



REPORT OF  
SELECTED BUILDINGS PROJECTS TEAM  
ON  
SLUM CLEARANCE

COMMISSION ON PLAN PROJECTS  
NEW DELHI

April, 1958



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ON  
SLUM CLEARANCE

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*Composition of the Committee on Plan Projects for Public Works and Buildings Sector of the Second Five Year Plan*

*Chairman*

Shri Govind Ballabh Pant, Union Minister for Home Affairs.

*Members*

Shri V. T. Krishnamachari, Deputy Chairman, Planning Commission.

Shri Morarji Desai, Union Minister for Finance.

Shri Gulzarilal Nanda, Union Minister for Planning, Labour and Employment.

Shri K. C. Reddy, Union Minister for Works, Housing & Supply.

Shri N. Sanjiva Reddy, Chief Minister, Andhra.

Dr. B. C. Roy, Chief Minister, West Bengal.

*Secretary*

Shri Indarjit Singh, Joint Secretary (Economy), Union Ministry of Finance.

*Composition of the Team for Selected Buildings Projects*

*Leader*

Shri S. K. Patil, Minister for Transport and Communications.

*Members*

Shri Sarup Singh, I.S.E. (Retd.), formerly Director, National Buildings Organisation.

Dr. Eng. A. Carbone, M.I.A.B.S.E., Consulting Engineer, Calcutta.

Shri C. P. Malik, Director, National Buildings Organisation (*ex-officio*)

*Secretary*

Shri T. S. Vedagiri.

General H. Williams, Director, Central Building Research Institute, Roorkee, has also kindly agreed to attend meetings of the Team and the Panels as and when he can spare time. He has, however, placed the facilities of the Central Buildings Research Institute at the disposal of the Team.



**Minister of  
Transport and Communications,  
INDIA**

*New Delhi, April 26, 1958*

My dear Pantji,

I have great pleasure in forwarding the Report of the Selected Buildings Projects team on Slum Clearance. You will recall that it was one of the terms of reference of the Team to review the Slum Clearance schemes of a few States and to make general observations on the progress made and the policy underlying the schemes. The Team in turn appointed a Panel under Shri N. V. Modak to analyse the facts and to assess the progress of work. The Report of the Panel has been carefully considered by the Team and it is in agreement with the recommendations made. It may be stated that a Member of the Team was also a member of the Panel and that the Panel has had several discussions with the Team as a whole before its report was finalised.

2. An estimate by the National Buildings Organisation places the expenditure required to demolish and rebuild slums in India at Rs. 10—20 thousand crores. Even if the definition of slums, taken for the purpose of this estimate, is diluted considerably, the task of clearance of slums will still remain a huge one having regard to the present resources of the country. The Team has therefore made certain recommendations for evolving a clear-cut policy on slum clearance so that priorities could be determined for purposes of formulation of schemes having regard to resources that are likely to be made available for the Second and subsequent Five Year Plans. It is understood that a Committee has been appointed under Shri A. K. Sen to consider the various issues arising out of slum clearance. The Report of the Team will be useful to that Committee to lay down clear-cut criteria for determining priorities for the purposes of slum clearance.

3. The Report of the Panel shows that the progress on slum clearance schemes included in the Second Five Year Plan is slow. It also shows that there is organisational deficiency in the co-ordinated

execution of housing schemes in the States as well as for preparation of schemes for the next Five Year Plan. These are matters to which attention is drawn specifically for such remedies as the Committee on Plan Projects may be able to suggest.

4. In the end I take the opportunity of thanking Shri N. V. Modak, Chairman of the Panel, and his colleagues for the trouble that they have taken to prepare the Report.

Yours sincerely,  
S. K. Patil.

Shri Govind Ballabh Pant,  
Chairman,  
Committee on Plan Projects, &  
Minister for Home Affairs,  
New Delhi.

# REPORT ON SLUM CLEARANCE

## CONTENTS

	<i>Report</i>	Page
	Introduction . . . . .	i-ii
SECTION 1.	Basic Issues . . . . .	1
SECTION 2.	Definition of Slum and Magnitude of Slum Clearance Problem . . . . .	10
SECTION 3.	Slum Prevention . . . . .	14
SECTION 4.	Rehabilitation of Sub-standard Buildings . . . . .	21
SECTION 5.	Slum Improvement and Slum Service . . . . .	24
SECTION 6.	Slum Clearance Schemes . . . . .	26
SECTION 7.	Reducing Cost of Construction . . . . .	35
	<i>Summary of Recommendations</i>	41

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### *Appendices*

I.	List of Meetings held and persons with whom the Panel had Discussions. . . . .	44
II.	Review of the Slum Clearance Schemes of various States. . . . .	46
III.	Rules of Bombay Municipal Corporation regarding Improvement to Buildings unfit for Human Habitation. . . . .	67
IV.	Note on Typical Plans for Slum Clearance Schemes. . . . .	78

### *Plates*

- I. Slum Clearance Housing with Hyperbolic Paraboloid roof.
- II. Do. (Precast units for roofing)
- III. Multi-storied—Star shaped Housing.

## INTRODUCTION

0.1 The extreme shortage of housing and the menace of the spreading slums are among the most urgent problems facing the industrial cities of India. They are the problems which demand positive action to meet the pressing social and economic needs of the community.

0.2 The Government of India realising, that the pre-requisite of the slum problem was the construction of low rent housing for industrial workers, initiated a National Housing Programme in the First Five Year Plan. This programme included a subsidised industrial housing scheme and a scheme for low-income group housing. Subsequently, in the year 1956, the Government of India introduced the Slum Clearance and Sweepers Housing Scheme and allotted a sum of Rs. 20 crores for its implementation during the Second Five Year Plan period.

0.3 The scheme provides for re-housing in new buildings the displaced persons from slum areas at or as far as possible near the sites of slum and at rents which they can afford to pay. Under this scheme, the Central Government provides 25 per cent of the cost as 'subsidy' and 50 per cent by way of 'loan'. The State Governments have to provide the remaining 25 per cent as 'subsidy' from their own resources.

0.4 For slum dwellers, who cannot afford to pay the rent of more than Rs. 3 per month, the Scheme provides for allotment of developed plots of land admeasuring about 1,000 to 1,200 sq. ft. along with a bath and W.C. per family. The family is also eligible under the Scheme to get Rs. 150 worth of building materials for constructing its own hut on the allotted land on a self-help basis.

0.5 The ceiling cost of new housing fixed by the Government of India for the purpose of subsidy was found to be subsequently inadequate in large cities like Calcutta and Bombay due to soaring prices of building materials and high cost of land. At the request of the State Government, therefore, the Government of India have recently revised the ceiling costs and rents.

0.6 It is realised that the provision of Rs. 20 crores for Slum Clearance and Sweepers' Quarters in the Second Five Year Plan is very inadequate. But it must be remembered that it only marks a beginning in the Government's efforts to provide a slum dweller

with a decent and comfortable dwelling at reasonable rent. The Government of India should consider the question of making liberal provisions for this purpose in subsequent plans. Unless dwellings are built more quickly and more cheaply, the Slum Clearance programme will be greatly handicapped and its success will be seriously jeopardised.

0.7 In order that a good impetus should be given to the Slum Clearance Schemes already in hand and to lay down a pattern for speedy execution of subsequent schemes for which more funds are likely to be made available in future plans, the Committee on Plan Projects desired that some of the schemes of the States should be taken up for examination by the Buildings Projects Team. The Team, at its meeting held on 31st March, 1957 at New Delhi, considered this item in detail and set up a Panel for the purpose with the following personnel:—

1. Shri N. V. Modak—*Chairman.*
2. Dr. A. Carbone—*Member.*
3. Shri C. B. Patel\*—*Member.*
4. Shri T. S. Vedagiri—*Member-Secretary.*

0.8 The Team also suggested that the Panel should study the Slum Clearance Schemes of Madras, Bombay, Mysore, U.P., and West Bengal with a view (1) to find out the existing bottle-necks in the way of pushing forward the schemes with speed, economy and efficiency, and (2) to recommend measures for the removal of such bottle-necks so as to expedite the execution of schemes already in hand and to smoothen the progress of similar schemes to be undertaken in subsequent years.

0.9 The Panel had in all six meetings at Bombay, Madras, Bangalore, Ahmedabad, Kanpur and Calcutta. It visited typical slums in each city and inspected the Slum Improvement and Slum Clearance Schemes undertaken by the Local Authorities and State Governments. Particulars of meetings held and the persons with whom the Panel had discussions are given in Appendix I.

0.10. The findings and recommendations of the Panel are given in the subsequent pages.

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\*Shri M. S. Bhatia took the place of Shri C. B. Patel from 1st October, 1957 as the latter went on deputation to the E.C.A.F.E.



## SECTION I—BASIC ISSUES

Slum clearance is a new programme of national dimensions. It has been attempted in the past on a local basis. It is for the first time that an endeavour is being made to evolve a national policy together with the implementation of a short range programme based on improvised schemes. We have no doubt from the case studies we have made, that the Plan provision on slum clearance took many implementing agencies unprepared. Policy and detailed schemes had to be worked out hastily to take advantage of the provision in the Plan.

1.2 It is for this reason that the achievements so far, in physical and financial terms, have been negligible. (vide Tables No. I & II on pages 8 & 9). A glance at the flow charts of the various schemes (Appendix II) also shows that the major part of the effort has been spent during the first two years of the Plan on working out basic preliminaries. The stage for the final preparation of schemes for implementation has just arrived but the programme, in our opinion, still lacks the necessary organisational structure to back it up. This has implications not only for the economic implementation of the short range programme but also for the formulation of the long range policy and detailed schemes for the third Plan. We have, therefore, thought it proper to refer to it in some details in our opening paragraphs of the Report.

1.3 The formulation of a realistic programme of this importance requires co-ordinated thinking by several specialities. We, have, on the other hand, found that these specialities such as engineering, public health, etc., are located in different agencies under State Governments. The housing programmes are themselves dispersed over a number of ministries and departments. Not only is there lack of co-ordination but it seems that under the present system there is a virtual denial of the opportunity to co-ordinate except by an expenditure of time and effort which would affect the pace of progress appreciably both in the short and the long runs. An appreciation of the types of problems that arise in administering such a programme is indicated in the body of the Report which has grown in volume despite the restraint exercised to refer to only important issues. This has been done to enable an assessment to be made of the type of organisation necessary to back up such a programme.

1.4 We may here refer to an argument that may be advanced that all housing programmes are not of the nature of slum clearance. We do not agree with it. All housing programmes sponsored by Government are either meant to clear existing slums or prevent the coming into being of additional slums. In varying degrees, they are all slum clearance programmes as they cater to a social class which left to its own resources cannot but live in slum conditions or those bordering upon it. The housing problem therefore should be viewed as of a piece and it should subsume such activities as regional planning, zoning, etc. Any attempt at segregating this problem into compartments can only lead to diffused thinking and responsibility.

1.5 We are convinced that unless strenuous efforts are made to provide depth of focus in organising institutional arrangements for this programme, its execution will be affected both in the matter of speed and economy. It is only organised direction that can hasten the transformation of a state of improvisation, subversive as it is of economy, into a long range policy of which short range programme should be an advance element. We are aware of the discussions that have taken place on this matter in different forums so far but we have not come across any definite signs of grappling with the problem in right earnest.

1.6 Another reason for expediting conclusiveness on organisational matters is that the preparation of realistic programme on slum clearance in the third Plan will also be adversely affected. We have consistently asked the question whether any arrangement exists for formulating schemes which should form the basis of the programme in the third Plan. The general tendency is that unless provision for the third Plan is known, it is no use preparing detailed schemes. In other words, if present methods are adopted, the third Plan will also start on a note of improvisation. This is clearly a negation of planning. A Plan should be realistic to the extent it can be; and to be so, it should be a compendium of schemes worked out in essential details at least in the sectors which are likely to find a place in the third Plan. When the consideration of third Plan is taken up, the only issue should be one of deciding priorities from amongst prepared plans. To enable this to happen, it is essential that the task should be undertaken now. Any expenditure incurred on gathering the necessary information, its analysis and use in formulating detailed plans, within an overall housing policy, will ultimately advance the implementation of the programme. Some directive on this is necessary by the Planning Commission. But the

main short-coming is one of adequate organisation to cater for the multifarious necessities of a complicated programme of national importance.

1.7 It will be clear from the various specialities that go into the making of a scheme for clearance of slums that the suitable agency for organising this activity is a Statutory Corporation or a Board with a Chairman and an appropriate number of Directors representing major specialities. We suggest that Statutory Housing Corporations should be created in every State. They should be autonomous bodies and should be charged with the responsibility of implementing the programmes included in the Plan. They should also be the agencies for formulating regional planning policies and thus collecting centres of all information necessary for that purpose. For actual formulation of plans and their execution, if they fall in the priority list, the responsibility should be placed upon such local agencies such as Public Works Departments, Improvement Trusts, Municipal Boards, etc., which can sustain technically efficient organisations. For non-viable areas, the Corporations should maintain an organisation which should undertake both preparation of plans and their execution.

1.8 The type of organisation, for the Corporations that we envisage, is contained in Chart I. The main task of the Corporation will be to draw up a list of priorities in the light of financial resources made available to it and the materials appreciation based on actual allocation secured from Government. It will also ensure technical competence and quality of workmanship. It will undertake such surveys and research or investigation as ensures the collection of economic, social and technical information vital for formulating detailed plans of a realistic nature.

1.9 We also suggest the creation of a Housing Corporation at the Centre to which the State Corporations may be the subsidiaries. It will be given the funds earmarked in the Plan for Housing Schemes. It will be its duty to allocate funds, on principles to be approved by Government, to the various State Corporations. It will also maintain a section for assisting State Corporations with the appreciation of the position of scarce materials and with their procurement. It will have close liaison with the National Buildings Organisation and the Central Buildings Research Institute and will be the main focus for introducing improved techniques. If for any reason it is not possible in the near future to set up a Central Housing Corporation, we would suggest that one Ministry of the Government of India should be entrusted with all Housing Schemes of the Centre.

1.10 This will involve a radical departure with the existing state of affairs and break with traditional thinking on such issues as the jurisdiction of local bodies in such matters. These issues, we suggest, should be faced sooner rather than later and state of consciousness reached on organisational matters which should at least subsist in substantial form for the next five—ten years.

1.11 An important argument in favour of the suggestion made is that housing programme of such dimensions cannot be carried out unless standardisation is achieved to the maximum and pre-fabrication is introduced. This requires concentrated and unified research which is only possible if housing programmes are brought under one auspices for administration.

1.12 Another problem to which we wish to draw attention is the danger of new colonies relapsing into slums. There are two reasons for it.

1.13 There is a tendency, observed in any new colonies, to sublet or to let out completely by self-denial of the new accommodation in order to make additional income in view of high rents prevailing. The desire to earn additional income, by persons at the subsistence level, is understandable but it does not further the programme of slum clearance. There should be strict observance of the densities on which the new colonies are planned. Adequate organisation will have to be built up for ensuring that in the proposed Housing Corporations.

1.14 The second reason for relapse into slums is that the art of living and of utilising the available space to optimum use is lacking. Some of the Japanese habits have to be imbibed by us namely of creating cleanliness and spaciousness out of shortage of accommodation.

1.15 The former is a matter of drilling of certain habits on a national scale and the latter of avoidance of rigid structures within the house such as walls when bamboo curtains can work as partitions which can be drawn in and up at will according to necessity.

1.16 We suggest that special efforts should be made to study these matters in social institutions so as to formulate a programme of national drilling of clean habits. It may require research into such matters as the best method of equipping kitchens, storage space, types of furniture appropriate for the houses etc. In certain countries furniture has been designed in such a way that it can be manufactured on a mass scale from odd wooden pieces fabricated into geometrical patterns which can be laid out as meccano parts

This not only reduces the cost but also adds to the mobility of the pieces and of their transformation into bigger or smaller units according to necessity and artistic taste.

1.17 We make two concrete suggestions in this respect. We suggest that in each new colony two dozen families should be adopted by the Mayor or the Senior Executive of that place for study with a view to improvement in personal and social sanitation without *incurring additional cost either to the families or to Government*. Japan may be cited as a model for this purpose as the population there seems to have learnt the art of increasing cleanliness and comfort without any apparent cost but by constant drilling of clean habits. The second suggestion is that annual prizes should be offered, as in Italy, for observing certain codes of conducts consistently. If their number is large and the amount is substantial having regard to the social groups inhabiting the colony, this system is likely to work for improvement of social habits.

1.18 This is a task which can be undertaken by selfless social workers and not paid agents. The Government of the suggested Corporations should press into this work genuine social organisations or students who have social conscience. What is required is a planned programme of research and the definition of agencies that will undertake this work. Otherwise new colonies will, over a short period, revert to the level of old slums and all effort put into them will be of an infructuous nature.

1.19 In the end we may draw attention to a few procedural issues, which if settled, will add speed and economy to the short-term programme:—

(a) We find that delay in land acquisition proceedings was in many cases attributable to the inability of the local bodies to make the necessary deposit representing the preliminary valuation of the land as required under the Land Acquisition Act. Under the present rules the payment of first instalment of loan becomes due only after the acquisition proceedings have been finalised and the amount becomes payable to the owners. We recommend that 50 per cent of the loan that is now being given at the completion of the acquisition proceedings or the amount of the advance deposit required to be made under the Land Acquisition Act, whichever is lower, should be advanced at the time of the commencement of the proceedings. This will obviate considerable financial embarrassment to several local bodies engaged on slum clearance work and will also lead to the acquisition proceedings being expedited. Another way of solving the problem is to exempt the municipal and other local bodies from the payment of compensation in advance. **This will require suitable modification in the Land Acquisition Acts.**

(b) Despite the fact that commendable effort has been made to codify the requirements of Central Government for financing loans, we found considerable delay still being caused. The main cause for this delay was the correspondence that took place between the Central Government and the State Government due to lack of understanding between them as regards the interpretation or implementation of the various features of the scheme. We suggest that an attempt should be made at clarifying some of the difficulties that have arisen in the past. It is, however, necessary that, as far as possible, the discussion on the schemes prepared by the State Government, should take place at a personal level instead of through correspondence. The fact is that mere transmittal of papers from the Centre to the States takes a long time to filter down to the lowest levels where arrangements for implementation are located. This is particularly true on the side of the State Governments as almost all of them do not have a separate department with adequate technical staff to process the housing scheme subsidised from the Centre.

