

RESEARCH COMMITTEE ON MINIMUM STANDARDS OF ACCOMMODATION.

Minutes of the First Meeting of the Heating and Cooling Sub-Committee held in the Board Room, C.S.I.R., Second Floor, Block 1, Visagie Street Government Buildings, Pretoria, on Friday, 26th September, 1947, at 2.15 p.m.

Present:

Dr. A.J.A. Roux (Chairman).  
 Mr. P.H. Connell (Organising Secretary).  
 Mr. J.E. Jennings (Director, National Building Research Institute).  
 Dr. R.E. Meaker (Department of Health).  
 Mr. S.C. Mossop (National Physical Laboratory).  
 Mr. B.L. Buchanan (S.A. Bureau of Standards).  
 Mr. D.M. Cowin (Institute of S.A. Architects).

In Attendance:

Mr. J. Delpont (National Building Research Institute).

The Organising Secretary introduced Dr. Roux as Chairman who then opened the meeting and welcomed all members.

1. Introductory Statement by Organising Secretary.

The Convenor said that for the present the function of the Committee would be limited to considerations affecting housing only, which included all types of dwelling such as the conventional house, the maisonette, flats and any type of building which human beings used for dwelling purposes. It was a well-known fact that all over the world there existed a movement to try to better the standards of housing accommodation and to improve the legislation which governed such standards, with the object of promoting progressively higher standards of accommodation, comfort and convenience. Such legislation as existed, however, was neither uniform nor consistent, and much of it was felt to be arbitrary and out of date.

In common with the rest of the world, we in South Africa had felt dissatisfaction with the type of housing environment in which the bulk of our population lives, both in town and country, and with much of the legislation governing the minimum standards permitted. As a result, therefore, of internal arrangements in the National Building Research Institute, followed by a request from the National Housing and Planning Commission to investigate and report on certain tentative standards of accommodation proposed by the Directorate of Housing for application to all housing schemes for which State loans were to be advanced, the Council for Scientific and Industrial Research set up a Research Committee on Minimum Standards of Accommodation. This Committee generally spoken of as the "Main Committee", is a permanent sub-committee of the Building Research Advisory Committee. Its function is to direct and co-ordinate research into minimum standards of accommodation in dwellings and eventually to issue a series of recommendations, some of which may



lead to new codes of practice and revised legislation. The Convenor pointed out, however, that it had been ruled that the work of the Committee would be confined to conducting research and making recommendations, and that it would not undertake the drawing up of codes of legislation. The Main Committee, which meets under the Chairmanship of Mr. Norman Hanson, A.R.I.B.A., would have to consider the matter of minimum standards of housing accommodation in the widest sense; the work would not be limited to the consideration of minimum standards within the dwelling, but would cover the whole housing environment, and touch on many fundamental aspects of the housing problem. For this reason the Main Committee would be supported by nine working sub-committees, divided into three main groups, viz:-

- (a) Survey Sub-Committees (Nos. 1, 2 and 3)
- (b) Design Sub-Committees (Nos. 4 and 9)
- (c) Sub-Committees dealing with health and comfort factors.

The sub-committees were then described in detail and the scope of the work as a whole, as illustrated on the attached chart, was outlined. It was proposed to issue an interim report in June, 1948, which would deal chiefly with the Housing Commission's schedule of standards. Thereafter the work of the Committee would revert to a more fundamental consideration of the long-range problems involved in the study of accommodation standards for housing.

The Organising Secretary drew members' attention to the fact that sub-committees had power to co-opt additional members when necessary.

#### Relation to S.A. Bureau of Standards.

This Sub-Committee, together with Sub-Committees 5, 6 and 8 would be considered for the present as a joint Committee, serving both the Building Codes and Regulations Committee of the S.A. Bureau of Standards and the Research Committee on Minimum Standards of Accommodation of the Council for Scientific and Industrial Research.

