

To,

Shri Devendra Fadnavis

Hon. Chief Minister, Maharashtra

Mantralaya, Mumbai 400 032

मुख्यमंत्री सचिवालय
महाराष्ट्र शासन
मंत्रालय, मुंबई - ४०० ०३२.
दिनांक.....०६/०४/२०१८...

Date: 5th April 2018

Subject:-

1. Findings of the Report, "Studying the association between structural factors and tuberculosis in the resettlement colonies in M-East ward, Mumbai, 15th March 2018", submitted to the Mumbai Metropolitan Region – Environment Improvement Society (MMR-EIS)
2. Urgent need of making appropriate amendments to the existing Development Control Regulations (DCRs) for Greater Mumbai, in the light of the findings referred to in (1) above.

Dear Sir,

We were prompted to write to you this letter after reading with great satisfaction your central article, on the editorial page of the Times of India, Mumbai (20th March 2018), which detailed the dedication with which you and your government are tackling the scourge of **tuberculosis (TB)** in Maharashtra. Coincidentally, the Report referred to in (1) above is of a Research Study which sought to look into the association between structural factors of buildings in three resettlement colonies (Lallubhai compound, Natwar Parekh compound and PMG colony) in M-East Ward in Mumbai and the incidence of **TB**. The Report has been very recently submitted by 'Doctors For You', a Non-Government Organisation (NGO), which was given a grant by the MMR-EIS for undertaking the said research study. The Report is available on the MMR-EIS website. The main findings and recommendations of the Report have been summarised in **Section (A)** of the ANNEXURE enclosed.

2. The Report referred to above highlights how the densely crowded projects for the (a) rehabilitation of slum dwellers and (b) resettlement of existing residents of old chawls and dilapidated buildings, (hereinafter collectively referred to as 'rehabilitation and redevelopment buildings/ projects/ schemes'), sanctioned in the past and being sanctioned under the present diluted DCRs in force, contribute to the spread of this dreaded disease,

TB and loss of human life. You will agree that it is the duty of the Government to provide the essentials for a reasonable quality of life to its citizens and hence the responsibility of the repercussions, such as the ones mentioned in the aforesaid Report, squarely rests with the Government.

3. The ANNEXURE enclosed has four Sections:

Section (A), which summarises the important findings/ conclusions of the aforesaid Report;

Section (B), which expounds our main concerns arising from the conclusions mentioned in the said Report;

Section (C), which mentions the amendments required to be urgently carried out to the existing DCRs to dispel our aforesaid concerns; and

Section (D), which seeks to point out the action which needs to be immediately initiated to mitigate the incidence of TB.

4. Greater Mumbai already has the highest population density amongst global cities. Instead of providing solutions to cope with such high densities to mitigate their deleterious effects, our existing peremptorily modified DCRs are, unfortunately, enabling even denser living, resulting in further deterioration in the already depleted living standards. **Lamentably, these diluted existing DCRs expose the residents of crowded rehabilitation and redevelopment buildings to easy attack by contagious diseases, such as TB and, therefore, urgently need a thorough review and drastic overhaul.**

5. Pending the review of existing DCRs [particularly 33(7), 33(8), 33(9), 33(10), 33(13) and 33(14)], as suggested in paragraph 4 above, we strongly urge you to issue immediate orders/ instructions to the following effect:

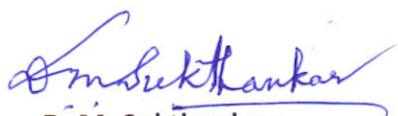
- i. No further buildings/ projects/ schemes should be sanctioned/ approved by the Municipal Corporation of Greater Mumbai/ SRA/ MHADA/ MMRDA under the provisions of the existing DCRs 33(7), 33(8), 33(9), 33(10), 33(13) and 33(14);
and

ii. Where the construction of a building/ project/ scheme already approved under the provisions of the existing DCRs 33(7)/ 33(8)/ 33(9)/ 33(10)/ 33(13)/ 33(14) has not commenced, the same should be stayed forthwith and not be allowed to proceed.

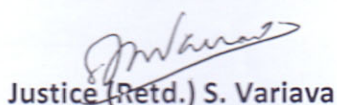
6. We also earnestly request you to issue immediate instructions to the Urban Development Department under your control to duly take into account our concerns and suggestions as mentioned in Sections (B) and (C) of the ANNEXURE, while finalising the relevant proposed DCRs under the Revised Draft Development Plan (RDDP) 2014-2034, which are currently in the process of being finalised and approved.