1.20 In the text within, we have suggested certain standards and norms. They are ultimate; that is if conditions prevalent could allow them to be maintained where it cannot be done, it is obvious that the next lowest standards attainable in the circumstances should be adopted and the ultimate figure worked up progressively.

CHART I

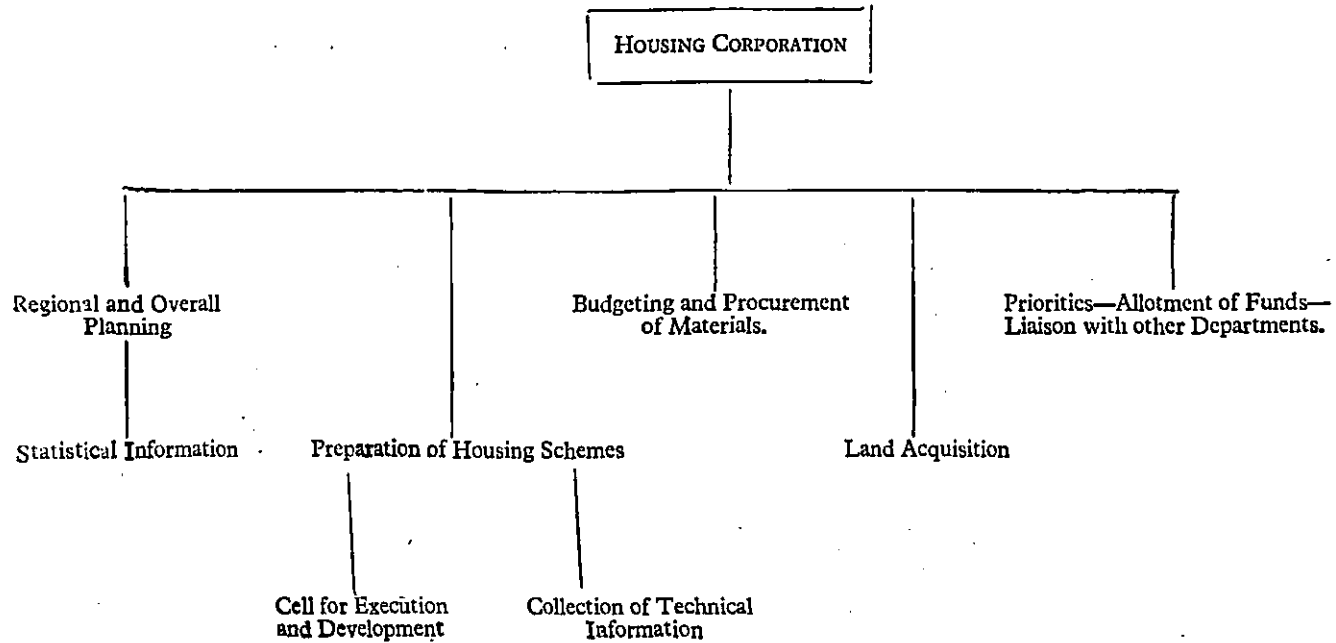


Table I

States	Plan Programme		Central Govt. share (1957-58) Rs. Lakhs	Disbursement during 1957-58 (Central Govt.) Rs.
	Total Plan Rs. Lakhs	Central Govt. share. Rs. Lakhs		
1. Madras . . .	168.00	126.00	15.00	6,67,495
2. Bombay . . .	429.33	322.00	27.00	95,000
3. Mysore . . .	75.00	56.00	8.25	..
4. U. P. . . .	196.00	147.00	12.00	10,80,000 (in Jan. '58)
5. West Bengal . .	280.00	210.00	15.00	..

Note: — The above figures are based on data made available to us till the end of Jan. 58.

The progress in terms of physical target is exhibited in Table No. II.



Table II

States	Progress
1. Madras . . . .	Two out of four Schemes, in land acquisition stage. In both the cases some preliminary work on land development has taken place.
2. Bombay . . . .	Work on only one out of four approved schemes has commenced.
3. Mysore . . . .	} Nil
4. Uttar Pradesh . . . .	
5. West Bengal . . . .	

## SECTION 2—DEFINITION OF SLUMS AND MAGNITUDE OF SLUM CLEARANCE PROBLEM

### Need for a concise and precise definition of slum

2.1 The first observation that we have to make is about the desirability of having one common and authoritative definition of what constitutes a 'slum'. Different cities seem to have different notions in this regard and every city has its own nomenclature for its slums. In Madras, the *cheris* consisting of thatched huts and other kacha constructions are designated as slums. In Kanpur, the slumps mainly consist of *Abadis* and *Ahatas*. *Abadis* are old outlying villages which have come within city limits as a result of the city's expansion. *Ahatas*, on the other hand, are pockets of thickly built-up and over-crowded area consisting of kacha huts, partly underground, without means of light and ventilation and sanitary facilities. The *bustees* of Calcutta are almost of similar nature, equally unhygienic and over-crowded. A comprehensive and authoritative definition of a slum would be of considerable help to the local authorities to determine which parts of a city should be designated as slums and taken up for improvement and clearance. It is difficult to define a slum precisely and concisely. There seems to be general agreement that it is an area in which the housing is so unfit as to constitute a menace to the health and morals of the community and that the slum is essentially of social significance. The U.S.A. Housing Act of 1949 defines a slum as "any predominantly residential area, where the dwellings which by reason of dilapidation, over-crowding, faulty arrangement of design, lack of ventilation, light or sanitary facilities or any combination of these factors, are detrimental to safety, health or morals".

2.1.2. The Seminar on Slum Clearance, held in Bombay in May 1957, has suggested the following general description of slums for the purpose of analysis, classification and selection of specific areas in a city for improvement, clearance and redevelopment:—

"A slum may, be described as a chaotically occupied, unsystematically developed and generally neglected area which is over-populated by persons and over-crowded with ill repaired and neglected structures. The area has insufficient communications, indifferently sanitary arrangements and inadequate amenities, necessary for the maintenance of physical and social health and the minimum needs and comforts of human beings and the community.

There is a general absence of social services and welfare agencies to deal with the major social problems of persons and families in respect of sub-standard health, inadequate income and low standard of living, who are victims of biological, psychological and social consequences of the physical and social environment”.

### **Classification & definition of slums**

2.2. The Bombay Seminar on Slum Clearance has suggested nine classifications of the existing slums to facilitate the introduction and maintenance of community services by various agencies interested in the slum elimination programmes.

2.2.2 Broadly speaking, slums may be classified under two major heads—(1) hutment slums and (2) pucca-built slums—depending upon the nature of materials and methods used in construction. It is noticed that more emphasis is being laid in the elimination of hutment slums in cities like Madras, Bangalore, Poona, Ahmedabad and Kanpur than those of the pucca-built slums which constitute about 60 per cent of the built-up area of any industrial city. It is only in Bombay that a beginning has been made in taking up a scheme for clearance and redevelopment of pucca-built slums.

2.2.3 We, therefore, strongly recommend that a comprehensive definition of a slum should be framed by the Government of India. The definition given in the U.S.A. Housing Act of 1949 seems to cover all the points.

### **Slum clearance programme to cover the entire problem of urban decay**

2.3. Efforts for removing slums through City Improvement Trusts were started as far back as 1896 when the country was in grip of the bubonic plague epidemic. The first City Improvement Trust was started in Bombay in the year 1898. Other towns followed suit. In spite of the efforts made by the Trusts for the eradication of slums we have not succeeded in eliminating them. The slum problem is still with us and that too in much larger proportions than fifty years ago. It will still continue for another century unless the entire problem of urban decay is attacked by resorting to preventive and remedial measures simultaneously with slum clearance. The Trusts took up the clearance and redevelopment of certain slum areas, but they did not provide housing for the displaced persons. This resulted in the creation of slums in other parts of the city. It has now been fully demonstrated, not only in our country, but also in other countries like the U.S.A. and the U.K. that mere clearance of a slum property in one section of a city without a proper programme of rehousing only pushes the slums to other sections. The programme of slum clearance must be closely integrated with other measures necessary for slum elimination.

## **New housing, slum clearance and rehabilitation of sub-standard buildings must go hand in hand.**

2.4 Slum clearance does not mean merely demolition of worn-out and sub-standard houses. It means also construction of new housing for the dishoused persons at rents which they can afford to pay and the rehabilitation of sub-standard houses which are worth saving. Again, demolition and redevelopment alone will never get rid of slums; rehabilitation of any number of sub-standard buildings, worth saving, will also not solve the slum problem unless millions of new dwellings are constructed (a) to meet the demands of urban growth, (b) to wipe out the present shortage and (c) to make up for the houses demolished. New housing construction, slum clearance and rehabilitation of sub-standard buildings must, therefore, go hand in hand.

### **Magnitude of the problem**

2.5 The slum problem which the country has to solve is colossal. It is the result of haphazard and unplanned urbanisation caused by the rapid growth of trade and industry. The problem is common to almost all the industrial countries of the world. The housing programme did nowhere keep pace with the growth of trade and industries. This, therefore, encouraged the development of speculative sub-standard housing by individuals for realising quick profits.

### **Estimate of housing need\***

2.6 According to the Census reports, the urban population in India has increased by 10.6 million during 1931—41 and by 18.1 million during 1941—51, while the number of occupied houses in urban areas have increased by 1.8 million and 1.7 million catering to an additional population of about 9 million and 8.5 million respectively. Thus even apart from the question of quality of housing, the quantitative shortage in housing has considerably increased during 1941—51. In 1951, the total urban population was 61.9 million, occupied houses\*\* were 10.3 million and households\*\*\* 12.8 million. Thus, the shortage in 1951 was 2.5 million on the broad assumption that each household should have a separate house. The number of houses required to be constructed during 1951—61 to meet the quantitative shortage in housing is estimated at 8.9 million which takes into account the shortage of 2.5 million houses in 1951, houses

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\*From National Buildings Organisation publication "Building materials and housing in India".

\*\*In 1951 Census, a house was defined as a structure with a separate main entrance.

\*\*\*In 1951 Census, a household was defined as a group of people who lived together and took their food from a common kitchen.

required for an increased population of about 33 per cent during 1951—61, and replacement of existing houses which are over-aged. On the other hand, it is anticipated that during the same period only about three million dwelling units would be constructed in urban areas both by the public authorities and private agencies. Thus, the shortage in housing by 1961 is likely to be twice the figure in 1951.

2.6.2 It will thus be obvious that slum clearance job is neither cheap nor easy and there is no dramatic solution for it. An attempt to tackle it must comprise of a well-planned, well-organised and concerted action using the tools of (1) slum prevention, (2) rehabilitation of sub-standard housing, and (3) slum improvement and slum servicing.

## SECTION 3—SLUM PREVENTION

### Causes of slums

3.1 In order to take adequate and suitable measures for slum prevention, the causes that lead to the creation of slums must be carefully studied and efforts made to nip them in bud. There is a close relationship between the cause and effect in slums and in order to get rid of either, both must be simultaneously tackled.

3.1.2 The basic causes of slum developments are:

- (i) Phenominal increase in population of towns due to influx of the rural population in search of employment and attracted by better civic amenities available in towns,
- (ii) unplanned development in the past, defective building bye-laws, and absence of any attempt to prepare master plans for future development, and consequent paucity of developed land,
- (iii) non-enforcement of building rules and regulations,
- (iv) rent control, and
- (v) toleration of slums "in a patronizing & philanthropic manner".

3.1.3 It is necessary, therefore, to give careful consideration to the various causes cited above, while evolving remedial measures for preventing the growth of slums. The various causes and the remedial measures thereof are discussed in detail in the succeeding paragraphs.

### Influx from villages

3.2 The influx from the villages to the cities is so great that any amount of new housing would be inadequate to meet the ever-increasing demand for more accommodation in most of the industrial cities. The housing activity in the cities has also been considerable. In spite of this, the increase in housing stock has not been able to cope with the rapid growth of population. The situation has led to sub-letting and over-crowding of houses. This has also encouraged the construction of speculative low standard buildings for earning quick profits.

3.2.2 In Bombay City, for example, house building has not kept pace with the growth of population. There has been 150 per cent

increase in population during the last quarter of a century while the increase in dwellings during this period has only been 35 per cent. This has naturally led to over-crowding. It was estimated in 1951, that a population of about 50,595 was living at the rate of 20 or more persons in each dwelling or a room. The present accommodation in Bombay is considered to be sufficient to accommodate about 15 lakhs of people out of the present total of about 33 lakhs. If the rest of the city's population is to be adequately housed it would involve construction of at least 2½ lakhs of tenements, involving an expenditure of about Rs. 150 crores.

3.2.3 The following remedial measures will be effective in preventing the influx of population from the villages to cities:—

(i) *Dispersal of population and industry.*—One of the remedies for slum prevention is the dispersal of population by removal of industries from over-crowded cities. The need for dispersal both of industries and population from the more congested centres has been recognised long since. It has been accepted as a basic assumption in the development plans prepared under the 1947 Town and Country Planning Act of England. Dispersal of industries is being talked about in our country for a long time; but no concrete steps appear to have been taken to implement it. On the contrary, there is a tendency to permit the establishment of new industries in the already over-crowded and congested parts of cities even without any regard as to whether adequate provision exists there for water supply, electricity, drainage and other facilities. During our visit to Bangalore, we were informed that though the water supply of the city was inadequate, Government had permitted establishment of new factories requiring large quantities of water, without giving financial aid to the Corporation for augmenting the city's water supply. This has, in turn, affected the slum improvement schemes and other housing schemes in the city in respect of water supply.

We, therefore, recommend that no licences to start new industries or for expansion of any of the existing industries should be granted by the Central Government unless a 'no objection' certificate is produced from the local body. The local body while giving such a certificate will, no doubt, take into consideration the availability of essential facilities such as water supply, drainage, power, means of communication, transport, etc.

(ii) *Limiting further expansion of industries in big cities.*—A firm decision to limit employment expansion in the congested areas is also necessary. It is advisable to fix an optimum limit to the population of a city from the point of view of efficient administration and economical planning of the utility services. This can be best

achieved by providing appropriate machinery for keeping a constant watch on the industrial development with a view to keeping total employment capacity of the area within the prescribed limits. The industries may be permitted to rationalise their system of working or instal modern plant and machinery provided that does not involve employment of additional labour.

(iii) *Establishment of New Industrial Estates.*—We welcome the decision of the Government of India to develop industrial estates. During our visit to the various States, we found that only a small beginning has been made in this direction. It is necessary to push through these schemes at an early date. It is understood that the Panel for Factory Buildings which has taken up the study of industrial estates would make suitable recommendations for the speedy and economical execution of these proposals. The new estates should be self-sufficient and self-contained in regard to housing, means of communication, power, water supply and environmental hygiene. This would enable the shifting of small industries now located in the heart of the towns and the area vacated by these may be profitably utilised for the accommodation of displaced persons from slum areas. Wherever possible the industrial estates schemes may be co-ordinated with slum clearance schemes.

(iv) *Establishment of satellite towns.*—Another way of dealing effectively with the influx of people into cities is the establishment of satellite towns. This has been done with considerable measure of success in the U.K., U.S.A. and Italy. The towns constructed in the U.K. under the New Towns Act have helped in accommodating the spill-over population from the cities. The satellite towns should be self-sufficient with respect to means of livelihood, residential accommodation, community development and utility services.

(v) *Establishment of Dormitory towns.*—We feel that the development of suburban areas on the periphery of the cities could be utilised to relieve congestion in the cities provided such areas are given transport facilities, adequate utility services and community facilities. Such a development has several advantages. Firstly, the cost of land in outlying areas will be cheap and consequently the rents of houses built thereon can be kept down. Secondly, it would induce the middle class people to build their own houses. Thirdly, it will be easier and more convenient to provide the utility services in a new area instead of augmenting the existing services in an overcrowded city at prohibitive cost.

(vi) *Carrying industry to the villages.*—Another remedial measure to stop the influx of villagers into congested towns is to shift the industries to villages and to improve the living conditions



in such villages by providing most of the amenities obtaining in cities. Ways and means must also be found out to increase the income of the villager to make him stay in the village itself where at present the employment opportunities are limited. If adequate steps are taken to provide these facilities and to start small scale industries in villages, the exodus of village population to towns can be arrested. *It is better to carry industry to the people than carry people to the industries.*

A successful attempt to achieve this objective is being made at Vallabh Vidyanagar (Anand). During our visit to this place, we were happy to see how even highly technical industries such as the manufacture of prestressed concrete members could function successfully in a village. Experiments are also being carried out at this place to produce power looms and other accessories by which textile industry can be dispersed and effectively located in villages or in a group of villages. A number of other experiments are in progress to induce the villager to live in the village. A co-operative society has been started to undertake the preparation of water supply and drainage schemes for the adjoining villages and some of the materials required for such projects are being made locally thereby providing employment to the villagers all the year round. This shows that by proper planning, it should be possible to disperse and decentralise a large number of industries from cities to the villages. Countries like Italy and Japan have succeeded in transforming locally available materials into products of utility. One of the striking examples of this is the purse for coins made out of waste cloth and hoop-iron strips used for packing purposes which otherwise normally go to waste. Another equally good example is the small gadget for cutting tracing and drawing papers. Such gadgets are very cheap and are highly utilitarian in character. It is possible for the villagers to turn out large number of gadgets required for daily use at a cheap rate. What is required is some research in 'product design'. We feel that it is time to encourage studies and research in 'product design' with a view to evolve such gadgets of common use which can be prepared from the locally available materials without the aid of any big machinery. The promotion of such industries in the villages coupled with the provision of electrical and sanitary facilities to the extent possible will prove to be the most effective and positive step in preventing the exodus of village population to the nearby industrial areas

### **Bad layout and unplanned development**

3.3 Most of the present slums in our towns and cities are the result of haphazard, unplanned and uncoordinated development. Measures

to avoid such unplanned development in all future programmes are outlined below:—

(i) *Master Plan for each town.*—Preparation of Master Plans for each city is a positive measure for slum prevention. The Master or development plan should determine future population & densities, allocate lands for housing, industry, commerce, recreation and other essential uses, provide for the development and redevelopment of residential neighbourhoods and other areas. The plan should also indicate where the spillover population of the city could be provided with housing and place of work on a regional basis. The Master or Development Plan must not be rigid but elastic. It has to be flexible and capable of revision in its details, periodically in the light of changing circumstances.

