of the large cities such as London, Paris, New York, etc., and is unavoidable even for those who take the underground, or buses, or any other public conveyance except a taxi. Gradually people in Johannesburg will have to realise this and have to start walking again at least in the shopping and business centres. As things are now, with the parking in the main thoroughfares, it is not even possible to alight in front of any shop, either for those who have a chauffeur or the owner-driver, since one cannot get anywhere near a shop to make a purchase, and it is impossible to leave one's car in the middle of the street behind a row of parked cars.



Proposed Offices with Parking accommodation on each floor
Ground Floor Plan

In large cities where the blocks between cross streets are generally very deep there is a possibility of building the garages in the back of such blocks, and large stores in the United States, as well as in the capitals of Europe, have taken the bull by the horns and have provided garage accommodation for their patrons. Such, for instance, are Messrs. Selfridge's in London, Simpson's in Toronto, The Galaries Lefayette in Paris, etc. As a matter of interest, I am illustrating a perspective of a scheme which I prepared for Messrs. Selfridge's in London, where, as there is no room for the cars in the street, I built a ramp and parked them on the roof. Unfortunately, this scheme did not mature, as Messrs. Selfridge's made other arrangements, but they were very pleased with the idea and wrote a charming letter about it. The idea, of course, still holds good.

Taking into consideration the reluctance of the average Johannesburg person to walk, and the desire to drive their cars right up to the office desk, I have worked out a scheme, which I have copyrighted, whereby, in a block of two hundred feet square, the street frontages are taken up on the ground floor by shops and the upper floors by office space, whilst the interior of the block, behind the offices, is used for garage accommo-



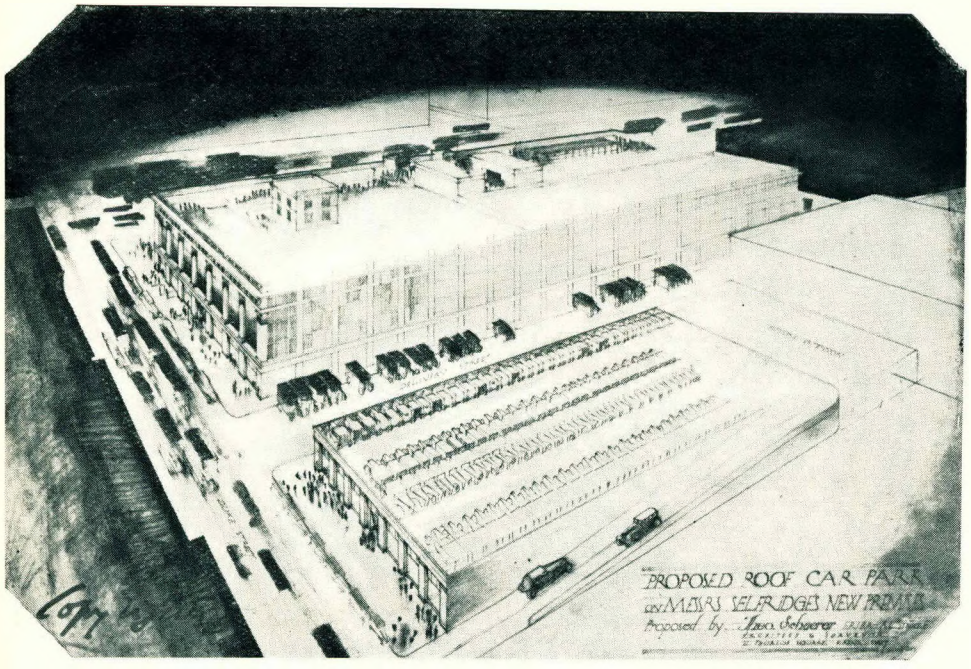
Proposed Offices with Parking accommodation on each floor

Typical Floor Plan

dation, so that each of the tenants on the various floors can drive their cars right up to the respective floors and have the cars parked almost next to their offices.

