



THE SLUM AND THE HIGHRISE

Alpa Sheth

The Development Plan is ostensibly meant to reflect a land-use plan suitable for the long-term growth and sustenance of the city. It also sets the tone for regulating how the city manages its real estate thereby creating opportunities for good living standards for all its citizenry across a broad sociopolitical spectrum – decent housing, transportation and other infrastructure. Development Control Rules (DCR) in turn are meant to be the engine that drives the implementation of the Development Plan.

While the development plan, post-independence, has been implemented in its breach, adherence to development control regulations is scrupulously checked by authorities and the regulations are revised from time to time, underlining the disconnect of the DCR from the DP. The development plan has typically ignored, for example, the reality of more than half of Mumbai city residing in informal housing. However political compulsions and development exigencies have required frequent interventions in the DCRs to create enabling mechanisms for tackling new situations as they arise. Regulation 33 was introduced in the DCR in 1991. It was forged as a means of addressing the housing issue of those affected by infrastructure projects and by extension to include other slum encroachments, additional needs of educational institutions, reconstruction of crumbling stock of cessed buildings and so on. It did this by relaxing the

Floor Space Index (FSI) for such special projects. (Floor Space Index has been traditionally used by the State as a currency to generate funds through a short-sighted policy of tweaking and throttling its supply, thereby propagating the perception of space unavailability in Mumbai city and thus raising FSI value, with utter disregard to the severe housing shortage in the city).

DCR 33 has been the single-most important clause that has changed the landscape of Mumbai in the past two decades. A significant amount of the construction in Mumbai since 1991 has been under some sub-clause of DCR 33, the most popular being 33(7) which allows for reconstruction of cessed buildings with increased floor space index (FSI) of 2.5 (it was earlier capped at 1.33 in island city of Mumbai) or more in lieu of free housing for the tenants of cessed buildings; and slum redevelopment projects under 33(10) which also likewise allows for a minimum FSI of 2.5 contingent to providing free housing to slum dwellers. (FSI varies plot by plot, based on the FSI required to house the existing tenants + 50% incentive FSI for the sale component). The real estate generated from the additional FSI could be sold in the free market.

Slum rehabilitation projects housing in Mumbai thus got a fillip after the 1991 Development Control Regulations as the latter created opportunities for manufacturing saleable real estate in

plum locales hitherto encroached by slums of Mumbai city. This seemed to be a win-win situation for all. The city rid itself of slums, the slum dwellers got free “pucca” homes fitted with toilets and in the process, some much needed saleable housing was infused into the market. Implicit in the DCR Clause 33(10) is the entitlement of slum-dwellers to free formal housing, a guiding principle so far-reaching in its impact that one would have expected it to be debated at a national policy level before it was given state sanction. (There have been national debates and draft bill on right to food but not on right to housing. The housing policy of Maharashtra state acknowledges shelter as a fundamental right and as a key component to housing, but does not assert the fundamental right to housing. By this non-assertion, the state implicitly disengages itself from its obligation as the competent authority who’s duty it is to ensure the fulfilment of housing rights for its citizens. Further, it also avoids any serious discussion and measures of transparency and liability towards guaranteeing housing rights universally.) However 33(10) admittedly has precedence in various social housing schemes such as *Indira Awas Yojana* which already existed prior to 1991 for rural housing for poor, and DCR 33(10) may be considered as an urban extension of rural social housing schemes. (The social housing schemes had their genesis in rural employment schemes unlike the slum rehabilitation scheme and they provided a limited

grant for building of houses which required participation of the occupant in its construction).

As an enabling regulation, clause 33(10) focuses only on the floor space index (FSI) as a tool to control development on a plot and is completely disregarding of the density of housing that may ensue from its application. It is interesting to note, for example, that Clause 33(5) which regulates construction of low cost housing schemes of Maharashtra Housing and Area Development Authority (MHADA) mandates a maximum density of 540 tenements (450 + 20%) per hectare. Clause 33(10) on the other hand permits 500 tenements per 1.0 FSI per hectare. Thus, if the existing number of slums on a plot generates a permissible FSI of 4.0 on the plot, the density of formal tenements that may be built could theoretically be as high as 2000 tenements per hectare and with an assumed 5 persons per tenement, it could mean 10,000 persons per hectare.

