

This Issue is the Second of Three Special Numbers on Town Planning

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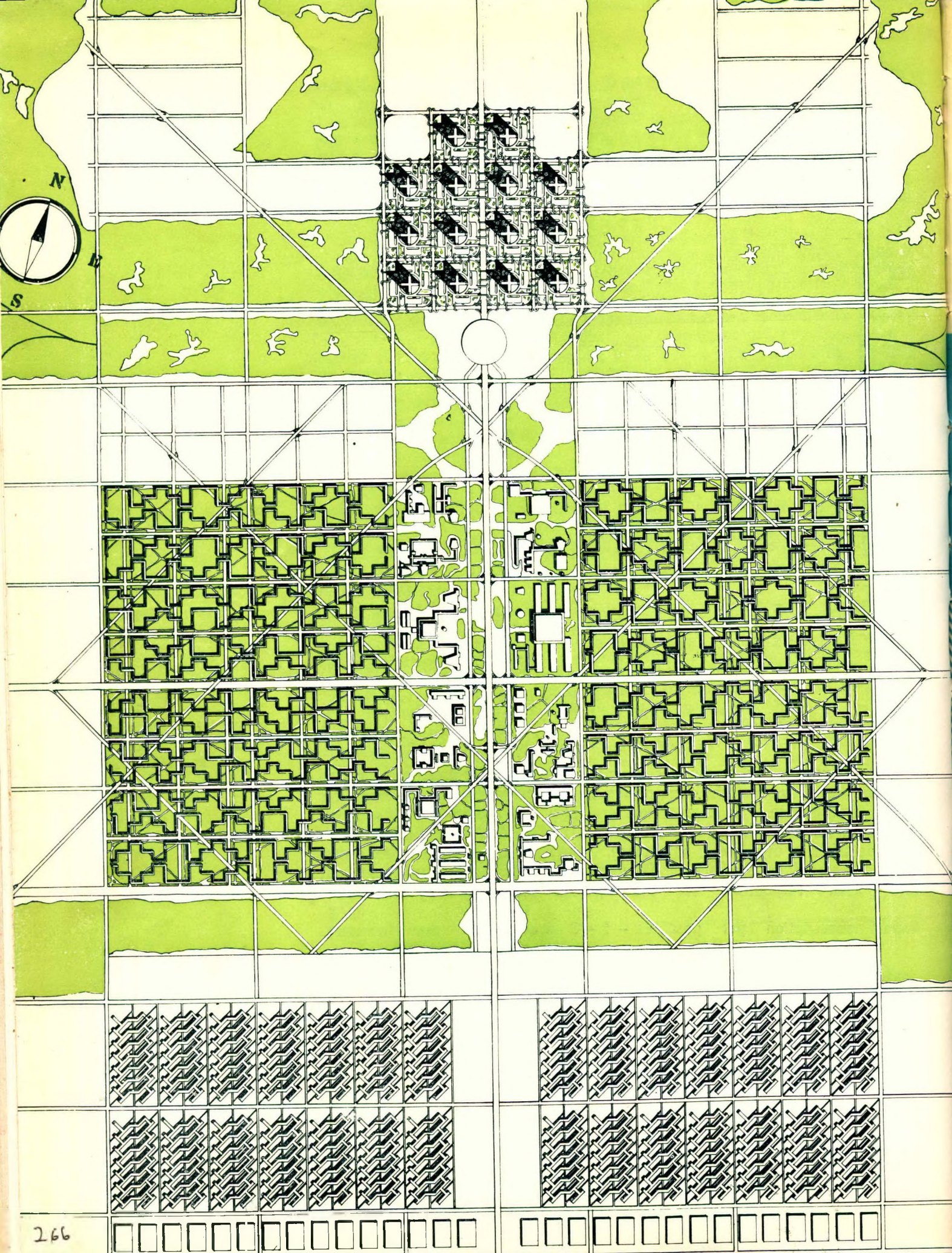
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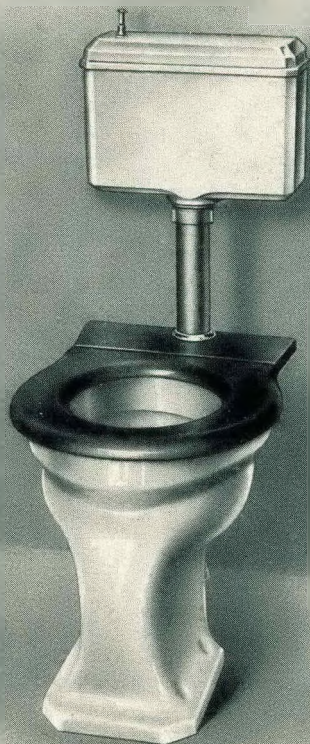


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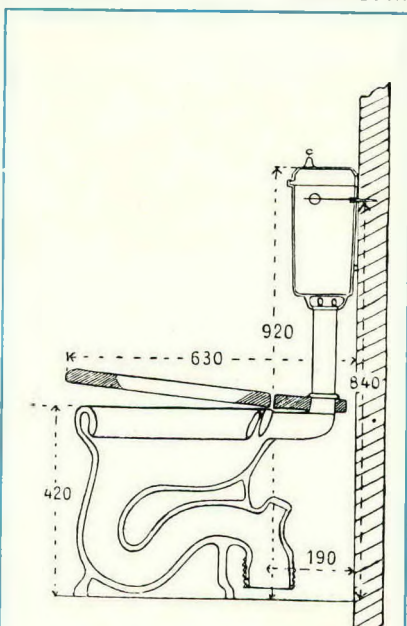
Teutonia-Klosettörper aus Feuerton, mit poliertem, aufklappbarem Sitz aus Buchenholz, zwei Gummibuffern mit Schraubchen, Spülkasten aus Gußeisen, innen emailliert, außen gestrichen, mit Wasseranschluß für rechts und links eingerichtet, mit 2 Befestigungsschrauben, Innengarnitur bestehend aus Dreizack-kegel mit Hebel, Bügel und Gummiring, Schwimmerhahn mit Schwimmerkugel, Druckknopf und Rosette, Ventilsitz mit Gummiring sowie Schiebeflansche mit Dichtungsscheibe, 2 Flanschschrauben, 2 Sitzbefestigungsschrauben mit Unterlegscheiben und Flügelmuttern sowie 4 Topfbefestigungsschrauben.

Spülkasten aufleichten Druck entleerend. Ganze Höhe bis Oberkante Spülkasten 920 mm, Höhe des Körpers 420 mm, Breite des Spülkastens 380 mm, Tiefe von der Wand bis Vorderkante Sitz 630 mm, Höhe des Wasseranschlusses von Flur bis Mitte Verschraubung 840 mm.

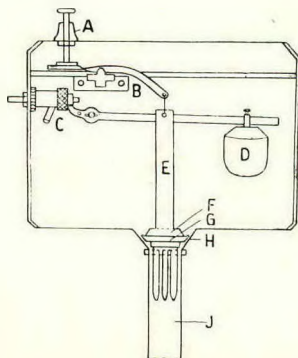
- A) Druckknopf
- B) Böckchen
- C) Schwimmerhahn
- D) Schwimmerkugel
- E) Führungsrohr mit Hebel
- F) Dreizackführungskegel
- G) Gummiring
- H) Ventilsitz
- J) Fallrohr

Das Klosett wird nur in kompletter Ausführung geliefert.

Schnitt des Teutonia-Spar-Klosetts D. R. G. M.



Schnitt eines Teutonia - Spülkastens D. R. G. M.



Schnitte der lieferbaren Teutonia-Spar-Klosett-Körper

Entfernung von der Wand bis Mitte Klosett-abgangsstutzen:

bei Teutonia-Klosetts	Fig. 1 mm	Fig. 2 mm
Nr. 4 mit Gußkasten	290	190
Nr. 10 mit Feuertonkasten	320	210
Nr. 5 mit Gußkörper	320	—
Nr. 6 mit Sitzbacken und Gußkasten	—	265

Bei Bestellung genaue Angabe des Abganges erbeten.

Alle Maße verstehen sich annähernd.

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	ohne Deckel	mit Deckel
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bewirkt völlige Tilgung der Anschaffungskosten in wenigen Jahren, deshalb ist es das vorteilhafteste Klosett.

Sonstige Vorzüge:

Verwendungsmöglichkeit bei jeglichen Wasserdruckverhältnissen, ohne störende Einflüsse.

Infolge der niedrigen Bauhöhe Einsparungen an Leitungen, mithin erhebliche Verbilligung der Anlagekosten.

Auf Wunsch stehen Bezieherlisten und Anerkennungsschreiben aus der Industrie, von den Baubehörden, Architekten und Installateur-Meistern gern zu Diensten.

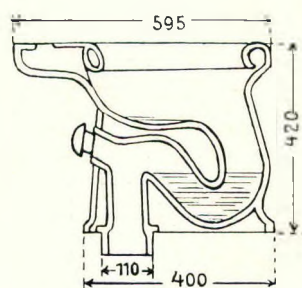


Fig. 1

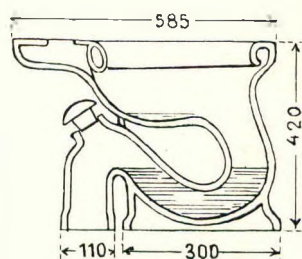


Fig. 2

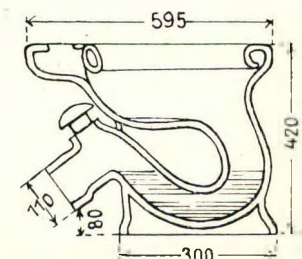


Fig. 3

D O Y O U P R E F E R T O W A G E W A R ?

The home first, before everything.

The home; centre of urban activities (C.I.A.M. Congress at Athens, 1933). It was during my travels through the world that the immense discomfort of the present time appeared to me: man has lost his home, thus shattering the essential pattern of his leisure. Man no longer has a home. He has annihilated himself in the deceptive pursuit of money.

A home: a place to walk, to sprawl, to stretch your limbs; for coolness or warmth; to rest; to rest till thought comes. Then to submit to, or to challenge its atmosphere. To contemplate the hierarchy; the Sun, master of the living; the living air—in movement—(recalling the ingenious ventilation of folk-lore architecture); your eyes ravished, your senses stabilised by grass, flowers, trees, sky, space. The leisure of the family. One family: a link in the life eternal. The games of the family (look how animals gambol). A space used for the games of the family. A place to be born in, to eat, to dress yourself, to live with vigour, with love and with friendship.

The problem of the home before all others.

Working, circulating are incidentals.

The home is the key.

The death of present society is written in the degeneracy of the home. The birth of a new civilisation is begun by that positive pre-occupation; to create homes; the home involves fundamental living conditions; man and the cosmos. Through urbanism, to establish these essential relationships (man and the cosmos) with the help of modern technology. Such is the fitting occupation of a balanced society.

"BUT DO YOU PERHAPS PREFER TO WAGE WAR ?

That hysteria in which modern society struggles: cannons and munitions; oppose it with the appeal of life.

THANKS, HOMES, IF YOU PLEASE !

And mobilise the enormous powers of the present in the cause of work for peace: to build homes.

This would distract those others from organising a war for us. They could equally well organise a peace. It is the same process. And their forces and the energy of experts would be thrown into it with the same violence. For war—which is fomented by misery and arrogance—has no point for us; it would find no one available if modern society were busy realising the very essence of its life: creating shelter.

Your immediate charge: to make an appeal for initiative, courage, defiance; to instigate the grappling—the match—and the victory; to stir the spirit, to swell the heart with joy. To regenerate !

!!! LE CORBUSIER.

This message, which was sent to the Congress by Le Corbusier, is the preface to a book now actually in Press, entitled:
DES CANONS, DES MUNITIONS ? MERCI ! DES LOGIS S. V. P.

If the future of human society is to be different from the bloody spectacle of the past and the terror of the present, man must be changed. But man cannot be changed without changing, first, his social relationships and his surroundings. And the latter cannot be done without the former.

But this transformation of society is not altogether a matter of sudden, drastic, revolutionary change. Even if such be the ultimate necessity, as I indeed believe it is, the betterment, both in man's social relationships and more particularly in his surroundings, that can be brought about within the framework of the present should not be under-rated. To strive for such betterment without losing sight of its inherent limitations, and hence of the need for a goal beyond, is our practical and immediate duty.

One aspect of the change in man's surroundings that must be accomplished is known as town planning. It is not the only, but, taken in its widest implications, perhaps the most important aspect. It is, at the same time, the most important aspect of that particular social activity, synthesising life, science, and art, which we know as architecture.

Modern architecture, hopelessly frustrated as a practical occupation in the social system (or perhaps more accurately: anti-social chaos) in which we live, has turned its attention towards town planning. And even if, in so doing, the contemporary architect has but little hope of immediate success, he yet renders society a dual service. He gives the impetus to some betterment of man's surroundings, and he shows what could be done, without Utopian premises, simply by applying the resources of contemporary economics, science and art.

The Architectural Students' Society of the University of the Witwatersrand has attempted to render this dual service—in some small measure—to South Africa, by holding the Congress on Town Planning, the proceedings of which are reported in this and the following issues.

This Congress is a demonstration of a rational approach to a problem. Social problems are not solved by mystical medicines, but by a constructive effort which must consist of three interdependent elements: Theory, Programme, Action.

Theory : That is the sum of all factual scientific knowledge concerning the particular or general problem; the deduction, from these facts, of general or historical laws; and the demonstration of probable future trends in terms of these facts and governing laws.

Programme : That is the interpretation of the theory in terms of the needs, present and future, of the people concerned. A postulate is added to the theory and out of these two elements a set of principles and a line of action is evolved.

Action : That is the practical interpretation and application of the programme in terms of the concrete conditions under which the programme can be acted upon and realised.

The Congress attempted to do justice to all three elements. The first evening analysed the more important determining factors which town planning must take into account. It showed the governing laws and outlined possible future trends. The second evening interpreted this theory in the light of town planning requirements and experiences and formulated a generalised programme of town planning. The third evening, finally, applied this general programme to two particular South African problems in terms of present-day possibilities.



Waschbrunnen

Nr. 8

nach Anregung des Amtes
„Schönheit der Arbeit“.