Large entrances or exits are provided on the ground floor leading to two streets. The accommodation on each floor is for 26 cars. There is ample light and ventilation throughout the whole block and not the slightest reason why such buildings should not be erected in the near future for the occupation of those who wish to get their cars parked in a space easily accessible and available for use at any moment during the day. The drawback of a good many of the parking garages at the present moment is that they fill up the floor space to capacity and that the man who comes early in the morning has his car pushed in the far corner and, should he require it during the day, he has to wait whilst at least half a dozen other cars are pushed about to make room for his exit.

The various floors of this building, with its garage accommodation on each floor, are accessible by ramps. There is a special ramp for up traffic and one for down traffic. This, however, can be reversed, and in the rush hours, say from eight-thirty to nine-thirty a.m. and five to six p.m., both ramps can be used either for up traffic or down traffic only.



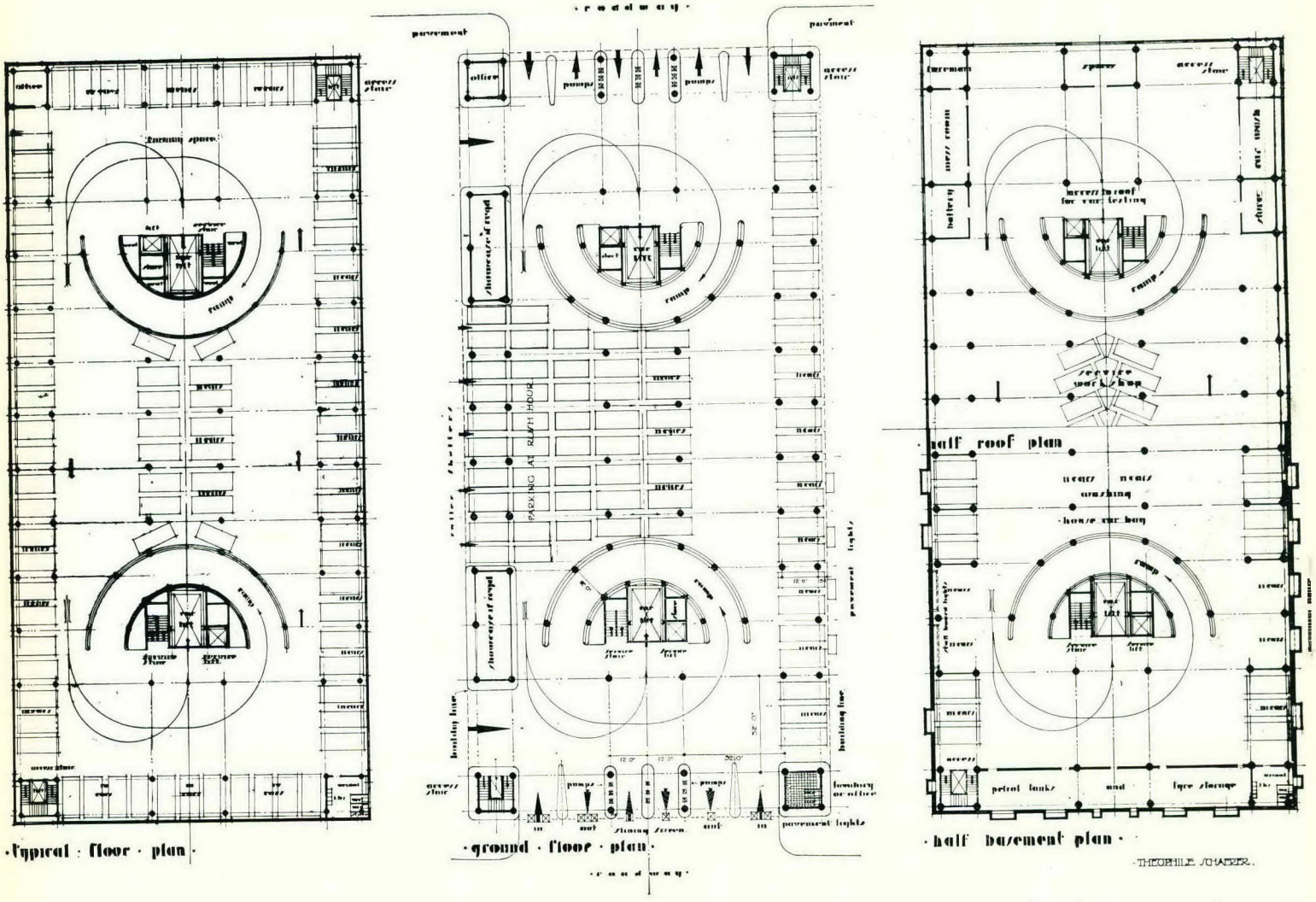
Proposed Roof Car Park for Selfridges

In the United States in some of the garages which are operated by ramps only, the patrons are not allowed to drive the cars up or down, this being done by garage attendants, hence a further reason for ample space being provided on the ground floor for parking temporarily in rush hours.

To illustrate the possibility of such a scheme in Johannesburg, it is suggested that the Stock Exchange building might be suitable for this purpose. The large hall for high change could be put on the upper floor accessible by lifts or escalators. The offices of the various brokers could remain almost in their existing positions with only such alterations as might be required to modernise them and to fit them into the scheme.

The centre of the lower intermediate floor would be occupied for parking the cars of the tenants as previously described.

It is further possible to provide workshops, waiting rooms for chauffeurs and other conveniences on the top floor accessible by lifts situated in the well of the ramps. There are a good many solutions which could be worked out in this way, similar to some of those existing in other parts of the world, and no doubt a practical scheme could be evolved also for the requirements of Johannesburg.



Proposed Parking Garage ● Johannesburg



Proposed Tower Garage ● Johannesburg

● Garages with Ramps

