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(3) Bombay Corporation debate of July 1915
on Improvement Trusts Parel Road
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and

(4) Mr. Oza's speech in the Bombay
Corporation Debate on the Improvement
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(4) Social reform and slum Reform
Part II Bombay Past and Present -
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(5) The Bombay City Improvement Trusts
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(6) Light and air in dwellings in
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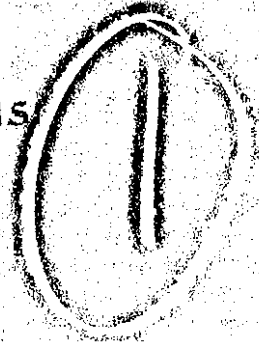
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**"The Need of Co-operation
BETWEEN
Neighbours in the Development
OF
BUILDING ESTATES."**

**PART I
New Estates and Growing Slums**

AND

**PART II
Established Slums**



LECTURES DELIVERED

BEFORE

THE BOMBAY CO-OPERATIVE HOUSING ASSOCIATION

BY

The Hon'ble Mr. J. P. ORR, C. S. I., I. C. S.

Chairman of the Bombay City Improvement Trust

IN

AUGUST 1915.



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Bombay Improvement Trust.

LIGHT AND AIR IN DWELLINGS IN BOMBAY.

1. Over two years' study of Bombay's slums has gradually brought me to the firm conviction that the two features which contribute most to the insanitary condition of Bombay are—

Chief insanitary features of Bombay.

- (1) the existence in certain quarters of numerous breeding places for malaria-bearing mosquitoes;
- (2) the fact that a large proportion of the poorer classes live in rooms that are insufficiently lighted and ventilated.

At the instance of Government, the Corporation are planning a campaign against mosquito breeding places in the light of the excellent report on the subject published by Dr. Bentley. But, if any substantial improvement is to be made in the sanitary condition of Bombay in the near future, there must, I am convinced, be carried on simultaneously a vigorous campaign against ill-lighted and ill-ventilated living rooms; and the sooner this campaign is started the better. I assume that my audience being well-acquainted with Bombay do not need to hear a detailed description of the typical cases we have to deal with; so I have relegated that description to Appendix A which strangers to Bombay into whose hands this lecture may fall will do well to read at this stage.

2. In general terms, the most obvious lines to adopt in a campaign against ill-lighted and ill-ventilated dwelling rooms will be—

Wholesale demolition an impracticable remedy on account of its costliness.

- (1) to wipe such rooms out of existence, and
- (2) to prevent any more from coming into existence.

The Improvement Trust have already done a great deal towards wiping insanitary rooms out of existence by the wholesale demolition of houses in such insanitary areas as Nagpada, Mandvi and the neighbourhoods through which the Princess Street and Sandhurst Roads have been driven. But it is now realised that campaigns conducted on the lines of such whole-

sale demolition are extremely expensive, and, where demolition has been too rapid, have resulted in the increase of overcrowding in the immediate neighbourhood. If this has been so in the small areas which the Trust have hitherto dealt with much more will it be so, if the campaign is extended to all houses which contain ill-lighted and ill-ventilated rooms.

Light and air
defective not in
front rooms but in
back and side
rooms.

3. Section 349B of the Bombay City Municipal Act limits the height of houses along a street to the breadth of that street or, in the case of narrow streets, to 40' or $1\frac{1}{2}$ times the breadth of the street whichever is less. This device for securing that *streets* shall be amply lighted and ventilated has also the excellent effect of ensuring that all *front rooms* in the houses along the street are sufficiently lighted and ventilated. **But the trouble is that hitherto Municipal by-laws have not been directed towards ensuring that back-rooms and side-rooms are sufficiently lighted and ventilated, while the Act itself contains no provision on this point.** The result is that the great majority of one-room tenements abutting on the sides or backs of houses in Bombay are grossly defective in light and ventilation. It nevertheless remains the fact that almost every house has, at any rate, *some* rooms sufficiently lighted and ventilated, and therefore the wholesale demolition method, besides being financially impracticable, involves demolition of so many sanitary rooms as to be in my opinion wholly unjustifiable, unless such demolition is necessary as in the case of Princess Street and Sandhurst Road, for the purpose of driving a ventilation shaft through a congested area or of improving communications in the City. It may be admitted that the wholesale demolition method has done more good than harm; but the nett gain has been achieved at extremely heavy cost and has therefore necessarily been confined to only a small portion of the area requiring sanitary improvement. Municipalities in England and elsewhere have had precisely the same experience, and, like them, we must seek less expensive methods of attacking the first of the problems stated in para. 2, *viz.*, how to wipe insanitary rooms out of existence. Unfortunately, the Municipal Act does not authorise the condemnation of particular rooms or *parts* of houses as unfit for human habitation; only

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Therefore a less
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is required.

whole houses can be so condemned under Section 378 : so although the Health Officer agrees with me that people ought not to be allowed to live a single day longer in any of the grossly insanitary dens which we have inspected together, he is unable to take any action in the matter. The remedy in the case of existing houses clearly is to invest some local authority with power to prohibit the use of insanitary rooms for human habitation.

4. Our second problem—how to prevent more insanitary dwelling rooms from coming into existence—can never be solved so long as the Municipal Act and Bye-laws remain as they are. On the contrary, matters must continue to go from bad to worse, as they have long been doing. A detailed explanation of what is wrong with the Municipal Act and Bye-laws is given in Appendix B. **Roughly, the main defects in the Municipal Act and bye-laws are:—**

We cannot check the continuous increase of insanitary rooms so long as Municipal Act and Bye-laws remain as they are.

- (1) That they do not provide for there being outside each room sufficient air space free of buildings and open to the sky for the lighting and ventilation of that room, and
- (2) that they do not limit the depth of a room in proportion to the area of openings for light and ventilation,

Main defects in Municipal Act and Bye-laws.

Vide Appendix D, clauses-2 & 3.

the result being that only the part of the room nearest the window is lighted and that often the other part is divided (after the completion of the building, when there is no fear of detection by the Municipal staff) into two or three compartments, each let out as a separate tenement, though absolutely unfit for human habitation. Moreover, there is nothing in the Municipal Act or bye-laws requiring a house-owner to limit the height of his house in consideration of the extent to which the height interferes with the lighting and ventilation of the house itself or of houses adjacent to it. All over Bombay, but especially in crowded parts, new storeys are being added to buildings which are already so high as to shut out light and air from the lower rooms of neighbouring houses to a very serious extent. This growing evil is annually adding largely to the number of

Vide Appendix D, clause 3.

insanitary one-room tenements in Bombay, and there is no way of checking it except by special legislation. The improvements made by the Improvement Trust in the few small sections of the City which they have been able to tackle are as a drop in the ocean to the rapid advance in insanitary conditions which is going on all over the City by virtue of the want of some check on extensions of buildings outwards and upwards and the consequent steady deterioration of the already defective lighting and ventilation of the quarters inhabited by the poorer classes of the population. Laudable efforts are being made to relieve sufferers from tuberculosis by providing hospitals and sanatoria for them ; but that strikes me as attacking the problem at the wrong end. Far better go to the root of the matter and make hospitals and sanatoria unnecessary by first preventing people from living in the dark foul dens which serve as foci for the propagation of tuberculosis and other diseases and then wiping out some of these dens in order to convert the others into healthy residences by the admission of the two great healing powers that nature supplies gratis,—light and air.

Remedy proposed.
Veto occupation of
rooms with light
and ventilation not
up to standard.

Vide Appendix D,
clauses 4 & 7.

5. **The remedy I propose for the serious evil which I am trying to show up, viz., the existence in Bombay of large and daily increasing numbers of one-room tenements, which for want of adequate lighting and ventilation are, strictly, unfit for human habitation, is to veto the occupation of such rooms under penalty of heavy fine such penalty being exacted not only from the occupier but from the owner. This veto should not take effect through bye-laws or through the agency of any specially empowered officer with respect to particular rooms selected by him, but should apply generally as a substantive provision of law to all rooms which fail to reach a prescribed standard of lighting and ventilation.** I claim for this procedure by veto that it is the simplest and most direct method of dealing with the evils we have to grapple with and that it supplies a solution for both the problems stated in para. 2, for when residence in existing insanitary rooms is prohibited and prevented, they are practically wiped out of existence *as dwelling rooms* ; and no insanitary rooms will come into existence ; for whereas during the 10 years that

the Municipality were holding the discussion which ultimately led to the passing of amended (but still, as I have tried to show, seriously defective) building bye-laws in 1910, house-owners were pressing on with their building operations so as to escape the new bye-laws, no man will now deliberately build a house with rooms, the light and ventilation of which fall short of the standard contemplated for general adoption, when he knows that on the legalisation of the veto they will be declared unfit for human habitation and he will get no rent for them and no compensation for having to alter them. *Vide Appendix D, clause 17.*

6. It would cause too great and sudden a dislocation of the conditions of life among the poorer classes in Bombay, if all insufficiently lighted and ill-ventilated tenements were declared unfit for human habitation *at once*. The same results would follow as are justly complained of in connection with the Improvement Trust's earlier schemes, in the execution of which demolition followed too closely upon acquisition. The demand for new lodgings would raise rents enormously, and there would be such a rush on uncondemned dwellings that, though sufficiently lighted and ventilated, they would soon become unfit for human habitation by reason of overcrowding. **In order to allow time for gradual re-distribution of population and for gradual improvement of dwellings now insufficiently lighted and ventilated, the veto should not come into force throughout the City till after the expiry of, say, 5 years.** *The proposed veto should be gradually extended to the whole of Bombay within five years. Vide Appendix D, clause 4.*

7. **Meanwhile, the Municipal Commissioner and in "represented" areas the Improvement Trust should have power to apply the veto to the worst cases in the worst localities; but in every case the Commissioner or the Improvement Trust should be required to first give the evicted occupants the refusal of decent accommodation within a mile of the condemned dwellings at the same rents as they paid for the latter.** *Meanwhile Municipal Commissioner and Improvement Trust should gradually apply it to the worst areas finding temporary accommodation for tenants of rooms declared U. H. H.* The Commissioner should be at liberty to delegate this power to the Health Officer, and the Improvement Trust should be at liberty to delegate it to the Chairman. Such a provision would operate to make the process of condemnation and eviction sufficiently slow to obviate hardships to those concerned. The Improve- *Vide Appendix D, clause 5.*

ment Trust now have large Estates on which they can, at very short notice, erect semi-permanent sheds, which are in great favour with the poorer classes ; and they also have many vacant rooms in acquired houses which they need not demolish for some years to come, so that there will be few, if any, places within a mile of which the Commissioner or the Improvement Trust cannot find accommodation for the tenants of the worst lighted and ventilated rooms ; these therefore should be condemned at once. The Commissioner should have the same liberty to commandeer open land for the erection of sheds for this purpose as he has under the Epidemic Diseases Act for the purpose of erecting Health Camps.

Tenants entitled to temporary accommodation only until condemned rooms are rendered habitable.

8. No evicted tenant should be held entitled to the accommodation offered to him by the Commissioner or the Improvement Trust, after his original landlord is ready to take him back ; as fast as condemned rooms are rendered habitable, the original tenants should be displaced from the semi-permanent camps in order to make way for occupants of the next houses to be condemned. In this way, the process of improvement would go on gradually in the worst cases throughout the 5 years, and owners of less seriously defective dwellings which the Commissioner or the Improvement Trust might not condemn under their special powers would see that it would be to their interest to set their houses in order before the veto came into general force throughout Bombay at the end of the 5 years.

The Improvement Trust have now about 500 vacant rooms available in chawls and acquired houses in their Estates south of Lal Bagh for people who may be turned out of condemned rooms. Their vacant rooms north of Lal Bagh are not taken into consideration, as they are too far from the congested areas to be in demand. The Trust could however on demand erect quite 5,000 corrugated iron huts on vacant lands in their southern Estates. There is, therefore, no difficulty about finding accommodation for displaced tenants at present. Probably about 20% of the population of congested areas would have to find new quarters, as the alterations necessary to make their old quarters sanitary would result in reduction of accom-

Cf. para. 22 below

modation ; but the measures I propose will encourage sanitary building, and the 20% will soon find quarters in the new houses that will be erected on what are now open lands or in the old houses which will be vacated as the development of the Trust's and other owner's Estates in the north of the Island and the proposed Back Bay reclamation take people away from the more densely populated areas.

9. Obviously our first supplementary problem is to fix a standard of light and ventilation with a view to applying the veto to dwellings that fall short of it. **It is very desirable that there should be one standard of light and ventilation all over Bombay, and the standard I propose is that which has long been enforced upon Improvement Trust Estates, and which is also now enforced under Municipal Bye-laws all over Calcutta, and in most of the important towns in England; that standard is commonly known as the $63\frac{1}{2}^{\circ}$ standard. It is explained in detail in Appendix B; roughly, it means this that throughout the length of one side of every living room there shall be external air space open to the sky extending to a distance measured horizontally from the room wall of at least half the height of the top of the opposite house above the floor of the room. It is called the $63\frac{1}{2}^{\circ}$ rule because the angle at which light from the minimum air space so prescribed will strike the floor is an angle of approximately $63\frac{1}{2}^{\circ}$, which has a tangent of 2 to 1.**

Adopt standard of $63\frac{1}{2}^{\circ}$ rule.

For illustration, vide Appendix D, para. I.

Thus, if a gully between two houses is only 10' broad the height of each house above the plinth must be limited to 20,' if the lowest rooms are to satisfy the $63\frac{1}{2}^{\circ}$ rule ; and if two houses of the maximum height ordinarily allowed in Bombay, viz., 70 are built side by side and have side rooms depending upon the space between the houses for their light and ventilation, then, to satisfy the $63\frac{1}{2}^{\circ}$ rule, that space must be 35' broad. Until recently such houses could have been built in Bombay with an intervening space of 3' or even less ;* and even under the new bye-laws the width of this space need not exceed 14' and, in the case of a new house built on a site on which an existing house abuts, need not exceed 7' which is far too little to permit of the adequate lighting and ventilation of ground

*Vide S. 348 (f) of Bombay Municipal Act. Vide Bye-law 41 (1) (a).

floor rooms in abutting buildings 70' high. Probably one excellent result of the universal adoption of the $63\frac{1}{2}^{\circ}$ rule will be that architects will learn to light houses from back and front only, so that buildings will be continuous along the streets and the abominably insanitary gullies that now exist between adjacent houses will altogether disappear.

Relaxation of the standard where land is costly.

10. It would be unfair and disheartening to the sanitary builder to have *in the same locality* a high standard for new buildings and a low standard for old, if the result would be to give the owners of old properties an unfair advantage over those of new properties in the tenement letting market. But in localities such as the Fort, in which land is very costly and buildings very high and close together, it may be found imperative to lower the standard for both old and new buildings, if the adoption of the $63\frac{1}{2}^{\circ}$ standard would throw such a large number of rooms out of occupation as to make impracticable to find accommodation for the original occupants in the neighbourhood. It is found in Improvement Trust Estates that by building *high* sanitary houses on areas which were previously crowded with *low* houses accommodation can be provided for far more than the original population; but where the original houses were unduly high, there must be some considerable permanent displacement of population, if the new houses are to be adequately lighted and ventilated by the clearance of air spaces between them. **It is of course just in such congested areas that adequate lighting and ventilation is most needed; and therefore no undue lowering of the standard should be countenanced; but I think the $63\frac{1}{2}^{\circ}$ might be raised to 68° , the angle with a tangent of $2\frac{1}{2}$ to 1, in such localities. This is permitted in Calcutta in certain cases, and the Corporation might be empowered to apply it with the sanction of Government to particular areas such as the Fort in Bombay. The effect will be that an open space of 28' will be allowed instead of 35' between adjacent buildings each 70' high.**

Vide Appendix D, clause 1.