#### 2. Terms of Reference.

Draft Terms of Reference were then tabled and considered by the Sub-Committee. Arising from the discussion, the Chairman explained that if the outside conditions of a building were fixed, it could be determined how to build the walls, ceilings, etc., so as to produce equable conditions inside. The four factors determining heating and cooling i.e. solar radiation, air temperature, air velocity and relative humidity were continually varying, so that designers were obliged to determine an average, bearing in mind that it is easier to heat than to cool a building. Generally speaking, therefore, dwellings in South Africa should be designed so as to be cool, heating being effected artificially. Heat resistance and insulation should be studied with a view to minimising the necessary adjustment as far as possible. The study would involve both natural and mechanical means of heating and cooling. It was pointed out that solar radiation might be considered by both this committee and the ventilation sub-committee. The sub-committee agreed that the survey would include native housing, and should any



valid differences in the optimum comfort standards applicable to the two races be found to exist, such factors would be considered as the investigation developed. The following Terms of Reference, duly amended, were then agreed to:

"To examine the conventional types of dwelling in use in South Africa with special reference to the factors of insulation of the enclosing walls, roof and floor; artificial means of heating, the maintenance of cool conditions within the house in the hotter parts of the country; the effects of solar radiation and any other factors effecting the heating and cooling of dwellings in South Africa. To discover where the conventional types of dwelling fall short in these respects and to make recommendations for the improvement of the standards commonly occurring at the present time; to seek to define the minimum provision for heating and cooling required to conform with the requirements of health and comfort in various parts of the Union and to prepare a report on the Sub-Committee's findings for submission to the Main Committee".

### 3. Methods of Work.

#### General Approach.

Agreed that the Committee would first gather information on existing methods and practice, and on existing legislation governing ventilation in dwellings, and then study such research as has been done both in this country and overseas. This information would provide a basis on which to work.

### 4. Allocation of Work.

#### (a) Legislation:

In view of the fact that a special Sub-Committee already existed to study this aspect, and that the Organising Secretary would have ready access to that Sub-Committee's records, it was agreed that he be responsible to report to this Sub-Committee on legislative measures.

#### (b) Research Work:

It was agreed that a survey be made of the work done overseas to determine the means of adjusting inside conditions in relation to varying outside conditions. It was pointed out that methods differed in different countries e.g. the British neglected the factor of relative humidity in computing a comfort index, whereas solar radiation was neglected in the U.S.A. The Chairman agreed to undertake this work and it was decided that Mr. W. Steenkamp of the National Building Research Institute be co-opted to assist him. In addition Mr. Mossop would from time to time be asked to assist.

#### (c) Physiological Optimum:

Agreed that Dr. R.E. Meaker report on the minimum conditions of Comfort inside buildings.

#### (d) Survey of existing practices to ensure comfortable conditions for dwellings in South Africa and other countries:

Agreed that the Institute of S.A. Architects undertake this practical survey, and that practitioners be invited to report



on case-studies which they may wish to bring to the notice of this Sub-Committee.

- (e) Study of properties of materials used in the construction of the envelope of buildings:

Agreed that this study be undertaken and reported upon by Mr. Mossop.

- (f) Study of the various types of heating system:

Agreed that Mr. Buchanan study and report on this aspect with special reference to practical case-studies both in South Africa and overseas.

Reports.

Agreed that no immediate time limit be set for reports but that these be considered as they come to hand.

5. General.

The Chairman thanked members for their attendance and willingness to assist in this all-important study. He hoped that something constructive would result within a period of about 9 months.

A Eupatheoscope from the National Building Research Institute laboratory was demonstrated and its functions explained by the Chairman.

The next meeting to be held on Friday, 7th November, 1947 at 11 a.m.