The most essential and elementary necessity for the arrangement of ramps is generous and ample dimensions. If circular they must have ample radius; they must be easily visible from all parts and free of all encumbrance whatsoever. It is useless to have ramps on which cars are parked or giving direct access to parking space. To those who have any doubts about the correctness of this statement I would recommend to watch the angle parking in one of the central streets with the traffic proceeding in the middle or to ask the motor owner or chauffeur who has to deal with these troubles daily. It needs little imagination to picture the confusion arising in such a garage of several storeys in height where the cars are parked directly off the ramps and have to be backed on to the ramp to leave the parking space. Once a car is on the ramp it must be able to proceed either up or down without any interference or encountering any obstacle from either side except a car in front of it. It is further necessary that the ramps are easily accessible from the entrances and they must be near the exit so that cars do not have to drive about the garage and thereby interfere with the routine of the garage.

Another and important item is the position of petrol pumps and oil pumps, as well as other services. These should be easily accessible near the entrance and the exit, but they must not encumber the direct route for in and outgoing traffic. In many of the garages now in existence they are very badly arranged and many a car standing in front of the petrol pump and being served blocks both the entrance and the exit.

● Conclusion

The study of the question of garages and their planning is a most interesting one, but few people have either troubled about it or have had the opportunity of doing so.

It is also essential that the designers of garages should have experience in the actual driving of cars; it is only thus that they will appreciate the niceties of garage and service planning and its difficulties.

Some of the best garages are to be found in New York and Chicago. A curious example in this respect was at the World Exhibition in Chicago in 1933, where the Nash Motor Company had a garage consisting of a tower where cars were stored on platforms secured to an endless chain. The whole was enclosed in a tower with four vertical sides glazed—a large show case where the public could see the moving about of cars from a great distance. Such garages have been adopted in some of the large office buildings of the United States, but of course they are situated in the centre of the building in a type of lift-shaft, and nothing can be seen of it, except the access doors on the ground floor.