Einheitsausstattung:

Fuß schwarz aus Steinmaterial mit Reinigungstür und eingebautem Geruchverschluß.
Schale innen und außen **weiß emailliert**, mit stoß- und schlagfester Emaille.

Säule weiß emailliert und **Verteilerkopf** mit **Seifenschalen** schwarz emailliert.

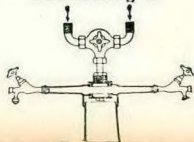
Armaturen und **Ablaufventil** vernickelt.

Preise:

Ausführung I



Ausführung II



Ausführung III



Ausführung IV



TRAGBARES KLOSETT

für
LUFTSCHUTZ-RÄUME

**Zechen
Gärten
Jagdhütten
Wochenendhäuser**



Nr. 15

Im Vollbade feuerverzinkt, mit Holzsitzbacken, mit 2 Traggriffen. —
Leichte Reinigung. — Sämtliche Kübel werden mit Hebelverschluß geliefert.

GRÖSSE 1

However, that a thing is possible to-day does by no means prove that it will be done, even if it were recognised to be right and good. He would be more than optimistic who would conclude that either of the schemes presented at the Congress will be adopted, just because they are based on present-day needs and means. But that is not the important point. It is important to have demonstrated what could be done, here and now, if only the will was forthcoming; in other words, if this will was not paralysed by existing social relationships.

This demonstration has two aspects : one to the architect who is made to realise that he cannot pursue his art in the seclusion of a studio, but must help to prepare the ground for it on the battlefield of social forces; the other to the layman who is made to realise what town planning can do if only given the chance which the capitalism of to-day denies it.

The significance of this demonstration is considerable, not so much in itself, but as one of many possible demonstrations. If society is to be changed, then it is not enough to show toiling humanity that it has nothing to loose but its fetters. It must also be shown that there is a world to be gained.

If this Congress has given a glimpse of the world that could be—even if none of the suggestions materialise immediately—it will not have been in vain. It will have rendered a great service, to architects and public alike. For on the vision of the future hinges the transformation of the present.

Utopia ? No.

A scientific theory.

A logical programme.

A practical line of action.

That much the architect can give. That much the Architectural Students' Society—fully conscious of limitations and shortcomings—has attempted to give in this Congress.

Realisation does not depend on the architect alone. Here he is only one amongst all the workers by hand and by brain who must shape the future of mankind. The planned town will come as an integral part of planned society. And with it will come the town planner's supreme task and opportunity : To create for the "good life" a beautiful world to live in.

KURT JONAS, Chairman,
Architectural Students' Society,
University of the Witwatersrand.

F O R E W O R D

It gives me great pleasure to welcome the Architectural Society's Conference on Town Planning. From what I have heard of it, it bids fair to outdo, both in interest and importance, last year's Conference on Abstract Art. The science of Town Planning has so many aspects that it ill becomes one who is acquainted only with the veriest rudiments of the subject to offer any observations. But if this Conference serves to impress upon the minds of the Architectural students of the Union—and may we hope on those of some others as well—the conviction that we must plan towns in which it is a joy to live—towns without Vrededorps and Sophiatowns—towns in which the parking of a single car more than eighteen inches from the curb does not dislocate the traffic for miles—then indeed it will have been crowned with success. Indeed, fired by the success of the architects, we may hope to see the students of the Faculty of Medicine setting about curing that other scourge of modern civilisation in the Union—the curse of malnutrition. If this University can contribute, even if only in a small measure, towards the provision of decent living conditions and decent living, it will be beginning to take its rightful place in the community.

H. R. RAIKES

Principal

University of the Witwatersrand

M E S S A G E T O T H E C O N G R E S S

Both on general grounds, and perhaps more especially as one who was closely identified with the Department of Architecture at the University of the Witwatersrand at its inception, I cordially welcome the action of the Architectural Students' Society in organising an Exhibition and Congress devoted to Town Planning. In doing so it is rendering an important public service, which in itself is an evidence of the way in which the establishment of the Department of Architecture has justified itself.

In some parts of South Africa the question of Town Planning has received only belated attention; we are suffering, and shall continue to suffer, for past neglect. Speaking generally, however, very great advances have been made in this matter in recent years, on both the legislative and administrative sides. But much continues to depend on public opinion, and in this respect, as well as in connection with the technical aspects of the question, the Exhibition and Congress can do most useful work.

I hope sincerely that the fullest measure of success will be attained.

J. H. HOFMEYR

Minister of Education

S Y N O P S I S

● *First Evening*

A P P R O A C H

B. A. FARRELL on

SOCIOLOGICAL APPROACH TO TOWNPLANNING

DR. S. BIESHEUVEL on

PSYCHOLOGICAL APPROACH TO TOWNPLANNING

● *Second Evening*

T H E S I S

W. G. McINTOSH on

T H E T A S K O F T H E A R C H I T E C T

PROFESSOR L. W. THORNTON-WHITE on

A SURVEY OF 20th CENTURY TOWNPLANNING

● *Third Evening*

D E M O N S T R A T I O N

R. KANTOROWICH on

A MODEL NATIVE TOWNSHIP FOR 20,000 INHABITANTS

N. HANSON on

A NEW BUSINESS CENTRE FOR CAPETOWN

A P P R O A C H

B. A. FARRELL on

SOCIOLOGICAL APPROACH TO TOWN PLANNING

- A. The Sociological Approach.
 - 1 Issues Raised.
 - 2 The Social Situation.
 - 3 Is Town Planning Possible in this Social Situation ?
 - 4 Can Town Planning Achieve its Real Purpose under these Conditions ?
- B. Social Change and Town Planning.
 - 1 First Proposition: Controlled Capitalism.
 - 2 Second Proposition: Fascism.
 - 3 Third Proposition: Socialism.
 - 4 The Desirability of Town Planning.
- C. Sociological Conditions of Town Planning.
 - 1 Sociological Data Required.
 - 2 Accuracy of Data and Control of Social Forces.
 - 3 Difficulties and Problems.
- D. Political Philosophy for the Town Planner.

DR. S. BIESHEUVEL on

PSYCHOLOGICAL APPROACH TO TOWN PLANNING

- A. Man as a Creature of Likes and Dislikes.
 - 1 Origins.
 - 2 Domestic Prejudices.
 - 3 The Possibilities of Change.
 - 4 Limitation of Change by Real Needs.
 - 5 Evaluation of Living Conditions and the Task of the Psychologist.
- B. Psychological Effects of Present Day Urban Life.
 - 1 The Metropolitan Mind.
 - 2 The Suburban Mind.
 - 3 Irritations and Frustrations.
- C. Town Planning as a Relieving Factor.
 - 1 Facilitation of Cultural Life.
 - 2 Individualism and its Demands.
 - 3 The Need for Privacy.
 - 4 A Breathing Space for Nerves.
 - 5 Ways of Escape.
- D. Practical Psychological Difficulties.
 - 1 Resistance to Change.
 - 2 Methods of Approach.

FIRST EVENING — PROCEEDINGS

Thursday, June 23rd, 1938, 8.15 p.m.

The Chairman : Mr. Principal, Mr. President, Ladies and Gentlemen : To-night the Architectural Students' Society is starting on a rather ambitious programme, a Congress on Town Planning. This Congress will consist of three evenings, on each of which there will be two lectures. That, of course, is once again asking quite a good deal of the audience, but I trust you are all sufficiently interested in this subject, which we think presents one of the most important problems of modern times, to stand the strain of six more or less consecutive lectures. We are very glad that this time, as compared with last year at the University, we are able to provide considerably more comfortable seats.

This Congress is remarkable, not only for its subject, but also in that it is not an affair only of the Architectural Students' Society of the University of the Witwatersrand. In this Congress the architectural students of the University of Capetown, and the staff of the Department of Architecture of that University have collaborated to a very great degree, and a number of the drawings and photographs which you saw at the Exhibition downstairs are their work.

We are very glad to be able to welcome Professor Thornton-White, of the Department of Architecture of the University of Capetown, and nineteen of the architectural students as our guests here to-night and for the following evenings. I think this collaboration of the two Universities on a subject which is of the greatest importance, not only as a University subject of study, but because of its direct bearing on social issues of modern times, will prove a great step forward. In this connection it is particularly interesting that Johannesburg architects have contributed a scheme for the replanning of Capetown. That, I think, should prove that the collaboration has gone very far indeed.

The three evenings are devoted, first of all, to the approach on the subject of town planning. We do not believe that an architect is entitled, or able to jump into the problem of town planning by taking a piece of paper and starting a design. He has to consider the sociological and economic conditions, and take into account psychological considerations, which must have a great influence on his work. We have therefore asked a sociologist—though he probably would prefer to be called a political philosopher—and a psychologist to speak on these two subjects to-night.

The lecturers to-morrow night are going to discuss the general aspects of town planning by giving a survey of town planning in the twentieth century and discussing the general aspects of the theory.

The speakers on the final evening are going to show how these theories and the sociological and psychological conditions have been interpreted in two practical schemes—the first being a scheme for a model Native township, and the other a scheme for the replanning of the centre of Capetown.

The lecturers, I believe, are all well known to you. The first is Mr. Farrell, of the Department of Philosophy of the University of the Witwatersrand, and the next is Dr. Biesheuvel, of the same Department. To-morrow evening you will hear Professor Thornton-White, of the Department of Architecture of the University of Capetown, and Mr. Gordon McIntosh, of the Department of Architecture of the University of Pretoria. And the final evening's lecturers will be non-academic—namely, Mr. Kantorowich, a student of the University of the Witwatersrand, and Mr. Hanson, a former student of that University.

I would now like to call on the President of our Society and the Head of the Department of Architecture of the University of the Witwatersrand, Professor Pearse, to open this Congress.

Professor G. E. Pearse : Mr. Chairman, Mr. Principal, Ladies and Gentlemen : I do not propose to take up much of your time. The Architectural Students' Society have prepared a wonderful feast for us, and I am sure you are all looking forward to its beginning. But I would like to say how very much I regret that neither the Minister of Education nor the Administrator was able to be present here this evening. Both of them were asked to open this Congress, but unfortunately it was not possible. Mr. Hofmeyr, as you know, was primarily responsible for the Transvaal Townships and Town Planning Act; and Mr. Bekker, the Administrator, has the responsibility of administering that Act.

It is interesting, perhaps, to mention that this Act, or Ordinance, as it is called, is largely due to the efforts of the architectural profession, for the Town Planning Association, which was formed soon after the War, was established by the then Association of Transvaal Architects, and it was through their efforts that this Ordinance was passed. It is very gratifying, therefore, to see your Society and the younger members of the profession taking such a keen interest in the subject, seriously tackling the problems of town planning and housing and arranging this Congress. I might mention also, that Mr. Hofmeyr was responsible for the Slums Act, as it is called, of 1934, and this enactment is due to architects, and can be traced back to one or two self-sacrificing individuals in Johannesburg who, having drawn attention to the appalling conditions here, made a public appeal to try to improve them. They approached the University, and it was through the assistance of members of my staff and students at that time that a survey was made of Fordsburg, models prepared, and a book prepared entitled, "To Hell with Slums," which was sold and created great public interest. As a result a Housing Utility Company was set up in Johannesburg, and following that this Act was passed.

To the man in the street town planning merely consists of the sub-division of land for building purposes, but it has a far greater meaning than that and should be much more widely appreciated and understood by the general public. It is a subject which concerns environment, and environment means a good deal to the mental and physical health of a nation.

In this country town planning, if we except the early schemes which were laid out by men of vision, has been allowed to develop in a very haphazard way. Land surveyors have been chiefly responsible for our town plans, and to them it has consisted of the sub-division of land to obtain the maximum number of plots and stands. In saying that I do not want to condemn the land surveyor. He, like the architect or some Government authorities, has been forced to do this, owing to the conditions prevailing. The engineer has been interested in so far as it concerns drainage, the construction of roads and bridges, and the siting of railways, but, unfortunately, he, as a rule, is called into the picture when it is too late. The Medical Officer is concerned with questions of public health, sanitation and insanitary areas, and frequently has to condemn sites which have been allocated for public buildings. The architect has looked at it from the point of view of amenity, and very often, unfortunately, as an opportunity for creating a beautiful pattern on paper. The most important aspects of the problem, the sociological, psychological and economic, have been almost entirely overlooked. These various aspects are being dealt with in the lectures arranged by your Society, as the Chairman has already stated.

There is little or no doubt, to my mind, that the architect, with his long training in imagination, visualisation, planning and housing, should play a much greater part in town planning than he has done, and it is encouraging to see that the younger members of the profession are coming to the fore and endeavouring to take their share in this great national problem.

Your programme, Mr. Chairman, is an ambitious one, and has entailed a great deal of work and research. I congratulate you and your Society, the lecturers, and those members of the profession concerned, on their achievement, and I feel sure that what you have to put before us will not only be fascinating and stimulating, but will lead to very fruitful discussion. I should also like, with you, to congratulate Professor Thornton-White and the students of the Capetown University School of Architecture for their co-operation in these proceedings, and to draw attention to the very fine Exhibition which is to be seen downstairs.

The proceedings of the Congress will be published in full in the "South African Architectural Record," and also in a special edition, and it is hoped that they will not only create wide public interest, but also may lead to a greater recognition of the architectural profession in the administration of the Town Planning and Housing Acts of the Union.

I have very much pleasure in declaring the Congress open.

The Chairman: Ladies and Gentlemen, I would like to thank our President, Professor Pearse, very heartily indeed for the expression of his confidence in the younger generation, if I may put it that way, and for the expression of confidence that this Congress will be more than just a students' affair. Indeed, if it is to be justified, it must have some influence at least on the future of actual town planning in South Africa, and that is what we very ambitiously hope to achieve.

I would now like to call on Mr. B. A. Farrell, Lecturer in Political Philosophy at the University of the Witwatersrand, to start this Congress with the first lecture, which we hope will pave the way for us by alleviating some of our doubts as to sociological possibilities, or perhaps by creating some other ones which will prove fruitful in further work. I now call on Mr. Farrell to deliver his lecture on "The Sociological Approach to Town Planning."