The serious problem with 33(10) is that in its present form, it does not stipulate any requirements for the ground space allocation on a plot to the sale component and the rehabilitation (rehab) component of slum rehabilitation projects. Typically therefore, developers squeeze the rehab construction into a small fraction of the plot, leaving the balance for the sale buildings. Thus, if the slum component of the project is housed on just 25-30% of the plot, the

real density of slum subplot will become three to four times higher than the existing slum. (The sale component of the project does not usually give access to amenities such as open spaces, gardens etc to the slum rehab building.)

The density of housing in these subplots thus becomes up to four or five times the original density of the slum agglomeration. Further, DCR 33 relaxes what should be un-negotiable requirements of open spaces and consequently life safety, light and ventilation requirements for tenements. DCR 33(10) has resulted in mushrooming of a series of rehab projects with 8 storeyed buildings spaced just ten feet apart resulting in poor health and hygiene conditions. The spacing of buildings is in clear violation of National Building Code norms and it is only in the past couple of years, after huge public outcry that the rules have been tightened marginally.

By housing people who earlier lived in single or double storeyed slums, for whom a look-up to the sky was just a step out of the door or a flight down the stairs, into high-rise buildings, one is essentially depriving them of the quick and easy access to public open spaces they enjoyed earlier. People living in tenements with low built-up area per capita tend to utilise public outdoor spaces more frequently as a lot of functions are carried out in public spaces such as entertainment, social interaction, games, kitchen work,

clothes drying and so on. A transition to multistory double-loaded corridor housing robs them of these amenities.

It has already been established that there is an upper boundary to how high one may go as there is a recognized minimum public ground area per person that is required for amenities – road and pavement space, recreational and social spaces, parks, transportation, medical, educational and other requirements which cannot be squeezed beyond limit. It has been demonstrated that this area at its very least tends to be about 5-6 m²/ per person. If for whatever reason, some of the functions cannot be provided on the ground, *they must necessarily be provided as public spaces elsewhere in the building.* It is suggested herein that at least 20% or 1m²/person should be provided as public spaces in form of recreational and social activity areas per person in the form of community areas within the building. Thus if there are 12 tenements per floor, each tenement with 5 persons, a min area of 60m² should be provided per floor as community space. This would mean an increase of total built-up area for rehab housing by about 10-15%. Whether this may be combined for 2 floors to give a larger space every alternate floor etc. are matters of detail not discussed herein. What is of import here is that for lower income housing there is a greater need for providing public spaces as a) the private spaces are very cramped and more time is therefore

spent outside and b) the density of slum housing is much more, requiring larger public open spaces based on per capita requirements.