It may be necessary to revise some of the bye-laws to meet the requirements of such modern super and up-to-date garages, but no doubt the city authorities, in conference with the City Engineer (who has been abroad and has personally studied such garages overseas), would no doubt meet the various cases in a broad-minded spirit and according to circumstances.

Here in Johannesburg this garage question is a particularly complicated one on account of the many difficulties and particularities which do not exist elsewhere, but it has to be solved without undue delay as the position is rapidly becoming not only impossible but intolerable.

PARKING GARAGE ● DURBAN

Architect William B. Barboure

On the site of what was originally a farm implement warehouse there has arisen in seven months South Africa's first car hotel.

Built with its frontage on Devonshire Place, it has a simple dignity that cannot fail to impress the onlooker. Built throughout of reinforced concrete, the new garage has been designed to permit of the addition of four more floors. The foundations and general construction indicate that should the necessity arise to add the extra floors no difficulty would be experienced.

There are no lifts, as inclined drive-ways permit of cars reaching the basement or the higher floors under their own power. These drive-ways are built of concrete and have been dusted with carborundum to ensure good wheel adhesion. The ripply surface produced means that cars can be driven up or down with confidence and that brakes will operate efficiently.

Large concrete pillars, scientifically placed, support a flat roof, on which it is proposed to establish open-air parking at reduced rates. These pillars help to divide the garage up into its various sections and will not incommode drivers.

The ground floor houses most of the conveniences with which the garage is provided. Entering from Devonshire Place, the driver turns left at the first entrance, and after parking his car in the allotted space will find there is a special rest room where he may write a letter or read a paper while waiting for an appointment. Should he have come a long, dusty journey, he will be able to have a hot bath or a cold shower. Special rest rooms have been set apart for men on the ground floor and for women on the first floor, and no pains have been spared to look after the comfort of the public.

On the ground floor is a special greasing and spraying room, where hoists and a high pressure equipment of the latest type have been installed. This room is interesting, as it is ducoed white and has sliding doors, which are so constructed that it can be isolated from the rest of the building and so prevent fumes from the sprays permeating through.

The new garage will normally house approximately 260 to 270 cars. As many as 500 could be accommodated, but it is the policy of the proprietors to make things as easy as possible for drivers, and they have provided plenty of space for manœuvring cars and the opening and shutting of car doors.

There will not be the slightest difficulty in getting in or out, and in no circumstances will more than the proposed number of cars be accepted. Should it be found that the building is insufficient, further floors will be added.