Temporary concessions to obviate unreasonably heavy expenditure on existing buildings.

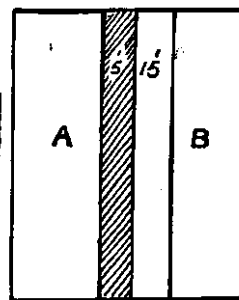
11. Another class of cases large and important enough to receive special consideration consists of cases in which the strict enforcement of the new standard would necessitate heavy expenditure on existing buildings which satisfy the present

Municipal regulations and have only recently been constructed or purchased. It may be well in such cases to defer the bringing of the lighting and ventilation up to the full $63\frac{1}{2}^{\circ}$ standard and be content with some lower standard, say, the 68° standard, till the re-construction or substantial alteration of the building is necessary on other grounds (e. g., on the occurrence of a fire) subject to a maximum of, say, 20 years' deferment. Such a concession might also be made in cases of existing buildings in which the actual lighting and ventilation fall only a little short of standard, e. g., when the space between two chawls each 40' high is 15' instead of 20'. But in all such cases the owner should do something to earn the concession; and one useful condition will be that he should bind himself to remove buildings from a certain area at the end of the concession period. On his executing such a bond, he should be granted exemption from the veto of occupation of the rooms concerned for so long as they remain unaltered, subject to a maximum exemption period of 20 years.

Vide Appendix D,
clauses 8 and 15.

12. It will facilitate and expedite the realisation of the improvements we desire, if similar concessions on similar conditions are made in such cases as that illustrated in the margin. B wants to build a chawl 40' high on a vacant plot next to an existing chawl which A has recently built 40' high over every inch of his land. B must leave a 20' margin in his land, and to prevent A benefiting thereby can erect a hoarding along the common boundary which will result in many of the rooms in A's chawl being condemned as unfit for human habitation. To escape this, A must demolish 20' of his chawl, unless he can make terms with B for both to share B's 20' strip; but if B leaves more than a 15' strip open, he will not have room left to build a chawl on. If the standard is strictly enforced, A will have to pull down 5' of his newly constructed building and rearrange the remainder at prohibitive expense. In such a case A and B should be required to enter into an undertaking that a strip 15' broad shall be always kept vacant on B's side of the boundary and that when A's chawl is rebuilt or at most 20 years hence A shall clear a strip of 5' along his side. Thereupon B should be allowed to build along the 15' margin, the breach of standard being condoned for at most 20 years.

Temporary
concession in case
of new buildings
adjacent to old.



Vide Appendix D
clauses 8 and 15.

Temporary concessions to be granted by Special Committee after personal investigation by selected Officers of high standing.

Vide Appendix D, clauses 4, 8, 14.

Vide Appendix D, clause 1.

For definition of "light-plane," vide Appendix D, clause 1

Vide Appendix D, clause 15.

Co-operation between neighbours necessary so that each may benefit by open space in the property of the others.

13. There will be numerous other smaller classes of cases in which the making of concessions will be justified by the desirability of getting the requisite improvements made gradually in order to reduce the hardship the innovation may cause to a minimum; but in order that there may be a consistent policy in this matter, it seems very necessary that such concessions should be subject to some general limitation and should be granted only by a special committee and only at the instance of some officer of high standing, who has previously investigated the case, and not on investigation by mere subordinates. The Special Committee might consist of the Municipal Commissioner, the Chairman, Improvement Trust, and Health Officer, and they might act on their own investigations or on those of the Deputy Health Officer, Executive Engineer and Deputy Engineer of the Municipality and the Engineer and Land Manager of the Improvement Trust and their Deputies. They will learn by experience in investigation of actual cases what are the best lines to work on, and it should not be necessary to legislate as to their procedure beyond laying down certain broad limitations within which exemptions from the general veto must be confined. The actual experience I have gained in applying my proposals to the Trust's Estate on Nowroji Hill shows that the commonest class of cases requiring special treatment on their individual merits is that of rooms in irregularly grouped houses, in which, though the *light plane is partially obstructed by a neighbouring house, the deficiency of direct light caused thereby is more than made good by diffused light or by light received obliquely across a low house next to the obstructing house. For such cases no general rule can be framed. The Special Committee must deal with each on its merits.

14. The difficulty about complying with the 63½° rule is that to secure full value from any site the owner has to make an agreement with his neighbour by which each may share the advantages of the open space provided on his neighbour's site. It would be wasteful of space for a man who wants to build a building 40' high to provide 20' of open space *on his own site*: he can make the most of his site by leaving a space of 10' open and getting his neighbour to leave a similar space open alongside of it. This can be easily arranged on large estates like those of the Improvement Trust, where buildings on adjacent plots are controlled by the same landlord; and where vacant building sites of regular outline adjoin one another, owners will generally come to an agreement as to what open margin should be left along the common border; but where irregular

building sites, some built upon, some yet to be built on, all in different ownership, lie higgledy-piggledy in juxtaposition, many difficulties present themselves, especially if neighbours are not on good terms with one another; and after studying many such cases, I have come to the conclusion that the best way to deal with them is to use the lever supplied by veto of occupation of rooms that do not comply with the 63½° rule as a means of inducing neighbours to come to an early agreement mutually beneficial to all concerned. Bombay Architects have now gained sufficient experience of the practical working of the 63½° rule to be able to show their clients how in co-operation with their neighbours and at the least expense and with the least loss of time to design new buildings or make the structural alterations necessary to give old insanitary buildings as large as possible a number of rooms complying with the 63½° standard. It will be to owners' interest to carry out these alterations quickly, in order to get their tenants back again and so secure rent.

15. In the numerous actual cases which I have investigated with a view to testing the practicability of my proposals as regards sanitary reconstruction of existing houses I have found many in which a difficulty arises from the fact that the house is so small and so shut in by other houses that the admission of a sufficiency of light and air to the back and side rooms involves demolition of an unduly large proportion of the house and consequently the requisite alterations can only be made at a heavy loss. Such cases, however, generally occur in groups, and it is generally practicable to acquire one of the houses concerned and parcel its site out for the benefit of the others. This will be best understood by a study of the particular instances given in Appendices A and C. **Power to acquire houses, demolish them in whole or part and apportion the cleared site to neighbouring houses either as open space or for extension of the existing buildings (e.g., in order to find a more suitable location for W. Cs. and washing places) should be given to the local authority to use for the assistance and at the instance of owners of decent properties which are spoilt by the juxtaposition of mean insanitary houses which the owners will not sell except on preposterously high terms, if they cannot be dealt with under the Land Acquisition Act. In such cases the cost of acquisition should be recoverable from the properties benefited.**

Local authority should have power to acquire houses in order to form air spaces or room for extension of neighbouring houses requiring sanitary reconstruction.

Vide Appendix D, §9.

Vide Appendix A, Plan B.

16. In "represented" areas in which the early provision of dwellings to replace those condemned is a matter of public importance and owners are not taking

Improvement Trust to enforce reconstruction or in case of obstructive houses demolition.

Vide Appendix D,
clauses 11 and 12.

Vide Appendix D,
para. 13.

In many cases
owner will
probably
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In cases in which
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he will be fully
compensated and
the Trust may be
able to make
reconstruction or
demolition pay by
levying betterment
rate on
neighbouring
houses.

Vide Appendix D,
clause 10.

up sanitary re-construction work fast enough I would give the Improvement Trust power (1) to acquire any house containing more than 10 rooms condemned as U. H. H. and to so re-construct it, as to make all the living rooms conform to the prescribed standard of lighting and ventilation, in case the owner fails to comply within 12 months with the Trust's requisition calling upon him to do this work himself and (2) to acquire and demolish houses or parts of houses that so obstruct the lighting and ventilation of surrounding houses as to make more than 10 rooms unfit for human habitation according to this prescribed standard.

17. The Trust have now to pay compensation on the basis of high rents which chawl owners secure only because they are at liberty to overcrowd their sites with insanitary rooms. No chawl owner will comply with a requisition to re-construct, so long as the alternative is to receive compensation *on the basis of these rack rents*. Sanitary dwellings will, of course, pay him a far smaller return than the old insanitary ones; but when he will no longer get a handsome return, as he does now, by re-investing his compensation money in fresh insanitary buildings, he will probably prefer to secure a moderate return by making the necessary alterations of his chawls himself as soon as possible rather than lose the rent of his condemned rooms for a year and then receive compensation based not on his original rack rents, but on the return he can get for the property after spending on it what is required to bring it up to modern standards of sanitation. In cases in which it is impossible for the owner to secure an adequate return upon the expenditure involved in the necessary alterations, it will be a relief to him to have his non-paying property acquired and the loss shifted to the public purse; and since this loss will be incurred in the interest of public health, I see no reason why the Improvement Trust should not undertake it and even pay the owner the usual 15% under Land Acquisition Act, Section 23 (2) on account of the compulsory nature of the acquisition. In cases in which the Trust demolish part of the acquired house, in order to admit light and air to neighbouring houses, the cost to the public purse can be reduced in a way which is not open to the original owner, **if the Trust are empowered, as they should be, to recover a contribution towards the nett cost of acquisition and alteration or demolition of the obstructive property from the owners of the properties benefited by the demolition in proportion to the betterment these properties respectively secure.** If any owner is too poor to be able to pay his share of the cost in a lump sum down, 30

annual payments of 6 per cent. on his share may be accepted instead as a betterment rate. This is on the 4 per cent. table just about equivalent to the immediate payment of the lump sum. To save this measure from becoming oppressive to poor house owners, we may perhaps fix a limit beyond which cost of acquisition of houses or parts of houses constructed before, say, June 1912, should be borne by the public purse, e.g., by limiting General Tax plus this annual payment to 25 per cent. of Assessment.

Vide Appendix D, clause 13.

Some instances of such obstructive buildings are shown in the plans appended in Appendix C, with estimates of the cost of acquiring them and notes as to how the cost will be distributed among the owners of adjacent properties.

18. The general idea in disposing of an obstructive property acquired by the Trust *suo motu* (V. para. 16 above) is to retain it as Trust property dominated by the right conceded to owners of neighbouring houses to prohibit building above their light* planes. If the property has cost an average of Rs. 50 per square yard to acquire, each owner is charged for this concession half that rate, i.e., Rs. 25 per square yard for the area over which he can prohibit building above his light planes. This will be understood by study of the instances given in Appendix C. Public hydrants can be conveniently located in these open spaces; and these will immensely increase protection from fire. It is a marvel that there have not been more fires in the many congested areas in the city into which in case of fire, it would be impossible to bring in even a fire hose hand cart. There will often be ample space below the dominating air planes for a ground floor structure not intended for human habitation, and it will be a convenience to the Municipality to be able to build vaccination stations, registration offices, public urinals and W. Cs., stores, chaukis and the like on such sites or use them as metal depôts; and they may even let some for godowns or motor garages; but in most places the sites will remain open, and should be levelled and tarred and planted with trees. They will be invaluable as air spaces and playgrounds for children. A demonstration of their great utility for this purpose is afforded by a visit to such localities as Lower Colaba and Umarkhadi where, in pursuance of cross road schemes laid down years ago, the Municipality have acquired several small spaces under the set-back sections. These spaces are not yet sufficiently continuous to admit of the actual construction of roads; so children safely play in them without any danger from cart traffic. The tarred open spaces between Improvement Trust chawls afford a similar illustration of the utility of these places for children.

How the acquired property is to be disposed of.

Vide Appendix D, clause 9.

* *Vide* Appendix D, clauses 1 and 2.

Need of open spaces in the City.

A Committee of the Corporation has been sitting nearly 3 years for the purpose of devising methods for securing more open sites in the City, and their tendency is to recommend creation of a very few large recreation grounds at great expense. I venture to think that far more good will result at far less expense from the creation of small ventilation chawks for every small group of houses and from insisting on every house site including some open space for the lighting and ventilation of the house. **Large central recreation grounds are all right for adults who can walk a mile or two to get to them; but it's the little children we want specially to provide for. We want to save them from being brought up in dark places and foul air, while they are too weak to resist the diseases that germinate in such surroundings; and we can't succeed in this unless we go right down to the unit of the single room-tenement and insist on each such dwelling room receiving its full quota of light and air and on each house contributing its share towards an open space provided as an amenity for every small group of houses.**

Recapitulation.

19. Let me now recapitulate my proposals :—

I have shown to begin with (paras. 1 to 3) the need of some cheaper substitute for the unjustifiably costly measure of wholesale demolition as a remedy for the evils resulting from the existence of large numbers of ill-lighted and ill-ventilated one room tenements in Bombay (Appendix A).

I have shown (para. 4 and Appendix B) what are the main defects in the Municipal Act and bye-laws by reason of which the number of such insanitary rooms increases from year to year.

I have proposed (paras. 5 and 9) as the first step towards mending matters legislation prohibiting the use for human habitation of rooms that fail to satisfy the $63\frac{1}{2}^{\circ}$ standard of lighting and ventilation, such prohibition to apply generally all over the City after 5 years (para. 6) but to be meanwhile applied (para. 7) to the worst rooms in specially insanitary areas, temporary accommodation being offered (para. 8) to the tenants, till the landlords have rendered their rooms fit for human habitation.

I have shown how, to make matters easier for house-owners and landlords, the $63\frac{1}{2}^{\circ}$ standard may be locally (para. 10) or temporarily (paras. 11 and 12) relaxed by a Special Committee of high officers appointed to investigate individual cases (para. 13).

I have explained (para. 14) how house-owners can reduce the difficulty of complying with the 63 $\frac{1}{2}$ ^o rule by co-operation with their neighbours and suggested (para. 15) that where a co-operative improvement scheme is likely to be spoilt by the recalcitrance of a minority, the Improvement Trust should be empowered to acquire obstructive properties at the instance and for the benefit of the majority and at their expense.

I have suggested (para. 16) that where reconstruction by owners is not proceeding fast enough the Improvement Trust should have power to acquire and reconstruct defective houses and also power to acquire and demolish obstructive houses (para. 17) and charge a limited betterment rate on the houses benefited by such demolition; and finally I have shown how the sites thus acquired may be used (para. 18) to meet the need of open spaces in the City.

20. It has been suggested that the Municipality will have to keep a huge staff of inspectors in order to ensure that condemned rooms are not surreptitiously occupied; and it is represented that the people of Bombay rightly resent the intrusion of low-paid subordinates into their houses for inspection purposes; but this will not be necessary if the alternative is adopted of attaching a very severe penalty of both fine and imprisonment to occupiers of condemned dwellings, together with liability to demolition in extreme cases. **If the penalty is made severe enough and rent charged for condemned rooms is declared irrecoverable at law, it should be unnecessary to give power of entry for inspection of condemned rooms to more than the members of the Special Committee and the investigating officers mentioned in para. 13.**

Inspection of
condemned rooms.

Vide Appendix D,
para. 17.