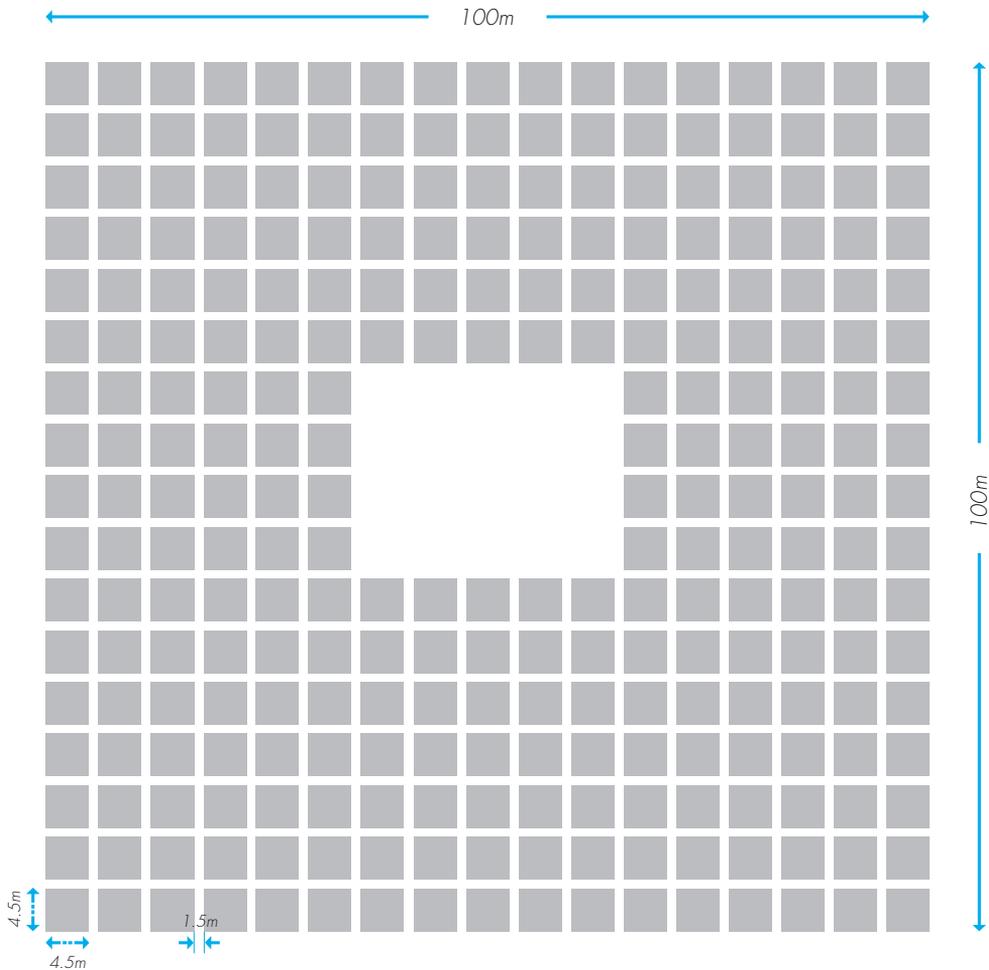
The very least that needs to be ensured is that the public space enjoyed by slum inhabitants prior to the redevelopment is maintained in the rehab project. Unfortunately this is not the case. Fig 1 and 2 show open ground area per capita reduces drastically - by as much as 66% in typical slum rehab projects.

Another connected issue that is often ignored in slum rehousing is the quality and adequacy of vertical transportation. Since 2010, with tighter requirements from authorities, slum rehabilitation housing has gradually moved from 8 storeyed to 22 storeyed. However the number of elevators provided is much lower per tenement than what is provided for sale building even though the density per tenement is much higher. A study of slum rehab projects showed typical slum rehab building of 22 floors has 3 elevators for 12 units per floor (or 60 persons per floor) while smaller buildings with 7-8 tenements per floor have 2 elevators for 22 storeyed buildings. A study of lift traffic analysis shows this provision as inadequate. The waiting time for vertical transportation is much higher than acceptable limits. Poor vertical transport coupled with highly compromised open spaces in the plot is a double whammy that adds another level of urban stress to the residents.

Lift maintenance is very expensive and adding more lifts may add to the maintenance burden of the tenants in future, so the issue of providing additional lifts needs to be reviewed carefully. Even though a large number of slum rehab projects currently ongoing in Mumbai are 22 storeys high, there are very few 22 storeyed slum rehab buildings already handed over and in use presently in Mumbai and their long-term maintenance issues are still to unravel. Impact of poor building maintenance on the living conditions of its residents cannot be stressed enough.

The above discussion is relevant especially as Mumbai threatens to embark on the first phase of Dharavi redevelopment.

Figure 1 - Original Slum



Each square block represents 2 storey 20 m² homes each. Total of say 600 homes, 20 m² each in 10,000 m² (1 ha) area. Some may be G+2 storied.