Many of our cities have not yet prepared Development or Master Plans. Some States have enacted Town Planning Acts under which municipalities have been asked to prepare a Master Plan within a prescribed period. But many municipalities have not been able to prepare such a plan for want of funds and adequate technical personnel. Such municipalities should be given the necessary assistance by the State Government.

(ii) *Central Town Planning Organisation.*—We are also given to understand that there is a Central Town Planning Organisation consisting of Townplanners, Architects, Sociologists and Engineers under the Union Ministry for Health. The States and the municipalities who cannot afford to set up such an organisation should be permitted to draw upon the central organisation for necessary guidance and help. When the central housing corporation is formed this organisation can merge into it.

(iii) *Incorporating the principle of zoning fully in Town Planning Acts.*—Some States have Town Planning Acts which do not confer adequate powers on the local authorities for the orderly development of cities as the principle of zoning has not been fully incorporated therein.

“Zoning” is the division of a city or town into ‘zones’ or districts for the purpose of applying different regulations to the property within each district. It includes limitations on the heights of buildings, densities of population, the percentage of the total plot areas that they may occupy and the uses to which they may be put. In each of the zones certain uses are permitted and others excluded. Separate zones can be provided for residences, for business and for industries. Business and industry are excluded from the residential districts. The industrial zones may be sub-divided into areas of light industries and heavy industries. There may be separate zones for local business and general business.

(iv) *Model Town Planning Legislation.*—It is learnt that the Institute of Town Planners has prepared 'A Model Town Planning Legislation' which is under consideration by the Ministry of Health. Within the short time at our disposal, it was not possible for us to study it in detail. It is hoped that the Central Government will finalise this model legislation after obtaining expert advice and make it available to the States as early as possible.

#### **Non-enforcement of building rules and regulations**

3.4 The present system of 'bye-law planning' in use in several cities needs to be supplemented by resorting to 'zoning regulation' to ensure an orderly and coordinated development of the city. Further, the existing building bye-laws in some cities are not adequate to prevent buildings built under them becoming slums in course of time because, when the bye-laws were framed, proper outlook or understanding in respect of environmental and social health were lacking. Many municipalities have not revised their obsolete bye-laws and brought them up to date to meet the present standards. Revision of bye-laws at least every ten years to suit changing circumstances must be enforced.

3.4.2 Provision should be made in the existing bye-laws to restrict the construction of new buildings in congested and over-crowded areas which have been declared as slums. Under the present building bye-laws, any plan submitted for new construction or additions or alterations has to be sanctioned even though the same may not conform to the future development of that area. This leads to the unnecessary wastage as the new constructions may also have to be pulled down when the area is taken up for redevelopment later on. It is also felt that the municipalities should have powers not to permit additions and/or alterations to existing sub-standard buildings unless the owner takes steps to improve the existing building to the required standard.

3.4.3. In the same way, though there are provisions in some of the Municipal Acts for preventing over-crowding, no municipality has enforced these provisions due to acute shortage of housing accommodation. It is feared that the newly constructed houses built under the Industrial Housing & Slum Clearance Schemes will also relapse into slums in course of time if over-crowding is allowed. The Housing Board in Bombay has framed certain rules for preventing subletting and over-crowding of new houses. Similar rules may be framed and followed in other cities to guard against the decay of new tenements due to over-crowding.

#### **The effect of Rent Control Act on the condition of existing buildings**

3.5 We consider that Rent Control Acts of different States are in need of amendment as it has been partly responsible for the creation

of new slums. This view was also shared by most of the officers with whom we had discussions. Rent Control Acts were promulgated by the various States soon after the War, after taking into consideration the housing situation prevailing at that time. Other countries which had enacted similar Rent Control Acts have revised them gradually with a view to ensure adequate maintenance of the buildings so far neglected due to the high cost of maintenance and the low rental value realised by the landlords. We recommend that the Rent Control Acts of different States be examined with a view to exempt from its application buildings which have finished their useful life, old buildings which are in a bad state of repair, and buildings which are sub-standard but which can be improved for rehabilitation at reasonable cost. This will enable the landlords to carry out essential repairs to their buildings by accommodating the tenants, if necessary, in transit camps which should be provided by the local authority. The tenant so evicted can have the first lien on the accommodation provided in renovated building but he will have to pay the enhanced rents commensurate with the expenditure incurred on renovation. Such a step would be helpful in preventing more buildings decaying into slums.

#### **Interference from outside agencies**

3.6 Drastic action must also be taken in arresting the growth of unauthorised huts or kutchha buildings on vacant lands in the cities because such haphazard and unauthorised development serves as a nucleus for the growth of new slums. In a democratic set-up, difficulties are often met with in dealing with such unauthorised developments harshly. People, without employment, casual labourers and others put up such huts on any available vacant pieces of land in a city and once they start living in them, it becomes difficult to demolish them. Appeals are often made to the local authorities to ameliorate the hardship of the occupants of such unauthorised structures by providing in the area a water tap, a latrine, means of access, storm water drainage arrangements etc. We are thus made to pay a premium on lawlessness. It is in this way that slums get permanently established and once they are established, it becomes difficult to remove them. Many slums have been created in this manner and more are coming into existence every day. A firm action, by the local authority, in preventing the growth of such slums is needed in right earnest from the very commencement. The local authorities must summarily demolish such unauthorised and unhygienic structures. Any interference from outside agencies on humanitarian or other ground should not be tolerated. It should be realised that any relaxation in taking prompt action in such cases results in perpetuating slums.

## SECTION 4.—REHABILITATION OF SUB-STANDARD BUILDINGS

### Necessity for rehabilitation

4.1 As indicated before the national slum clearance programme should provide for improvement of sub-standard dwellings in the existing housing stock, as people living in such buildings would continue to occupy them till alternative accommodation is made available to them elsewhere. It would not be possible to provide alternative accommodation to the entire slum population for a long time due to the present restricted programme of new housing. Efforts have therefore to be made to improve the sub-standard houses wherever this can be done at a reasonable cost.

### Survey of existing old buildings in a city necessary

4.2 Before any building is selected for improvement, a complete survey of the existing housing in all the slum areas of the city should be undertaken. The Bombay and Ahmedabad Municipal Corporations have proposed suitable *proforma* for this purpose. The National Buildings Organisation has also suggested detailed schedules for conducting such surveys.

### Minimum housing standards for rehabilitation

4.3 To improve the sub-standard housing to a tolerable standard of living, some minimum standards would have to be laid down. These minimum standards should include (a) provision of open spaces around the buildings ensuring adequate light, air and ventilation, (b) minimum standards for areas and heights of living rooms, (c) restriction regarding the maximum number of persons per habitable room, (d) arrangement for water supply and sanitation. The Bombay Municipal Corporation Amendment Act 1954 includes two new Sections 378-A and 378-B which empower the Corporation either to require the owners of buildings used for human habitation to execute such works or carry out such alterations as are considered necessary to render the buildings fit for human habitation, or order their demolition, if they are not capable, at reasonable expenditure, of being rendered fit for human habitation. The Bombay Municipality has accordingly framed regulations for determining the standards for fitness of such buildings (Appendix III). These standards cannot, of course, be as rigid as those enforceable under the existing building bye-laws for new buildings.

### **Subsidy for improvement of sub-standard buildings**

4.4 In recent years, in a number of countries both Eastern and Western, increased interest is being evinced in the problem of improving the existing sub-standard dwellings and State grants are being given for improvement, modernisation, enlargement or conversion of old houses. This is being done in Belgium, France, Hungary, Ireland, Netherlands, Norway, Poland, Sweden, Switzerland, the U.S.S.R. and the U.K. Low interest bearing loans are also made available for the purpose in Belgium, Finland, France, Western Germany and Sweden. In the United Kingdom, financial assistance is being given under the new Repairs & Rents Bill of 1954 for the improvement & reconditioning of sub-standard housing.

4.4.2 The Bombay Municipal Corporation have also approved of a scheme to offer an improvement subsidy towards reconditioning and improvement of sub-standard dwelling.

4.4.3 During our visit to various cities we found that the problem of sub-standard housing has not been tackled at all though the authorities everywhere were of unanimous opinion that it deserved immediate attention. The difficulty in tackling the problem, we were told, was the non-availability of funds. We would recommend that permanent allotment may be made in the yearly budgets of the municipalities for improvement of sub-standard housing. Considering the necessity of rehabilitating as many sub-standard houses as possible we also recommend that a regular Five Year Programme may be drawn up by each municipality to deal with this problem.

### **Housing Code for maintaining houses in a good state**

4.5 To ensure maintenance of all the types of buildings in a city in good condition some American cities have introduced a 'Housing Code' under which the onus of maintaining a house in a good condition is thrown both on the occupant as well as the owner. The main object of the Housing Code is to prevent further deterioration of the existing buildings due to neglect in maintenance and executing repairs at the proper time. Such a code is only applicable to the existing buildings. We consider that the adoption of a housing code by Indian municipalities also would go a long way towards prevention of blight as its enforcement would help in maintaining the existing buildings in a good state of repairs.

### **Fines laid on house owners for violation of buildings & housing Code**

4.6 Another important observation which we want to make is in respect of fines levied by the Courts on the violation of building bye-laws under certain sections of the Municipal Acts. Experience

has shown that the courts inflict very small fines, one direct result of which is that the house owner prefers to pay the fine rather than spent large amounts on repairs. In English and American cities, the defaulter is also liable to be imprisoned in addition to the payment of fine and the fines prescribed for certain types of violations are heavy. This acts as a check on the house owner and makes him carry out the work included in the requisitions promptly. It is suggested that similar procedure may be incorporated in the by-laws of the various municipalities in this country.

## SECTION 5.—SLUM IMPROVEMENT AND SLUM SERVICE

### Problem of existing slums

5.1 In the preceding sections, the problem of preventing creation of further slums and the necessity for rehabilitation of existing sub-standard housing have been discussed. Coming now to the problem of the existing slums proper, there can be only two alternatives to deal with them, *viz.*:

- (1) Slum improvement or slum service; and
- (2) Slum clearance.

5.1.2 The slums in most of the cities in India are in such a condition that there is no alternative but demolishing them. Due to the limited finances available, it is not possible to take even a fraction of existing slums for clearance by demolition. It is therefore, necessary to resort to slum service and/or slum improvement wherever possible to improve the lot of the slum dweller.

### Nature of slum improvement and slum service

5.2 The improvements carried out under a programme of slum service may include, *inter alia*, repairing and resurfacing neglected streets and alleys, rehabilitating outmoded and perhaps unsafe schools and community buildings, constructing sanitary services and storm water drains, providing facilities for water supply and refuse collection, opening up of traffic gaps or lanes for the movement of fire fighting equipment and conservancy vehicles and also serving as accesses to certain dwellings, improving street lighting, providing electric lighting to individual houses, shifting noisy and offensive trades to the appropriate zones of the city, providing shopping facilities where they do not exist, creating open spaces for recreation purposes and so forth.

### Steps taken in this direction by some municipal bodies and the legislation necessary

5.3 We were happy to note that steps for slum improvement and slum servicing have already been taken up by certain municipalities and corporations. In Bangalore, the Corporation has improved a few slums by providing water supply and drainage facilities and by opening out streets by demolishing obstructive buildings. In Madras also, some of the slum areas have been improved and serviced in this fashion by the corporation and the Improvement Trust. During our visit to these cities we have noticed that these



steps have really improved the condition of slums and to some extent have ameliorated the living conditions of slum dwellers. A good deal of work in this direction has been done by the Bombay Municipal Corporation. In Kanpur, the Development Board has enacted bye-laws for *Ahatas* under which the owners of these *Ahatas* are compelled to provide the minimum services such as surface drainage, limited water supply and paving of accesses to dwellings. In case the owner fails to carry out these improvements, the Development Board has powers to carry out the works departmentally and recover the cost from the owner as arrears of land revenue. Even with this provision we were told that it was often difficult to recover the money from some of the owners. We, therefore, feel that by legislation such expenditure must be made a charge on the property so that the local authorities can be sure of recovering the money spent on such improvements.

## SECTION 6.—SLUM CLEARANCE SCHEMES

### Progress of slum clearance schemes

6.1 As has been observed earlier in this report, the slum clearance schemes under the Government of India are still in a preliminary stage. Arrangements for getting sanctions for plans, acquisitions of land, and declaring slum areas either for demolition or re-development are being made.

### Alternate possibilities in slum clearance

6.2 While effecting slum clearance, some of the slum population has necessarily to be shifted and rehoused at a new site in close proximity of the area to be cleared if such a site is available. The main object is to reduce the density in the slum area and provide more open spaces around the buildings. It has been argued in some quarters that the entire population of the slum should be accommodated in the same area after clearance by resorting to multi-storeyed construction. Such an arrangement is rarely possible as in most cases there will not be sufficient open space around the area and the density of population will continue to remain as high as before. To add to this, multi-storeyed construction is very costly and involves greater use of materials which are in short supply. It also involves expenditure on foreign exchange for special services such as lifts etc. Above all, there is also the possibility that such multi-storeyed construction may ultimately turn out to be a vertical slum.

6.2.2 Alternatively, if the site of the slum area is such that it is necessary to clear it and utilise it for other public use, such as, providing gardens for recreation or making room available for industry, the entire population from this area must be shifted somewhere else by providing suitable alternative accommodation either in an industrial estate or in a satellite town.

### Problems in slum clearance

6.3 From a study of the slum clearance scheme of the various States undertaken by us, it is found that the major obstacles in the way of speedy execution of the slum clearance schemes are:

- (1) uncertainty regarding the availability of critical materials;
- (2) delay in the acquisition of lands and high rates of compensation;

- (3) absence of co-ordination between the several agencies executing slum clearance schemes;
- (4) unwillingness on the part of slum dwellers to move to distant places and pay higher rents; and
- (5) non-availability of suitable land with essential services and non-existence of agencies for a co-ordinated development of building sites.

### **Uncertainty regarding availability of critical materials**

6.4 We were informed by the various authorities that they experienced difficulty in pushing through their building schemes because of delays in the supply of critical materials like cement and steel. We understand that such difficulties will have to be encountered at a time when the materials are in short supply. Therefore, it is advisable for the municipalities to draft their programme on a realistic basis after ascertaining the quantities of critical materials that would be allotted to them for slum clearance housing. We have elsewhere recommended the setting up of a Housing Corporation in each State which should have a section for building materials. We have also suggested certain methods of cutting down the consumption of cement and steel in building construction elsewhere in the Report. We emphasise that even at the beginning, the planning of slum clearance housing should be done in such a way as to avoid over-dependence on critical materials, the supply of which is bound to be uncertain for some time.

### **Delay in acquisition of land and high rates of compensation**

6.5 It was a common complaint that considerable delay, ranging from 2 to 3 years, takes place in acquiring slum sites as well as lands for rehousing purposes. The compensation to be paid for in both cases is also reported to be high leading thereby to increase in the cost of slum clearance schemes.

5.5.2 Some States have enacted legislation for bringing about speedy acquisition of sites occupied by slums. A legislation like this has been enacted in Bombay, Delhi and Madras. Mysore is contemplating to have a similar legislation and West Bengal has recently brought out one. These legislations differ widely in content. There are major differences in the quantum of compensation to be paid and also in the procedure adopted for acquisition of slum areas. The Madras Act provides for payment of compensation equal to 12 times the net annual rental value of the land along with any structure that may be on it. This gives rise to a serious difficulty in fixing the compensation as the rental of the structure in

any slum area may be disproportionately high compared to the cost of the structure itself. The legislation, therefore, requires amendment in this respect.

6.5.3 In Bombay, the acquisition of slum sites takes about 12 to 15 months from the time the Municipal Corporation declares the slum areas as clearance areas to the time of compulsory acquisition orders confirmed by the State Government and possession obtained from the Collector. Procedural delays at various stages become inevitable. The same applies to Madras also.

6.5.4 In Bangalore, the Municipal Commissioner himself is an authority for acquisition of land within the municipal limits. Land acquisition in this case is naturally easier and quicker.

6.5.5 Though there is special legislation in some States for acquisition of slum lands, there is no such legislation anywhere for acquiring rehousing sites. Acquisition of sites for rehousing purposes has to proceed according to the Land Acquisition Act. This involves delays and leads to high cost of acquisition in many cases. Possibilities of speculation and manipulation of high rates of sale cannot be ruled out. A specific case came to our notice in Madras where a rehousing site was valued at Rs. 17,100 per acre against Rs. 9,075 per acre provided in the estimate. This has upset the entire scheme. The only way out is to freeze the cost of land by suitable legislation as has been done in Bombay State.

6.5.6 *Need for a Model Slum Clearance Act.*—Considering the inadequacy of the provisions made in the various slum clearance Acts, we strongly recommend that a critical study of the various Acts should be made by a Special Committee which should formulate a Model Slum Clearance Legislation for the guidance of all States. The legislation should include measures for slum prevention, acquisition of slum sites and rehousing sites, slum servicing and improvement and also rehabilitation of sub-standard housing. The problem of slum clearance has to be tackled on an all India basis and it is essential to have a uniform legislation for this purpose.