Front Elevation Devonshire Place

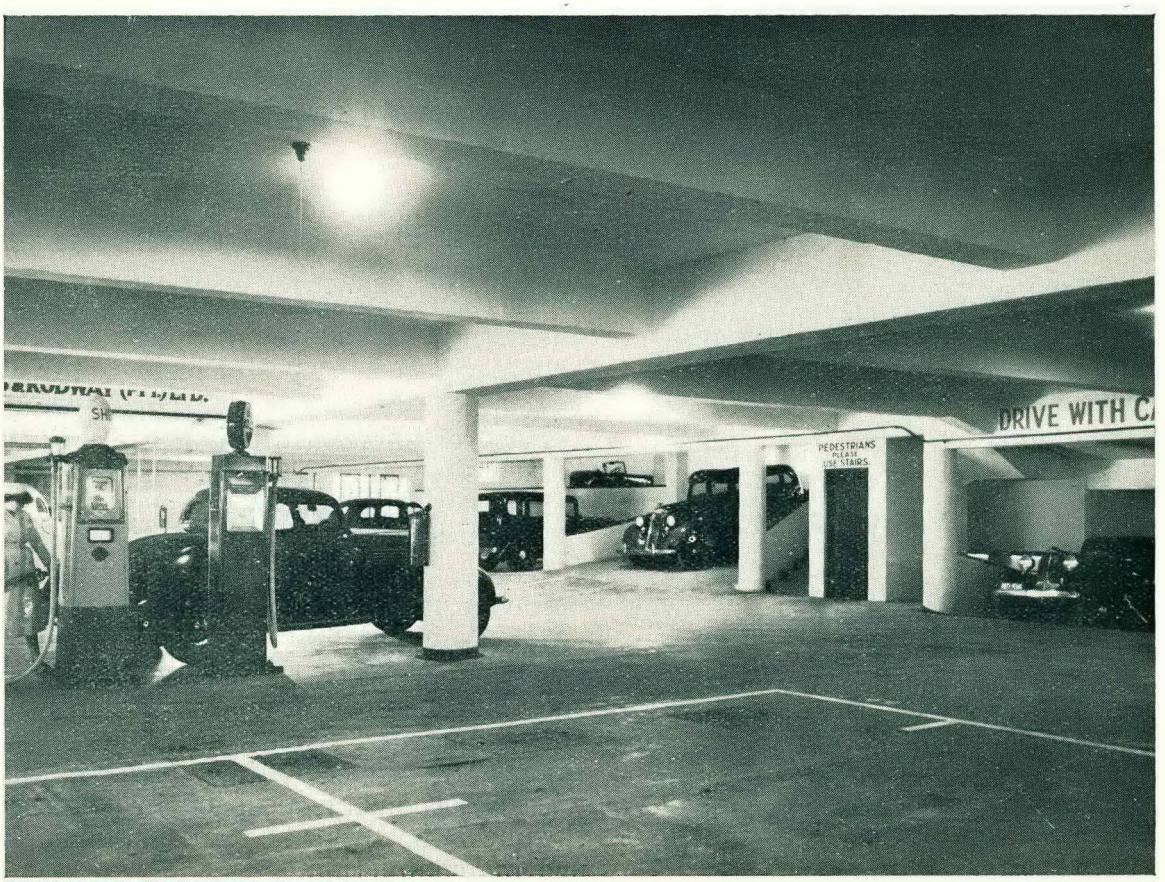
It is interesting to note that the area is 150 × 150, which allows plenty of space for all parked vehicles. At least 30 per cent. of the space has been allotted to "baby" cars, while special provision has been made to accommodate motor cycles.

Leading off from the ground floor is a basement which will house a considerable number of cars, and there is an exit for pedestrians to Leslie Street. This exit will prove a boon to those who have business on the Esplanade, or in Gardiner Street, as they can cut straight through.

The lighting and ventilation of the building is excellent and a credit to those concerned. It is no easy task satisfactorily to light such a large area having only two exits, but the windows have been so constructed that they admit the maximum of light and air.

The first floor is reached by means of the inclined drive-ways. This is devoted almost exclusively to parking, although there are certain conveniences in the way of air pumps and water taps to obviate the necessity of sending cars down for these services. A large rest room for women is situated on the first floor.

The flat top roof provides still more space for parking, which in this case will be half-price. At the rate charged the roof should prove popular, although when a man has spent some hundreds of pounds on a vehicle he will probably prefer to have it under shelter.



General View ● Ground Floor

Coming to some of the other functions of the garage. One of the most popular will be the special "pick-up" service it is proposed to inaugurate within a reasonable distance of the garage. The idea of the "pick-up" service is, roughly, to drop the car driver wherever he or she may wish to go and return the car to the garage, where it will be parked until required. The owner can then telephone and ask to be picked up at an appointed place, which means that all parking problems while shopping or paying calls are resolved with the minimum of trouble.

Provision is being made to attend to the maintenance of customers' cars, and a mechanic will be at hand for that purpose.

A checking system, whereby customers will be notified when their cars are due for greasing and other treatment, will come into force once the garage is in full swing.

The high pressure air plant will have a piping system to every part of the building, and a section of the ground floor will be set aside for an exhibition of new cars. The pillars surrounding this section will be decorated with chromium plated tubing.

During the past year or so conditions have changed rapidly, and the new parking station would appear to have arrived at an opportune moment. The conception of a purely parking station designed and constructed to give the maximum service with the minimum delay is bound up closely with Durban's parking problem, and it is in a sense an answer to that problem.