21. After writing the first draft of this lecture I deferred delivering it, in order to test the practicability of my suggestions by actually applying them to the one big insanitary area of which I had control, *viz.*, the Nowroji Hill Estate, on which about 350 houses have been acquired by the Trust. Many of these houses were rickety and had to be demolished at once; but instead of demolishing the remainder soon after acquisition the Trust have retained most of them in the occupation of the tenants of the original owners.

Result of applying
proposed measures
to Nowroji Hill Es-
tate.

In the last six months a thorough inspection of every room in the Estate has been made. Rooms have been classified as fit or unfit for human habitation; those condemned as unfit have been vacated and closed, except such as could be rendered

habitable by structural changes or by the removal of obstructive houses that were keeping light and air out of them.

As practically all the houses on this Estate must, in the course of a few years, be demolished in order to permit of the quarrying of the stone in the hill and the laying out of the new Estate, it was not worth while to incur great expense on structural alterations ; but wherever a house or group of houses containing many condemned rooms was found, a decision was made on the spot, as to whether one or more of the houses should be removed to form ventilation chauks, or whether condemned rooms should simply be vacated and closed. **The result can be seen upon the model of the Estate in the Trust Office or, better still, by a visit to the spot. Since November 11th 22 houses have been demolished and any body can see how immensely the light and ventilation of the neighbouring houses have been improved thereby, as also by the previous demolitions. The 22 houses demolished since November 11th contained 39 condemned and 224 approved rooms occupied and vacant. All the occupants had one month's notice to quit, and accommodation was offered to them in the vacant approved rooms on the Trust Estate. About half of them accepted the accommodation offered ; the others preferred accommodation elsewhere in view of the prospect of their being turned out of Nowroji Hill a few years hence. There remain on the Estate 279 houses containing 4,405 rooms rented at Rs. 24,357 per mensem, 410 vacant rooms fit for human habitation and rentable at Rs. 2,180 and 329 condemned rooms originally rented at Rs. 1,132 but now all vacated.**

From the results on Nowroji Hill it may be deduced that new houses are required with accommodation sufficient for 20 per cent. of the population of congested areas.

22. The Nowroji Hill Estate is fairly typical of the badly congested areas in the City, and the results of our sanitary survey may therefore be taken as a guide to show how far accommodation in similar areas will be affected by the operations I have suggested. **Out of the 5,407 rooms on the Estate, 368 had to be condemned and 224 not condemned had to be vacated in order that the houses containing them might be demolished for the improvement of neighbouring houses. The accommodation on the Estate has thus been reduced by about 11 per cent. Some houses had already been demolished before November as dangerously rickety, and their demolition improved certain rooms which would otherwise have been condemned ; moreover a good many of the approved rooms would probably be condemned if the classification had been made strictly according to my proposals. On the other hand in considering reduction of**

accommodation, no account has been taken of increased accommodation made possible by liberty to add new storeys to buildings in the neighbourhood of newly created open spaces (Cf. Appx. A. para. 15). **We are therefore absolutely on the safe side in putting the reduction of accommodation due to the measures I have suggested for general adoption at 20 per cent. (vide para. 8 above) and I am confident that, if the redistribution of 20 per cent. of the population of the most congested areas in the City is spread over 5 years, there will be no serious difficulty in the matter.** Luckily for Bombay the period of most serious congestion is in the fair weather (December to May) when large numbers of labourers come up from the Mofussil, and the congestion is relieved then by the people's habit of sleeping out in the open.

23. It was of course far easier for the Trust to deal with their houses on Nowroji Hill Estate than it would be for the owners of single houses who may not be able to get their neighbours to make plans for improvement of their properties that would fit in with their own. But I believe that the difficulties that such owners will undoubtedly have will be greatly mitigated by the legislative measures that I have proposed, and that when the owners see that, by virtue of the operation of the veto, it is only by co-operation with their neighbours that they will be able to get their condemned rooms tenanted again by bringing their light and ventilation up to the required standard, they will quickly take advantage of the facilities offered to them to set their houses in order.

Owners will probably co-operate to set their houses in order under pressure of the veto.

24. I am well aware that my main proposal—to use the power of veto as a lever—is one which is bound to provoke the most strenuous opposition at the hands of the bulk of the owners of houses situated in the more congested parts of Bombay; for the object of the campaign is to wipe out of existence all insufficiently lighted and ventilated dwellings in Bombay, and these include a large number which have long been a source of big profits to their landlords, yielding an annual return which must, in some cases, be greatly decreased in future, if the campaign is successful; but these insanitary dwellings are a standing menace to the public health, their number is increasing every year and their removal or conversion into sanitary dwellings cannot but effect a great improvement in the health and comfort of the poorer classes who have been compelled by force of circumstances to occupy them hitherto. The campaign is therefore in an excellent cause, and no public spirited man who has any regard for the health and comfort of his poorer fellow citizens will shrink from facing the opposition, however violent it may be. Indeed I am not without hope, seeing signs

Opposition to veto expected from house-owners of congested areas.

in various quarters (*e. g.*, the creation of this Sanitary Association) of the growth of what I may call a public sanitary conscience in Bombay, that even some of the landlords whose pockets will be affected, if the campaign is successful will rather support the campaign than continue to bear the reproach that they care too much for ill-gotten private gains and too little for the health and well being of their fellow citizens in this great City.

Legislation
required.

25. I append as Appendix D a very rough draft of the legislative provisions required to give effect to the policy I am advocating. I have made no attempt to put them into exact legal language, so they will have to be knocked into shape by a lawyer; but they will give the reader a rough general idea of the kind of legal procedure contemplated in my suggestions.

Conclusion.

26. **The more I think this matter over and the more I see of the numerous building operations that are making: the lighting and ventilation of dwellings in Bombay worse and worse from day to day, the more firmly am I convinced that the proper remedy is the power to veto occupation of ill-lighted and ill-ventilated dwellings and the more strongly do I feel that legislation conferring that power on the Municipal Commissioner and the Improvement Trust and prescribing the 63½° standard for general adoption ought to be undertaken without further delay.**

J. P. ORR,

Chairman,

BOMBAY CITY IMPROVEMENT TRUST.

1st June 1912.

APPENDIX A.

TYPICAL INSTANCES OF ILL-LIGHTED AND ILL-VENTILATED ROOMS IN BOMBAY WITH SUGGESTIONS FOR THEIR IMPROVEMENT.

An unobservant stranger driving through the main streets of Bombay may form the opinion that there is nothing very wrong in the lighting and ventilation of Bombay houses; but he must leave the main streets and walk into the side streets and gullies and the deep houses running back from them in order to get an idea of the conditions under which the poorer classes of the community live. Front rooms are mostly well lighted and ventilated, but a very large proportion of back-rooms and side-rooms on all but the topmost floors are grossly insanitary from various causes, but chiefly through defective lighting and ventilation.

2. Two of the commonest types of insanitary houses are described in the following notes:—

- (1) Those which run deep back from a street and have their back-rooms lighted and ventilated only through side spaces between them and the nearest houses, such spaces being often only 2' or 3' wide with eaves projecting over them and almost meeting and foul smelling gutters running down their whole length to receive rain water from the roofs and sullage from washing places and the overflow of urine from privies.
- (2) Undetached houses situated in a continuous line between two parallel streets and separated by a gully 2' or 3' wide midway between the two streets with privies and washing places abutting on it and all the characteristics of the gullies in class (1).

3. Houses Nos. 66-78 in Umarkhadi Road, of which a plan (A) is attached, are good specimens of class (1):—House No. 66-68 consisting of ground floor and three upper storeys has not been enlarged or improved during the last 10 years. It contains 48 one-room tenements of which 30 though occupied are unfit for human habitation.

House No. 70-72 originally consisted of ground floor, two upper storeys and a loft. It was marked U. H. H. on 3rd January 1904. The loft was then removed and the house repaired, improved and occupied on 25th October 1904. The house now consists of ground and two upper floors. This house contains 48 rooms of which 26 though inhabited are strictly unfit for human habitation.

House No. 74-76 originally formed two houses, the front and the rear with a space between. Both these houses consisted of ground floor, first floor and a loft. There were six rooms in the front house and five rooms in the rear. In 1902 these two houses were repaired, enlarged and converted into one continuous chawl consisting of ground and two upper floors with 10 rooms on each of 3 floors, and they were occupied on 20th December 1903. Thus, the original 11 rooms have been increased to 30 of which 18, though occupied, are strictly unfit for human habitation.

House No. 78 consisted of only 12 rooms on each of 3 floors up to 10th October 1910. The revised Municipal Bye-laws came into force on 24th March 1910. The new building contravenes them in many respects. The plans were submitted to the Municipality on 12th February 1910 and passed on 1st March; but work was not commenced till 10th October. The house was then enlarged by an addition of 8 rooms on each of 3 floors in the rear, on what had till then been an open compound. The enlarged house was completed on 19th May 1911 and partly occupied on 25th May 1911. The original 36 rooms were increased to 60 of which 34, though occupied, are strictly unfit for human habitation.

In classifying rooms as U. H. H. the 62½° standard has not been followed; otherwise several of the top floor rooms would have to be condemned. The rooms condemned comprise all except front rooms, top floor rooms and the rooms abutting on chowks on the top floor but one.

4. The mere perusal of these notes and study of the plan attached and of the model of these four houses on view in the Improvement Trust Office cannot give the reader an adequate idea of the sad conditions of life in these 4 chawls; to fully appreciate them he should visit the chawls and inspect each room. The internal passages, even in bright weather, are so dark that one stumbles over children squatting in them. The external gullies are so foul smelling that one is not surprised to find the windows opening into them all shut. One hears sounds and, lighting a match, sees on the walls and floors signs of spitting which show how tuberculosis is spread in these dark foul dens. And yet these chawls have been built so as (just) not to break any provisions of the Municipal Act and old bye-laws; and that they are at any rate up to the average of chawls in the neighbourhood may be gathered from the fact that the owners are able to keep them occupied at rents varying from Rs. 3-8 to Rs. 5 per room per month.

5. The irony of the situation lies in the fact that, these houses are included in a scheme for improvement of an area represented in 1905 under Section 24 (2) of the City of Bombay Improvement Act as grossly insanitary and as requiring to be dealt with by the wholesale demolition method; that within the last 8 years their owners have under pressure from the Health Department "improved" them; that in 2 cases the opportunity was at the same time taken to enlarge them considerably by building over every bit of what was previously the compound; that in all cases the rents have been increased; and that consequently the cost of acquiring them must be far greater now than at the time of the original representation. Meanwhile, the owners have been making far greater profits than they could have made, had they been forced to keep a sufficiency of open spaces round the houses in the interest of public health, and therefore in my opinion the appropriate way of dealing with them is not to pay them compensation based on those abnormal profits, but to require them to devote part of their profits towards cutting out some of their rooms in order to make the others fit for human habitation in future.

6. Of the second class of cases a good specimen is provided in the small section of 2nd Nagpada shown in the appended plan B. It is obvious from a glance at the survey sheets of Bombay that there were large areas deliberately laid out at some time for building purposes in Nagpada,

Kamatipura, Memonwada and other districts North of Pydhoni, and the explanation is that, these parts constituted what are shown in the old "Foras" maps as "Old Town" and "New Town," the localities in which building sites were given to people who were turned out of the zones which were at different times cleared of buildings in connection with military plans for the defence of the Fort. As the range of cannon increased, the zone was broadened in 1739 to 400 yards and in 1803 to 800 yards measured from the Fort wall and the people evicted were allowed to take up building sites in Old Town and New Town on those two occasions respectively. The New Town was also the refuge of many Konkanis who lost their property in the Fort in the great fire of 1803.

7. The Town planners of those days were liberal enough—in fact over liberal—with their roads, and their plan evidently was to form rectangles between 4 roads, divide them into two by a transverse gully just big enough to let a sweeper get to the privies abutting on it, and form house sites of equal depth on either side, with any breadth the builder might choose. Unfortunately, they put no limit on the proportion of each site that might be built on or on the breadth of each site and most of the occupants have, in course of time, built over the whole site, while breadth of 7' to 10' are quite common. Only a visit to the site can give an idea of the insanitary conditions resulting from consequential want of light and air in back rooms and the poverty and squalor of the bulk of the houses, inhabited as most are by the poorest and most ignorant tenants. Nevertheless the original conditions have not only been allowed to continue under the Municipal Act and Bye-laws, but owners are allowed to build over the whole of their old plinths when they do any reconstruction work and many have added one and even two storeys to their original houses, so that the lighting and ventilation of their lower back rooms and of those of the adjacent houses have become far worse than before.

8. This state of affairs is found not only in Old Town and New Town, but, as a glance at the survey plans will show, in large areas all over the City, differing from the Old Town and New Town only in that the house sites have not been so regularly laid out, so that there are many bends and awkward corners in the intermediate gullies which are consequently in an even more hopelessly insanitary condition than those of Nagpada, and must be a most dangerous source of infection to all who live in the dark rooms which abut on them.

SUGGESTIONS FOR IMPROVEMENT.

9. If to the two types of house-groups described above we add the variations due to the addition of a higgledy-piggledy arrangement of houses, or low plinths, or water-logged surroundings, we shall probably include in these types and their variations the bulk of the insanitary houses of Bombay, and I maintain that most of them can be improved out of all knowledge by such devices for admitting light and air as partial

demolition and reconstruction directed towards converting the narrow, dark, foul gullies into open spaces sufficiently wide to admit of the lighting and ventilation of the adjoining rooms in accordance with the 63½° standard.

10. That the necessity of some such measure has already been realised by the Corporation is evident from the amendments recently made (after several years' discussion) in the building bye-laws, under which the side and back rooms of new buildings are required, if used as dwelling rooms, to have outside them certain air spaces varying from 2' to 10' in breadth according to the height of the building; but owners evade these new bye-laws, which are unfortunately so worded as to afford many loopholes for escape. For instance, the spaces are required only outside *living* rooms, so rooms are described in the builders' plans as kitchens, dressing rooms, etc., to escape the bye-laws, and after completion of the building are used as living rooms with impunity. But my chief objection to the new bye-laws is that they are useless in the areas in which improvement is most required, viz., those already built over, because they do not apply, as the corresponding 63½° rules in Calcutta is rigidly applied, to old buildings when reconstructed or substantially altered, "unless and except to the extent to which" the work in hand contemplates the removal of more than half of a wall measured in superficial area from the plinth upwards or in frame buildings of more than half the posts, a provision which is easily evaded by carrying out reconstruction by instalments.

11. Little good can ever come of half-hearted measures that only touch the fringe of the subject and leave the root of the evil, the old insanitary buildings untouched, it is worse than useless to have a house here and a house there partially improved, while all round are old houses and gullies that continue to be centres of disease and become more and more dangerous as the houses around them are raised storey by storey.

The remedy to be adopted must be one that goes to the root of the evil and deals promptly and effectively with it wherever it is found.

12. Many of the grossly insanitary rooms which were inspected by Lord Sandhurst and other high officials in 1897 as types of the dwellings of which Bombay was to be purged by the introduction of the City of Bombay Improvement Act are still in existence and *still inhabited*. Many more, equally defective in light and ventilation and only superior to the other ones in construction, have been created without breach of the Municipal Act and Bye-laws since 1897. Further, rooms that were fairly lighted and ventilated in 1897 have had light and air shut out from them by the erection of new buildings or the addition of new storeys to old buildings in their vicinity. Visitors to whom I show such rooms call it a public scandal that human beings should be housed in such places and ask why it is allowed. The reply is that the law gives no one any power to stop it and that the growth of the evil is going on so gradually and in places so shut out from public view that the citizens of Bombay have not realized how urgently an amendment of the law is needed, and so far from clamouring for a law to prevent owners from letting out grossly insanitary rooms for human habitation are inclined to look upon any restriction of an owner's right to build upon his old plinth as confiscation and any interference with a poor man's choice of dwelling place as grand-motherly and tyrannical.