6.5.7 *Allotment of funds.*—It was brought to our notice that the local bodies had to deposit large sums of money with the Land Acquisition Officer for the acquisition of land required for slum clearance schemes. This deposit remains for a long time with the Land Acquisition Officer as the award takes considerable time. In addition in some cases the local authorities have also to pay the interest on the total amount of award. We have dealt with this issue in an earlier section of this Report.

### **Absence of coordination between bodies executing housing schemes**

6.6 During our visits to the various cities, we found that the housing schemes in each State are executed by a number of Government departments and public bodies. In Madras, the Corporation and the Improvement Trust share between themselves the industrial housing scheme, slum clearance scheme, and low income group housing. In Bombay, the Corporation does only slum clearance schemes whereas the Housing Board looks after industrial housing and low income group housing schemes. In West Bengal slum clearance schemes are in the hands of the Improvement Trust while the Construction Board of Government is in charge of low income group housing and the Housing Department of Government is in charge of industrial housing schemes.

6.6.2 *Need for a strong Housing Corporation both at the Centre and in States.*—With so many bodies in charge of housing schemes there is bound to be inefficiency and delay in execution due to lack of coordination. In Bombay, for example, the slums contain industrial workers, casual labourers and others who cannot afford to pay even economic rents. While clearing slums, the displaced industrial workers are allotted some houses built under the industrial housing scheme and in many cases the displaced workers do not avail themselves of such allotments perhaps because they are far away from their places of work. They choose to move into other slums thus aggravating the problem. Similarly, there is the problem of housing low income group people displaced from slums. The Bombay Municipal Corporation, therefore, represented to us that the Corporation may be allowed to build low income group housing and industrial housing also to meet these needs. We, therefore, recommend the formation of a strong Housing Corporation in the States as well as at the Centre as described earlier.

### **Unwillingness of the slum dwellers**

6.7 One of the major difficulties in the problem of slum clearance is the unwillingness of slum dwellers, to move to distant places, where accommodation is provided on account of (a) the fear that their social and economic life will be dislocated, and (b) their inability or unwillingness to pay economic rent.

6.7.2 Regarding (a) it is essential to first conduct a thorough survey of the existing slums and classify the slum dwellers with regard to their occupation and mode of livelihood. Such a survey will indicate as to how many of the dwellers can be shifted to distant places without jeopardising their occupation and how many will have to be necessarily rehoused in the same place. It may be possible to clear a few slums by partly housing some of the resi-

dents in the same area after it is rebuilt and shifting the rest elsewhere, where alternative accommodation is made available. But in some cases it may so happen that the number of residents who may have to be accommodated in the same area after rebuilding, may be so large as not to redress and ameliorate the slum conditions. In such cases steps should be taken to shift some of the industries in such areas to an industrial estate or a satellite town as discussed earlier.

6.7.3 Regarding (b) the problem requires careful consideration. In spite of subsidising the construction of houses, the rent may work out to be higher than what the slum dwellers would be willing to pay. But a good number of slum dwellers may come forward if they could be allowed to pay the cost of the house on a hire-purchase system. The hire-purchase system may also give an incentive to the occupant to keep his house in order and make the payment regularly.

6.7.4 In open plot development the plot can be transferred free of charge to the allottee if he constructs a house on it according to approved plans. By a proper slum survey, it is possible to find out who among the slum dwellers may be in a position to construct a house even in the first instance. Plots for such people can be given in a separate block. There may be other slum dwellers who in the course of time may be in a position to construct the houses. Those can be given plots in another block by suitable rearrangements at a later date. The contribution of Government in the shape of plot, free of cost, would be about Rs. 500-800 or so which is much less than what the Government would give as subsidy in the case of single room tenements. It is hoped that this scheme of transferring to the allottee the ownership of the plot will serve as an incentive to slum dwellers to build their own houses.

#### **Non-availability of suitable land**

6.8 The non-availability of suitable land has retarded the progress of constructing new houses. If the programme of slum clearance by construction of new houses is to be successful, it is essential to acquire and develop land in bulk well in advance. Piecemeal development of land cannot be economical. The setting up of a Housing Corporation as discussed earlier will enable the speedy acquisition and development of land.

#### **New housing**

6.9 As already pointed out earlier, there is an extreme shortage of housing in India. Slum clearance schemes cannot be success-

fully carried out without appropriate plans for the construction of *new housing* for accommodating the dishoused persons from the cleared areas at rents which they can afford to pay.

6.9.2 *Union, State and local authorities should build housing for 50 per cent of their low paid employees.*—A majority of the population living in slum and blighted areas are not in a position to pay economic rent of new building, the cost of which has gone up considerably due to the increase in land values, prices of materials and wages of labour. Private enterprise is not interested in investing its capital in building houses for this class of people. The building of houses for these will have to be done through the joint efforts of the Union Government, State Governments, local authorities, industry and employers of large labour and private enterprise. The responsibility for bringing this housing into existence must be assumed by Government, public bodies and industry and as a first step in this direction housing should be provided by these authorities for a substantial proportion of their low paid employees. If the Union Government, the State Governments and the local authorities provide housing for 50 per cent of the low-income employees or enable such houses to be built through advancement of loans, the housing problem will be relieved to some extent and this will facilitate the cleaning of slums. The possibility of diverting a portion of the funds of the Life Insurance Corporation for the housing programmes of Central and State Government employees may be investigated. This will be a sound investment as it is practically guaranteed by the Governments.

6.9.3 The various points which need attention while considering the question of providing new housing are outlined below:—

(i) *Minimum standards for new housing.*—As finance available for new housing is limited, the standards to be adopted for housing must, in the initial stages, be the barest minimum, consistent with tolerably comfortable living. The standards laid down by the Union Government for slum clearance and sweepers' housing scheme may be accepted for the time being though the minimum standards for such housing should be two rooms.

(ii) *Facilities to be provided.*—As the accommodation provided is very limited, some facilities must be given to the occupants by way of shelves, lofts, cupboards for storage of articles etc. The kitchen should have a sink, and a cooking *chulla* with proper *chimney* arrangement. Bathrooms should have a small shelf and hat pegs. A courtyard wherever possible should be provided.

(iii) *Flexibility in planning.*—Where the barest minimum standards are adopted, it should be stipulated that the accommodation would be enlarged within a reasonable period, say 10 to 15 years, either by converting two tenements into one tenement or by the construction of an additional room, if economically possible, to each unit of accommodation for which space should be reserved at the time of initial construction itself.

(iv) *Principles in planning of new colonies.*—Planning of a housing colony requires deep study and careful consideration of several factors such as the topography, optimum density, road pattern, orientation of dwelling units, location of common facilities, apart from the planning of the houses themselves. Omission of any particular factor may lead to uneconomical utilisation of the land and consequent inefficiency of planning.

In the planning of big housing colonies provision is not normally made for accommodating smaller domestic trades. In the absence of any accommodation, temporary shops and unauthorised structures come into being. It is, therefore, necessary that even in the initial stages of planning of such housing colonies suitable provision must be made for shops, community facilities and for the residential accommodation for people engaged in domestic trade.

6.9.4 Following recommendations are made for the successful implementation of new housing schemes.

(i) *Incentive to private enterprise.*—We feel that full measure of success will not be achieved in the National Housing Scheme if private enterprise is not induced to take a sizeable share therein. However much the State and Union Government may do in the way of supplementing the housing stock in the country, there will still remain a gap which is hard to fill. It is suggested in certain quarters that private enterprise would be able to take up the construction of houses for the low income group if sufficient incentive is given to them by way of tax remissions and loans, if necessary. The private enterprise can build houses not only for the low income group but also for the upper middle class people, who will be in a position to pay the economic rent.

(ii) *Encouragement for the formation of building societies and cooperative societies.*—We were informed that the progress of new housing could be stepped up if encouragement is given to building societies and cooperative housing societies.

### **Reducing cost of construction**

6.10 New housing is an essential part of all slum clearance schemes. Any reduction of cost effected in this will enable the sum earmarked for the purpose of slum clearance go a little further.



Some methods of reducing cost of construction have been described in detail in the subsequent part of the Report. In addition, we have suggested elsewhere the adoption of hyperbolic paraboloid type of roof for single storeyed construction. The hyperbolic paraboloid roof requires less cement and steel and the filler work can be constructed by the owners themselves on an aided self-help basis. The star-shaped construction is economical on services and in circulation space. These can be adopted in conjunction with other types of construction to relieve monotony. Apart from these, we suggest the adoption of a new technique for roofing developed by the Central Buildings Research Institute by which considerable saving in cement and steel can be obtained. Details of these are given in Appendix IV.

### **Social education**

6.11 Slum clearance is not only the problem of brick and mud. It is a problem of social uplift of the masses, of training them towards the goal of better living. We are fully aware that no amount of new housing schemes for rehabilitating slum dwellers will be successful if proper steps are not taken to give them the necessary social education. Such social education is necessary both for people living in slums as well as for those who have been rehabilitated elsewhere. This can be achieved through well qualified social workers who must live amongst the slum-dwellers and demonstrate by action and propaganda the benefits of sanitary and hygienic living.

6.11.2 Better living does not necessarily mean additional expenditure. Living neatly in a small area is an art, which must be developed by the spread of education. Japan can be cited as an example where in spite of acute shortage of space, the houses are kept extraordinarily trim and clean because of the neat habits of the people. It may be worthwhile for the Government to start an Institution for training social workers.

6.11.3 It may even be possible for the municipalities to adopt a few slum families and teach them how to live decently within their income. These families can then serve as examples for others to follow. It is necessary that all municipalities and local bodies engaged in slum clearance work should give serious attention to this important problem of educating the slum dwellers towards better and more wholesome way of living.

6.11.4 It is also necessary to form a labour force to keep the existing slums clean. The force must be created from amongst the slum dwellers. It should be the duty of the labour force to keep the area clean and tidy under the leadership of a social worker. In addition, they can be given a training, free of charge, two hours a day in carpentry, masonry construction and horticulture. The normal repair works for slums can be undertaken with such labour drawn from the slums and trained for carpentry and masonry work.

6.11.5 This process gives additional income to the slum families. A part of the wages paid to this labour force can be put in a fund for insurance of the families and also for the hire-purchase of utility furniture, storage units etc. which can be specially designed for small houses in order to increase the utility of space. Such furniture can be manufactured by the labour force trained in carpentry work under the management of an intelligent executive. Italy has gone a long way in standardising the basic units of furniture which can be bought gradually to build up different pieces of utility furniture.

## SECTION 7—REDUCING COST OF CONSTRUCTION

### **Answer to low rent housing is lower cost and not higher subsidy**

7.1 When housing is to be provided at public expense, its cost is a factor of primary importance. *The answer to the problem of low rent housing is not higher subsidies but lower costs.* Ways and means must, therefore, be found to reduce the cost of construction.

### **Control of rate of materials**

7.2 The standards of specifications of the houses for rehabilitating slum dwellers are already low. There is no scope for further pruning. Reduction in cost must be obtained through rational planning, careful standardisation and adoption of new techniques of construction. The construction cost depends largely on the rates of materials which account for two-thirds of the cost. During our visit to Ahmedabad we came to know that the cost of bricks had risen from Rs. 36/- to Rs. 46/- per thousand. This, we were told, was due to the lack of adequate supply of coal. In normal load-bearing wall construction, bricks account for 30-40% of the cost and an increase in the cost of bricks such as this will adversely affect the economies of big construction. Even in Bombay, we were told, that the cost of bricks was fluctuating markedly. This fluctuation is of a seasonal character and has a vital effect on building activity as a whole. Due to the increased cost of bricks, some of the three and four storeyed tenements which could have been otherwise economically constructed in brick had to be designed as R.C.C. frames with brick filler walls. This represents waste of critical materials like cement and steel which are in short supply in the country. In Calcutta, the cost of bricks is Rs. 70/- per thousand and upwards. We feel that it is necessary to probe into this high cost of bricks at Calcutta and Bombay so as to find out the root cause and suggest remedies thereof. It may be possible for the National Buildings Organisation to study this problem in detail and arrive at a satisfactory solution.

7.2.2 The problem with respect to other materials of construction is similar. The cost of stone aggregate in many cases varies because of transport difficulties and due to concentrated demand at certain periods of the year being very much in excess of the production capacity of the existing quarries. The cost of timber is found to be generally high as the Government departments and other municipal agencies have to obtain timber from the market. Direct supply of timber in suitable sizes by the Forest Department to the construction agencies of Government and municipal bodies will reduce the cost as this procedure will avoid middleman's profit.

7.2.3 With regard to cement some economy is possible by obtaining bulk supply to the various centres of construction activity. Supply of cement in bulk has been adopted with success in other countries. Some reduction in cost can be effected if cement is procured in bulk and distributed through silo-sites. Taking into account the capital outlay on trucks for the transport of bulk cement, and on silo-sites the net saving in cost can still be appreciable. This system has already been adopted in Delhi and can well be extended to other cities where there is concentrated building activity.

#### **Reduction in cost of materials through long range planning**

7.3 Considerable reduction in the basic cost of materials can be obtained if long range planning is done for the procurement of materials. Bombay Corporation is considering a scheme of having its own quarries for ballast and kilns for bricks. Other big construction agencies also can consider similar schemes with advantage. The most important pre-requisite for the success of such schemes is the "long range" planning. Government must guarantee the continuation of housing and slum clearance schemes for the period of at least 10 years. Long range planning of this type can enable the construction agencies to plan ahead for the procurement of materials which will result in economy and efficiency.

#### **Budgeting for materials**

7.4 The cost of materials, to a great extent, determines the cost of construction. An all round effort is necessary not only to reduce the cost but to guard against seasonal and sporadic fluctuations in the rates. The proper survey of the requirements of materials and their availability is essential if a scheme has to be prepared on realistic lines. The 'materials section' of the proposed Housing Corporation is intended for this work.

#### **Organisation of the building industry**

7.5 Another measure which would help in bringing down the cost of construction is re-organisation of the building industry itself on more sound lines. This industry today is suffering from acute shortage of skilled workmen. With the high tempo of construction—activities the situation has become worse. Training of masons, carpenters and other categories of workmen has, therefore, to be undertaken immediately and the programme of such training must be co-ordinated with the building activity. Due to high tempo in construction, even the well-established contracting and building firms are finding it difficult to secure the adequate number of skilled workmen and supervisors for the execution of such works. They are also short of the tools and equipment necessary for the economic

and speedy execution of big projects. Though most of the normal equipments necessary for building construction are of an indigenous character, there are others such as hoists, mixers etc. which at present are being imported. The question of manufacturing them in the country may well be looked into.

### **Standardisation and modular co-ordination**

7.6 Reduction in cost of construction is possible through standardisation and effective modular coordination. With the repetitive character of construction considerable economies are possible if several units which go into a house such as doors, windows, etc. are standardised according to a modular pattern produced on a mass scale in a central place and transported to the various works. The National Buildings Organisation has already standardised the doors and windows to be used in residential construction. We emphasise the supreme need for such rational standardisation. Even the plans of houses can be so standardised that there may be saving in cost of form work due to large repetition. Advanced countries have successfully adopted modular co-ordination for their housing schemes.

7.6.2 Closely related to this is the problem of standardising furniture. An interesting example of modular coordination as applied to furniture is the one attempted in Italy. There are only a few standard components which can be purchased gradually by the user and several pieces of furniture made out of the same. A more effective utilisation of the area within the house is the answer to the present problem of housing shortage.

7.6.3 Considerable attention has been paid in other countries even for the detailed planning of 'kitchens'. A comprehensive works study of the housewife's activities in the kitchen was made in Sweden as a consequence of which standard kitchen plans have been evolved along with accessories and utensils reducing the working time of the housewife by 10 per cent. It is high time that such studies are conducted in our country. The National Buildings Organisation may take this up as one of the items for detailed study. The study can be conducted in different regional centres for evolving standard kitchen plans.

### **Adoption of different techniques in design and construction**

7.7 Reduction in construction cost can also be effected by adopting different techniques in design and construction which have now become popular in other countries. The use of secondary species of timber must be encouraged as the known varieties like Teak, Sal, etc. are in a very short supply. Hollow Block construction with cement concrete blocks can be tried in comparatively humid areas and adoption of stabilised soil construction can be encouraged in other places, where no other suitable materials are available. The

economies of Hollow Tile floor construction for spans 8'—10' are well established. In Italy this technique has been developed to such an extent that clay block floors are used even without the top concrete course. We understand that the National Buildings Organisation is already seized of the subject. An early development in this direction is highly desirable. The National Buildings Organisation and Central Buildings Research Institute may well look into this problem. We are happy to learn that some Italian firms are willing to supply the technical 'know-how' and also to help in establishing factories for the manufacture of clay tiles in India in association with Indian firms. It may be possible to process this through the Small Scale Industries Board. We emphasise the need for pushing through this scheme quickly, as considerable economy in cost of materials can be achieved thereby. Russia has tided over the problem of scarcity of usual building materials by expanding the technique of prefabrication of cement concrete units. This may not be satisfactory in our country at the present juncture due to the short supply of cement. But we emphasise the necessity of advancing this technique as the shortage in cement supply is only a temporary one and the economy of prefabrication is well known.

#### **Emphasis must be laid on "Applied research"**

7.8 The adoption of new materials and new techniques of construction requires experimental research. The research organisation in this country should lay more emphasis on research that would be of immediate practical importance in the execution of buildings projects. The research centre in England did the same soon after the War and consultative committees were established to communicate the results of research to the building trade without loss of time. This was the main reason for the successful post-war construction activity. One of the main functions of the National Buildings Organisation is the translation of research into practice. It can be strengthened, if need be, so that it can effectively fulfil this object. We are of the opinion that some portion of the funds payable to the various construction agencies should be set apart for 'experimental construction' which is so necessary for the advancement of design possibilities and construction techniques. We fully endorse the resolution passed in this connection by the National Building Council in its meeting in November, 1957, "that 1 per cent of the Housing Budget be earmarked and set apart for construction of experimental housing".

