

**REPORT OF THE  
EXPERT COMMITTEE**

**PERFORMANCE APPROACH  
TO COST REDUCTION IN  
BUILDING CONSTRUCTION**

**GOVERNMENT  
OF KERALA  
JANUARY 1974**

**PRINTED BY THE S. G. P. AT THE GOVERNMENT PRESS,  
TRIVANDRUM, 1974.**

## FOREWORD

There is a need in Kerala for a performance approach which will tailor housing closely to the needs of the people and be consistent with the level of economy and resource constraints. To this end the Government of Kerala in its order No. G. O. MS. 2/77 dated 16-2-1972 constituted an Expert Committee consisting of the following members:

Dr. Kirit S. Parikh,\*  
Director, Programme Analysis Group,  
Department of Atomic Energy, Bombay.

*Chairman,*

Shri K. Madhavan,  
Director,  
Hydro Civil Designs, C. W. & P. C.,  
New Delhi.

Shri L. W. Baker,  
Architect,  
Nalanchira, Trivandrum.

Shri K. C. Alexander,\*\*  
Structural Engineer, P. W.D.,  
Trivandrum.

*Member Secretary,*

## TERMS OF REFERENCE

The terms of reference of the Committee are as follows:

1. To examine and assess different methods of lowering the cost of construction of residential houses utilising to the maximum extent possible local materials and labour.
2. To consider to what extent the methods available for lowering cost of construction can be applied to Welfare Centres, Youth Hostels, Bus Transport Terminals, Rest Houses, Workshops for Industrial Estates etc.

---

\* At present Professor and Head, Planning Unit, Indian Statistical Institute, New Delhi.

\*\* At present Regional Engineer, Kerala State Housing Board, Cochin.

3. To examine the present organisation of the building industry in the State and suggest the necessary improvements (including training programmes, standardisation of materials and designs, provision of finance etc.) for making it capable of undertaking on a large scale the low cost construction methods suggested under 1 and 2 above.
4. To examine the National Building Code, the P. W. D. norms and the present governmental procedures and requirements in regard to building operations, in the light of the above, and suggest the changes needed in them in order to extend rapidly the use of cheaper methods of construction for achieving the larger objectives of development.
5. To examine and choose models of low cost housing available with a view to recommending the adoption of a large scale housing programme for the poorer sections of the people in the State.
6. To suggest any other means of promoting and encouraging the use of low cost methods of construction of building in the State.

The Committee started work together in April 1972. In addition to working and holding study sessions together in various parts of Kerala and other parts of India, they have interviewed architects and engineers, experts in many technical and manufacturing fields, and the lay public of Kerala's towns and rural areas. To all of these the Committee is grateful for the cooperation and help. They sent out questionnaires and tabulated and assessed results and they collected and studied the many previous reports and studies of others on Housing and Cost Reduction in construction, together with as much relevant printed materials and data (published in this country and in other parts of the world) that they collected.

The Report represents the result of all this study and we are presenting as much as we feel will be helpful to both

experts and laymen alike. Some illustrations and tables are appended to this report while others will follow with the final Report.

Some of the terms of reference have been touched on only lightly while other aspects which we feel to be currently relevant have been treated with some depth in this report.

The Committee want to express their appreciation of the services of its staff, Shri N. M. Sherafudeen and Shri M. Chandrasekhar.

## CONTENTS

	<i>Page No.</i>
Foreword ..	i - iii
Section I	
Approach to cost reduction ..	1
Section II	
Climate and materials ..	5
Section III	
Construction techniques ..	20
Section IV	
Planning and design ..	38
Section V	
Implementation and institutional changes ..	45
Section VI	
Summary and recommendations ..	49
Section VII	
Appendix ..	56