It is interesting to note that it was this same tender-hearted attitude of the public and Government towards house-owners that prevented the laying out of the Fort on sanitary lines after the great fire in 1803. The deplorable consequences of the loss of that opportunity are seen in the Fort to-day; and still more deplorable consequences will ensue if another fire occurs and finds us still unprepared to grapple with the danger to public health that the "sweating" of building sites entails by insisting on every house having ample air space on at least two sides of it so that every dwelling room is adequately lighted and ventilated.

Vide Gazetteer
Vol. II, page 343.

13. The first step I suggest is a general veto on use of inadequately lighted and ventilated rooms for human habitation. This will stop the use of existing insanitary dwelling rooms and prevent more from coming into existence; and the next step is to actually get those now existing wiped out by requiring their owners to make them sanitary and assisting them by placing at their disposal strips of land acquired and cleared of buildings for the purpose of providing air spaces outside houses in the neighbourhood.

14. How this can be done in the case of the two typical house groups described in this note is indicated in the attached plans in which the hatched areas indicate those which must be acquired and cleared of buildings and the cross hatched areas those which can then be used for extension of neighbouring buildings in order to provide room for the privies, washing places, etc., that may have been cleared away in order to get the $63\frac{1}{2}$ ° rule satisfied. There are of course many alternative methods feasible, but those suggested involve less interference with existing buildings than the others, and therefore less displacement of population, which is an important advantage.

15. In the Umarkhadi case (Plan A) omitting the eastern half of house No. 78 which must be improved by demolition of rooms in the next house eastwards, the original 159 rooms will be reduced to 113; but these will be all inhabitable, whereas 92 of the original 159 were U. H. H. and only 67 habitable. Under the new arrangements 21 new rooms can be added to 2 houses, so that there will be 134 habitable rooms, *i.e.*, double the original number.

16. In the Nagpada case (Plan B) the sites containing the narrowest, lowest and meanest houses are proposed for acquisition and will be mostly used as open spaces, but partly also for location of privies and washing places that are to be cleared out of the 20' strip to which the central gully is to be widened and partly (along the frontages) for extension of neighbouring buildings to compensate them for loss of rear rooms taken into the 15' strip.

The general idea is to require owners to clear away buildings (in nearly all cases privies and washing places) along the existing gully so as to create an open space at least 20' broad in place of the 2' or 3' gully. In most cases, as will be seen from the instances given in Plan C (which incidentally shows how ill-lighted and ventilated the existing rooms are) the privies can be replaced by W. C's placed in the middle of the house with washing places beside them and a living room on each side, one lighted from the front and the other from the new 20' space at the rear, which

In Calcutta, *vide*
rule 22 on page 27,
a space of 40' (30
in each holding)
would be required.

will allow of the houses being raised to a height of 40'. In some cases in which this arrangement is not feasible the back part of an adjacent house can be demolished and on the cleared site W. C's and washing places for the 2 abutting houses can be provided as shown by hatching in Plan B.

The result of the alterations suggested will be to reduce the number of rooms on each narrow site to two and on each broad site to four on each floor; but these will be larger rooms than the original four, six or eight rooms, and will be thoroughly well lighted and ventilated. In the 8 houses shown in Plan C, for instance, the only rooms adequately lighted and ventilated are those in front, those on the top floor, those abutting on chowks on the top floor but one and, in the case of high houses overlooking low houses, a few more rooms in the rear. The result of the proposed alteration will be to provide 76 sanitary rooms where there were previously 124 smaller rooms, including 76 sanitary and 48 insanitary: but further the provision of new open sites in rear will enable some owners to add extra floors to their houses, so that probably the total number of people that can be sanitarily accommodated in the altered houses will not be much below that of the people now housed in the existing grossly insanitary buildings.

Particulars of a block of houses in Umakhadi Scheme. (Plan A),

Street No.	EXISTING ARRANGEMENT.			PROPOSED ARRANGEMENT.			Remarks.
	Sanitary Rooms.	U. H. E. Rooms.	Total No. of Rooms.	Sanitary Rooms.	U. H. E. Rooms.	Total No. of Rooms.	
66-68	18	30	48	32	Nil.	32	The 27 rooms in eastern half of No. 78 are not included in this statement. Under the proposed arrangement in addition to securing 113 habitable rooms instead of the existing 67, 17 extra habitable rooms can be added on new floors in Street No. 78 and 70-72, and 4 additional rooms can be constructed in rear of Street No. 70-72. Thus there will be 134 habitable rooms instead of the original 67.
70-72	22	26	48	45	Nil.	45	
74-76	12	18	30	3	Nil.	3	
78 W. half	15	18	33	33	Nil.	33	
Total...	67	92	159	113	0	113	

*Particulars of a block of 8 houses in Nagpada between Temkar Street and Shekh
Buran Commodity Street (Plan C).*

Street No.	No. of floors	Height of house at edge of proposed 30' rear open space.	No. OF ROOMS UNDER EXISTING ARRANGEMENTS.			No. of rooms under proposed arrangements (All Sanitary).	REMARKS.
			Sanitary.	Insanitary.	Total.		
	No	Ft. in.	No.	No.	No.	No.	It is proposed to transfer privies and washing places from the rear to the centre of each house, to abolish interior rooms and to have on each floor only rooms lighted either from the street in front or from the 30' open space in rear and in some cases extra rooms lighted from the central chook on the top floor.
62-64	5	33'-3"	5	5	10	9	
66-76	4	47'-6"	16	7	23	17	
78-80	4	25'-9"	7	0	7	8	
82-84	4	19'-6"	6	2	8	8	
93-97	4	39'-0"	9	7	16	8	
99	4	44'-9"	9	11	20	8	
101-103	5	49'-3"	14	10	24	10	
105	4	35'-9"	10	6	16	8	
		Total...	76	48	124	76	

2ND NAGPADA SCHEME

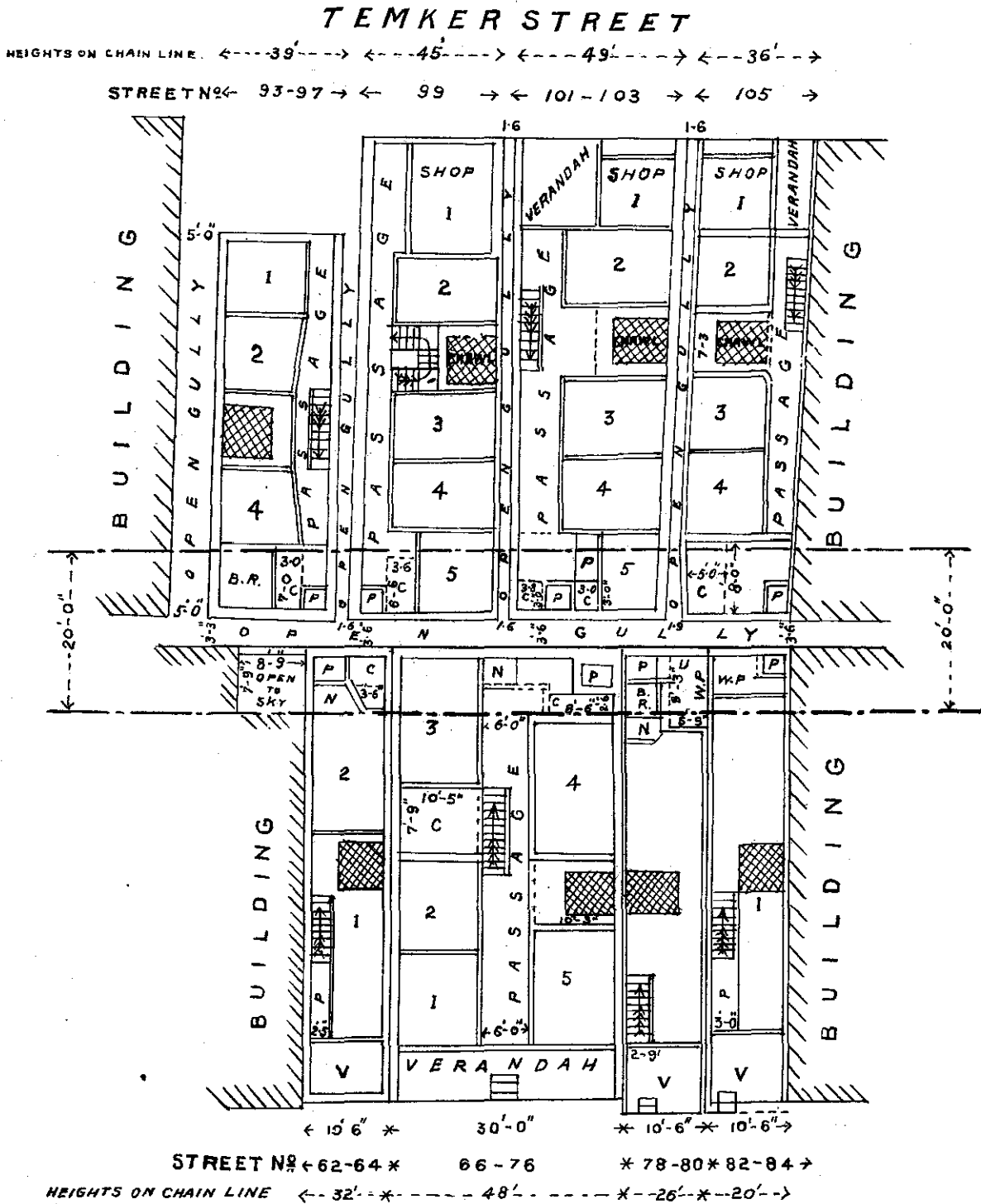
SCALE, 20'-1"

PLAN C. REFERRED TO IN APPENDIX A 3 16

Ground Floor Plan.

Note:-

Cross hatched areas denote sites proposed for W. C's and Washing Places after buildings are removed from the 20' space between the Chain Lines.



APPENDIX B.

THE 63½° RULE AS APPLIED IN CALCUTTA.

Letter to the President, Municipal Corporation, Calcutta, from the Secretary, Bombay Improvement Trust, No. 9562, dated the 6th December 1911:—

"I am directed to request the favour of being informed whether in connection with the Municipal building bye-laws the 63½° light and ventilation rule applies in Calcutta to buildings reconstructed on old plinths and whether the rule is applied or not. In Bombay the tendency is to treat interference with a man's right to rebuild on his old plinth as confiscatory.

2. In the case of plots belonging to this Trust the 63½° rule is comparatively easily applied as the Trust can fix open margins in two neighbouring plots and let both plots benefit by margins in both; but in private plots open space in a neighbour's compound cannot be reckoned on. Will you kindly say if your Corporation have any special way of dealing with this difficulty in Calcutta? It would be wasteful of space to make every man keep sufficient to comply with the 63½° rule *in his own land*.

3. The favour of an early reply is requested."

Letter to the Secretary, Bombay Improvement Trust, from the Deputy Chairman, Corporation of Calcutta, No. D. C. 397, dated the 14th December 1911:—

"With reference to your letter No. 9562, dated the 6th December 1911, to the address of the Chairman of the Calcutta Corporation, I have the honour to state that I am not acquainted with the Bombay Municipal Building Bye-laws, but I infer that what you describe as "63½° light and ventilation rule," is the rule regulating the open spaces to be left in the rear of the building. I enclose a copy of the Calcutta Building Bye-laws, and I would draw your* attention to Rule 22 of Schedule XVII, which provides for an open space of not less than 10 feet in depth being left at the rear of every domestic building, such space to increase in depth according to the height of the building abutting on it. In Calcutta the building rules apply to new buildings erected on old plinth equally with the buildings constructed on a site previously open, except for the relaxation of Rule 2 provided for in Rule 50 of Schedule XVII. Moreover, under Section 391 of the Calcutta Municipal Act (1899) it is held that any additions or alterations made to a building which do not come within the definition of necessary repairs, are regulated by *all* the Building Rules. The fact that open space may be left in the rear of one domestic building which abuts on the rear of another domestic building, does not exempt the latter building from the operation of Rule 22, nor is any concession made in such a case if the owners of two such buildings wished to leave a common open space less than double the width prescribed for any single building under Rule 22. I may state that there has been no difficulty in applying this rule in Calcutta. It is recognised that in the case of insanitary and ill-ventilated buildings the opportunity for having a sanitary building constructed in conformity with the Building rules, must be utilised when the old building is demolished. In certain cases the General Committee have

*This letter deserves special attention of the Bombay Municipality. If the Bombay bye-laws were brought into line with those of Calcutta on the points here dealt with they would be purged of some of their main defects. J. P. O.

allowed some relaxation of the building Rules under Section 391 of the Act III (B. C.) of 1899 in order to encourage owners to demolish old insanitary buildings and to construct buildings which conform substantially to the Building Rules but it is recognised that such concessions cannot be claimed as a right.

2. I should be glad if you will kindly send me for reference a copy of your own Building Bye-laws."

Extract of Rules from Schedule XVII, Act III of 1899 (as amended by the Local Government up to 14th March 1911).

2. (1) If a building is situated at the side of a street no portion of the building, except open or balustrated parapets not more than four feet high, shall intersect any of a series of imaginary lines drawn across the street at an angle of forty-five degrees with the plans of the ground, such lines being drawn from the street alignment on the side of the street which is the more remote from the building in question from a height of two feet above the centre of the street. Height.

Provided as follows :—

- (i) where the said street is joined at an angle by another street facing the building, the height of the building measured from two feet above the centre of the street and excluding parapets as aforesaid shall not in any case exceed the width of the street in which it is situated, together with the width of any set-back which may be made, plus half the width of the street facing it.
- (ii) Nothing herein contained shall affect the erection of a building abutting upon, or situated at the site of a street of not less than 60 feet in width, if such building does not exceed 80 feet in height ; and
- (iii) no building exceeding 80 feet in height shall be erected without the special permission of the General Committee.

Explanation.—If a building be placed at the edge of the street, its height measured from two feet above the centre of the street and excluding parapets as aforesaid must not exceed the average width of the street facing the site ; but, if the building or one or more of its storeys be set-back, the height of the building may be increased subject to the condition that no portion of the building, after the height is increased, intersects any of the aforesaid lines.

2. (2). In the case of any building which is re-erected in a street in existence at the commencement of this Act, the angle at which the lines referred to in sub-rule (1) are to be drawn shall be forty-six and-a-half degrees instead of forty-five degrees.

Provided as follows :—

- (i) the height allowed under this rule shall in no case be more than thirty-six feet ; and
- (ii) nothing contained in this sub-rule shall authorise the re-erection of any building so as to make it higher than any building which at the commencement of this Act was standing in the same place.

2. (3) Notwithstanding anything contained in sub-rule (1) or sub-rule (2), the Corporation may, by order published in the *Calcutta Gazette*, declare that, in any street specified in the order, the erection of two-storeyed buildings not exceeding twenty-eight feet in height, excluding two feet for the plinth and excluding open or balustraded parapets not more than four feet high, will be permitted without complying with the requirements of those sub-rules.