7.8.2 We understand that the research items pertaining to buildings are determined by mutual consultation by the Council of Scientific and Industrial Research and the National Buildings Organisation and the Building Research Committee of the Council

of Scientific and Industrial Research allots funds to research organisations and private individuals. This procedure is commendable and should be continued.

#### **Judicious use of critical materials**

7.9 The reduction in construction cost is inextricably tied with the judicious use of materials such as cement and steel which are in short supply. The Cement Economy Committee set up by the National Buildings Organisation has recently published its report. We endorse the recommendations of this Committee. We also feel that the adoption of Madras terrace roofing for buildings in Madras, Andhra and Orissa will help in saving cement and steel. The only possible objection is the plea of non-availability of structural timber. But it is understood that a considerable quantity of secondary species of timber is available in the Andamans which can be well utilised for structural purposes after necessary seasoning and treatment. We recommend that all possible steps should be taken to utilise secondary species of timber for structural purposes to ensure thereby considerable saving in steel and cement. For this purpose seasoning and treatment plants will have to be set up at suitable places.

#### **Revision of bye-laws**

7.10 We found that the building bye-laws of several municipalities have not kept pace with the development in the use of building materials and methods of construction. In order to keep down the cost of building commensurate with safety, these bye-laws are in need of revision especially in respect of the use of new materials, the heights of floors, live loads to be allowed in the design of floors and roofs, thickness of walls etc. We strongly recommend that the model bye-laws evolved by the Indian Standards Institute should be adopted with modification to suit local requirements by the various municipalities who have not revised their bye-laws for a long time.

#### **Construction of dormitory accommodation**

7.11 Some of the slum dwellers do not live with their families. They come to the cities alone in quest of employment. It will be better and cheaper to build dormitory accommodation for such single persons. Such an accommodation in four storeyed construction will cost about Rs. 3,000 per unit in Calcutta and Bombay, whereas a single roomed family quarter will cost as much as Rs. 6,000 per unit. The Calcutta Improvement Trust has constructed one such dormitory for working women. This is working successfully. In the case of dormitories for men it is advisable to introduce as far as possible community kitchens. The agencies in charge of slum clearance schemes may explore the possibility of accommodating some of the slum dwellers who do not live with their family in dormitories.

**Conclusion**

7.12 The Government is trying to raise the standard of living of the common man and thus helping in awakening in him consciousness for good and sanitary living. It is hoped that this awakening would subsequently help in preventing the creation of further slums and all new housing that would be constructed by the local authority, State and Central Government or private agency would be maintained in a satisfactory condition, preventing their blight due to neglect and disrepair.



## SUMMARY OF RECOMMENDATIONS

### *Section 1. Basic Issues*

Serial No.	Ref. to Para. No.	
1	1·7	A Statutory Corporation should be created in every State for implementing the slum clearance programmes included in the plan.
2	1·9	A Housing Corporation should be created at the Centre and all the State Corporations should be subsidiaries to the same.
3	1·19 (a)	The Financial assistance by the Central Government should be given at the time of the commencement of the land acquisition proceedings or the local bodies must be exempted from paying the compensation in advance.
4	1·19 (b)	Minor matters of detail should be settled by discussion at personal level instead of through repeated correspondence.

### *Section 2. Definition of slum and magnitude of slum clearance problem*

5	2·2·3	A comprehensive definition of a "slum" should be framed by the Government of India.
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### *Section 3. Slum prevention*

6	3·2·3 (i)	No licences to start new industries or for expansion of the existing industries should be granted by the Central Government unless a "no objection" certificate is produced from the local body.
7	3·2·3 (vi)	Studies and research in "product design" should be encouraged with a view to evolve gadgets of common use which can be prepared from the locally available materials without the aid of any big machinery.
8	3·3 (i)	A Master Plan should be prepared for each city as a positive measure for slum prevention.
9	3·3 (i)	The Municipalities should be given assistance financial as well as technical by the State Government for the preparation of the Master Plan.
10	3·3 (iv)	The Central Government should make available a "Model Town Planning Legislation" on the basis of which the States can enact their own Town Planning Legislation.

Serial Ref. to  
No. Para. No.

- 11 3·5 The rent control Acts of different States should be examined with a view to exempt from their application buildings which have finished their useful life, old buildings which are in a bad state of repairs and buildings which are substandard but which can be improved for rehabilitation at a reasonable cost.

*Section 4. Rehabilitation of substandard buildings*

- 12 4·4·3 Permanent allotments may be made in the yearly budgets of the municipalities for slum servicing and improvement of substandard housing and that a regular Five Year Plan may be drawn up by each municipality to deal with this problem.
- 13 4·5 The municipalities should adopt a Housing Code which would go a long way towards prevention of blight as its enforcement would help in maintaining the existing buildings in good state of repairs.

*Section 5. Slum improvement and slum service*

- 14 5·3 In case the owner fails to carry out improvements where this is feasible, the local authority should be empowered by suitable legislation to carry out these improvements and recover the money spent on improvements.

*Section 6. Slum clearance schemes*

- 15 6·5·8 A critical study of the various Slum Clearance Acts should be made by a Special Committee which can then formulate a "Model Slum Clearance Legislature" for the guidance of all States.
- 16 6·8 The acquisition and development of land on a large scale for housing purposes by the proposed Housing Corporation would ensure the speedy execution of slum clearance schemes.
- 17 6·9·4 Encouragement should be given to building societies and cooperative housing societies to step up the progress of new housing.

*Section 7. Reducing cost of construction*

- 18 7·4 A proper budgeting for materials is of prime importance for the drawing up of housing schemes on a realistic basis.
- 19 7·7 The manufacture of clay tiles must be studied at different places in India where good clay is available.
- 20 7·7 The technique of pre-fabrication of cement concrete units should be further explored in this country.
- 21 7·9 All possible steps should be taken to utilise secondary species of timber for structural purposes in order to ensure thereby saving of steel and cement.

Serial No.	Ref. to Para No.	
22	7·10	The municipalities, who have not revised their building bye-laws for a long time, should revise them now on the lines of the model by-laws evolved by the Indian Standards Institution.
23	7·11	“Dormitory accommodation” for displaced slum dwellers (who live in the city without their families), should be constructed.

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## APPENDIX I

### LIST OF MEETINGS HELD AND PERSONS WITH WHOM THE PANEL HAD DISCUSSIONS.

The first meeting of the Panel was held in Bombay on the 14th and 15th of June, 1957, under the Chairmanship of Shri N. V. Modak. Dr. Carbone, and Shri C. B. Patel, Members of the Panel, attended the meeting in addition to the Secretary. Shri A. Balakrishan, Member of the Team, also attended the meeting.

The second and third meetings of the Panel were held at Madras and Bangalore respectively during July, 1957. The Panel visited a number of slums in both the cities and had discussions with various officers. The list of officers with whom the Panel had discussions on both the days is given below:—

#### *At Madras*

Shri Balasundaram, Commissioner, Corporation.

Shri R. V. Raman, I.A.S., Secretary, Department of Industries Labour and Cooperation.

Shri Meeran, City Engineer, Madras Corporation.

Shri P. T. Govindrajulu, Executive Engineer, Madras Corporation.

Capt. D. Gnanaolivu, Chairman, City Improvement Trust.

Shri Krishna Murty, Town Planning Officer.

#### *At Bangalore.*

Hon'ble Chief Minister.

Hon'ble Shri Chennigaramiah, Minister for Local Self Government.

Hon'ble Shri R. M. Patil, Minister for Health.

Shri Razvi, Secretary to the Local Self Govt.

Shri Junabhai Devidas, Mayor.

Shri M. Ahmed, Commissioner, Bangalore Corporation.

Shri Manchigiah, B.E.M.I.E., Chief Engineer, Corporation.

Shri B. V. Lankappa, Chairman, City Improvement Trust.

Dr. S. R. Bhombhore, Health Officer, Corporation.

Shri B. N. Shamanna Gowda, Chairman, Town Planning Committee.

Shri B. V. Vithal Murthy, Engineer Officer, City Improvement Trust.

The fourth meeting of the Panel was held at Ahmedabad and Anand in Gujerat between 13th to 15th September, 1957. The Panel had discussions with the following persons:—

- (1) Shri K. M. Kantawala—*Commissioner.*
- (2) Shri M. M. Patel—*City Engineer.*
- (3) Shri H. Gandhi—*Deputy City Engineer.*

At Anand the Panel had discussions with Shri Bhailal Bhai Patel, Vice-Chancellor of Anand University and founder of the rural town of Vallabha Vidyanagar.

The fifth meeting of the Panel was held at Kanpur on the 15th and 16th of October, 1957. The Panel had discussions with the following persons:—

- (1) Shri M. N. Qurashi, I.C.S.,—*Administrator, Development Board.*
- (2) Shri Mosabdi Lal—*Chief Engineer, Development Board.*
- (3) Shri Dev Raj—*Executive Officer, Development Board.*
- (4) Shri D. T. Patel—*Executive Engineer.*
- (5) Shri Sobaram—*Executive Engineer.*

The sixth meeting of the Panel was held at Calcutta on the 17th of October, 1957. The Panel had discussions with the following persons:—

- (1) Shri N. M. Bardhen, I.A.S.—*Joint Secy. Local Self Government Department, West Bengal.*
- (2) Shri N. R. Das—*Chief Engineer, Calcutta, Improvement Trust.*
- (3) Shri Bandhopadhaya—*Chief Engineer, Construction Board.*
- (4) Shri S. B. Ray—*Joint Development Commissioner.*
- (5) Shri A. K. Ghosh—*Joint Secretary and Chief Engineer, Housing Department.*
- (6) Shri A. N. Das—*Chief Engineer.*
- (7) Shri B. P. Basu—*Dy. Secy., Local Self Government Department, West Bengal.*
- (8) Shri D. S. Mukerjee—*Superintending Engineer, Greater Calcutta Division Circle.*
- (9) Shri H. Dass Gupta—*Assistant Secretary, Development Department.*
- (10) Shri K. Ray—*Superintendent, design and drawing, Calcutta Improvement Trust.*

## APPENDIX II

### REVIEW OF THE SLUM CLEARANCE SCHEMES OF VARIOUS STATES

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#### 1. *Madras:*

(i) Meenambal Sivaraj Nagar Slum Clearance Scheme.

(ii) Vazhaipper Cheri Slum Clearance Scheme.

#### 2. *Bombay:*

(i) Poona City Slum Clearance Scheme.

(ii) Ahmedabad City Slum Clearance Scheme.

#### 3. *Mysore:*

Khader Sheriff Garden Area Slum Clearance Scheme,  
Bangalore.

#### 4. *Uttar Pradesh:*

Slum Clearance Schemes of Agra, Kanpur, Allahabad,  
Varanasi & Lucknow.

#### 5. *West Bengal:*

Slum Clearance Scheme of Calcutta Improvement Trust.

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NOTE:—The reviews of the above Schemes given in the subsequent pages are based on data made available to us till the end of January 1958.

## MEENAMBAL SIVARAJ NAGAR SLUM CLEARANCE SCHEME MADRAS

### *Review of flow sheet*

The flow chart of the work is attached. The State Government has submitted the scheme to Central Government in May 1957. The scheme provides for rehousing of the slum dwellers partly in the same site and partly elsewhere. The plot size is 25'x30'. The Central Government has returned the scheme requesting the State Government to revise the plot size so that the minimum size may be 900 sft. and also provide for individual water connection to bath and W.C. and wire fencing to the plots. The minimum requirements for open plot development are outlined in the brochure brought out by the W. H. & S. Ministry. The State Government has not adhered to these.

The Central Government has sanctioned the scheme in July 1957 though the revised layout was not submitted by the State Government. Payment of Rs. 1,72,500 was also sanctioned by the Central Government in September 1957. The State Government has sent the revised plan in November 1957 to Central Government with a request that the sanction may be accorded at the revised ceiling of Rs. 1250 per plot. The case is at present being processed by the Ministry of W.H. & S. Although over 10 months have elapsed since the receipt of sanction of the scheme as also for the payment, steps have not been taken to commence the work.

### *Comments on the scheme*

The scheme envisages open plot development. For quicker development as discussed earlier the ownership of the plot may be transferred to the allottee if he has constructed the house on the plot in accordance with the approved plan.

The areas of roads and open spaces in the scheme are within reasonable limits.

The rehousing site is 3 miles away from the slum area. More than 3/4ths number of families in the slum area have to be shifted to the new site. This is likely to present considerable difficulties.

Under the municipal regulations, individual water tap cannot be given if the monthly rental is less than Rs. 5/-. The scheme therefore envisages the provision of public hydrants at the rate of 1 for 8 families. This is not a satisfactory arrangement. The public hydrants are often put out of order and it is a problem for the corporation to keep the hydrants in good repair. We understand that this is due to the scarcity of water in Madras. The aim must be to provide individual water connections as soon as conditions permit.



*Flow Chart of Meenambal Sivaraj Nagar Slum Clearance Scheme*

Date	Events	Remarks
1952	Initiation of the idea.	
1-1-1957	Formation of scheme.	
20-3-1957	Submission of scheme to State Government.	
23-4-1957	Return of the case from State Government with remarks.	
4-5-1957	Submission of scheme to the Central Government.	
15-6-1957	Central Government returned the scheme to State Government with comments. The comments are (a) size of plots should be at least 900 sq. ft. instead of 750 sq. ft., (b) individual water connection should be provided to both water closet and bath, and (c) wire fencing should be provided around the plots.	
27-6-1957	Reminder from Central Government for submission of revised plans.	
2-7-1957	Madras Government asked for sanction at the ceiling of Rs. 1,000/- per plot pending submission of plans.	
8-8-1957	Work started on Corporation land. (Rehousing site).	
19-8-1957	Madras Government requested Centre for payment of loans.	
1-9-1957	Collector addressed to acquire private lands (for rehousing).	
19-9-1957	Payment of Rs. 1,12,500/- sanctioned by the Central Government.	
8-10-1957	Government ordered the Collector to transfer Government land (slum proper).	
13-11-1957	Rs. 1,12,500/- drawn from Reserve Bank.	
20-11-1957	Revised layout submitted to Central Government with a request that sanction may be accorded at the revised ceiling of Rs. 1,250/- per plot.	

Date	Events	Remarks
31-1-1958	Valuation statement of private lands to be acquired received from Collector. Valuation at Rs. 942/- per ground against Rs. 500/- per ground provided in the estimate.	
	<i>Present state of work</i>	
	<ol style="list-style-type: none"><li>1. On Corporation lands demarcation of plots and laying of roads have been completed. Water mains and sewers have to be laid. Separate disposal system being considered.</li><li>2. Work on private lands not started so far on account of delay in acquisition of lands.</li><li>3. The slum proper is on Government land. Rehousing site is partly owned by Corporation and partly to be acquired from private parties.</li></ol>	

## VAZHAIPPER CHERI SLUM CLEARANCE SCHEME, MADRAS

### *Review of flow chart*

The flow chart of the work is attached. The State Government submitted the schemes to Central Government in May, 1957. The Central Government had to return the scheme to the State Government as the plot sizes and other details were not in accordance with the regulations contained in the Central Government brochure on slum clearance. In July, 1957, the Central Government sanctioned the scheme subject to their original comments. In September, 1957 the Central Government also authorised disbursement of Rs. 58,000.

Instead of starting the work on receipt of sanction, the State Government submitted revised plans in November, 1957 with a request that sanction may be accorded at the revised ceiling of Rs. 1,250/- per plot. This was sanctioned by the Central Government in January, 1958. The work does not seem to have been started as yet.

### *Comments on the scheme*

The rehousing site is fairly adjacent to the slum. Comments made in respect of the Meenambal Sivaraj Nagar Scheme hold good in this case also.

*Flow Chart of Vazhaipper Cheri Slum Clearance Scheme, Madras*

Date	Events	Remarks
5-1-1957	Inception of the idea.	
20-3-1957	Submission to State Government.	
10-5-1957	Submission of scheme to Central Government.	
14-5-1957	Receipt of scheme in the Works, Housing and Supply Ministry.	
14-6-1957	Central Government returned the scheme to State Government with the remarks that (a) plots size should be changed to 900 sq. ft. (b) individual water connection should be provided in W.C. and bath, and (c) wire fencing should be provided around the plots.	
2-7-1957	State Government referred back the case to the Corporation. At the same time requested the Central Government to sanction the scheme at the rate of Rs. 1,000/- per plot pending submission of revised plans.	
5-7-1957	Central Government approved of the scheme at Rs. 1,000/- per plot.	
12-7-1957	Sanction communicated by State Government to the corporation.	
13-7-1957	Revised plans and estimates submitted by the corporation to the State Government.	
19-8-1957	State Government requests Centre to sanction the loan.	
Do.	State Government ordered the Collector to take land acquisition proceedings.	
2-9-1957	Formal requisition sent by corporation to Land Acquisition Collector.	
9-9-1957	Centre authorises disbursement.	
28-9-1957	Revised plans and estimates sent to State Government.	

Date	Events	Remarks
15-10-1957	State Government orders disbursement of loan.	
3-11-1957	Corporation informed of the approach of the State Government to the Central Government to raise the limit to Rs. 1,250/- per plot.	
13-11-1957	Corporation draws loan.	
20-11-1957	Suggestion of the Deputy Collector (Land Acquisition) for adding a small bit of land to the proposed area.	
10-12-1957	Corporation asked by the State Government to proceed with the scheme pending approval of the Central Government.	
30-1-1958	Corporation given consent to the addition of small bit of land subject to the approval of the Council, and requests the Collector to handover possession of the area already notified pending award of compensation.	

POONA CITY SLUM CLEARANCE SCHEME  
BOMBAY

*Review of flow sheet:*

The flow sheet for the work is attached. The schemes sent originally by the State Government for Poona city were not complete. Two of the schemes had to be sent back to the State Government. The State Government took up a part of one of the schemes for construction and then applied for *post facto* sanction.

The other part of the scheme which was received and sent to Central Government was also lacking in many details. The estimate was incomplete. The Central Government had to send for some of their engineers for a discussion in Delhi. As a result of discussion the estimate was cut down from Rs. 4600 to Rs. 4150 per tenement. This only shows that the original estimate was defective.