PHOTOGRAPHS OF THE EXHIBITION BY CHARLES IRVINE-SMITH

THE SOCIOLOGICAL APPROACH TO TOWN PLANNING

Mr. B. A. Farrell : Mr. Chairman, Sir, Mr. Principal, Ladies and Gentlemen : It is very necessary, I feel, for me to begin with a preliminary remark. I want to thank you very much indeed, Sir, for the honour you have done me by asking me to speak here to-night. But I must say that I really know very little indeed about sociology, and even less about town planning. These topics are right outside my sphere. Consequently this paper is bound to reveal the muddled thinness or the muddled compression of style that is usually a reliable index of the author's inability to cope adequately with the subject at hand. For this I can only offer you my regrets and extend to you my sympathy. I am very sorry indeed that the Society was not able to obtain someone else who would not have subjected you, as I am about to do, to the tedium of listening to an unsatisfactory analysis.

Now, Sir, if I understand correctly the present current of sociological thought, a sociologist would tend to approach the subject of town planning in the following way. An urban community arises from certain causes. These causes determine not merely its position in space and time, but also the relative positions and distribution of the population and institutions within it. This distribution sociologists call the ecological organisation of the community. Now the rapid extension of urbanisation during the last century was largely determined by the technological revolution which occurred. This placed a premium on the specialisation of labour and capital, and, by raising the productivity of agriculture, enabled larger collocations of people to be withdrawn from the land to live in the towns. The actual location of these communities and their ecological structure were largely determined by the forces of competition and selection operating within a predominantly laissez faire economy. But these forces, in producing these commercial and industrial communities, also produced other results that are manifestly undesirable. For this audience I shall presume that it is unnecessary for me to enumerate any of them. I will simply pass them by. So in recent years the demand has arisen that the location and ecological structure of urban communities be directed and controlled in such a way that these undesirable features be abolished, if possible, from existing towns, and that they certainly be prevented from arising in future. This, very crudely and very shortly put, seems to be the sociological gist of the town planning movement.

With this movement as such it seems obvious that no reasonable man can have any quarrel. The objects it seeks to satisfy are in themselves unexceptionable. But it also seems obvious that by considering it per se we cannot decide upon its merits, or upon the difficulties it is likely to encounter. To place it in its proper perspective it is essential to examine some of its sociological implications. (The other essentials I leave to Dr. Biesheuvel.) For example, if town planning is to consist in the direction and control of the ecological organisation and location of urban communities, who is to do the directing and the controlling ? And how are decisions about this to be arrived at ? It is arguable that the satisfaction of the desire to plan urban communities, though estimable in itself, would very probably involve the sacrifice of certain other desires that are equally, if not more, urgent. It may, for example, be the case that town planning, at least on any extensive scale, is incompatible with every form of governmental organisation except Fascist regimentation. If this be so, it is probably true to say that town planning can only be achieved and maintained by means so undesirable that the gains accruing from it are wholly outweighed by the losses involved in attaining and maintaining it. And in any case, it seems reasonable to suppose that some ways of achieving town planning may be better than others. If so, it is to the sociologist that we have to look for guidance. Again, even if town planning does not involve the sacrifice of other urgent desires, it may be impossible to achieve its real long term purposes, without some further reorganisation of the community. The losses,

if any, from this change must be taken into account. Moreover, the simple little fact must never be forgotten, that towns are planned and built for people to live in. In order that their living should be as satisfactory as technological, economic and other circumstances permit, it is necessary for the sociologist to present the planners with a large amount of information that has to be incorporated into the final scheme.

These then are some of the implications of the sociological kind raised by the town planning movement. I shall attempt to consider them at as much length and in as much detail as time permits.

For the sake of simplicity—you will forgive me, I hope, in this—for the sake of simplicity I propose, roughly speaking, to consider a country like that of Great Britain, or to a lesser extent like South Africa. To express myself with greater precision I propose to postulate that we have to deal with a situation defined by the following data:—

- (1) An urban country. That is, a country where the productive system, including agriculture, is largely determined in character and operations by the demands of the cities, and where the social structure, to use Mr. Glass's phrase, is "coloured" by city conditions.
- (2) A country whose economic structure has been determined by the Industrial Revolution. At present the first postulate implies, I think, the second. But it is clear that it has not always done so.
- (3) The factors determining economic equilibrium are largely money prices operating in a free market, supplemented by price fixation through monopolies of capital and labour, and through governmental control by means of wage boards, etc.
- (4) The capital goods are owned and controlled predominantly by private people, who possess certain consequential rights, like those of bequest and inheritance. (By capital goods I mean merely to distinguish between things like bread and butter, which are consumption goods, and things like the machines that Mr. Fotheringham, for instance, uses to make the bread. It is the latter that I call capital goods.)
- (5) The distribution of wealth is markedly unequal, and this inequality corresponds to a predominantly static differentiation of the community into economic classes.
- (6) The conditions under which the community lives are determined in law by means of a process called Parliamentary Democracy.

I propose to confine my attention for the most part to a country of this sort. In this way I may be able to sort out the maze of complex issues raised into some simple pattern. To the extent that any particular situation in which you may happen to be interested does not conform to my postulated society, to that extent will you have to consider whether the conclusions I suggest are applicable to the situation in question, and to what extent they may require modification.

Moreover again for the sake of simplicity, I propose to concentrate on the planning of new towns. I do not intend to say much about the replanning of existing towns, whether in whole or in part, or about the planning of their future extension. Consequently the conclusions I come to about the planning of new towns are only applicable to these types of planning with the necessary modifications. Abstract as this discussion may appear, I believe that from an examination of this special case we can obtain much insight into the possibilities and the merits, into the characteristic difficulties and problems of town planning in general.

So much then for the postulated situation and the way in which I intend dealing with it in this lecture.

Now let us suppose that in this country the public spirited inhabitants start a movement demanding that all future urban communities that may grow up shall be planned. The two following questions then arise :

- (A) Will this movement be successful? That is to say, what is the likelihood that future towns will in fact be planned?
- (B) Assuming that the movement were successful in any one instance, what is the likelihood of its achieving its real long term purposes?

Let me consider (A). The answer is, I think, in the negative. On the whole it is unlikely that such a town planning movement will be successful. The reasons for this ought, I think, to be fairly clear. The determinants of urban location and ecological structure in this society are the forces of competition and selection. Towns grow up where they do because, very crudely put, it pays the owners of capital to invest their capital there. The town we are in at the moment is a very obvious example of that process. And the distribution of people and institutions within such a town is determined by a complex of factors, the important ones of which being geography, lines of communication, and land values. Since, for example, it pays the ground landlords to extract as high a ground rent as they can, they tend to cut it up into such lots as they think will achieve this object, largely irrespective of other considerations.

Or consider another example of this process. Between the central business or factory area and the outer residential zone, one tends to find various areas that sociologists have called transition zones. For they are always in the state of becoming something else, squeezed in as they are between two other zones that are on the point of expanding. Because they are too near the centre and yet not far enough out, their rental values tend to fall. And because landlords have not yet made up their minds what to do with their property, they tend to neglect it. So the transition zone becomes a slum. I suppose that we might call Ferreiratown such an area at the moment. But generalisation here is difficult because of the ethnical segregation of the mass of the ordinary, lowly paid, unskilled workers who, in other circumstances, would tend to occupy such areas—I refer, of course, to the Bantu)—and because of the geographical situation of the mines that has had the effect of forcing the residential zone to the north. In short, then, the forces that determine the social and economic distribution of population and institutions are of the same sort as determine the development of the town itself. They are the normal consequences of a capitalist society predominantly competitive in character. That is to say, these consequences are implied by the postulates defining the sort of social situation I am considering.

If this is so, it follows that the location and ecology of new towns can hardly be controlled within the framework of this sort of society. Town planning appears to be incompatible with it. And should the town planners start an agitation, under Professor Pearse's aegis, they are quite likely to find themselves opposed by that powerful section in the community that owns the capital goods. The members of this section are likely to see in the town planning movement a threat to their own individual freedom of action and a menace to their future expectations of gain, which freedom and which expectations they identify with the ultimate welfare of society as a whole.

This inspective analysis is on the whole, I think, borne out by the empirical evidence, though here I speak with even more diffidence than usual. As far as I am aware, instances of new planned towns in societies of the sort in question have been conspicuous by their rarity. What does appear to have been accomplished on some occasions is either the partial replanning of an existing town, or the planning of the future extension of one, or both;

or again the laying down of a plan for a town that is about to develop or that has just begun. Obviously these things are not incompatible with our postulates, though they are often difficult to accomplish. Of these possibilities the replanning of an existing town on any large scale is the most difficult. For all other things apart, it necessitates either the coercion or the consent of the ground landlords and all the other vested interests that are entrenched in the existing town. But coercion involves either the compulsory purchase of the land by public authorities, which infringes our postulates, or the infringement of the owner's freedom to dispose of his capital so as to maximise his returns, which is again incompatible with our postulates. Hence, in our society consent seems to be the inevitable method. This, however, is notoriously difficult to obtain. A favourite method suggested to obtain it is to pool all landowners' rights and then to allot new areas to them in accordance with the town planning demands. This, incidentally, is the method advocated by the recent Highway Development Survey for London written by Sir Charles Bressey and Sir Edwin Lutyens. Obviously, however, this device will by itself hardly be sufficient to obtain the desired results. For, excluding other stimulants, the avenues for haggling and delay that it offers may prove endless, and well intentioned efforts peter out in a fruitless harangue.

Let us, however, suppose—I want to be as magnanimous as possible—that the town planners in this society are successful in some instance in planning a new town or in some other large scale planning of the sort just discussed. The second question then arises: (B) Are they likely to achieve their real long term purposes within such a society?

Very briefly again, let me give you two reasons why I think the answer to this question is also in the negative. First of all, there is no way of ensuring that the town will not soon get completely out of hand. For one thing, the location of future industry and factories is still left to the decisions of private individuals. This freedom is sufficient to thwart the best laid of schemes. For it means, among other things, that the future diminution or growth of population is largely unpredictable and uncontrollable. Clearly it is hardly worth while to plan elaborately if in a few years' time a large percentage of the population has migrated elsewhere, or if there is a sudden increase in the demand for accommodation which increase results in a growth and congestion that ruins the original plan. Yet this, I am given to understand, is what in fact tends to happen. Thus the recent report of the Town Planning Institute in Great Britain—(see the "Manchester Guardian Weekly," Friday, June 3rd of this year)—states that the most important of all aspects of planning is that summed up in the phrase "location of industry and population." Examples of this process are, I gather, fairly extensive. Two good instances are the American cities of New York and Washington.

The other difficulty is the following. If town planning is to be successful, the transport and power systems of the region surrounding the town must also be adequately planned. And it must be planned not only for the present, but for the future as well. If, for example, the town is planned for a certain rate of development, and the roads and railways are not, the beneficial results will be largely lost owing to the confused congestion resulting from the increased volume of traffic. So to plan a town adequately involves much more than the mere planning of an urban area. It involves, at the least, the planning of the transport and power systems of the regions concerned. And regional planning obviously involves some degree of national planning. The Town Planning Institute, in the Report just mentioned, also emphasises the necessity for such national planning. Yet it is precisely this regional and national planning that it is so difficult to obtain within the framework of our postulated society. I have already touched on the difficulties in this sort of society connected with the location of industry. Where the transport

system is in private hands, the same difficulties arise and for roughly the same reasons. Where it is largely under direct Parliamentary control, as in this country, national planning is also likely to be hampered. For the transport system will then probably be operated, not in accordance with long term communal needs, but in accordance with those short term sectional wants that happen to be of strategical importance to the party in power.

So for these two reasons alone it is doubtful whether the town planners would really be satisfied with their achievements in the long run. And the conclusion seems to be that the limits to their achievements, just as the limits to the possibility of their succeeding at all, are also set by the postulates that define the sort of society we are considering.

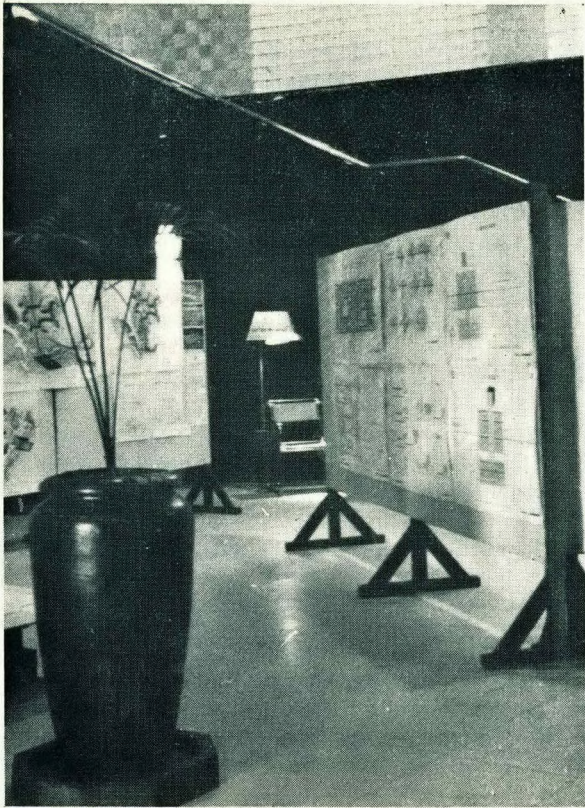
Well, now, our negative answer to the two questions we asked at once raises a further question: What minimal alteration in these postulates is necessary in order to make successful town planning a likelihood. That is to say, what are the least changes that have to be made in our society in order to make it probable that town planners will succeed and not be disappointed in the results of their efforts.

The number of answers to this question appear to be legion. I only propose to consider three that I think are of importance and of contemporary interest. Let me emphasise again that it is impossible in the time at my disposal to do justice to any of these views.