(4) If a building is situated on a corner plot, so as to abut upon more than one street, the height of the building shall be regulated by the wider of such streets so far as it will abut or abuts upon such wider street, and also so far as it will abut or abuts upon the narrower of such streets to a distance of fifty-five feet from the wider street :

Provided that, if the narrower street does not exceed eight feet in width, the height of the building shall be regulated by the wider street so far as it will abut or abuts upon the narrower street.

(5) Notwithstanding anything contained in sub-rule (1), (2) or (4)—

- (a) a building of not more than one storey and not exceeding fourteen feet in height above the centre of the street; and
- (b) if the owner, by a free gift of a portion of his land to the Corporation, makes the street not less than twelve feet wide in front of his site, then a two-storeyed building not more than twenty-eight feet high,

may be erected without complying with the requirements of those sub-rules.

22. (1) Except in localities where the erection of only detached buildings is allowed, there must be in the rear of every domestic building an open space extending along the entire width of the building and belonging exclusively to the building, unless the back of the building abuts on an open square or the like of not less than twenty feet in width, which is dedicated to public use and is consequently not likely to be built upon :

Open space in rear of building regulating the rear height.

Provided that, if the back of such building abuts on a public street which is less than twenty feet in width, an owner, on giving up to the Corporation a sufficient portion of his land to make such public street not less than 20 feet wide, may be allowed to build on the very edge of his remaining land without being required to leave any such open space.

(2) The minimum distance across such space from every part of the building to the boundary line of the land or building immediately opposite such parts shall be 10 feet :

Provided that in the case of any building in which there are both an outer and an inner courtyard, a minimum distance of six feet shall be permitted.

(3) No portion of the building excluding open or balustraded parapets not more than four feet high shall intersect any of a series of imaginary lines drawn across such space at an angle of sixty-three and-a-half degrees with the plane of the ground, such lines being drawn from the line limiting the width of such space at the side thereof which is the more remote from the building, at the level of the plinth of the building ;

Provided that, in the case of two-storeyed buildings the angle shall be increased from sixty-three and-a-half to sixty-eight degrees.

Explanation.—If the building be placed at the edge of such space, its height, measured from the level of the plinth and excluding parapets referred to above, must not exceed twice, or, in the case of a two-storeyed building, two-and-a-half times the width of the space, but if the building or one or more of its storeys be set-back, the height of the building may be increased, subject to the condition that no part of the building, after the height is increased, intersects any of the aforesaid lines.

(4) For the purposes of this rule, the rear of a building shall be deemed to be that face which is farthest from any street at the side of which the building is situated :

Provided that where a building is situated at the side of more than one street, the rear of the building shall, unless the Chairman otherwise directs, be deemed to be that face which is farthest from the widest of such streets.

Relaxation of Rule 22 in case of irregular site.

23. If any person desires to erect a domestic building, in a street laid out before the commencement of this Act, upon a site which is of such a nature that it is impracticable to provide an open space in the rear of the building of the dimensions prescribed by Rule 22, the General Committee may relax the provisions of that rule :

The principle of this Rule 23 might well be adopted in Bombay. I draw special attention to proviso (b).
J. P. O.

Provided that—

- (a) such open space shall be left as the General Committee may consider practicable, having regard to all the circumstances of the case, and
- (b) not more than two-thirds of the total area of the site shall be occupied by masonry buildings or verandahs.

Relaxation of Rule 2

50. In applying Rule 2 in the case of an alteration of, or addition to, any building which was erected before the commencement of this Act, the angle at which the lines referred to in sub-rule (1) of that rule are to be drawn shall be forty-six and-a-half degrees instead of forty-five degrees :

Provided that nothing contained in this rule shall authorise any addition to a building which would make it higher than any building which, at the commencement of this Act, is standing in the same place.

Construction of Rules 30 to 36 or 47 to 49.

52. (1) Rules 32 to 36 or Rules 47 to 49, as the case may be, shall not be applied in the case of any alteration of, or addition to, a building unless one or more of the following works is, or are, undertaken, namely :—

- (a) the construction of a roof or an external or party wall ;
- (b) any repairs to the building which involve the reconstruction of a masonry wall and lift shaft or a chimney after the same has been entirely or in great part demolished ;
- (c) the closing of any door or window in an external wall ;
- (d) the construction of an internal wall or partition ;
- (e) any other alteration of the internal arrangements of a building which affect an alteration of its courtyard or courtyards or its drainage, ventilation, or sanitary arrangements, or which affect its security ;

- (f) the addition of any building, room, out-house, or other structure ;
- (g) the roofing of any space between one or more walls and buildings ;
- (h) the conversion into more than one place for human habitation of a building originally constructed as one such place ;
- (j) the conversion of two or more places of human habitation into a greater number of such places ;
- (k) the alteration of a building for the purpose of effecting a partition amongst joint-owners.

52. (2) In the case referred to in clause (g) of sub-rule (1) the said Rules 30 to 36, or Rules 47 to 49, as the case may be, shall apply only as regards the structure which is formed by roofing a space, and not as regards adjoining buildings.

EXTRACT FROM THE CALCUTTA MUNICIPAL ACT.

Application of Act to alterations of, and additions to, buildings.

391. (1) Without the consent of the General Committee, no person shall make any alteration of, or addition to, any building in such manner that, when so altered or added to, the building will, by reason of such alteration or addition, not be in conformity with the provisions of this Chapter or Schedule XVII or any orders, rules, or bye-laws made under this Act, relating to the erection of buildings.

Application of Act to alterations of, and additions to, buildings.

(2) Every alteration of, or addition to, a building, and any other work made or done for any purpose in, to, or upon a building shall, so far as regards such alteration, addition, or other work, be subject to the provisions of this Chapter and Schedule XVII, and any orders, rules, or bye-laws made under this Act, relating to the erection of buildings :

Provided as follows :—

- (a) none of the said provisions, orders, rules, or bye-laws shall apply in the case of a necessary repair not affecting the position or dimensions of a building ;
- (b) sections 370 to 383 (*re*: masonry buildings) or sections 384 to 390 (*re*: huts), as the case may be, shall not apply in the case of any alteration of, or addition to, a building unless one or more of the works referred to in Rule 52 of Schedule XVII is, or are, undertaken ;
- (c) provisional permission to proceed with any of the works referred to in the said Rule 52 may be granted in the cases, and subject to the conditions prescribed in this behalf in the said Schedule XVII.

Corresponding to sections 337 to 353 of the Bombay Municipal Act. J. P. O.

(3) If any question arises as to whether any alteration, addition, or other work is a necessary repair not affecting the position or dimensions of a building, the matter shall be referred to the General Committee, whose decision shall be final.

**NOTE BY DEPUTY ENGINEER ON THE LIGHT AND
VENTILATION RULES OF CALCUTTA AND
BOMBAY.**

1. The Light and Ventilation Rules of the Calcutta Municipality are in some cases much more stringent than those of the Bombay Improvement Trust, in other cases they are not quite so strong taken as a whole ; however they are, I should think, more stringent if the law is carried out as laid down. This is a point which should never be forgotten in connection with Building Bye-laws ; as one may have the most upto date and most satisfactory Bye-laws that were ever written and yet owing to slackness in applying them may get the worst results on record.

2. The first rule of the Calcutta Municipal Bye-laws referring to this subject is No. 17 of part IV on page 12, which runs as follows :—

Proportion of site for dwelling-house which may be built upon.

The total area covered by all the buildings (including verandahs) on any site used for a dwelling-house shall not exceed two-thirds, or, in localities where the erection of only detached buildings is allowed, one-third of the total area of the site ; and the area not so covered shall belong exclusively to the dwelling-house and shall be retained as part and parcel thereof.

3. The first portion of this rule is the same as the old one-third open space rule of the Bombay City Improvement Trust, which for various and excellent reasons the Trust has abandoned. The rule however does not stop there, but goes further, in that in localities where the erection of only detached buildings is allowed there must be two-thirds of every plot kept as open space ; this would be a very desirable rule no doubt in portions of Schemes like Schemes V (Dadar-Matunga) and VI (Matunga-Sion), but would be rather hopeless to apply in a City, at any rate such a City as Bombay, which is precluded from expanding on two sides. The reason why the Trust have abandoned the one-third open space rule is that satisfactory results can be got in this City by the use of the $63\frac{1}{2}^{\circ}$ rule, while permitting a larger area to be built upon.

This rule is as follows :—

$63\frac{1}{2}^{\circ}$ Rule applied to Side open spaces.

An air space at the side of the building obtained as follows :—An imaginary horizontal plane shall be assumed at the level of the floor of the lowest habitable room of which any portion of the required window area opens on to such air space. An imaginary diagonal plane shall be assumed making an angle of sixty-three and-a-half degrees with the imaginary horizontal plane and whose intersection with the said horizontal plane shall be a line parallel to the nearest boundary of the adjoining plot and vertically over the said boundary. No portion of the building above the said horizontal plane and depending for light and ventilation on this side air space shall be at a less horizontal distance than 10' from the said boundary, nor project beyond the said imaginary diagonal plane, except chimneys, dormers,

gables, turrets, or other architectural ornaments aggregating in all no more than one-third of the side elevation of such building.

63½° Rule applied to Interior open spaces.

Every Ventilation chowk within a building shall consist of an interior open space having an area not less than one-fourth of such portion of the aggregate floor area of all the rooms abutting thereon as may depend on the same for the minimum required opening for light and ventilation, and of a width in every direction not less than half the height measured from the floor of the lowest habitable room opening into it to the eaves or top of the parapet of the opposite wall, subject to a minimum width of 10 feet.

Such interior open space shall be and be kept free from any erection thereon, and shall be and be kept open to the sky for its entire area and no portion of any verandah, gallery or other projection of a building abutting on any such interior open space shall project over such interior open space other than the main roof eaves and those only to the extent of 18". And every interior open space shall have as a means of access thereto a passage on the ground floor communicating with either a street or a space open to the air. Such passage shall be not less than 6 feet wide and 8 feet high and shall not be closed or obstructed at either end or at any part thereof otherwise than by a door or gate having at least three-fourths of its area open to perforation of air. All such interior open spaces shall be rectangular.

63½° Rule applied to the Rear open spaces.

The height of any such building in relation to the open space required in the rear thereof shall be fixed and ascertained as follows :—

(a) An imaginary horizontal plane shall be assumed at the level of the surface of the Crown of the adjoining street such level to be fixed by the Engineer where the surface of the said crown is not on one level.

(b) One or more imaginary diagonal planes shall be assumed, inclined at an angle of 63½° to the horizontal plane, such that the lines of intersection shall be parallel to the frontage line and shall cut the rear boundary of the plot at such point as the Engineer may fix.

(c) When the land at the rear of any such building and exclusively belonging thereto abuts immediately upon a street or upon an open space which is dedicated to the public, or the maintenance of which as open space is secured permanently or to the satisfaction of the Board by covenant or otherwise, the diagonal plane or planes shall be assumed such that the intersection with the horizontal plane shall be parallel to the frontage line of the plot and shall cut the further boundary of such street or open space at such point as the Engineer may fix subject to a maximum distance of 20 feet from the rear boundary of the plot and it shall not be necessary to provide any open space in the rear of such building.

(d) No part of such building shall extend above such diagonal plane or planes except chimneys, dormers, gables, turrets, or other architectural ornaments aggregating in all not more than one-third of the width of the rear elevation of such building, and except any building which under the provisions of these regulations is permitted on the open space.

4. In Mandvi-Koliwada (Scheme No. VIII) the proportion covered by buildings is as much as 86 per cent. of the total area of the plots leased giving 14 per cent. of open space only, but at the same time complying with the 63½° Rule. From both the sanitary and economical points of view the result is highly satisfactory.

5. In the out-lying Schemes it is quite as easy to lay down building lines which can regulate the amount of building on any plot or sets of plots. Of course when comparing the Improvement Trust with a Municipal Corporation one must remember that the two bodies are dealing with very different things. In the case of the Trust we are dealing with Trust Estates on which we have a perfect legal right to say that they shall not be built upon except in certain ways and can enforce our rights in this connection even if we were to insist on things which were unreasonable. The Municipality, on the other hand, has to deal with buildings erected on private properties and can only lay down general rules.

6. The Calcutta Rule relating to the Size and Ventilation of inhabited rooms is as follows :—

Size and Ventilation of inhabited rooms.

20. Every room in a domestic building which is intended to be used as an inhabited room—

(a) must be in every part not less than 10 feet in height, measured from the floor to the under side of the beam on which the roof rests ;

(b) must have a clear superficial area of not less than eighty square feet ; and

(c) must be provided for purposes of ventilation, with doors or windows opening directly into the external air, or into a verandah and having an aggregate opening of not less than one-fourth of the superficial area of that side or one of those sides of the room which faces or face an open space.

7. This rule is identical with that of the Bombay Municipality except that in Calcutta the room is required to be not less than 80 square feet in area, whereas in Bombay it is required to be not less than 100 square feet ; the portion of the rule relating to doors and windows is an insanitary one for the reasons given in my note of 9th May 1910 (copy attached).

8. Calcutta has an additional and very excellent rule regarding the ventilation of the staircase which requires that in the case of flats (also, presumably, of chawls) the principal common staircase must be adequately ventilated upon every storey.

9. Calcutta Rules as regards internal open spaces are a mixture of those of the Bombay Municipality and the Bombay Improvement Trust. They are not so stringent as the Improvement Trust and are much more stringent than Bombay Municipality ; for instance by Calcutta Rules, the minimum superficial area of any internal open space must be not less than $\frac{1}{4}$ th of the aggregate floor area of all the rooms and verandahs abutting on it. The Bombay Rule is $\frac{1}{10}$ th of the floor area. The Improvement Trust rule is that it must be wide enough and long enough to permit of every room depending on it for light or air, getting an angle of $63\frac{1}{2}^{\circ}$ of light. Again under the Calcutta rule the minimum width of an internal open space is 8 feet. The Bombay Municipality make the minimum width 6 feet, under the Improvement Trust the minimum width is 10 feet.

10. In addition to these rules the Calcutta Municipality enforce the $63\frac{1}{2}^{\circ}$ rule as practised by the Improvement Trust with the following modifications :—

- (1) The angle is taken at Plinth level instead of ground level as with the Trust.
- (2) In the case of dwelling-houses which have more than two storeys, the storeys above the second shall not be taken into account in applying the $63\frac{1}{2}^{\circ}$ rule to internal spaces if they are not built on more than two sides of the house.

11. There is nothing very much to urge against the 1st of these modifications, but the second is rather retrograde, and I imagine has not been given very full consideration as it is quite conceivable that modification might lead to the most undesirable state of affairs as will be seen from the marginal sketch which shows the building with a central 'chowk' on which two sets of rooms on each floor depend for light and air, the two long sides being 5 storeys high and the two short sides being of 2 storeys. The result would be that the internal line of rooms on the ground, 1st and 2nd floors of the longer sides would be very badly lighted indeed; in fact the ground floor would be pitch dark. It seems to me that in drawing the Calcutta Rules they have forgotten this possibility, and have only considered the case of two sides at right angles to each other which would not be objectionable to any great extent although even in that case the ground floor rooms on the side which was not built up would have to depend on reflected light.

12. As regards the $63\frac{1}{2}^{\circ}$ rule applied to the open spaces in the rear of the building and regulating the height of the building in the rear the Bombay Municipality has no such rule. The Calcutta Corporation rule is very well and clearly worded, as follows :—

Open-space in rear of building regulating the rear-height.