We sincerely hope that you will take immediate action as earnestly requested above.

Yours faithfully,



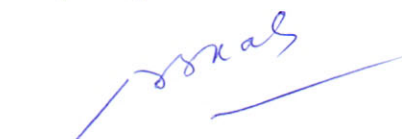
D. M. Sukthankar
IAS (Retd.)



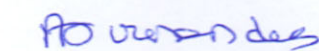
Justice (Retd.) S. Variava



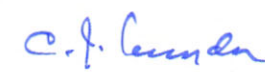
Julio Ribeiro
IPS (Retd.)



Sharad Kale
IAS (Retd.)



Dr Armida Fernandes
SNEHA



Cyrus Guzder
BEAG



Shirish Patel



Gerson da Cunha
AGNI



Nayana Kathpalia
OCRA



Shirin Bharucha
O.V.A.L. TRUST



Meher Rafaat
NAGAR



Pankaj Joshi
UDRI

ANNEXURE

A. Important conclusions and recommendations of the Report referred to in (1) of the “Subject” of the letter dated 5th April 2018 addressed to the Hon. Chief Minister, Maharashtra

- i. Planners have long known the relationship between a city’s built form and public health. However, over time, in a bid to provide formal housing for maximum number of people, we have compromised on the basic standards of liveability for the poor to such an extent that our diluted planning norms are now aiding a public health disaster. It is imperative to roll back the norms that are detrimental to the health of the public.
- ii. In the current era of climate change, climatically sensitive building design is a necessity for survival of the lower income classes that cannot afford costly mechanical solutions for air-conditioning and ventilation. The Research Study has found that the following factors relating to the design and layout of a building/colony are associated with TB prevalence and general wellbeing:
 - a. **FSI and distance between buildings:** In order to accommodate a higher number of formal dwelling units, the *in situ* consumption of FSI on a plot has been increased from 2.5 in 1991 to 4 in 2015. Further, in order to accommodate higher densities, the distance between buildings has been relaxed from one-third the height to 3 meters, no matter what the height of the building is. This means that, while as per general building regulations, the distance between buildings 24 meters in height should be 8 meters, the same has been relaxed to only 3 meters in the case of rehab/redevelopment buildings. This has adversely affected the light and ventilation conditions in rehab/ redevelopment colonies.
 - b. **Density:** The National Building Code suggests a **maximum** dwelling unit (DU) density of 500 DU/ gross ha in the case of low-income housing, **which cannot be increased**. The DCRs, however, allow for a **minimum** density of 500 Dwelling Units (DU)/net ha for redevelopment buildings! It is also important to note that the average number of persons living in a low-income household is usually larger (5.27 persons per unit in the three colonies surveyed) than the city average (4.56 persons per unit). This leads to even higher population density and hence over-crowding.

- c. **Floor:** Almost all floors are affected. Top floors have lesser number of cases, probably because all the other floors have even poorer ventilation and sunshine access.
- d. **Window design and usage:** Households having sliding windows instead of fully openable windows, and/or using the closed windows as storage space, have high likelihood of having a TB patient. The position of windows also plays a very important role in modifying natural ventilation strategies within the room. A detailed study needs to be carried out for framing effective design guidelines for construction of high density housing for low-income groups to incorporate better air circulation and ventilation to improve air exchange rate.
- e. **Exhaust fans:** Lack of exhaust fans (mechanical ventilation) is strongly correlated to TB prevalence, indicating that the same is one of the risk factors contributing to TB prevalence and transmission.
- f. **Sky view factor, daylight autonomy, ventilation:** All three colonies show poor sky view factors, daylight autonomy and ventilation, which may be a likely cause of high TB in these colonies. In literature, Sky view factor less than 0.6 has been associated with TB prevalence. Low daylight autonomy and ventilation may be because of poor design of the building and compact stacking of buildings next to each other.
- g. **Architectural factors and layout of compact, high-rise, apartment buildings/colony:** Poor building design and layout pose many health risks to its residents, risk of air borne infections like TB being a major one. Access to natural ventilation and sunlight may prove to be an important public health measure in controlling drug resistant TB, where antibiotics have failed to cure the disease. Indoor environment of a building plays a significant role in determining the health status of its occupants. As shown by the Research Study under reference, females of productive age are specifically affected by TB and it is, therefore, essential to provide possible interventions, structurally and socially, so as to maintain the health of the society as a whole. Research has established that windows or openings have a significant effect on daylight and natural ventilation strategies for refreshing the indoor environment by easier and faster removal of household air pollution. Sunlight and natural ventilation help in controlling air borne infections like TB. Natural ventilation is preferred over mechanical (e.g. exhaust