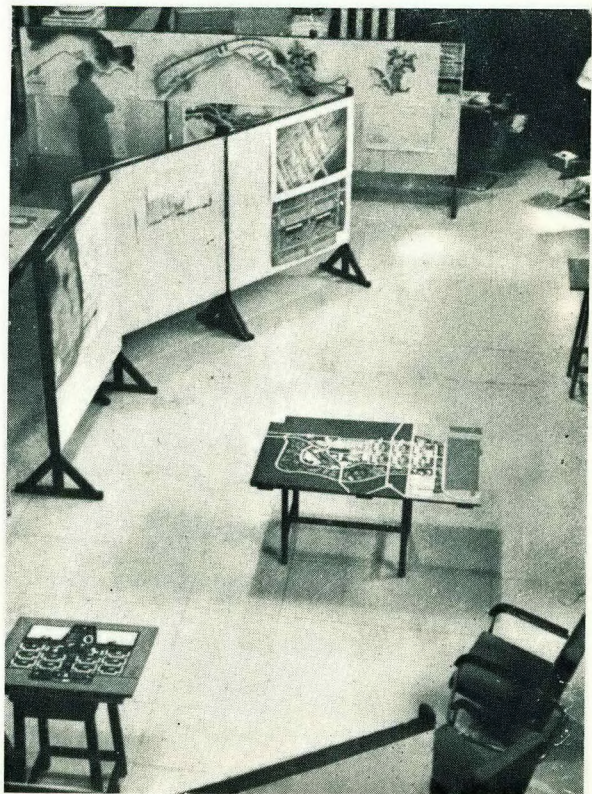
The first one I wish to consider is the answer that is given by many Liberals and by those further left who want to get something done now, even though it may not be a very adequate something. This attitude can be summarised, I hope not too unfairly, as follows.

Our society has to be altered by modifying the two postulates of the private ownership of capital goods and a free market. This modification takes the following form. A National Investment Board is to be set up to provide new capital issues on favourable terms, these loans being conditional upon their being invested in accordance with the national town planning scheme. The Banks, both central and joint stock, are to be nationalised in order to secure communal control over the amount and distribution of short term capital to industry. Then, the transport and electrical power systems must be taken out of private hands and be organised into a semi-autonomous Board or Trust on the model of the Central Electricity Board in Great Britain. The upshot of these changes will then be apparent. The National Investment Board, by means of its loan policy, the Banks by means of their short term credit policy, and the other two Boards by their rates policy, could together effectively place the development of new industries, encourage the re-equipment of existing industries, and prevent the purposeless drift of industry away from one area to another. All this could be done without in any way handicapping existing industry, and without damping entrepreneurial enterprise.

In matters of general policy these public authorities would be the agents of a State Planning Department. This should consist of a number of sub-departments, staffed by experts in a number of different fields, e.g., industrial organisation, labour problems, finance, town and regional planning, power and transport, economists and statisticians. Its business would be the actual drawing up of plans for creating new industries, the provision of housing, transport and social services, the general distribution of the country's capital resources, and the general relationship between different regions. It would be presided over by a Cabinet Minister, assuming that the Parliamentary democracy is of the Cabinet and not Presidential form. For the general policy of the Department the Cabinet as a whole would be responsible in the ordinary way. And clearly its general character would be open to public criticism and discussion in Parliament itself, in what are known as Consultative Committees, as well as at an election. It is claimed that in this way



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a co-ordinated national scheme for the planning of new towns as well as for the partial replanning of existing ones could be worked out and applied, with every chance of its being a success. And all this could be done, it is pointed out, with the very smallest disturbance to the structure of the society as a whole.

Now I think the claim that much can be done in this way is a true one. And I suggest this method as the basis for a minimum political platform on which town planners might be able to unite for the satisfaction of their demands. But, though it is important to recognise its merits, it is equally important not to be too sanguine about the extent and nature of possible achievements by these means alone. The following difficulties may be noted, I think, with profit. (You will forgive me for my brevity.)

One may by this method be able to control the direction of future capital investment, but it is not possible to have very adequate control over its volume. And if the big investors take a dislike to the government, they will go on strike and become non-co-operators. This eventuality is by no means unreal in view of the fact that the Blum and the Roosevelt governments have recently experienced precisely this difficulty. A capitalists' strike will mean one of two things—either inflation, à la Roosevelt, or increased taxation. Neither is very hopeful. The former may have very unpalatable results, as you are no doubt aware; the injection of large doses of extra money into the economic system is a tricky business at the best of times. The latter is likely to incur the further hostility of the investing class, and may quite well damp down business enterprise. It will take a very strong government to introduce it. What is much more likely to happen is that the government will compromise with the investors, and tone down the planning schemes. Much of the achievements of this method will thereby be lost, and what remains will not very seriously disturb the traditional freedom of action of the investing class. In this way the important and no doubt uncomfortable element of truth in Marx's dictum will probably be manifested again—the dictum, namely, that the capitalist state is the executive committee of the bourgeoisie.

But, all this apart, it does not follow that the long term purposes of town planning will be achieved in this way. Two reasons for this may be noted :

(a) One of the worst features of contemporary urban civilisation is the slum. But slums cannot be abolished merely by the building of new dwellings and by prohibiting overcrowding. For, if inadequate wages or unemployment or some similar cause renders the new tenant incapable of keeping up a certain standard of life, the new dwellings may easily degenerate into places where the whole family sleeps in one bed. In these circumstances dirt, ill health, and all the other "illth" of contemporary city life will arise again. Moreover, any tendencies in this direction will be reinforced in a society where wealth is very unequally divided between rigid economic classes. For the wealthy will seek to escape to exclusive areas where rentals will go up as a result, and the poor will find themselves segregated in areas that the tourist is not shown. Houghton and Parktown on the one hand and Braamfontein and Ferreiratown on the other will still come into existence in a town planned under the conditions suggested.

(b) Planning the towns of a country adequately implies planning its population trends. This is, of course, a very complex and thorny subject. So all I want you to note is one point. If the towns are not to be partly empty in a few decades, it is necessary to prevent the impending fall in population that seems likely in countries of the sort postulated. Now one of the important determinants of this fall in this sort of society is its class stratification and competitive character. For the upper working class, the middle and upper classes are all striving either to improve or to maintain their economic and social status, in other words their class position. Hence, it pays to have

small families. In other words, the sociological structure of this sort of society will probably have results incompatible with the anticipations of the planners. The method we are examining does not seem to take this not unlikely eventuality into account, and it is difficult to see how it can.

So much then, Mr. Chairman, Sir, for the first suggested alteration to our society. By way of contrast I now propose to say something very brief about the Fascist method.

On this view it is necessary to abolish the democratic postulate and the postulate of the free market. The argument, very baldly, and I hope not too unfairly, put, runs like this. The common good of the nation is more than and greater than the good of any single individual or class in it. The reason why nothing, or at least so very little, is done about the planning of our towns, which is obviously an element in the common national good, is that class and sectional interests capture control of Parliament and effectively use it for their own petty gains. Hence, it is necessary to revivify and strengthen the State to enable it to put the common good into force. In so doing the State will be guided and controlled by a body of persons who have made it their special task to discover and to satisfy the real needs of the nation. So the abolition of Parliamentary democracy, or anything resembling it, is indispensable. And as it is the free movement of prices in the economy postulated that makes the success of town planning so doubtful, it is necessary for the State to abolish it without hesitation as far as this is necessary, to instruct employers where to open factories and to arrange for workers to live in the necessary areas, if this be required. It is a disciplined nation that has the most chance of becoming great. And town planning is merely a part of such discipline.

The objections that can be raised to this suggested method are, I think, final and rule it out of court. I cannot give them here with any adequacy, since to do so would take me right outside my terms of reference. Let me indicate the sort of criticism that can be offered.

(1) It is clear that if town planning can only be established in this way, it is very questionable whether it ought to be instituted at all. For on this method it appears to involve the permanent regimentation of individuals. This makes it certainly not worth the price of its attainment. (I am sorry to appear so dogmatic here, but I haven't the time to elaborate my reasons.)

(2) The method adopted to control the location of industry, etc., is likely to be both inefficient and unjust. It is likely to be inefficient as it is neither flesh, fowl, nor good red herring. It relies on the individual initiative and enterprise of the business man, yet it is in fact in Germany and in Italy continually interfering with the small man and hampering his freedom of action. If the Party, and thence the State, were to adopt a completely totalitarian policy, it would be quite impracticable, as the job of regulating every single phase of economic life by decree would prove a task impossible to perform efficiently. Besides, such a policy would make the big investors non-co-operative. Yet the Fascist State relies on the business and organising ability of these people just as much as any other Capitalist State. And the whole method is likely to prove unjust, for the very reason that the State requires the co-operation of these elements in society. Hence, the incidence of State benefits is likely to be in their favour and the needs of other sections of the community neglected. As the Italian correspondent of the "Economist" once wrote ("Economist," July 27th, 1935) :

"So far the new Corporate State only amounts to the establishment of a new and costly bureaucracy from which those industrialists who can spend the necessary amount can obtain almost anything they want, and put into practice the worst kind of monopolistic practices at the expense of the little fellow who is squeezed out in the process."

(3) Let me end this section with some general objections. It is, I think, very important to remember that Fascism is an anti-urban philosophy. For, everything else apart, its autarchic policy and its organisation of the community on a semi-war basis—both of which are implied by its central theses—mean that the peaceful specialisation of production, on which the growth and existence of towns so much depends, is steadily rendered impossible. I suggest that no group of architects and town planners can envisage the destruction of city life with equanimity. In passing, we can note that the much vaunted housing and planning schemes of Signor Mussolini, so far from being a real attempt to cope with the problem, seem rather to be an attempt at satisfying the megalomania of a self-alleged Caesar, and at impressing the more impressionable of foreign visitors.

I go on now to consider the third suggestion for the reorganisation of our postulated society. The purpose of this suggestion is to try to avoid the difficulties of the first method I discussed while preserving, if not actually extending, the freedom of the ordinary person to determine the conditions under which he lives. It is usually given the vague name of "Socialism."

On this view it is necessary to abolish our postulate that the distribution of wealth is very unequal and corresponds to a predominantly static differentiation of the community into economic classes. Now the sociological factor, so it is alleged, producing this inequality and class differentiation, and the factor that it is at the moment politically easiest, comparatively speaking, to abolish, is the institution of private property and inheritance rights in capital goods. So our postulate embodying this institution must also be abolished. These two changes probably also imply some change in our other postulate of a free price economy, though precisely what change is involved is still a matter of debate among the experts.

The reasons for these suggested alterations ought to be clear from our discussion of the two previous methods. Let me recapitulate them for you very briefly. The abolition of gross inequality is necessary in order to prevent much of the "illth" of contemporary urban life arising again in the planned towns; and in order to assist in the prevention of a catastrophic fall in their population. The communal ownership and control of capital goods is very probably necessary in order to achieve the fair degree of equality desired and the abolition of discrimination on the grounds of an economic predetermined status. Such communal ownership is probably even more necessary in order in the long run for the community to plan its urban face satisfactorily. For a society of the sort postulated, embodying as it does the institution of private ownership in capital goods, is quite likely to give rise to political conflicts that will tend to prevent the achievement of town planning, and that, even if achieved, will tend to nullify its gains in various ways. So the conclusion is that these are the minimal changes it is essential to bring about for successful town planning to be possible. It should, of course, be obvious that the arguments we have considered, as they stand, do not really suffice to establish this conclusion. They merely serve to indicate the line along which an adequate proof can be attempted. Time prevents me from going into any further detail.

To this conclusion a mass of objections could be raised. I only propose to touch upon some of them. I want to consider them by asking and trying to answer the following questions: Supposing that these minimal changes outlined are the essential conditions for successful town planning, is it still a desirable thing to aim at? Or is the cost involved in getting it so great as to outweigh its gains?

(1) The first alleged costs I want to touch on are those that can be grouped together under the rubric of economic liberty. These costs are ascribed to town planning in general and to this method of town planning in particular.

(a) To plan the location and ecological organisation of a town, particularly when this planning is part of a general scheme of national planning, is to deprive the ordinary consumer of much freedom of choice. At the moment his freedom is very extensive, not merely in the renting of dwellings, but also in the purchase of umpteen different sorts and varieties of ordinary consumption goods. Were the economy of the community as a whole to be planned, it would be difficult, if not impossible for various reasons, to provide this variety. In particular, it would only be possible in the main, particularly on the Corbusier scheme of town planning, to plan for a few types of flats. And a consumer might have to rent a flat that he really did not like, simply because there was no more suitable type of flat obtainable. Obviously such restrictions on individual freedom are very undesirable.

(b) This argument is reinforced by considerations about the distribution of labour in this sort of society. The problem crudely put is this : How are the authorities going to get people to occupy the newly-planned town ? The suggestion is that they will probably find that the only way to ensure it is to order certain people to move into the town. Quite clearly, however, such regimentation is very undesirable. Not only does it make intolerable inroads on individual freedom, but it is quite likely to be grossly inefficient, as conscripted labour is seldom satisfactory.

As these arguments stand they are not very impressive. There is no reason whatsoever why the State Planning Commission should not be able to estimate what the people want just as much as the body of capitalist producers do to-day. On the contrary, there is reason to believe that it could do so much more accurately. And it is false to say that the mass of people at present have a wide range of choice over the dwellings they occupy. The working classes have to reside where they can. Moreover, as far as I am able to judge, there is no reason why a large variety of flats should not be provided by schemes of the Corbusier type. Much the same applies to the labour question. There is no reason why differential wage rates, coupled with higher real wages in the form of shorter hours and so forth, should not be amply sufficient to shift the required amount of labour without any coercion but as the result of free individual choices. In this case no-one will go to live in a planned town unless he chooses to do so. And clearly one of the elements he will probably consider in making up his mind is the fact that the town is planned and that if he goes there, he will probably have to live in a certain sort of dwelling. There is nothing very odd about all this. After all, one of the main factors assisting to produce economic equilibrium, according to the orthodox economists, is just the additional gain that will accrue to an ordinary worker if he migrates from a bad employer to a good one elsewhere.

It is worth while noting that economists have on the whole recently retreated from these two objections to another and much more impressive one, the objection, viz., that there is no possible way of determining the most productive allocation of socialised capital. But this objection is hardly relevant here. It is a very technical question, and it is still being debated by the experts. So I propose to say nothing about it.