Three other schemes were sanctioned by the Government of India and disbursement of funds was also made. No progress report has been received from the State Government so far.

*Comment on scheme*

A few Housing Plans are available. The internal walls can be reduced in thickness. Privacy of rooms could be improved by lowering the balcony.

*Slum Clearance Scheme of Poona City, Bombay State*

Date	Events	Remarks
17-6-1957	Five schemes received from the Bombay Government costing Rs. 60 lakhs (sanction was limited to yearly allocation).	
29-6-1957	Central Government writes to the Bombay Government to outline the projects to be taken within the amount of the allotment for the year 1957-58. The total allocation for 1957-58 for Bombay State is Rs. 36 lakhs.	
19-7-1957	Reply received from the Bombay Government. The State Government wants 3 out of 5 to be sanctioned.	
5-8-1957	Central Government returns two of the three schemes intended to be taken up by the State Government with the same comments.  (a) No independent bath and W.C. provided. (b) Lay-out not satisfactory (Model lay-out was also sent by the Housing Adviser). (c) Building estimates not given.	
30-8-1957 & 6-9-1957	The remaining 3 out of the 5 projects sanctioned. Central Government asks Bombay Government to take up these 3 for execution.	
4-10-1957	State Government took up a part of one of the two projects returned by the Central Government for construction and asked for <i>post facto</i> sanction.	
22-11-1957 & 29-11-1957	The remaining portion of the two original returned, revised and submitted to the Central Government.	
19-12-1957	<i>Post facto</i> sanction to the project taken up for execution accorded on the basis of old ceiling.	
21-12-1957	The revised project was also lacking in certain respects. The cost was high. The estimate was not in order. Central Government suggested that an Engineer from Poona might come over to discuss with the Housing Adviser.	

Date	Events	Remarks
23-12-1957	WH&S Ministry asked the State Government regarding disbursement of funds for the 3 projects sanctioned in August and September.	
12-1-1958	Demand for Rs. 95,000 received from the State Govt.	
17-1-1958	An Engineer from Poona came and discussed the case with Housing Adviser. The cost of tenement was cut down from Rs. 4600 to Rs. 4150. Even Rs. 4600 was not a correct figure. It should have been Rs. 4950. The total cut for a tenement was, therefore, Rs. 800. The State Government was requested to revise the estimates and submit for sanction.	
23-1-1958	Central Government authorised disbursement of Rs. 95,000.	

NOTE : No progress report received though some portion of the work has been started.



## AHMEDABAD CITY SLUM CLEARANCE SCHEME BOMBAY STATE

### *Review of flow sheet*

The flow chart is attached. Five schemes were submitted by the State Government to the Central Government in November, 1956. These were sketchy. The Housing Adviser discussed the schemes with the municipal officers in January, 1957 and model layout plans and estimates were sent to the corporation in April, 1957.

The State Government has submitted the revised scheme in November. The revised schemes include 22 projects costing Rs. 3.26 crores while the total allocations for the Bombay State in the Second Five Year Plan is only Rs. 4.29 crores. The Central Government, therefore, has requested the State Government to make suitable internal allocation among the three districts, namely, Bombay, Poona and Ahmedabad where slum clearance work will be taken up in the Second Five Year Plan. In spite of several reminders and D.O. letters from the Minister himself no reply has been received. More than a year has passed since the scheme was first submitted to the Central Government, but their sanction is still awaited.

### *Comments on the scheme*

The Municipal Corporation prepared 7 types of plan for slum clearance housing. Six of them are for three storeyed construction and one for single storeyed construction. In all the three-storeyed plans the balcony which serves as access to the houses is at the same floor level. With this arrangement it is very difficult to have privacy in the quarters. Taking balcony at a lower level by about 2 feet or so could have secured privacy. This in fact has been successfully attempted in Swadeshi Mill Quarters, designed by Dr. Episcopo. Even the slum clearance plan proposed by the Calcutta Improvement Trust incorporates some of the good features. It may be better to adopt that plan straight away in the case of Ahmedabad also.

In most of these plans, the door-openings and position of rooms are such that there is necessity of providing RCC columns at many places. This can be avoided by better planning or door openings.

*Slum Clearance scheme of Ahmedabad City  
Bombay State*

Date	Events	Remarks
11-11-1956	Five schemes received by the Central Government. The schemes were completely sketchy.	
1-1-1957	Housing Adviser discussed personally the schemes with the municipal authorities at Ahmedabad.	
4-4-1957	Five schemes returned back to State Government. Model Plans and estimates supplied by the Housing Adviser.	
7-9-1957	Municipal Corporation of Ahmedabad agreed to revise the schemes as desired by the Central Government.	
1-11-1957	Revised schemes received from the Bombay Government. The schemes include 22 projects costing Rs. 3.26 crores.  Central Government asked the State Government for internal allocations among the 3 cities, namely, Bombay, Poona and Ahmedabad.	
1-12-1957	Central Government wrote to State Government that the internal allocation should be decided before 18th December. H.A., WH&S writes a D.O. to Bombay Housing Minister for internal allocation.	
1-1-1958	Reminder from H.A., WH&S.	

NOTE : No scheme has been sanctioned.

## SLUM CLEARANCE SCHEME, BANGALORE CITY

### *Review of flow chart*

The flow chart of the work is attached. Five schemes for slum clearance were submitted by the State Government in December, 1956, but these did not give sufficient details. Even the layout plans were not sent. The Central Government, therefore, returned the schemes in March, 1957, for revision.

A second batch of schemes was received in March, 1957 and they had also to be sent back in June, for revision. The State Government did not submit the revised schemes till November, 1957 in spite of several reminders and D.O. letters from the Ministry as well as the Minister himself.

As a result of the discussions, the Dy. Housing Adviser had at Bangalore early in November, 1957, the entire scheme had to be revised. The total number of schemes was reduced from 25 to 14. Six of the revised schemes were sent to the Central Government in November, 1957 and they were sanctioned by the Central Government in December, 1957. The other schemes have not yet been received in spite of reminders from the Central Government. Only one more revised scheme has been received on the 30th January, 1958.

The State Government has lost valuable time by submitting incomplete schemes. Further, the State Government has not planned the schemes properly. Complete revision had to be effected in November as a result of the discussion with the Housing Adviser. No scheme appears to have been taken up yet though more than a year has elapsed since the schemes were initially submitted to the Central Government for sanction.

*Flow Chart of Khader Sheriff Garden Area Slum Clearance Scheme,  
Bangalore*

Date	Events	Remarks
21-5-1954	• Intimation to the Corporation of the initiation of the slum clearance scheme at Bangalore.	
24-6-1954	• State Government approached to move the Government of India for sanction of grants and loans for slum clearance schemes.	
13-7-1954	• Detailed proposals with plans and estimates called for by the State Government.	
18-9-1954	• Corporation reminded by the State Government to submit plans and estimates.	
17-4-1956	• Resolution of the Corporation to improve slum at Khader Sheriff Garden, situated on private land.	
4-9-1956	• Valuation Statement (Rs. 44,275/-) for land acquisition sent by the Corporation Engineer to the Corporation Commissioner.	
18-10-1956	• Proposal for land acquisition for Khader Sheriff Garden put up to the Town Planning Committee.	
13-11-1956	• Five projects for slum clearance, as received from the Corporation Engineer put up to the Works Committee of the Corporation.	
29-11-1956	• Works Committee recommended to the Corporation for approval of the scheme. Five estimates approved by the Corporation and sent to State Government.	
1-12-1956	• First batch of five projects of slum clearance sent by the State Government to the Central Government.	
31-12-1956	• Proposal for land acquisition recommended by the Town Planning Committee to the Taxation and Finance Committee.	
16-1-1957	• Recommendation of the Taxation and Finance Committee to the Corporation for approval of land acquisition.	
1-3-1957	• Second batch of 12 projects sent by the Corporation to the State Government.	

Date	Events	Remarks
4-3-1957	Schemes received back from the Central Government by the State Government with the following comments :—	
	<ul style="list-style-type: none"> <li>(a) Lay-out plans not sent.</li> <li>(b) Bath and W.Cs. are not provided . as envisaged in the Government of India scheme.</li> <li>(c) Wire fencing to be provided around plot.</li> <li>(d) Cost of building materials to be given to dwellers not indicated.</li> </ul>	
22-3-1957	Second batch of 12 projects sent by the State Government to the Central Government.	
14-6-1957	• Second batch received back from the Central Government by the State Government with the same comments as for the first batch.	
14-6-1957	• Corporation approved the proposal of land acquisition for Khader Sheriff Garden.	
1-7-1957	• Land acquisition plans for Khader Sheriff Garden called for by the Commissioner from the Engineer.	
12-7-1957	• Comments of Government of India on the second batch communicated to the Commissioner for replies.	
26-7-1957	• D.O. reminder of the Central Government communicated to the Commissioner by the State Government for expeditious reply.	
30-9-1957	• Reminder from the State Government to the Commissioner to return the two sets of schemes with replies.	
23-10-1957	• Suggestions of the Government of India for the preparation of correct estimates and plans, communicated to the Commissioner.	
26-10-1957	• Telegraphic reminder from the Minister of Works, Housing and Supply to the Chief Minister of Mysore—Communicated to the Commissioner.	
4-11-1957	Deputy Housing Adviser of the Government of India had discussions with the officials of the Corporation.	
& 5-11-1957		

Date	Events	Remarks
13-11-1957	. First batch of six estimates framed in the light of discussions with the Deputy Housing Adviser sent by the Commissioner to the State Government.	
16-11-1957	. State Government submitted the six estimates to the Central Government for Khader Sheriff Garden.	
29-11-1957	. Land Acquisition plan received by the Commissioner from the Corporation Engineer.	
20-12-1957	. Orders of the Commissioner to issue Notification for Land Acquisition for Khader Sheriff Garden slum scheme obtained.	
27-12-1957	. Central Government sanctioned six estimates.	
11-1-1958	. Central Government's sanction communicated by the State Government to the Commissioner.	
13-1-1958	. Second batch of one revised scheme sent by the State Government to the Commissioner.	
24-1-1958	. State Government submitted the second batch to the Central Government.	
4-2-1958	. Commissioner addressed the Corporation Engineer to intimate the amount of budget provision for the year for this Scheme—Khader Sheriff Garden.	

NOTE 1. So far, six slum clearance schemes have been sanctioned—four slums are in private lands and two in the Corporation lands.

2. Valuation statements for three slums on private lands are under preparation by the Corporation Engineer. These slums are in city limits and the Corporation Commissioner is competent to acquire them.

## SLUM CLEARANCE SCHEMES OF UTTAR PRADESH

### *Review of flow chart*

The flow sheet for the work is attached. Schemes for 5 cities in U.P. estimated to cost Rs. 5.24 crores were submitted to the Central Government in August, 1957. The detailed site plans and estimates were not sent. Only one scheme in Lucknow was submitted in detail and that was taken as a basis for estimating purposes.

The Central Government had to send for some of the officers of the State Government for a discussion. As a result of discussions, one scheme in each city was prepared in detail. The schemes were sanctioned limiting the Central Government share to Rs. 1.47 crores.

The Central Government had to remind the State Government even in regard to the disbursement of funds. The State Government had again given a bulk amount without making city-wise allocation. No work on any scheme has been started anywhere as yet. From the files, it is understood that only land acquisition proceedings are being proceeded with.

### *Comments on schemes*

As far as Kanpur is concerned, the proposal is to put up 3276 tenements at Rs. 3,700 each. Work has not yet started.

It is proposed to utilise the plans evolved for the industrial housing scheme for slum clearance housing also. Most of the plans are for double-storeyed construction. These have been prepared by the Housing Adviser and they are generally in order. But there is one plan for three storeyed construction in which the access balcony is at the floor level. Privacy could have been obtained by lowering the balcony.

The window openings and door openings are such that R.C.C. work in columns may be quite considerable. Rearrangement of rooms and openings is necessary.

### *Flow Chart of Slum Clearance Schemes of Uttar Pradesh*

Date	Events	Remarks
21-8-1957	Schemes costing Rs. 5.24 crores for five cities, Agra, Kanpur, Allahabad, Varanasi and Lucknow received by Central Government.	
26-9-1957	Central Government requested that an official from State Government might come to Delhi for discussions as the total cost of the project was much more than the total allocation of Rs. 1.96 crores for the State. Further, there were no estimates or layout plans for the various schemes in the various cities. Only one scheme of Lucknow city was given and that was taken as the basis for all the rests.	
1-10-1957	Shri K. N. Mishra, Town & Village Planner of U.P. came to Delhi for discussions. It was decided that a typical scheme for each city must be prepared and cost per tenement worked out. That would be taken up as the basis for sanctioning all the schemes of a particular city.	
17-12-1957	All the schemes sanctioned at ceiling cost limiting the Central Government's share to Rs. 1.47 crores.	
3-1-1958	Central Government asked the State Government regarding disbursement.	
25-1-1958	State Government requested for disbursement of Rs. 12 lakhs in bulk. City-wise allocation not given. The State Government indicated that land acquisition proceedings had been taken up. This was being processed by the Ministry of WH&S.	

NOTE :—As far as Kanpur is concerned, the proposal is to put up 3276 tenements at Rs. 3,700 each. The work not started. It is understood that it is still in the land acquisition stage.



## SLUM CLEARANCE SCHEME OF CALCUTTA IMPROVEMENT TRUST

### *Review of flow sheet*

The flow chart of the work is attached. The scheme was first submitted to Central Government in July, 1957. The scheme envisages construction of 896 tenements at an estimated cost of Rs. 56.45 lakhs. The Ministry returned the scheme to the State Government in August, 1957 requesting them to lower the density as the density was much higher than 100. The revised plan was received by the Central Government in September, 1957. In October, 1957, the Central Government sanctioned 800 tenements only out of a total 896 tenements at a ceiling cost of Rs. 6,000 per tenement.

The State Government has not asked for disbursement of funds and the work does not seem to have been started.

### *Comments on the scheme*

The rehousing sites are fairly near. The area of roads comes to 24 per cent which is on the higher side. The area of open space provided is also less.

As far as the buildings themselves are concerned they are all four storeyed, ground and 3 upper floors. A good feature is the provision of approach balcony at a lower level. The space utilisation is also good. The adoption of this plan even in places like Ahmedabad or Bombay is recommended.

*Flow Chart of the Slum Clearance Scheme of Calcutta Improvement Trust.*

Date	Events	Remarks
30-7-1957	A scheme of Calcutta Improvement Trust for constructing 896 tenements at the cost of Rs. 56.45 lakhs received by the W.H. & S. Ministry.	
8-1957	W.H. & S. Ministry returned the same to the State Government. Density was very high.	
9-1957	Revised plan received by the Central Government. This envisaged the construction of 888 tenements at the cost of Rs. 53.28 lakhs.	
20-10-1957.	The Central Government sanctioned the construction of 800 tenements at a ceiling cost of 6,000 rupees per tenement. Only 800 tenements were sanctioned out of 888 to keep down the density.	
11-1957 to 12-1957	Reminder from the Central Government regarding disbursement.	

NOTE : Work does not seem to have been started at all.

### APPENDIX III

#### RULES OF BOMBAY MUNICIPAL CORPORATION REGARDING IMPROVEMENTS TO BUILDINGS UNFIT FOR HUMAN HABITATION

In the Bombay Municipal Corporation Amendment Act, 1954, two new Sections 378-A and 378-B have been included empowering the Corporation, either to require the owners of buildings used for human habitation to execute such works or carry out such alterations as are considered necessary to render the buildings fit for human habitation, or to order their demolition if they are not capable, at reasonable expenditure, of being rendered fit for human habitations.

2. In order to implement the provisions of these Sections, the Act empowers the Corporation, under Section 378-D, to frame regulations for determining standards for fitness of such buildings. The standards of fitness to be made applicable to the old buildings, a large number of which were built when there were no building bye-laws cannot naturally be as rigid as those enforceable under the existing building bye-laws, as the objective of the new Sections is to improve the living conditions in old sub-standard buildings, by providing facilities of water supply, ventilation, means of access, safety of structures, etc. In taking a view as to the fitness of a building for human habitation, the following considerations are important:—

- (a) Good state of repair and freedom from dump and rot.
- (b) Adequate size of rooms and tenements.
- (c) Natural lighting and ventilation for every room.
- (d) Adequate water supply laid on inside or near the tenements on each floor.
- (e) Internal or otherwise readily accessible water closet and bath room on each floor.
- (f) Internal nahani or sink in every kitchen.
- (g) Satisfactory facilities for preparation and cooking of food in every kitchen.
- (h) Proper drainage system within the premises.
- (i) General sanitation of open spaces.
- (j) Provision of electric lights wherever possible.

3. The accompanying draft regulations have accordingly been framed and are proposed to be made applicable to all old buildings in the city whether in slums or other localities.

4. In accordance with what has been under consideration for sometime, it has been arranged to make a survey of all old buildings in the city, especially those in A, B, C and E wards and parts of D, F and G Wards, in order to obtain a correct picture of the existing situation regarding housing accommodation in the city. This survey will furnish details regarding the physical condition, the type and the extent of accommodation in these old buildings, deficiencies of essential services, etc. Apart from providing invaluable data for formulating a programme for slum clearance schemes and for new house building projects, the survey will also reveal the number of buildings capable of being rendered fit for human habitation by taking action under Section 378-A and of buildings which must be demolished by taking action under Section 378-B.

5. Financial difficulties, the disproportionately high cost of repairing very old buildings, and excessive wear and tear due to overcrowding are the main factors which have contributed to bring many old buildings to their present state of disrepair. The salvage of a proportion of these buildings does not now appear practicable and they will have to be demolished. Other buildings, although regarded as unfit for human habitation as judged from present standards could be rendered fit by improvements, as their structural condition is relatively satisfactory. An all-round effort must be made to retrieve them as far as possible. In this connection, a practical way of giving an incentive to owners to undertake additions, alterations, improvements and conversions in pursuance of the provisions of Section 378-A would be by offering them an 'improvement subsidy.'