22. (1) Except in localities where the erection of only detached buildings is allowed, there must be in the rear of every domestic building an open space extending along the entire width of the building and belonging exclusively to the building unless the back of the building abuts on an open square or the like of not less than twenty feet in width, which is dedicated to public use and is consequently not likely to be built upon.

Provided that if the back of such building abuts on a public street which is less than twenty feet in width, an owner on giving up to the Corporation a sufficient portion of his land to make such public street not less than twenty feet wide, may be allowed to build on the very edge of his remaining land, without being required to leave any such open space.

(2) The minimum distance across such space from every part of the building to the boundary line of the land or building immediately opposite such parts shall be 10 feet.

Provided that, in the case of any building in which there are both an outer and an inner courtyard, a minimum distance of 6 feet may be permitted.

(3) No portion of the building, excluding open or balustraded parapets not more than four feet high, shall intersect any of a series of imaginary lines drawn across such space at an angle of sixty-three and-a-half degrees with the plane of the ground, such lines being drawn from the line limiting the width of such space at the side thereof which is the more remote from the building, at the level of the plinth of the building.

Provided that, in the case of two-storeyed buildings, the angle may be increased from sixty-three and-a-half to sixty-eight degrees.

Explanation.

If the building be placed at the edge of such space, its height, measured from the level of the plinth and excluding the parapets referred to above, must not exceed twice, or, in the case of a two-storeyed building, two-and-a-half times, the width of the space; but, if the building or one or more of its storeys be set back, the height of the building may be increased, subject to the condition that no part of the building, after the height is increased, intersects any of the aforesaid lines.

(4) For the purposes of this rule the rear of a building shall be deemed to be that face which is furthest from any street at the side of which the building is situated.

Provided that, where a building is situated at the side of more than one street, the rear of the building shall, unless the Chairman otherwise directs, be deemed to be that face which is furthest from the widest of such streets.

13. This rule is the same in effect as the Improvement Trust Rule but has this additional provision which is a most useful one namely "provided that if the back of a proposed building abuts on a public street which is less than 20 feet in width an owner on giving up to the Corporation a sufficient portion of his land to make such public street not less than 20 feet may build upto the edge of his land without leaving a rear open space on his land, the $63\frac{1}{2}^{\circ}$ rule of course applying." The Calcutta Corporation modify this rule to a certain extent, and for reasons which do not appear, in the case of two-storeyed buildings in this case the angle is increased from $63\frac{1}{2}^{\circ}$ to 68° , *i.e.*, from the angle whose tangent is 2 to 1 to that whose tangent is $2\frac{1}{2}$ to 1.

14. As regards the open space at the sides of the buildings the Calcutta Municipality do not appear to apply the $63\frac{1}{2}^{\circ}$ rule and this appears to me to be a serious omission especially in Calcutta where they do not allow a dwelling-house to be attached to the adjacent building but insist on having space between them; the rule being that building must be at least 4 feet away from the boundary of the plot if a public open space is on the other side of the boundary line; if such open space is not on the other side then the distance of a building from the boundary must be at least 6 feet. Many examples of the undesirability of not applying the $63\frac{1}{2}^{\circ}$ rule on the sides of buildings are to be observed in Bombay and I for one distinctly prefer that the building should be attached to the adjacent building or that the $63\frac{1}{2}^{\circ}$ rule should be insisted upon. These two alternatives are those permitted by the Trust.

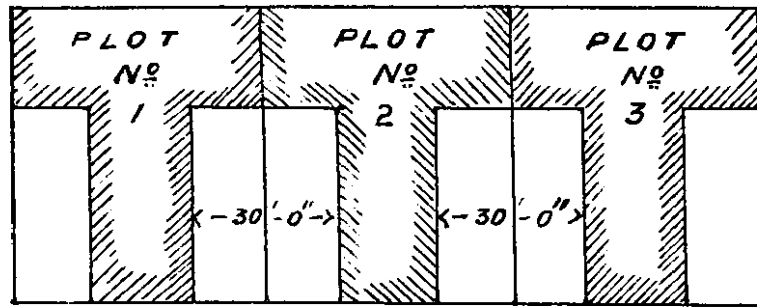
F. WATSON,

A. M. INST. C. E.,

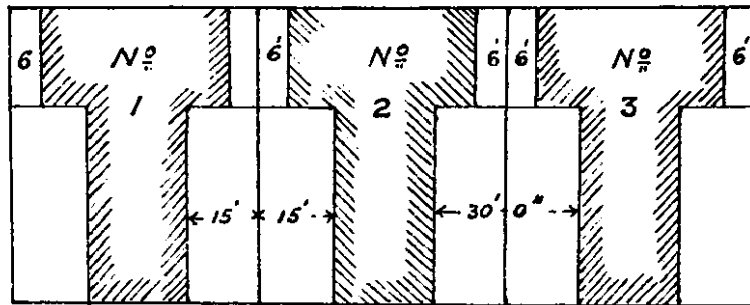
Deputy Trust Engineer.

1. I concur with Mr. Watson in his remarks on the $63\frac{1}{2}^{\circ}$ rule.

2. The ideal development for continuous blocks of buildings is undoubtedly the T arrangement.



GROUND FLOOR PLAN OF
"T" SHAPED BUILDINGS
HEIGHT OF BUILDING 60'
OPEN SPACES 30' WIDE.



UPPER FLOOR PLAN OF
"T" SHAPED BUILDINGS
SHOWING 12' OPENING IN
FRONT FOR PERFLATION OF AIR.

To meet the charge that a continuous frontage is prejudicial to satisfactory perflation of air in the interior of the block an open space 6' wide between the building and the plot boundary might be left on both sides extending from the front of the building to the rear open space the size of which is governed by the $63\frac{1}{2}^{\circ}$ rule. The 6' open space to commence at the 1st floor level ; the ground floor frontage being continuous. All rooms abutting on the 6' open space (12' with the neighbours' 6' open space) must of course receive light from other sources according to the $63\frac{1}{2}^{\circ}$ rule.

R. J. KENT,

A. M. INST. C. E.,

Trust Engineer.

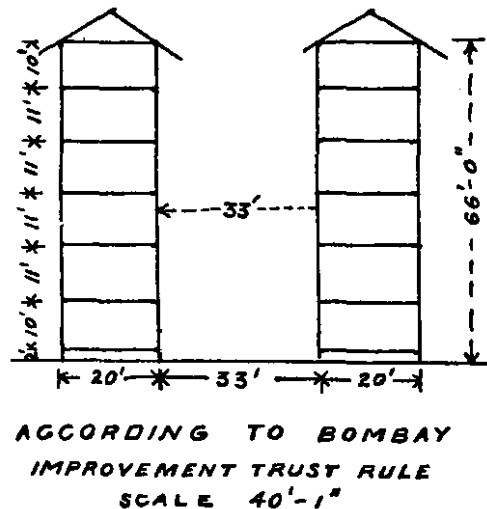
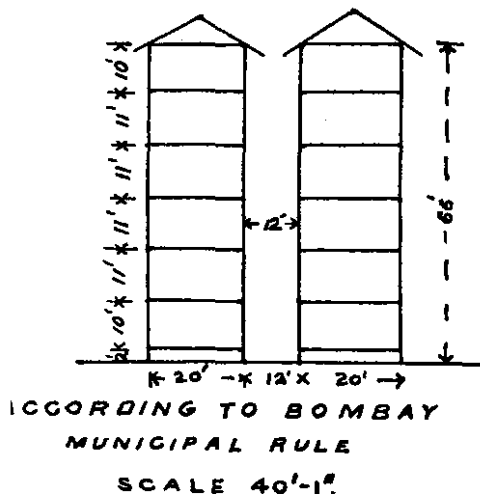
**DEPUTY ENGINEER'S NOTE NO. 3645 OF 9-5-1910
REFERRED TO IN PARA. 6 OF HIS NOTE
NO. 6016 OF 13-11-1910.**

*Comparison of Bombay Municipal Bye-laws re Ventilation of
buildings with those of Improvement Trust.*

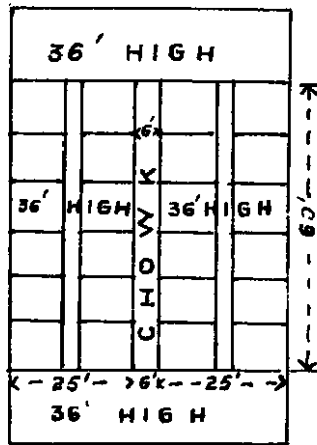
1. In the Municipal Bye-laws there are very few rules for ventilation of buildings, and those which exist do not appear to me to be such as can be taken as a standard for Trust Estates. The differences between the Trust rules on this subject and the Municipal rules are chiefly due to the fact that the Municipality is trying to make the best of a bad state of things which already exists and which they cannot change all at once. In the case of the Trust we are dealing with things *de novo* and therefore can insist on sanitary conditions being maintained.

2. Taking the Municipal Bye-laws on this subject *seriatim* :—

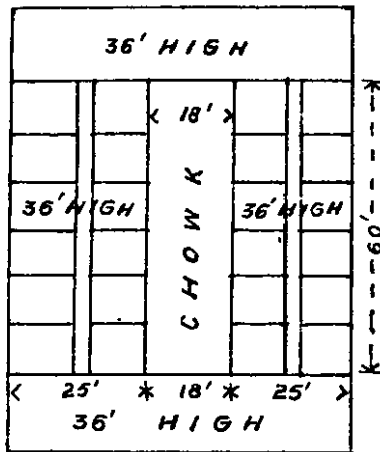
Bye-law No. 41 (1).—The Municipal rule is that every room intended for human habitation shall have the whole of at least one side abutting on an exterior or interior open space. The Trust require practically the same thing. The difference in the two rules comes in the definition of what constitutes the exterior open space, and the interior open space. According to the Municipal Building Bye-laws the minimum open space is given by a scale. See attached *Exhibit A*. In the case of the Trust the minimum external open space is not defined as regards its width or other dimensions but is fixed as being such width as will permit of every room opening on to it, receiving a minimum of $63\frac{1}{2}^{\circ}$ of light. In the same way the Municipal Bye-laws define the minimum interior open space as being a space of not less than 6 feet wide, the area of which is not less than $\frac{1}{10}$ th of the aggregate floor area of all rooms abutting on it. The Trust define the minimum interior open space in exactly the same way as the minimum exterior open space is defined namely that every room depending wholly on the interior open space for its light and air shall receive not less than $63\frac{1}{2}^{\circ}$ of light. The working of the two different rules is best understood from an example.



3. Take for instance two buildings both 66 feet high side by side both having rooms on the ground floor depending for light and air on the open space between the two buildings. In the case of the Municipal rule these buildings need only be 12 feet apart, in the case of the Trust they must be 33 feet apart. In the case of the Municipality the rooms on the ground floor will be in a state of continual twilight whereas in the case of the Trust the occupants of the rooms would be able to see the sky without going out of their room. With 12' space both Trust and Municipality would allow houses 24' high but while Trust would not allow the height to be increased, Municipality would allow increase upto 66", and every increase would lower the standard of light and ventilation in the lower rooms.



ACCORDING TO MUNICIPAL RULE
SCALE 40'-1"



ACCORDING TO BOMBAY IMPROVEMENT TRUST RULE
SCALE 40'-1"

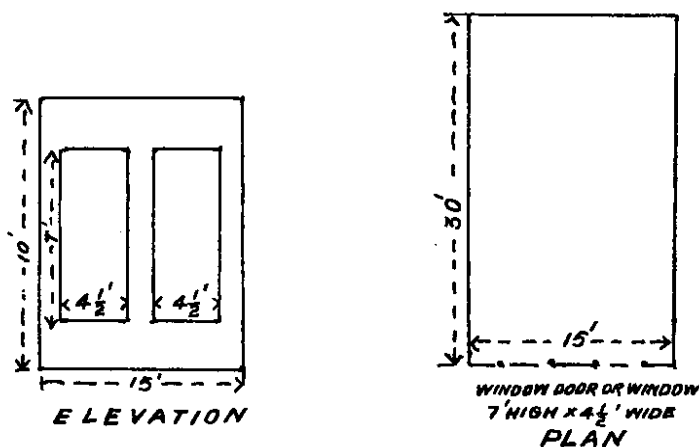
4. To illustrate the difference of the rules in the case of interior open space, suppose that we have a 3 floor building 36' high, and that in this building there are on each floor 12 rooms, each 100 square feet in area, and that the 12 rooms abut on either side of a central chowk and are dependent for their light on that chowk and that the side of each

of the rooms next the chowk is 10 feet wide. Under the Municipal rules the size of that chowk may be 6 feet wide and 60 feet long. In the case of the Trust the chowk must be 18 feet wide and 60 feet long. The sanitary result of the Municipal rule can be better imagined than described. Rooms on the ground floor would enjoy rather less light than a mediæval dungeon, and as to their ventilation the less said the better.

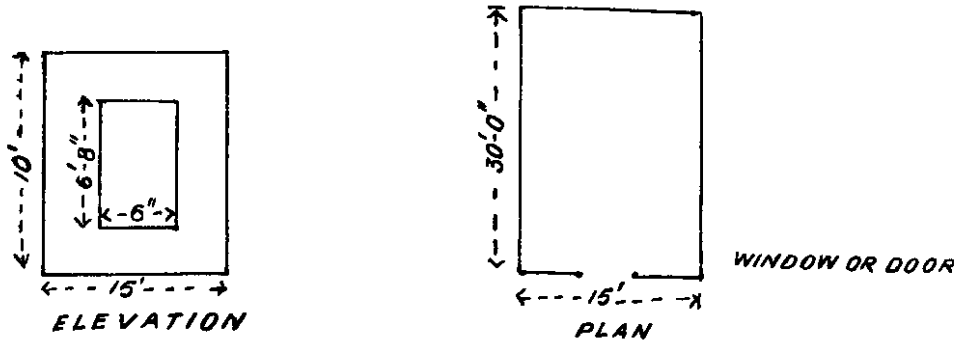
In the lowest and worst lighted rooms on Trust Estates, you can see the sky by lying on the floor with your head within 4 feet of a wall in which is a window whose top is 8 feet above ground level ; whereas outside Trust Estates your eye would have to be within $1\frac{1}{2}$ feet of the wall.

5. *Bye-law* 42 of the Municipal Bye-laws provides the same requirements as regards the size and superficial area of rooms as the Trust rules. It provides that every room shall be ventilated by means of doors or windows which open directly into the external air and have an aggregate opening equal to not less than one-fourth of the superficial area of that side of the room which faces an open space. Thus in a Kamatipura house with 7 feet frontage a room 10 feet high, 7 feet broad and 30 feet deep would pass Municipal Bye-law if it had a door 6' x 3' and no window. The Trust rule on the other hand is that such openings shall not be less than one-seventh of the superficial floor area of the room and of such opening, the window or grating area shall not be less than one-fifteenth of the floor area.

6. The difference between these two rules is best seen from an example:—Supposing we have a room 15 feet wide by 30 feet deep by 10 feet high with the 15 feet side abutting on the open space, under the Municipal rules a window 6'-3" high by 6 feet wide would suffice. In the Trust rules two windows 7 feet high by $4\frac{1}{2}$ feet wide would be required. In the case of the room complying only with Municipal rules there would be very little light for the last 10 feet of its depth. In fact if the external air space were the minimum allowed by the other rules before mentioned there would be no light at all.