With acknowledgments to "The Week End Advertiser."

CORRESPONDENCE

Editor,
S.A. Architectural Record,

Sir,

On behalf of architects trained at the University of Capetown, I warmly endorse the statements of Mr. Hanson, made in his very ably expressed letter, published in your April issue.

In addition to what he has said, I should like to point out that a large number of prominent architects trained in the old way are to-day in the hands of their senior draughtsmen (or any imaginative draughtsman they can get a hold of).

Further, the University educated men have better training in structural mechanics and, therefore, are better equipped for intelligent collaboration with engineers (a point which is becoming increasingly important) than the older office trained men.

I am not in the least a champion of the academic in any form, but I feel that the article in the "Architect, Builder and Engineer," referred to by Mr. Hanson, has proved nothing and merely distorted a number of facts in a loose and unfounded attack on the junior members of the profession.

Yours truly,

P. H. Shillington,
Dip. Arch. (U.C.T.) A.R.I.B.A.

The Editor,

S.A. Architectural Record,

Dear Sir,

I have just learnt from London of the success of Mr. Herbert Porter, who was placed second in the competition for the Government Offices in Salisbury, and in case you are including a column in your next journal publication I am tendering the enclosed information.

Mr. Porter was trained at the Witwatersrand University, and continued his studies at the Architectural Association overseas, where he qualified in 1930.

He was a pupil of the late Mr. John Waterson before leaving South Africa.

For the past eight years he has been continuing his researches overseas and specialising in the planning of hospitals, working in the firm of Pitt, Son and Fairweather, and for the past four years has been with Lanchester and Lodge, with a responsible position in connection with the new hospital at Birmingham, which is nearing completion.

As a young South African, I feel that he deserves some little recognition in our review.

Herbert J. Tanton.

Delay in Setting up completed jobs

The following letter from the Master Builders' Association is published for the information of members:—

" At the last General Meeting of members of this Association several complaints were received regarding the delay which is often experienced by builders in settling up jobs which have been completed.

" This matter was discussed at length, and I was directed to communicate with your Institute and to advise you that my Executive Committee is most concerned regarding this matter, which has been raised on several occasions, and to ask whether your Institute will be good enough to request its members to adhere to the provisions of Article 25 of the standard conditions of contract."

Members are requested to comply with the provisions of Article 25.

●

Reply to Kurt Jonas ● by L. Grinker

Mr. Kurt Jonas seeks to punish me for my presumption in daring to criticise the " great " Le Corbusier and his followers.

The violent sarcasm which he indulges in at my expense would be the more convincing were it not based on a welter of confusions, half-truths and inaccuracies. In addition to a disposition towards red herring tactics, Mr. Jonas shows a propensity for tilting at windmills, which peculiarity (like my alleged " ressentiment ") is perhaps also not unknown to psychologists. He says, for example, that I have a " ressentiment " (choice expression!) against

(a) The better architects.

(b) The critics of the better architects.

(c) The students who hope to become better architects.

If Mr. Jones will take the trouble to re-read my article instead of relying on his vivid if somewhat erratic imagination, he will find

(a) That what I actually said was that Corbusier was not a " better " architect.

(b) That I did not mention the critics at all.

(c) That my resentment was directed against the affectations and posings of a certain type of student.

I was not afraid that these students would become " better " architects. On the contrary, I am afraid that many of them won't—not if they continue to worship at the feet of one, or many, gods of architecture.

May I correct Mr. Jonas on another point ? I quoted Gilbert and Sullivan not as authorities on architecture, but on young men who " hold themselves like this " and " hold themselves like that "; and one must admit that Mr. Jonas, in the manner of writing his article, did his best to justify Gilbert's subtle parodies.

I do not wish to reply here in detail to Mr. Jonas' assertions. But I would like to say this much: There is a world of difference between saying and doing; between paper designs and executing actual work.