Total residents = 600x5 = 3 000

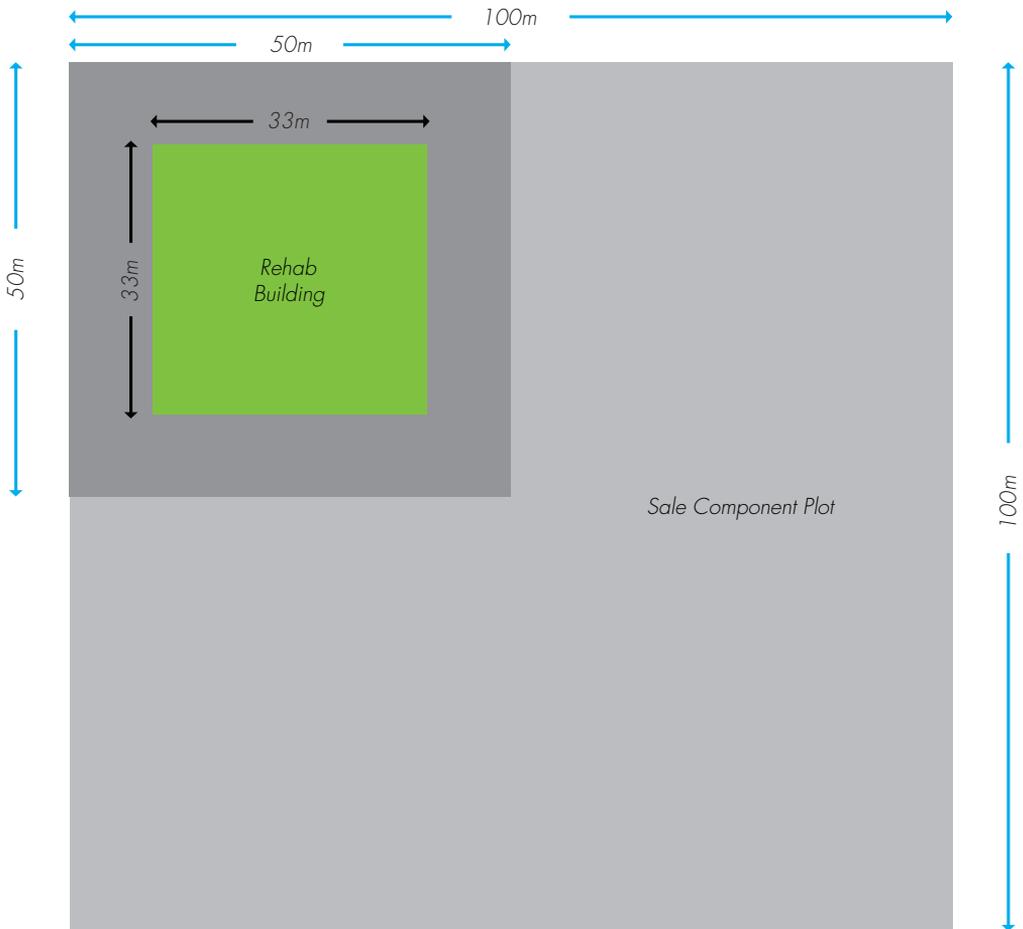
Total covered ground = 20m²*269 blocks = 5380m².

FSI = 12000/10000 = 1.20

Open ground area (OGA) per person = (10000-5380)/3000 = 1.54m²/pp

Density = 3000/10000 = 3000 pp per ha

Figure 2 - Redeveloped Plot



33m x 33m Block represents Slum rehab building which is squeezed into 25% of original plot. It needs 600 x 30 m² tenements = 18000m² in 1089 footprint considering ~ 9m marginal spaces.

Min no. of floors = 22 including area for passages, elevators and staircase.

OGA per person in slum rehab = $(2500\text{m}^2 - 1089\text{m}^2) / 3000 = 0.47 \text{ m}^2/\text{pp}$ FSI = $18000 / 2500 = 7.20$

Density of slum rehab subplot == $3000 / 2500 = 12000\text{pp}/\text{ha}$