(2) The other objection I wish to consider, to town planning under these conditions, is this. To plan towns on the scale envisaged means having a very precise idea of what sort of thing a town ought to be like and then giving expression to the idea in fact. Now, except in a society guided by a social philosophy that everyone believes, there is almost certain to be a minority that would like the towns to be something different. And this divergent desire in the minority may spring from beliefs and attitudes that are to them of profound importance. For example, there might be a religious

body in the community that considered it vital to preserve the importance of the family as a social and economic unit, and so considered—whether rightly or wrongly—that the herding of people together into large flat blocks with crèches attached would reduce the family to insignificance. These people might consider it essential to provide each family with a house and a plot of ground, or three acres and a cow. Such a minority would obviously object very strenuously to having to live in towns of the Corbusier type. Now it is obviously advisable, for several different reasons, not, in general, to suppress minorities on any matter they deem vital. How, then, is town planning, particularly of the Corbusier type, to avoid the charge of dragooning minorities into conformity?

The reply is fairly simple. Town planning can be made flexible enough to take account of minority desires. Provided provision is made for this flexibility, no objection can be raised. And as far as I understand, it could be allowed for even in the Corbusier type of town. It could be done by the provision of certain empty spaces on which voluntary associations like churches could erect their own buildings provided they did not clash with the rest, and by the provision of “cité jardins.” M. le Corbusier himself seems to suggest the latter for those who wish to work in the factory zones, and for those who work in the skyscrapers but who prefer to bring up their families in “garden” houses. Consequently, it would be open to the majority, if it chose, to live in these houses. It would have to suffer slight inconveniences, like not being near the centre of things, but it would be difficult to complain with justice that it was being dragooned into conformity.

This point, however, is merely one on which fundamental disagreement might arise. There are probably others that can be thought of. And to settle these, further flexibility and elasticity may be required.

So I think it true that town planning on the scale envisaged is not only worth while in itself, but it is also worth while when its further implications are taken into account. It can be brought about by methods and operated in a way that, so far from detracting, can actually further the purposes it sets itself. I am fully aware that I have not established this proposition by the arguments used. To have done so would have taken me very far afield. But I think I have indicated the sort of way in which it can be done. At the same time, I hope I have indicated how some of the important objections current are largely mistakes, as well as indicated some of the pitfalls town planners have to avoid.

But so far, however, I have been concerned with discussing the minimal changes necessary for successful town planning to become a likelihood; that is, I have been concerned with the sort of world in which the architect's magnificently impatient visions are likely to be fulfilled. But obviously these minimal conditions are not sufficient. Certain other conditions must be fulfilled within the framework of a socialised society. What now are these sufficient conditions?

Let me suppose that the erection of a town has been decided upon by the State Planning Commission in accordance with the national plan. The town, let us say, is to be set up in order to accommodate the workers engaged in some extensive mining work in an undeveloped area. The numbers required are stated, both permanent and seasonal, their shifts, the rough level of their incomes, the nature of the waste products involved, the possibility of future extension of the works and industry there, its amount, and so on. The more such details are given the planners before their task begins, and the more accurate such information is, the more likely it is that the planning will be a success. It is obvious at once that both to supply such information and to act upon it intelligently presupposes an elaborate Civil Service with a high level of administrative ability and technical competence.

Now with this data given them the planners have to construct on paper the town required. That is to say, the location and certain elements in its ecological organisation being given, it is their job to estimate what the other elements in this organisation are likely to be, and how, for various sociological and psychological reasons, they can best be mutually related. So the next condition we have to note is that these estimates shall be as accurate as possible. To achieve this accuracy is an extremely difficult task, and one on which I am simply not competent to speak. Let me indicate to you briefly the sort of things it involves.

Starting from the given nucleus of workers to be employed and the data about them, their age and sex composition must be determined. From this many of their requirements can be inferred. But it is not sufficient for the town merely to provide them with sleeping accommodation. The other services, for example, that must also be supplied are ones like the main supply services of food, water, light, heat, transport, health and administration. Similar estimates must be made for the workers, men and women, required by these services. In this way the total population of this town must be calculated. Then the cultural, recreational, and educational needs of this population must be allowed for. At the same time, distribution services for day to day needs, like clothing and haberdashery, etc., must be taken into account, as well as the needs of the floating population for hotels.

Then with the income grades of the anticipated population roughly given, it is possible to determine the rents that can be charged, and it is possible to estimate the anticipated demand for different types of dwellings from each income level. The general standard of accommodation and comfort provided will no doubt largely depend upon the general standard of life the country as a whole can afford. The task in this respect is very much easier than similar anticipations in an economically unequal society in view of the idiosyncrasies of taste that are permitted and encouraged in the latter.

The next thing to do is to anticipate and plan for future extension. If the intentions of the State Planning Commission are known, the task is somewhat simplified. But in any case various factors have to be taken into account. For instance, it is necessary to relate the planning of this town to the planning of the agricultural region round it, in order to calculate with accuracy the drift, if any, that will take place from the region to the town. Or, for instance, the possibility must be allowed that the town may develop into an important administrative centre. Or, again, it may prove convenient, owing to the geographical situation, to start a number of secondary industries in the town, and to develop it into a commercial centre. And, as I have already indicated, room must be left for the expansion of voluntary associations, and for the expression of important minority wants.

It is in the making of these estimates that the chief difficulties are likely to arise. Estimates of the best distribution of these constituents of the town are not so difficult. There are various commonsensical considerations that have to be borne in mind about the distribution of residential, industrial and other zones. Le Corbusier's *La Ville Radieuse* has an ecological organisation that is obviously preferable to the towns with which you and I have the misfortune to be acquainted. But though this part of the task is obviously simpler than the one just considered, it has one or two puzzling features that I shall touch upon in a moment.

When the group of planning experts have collected their information and made their estimates, these should be embodied in a provisional scheme or draft. The following steps, or something like them, should probably then be taken. It should be handed over to the architects for embodiment into an actual design. The draft should be made public and submitted to the

various Departments of State, e.g., Health, Transport, etc., concerned with different aspects of it. Criticisms, emendations and objections should then be lodged. In order to bring public criticism to a focus, it may be necessary to institute quasi-judicial hearings such as are accorded private members' Bills. Moreover, it may be necessary at some stage to permit judicial appeals against the Planning Department's decision where legal points arise. For it is usually inadvisable to allow civil servants to decide their own cases. From all these criticisms a final draft would be constructed. This would no doubt have to be passed finally by the State Planning Department, and for which, as in the ordinary course of events, a Minister would accept responsibility.

Now all this is obviously a colossal task. To state it baldly in a few minutes as I have done serves more to stun, I think, than to enlighten. Yet it is important to notice that for the last ten years or so the Union of Soviet Republics has actually been constructing towns along the lines I have been discussing. In so doing an enormous amount of experience has been obtained and, so I gather, a voluminous technical literature has been accumulated. Something of the same sort can also be said of some countries like Great Britain, where some attempt, however feeble, has been made at coping with the problem. For it is clear that the sort of factors to be taken into account in planning new towns in the society we considered must also be taken into account, though in a lesser degree and in very different circumstances, in any other sort of replanning, etc., at the present time.

Permit me at this point to note some difficulties. I do not propose to solve them.

(1) As any planning, in particular the planning of new towns, involves estimates whose accuracy is always in doubt, the planners must plan to leave a wide margin of error. That is, the plans must be flexible. So from a different angle we reinforce our earlier conclusion in this respect. The margin of error to be left will obviously differ in different circumstances. The more experience attained, quite obviously the less the margin of error we need leave.

(2) In deciding upon the ecological organisation of our towns we are faced by several unsolved problems. For example, what ought their size to be? It is clear that if they are too small, the full benefits of urban civilisation cannot be obtained. For instance, towns of about 50,000 inhabitants find it difficult to sport things like adequate theatres and art galleries. Yet towns of the size of London and New York are obviously too large. The cost of their supply services, for example, has probably reached the stage of diminishing returns. So the optimum point falls between these two extremes. But analysis cannot answer the question. We have to wait for more empirical evidence. I might, however, draw your attention to the contentions of certain social-biologists, like Professor Lancelot Hogben, who maintain that it is the large scale towns of contemporary urban civilisation that are contributing to the potential decline in population. On this view people are ceasing to have children partly because urban life provides them with so many other more pleasant things to do. What is therefore suggested, if I understand this view correctly, is that the optimum is very much smaller than is usually thought, and that consequently we ought to concentrate upon the construction of small satellite towns and let the metropolis disappear from the map.

Related to this view is the argument that flats have so far usually been associated with declining birth rates. If this is true, and if the planners are anxious to plan the residential area to consist in flat blocks, then they must go out of their way to make the having of children an easy and a comfortable business. It is obvious that there are various ways by means of which this can be done; how successful they are likely to be we cannot really tell in the absence of empirical evidence. Similarly, it is impossible to tell what size of residential block will cultivate most successfully a spirit of community consciousness.

(3) I offer the following problem to you to consider. If new and original ideas are to be given scope in this society, it is necessary that the architectural profession should not be in the hands of a body of R.A.'s. How the desired state of affairs is to be brought about I leave to you.

I want to end with one or two reflections. I suggest that instead of leaving the growth of our towns to the hazards of chance, to the chance that Adam Smith's invisible hand will always order things satisfactorily, we ought to utilise the knowledge and skill that is at our command to control and direct our environment. Instead of accepting its behaviour as a calamity of nature, we should adopt an attitude that is worthy of the dignity of human beings. We should seek to mould that environment to achieve our desires. But to control the forces of town life is probably impossible within our present social framework. Hence that social framework must be changed. In this conclusion there is nothing odd. We appear at the moment to be at one of those turning points of history, where, like the passing of the Middle Ages, a new social order is struggling to emerge. Its travail is acute and laboured at the present time. The Metternichs of modern Europe have made it their avowed purpose to hinder its birth. The more acute the travail becomes, the greater is the danger that in the process of its emergence, the delicate fabric of urban civilisation will collapse. Hence the need to assist and to hasten the process. Hence the need for all those, like architects and town planners, who are anxious to preserve and to extend the achievements of urban civilisation, to throw their lot in with that movement that is at the present time seeking to transform the world.

The Chairman: Ladies and Gentlemen: I think Mr. Farrell has admirably succeeded in being fair to everybody except, perhaps, to himself. I am referring to his original statement, when he tried to make us believe that he did not know anything about the subject he was discussing. Of course, if knowledge consists of having read a great number of books, then anybody speaking on the sociological approach to town planning would have been in the same position as Mr. Farrell, because there is no literature on the subject. We have to thank Mr. Farrell in particular because he had to work up this thesis from the general data of town planning and sociology in their isolated states. I do not think any of us had so far realised how intricate is the connection between the social problems and the task of the town planner. But there are still more problems to come, and I want to give Dr. Biesheuvel a chance to complete his lecture before midnight draws near.

I now call on Dr. Biesheuvel to deliver his lecture on "The Psychological Approach to Town Planning."

THE PSYCHOLOGICAL APPROACH TO TOWN PLANNING

Dr. S. Biesheuvel: Mr. Chairman, Ladies and Gentlemen: I do not propose to apologise after the manner of Mr. Farrell for my attempt to lecture to you to-night. I have inflicted my remarks on the Architectural Society on two previous occasions, and I think by now they ought to have been wiser. Consequently I feel that the responsibility is off my shoulders. My problem is considerably easier than that tackled by Mr. Farrell, who dealt with town planning from an essentially practical point of view.

My task as a psychologist is to answer the following questions: Given any particular society—for the moment I do not mind which—how will individuals react to the idea of a planned city? What objections will they raise? How could those objections be met?

The motivation of man compared with that of lower organisms is infinitely complex. Whereas the behaviour of the latter can usually be referred to some simple needs or desires, it is not so easy to disentangle the main springs of human action from the welter of specific wants, likes, aversions, demands and habitual modes of response which form the outward and visible determinants of human behaviour. If, for instance, we consider the conditions of life of the West End of London flat dweller and compare them to those of an East African kraal native, then we should either have to conclude that they are creatures of a different fibre, or else that the Londoner had merely developed a large number of elaborations on a very simple and primordial theme, somewhat like a classical composer taking a folk tune and moulding it into a massive symphony.

Just as within that symphony each bar eventually becomes indispensable, so too our Mayfair citizen requires his Bond Street gear and his "Bystander," preferably with a photograph of himself eating, drinking, or killing something in the company of Lord Cholmeley and the Lady Dowager Barth; he requires his races, his cocktail parties, his "first nights," charity balls, and some not too, too vulgar work. Life, indeed, would be grey without these things. It would not be difficult to show that most of these requirements are only incidental, the consequences of environment and upbringing; but to do so would be very largely irrelevant. It is not what is, but what people believe to be, that matters. As long as one believes that certain needs are fundamental no amount of rational argument that they are not would prove anything to the contrary. Likes and dislikes become the very stuff of one's personality, the warp and woof of one's being. They are the constant thread that runs through one's existence. Take away any considerable portion of it, and one's personality tends to collapse.

We all know the anecdote of the Public School Englishman at one of the outposts of the Empire who persists in dressing for dinner. There is a good deal of sound psychology behind this apparently foolish behaviour. To a person thus brought up, dressing for dinner is one of the decencies of social life; by dropping it, one begins to drop away from all the standards and values by which one lives, because one impairs one's self-respect. There are but few people who have the honesty and courage of Touchstone regarding his choice of Audrey when he said, "A poor thing, but mine own." Most of us tend to magnify our prejudices and likes into absolute values, worth while striving and fighting for, into something far removed from what is morally expedient. "I know what I like" is the master creed of arrogance by which most people live.

Such beliefs are as effective in determining conduct and action as if they were founded on real fact. If we did not believe in the essential value of gold, there would be no Johannesburg; if we did not believe in the essential superiority of the white race, there would be no Alexandra Township.

Now nowhere are beliefs and prejudices more deep-seated than in the realm of housing. The architect will have to take careful account of them, because the prevailing individualism of Western Society has here found its

surest stronghold. The Englishman's home is his castle, and what he does either with or within its walls is nobody else's business. His house tends to become an extension of his personality. What you say against his house you say against him. If he is emotionally attached to the symbols and circumstances of his youth, he may wish to build a house in the image of that period, a house similar to that in which he grew up, and where his attachments still linger. It is difficult to prevent him from doing so. If he craves to impress his personality on his environment and demands its adulation, his house may well become a monument to that need, and, we might add, a tombstone to the architect who is prepared to stake his future on it. It is no exaggeration to say, "Show me the type of house a man builds, and I will tell you what manner of man he is."