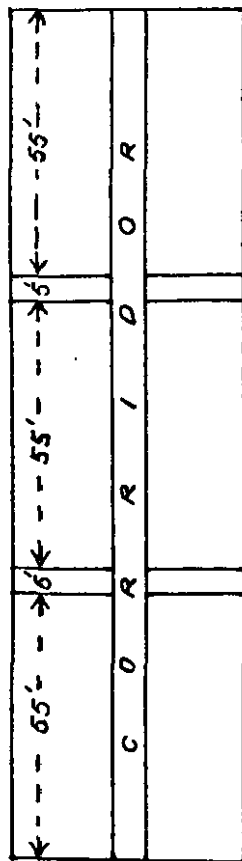


ACCORDING TO TRUST RULE

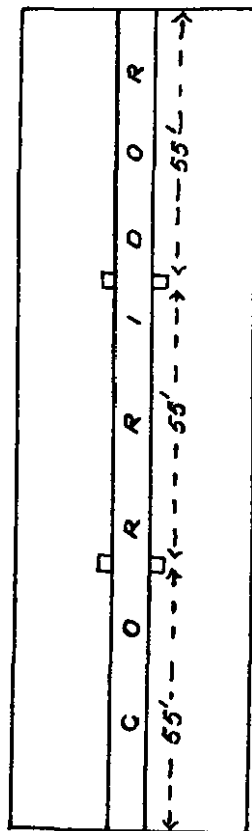


ACCORDING TO MUNICIPAL RULE

7. *Bye law 43* provides for certain gratings in back to back rooms; these are not mentioned in the Trust's Bye-laws as in the cases of chawls, back to back rooms are prohibited and in the case of other buildings there is no difficulty with regard to through ventilation.



AS INTENDED
SCALE 40'-1"



AS ACTUALLY REQUIRED
BY BYE-LAWS
SCALE 40'-1"

8. *Bye-law* 44 provides that the corridors in chawls shall be open to the air at both ends and shall if they exceed 55 feet in length have a through passage from side to side open to the air at distances of at most 55 feet. The first part of the rule is the same as provided by the Trust. The second part has not been provided as our other rules are sufficient to preserve Sanitary conditions, but in the case of our own chawls we provide the open chowk for ventilation at about this interval.

This is the rule as intended by the Municipal Executive ; but actually the rule in the Bye-laws requires only two small shafts or chimneys 2' x 2½' on each side of corridor every 55 feet of its length.

(Sd.) F. WATSON,

A. M. INST. C.E.,

Dy. Trust Engineer.

EXHIBIT A.

(Referred to in para. 2 of Deputy Engineer's Note 3645 of 9-5-10.)

In the case of dwellings other than chawls :—

Minimum width of open space throughout.	Where height of building above the plinth does not exceed.
2 feet.	22 feet.
3 "	33 "
4 "	44 "
5 "	55 "
6 "	66 "
7 " where height exceeds.	66 "

In the case of Chawls :—

5 feet.	22 "
6 "	33 "
7 "	44 "
8 "	55 "
9 "	66 "
10 " where height exceeds.	66 "

APPENDIX C.

(Referred to in paras. 15, 17 and 18 of Note.)

METHOD OF DEALING WITH OBSTRUCTIVE HOUSES, DISPOSING OF THEIR CLEARED SITES AND ASSESSING BETTERMENT RATES LEVIABLE ON ADJACENT PROPERTIES.

1. It is difficult to lay down the general rules which should govern the disposal of sites of obstructive houses because of the great variety and complexity of the cases that are met with.

2. The Trust will do well to select only cases in which *all* the neighbouring houses are substantially benefited by the clearance. It is very desirable that there should be some easily applicable method of assessing the betterment rate, and that, to get the matter settled once for all, the assessor should take into account potential betterment to result on reconstruction of the houses concerned and not merely the immediate actual benefit to the houses as they now stand.

3. In order to reduce house owners' expenses as far as reasonable, it should be recognised that a part of the cost of the operations may be paid from the public purse and the Trust may be empowered to recover not more than two-third and not less than half of that cost in the shape of betterment rate.

4. Various systems of distribution of cost have been tried in many actual cases, and it has been found necessary to discard those methods which aim at distributing the burden in strict proportion to the immediate benefits gained by the several houses because of their complexity. The system most easily applicable and least open to the objection that it results in unequal treatment is that which has been adopted in the 4 cases set out here, *viz.*, to distribute the burden to the several houses in proportion to the length of their several frontages on the acquired area, and give the owners the option of paying a lump sum or an annual betterment rate.

5. In order to leave every house-owner some margin of profit, it is proposed to recover in any year only so much of the betterment rate as added to the general tax payable in the year gives the equivalent of a general tax at a 25 per cent. rate (the present rate is 10 $\frac{3}{4}$ per cent.) and to remit the remainder. Thus in the year of the clearance the assessments will be low in consequence of so many rooms having been till then condemned and there will be pretty big remissions of betterment rate; but the clearance of the site will result in the removal of the prohibition against occupation, of several rooms, and rents and assessments will rise: *pari passu* the amount actually paid out of the increased rents towards the betterment rate will rise and remission will fall till probably in a few years, when better rents are obtained, *e.g.*, when an extra storey rendered permissible by the conversion of the obstructive house into an open space is constructed, there will be no remission and general tax and betterment rates together will fall below 25 per cent.

6. The effect of this limitation in individual cases will be to raise the Trust's share and decrease the private owner's share of the cost of the clearance operations, so that if (*e.g.*) the original distribution assigned 60 per cent. to the owners and 40 per cent. to the Trust, the actual effect may be that they pay half and half. This can be roughly allowed for in fixing the

original distribution so as to suit the pockets of the owners. The poorer the owners are and the more urgently improvement is required, the larger should the Trust's share be.

7. In return for the Trust's share of the cost they (or the Municipality) will have the right to make use of the cleared sites for offices, godowns, and other purposes set out in para. 18 of the main note (q. v.)

8. In the Telwadi case dealt with in Plan and Statement **A**, it is found equitable to recover no more than half the cost of acquisition from the owners of the houses benefited by the removal of the obstructive house. None of these owners will get any remission in 1912-13 as the betterment rate in that year will fall short of the maximum leviable. House No. 33 can be raised by one storey and houses Nos. 34 and 35 by two each as a result of the creation of the open space; so the maximum leviable in these cases will ultimately increase and the owners will have no difficulty in paying the full betterment rate. In all probability the public purse will ultimately pay half the cost of the acquisition.

9. In another Telwadi case, dealt with in Plan and Statement **B**, it is found equitable to recover two-thirds of the cost of acquisition from the owners of houses benefited by the removal of the obstructive house. The owner of house No. 13 will get remission of Rs. 101 in 1912-13 and the total betterment rate recoverable in that year will be Rs. 379 instead of the maximum Rs. 480. The Western portion of house No. 13 can be raised by two storeys and the Southern portion of house No. 22 can be raised up to a maximum height of 70 feet (its present height being only 26 feet) as a result of the creation of the open space, so the maximum leviable in these cases will ultimately increase and the owner of No. 13 will then have no difficulty in paying an increased betterment rate. In all probability the public purse will ultimately pay about 40 per cent. of the cost of acquisition.

10. In the Kolbhatwadi case dealt with in Plan and Statement **C**, it is found equitable to recover 60 per cent. of the cost of acquisition from the owners of houses benefited by the removal of the back of the obstructive house. Two of the owners, i.e., those of houses Nos. 37 and 38 will get a remission in 1912-13 while in the remaining two cases the betterment rates in that year will fall short of the maximum leviable. Houses Nos. 35 and 38 can be raised by two storeys each as a result of the creation of the open space, so the maximum leviable in those cases will ultimately be increased and the owners will have no difficulty in paying full betterment rate. In all probability the public purse will ultimately pay 45 per cent. of the cost of acquisition.

11. In the Umakhadi case dealt with in Plan and Statement **D**, it is found equitable to recover two-thirds of the cost of acquisition from the owners of the houses benefited by the removal of the obstructive house. None of these owners will get any remission in 1912-13 as the betterment rate in that year will fall short of the maximum leviable. In all probability the public purse will ultimately pay one-third of the cost of acquisition. All the houses abutting upon the site of the obstructive house can be raised by at least two storeys each as a result of the creation of the open space, and the extra rooms thus supplied will more than make good the accommodation lost by the demolition of the obstructive house.

STATEMENT A.

Telwadi.

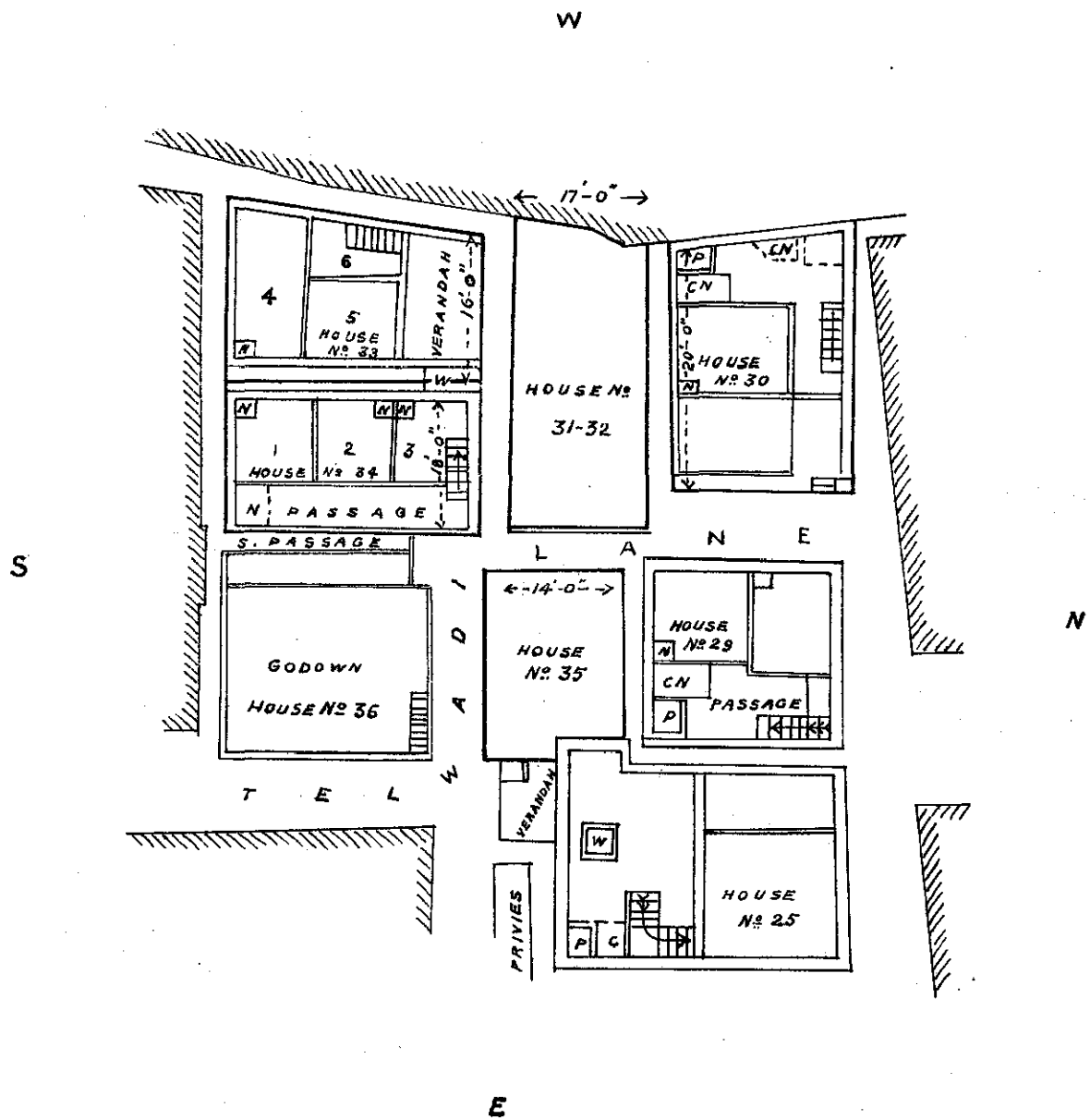
Particulars of the obstructive house. Street Nos. 31-32. Gross annual assessment Rs. 604. Cost of acquisition estimated for the purposes of the following Statement at 16½ Y. P., on Rs. 604 plus 10 per cent. for contingencies=Rs. 11,100. Area=62 square yards. Rate per square yard=11,100÷62=Rs. 179. 50 per cent. of cost to be recovered from owners=Rs. 5,550 (*vide* column 4).

Statement giving the amounts of betterment rate levisible in respect of the properties adjoining the obstructive house.

Street Nos. of properties adjoining the obstructive house.	Height of buildings.	Length of frontages of properties referred to in column (1) on site of obstructive building.	Lump sum contribution recoverable from the owners in proportion to length of frontages in column (3).	30 year's annual betterment rate levisible in lieu of lump sum contribution.	25 per cent. of 9/10ths of gross assessment.	Actual general tax in 1912-13=104 per cent of 9/10ths of gross assessment.	Limit of betterment rate in 1912-13=column 6—column 7.
1	2	3	4	5	6	7	8
	Feet.	Feet.	Rs.	Rs.	Rs.	Rs.	Rs.
30	45	29	1,712	103	250	106	144
33	33	16	944	56	183	78	105
34	25	18	1,063	64	131	56	75
35	21	14	827	50	114	49	65
1	15	17	1,004	60	135 (Estimated).	57	78
Total		94	5,550	333	813	346	467

PLAN RELATING TO STATEMENT A.
TELWADI SCHEME.

SCALE, 20"-1'.



STATEMENT B.

Telwadi.

Particulars of the obstructive house. Street No. 21. Gross annual assessment Rs. 653. Cost of acquisition estimated for the purposes of the following Statement at 16½ Y. P., on Rs. 653 plus 10 per cent. for contingencies = Rs. 12,000. Area = 100 square yards. Rate per square yard = $12,000 \div 100 =$ Rs. 120. 66 per cent. of cost to be recovered from owners = Rs. 8,000.

Statement giving the amounts of betterment rate leviable in respect of the properties adjoining the obstructive house.

Street Nos. of properties adjoining the obstructive house.	Height of Buildings.	Length of frontages of properties referred to in column (1) on site of obstructive building.	Lump sum contribution recoverable from the owners in proportion to length of frontages in column (3).	30 years' annual betterment rate leviable in lieu of lump sum contribution.	25 % of 9/10ths of gross assessment.	Actual general tax in 1912-1913 = 10½ % of 9/10ths of gross assessment.	Limit of betterment rate in 1912-1913 = column 6—column 7.
1	2	3	4	5	6	7	8
	Feet.	Feet.	Rs.	Rs.	Rs.	Rs.	Rs.
10-18	50	15 4 22 12 53	8,889	238	1,028	437	591
13	26	34	2,496	150	85	36	49
22	26	17	1,248	75	260	111	149
23	29	5	367	22	189	59	80
Total.....	...	109	8,000	480	1,512	643	869

The betterment rate will be limited to Rs. 49 in house No. 13, so that betterment rate leviable in 1912-13 will be $233 + 49 + 75 + 22 =$ Rs. 379, which connotes distribution of cost of acquisition 52 per cent. to private owners and 48 per cent. to public purse.