fans) ventilation for a better exchange of gases and dilution of infectious agents. Findings of the Report suggest that relaxation in building standards permitted by the existing diluted DCRs applicable to rehabilitation and redevelopment buildings are detrimental to the health of the poor who inhabit them. It is imperative to reverse the relaxations in standards on setback and dwelling unit density incorporated in the existing diluted DCRs. National Building Code guidelines should be strictly followed for adequate light, ventilation and density. Further modelling studies, similar to the ones carried, out as mentioned in the Report, could (and should) be conducted to see the effect of light and ventilation in rooms by using the step back methods of building. Window design can also be studied. It is suggested that shutter windows instead of sliding windows should be provided in rehabilitation and redevelopment buildings to increase the size of openings. Concessions that lead to over-crowding or compromise the light and ventilation of homes in rehabilitation and redevelopment buildings must not be allowed.

B. Our Concerns:

- i. It is important to note that, according to the World Health Organisation (WHO), “India is the global TB epicentre: the Country records 2.8 million (28 lakh) new tuberculosis cases annually, of which more than 100,000 are multi-drug resistant (MDR)”. The disease kills 400,000 Indians every year and costs the government a staggering Rs.1.6 lakh crore a year. Recent reports reveal that MDR-TB is so pervasive in densely crowded urban hotspots in Mumbai that an average TB or MDR-TB patient will infect 10-20 others a year, amplifying the epidemic relentlessly. In referring to the several million people living in “unending stretches of narrow lanes ... and cramped homes”, the well-known pulmonologist Dr Zarir Udwadia states these conditions “are an incubator of TB by virtue of poverty and overcrowding... with MDR-TB a ticking time-bomb, threatening to sabotage all the progress made by the new DOTS Scheme” rolled out by Government of Maharashtra.
- ii. We do not sufficiently recognise the indestructibility and permanence of what we are building through the applicability of the current DCRs. The open spaces which are provided around buildings, for light and ventilation, will remain as they are now, for the next hundred years or more, before any subsequent reconstruction might take

place. Thus, if the conditions created are insanitary, they will remain so for generation after generation to come.

- iii. The Report under reference establishes a direct correlation between the lack of adequate light and ventilation in rehabilitation and redevelopment buildings/ projects/ schemes and the increasing susceptibility of their residents to contagious airborne diseases such as **TB**.
- iv. The Report indicates that even in 7 storeyed structures, only the top 3 storeys may have adequate light and ventilation. Hence, in the current scenario, where rehabilitation and redevelopment buildings usually have more than 20 storeys built in pursuance of the further diluted existing DCRs, it is clear that a **substantial** majority of the tenements in such towers will not have adequate light and ventilation.
- v. In all Wards of Greater Mumbai, provisions for public amenities, such as healthcare, education, open spaces, recreational facilities etc., are in deficit, as compared to the National Standards set out in the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines. For example, as per the provision proposed in the RDDP 2014-2034, the standard for healthcare amenities is only 0.69 sq.m. per capita, as compared to 1.28 sq.m. per capita prescribed by URDPFI. The condition in M-East ward is even worse, only 0.17 sq.m. per capita. If the deleterious effects of shortages in all these public amenities are reckoned together, it would be evident that the negative health and mortality impacts highlighted in the Report would be even more serious.
- vi. Furthermore, owing to the high density living conditions and a reduction of the side margins in these rehabilitation and redevelopment buildings, a 'heat island effect' is created, thereby increasing the temperature of the neighbourhood, making it all the more conducive for bacterial growth, such as the bacteria causing tuberculosis (**TB**).
- vii. The Report uses validation software, which can assess the light and ventilation conditions in buildings and neighbourhoods and recommends that such modelling needs to be undertaken **before** future permissions for rehabilitation and redevelopment buildings are given, irrespective of the height of the buildings proposed. Although the analysis in the Report has revealed the core issues relating to existing rehabilitation and redevelopment projects, such post facto analysis becomes meaningless **after** such buildings have already been constructed. **The Report,**

therefore, rightly highlights the importance of pre-approval analysis in order to avoid the creation of such disease-prone buildings and unhealthy environments.