Notwithstanding the fact that they are tenaciously held, there is nothing inherently inevitable in these prejudices and likes. Each innovation that has come about in the course of the Industrial Revolution has been fought tooth and nail. When the old stage coach went, people said, "Alas! Life will never be the same again." With the departure of the sailing ship, romance went out of travelling for its contemporaries. To-day, many deplore the displacement of the almost human steam locomotive by the soulless electric one. There are those who deplore the fact that by merely turning a knob and paying your monthly instalment, you can get any amount of canned music and information from the air, whereas in the past the happy family circle would gather round the organ or the piano and sing part songs by candle light, and in an atmosphere conducive to the forming of real social ties, sound opinions and moral character. Yet each generation puts up the same wall, only to find its values relegated eventually to the back corner.

It is therefore relevant to ask to what extent a change of human likes and dislikes, wants and demands, is possible. Putting this in terms of housing: What fundamental needs must at least be satisfied by the domestic arrangements which we make for man. This raises a second and more difficult question, one of values, viz., to what extent change is actually desirable.

The discovery of fundamental needs is particularly difficult if we consider the tremendously wide variety of environmental conditions under which man can actually live and which indeed he may like. Social workers, for instance, have reported that when slum waifs were taken out of their squalor and brought into clean seaside hostels for a month or two, where each had his own little white bed, the minute the lights were turned off they would all crawl three and four in a bed together. The idea of nocturnal loneliness was as repulsive to them as the idea of communal sleeping would be to us. Again, superintendents of hostels where children are temporarily accommodated have noted the fact that such children, when eventually the time comes for them to go back home, often take up their old rags again with the greatest of joy to return to the misery from which they have come. One particular incident once related to me provides striking affirmation. The children in one such hostel were attending a Christmas party, all dressed in finery, and having a wonderful time. All of a sudden new arrivals came unexpectedly. Room had to be made for them by clearing out those first on the departure list. This news was broken very carefully to them, but there was no need for such caution: they whooped with joy, took off their fancy dresses, went back to their old clothing, and returned quite happily to their old squalid environment. This occurred in a hostel which was not oppressively run. It shows that people like curious things if they get used to them.

If we consider that people live under conditions obtaining in such widely diverse environments as, for instance, the East End of London; First Avenue, New York; any garden suburb of any city; the house boats of Canton; a village in the Melanesian Islands; a kraal in Zululand; a farm in the Karoo; that most are satisfied up to a point with what they have, and in many cases would

resent change, we seem forced to conclude that fundamental domestic needs vary with the particular society the individual happens to belong to. To change the needs means to change society.

This brings us to the question of the desirability of change. We are inclined to assume that change means progress, and that because we have all-electric houses and ideas about diet and hygiene, we have also become better people. The older generation is always quick to detect signs of moral retrogression and superficiality. It is difficult, without the right historical perceptive, to decide which of the two is right and whether change is not just change and nothing more.

Consequently any proposal for a further and deliberate change in ways of living should be conditioned, not merely by the possibility of such change in terms of human needs relative to western civilisation, but also by its desirability in terms of human values.

Fortunately it is not the task of the psychologist to decide what these values should be. But as it is impossible to conduct this argument without some idea of value, I shall adopt one which I happen to prefer myself. I conceive it to be our problem to create within the great technology such living conditions as would allow for as complete a realisation of the known potentialities, both physical and mental, of human nature, as circumstances permit.

This, rather than the obsession with a particular plan or idea, should be our guide in subsequent discussion.

The advocacy of a return to the simple and primitive life is a form of romantic feeble-mindedness. We must face the realities of the great technology. And, furthermore, man possesses potentialities which cannot be realised in the primitive state. Were this not the case, he would never have emerged from it even the little way he has. It is the task of the psychologist to point out what attributes a town-plan should have in order to fit in with such needs of man as can be discovered. First of all I shall try to show how our present haphazard way of living is constantly producing irritations and frustrations which prevent the fullest development of human personality; secondly, what should and could be done in order to remove these frustrations and to improve the quality of our social life; thirdly, how the prejudices which will be encountered in effecting the necessary change can be overcome. That, I think, is one of the most important practical aspects of town planning. I shall try to put the point of view of the man in the street; after all, he is the fellow who has to live in the houses we are going to design for him. He is entitled to a hearing.

I consider that the most important single factor leading to the negation of cultural values is the growth of what one might call the metropolitan mind. I can best describe what I mean by "the metropolitan mind" by comparing a rural community with an urban one. The most outstanding feature of a rural community in general is its adherence to traditions. The farmer, more than anyone else, does things in the old-established and primordial way, as well we know in South Africa. In a small village community, each individual is essentially a member of a homogeneous group. He is a member of such a group by virtue of an essential community of interests and pursuits. I am thinking, perhaps, of farming communities such as one does not find in South Africa, but which are extremely common on the Continent of Europe, notably in Holland. There, each farmer is what the word signifies, a man who works on the land and grows things, whereas in South Africa a farmer may be engaged in anything under the sun, except in what goes on under the sun beating on the lands. Normally, there is no division of labour in a farming community: that is the crucial point. The group, from a production point of view, is essentially homogeneous. In pursuing his own individual goal, a farmer is yet pursuing the same goal as the whole community. He is tilling the land and raising

stock—whether he grows carrots, potatoes, whether he raises sheep, pigs or cows makes no difference. There is a further curb on individual differentiation as a result of the fact that such communities are nearly always small, and that what one man does is known to all. To act as an individual means to break through the inertia and brave the social censure of the whole group. All these factors tend to produce an adherence to tradition in the farming community. And finally there is the regularity imposed on everyday life by its close contact with and dependence on the cycle of nature. The cows have to be milked at a certain regular hour; the land has to be ploughed at a certain time of the year; life and prosperity depend on temperature and humidity. This creates in the farmer an almost fatalistic dependence on the forces of nature. He feels acutely that there are certain forces beyond him over which he has no control, and which regulate his life. This attitude of dependence becomes characteristic of the whole of his outlook on life. As things were, so they shall ever be, for nature does not change. The atmosphere established in a rural community is therefore one which favours adherence to old values. It would be a mistake to assume that the individual becomes merely a cog in a seasonal machine. Although the type of life does not lead to the development of intellectual groups, it does lead to the emergence of a vital cultural life, which shows itself in such old customs as dancing round the maypole, harvest festivals, floral dances, the burning of Yuletide logs, and the like—all of them cultural pursuits which have a close connection to the manner of living of every individual in the community, which reflect their fears, hopes, joys and aspirations, which are meaningful to all and in which they can all co-operate. A cultural level is thereby established which in many cases has proved to be an inspiration for more abstract and intellectual work, both in literature and music. Thus the tradition which keeps such groups together provides them with a philosophy of life, which, though not profound, is yet satisfying.

The large modern town is quite incapable of creating such an organic group. For a number of reasons it cannot provide for communal forms of cultural expression. The essential principle of the growth of the modern town is division of labour. That division of labour turns people generally into mere atoms over which the town disposes as it wishes. Even those institutions like the Guilds, which once upon a time brought members of a profession together and provided some sort of a cultural basis—they were unions of active craftsmen; there was a certain insistence on quality of work; there were contests; one had to graduate to obtain membership—have vanished to-day. It is true that trade unions have taken their place, but trade unions provide merely for an economic purpose, collective bargaining, and cannot be compared from the cultural point of view with the old type of Guild. In fact, the only communal type of interest which as a rule does exist among those atoms is an economic, not a professional one, and when these two get divorced, there is no basis for the emergence of cultural values at all. Furthermore, expansion is the lifeblood of the modern town. It is by expansion that it thrives, and the minute it ceases to expand it retrogresses. As it grows more and more people are drawn into its vortex, from different climates, different environments, differing in outlook and with different modes of living. They shift about from employment to employment, from locality to locality, as so much labour, casual, skilled, white-collared, producing a sort of flux in which there is no constancy, and out of which no group sentiment can really develop. In the town a man takes his destiny in his own hands. It is true that economic forces, over which individuals have comparatively little control, do determine one's future, yet within the operation of these forces there is a good deal of scope for individual endeavour and initiative. The hard-bitten and unscrupulous may yet inherit the world.

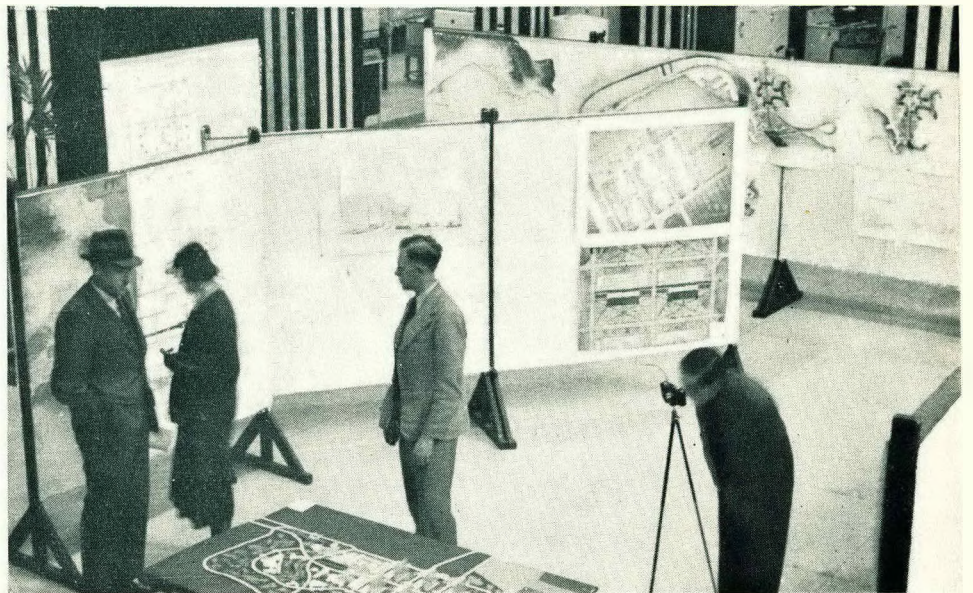
Hence the values which dominate the towns are individualistic ones—the looking to the future rather than the past, the creating of one's own

means and ends rather than being dependent on what nature or others will do for one. This difference between town and country is strikingly revealed by Government policy in South Africa. Whereas the farmer is aided in numerous ways by subsidies, loans, advances, special railway rates, tax exemptions, the individual town dweller neither expects nor gets such paternal care and assistance. There is, therefore, a premium on individualism; by its nature the metropolis must be destructive of cultural values. Whereas the rural community is a real group, the metropolis is merely a mass, an aggregation of atoms. Necessity is the sole binding force which obtains at all, and chance domestic propinquity the only universal common factor. Gone is the functional propinquity which we get in the street of the sandalmakers, silversmiths, weavers. Such groups as form themselves within the metropolis are in many cases purely chance groups. They may spring from the activity of the original individual; they may be the product of some religious organisation; they may be rational or aesthetic groups, islands in a sea of formlessness. The recreational needs of the majority can only be provided for in bulk. Occasions for the provision of mass amusement and relaxation are therefore rife—wireless which addresses itself to the multitude and has to please the mass; huge bioscopes where pictures are shown which must be a box-office success; sport palaces, tea rooms and restaurants, dance-halls—all catering for aggregations of atoms. Cause and effect are inextricably mixed in their appearance. Lack of common cultural values and the convenience of handling people as equivalent entities demanding similar mental fodder both contribute to mass catering and its equalising tendency. Metropolitan man is endlessly pelted with stimuli. His day is spent in a confusion of sounds, motor klaxons, the rattle of typewriters, the rumble of carts, trams, voices. Movement is ever present. Things continue to happen. The rhythm of the town never ceases. There is always something to do, somewhere to rush, something to attend. Comparatively few people can assimilate or withstand this multitude of impressions. For the majority the only escape lies in superficiality and an attempt to speed up the rhythm of the self in order to keep in phase. This in turn leads to the ever diminishing importance of inner values and an ever increasing reliance on those things which speak to the senses only, which demand no mental effort and raise no acute moral problems. As such stimulation, by its very nature, will soon pall and become meaningless, it must of necessity become ever stronger and more novel, even to the point of absurdity. Hence the mental fodder most in demand is the sensational, that which is capable of speaking to primary desires and impulses directly. All our entertainments bear the stamp of this mentality. The pantomime, musical comedy and revue, consisting of a series of superficially connected scenes, following each other in slick succession, full of colour, movement and noise, spicy wisecracks and blatant sex appeal, epitomise it most. So do the typical news and educational "shorts," strung together by puns and play of words à la McNamee. Only constant change of topic will hold the attention. The blaring of jazz music, modern dances, all-in wrestling, motor races, gambling occasions, cocktail parties and cabarets, the very emphasis on the word "sensational" itself and its use in advertisements, bear witness to the same fact.

It is this universal demand for the sensational which makes the provision of mass entertainment possible. That demand, together with the ensuing satisfaction of sex, acquisitiveness and rivalry in rather crude forms, constitute the aspirations of the Metropolitan mind.

There is no doubt that this way of life must lead to frustrations, to ultimate feelings of insecurity and hence to the engendering of dangerous tensions within the community. These reveal themselves either in the form of a "nervous breakdown" or as aggression, leading to conflicts and a readiness for war.

THE EXHIBITION



This is the general framework of the current malaise of the large city. Some more specific aspects and consequences deserve to be specifically stressed.

Helplessly caught in the levelling process of the big town, drawn willy-nilly into its mass diversions, the individual ultimately tends to revolt against this denial of his personality. Whereas in the country he finds adequate opportunity for self-expression, both through his creative activity as a farmer and through the cultural life of the group, there is little scope for either in the town. He is therefore thrown back on purely individualistic forms of self-assertion. This takes the common form, in relation to housing, of wanting to have a house of one's own and a garden to potter around in. In order to distinguish himself from others, similarly minded, metropolitan man creates his house in some curious shape and appearance, the sole merit of which is that it is different. He becomes a specialist in roses, chrysanthemums or chickens, according to chance and circumstance. Thus arise the vast suburbias and garden townships which have made our modern towns even more sprawling and unmanageable than they were. The growth of the garden suburb is a palliative which, though it solves something, brings other difficulties in its wake. It adds considerably to the traffic problem, tending to clutter up the centre of the city with cars, trams and buses. Though it creates opportunities for parish-pump politics and ratepayers' associations, it fails as a rule to create a meaningful social life. As a rule, the garden suburb is too decentralised. With the exception of a small park or monument, it possesses nothing which could serve as a nucleus for civic pride. Its inhabitants can only be brought together, and then only with difficulty, if there is a threat of increasing the rates. It remains essentially dependent on the city, where such cultural life as does exist usually has its origin and finds its expression. Participation is to some extent hindered by the fact that many people, having travelled out from the city to their homes after the day's work, are disinclined to do the journey again at night. They will read about what goes on in the paper, or listen over the radio.