6. These 'improvement subsidies' will be on the lines of grants-in-aid of improvements and alterations, which local authorities in U.K. are empowered to make under the Housing Act, 1949, and Housing Repairs and Rents Act, 1954, in order to subsidise current building cost and make many old buildings habitable. Such subsidies must necessarily be subject to certain specified conditions. It is suggested that the grant of improvement subsidies should be governed by the following:—

- (a) Any building for being eligible for a subsidy must provide satisfactory housing accommodation for at least 15 years after essential improvements, alterations and conversions have been carried out for bringing it upto the minimum standards.

- (b) Subsidy will be paid only for housing accommodation made available for letting and not that intended for sale.
- (c) Properties in Scheduled Clearance Areas will not be considered for a subsidy. Only buildings in other areas, and used primarily for residential purposes, will be considered eligible for subsidy.
- (d) Subsidies will be available to any owner who is willing to improve the existing accommodation in his building to bring it upto the required standards for the general benefit of occupants, on a voluntary application from the owner or an application in pursuance of the service of Notice under section 378-A.
- (e) The amount of subsidy will be not more than 50 per cent of the cost of improvement and/or conversion, or Rs. 500 per tenement so improved or converted, whichever is less.
- (f) As the subsidies are intended for the modernisation of old buildings, they will be available only for the improvements and conversions and not for ordinary repairs and maintenance.

7. The following items of improvements and/or conversions will be eligible for the grant of subsidies:—

- (a) Providing adequate water supply facilities inside or near the tenements on each floor.
- (b) Putting in a bathroom or water-closet wherever these are inadequate or non-existent.
- (c) Converting to a water-closet system from a privy system and connecting to main drainage.
- (d) Providing a nahani sink or a cooking platform in kitchens.
- (e) Works carried out for removing any fundamental defects in a structure, such as—
  - (i) Changing the levels of ceilings, floors or roofs in order to get a proper ceiling height for rooms.
  - (ii) Putting in a new staircase of adequate modern standard to replace an old one.
- (f) Providing adequate open spaces for the lighting and ventilation of rooms and the opening up of chowks.

- (g) Making new windows or enlarging the size of existing small windows to improve natural light and ventilation.
- (h) Enlarging the sizes of rooms or tenements to adequate standards.
- (i) Converting a non-residential building into self-contained units.

8. The following further conditions will govern the subsidy scheme:—

- (a) Plans and estimates for the proposed works must be submitted to the Municipality for approval through a licensed surveyor.
- (b) The amount of subsidy in respect of the expenses incurred for the purposes of the execution of any improvement and/or conversion works will be determined by the Municipality, after the plans and estimates are approved and will be related, in all cases, to the actual expenditure incurred as determined by the Municipality on the planned works. The approval of these plans and estimates and the determination of the actual expenditure incurred is proposed to be entrusted to the Planning Engineer, proposals about whom have been separately submitted to the Corporation.
- (c) Subsidy will be paid either after the whole work is completed or by instalments during the progress of a work to the extent of not more than 50 per cent of the estimated cost of the work done up to that time.
- (d) The subsidy in whole or in instalments will be paid on condition that the works are executed to the satisfaction of the Municipality and that the new accommodation will be always kept fit for human habitation by regular ordinary repairs and be available for occupation as dwellings by tenants.
- (e) No sub-letting shall be resorted to by the landlord in respect of the improved tenement for which a subsidy is granted.
- (f) Sanction of the Municipality for the subsidised work must be obtained before commencing the work. The subsidy will not be given for work already done without such sanction.

(g) The rent of the improved or converted building will be fixed under the Rent Act taking into account the character and condition of the dwelling after conversion or improvement and the amount of money the owner has spent on such works from his own pocket. The subsidy will be excluded from consideration for fixing the maximum rent.

9. Approval of the Works Committee and the Corporation is now requested (1) to the accompanying regulations framed under Section 378-D of the Act, for determining the standards of fitness for improving sub-standard dwellings, and (2) to the payment of subsidy to the extent of 50 per cent of the expenditure incurred by the owners being made from Municipal Funds in approved cases.

10. A provision of Rs. 10 lakhs is envisaged in the Budget Estimates of 1957-58 for the payment of subsidies under this scheme.

11. This may please be treated as "Urgent Business."

Draft regulations under the newly enacted Section 378-D of the Bombay Municipal Corporation Act for determining the fitness of existing buildings for human habitation, above referred to:—

"These regulations" shall apply to existing buildings for determining their fitness for human habitation. An existing building is "Unfit for human habitation" when it does not comply with the existing bye-laws in force and may be considered fit for habitation when it is made to comply with these regulations, to the extent demanded by the Municipal Commissioner.

*Expressing terms:*

In the construction of the regulations hereinafter contained, the words and expressions used shall have the meanings respectively assigned to each or collectively to them, as the case may be, as per the definition of terms in Section 3 of the Bombay Municipal Corporation Act and the interpretation of terms mentioned in the Building Regulations and Bye-laws enacted under the provisions of Section 461 of the Act, unless such meaning is repugnant to, or inconsistent with, the context of subject-matter in which such words or expressions occur.

In addition to the interpretation of terms mentioned in Section 3 of the Act and in the Building Bye-laws framed thereunder, for the construction of these regulations, the following words and expressions shall have meanings assigned to them:—

"Existing Building" means a building existing on the date on which these regulations come into force.

"Habitable room" means a room constructed, adapted or used for human habitation, such as, a living room, bed room, kitchen, etc.

"Open air space" means a space unbuilt upon, without covering and open to the sky.

"Sanitary Defects" include lack of air space or of ventilation, inadequacy of living space, darkness, dampness, absence of adequate and readily accessible water supply or sanitary accommodation or of other conveniences, in adequate paying or drainage of open spaces, passages or accesses.

"Site" includes not only the land actually covered by the building, but also the land at the front, rear and sides of such building required to be left open and the words "Inseparable part of site" means that part of the site, which is the property of the owner of the land, on which the building stands.

A person shall be deemed to do, or omit or fail to do, any act or thing mentioned in these regulations when demanded, when he does or omits or fails to do such act or thing, either in the capacity of an owner, agent of an owner, contractor, builder, structural designer, architect or engineers or persons in-charge of any building construction or alteration work.

*Meaning of access:*

(1) Every building shall have a means of access to such building, unless it abuts on a street, on a pathway not less than six feet in width from a street to the door of such building, such pathway to be so long as it is used as a means of access to the building, kept, levelled and paved and accessible at all times free from any obstruction.

*Level of plinth:*

(2) Every building shall have the whole of its lowest flat or ground floor at least 1'-6" above the level of the centre of the street on which the building abuts or 1'-6" above the ground within a distance of five feet of such building.

Every plinth shall be kept in good repair and reasonably water-tight:

*Walls:*

(3) Every exterior wall shall be free of holes, breaks and other conditions which might admit rodents, rain or dampness, to the interior portions of the walls or to the interior spaces of the building.



*Flooring:*

(4) Every water-closet, urinal, washing or bathing place and water room and every portion of the ground floor and every part of each floor, and every communicating passage and verandah on each floor will be laid or paved with stone-slate or non-absorbent tiles laid in cement coba or other durable materials impervious to moisture, and shall be easily cleanable.

*Front and rear open spaces:*

(5) When a building does not abut on a street, the Commissioner may insist on front and rear open spaces of at least 5' in width for the entire front and rear of the building.

*Open air space and ventilation of rooms:*

(6) At least one side of every room (including every kitchen room) in a building shall abut throughout its entire length on an open air space or on a verandah or communicating passage abutting on open air space of minimum width in accordance with the following scale:

Minimum width of open air space through the entire length of room or rooms.—8 feet.

Where height of building (above plinth), adjoining the open air-space does not exceed.—22 feet.

10 feet.....44 feet.

12 feet.....55 feet.

14 feet.....66 feet.

Provided, however, where more than one side of a room abuts on an open air space not less than 5 feet in width, the minimum width of each of such open air spaces may be reduced by 4 feet subject to a minimum of five feet. The open spaces so provided shall be free of all encroachments or projections excepting cornice of a width of 9"

*Dimensions of rooms:*

(7) Every habitable room shall have a clear superficial area of not less than 100 sq. ft. and shall not be of a greater depth than 20 feet from the side abutting on the open air space provided for its ventilation. No habitable room or a part thereof shall be used for the purpose of a kitchen unless the superficial area of such a living room is more than one hundred forty square feet and a portion is partitioned off by a wall not more than 5'—6" in height. The portion thus partitioned off shall have an area equal to one-third the area of the living room.

Provided, however, if a room is exclusively to be used as a kitchen, it shall have an area of 60 square feet.

The width of a room used either as a living room or as a kitchen shall not be less than 7 feet on the side abutting on an open space left for its air and light.

*Height of rooms:*

(8) Every room (including every kitchen room) in a building except a room in the roof shall not in any part be less than 8'-6" in height from the floor to the ceiling.

Every room in the room of such buildings shall have a minimum height of not less than 5'-6" and an average height of at least 7'-6" when the roof is a pitched one. In case of a flat or terrace roof, the height shall not be less than 8'-6".

*Means of ventilation of rooms:*

(9) In the side of every room (including every kitchen room) abutting on the open air space or on a verandah, or gallery or passage abutting on an open air space left under regulation No. 5 shall be provided for the purpose:—

- (i) A window or windows having an opening of not less than one tenth of the floor area of the room; and
- (ii) an aggregate opening of not less than one seventh of the floor area of the room consisting of a window or windows and a door.

Such openings provided as per this rule shall, under no circumstances be covered or closed by mattings, tarpaulins, etc.

Every exterior window shall be kept in good repaired condition, and its shutters shall properly fit within its frame.

Every door when closed shall properly fit within its frame.

Every window on the south and west sides of the room shall be protected by a weather frame of a least 2'-6" width properly supported.

*Through ventilation:*

(10) In a back to back room in addition to any other means of ventilation required by these regulations, every such room shall have a ventilator of at least three square feet in area near the top of each of two of the walls of such room and such ventilators shall be, as far as practicable, opposite to each other. In the case of an upper room or rooms, one of such ventilators may be a ridge ventilator of ventilating tile or tiles.

*Requisition of kitchen:*

(11) Every kitchen shall be provided with a nahani in a good working condition with a water tap and shall be properly connected to the drainage system as per drainage provisions of the Act and the rules and regulations framed thereunder, provided that in every separate kitchen of a double-room tenement or of a tenement containing more than two rooms, there shall be a bath room the minimum internal dimensions of which shall be 4' x 4'.

*Staircases:*

(12) Every principal staircase in a building shall be of fire-proof construction and of a minimum clear width of 2'-6" with treads in no part less than 10" and risers not exceeding 9" and shall have a hand rail of not less a height than 3 feet securely fixed.

When a staircase construction is winding at places or a staircase is of a winding type the width of the tread shall be measured at 18" from the smaller end of tread and shall be 10".

Every flight of a staircase and the hand-rails shall be firmly fastened and shall be maintained in good condition. No flight of a staircase shall have rotting or deteriorating supports.

Treads of every flight of a staircase shall be sound and securely fastened in position.

*Ventilation of staircase:*

(13) Every principal staircase in a building shall have an aggregate area of opening of 12 sq. ft. on each floor in such of the wall or walls of the staircase room as abut on an open air space of not less than 6 feet in width.

*Passage and corridors in building:*

(14) Every passage in a building shall be adequately lighted and ventilated from an external open space to the satisfaction of the Commissioner.

Every corridor in a chawl shall be kept open to the open air at each of its ends. Every such corridor of more than fifty-five feet in length shall have at intervals of not more than fifty-five feet an opening of not less than six feet square communicating wholly with the open air.

*Provision of light:*

(15) Every staircase, common passage, corridor or lobby and every common water-closet, bath room, urinal and washing place shall be adequately lighted at night by an adequate number of electric lights or by any other lighting system.

*Sanitary accommodation:*

(16) Every building shall have—

(a) adequate water-closet accommodation and washing places; and

(b) a supply of water for domestic use adequate for the use of and readily accessible to persons by whom the building is occupied.

The adequacy of sanitary accommodation should be as per Municipal Buildings Regulations and Bye-laws.

Provided, however, that it shall be competent for the Commissioner to reduce the requirements as the exigencies of a case may demand.

(17) In every building of single room tenements, there shall be provided one water-closet, one closed bath-room (of at least 16 sq. ft. area) or urinal (of at least 9 sq. ft. area) one general washing place (of at least 24 sq. ft. area) with two water taps and one metal dust bin (of adequate size and with a close fitting cover) for every four single room tenements.

Every such general washing place on any floor, if not otherwise covered on top, shall have a roof over it.

(18) In every building of double-room tenements, there shall be provided one water-closet, one closed bath-room (of at least 16 sq. ft. area) or urinal (of at least 9 sq. ft. area), one general washing place (of at least 24 sq. ft. area) with two water taps and one metal dust bin (of adequate size and with a close fitting cover) for every three double-room tenements. Every such general washing place on any floor, if not otherwise covered on top, shall have a roof above it.

*Drainage:*

(19) Every means of drainage, every water-closet, nahani sinks, washing place, bath-room, urinal and all sanitary appliances in a building shall be in good repair.

*Water supply lines:*

(20) Water supply lines shall be in good repair and located so as to be free from contamination.

**Roof:**

(21) Roof and roof gutters shall be water tight and free from defects which admit rain water into the building.

**Wall, plaster, etc.:**

(22) The outer surface of every external wall shall be either cement pointed or plastered with cement mortar so as to make it impervious to moisture.

The inner surface of every external wall and both surfaces of every internal wall shall be plastered with lime or cement mortar.

Every external surface of a wall, or ceiling or of any wood-work in every building shall be kept in a wholesome and sanitary condition and shall be colour washed, oiled or oil-painted.

In matters not specifically mentioned in these rules, the Building Rules and Regulations shall apply.

**Power to waive or modify requirements:**

Notwithstanding anything contained in these regulations, it shall be in the discretion of the Commissioner to modify in respect of a building any dimensions or requisitions prescribed by any such regulations if in his opinion the enforcement would be unreasonable in relation to any particular case, but subject to such conditions, if any, as he may think fit.

## APPENDIX IV

### NOTE ON TYPICAL PLANS FOR SLUM CLEARANCE SCHEMES

#### *Hyperbolic paraboloid roofs for residential buildings:*

The economic factor has always been of the utmost importance in the progress of science. In the field of buildings, this has given rise to various refinements in structural theory and practical building construction. The development of shell not roof is an off-shoot of the principle of 'shape engineering'. Concrete being extremely flexible in its application it can be cast into any shape. Advancement in concrete technology has given a considerable fillip to 'shape engineering'. The shell construction is an excellent example of 'shape engineering' where maximum structural advantage is derived from the shape.

Of all the shapes for shell structures the hyperbolic paraboloid has a number of advantages. The calculations for this shell are simpler. The construction is very easy. The form work required is simple as it consists only of straight planks. The foundation is reduced to a minimum. A plan envisaging the use of hyperbolic paraboloid for roofs of houses is given in Plate 1.

#### *Plate I*

The Plan shows the enclosure 25'×30' with hyperbolic paraboloid roof supported on four corner columns. The idea can be conveniently divided into two and internal partitions can be arranged at will. The area of each house this way will be 375 sft. The internal walls will be separately provided in the compound.

The main consideration for the adoption of this type of roof is the economy that is effected in the consumption of steel and cement. Compared to conventional house, with brick masonry walls and RCC slabs this structure would require 15 to 20% less cement and about 30 to 40% less steel.

From the point of view of construction, the hyperbolic paraboloid offers very little difficulty. The centering can be of straight planks and with greater repetition, the cost of construction can be further reduced. Rapidity of construction, greater flexibility in arrangement of internal walls, lesser consumption of scarce materials are some of the advantages of this type of construction.

From theoretical calculations, the reinforcement required for hyperbolic paraboloid type of shell comes to be always higher than what is actually necessary. Prof. Nervi suggested that by making

load tests on the roofs the reinforcement should be progressively reduced.

The shell roofing can be adopted even in seismic zones. Engineering studies made after the recent earthquake at Mexico City have also revealed the resistance of thin membrane roofs to seismic forces. The Panel feels that there is scope for the adoption of this type of structure in Assam for the low income group housing and for slum clearance housing schemes. As the requirement of cement and steel in this case is less, there is a specific advantage in adopting this structure in Assam, where the cost of these materials is very high due to transport difficulties.

Prof. Nervi suggested that good amount of thermal insulation could be obtained with the help of thatch over the hyperbolic paraboloid roof. This will be quite effective and less expensive than any other method of insulation.

#### Plate II

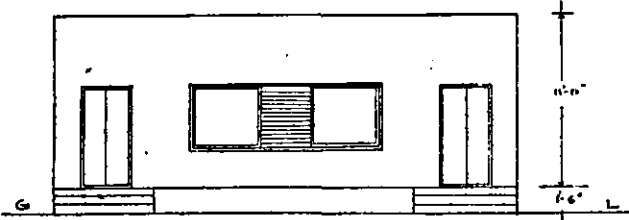
The Plan shown here has been evolved by the Central Buildings Research Institute. The roof will have precast shell units measuring 4'x4', the size being determined with due consideration for manual handling. The body of the shell contains no cement or steel. The shell unit is made of lime surkhi concrete 1:0:5:1:6 (lime: surkhi: Brickjelly maximum  $\frac{1}{2}$ " gauge) by volume with enough water to make the mix workable. A small quantity of cement (usually 10% of lime content by volume) is added to avoid cracks. A simple method of casting these double curved shell units has also been devised.

The units are to be used in conjunction with precast R.C.C. planks and *in situ* concrete. Details are shown in the drawing Tests on Individual units and on full scale roof made of such units have been conducted at the Institute and the results of tests have indicated that the roof is more than amply safe.