STATEMENT C.

Kolbhatwadi.

Particulars of the obstructive house. Street No. 37. Gross annual assessment Rs. 703. Cost of acquisition estimated for the purposes of the following Statement at 16½ Y. P., on Rs. 703 plus 10 per cent. for contingencies = Rs. 12,900. Area = 113 square yards. Rate per square yard = $12,900 \div 113 = \text{Rs. } 114$.

The East end of the house to a depth of two rooms may be left standing, and may be valued at $2/5 \times 11,717 = \text{Rs. } 4,687$, say Rs. 4,690, as there are five rooms on each floor. The Western main wall of the standing portion of the house and the privies will have to be constructed staircase will have to be shifted and sundry repairs will have to be carried out. The cost of carrying out this work may be roughly put down at Rs. 2,000, so that nett proceeds from the standing portion of the house may be estimated at $4,690 - 2,000 = 2,690$, say Rs. 2,700. 60 per cent. of the remaining cost (*viz.*, $12,900 - 2,700 = 10,200$) to be recovered from owner = Rs. 6,120 (*vide* Column 4).

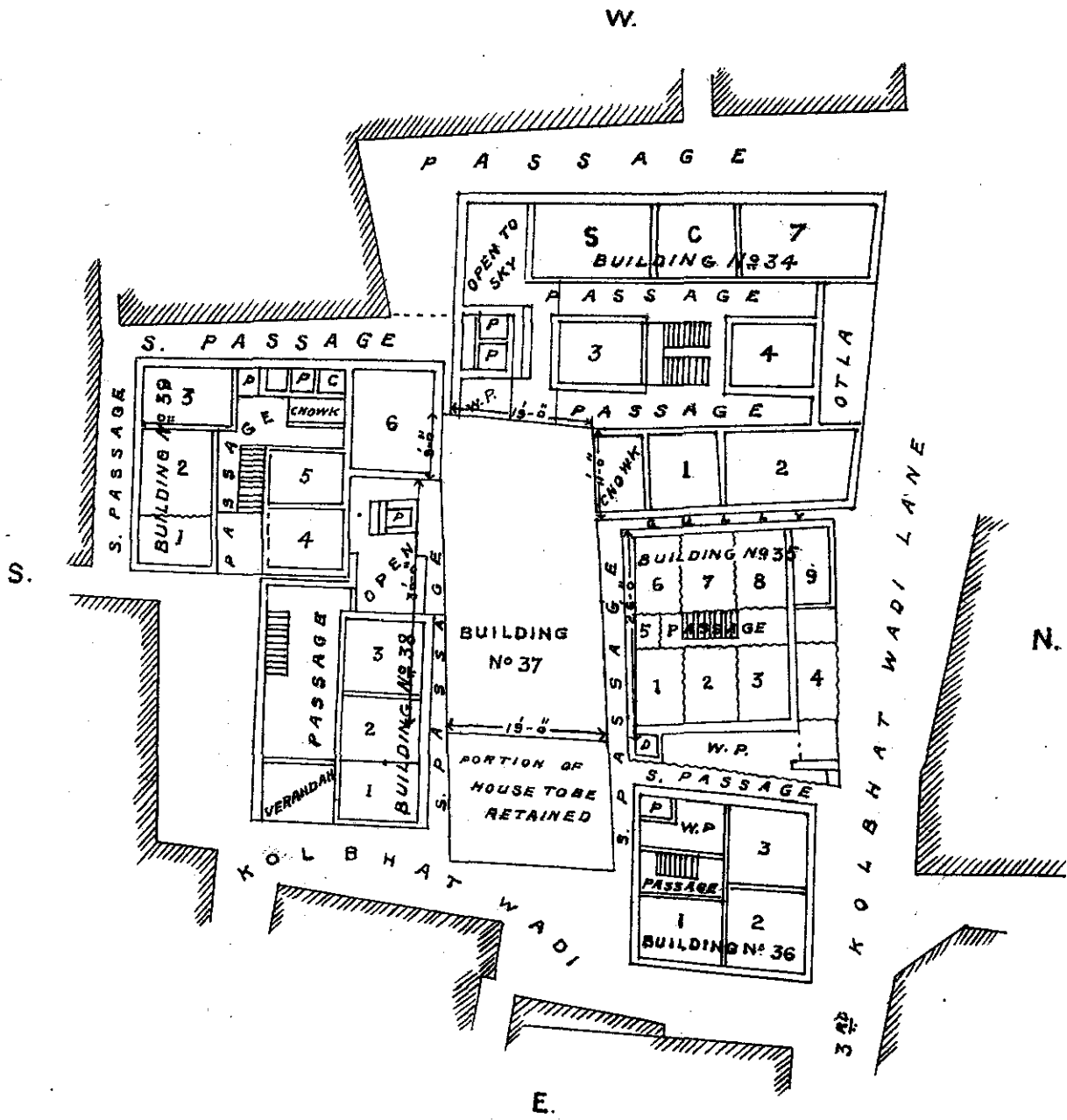
Street Nos. of properties adjoining the obstructive house.	Height of buildings.	Length of frontages of properties referred to in column (1) on site of obstructive building.	Lump sum contribution recoverable from the owners in proportion to length of frontages in column (3).	30 years' annual betterment rate leviable in lieu of lump sum contribution.	25 per cent. of 9/10ths of gross assessment.	Actual general tax in 1912-13 = 10% of 9/10ths of gross assessment.	Limit of betterment rate in 1912-13 = column 6 - column 7.
1	2	3	4	5	6	7	8
	Feet.	Feet.	Rs.	Rs.	Rs.	Rs.	Rs.
34	27	{ 11 19 }	1,611	96	295	125	170
35	26	26	1,395	84	167	71	96
38	28	30	1,611	97	127	54	73
39	27	9	483	29	218	93	125
37	28	19	1,020	61	68	29	39
Total...		114	6,120	367	807	343	464

The betterment rate will be limited to Rs. 39 in house No. 37 and to Rs. 73 in house No. 38, so that betterment rate leviable in 1912-13 will be $96 + 84 + 73 + 29 + 39 = \text{Rs. } 321$, which connotes distribution of cost of acquisition 52 per cent. to private owners and 48 per cent. to public purse.

PLAN RELATING TO STATEMENT C.

KOLBHATWADI SCHEME.

SCALE, 20"-1'.



STATEMENT D.

Umarkhadi.

Particulars of the obstructive house. Street No. 24. Gross annual assessment=Rs. 1,501. Cost of acquisition estimated for the purposes of the following Statement at 16½ Y. P., on Rs. 1,501 plus 10 per cent. for contingencies=Rs. 27,518, say Rs. 27,500. Area=211 square yards. Rate per square yard=27,500÷211=Rs. 130. 66 per cent. of cost to be recovered=Rs. 18,333, say Rs. 18,300 (*vide* Column 4).

Statement giving the amounts of betterment rate leviable in respect of the properties adjoining the obstructive house.

Street Nos. of properties adjoining the obstructive house.	Height of buildings.	Length of frontages of properties referred to in column (1) on site of obstructive building.	Lump sum contribution recoverable from the owners in proportion to length of frontages in column (2).	30 years' annual betterment rate leviable in lieu of lump sum contribution.	25 per cent. of 9/10ths of gross assessment.	Actual general tax in 1912-1913, 10½% of 9/10ths of gross assessment.	Limit of betterment rate in 1912-1913 =column 6—column 7
1	2	3	4	5	6	7	8
	Feet.	Feet.	Rs.	Rs.	Rs.	Rs.	Rs.
80-82	33 to 38	50	4,973	298	592	251	341
84	33 to 41	25	2,486	149	559	236	321
86	34	19	1,890	114	330	140	190
88-92	29	20	1,989	119	430	188	247
1-23	27 to 42	70	6,962	418	956	406	550
Total ...		184	18,300	1,098	2,867	1,218	1,649

APPENDIX D.

ROUGH SKETCH OF THE LEGISLATIVE PROVISIONS REQUIRED TO GIVE EFFECT TO THE SUGGESTIONS IN THE MAIN NOTE, IN THE SHAPE OF A DRAFT BILL.

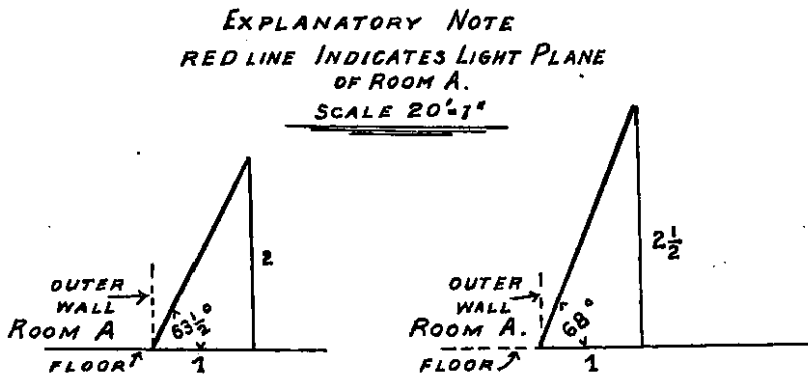
For the purposes of this Act the expression "Special Committee" shall mean a committee composed of the Municipal Commissioner, Chairman, Improvement Trust, and Health Officer, Bombay, and the expression "light plane" shall mean the "plane drawn upwards and outwards from the edge of the floor of any room at an angle of $63\frac{1}{2}^{\circ}$ to the horizon," provided that in specified localities in which the Corporation with the sanction of Government so prescribe the definition shall be read as if 68° were substituted for $63\frac{1}{2}^{\circ}$.

Vide note para. 13.

Vide note para. 18.

Vide note para. 9.

Vide note para. 10.



2. Every room shall be deemed unfit for human habitation unless it has got a window or windows opening on to a light plane which does not impinge upon any building and unless the area of such window or windows is at least equal to $\frac{1}{7}$ of the area of the wall in which it or they are placed and $\frac{1}{7}$ th of the floor area of the room.

Vide note paras. 4 and 18.

3. No building shall be constructed so as to impinge upon the light plane of any room used or capable of being used as a human habitation except with the written consent of the owners of that room. This section shall not apply to any wall, screen or hoarding lawfully erected within 12 months from the date of this Act for the purpose of preventing the creation of an easement over any property.

Vide note para. 4.

4. After the close of the year 1917, every one who inhabits a room which is unfit for human habitation and every one who gives, lends or leases such a room for human habitation without the Special Committee's written permission shall be liable on conviction to a fine of Rs. 200.

Vide note paras. 5 and 6.

Vide note para. 13.

5. The Municipal Commissioner, and in areas represented under Section 24 of the Bombay City Improvement Act, the Bombay City Improvement Trust may, at any time, before the close of the year 1917, order that a room which is unfit for human habitation shall be vacated within two months, provided that he or they shall at the same time offer the tenant of the said room accommodation of the same extent and at the same or lower rent within a distance of one mile from the said room.

Vide note para. 7.

6. A copy of such order shall be delivered to the owner of the room and the order shall be deemed to have been communicated to the tenant by the inscription of the letters "U. H. H." on the door of the said room.

Vide note para. 5.

7. Anyone occupying such a room or allowing it to be occupied for human habitation after 2 months from the date of any such order shall be liable on conviction to a fine of Rs. 200 unless the Special Committee have in the meanwhile, given written permission for the occupation of the room and have removed the letters "U. H. H." from the door.

Vide note para. 13.

Vide note para. 13.

8. The Special Committee shall on the application of the owner grant such permission as soon as the room ceases to be unfit for human habitation and may subject to clause 14 grant it so soon as external open space of at least half the width required by this Act has been provided, and an agreement for the provision of the other half within 20 years has been executed.

Vide note paras. 11 and 12.

Vide note para. 15.

9. The Municipal Commissioner and in areas represented under Sec. 24 of the Bombay City Improvement Act, the Bombay City Improvement Trust, may on the application of owners of houses assessed at half or more of the total assessment of the houses concerned acquire by procedure under the Land Acquisition Act any house which impinges on the light planes of rooms used for human habitation in two or more neighbouring houses, and after acquisition shall dispose of the acquired property in such a way as to secure for each such house a free air space above the said light planes. The order of disposal shall lay down the limits within which building on the acquired site is to be permitted, and shall be communicated to the Municipal Commissioner, who shall be responsible for seeing it strictly enforced in connection with procedure under Chapter XII of the Municipal Act.

Vide note para. 15.

Vide note para. 17.

10. The nett loss on each such acquisition case shall be chargeable to the properties benefited thereby as the Commissioner or the Improvement Trust may direct, in rough proportion to the lengths of the frontages of the several properties upon the area cleared of buildings. The sum so chargeable shall be recoverable from the owner of the house by the Municipal Commissioner, as if it were arrears of Municipal Taxes, but may be commuted into an annual payment of 6 per cent. of the said sum for 30 years. The sum thus annually payable shall be recovered along with and as if it were part of the General Tax and all such sums recovered in any year in respect of any represented area shall be handed over to the Improvement Trust at the end of the year.

Vide note para. 16.

11. In any represented area in which in the opinion of the Trust it is desirable in public interests that the one room tenements condemned as unfit for human habitation under this Act should be rendered habitable within twelve months, the Trust may require the owner of any house which contains 5 or more such rooms to re-construct his house within 12 months in accordance with plans provided by the Trust or with plans approved by them as regards the amount of living accommodation provided.

Vide note para. 16.

12. Should the owner fail to carry out such re-construction within the 12 months or within such extended period as the Trust may allow him, the Trust shall acquire the said house under the Land Acquisition Act and carry out the re-construction themselves.

13. In any such represented area as aforesaid the Bombay City Improvement Trust may without waiting for a requisition from house owners acquire and dispose of any obstructive house which impinges on the light planes of any two or more neighbouring houses in accordance with the procedure laid down in section 9, and their nett loss in the transaction shall be recoverable in accordance with section 10, provided that in case of commutation the sum chargeable to any house in any year shall be limited to 15 per cent. of the Municipal Assessment of the house for that year and the balance shall be remitted.

Vide note para. 16.

Vide note para. 17.

14. The Special Committee shall not grant permission to any one to dwell in a room which is unfit for human habitation or to lease such a room for human habitation unless such room has at least one window satisfying section 2 of this Act in point of area and abutting upon an exterior air space open to the sky and extending horizontally across the whole width of the window to a distance from the window equal to at least one-third of the vertical distance between the top of the building on the opposite side of that space and the level of the window sill.

Vide note para. 13.

15. Subject to clause 14, the Special Committee may in cases in which they are satisfied that any room which is for the time being unfit for human habitation under clause 2 is not so seriously defective in light and ventilation that the defect cannot be temporarily condoned, grant written permission to any person to dwell in that room or let it as a dwelling, if an agreement has been executed whereby the improvement of the light and ventilation up to the full 65½° standard within 20 years is assured.

Vide note paras. 11, 12, 13.

16. A copy of every such agreement shall be supplied to the Municipal Commissioner and the Municipal Commissioner shall have power to order the closure of any house in respect of which any such agreement may not have been fully carried out, until it is fully carried out.

17. It shall be unlawful to recover any rent or other consideration for the occupation as a dwelling of any room that is unfit for human habitation unless the Special Committee have issued a written permit for its occupation as a dwelling.

Vide note paras. 5 and 20.

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