The besetting sin, however, of the suburb is its gradual encroachment on the open countryside. Again Johannesburg provides a particularly good example of that. Numerous townships are springing up at present which are gradually covering the countryside with houses of greater or lesser pretensions, and make it very difficult for people to get into the open when they desire it. Hence it is no uncommon sight on a Sunday to find cars parked in the oddest of places, because there happens to be a tree there, or some piece of greenery. Yet the need for this escape to nature increases in inverse proportion to the means available for its satisfaction.

The metropolis creates a wealth of other irritations and frustrations. The most dominant one is noise. There are noises of every and any kind, notably the noise of traffic such as hooters, brakes, carts, skidding bicycles; there are children yelling in the streets; wireless sets next door; gramophones playing raucously; building going on—one could go on indefinitely. Noise is not conducive to the production of an equable mental life. You can always close your eyes to anything you don't like seeing, but it is impossible to cut out noise. Whereas noise in a boiler-shop, or in a stamp-mill, does not overmuch worry the people there—it may destroy their acoustic nerve, but it does not get on their nerves—the type of noise I am thinking of is not related to the work one has in hand. The screeching of a motor outside is an intrusion into one's privacy. The natural reaction is anger. Anger is not a beneficial human emotion. It produces metabolic changes which interfere with the digestive process, and can ultimately lead to domestic unhappiness of every kind.

Closely related to noise, traffic is very similar in its effects. To the pedestrian the traffic of the large city is one long intolerable plague. When

he is half-way across the street, and the robot turns against him, he has to jump for it. He can never avoid the car taking the right-hand turn, no matter how many traffic officials are on duty. Johannesburgers are proud of the fact that they have taught their pedestrians how to jump. And not only the car, but also the bicycle ridden by the Native causes the pedestrian to be chronically in a mild state of both fear and anger.

For the driver things are not much better. People do not realise the harm which the constant stopping and starting at the behest of a robot actually does to them. Presumably the motor car was in the first place invented in order that we could get more quickly from one place to another. In the city it hardly fulfils that function. If your way happens to lead you, unfortunately, through the centre of Johannesburg, it is a case of "Give up all hope all ye who enter here." One can look upon the robot as being functionally the same as restriction of bodily movement. It has been shown experimentally that the simplest situation capable of arousing anger in infants is the hampering of free bodily movement. Small wonder, then, that motoring in Johannesburg is one long history of angry words with other drivers, rudeness and arguments with traffic officials in which the motorist almost invariably loses his temper.

Of the hurry and tempo of the metropolis it is hardly necessary to speak. The more opportunities are provided for people to rush about, the more they are likely to avail themselves of these, doing as much as they can in a hurry, and wondering what it all leads to. No such abuse of opportunities and powers would be possible if metropolitan man were motivated by a system of values. The question "Is it worth while?," if put at all, merely raises another: "Well, what else is there to do" in reply. Rushing about becomes valued for its own sake. To many it is a sign of "a good time." The majority of the population live on their capital of nervous energy, leaving a harvest of nervous debility to succeeding generations. The nervous breakdown, scourge of our times, is on the increase. Nowhere is its occurrence more common than in the United States, where metropolitan development has reached its high-water mark, and creative cultural development is presumably at its lowest ebb.

Only an architectural monomaniac could believe that this disjointedness of our time could be put right by a mere stroke on the plan. Megalomaniacs of the totalitarian kind have been shrewd enough to realise that it is the mind of man that is in need of planning; by means of terror and propaganda they have set out to reform it into the image of their own. They failed to realise that only an order imposed from within and springing from the living realisation of moral principle could be effective.

It is within the power of the architect to create those conditions which would make a renaissance of the human spirit possible. Not merely negatively through the removal of irritations, but positively through the creation of a new background to daily life, could town planning bring about a change in the cultural trends of the metropolis.

Let us consider the fundamental needs of man in the large urban community. How can town planning provide for them? The analysis of the metropolitan mind indicated that some common object of attention, capable of providing a nucleus for group formation and somehow symbolising the endeavour of each individual was a first essential. We saw that the very size of the city militated against such group formation. Those organisations which came about in a chance way had no geographical point of reference and were seriously hampered by distance and the scatter of their members. The town planner must therefore provide for comprehensive and residentially self-contained units within the city.

One could not say offhand what the ideal number of inhabitants would be. Experience and experiment would tell, but there should be enough for a complete community, a microcosm in a macrocosm. The unit should be

something more than an aggregation of houses in the familiar geometric pattern, of which Orlando is a horrid example. Apart from the fact that distances would again become large, there would be no suggestion of unity and only one of monotony in them. Units consisting of groups of large blocks would more adequately suggest belonging-togetherness. As division of labour and economic individualism will, as far as I can see, remain the basic principles of our contemporary technology—I am fighting shy of the issues raised by Mr. Farrell—the mere existence of such organic unities would not in itself lead to group formations, however much they might favour their appearance. For a number of reasons it would seem undesirable to set aside units for the exclusive use of certain professions and trades, even if such segregation were possible within a democratic community. Each unit would therefore house people with different vocational interests, and the ideal conditions obtaining in the rural community where identification of the individual with the group is particularly easy as a result of similarity of fundamental interests, emotions and aspirations, would still be lacking. Identification is not, however, limited to such conditions. In fact, it is by no means uncommon for people to identify themselves with symbols which are opposed to their real interests, but which satisfy them emotionally. Would it not be possible, therefore, to create a group-allegiance based on other than vocational factors? If each unit was a real microcosm, it would be provided with its own library, schools, centre for adult education, Little Theatre, halls for meetings, sports grounds of every description, concert halls, orchestra, cinema, possibly a small museum, gardens and park. These would all be near at hand and would acquire a local meaning, especially if the community itself was partly responsible for their administration and activities. As everyone lived near at hand, participation would be easy. Hence it would become possible for people to become aware of the relatedness existing between them, and to that extent they would cease to be mere atoms. The absence of the irritations and frustrations of the metropolis would be conducive to the growth of cultural activities, ignored to-day. One could think of a number of opportunities for the creation of group pride, most potent of unifying factors. Different units might try out different systems of nursery-school organisations. They might vie with each other in the histrionic sphere, and there could be inter-unit rivalry on the various sporting fields. Even if this type of planning did nothing more than stop the present drift to cultural sterility, mass neurosis and social disintegration, its function would be amply fulfilled.

The chief criticism against this plan will be that it inadequately provides for individualism. The need for self-assertion is a reality, and that need, I think, will remain even in such a planned community. The residential outlet which is conventional to-day is not, however, an inevitable one. I do not think that there is any greater satisfaction in being the owner of, let us say, "Mount Pleasant" or the "Tudor Cottage," than in being Chairman of the Little Theatre, champion of the local Boxing Club, or leader of the debating group in the unit. Nevertheless, one's house is an intimate thing. It is natural that one should wish it to be an expression of one's personality. But why should this individualism extend to the exterior? Of many an exterior an owner might well say:

"My facade, I don't mind it,

For I am behind it.

It's the people in front get the jar."

Oddity of personal taste inflicted on the interior harms no one.

So isn't it possible for the planned city to leave infinite scope for individualism on the inside rather than the outside? I would like the architects to consider whether the blocks could not be planned in such a way that the disposition of the rooms, their shape, size, number and decoration was left plastic, so that an individual could run riot inside without hurting anybody on the outside.

The town planner should definitely avoid creating a human hive. If everyone were compelled to live in standardised apartments in identical blocks, the evolution of a mass mind would be a definite danger. In due course this in its turn would lead to some violent reaction, the consequence of which it would be difficult to foresee.

A further point which merits consideration is that people look upon houses to-day as an investment for their old age. Despite Mr. Farrell's pessimism on this point, I am not yet convinced that town planning of the kind we have in mind is impossible in our present society. It might therefore be desirable to make some provision whereby individuals could actually own or acquire on a basis of quitrent, certain premises in these large buildings. The conditions of tenure, disposal and general upkeep would have to be subject to some central control. In Scotland to-day it is quite a common feature for people to own only one floor in a building. I have never yet found out what would happen if a person decided to break down his floor, and it happened to be the middle one.

The next requirement that should be fulfilled is the need for privacy. I do not think privacy can be considered to be a fundamental need of man. In some primitive societies, except in respect of sexual matters, there is no privacy at all. But in an individualistic society of high cultural level, privacy becomes a real need. Our tastes differ; one man likes Beethoven, another Bartoc. One may wish to spend the evening quietly with a book, another listening to jazz music. If no provision were made for privacy, we would have to equalise our tastes. It would be the end of all intellectual life. Town planning would add considerably to the amount of privacy available.

In the suburban house to-day, with a stoep which either faces a tram stop, a street, or the kitchen of a neighbour, privacy is an illusion. Unless one owns an acre of ground, one can hear the music and the conversation of the family next door. Our blocks of flats are put up without regard to what is going to be built on the adjoining site, with the result that as often as not air and light are cut out, and anyone opposite can gaze in through one's windows. For real privacy, and consequently a happier and more restful and more productive life, an unimpeded flow of light, freedom from intruding gazes, absence of interfering noise, either from neighbours or from the street, would be desirable. Only large scale planning and sound-proof building could achieve this.

This brings us to the urgent necessity for less irritation, less wear and tear on nervous resistance. Because few die of neurosis to-day, we seem to take it rather philosophically, just like the common cold. But the spiritual death, which a good deal of that mild neurosis entails, is in a way infinitely worse than physical annihilation, because in the latter case the corpse goes underground, and in the former it continues to poison the mental atmosphere in a number of subtle ways. Yet most of these irritations could be eliminated by more substantial building; by air conditioning, if need be, so that it would not be necessary to open one's windows; by leaving large open spaces around each block; by having ample playground and crèche provision for children, somewhere near enough to be within constant reach of them and yet far enough not to hear them. There should be isolation from arterial traffic. The residential units would of course be quite separate from the business and shopping centre of the city, and a special feature of the plan should be a system of roads connecting the blocks with each other and with the centre. I presume all roads would be constructed in such a way that there would be no intersections, and therefore no need for hooting or stopping—the one road would pass over the other. Would the surrender of some pet ideas be too big a price to pay for the freeing of the community from

the scourge of nervous irritation? How infinitely better equipped for the major problems of life, how much more inclined for some deeper emotional pursuits would not man be, if the constant seepage of his life energy to which he is subjected to-day were to disappear?

There still remains the need for escape. I would not say with D. H. Lawrence that man is only happy when hating his fellow-men, though there is a substratum of truth in it, of course. One must admit that civilisation creates vague discontents, perhaps due to the curb man has put on his primitive drives, perhaps as a result of the clash of individualisms. It is therefore essential that one should be able to get away from one's environment from time to time. William James looked upon mountaineering as a moral equivalent of war, because it enabled people to ease their inner tensions by fighting nature instead of men. If one could regularly have a day in the country, away from one's normal entourage, this more drastic purge might not be necessary. We have lost that ability which made Wordsworth hear in nature "the still sad music of humanity." "One impulse from a vernal wood" now usually only teaches us that man has been there and left his litter of papers and orange skins about. If, by its immense concentration, the planned city could save the countryside from final submergence in a sea of suburbs, townships, garden villages, holiday farms, bungalows and the like, it would have provided one of the greatest safeguards for civilisation. Set free to roam at will among the simple things of nature, away from everyday associates and the ways of man, we might perhaps recapture that earlier sensitivity, and experience once again "thoughts that lie too deep for tears."

And yet, despite these overwhelming psychological advantages, the scheme will still meet with determined resistance. Where emotions run strong, rational argument is of little avail. People cling to their prejudices to the extent to which they resent change. Everyone creates for himself some picture of the universe into which he fits, complete with his needs and aspirations. Most of our pictures are "stills," rich oils, water-colours, or monochromes, according to our circumstances. Or else they are slow-motion films of such a kind that change is barely perceptible and never fundamental. Were it otherwise, the effort of achieving new adjustments, of throwing overboard points of view as knowledge grew fuller and richer, of altering customs and modes as circumstances changed, would constantly have to be made. Rather than admit the superannuation of our views and begin the business of adjustment all anew, let us cling to our picture; the omnipotence of thought and wish will aid us in our pretence. And should the bridge at the end of the old road and marked on the old map have been swept away, we'll sink or swim. After us the deluge.

It would therefore be necessary to proceed with extreme tact and circumspection. There will always be those who, as extreme individualists, would insist on their own house and their own garden, somewhere in close proximity to town. This garden question might well prove an awkward stumbling block. A noticeable feature of our Johannesburg flat balconies is the fern-stand, the baskets, pots or boxes with something that can be tended, that grows and produces flowers. For many, devoid of spontaneous creative powers within themselves, the growing and tending of plants has an immense fascination, which undoubtedly brings a deep and very real satisfaction. The lack of gardening facilities might therefore well arouse implacable opposition from those who consider the possession of a garden one of the major values of life. Is there any way in which this particular objection could be met?

To the extreme individualists, the answer should be: "When in the planned township, do as the planned township does." Those who want to

live in its vicinity would have to accept the conditions which that advantage entails. The shopkeeper, medical doctor, attorney or artisan who did not like this could establish themselves in a village or else, at a distance sufficiently great to prove a disadvantage to all but the most enthusiastic, provision could be made for the die-hards. Though a large number would probably avail themselves of that opportunity at first, it is very likely that once they saw the scheme in operation, its suasive influence would tempt one after the other back; or, if not themselves, then at any rate their children.

There remains the question of gardens. It should not be forgotten that the residential units would all be surrounded by parks, lawns and trees. In the administration and running of these some of the citizens at least could take part. Perhaps an improved system of allotments to fit in with the general scheme might be attempted, though that solution would remain somewhat unsatisfactory.