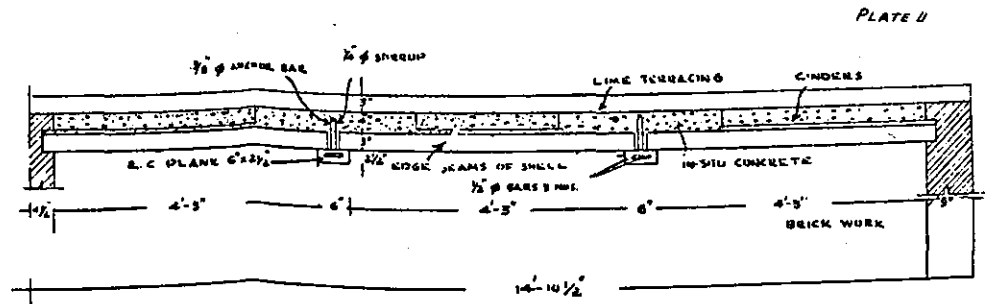
It is estimated that with this type of roofing the saving in cement & steel in comparison to the conventional type of 4" thick R.C.C. slab will be to the extent of 40% and 45% respectively.

#### Plate III

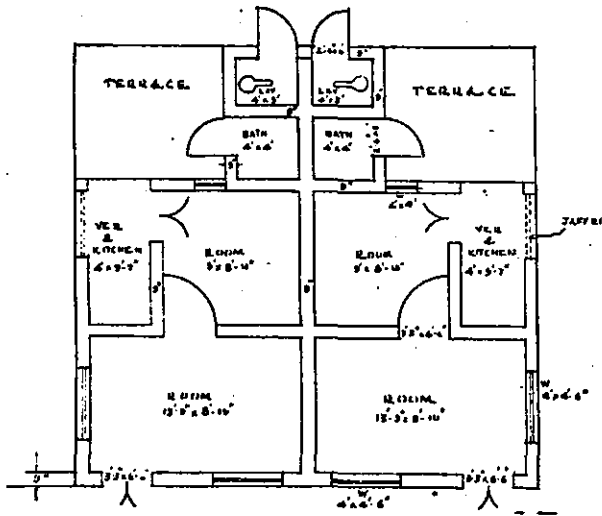
In congested cities like Bombay and Calcutta, multi-storeyed construction becomes inevitable. Normally, a straight pattern is adopted. A different design is given in this plate. The star-shaped lay-out ensures greater ventilation and light and leads to economy in circulation space and in services.



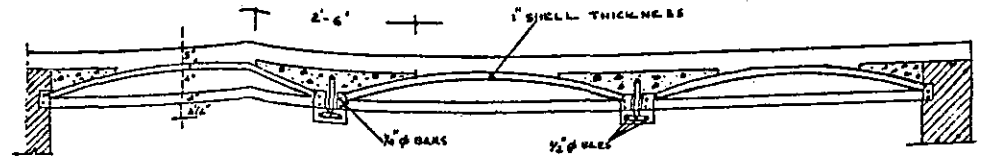
**ELEVATION**  
SCALE - 1/4" TO AN INCH



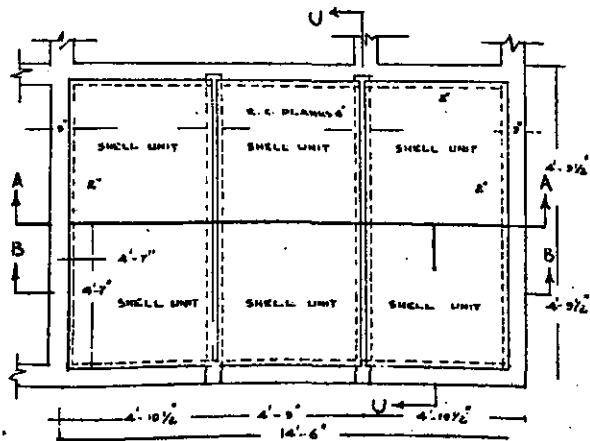
**SECTION A-A**  
SCALE - 1" TO A FOOT



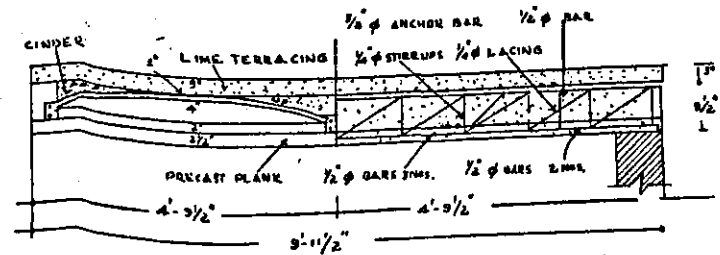
**PLAN**  
SCALE - 1/4" TO AN INCH



**SECTION B-B**  
SCALE - 1" TO A FOOT

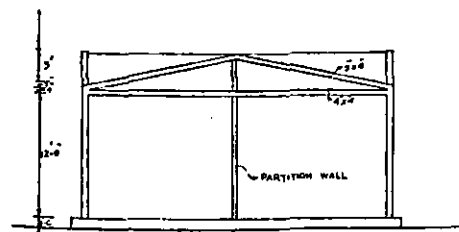
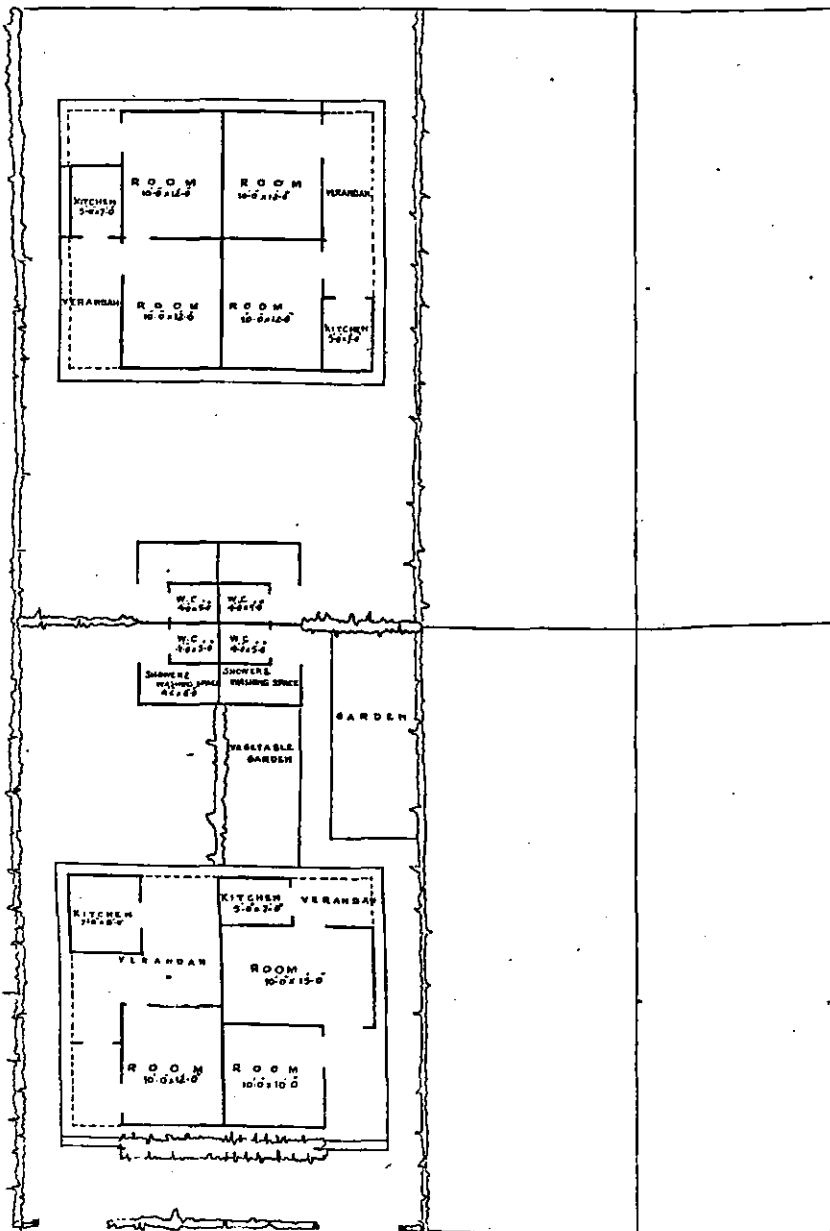


**PLAN OF ROOF**  
(FOR ONE ROOM ONLY)  
SCALE - 1/4" TO AN INCH

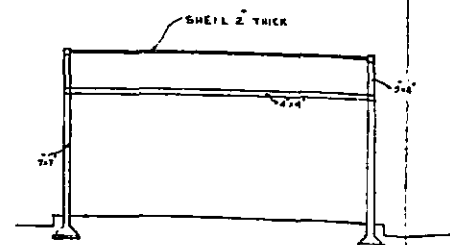


**SECTION C-C**  
SCALE - 1" TO A FOOT

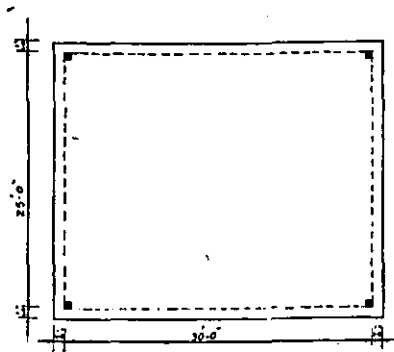




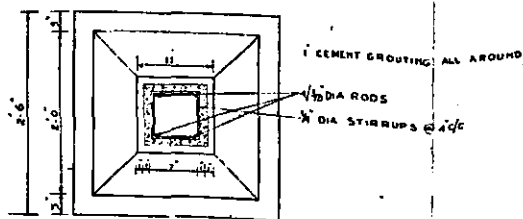
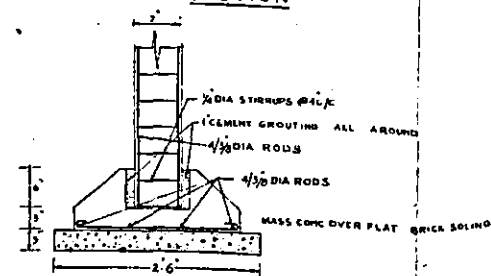
ELEVATION



SECTION



PLAN

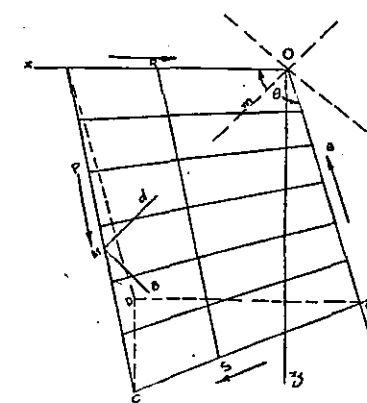
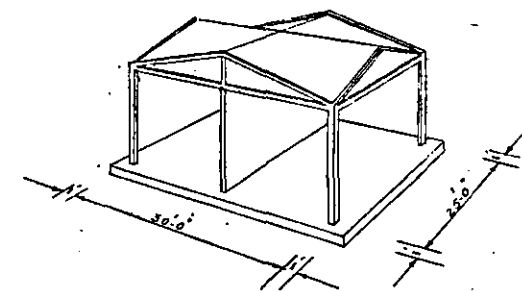


DETAIL OF PRECAST FOUNDATION

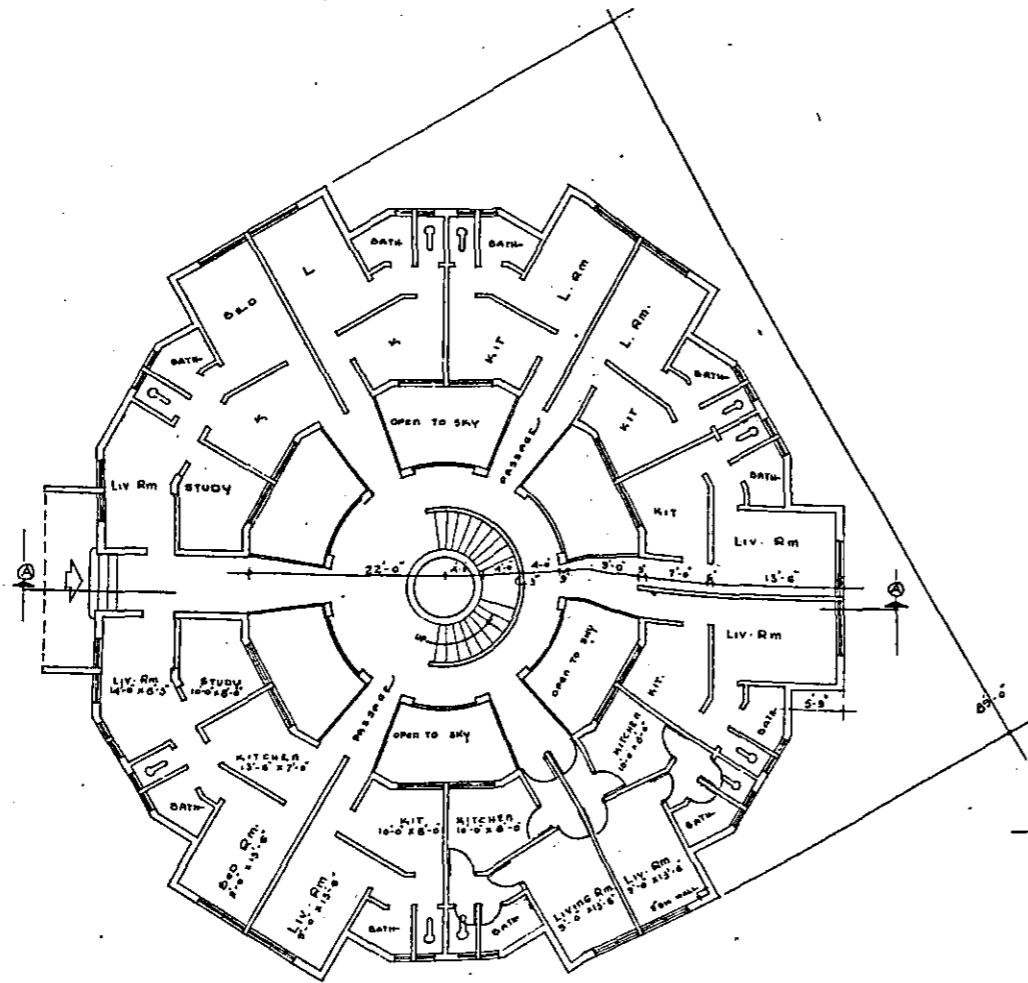
NOTE: STEEL REQUIRED FOR THE ROOF IS 138/SQ.FT OF THE COVERED AREA.

ABSTRACT OF QUANTITIES

1 CONG FOR HYPERBOLIC PARABOLOID SHELL ROOF 2" THICK	145.00 C.F.T.
2 CONG FOR R.C.C RIG FRAME FOR SHELL	28.30 C.F.T.
3 CONG FOR PRECAST R.C.C COLUMNS	18.50 C.F.T.
4 CONG FOR PRECAST R.C.C PLINTH BLOCKS FOR COLUMNS	8.00 C.F.T.
5 LEAN CONG FOR FOUNDATION 1:3:6 BELOW PLINTH BLOCKS	6.25 C.F.T.
6 RAMMING AND FLAT BRICK SOLING FOR COL. FOUNDATION	25.00 S.F.T.
7 STEEL REQUIRED FOR ROOF COLS RIBS AND FOUNDATION 3/8" @ 4" AND 1/2" @ 4" RODS	9.5 CWT.

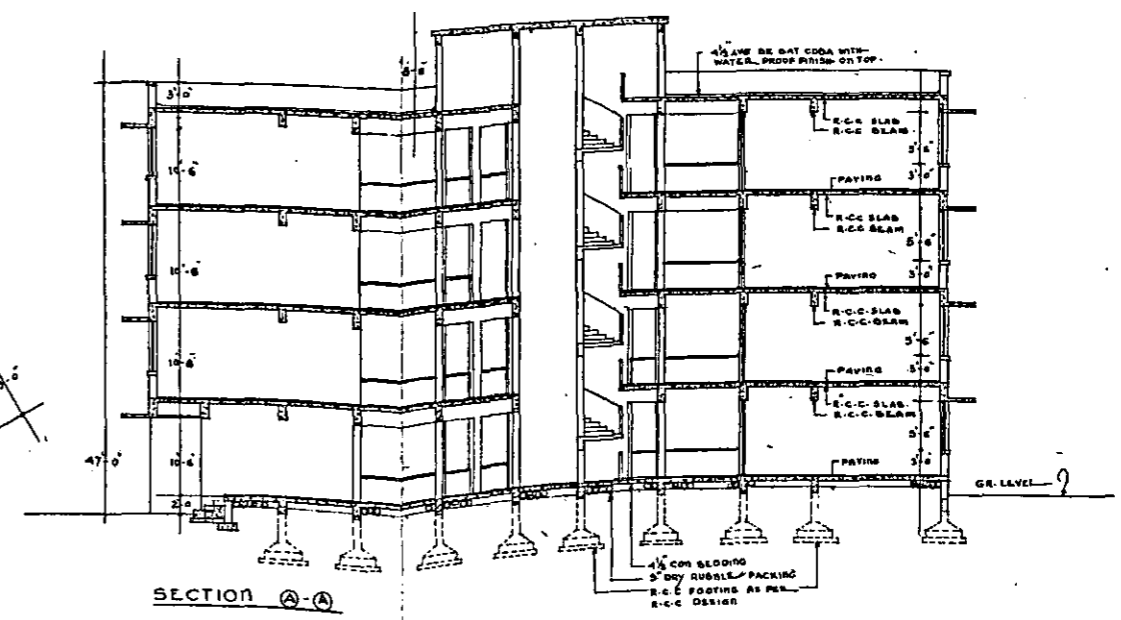


HYPERBOLIC PARABOLOID ROOF



TYPICAL FLOOR PLAN

SCALE : 8 FT. TO AN INCH



SECTION A-A