- viii. Even if a relatively modest number, say hundred, of such rehabilitation and redevelopment buildings were to be permitted under the existing DCRs, it will be tantamount to creating a pandemic in Greater Mumbai. These buildings will continue to be occupied for decades, and it would be safe to say that several future generations will become extremely vulnerable to debilitating diseases such as TB.
- ix. The experience, of Hong Kong, in the above context, is both relevant and instructive. Outbreak of severe acute respiratory syndrome (SARS) at Amoy Gardens, a classic high-density middle-class housing estate in Hong Kong, comprising of 19 apartment blocks above a three-storey podium as a shopping mall, was the most seriously affected location during the 2003 SARS outbreak, with over 300 infected people. The apartment blocks in Amoy Gardens typically have 33 storeys (each), with eight tenements per floor. The tenement size, on an average, is about 45 square metres, which is much higher than our tenement sizes in rehabilitation and redevelopment buildings.

C. Urgent need of amendments to existing DCRs

It is self-evident that to dispel the various concerns expressed by us in Section (B) above, appropriate amendments to the existing DCRs are absolutely necessary. In particular:

- i. **Provisions of D.C. Regulation 33 of the existing DCRs, [particularly Sub Regulations 33(7), 33(8), 33(9), 33(10), 33 (13) and 33(14)], which substantially dilute open space standards as well as side margins, and thus completely ignore the light and ventilation requirements so vital to healthy human life, need to be urgently and thoroughly overhauled. Such reduced open space and side margin standards for the ‘rehabilitation component’ of a development, as compared to those for the ‘sale component’ of the same development, are essentially discriminatory to the disadvantage of the poor. They significantly reduce the quality of life of economically disadvantaged residents of the ‘Rehab component’, causing severe adverse health implications for them. It needs to be borne in mind that, by its very nature, the contagion of TB easily spreads to the surrounding areas as well. It is, therefore, imperative that, such discriminatory provisions which have been evolved by relaxing well-established standards relating to side margins and setbacks,**

dwelling unit density etc. as incorporated in the National Building Code guidelines and have been made applicable only to rehabilitation and redevelopment buildings, are immediately rolled back by making appropriate amendments to the existing DCRs.

- ii. The proposed revised DCRs [Draft DCRs, Revised Draft Development Plan (RDDP) 2014-2034] prescribe a maximum density of 450 tenements per hectare for FSI 1, i.e. 2 lakh people per square kilometre. In rehabilitation and redevelopment projects/schemes, where the FSI permitted is as high as 4, this would result in a tenement density of approximately 8 lakh people per square kilometre! Such extremely high density does not exist anywhere in the world, even in commonly referred-to dense cities like Hong Kong. Such extremely high density triggers appalling living conditions, as also several other issues of privation, namely, inadequate infrastructure and paucity of public amenities, such as healthcare, education, open spaces and recreational facilities. **The life and well-being of residents is thereby exposed to serious and continuous threat. An urgent and holistic review of the existing DCRs 33(7), 33(8), 33(9), 33(10), 33(13) and 33(14) applicable to rehabilitation and redevelopment projects/ schemes as also those which enable high density projects in Greater Mumbai and the entire State of Maharashtra, followed by appropriate amendments therein to restore the well-established planning standards incorporated in the National Building Code guidelines, is, therefore, a must.**
- iii. **Besides, while processing the draft revised DCRs-RDDP (2014-2034), our concerns expressed in various paragraphs of Section (B) above should be given careful consideration and suggestions contained in preceding paragraphs (i) and (ii) above should be duly incorporated in the final DCRs RDDP (2014-2034).**

D. Action to be immediately initiated/undertaken to mitigate the incidence of TB.

Besides undertaking urgently the amendments to DCRs as suggested in Section (C) above, the Government of Maharashtra and/or the Municipal Corporation of Greater Mumbai should, as a part of the Mumbai Mission for TB prevention and control, initiate/undertake:

- i. a detailed house-to-house Survey of ALL high density rehabilitation and redevelopment buildings/settlements throughout Greater Mumbai, for mapping the incidence and gauging the scale of spread of TB;

- ii. an intensive and sustained campaign for appropriate and effective medical/health treatment of existing TB affected population; and
- iii. an aggressive programme of suitable remedial action/interventions by their Preventive and Social Medicine Departments/personnel.

Further, in rehabilitation and redevelopment buildings/colonies where the population has already been affected by TB owing to poor access to sunlight and natural ventilation, a large scale programme for structural retro-fitting/alterations/interventions needs to be expeditiously planned and urgently implemented by public agencies and private developers, who originally constructed these buildings/colonies. This program has to focus on changing the position/location and design (fully openable, to replace sliding ones) of existing doors/windows, provision of new/additional vents, provision of exhaust fans etc."