I therefore wish to suggest an alternate one, partly because without the acquiescence of the majority of the community the whole scheme would remain an idle dream, partly because the suggestion I am about to make appeals to me in itself and would seem to answer some real needs. I propose that, as people live in cities because technology and commerce make this essential, those who are no longer required for its purposes, such as the pensioners and the retired, should be given the option to live in one of a limited number of garden townships, themselves planned, but consisting of houses with gardens. There should be no industries in these townships, nor should they be too near the great cities. Certain amenities would, however, be needed in each. There would have to be shops, bakeries, doctors, chemists, plumbers, garages, and the like. These could be licensed strictly in accordance with the needs of the townships. Those professional men, artisans, clerks and the like who thirsted for the type of life provided for in these townships could compete for the licences available. My suggestion would meet the criticism that the town planning I have in mind would make undue interference with individual freedom necessary. The little towns so created could have their own cultural life, very much as those of the Middle Ages, to which they would not be dissimilar, had theirs. They would not interfere with the open countryside to any extent and would assist also in keeping the metropolis within manageable limits.

I think that brings me to the end of my discussion. The architect as the new Messiah seemed at first an extravagant idea, yet he has before now provided man with a focus for his aspirations. One need merely think of the Gothic cathedral, focal point in the small Mediæval town and emblem of its thought. I think the time is ripe for him to do so again. If his message is the Radiant City, then the psychologist for one would be counted among his apostles.

The Chairman: Ladies and Gentlemen: Admittedly the hour is rather advanced, but it is not quite midnight yet. So there is no need to exert that authority which has been mentioned and cut out criticism or individualism. I think both lecturers would be only too glad to answer questions or to elucidate any points on which doubt may be raised. I would like to throw the evening open to discussion and to ask you to clear up any points on which you think the issue is not perfectly clear.

(No response.)

The Chairman: Ladies and Gentlemen: I cannot seriously believe that so controversial a subject as the sociological, and particularly the psychological, approach to town planning can leave you so perfectly satisfied with the two speakers—the one saying he did not know the subject, and the other that it is our own fault for asking him to speak—that you have been left perfectly satisfied with everything said !

(No response.)

The Chairman: It does appear that the miracle has happened—that two speakers have completely satisfied an audience. Dr. Biesheuvel last year convinced his audience on Abstract Art. It appears that this audience does not object to his views on Town Planning, which seems to prove conclusively that he has convinced it. Mr. Farrell has told us that society has to be changed a good deal before the town planning we wish for could be accomplished. Personally, I do not think there can be any serious argument against that.

I do not feel very surprised that this audience does not get up to raise an outcry against the two speakers. I think their lectures were conclusive.

If I may take the opportunity of summing up, as this thesis on town planning is one whole, and it may be valuable for the speakers and audiences on the following evenings to bear in mind the essentials of the thesis :

Starting from the sociological approach, there is nothing to prove that town planning is not a feasible and possible proposition. Both theory and practice prove that it is possible. There are certain conditions to fulfil, and there must be more or less rigid control of social forces. This can only be



T H E E X H I B I T I O N

achieved by communal ownership of the means of production—of capital goods. Secondly, town planning appears to be not only an eminently desirable affair, but one which, in fact, would be an integral part of such a society, which is based on sociological data and takes into account the psychological necessities and the needs of the community: an architectural whole would be the only way in which society could consider the problems of a city.

The psychologist has added the good news that he sees nothing in man which would make him eternally unhappy if he lived in the planned city. The city planned on psychological and sociological grounds is the only one for the future. But here the speakers have made it clear, both to the architects and to the others, that town planning is not merely a matter of plastics and architectural terms which we approve, but that they do express a sociological and psychological necessity, and that in the society to come they will be self-evident and natural features of life, just as to-day school and other planned activities already are.

This evening's lectures on the sociological and psychological approaches to town planning have shown us that the two sciences on which town planning must be based fully justify these proposals, which are deeply rooted in the necessity of a sound social life.

I would now like to call on Mrs. Colin Sinclair to propose the vote of thanks to the two speakers.

VOTE OF THANKS.

Mrs. Colin Sinclair: Mr. Chairman, Ladies and Gentlemen: I am very glad to be able to propose this vote of thanks to the two lecturers this evening, because I think the two aspects—the Sociological Approach to Town Planning and the Psychological Approach to Town Planning—are very necessary to our Congress as a whole, and also to architecture. I do not think that I need go into a summing up of what they have said, because that has been most ably done by Mr. Jonas. I should simply like you to join me in proposing a hearty vote of thanks to Mr. Farrell and Dr. Biesheuvel for their very interesting and convincing lectures.



Fairchild Aerial Surveys

WASHINGTON, D.C. From "City Planning: Housing," Vol. III, by Werner Hegemann

CITY PLANNING : HOUSING, VOL. III. By WERNER HEGEMANN

Published by Architectural Book Publishing Co., Inc., New York

We live in a rapidly changing world. It is seldom, however, that an opportunity occurs for us to examine the character, magnitude and nature of the developments which are going on about us. An enquiry into the causes directing this change of scene soon elicits the fact, that Town Planning is one of the most potent influences at work. For Town Planning has ceased to be the prerogative of the architect. Instead he has become the instrument whereby certain data rationally deduced from the economic and sociological characteristics of a region receive plastic expression.

In South Africa, Town Planning is only just commencing. Few major projects of any importance have been undertaken. In addition problems within towns themselves have not assumed the urgency of let us say, the circulations of New York. Our future chaos is still in a formative stage.

If architects in South Africa who wish to develop their knowledge of Town Planning cannot gain anything from local experience, they are still less able to think in terms of the magnitude of the projects which are carried out elsewhere. For experience of scale within a normal city practice is limited to the size of the minute areas of land which are available. It is certain under these conditions that a project of a magnitude requiring a solution which rises above mundane things would be met with a lack of decision and confidence. Contact with the latest developments overseas is therefore vitally necessary.

These are usually illustrated in scattered pamphlets, journals, and surveys. To collect this information so that it is easily accessible is a task which few have the time or inclination to carry out.

"City Planning: Housing," Vol. III, by Werner Hegemann, endeavours to fulfil the above need. It presents detailed information about the most recent Town Planning schemes carried out in all parts of the world.

The magnitude of the projects illustrated demonstrate the triumph of modern technics over great physical difficulties. One must conclude inevitably that to-day nothing is impossible. The facets of our changing world show clearly through the grouping of town planning elements which has been adopted in this book. Roads, railways, bridges, housing, etc. Autostrados, ignoring contours, sweep across the countryside, vast housing schemes proclaim the birth of a new social order. In a scattered way the elements of even the most Utopian town plan, Le Corbusier's Ville Radieuse, exist already. Their co-ordinated practical application remains the task of to-morrow.

"City Planning : Housing," Vol. III, cannot fail to fire the imagination of any contemporary architect. It shows how irresistibly the modern conception of architecture and town planning is slowly sweeping across the world. In a hundred different ways we are beginning to live in the Twentieth Century scene. As a reference book on town planning, this well-produced volume should find a place in every architect's library.

J.F.

Member, Fellow of the Royal Institute, desires architectural partnership anywhere in the Union. Capital available. Particulars may be obtained at the offices of the Transvaal Institute.

The following circulars, issued by the Master Builders' Association to its members, are published for the information of members of this Institute:—

TEMPORARY CLOSETS.

At a recent meeting between representatives of the Institute of Architects, the Chapter of Quantity Surveyors and this Association, it was agreed that in view of the instruction issued by the City Engineer that temporary builders' closets for use in connection with all building operations, within a sewered area, must be connected to the sewer, there should be an item allowed in Bills of Quantities for temporary closets, including suite and in addition either a P.C. item or provisional measurement to cover connection which would be measured on completion.

I am directed to ask that you refer to this office all Bills of Quantities received by you in which the above arrangement has not been given effect to, as it is the intention of the Association to debar members from tendering on such Bills.

HOARDINGS.

In consultation with the Architects' Institute, the Chapter of Quantity Surveyors and this Association, the City Engineer has decided to improve the position in connection with hoardings around buildings being demolished or in the course of erection in the city.

Your Association has—with the knowledge of the above parties—decided to refuse permission to members to tender for any service issued in future in which hoardings are not properly measured in accordance with the attached regulations, and I am authorised to say that the City Engineer will insist on a strict compliance with Municipal Regulations in this respect. Where, however, any particular difficulties are experienced in connection with the measurement of hoardings for certain jobs, the City Engineer will always be pleased to discuss the matter with the architect concerned before measurement and inclusion of the item in the Bill of Quantities.

The following regulations regarding hoardings will be insisted upon:—

● **Schedule A Streets :**

During all demolishing and during erecting of buildings where there is no verandah at first floor, a hoarding must be provided with overhead gantry, fan, etc., same to be described—or reference made to the City Engineer's drawings—and billed per foot run, giving width of footpath. Openings and gates must be described and numbered. Where there is a close verandah overhead close hoarding to be provided not less than six foot and not more than ten foot high. This must be described and measured per foot run. Openings and gates to be described and numbered.

● **Schedule B Streets :**

During demolition all buildings to have hoardings with gantry and fans as above.

During erection buildings to have close hoardings as above without gantry.

● **Other Streets :**

All other streets to have protection rails composed of posts and rails at least 3 feet high with 9 in. x 1½ in. foot board. To be described and measured per foot run.

CONCRETE ASSOCIATION OF SOUTH AFRICA

The Portland Cement Manufacturers in the Union have formed the Concrete Association of South Africa, with offices in Maritime House, Loveday Street, Johannesburg, thus bringing South Africa into line with most other countries, old and new, where such Associations have been in existence for many years, and have proved of inestimable value to the construction industry.

The Concrete Association of South Africa will act in a purely advisory capacity, on a non-profit making basis, and its existence will only be justified if it succeeds in helping the industry to realise the immense possibilities in concrete construction and to keep up the standard of manufacture.

It is earnestly hoped that the architects of the Union will make full use of the Concrete Association whenever they may require information—it is a free service.

The Concrete Association will be under the direction of Mr. A. E. Wynn, B.Sc., A.M.Am.Soc.C.E., M.I.Struct.E., who has had experience in concrete construction in many countries, and who may be known to many architects through his articles and books on subjects connected with reinforced concrete.

CHEMICAL SURFACE TREATMENT OF CONCRETE

A special type of Silicate of Soda, which is manufactured in Great Britain, the U.S.A. and Germany, can be used for surface treatment of concrete. The British product is known as Imperial Chemical Industries P84 Silicate.

P84 Silicate is supplied as a concentrated liquid. It is of a syrupy nature, colourless, non-inflammable and non-poisonous. When applied diluted with four parts of water to concrete, plaster or brickwork it is readily absorbed. After combining with calcium hydroxide and calcium salts it forms finally calcium silicate. Calcium silicate, which fills thus all surface voids to the depth of $\frac{1}{4}$ " to $\frac{1}{2}$ ", is a hard and tough deposit which is insoluble and resistant to acids.

The sphere of application is very wide. P84 Silicate is thus used for case-hardening surfaces of concrete roads, paving slabs, kerbstones, storm-water drains, overflows of dams, weirs, bridges, stairs, and for any type of floors. Also special finishes in coloured cement granolithic and terrazzo floors are frequently treated. Concrete floors treated with P84 Silicate may last three to four times as long as untreated portions of the floors. The normal treatment consists of three successive applications by means of a watering-can, spray or brush. The material should be applied after the final set, when the surface has become reasonably dry. Any existing floor can be treated, but care should be taken that it is reasonably clean and dry.

Also for curing of concrete P84 Silicate is used in special cases. By sealing and case-hardening the surface the moisture is retained in the concrete. The curing action is thus prolonged, resulting ultimately in a denser, tougher and stronger concrete. Treated concrete floors can be opened to traffic and use at a very early stage. This is a distinct advantage in times when owners do not wish to wait and would object to a proper curing with damp sand, wet sacks or with a damp-proof asphalt paper.

P84 Silicate is, furthermore, extensively used for waterproofing and oilproofing. The protection gained should suffice for all practical purposes. One of the principal advantages is the fact that an uniform protected surface

is obtained. It is thus possible to waterproof and oilproof floors. Basements, which are solely subject to seepage of rainwater, can be treated, but the application of P84 Silicate is not recommended if such a basement is subject to water pressure from the ground unless treated when dry. Such pressure may prevent the P84 Silicate from penetrating to the required depth and would stop the chemical change from taking place. In this case an original external damp-proof course should rather be used. For waterproofing tanks or plastered walls Silicate treatment is ideal, and in the case of the latter, colour wash or paint can be applied on the surface after treatment with P84 Silicate. Also on plain brick walls P84 Silicate may be used, although care should be taken that the solution is well absorbed. In all cases any remaining surplus solution should be washed off before setting so as to avoid the appearance of a skin which might give the impression of efflorescence. Dealing with sea water, P84 Silicate prevents the penetration of the harmful magnesium salts into the concrete, which causes disintegration. Sealing of the concrete surface will also prevent the sea air from penetrating and corroding reinforcing bars, which would result finally in "blowing" the concrete.

As a protection against acids P84 Silicate is extensively used. This applies to sewerage, sedimentation tanks, smoke stacks, abattoir and dairy floors, compound kitchens, and for many purposes in the fruit, wine and sugar industry, also for cattle dipping tanks. In the case of strong acids it may be necessary to repeat the treatment at certain intervals. Whenever possible a skin of Silicate should be left, which is best obtained by applying the third and final application of the normal treatment with a more concentrated solution, usually two parts of water to one part of the concentrated P84 Silicate.

There are, furthermore, a number of special uses as dustproofing on certain types of floors, e.g., aeroplane hangars, brightening up of colours in special finishes, prevention of water marks due to dust and soot being absorbed with the rainwater, prevention of efflorescences, etc.

Finally it should be stated that only P84 Silicate of Soda will form the insoluble, hard, tough and acid-resistant calcium silicate after having undergone a chemical change. This is due to a fixed molecular ratio between silica and sodium oxide and to a certain fixed viscosity. Commercial Silicate of Soda, which is manufactured in many different grades, does not comply with these requirements. For this reason P84 Silicate is recommended as the only suitable grade for concrete treatment.

J. TURNER MORRIS,

A.M.Inst.C.E. (Chartered).

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