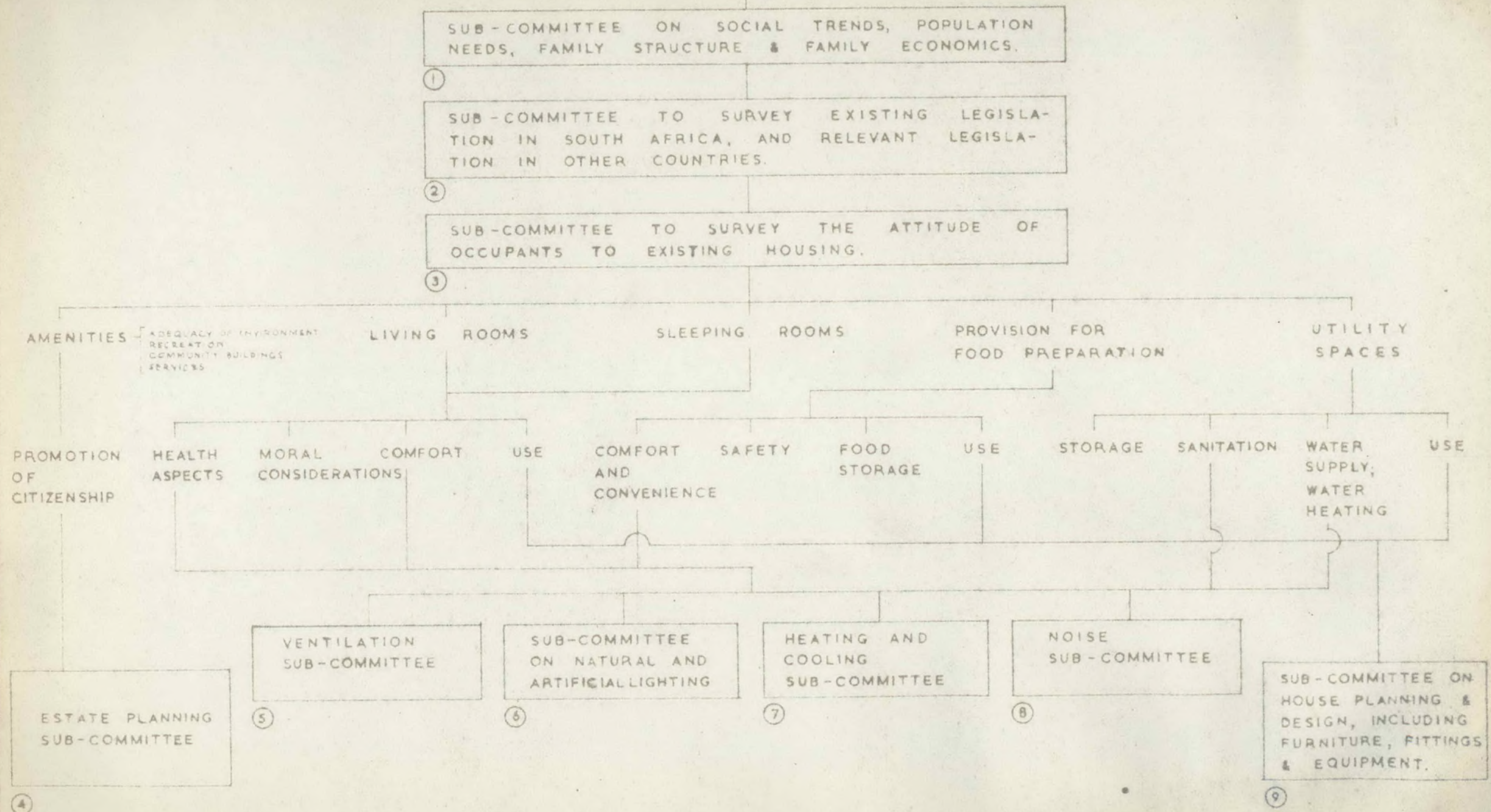
The meeting terminated at 3.30 p.m.

Confirmed

CHAIRMAN.



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