The designs of the Alexanderplatz may be very wonderful as paper designs! But to assert that they constitute greater architecture than all the executed work of the local architects is too fantastic even to require comment.

In conclusion I venture to suggest that the true architect—the one who we may expect to produce architecture truly representative of the age, and perhaps even great architecture—is he who ventures to go forth and fight the architectural dragons—not he who retires to his ivory tower, and there awaits the work which comes under ideal conditions. For such a one will wait in vain—and end his days—an architect in name—but on paper only!

PROFESSIONAL NOTES AND NEWS

Central Council Notices.

The 1936-1937 Central Council was in session at Johannesburg recently. The meeting occupied four full days, and included one night sitting.

The personnel of the present Council is:—Representing the Cape Provincial Institute: Mr. H. J. Brownlee and Mr. J. K. Parker. Representing the Natal Provincial Institute: Mr. Ernest M. Powers. Representing the Transvaal Provincial Institute: Mr. W. Gordon McIntosh, Mr. R. Howden, Mr. V. S. Rees-Poole and Mr. F. Williamson. Representing the O.F.S. Provincial Institute: Mr. Frederick W. Masey. Representing the Chapter of S.A. Quantity Surveyors: Mr. D. J. Laing and Mr. T. Moore. Government nominees: Mr. J. S. Cleland (Architect) and Mr. R. J. C. Prentice (Quantity Surveyor).

●

The election of officers, which was unanimous, was:—President-in-Chief, Mr. H. J. Brownlee; Vice-President-in-Chief, Mr. Ernest M. Powers; Chairman of the Executive Committee of the Council, Mr. H. J. Brownlee.

●

Among the matters dealt with by the Council are the following:—

Consideration of the position of the Institute when approached for assistance by a member in a lawsuit concerning principles of importance to the whole profession. (The Council is appreciative of the difficulty which might ensue if it intervenes in what may prove to be a factual dispute between an architect and his client; and, on the other hand, is desirous of assisting to the extent that evidence as to professional principles shall be properly and completely presented to the Court for its judgment. Counsel's opinion on this point is being obtained.)

It was decided to increase the Council's Reserve Fund to £500, and to allocate all future registration fees direct to the Reserve Fund.

After considerable discussion the Council decided not to issue a Code of Professional Ethics. It was felt generally that, in view of the comprehensive nature of the Unprofessional Conduct Regulations, it would be inadvisable to proceed with the suggested Code.

A document entitled "The Duties of an Architect," on the lines of the R.I.B.A. "Conditions of Engagement," will be issued in the near future and incorporated in the Institute's Year Book.

After considerable discussion the Council decided to adopt the R.I.B.A. provision as to consultants' fees, viz.: "Where it is agreed to retain the services of a consultant, in no case shall the architect's fees be reduced by more than 1 per cent. on the cost of the work upon which the services of the consultant are retained."

Considerable progress has been made in the matter of co-ordinating building bye-laws in South Africa. The Council hopes to be in a position in the near future to issue a statement in this connection.

The Institute of South African Architects is entitled to two seats on the Council of the R.I.B.A. The appointments made for the session 1936-1937 are: (1) Mr. Ernest M. Powers (South Africa); (2) Mr. Maurice E. Webb (London).

The Council has approved of the following amendment to the Institute's Conditions of Competition, viz.: "Where a jury of three assessors is appointed, one of the assessors may be a non-architect."

On the subject of R.I.B.A. membership in relation to South African architects, the R.I.B.A. has agreed to the following two recommendations: (1) to allow an additional period of two months between the time of the publication of nominations and the actual date of election; and (2) that no Licentiate be elected a Fellow until at least four years after his election as a Licentiate.

The Council has, in the light of actual experience, and after detailed consideration, reorganised the whole of the regulations.

Journal of the SA Architectural Institute

PUBLISHER:

University of the Witwatersrand, Johannesburg

LEGAL NOTICE:

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.