

Developing Dharavi!

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The proposal explores conditions beneficial to both residents and the government. It proposes a Dharavi Development Board comprising of a people's council, government council and a People's participatory board comprising a social development council and urban development council. 10% of land is handed over to the government for sale. Dismantleable transit camps are proposed in existing open spaces. Proposes a hierarchy of roads. The jury found the proposal unconvincing as it left the residents with the same size of housing as current with only infrastructure improved and retained existing eligibility criteria to identify residents.



PREMISE

Dharavi today stands as a community considered both illegal as well as industrious. 80% of Dharavi's residents work within it, in small scale or home-based industries. The city of Mumbai wishes to hold on to Dharavi, a settlement that contributes around INR 3,000 cr to its GDP.

Workers have migrated from different parts of the country to live and work in Dharavi. These communities have built almost 85 nagars in Dharavi structured either by occupation, region, language, caste or religion. The working conditions however are often hazardous and neglectful of the health and safety of its workers.

The housing in Dharavi has evolved over time, spontaneously yet systematically, organic yet ad hoc, adjusting to space constraints. The system of housing functions in a way that the housing unit is seen as part of a larger community. Dharavi's built and unbuilt character is due to the ability to communicate across houses on the street, the small home-based industries and the street being a life line to social living. However, there is a lack of adequate infrastructure that deprive residents of better living conditions.

Seen as a resident, Dharavi is home that they've occupied and built over several years. Yet they feel neglected by the Government and consider themselves to be the unwanted citizens of the nation.

Several projects have been initiated to redevelop Dharavi, and most have been flawed in their outlook. Some consider the process an opportunity to dig into the gold mine. Dharavi is seen as the land of opportunity, with land values close to INR 35,000 per sq ft. Some consider it

an opportunity to foster personal gain. Some consider it an opportunity to provide only for the community, thereby working towards no profit.

This proposal is based on the premise that a participatory process shared by Government and residents is most befitting in recreating the hybrid nature of Dharavi, regulating a development process and allowing people to build their own community.

GUIDING PRINCIPLES

- Work towards minimal gain with minimal loss. The proposal aims at exploring conditions that could be beneficial and befitting to both parties.
- Shape, strengthen and structure before redevelopment.
- Retain Dharavi's identity of nagars, and work from the level of the nagars and build Dharavi as a whole.
- Retain the "jugaad" nature, particularly related to housing, that makes Dharavi, Dharavi.
- Set up a governance structure that is inclusive so that processes are shared by Government and residents.
- See transit camps as the building blocks for development.
- Improve industrial spaces and infrastructure.

GOVERNANCE

A Dharavi Development Board is set up backed by State Government funding.

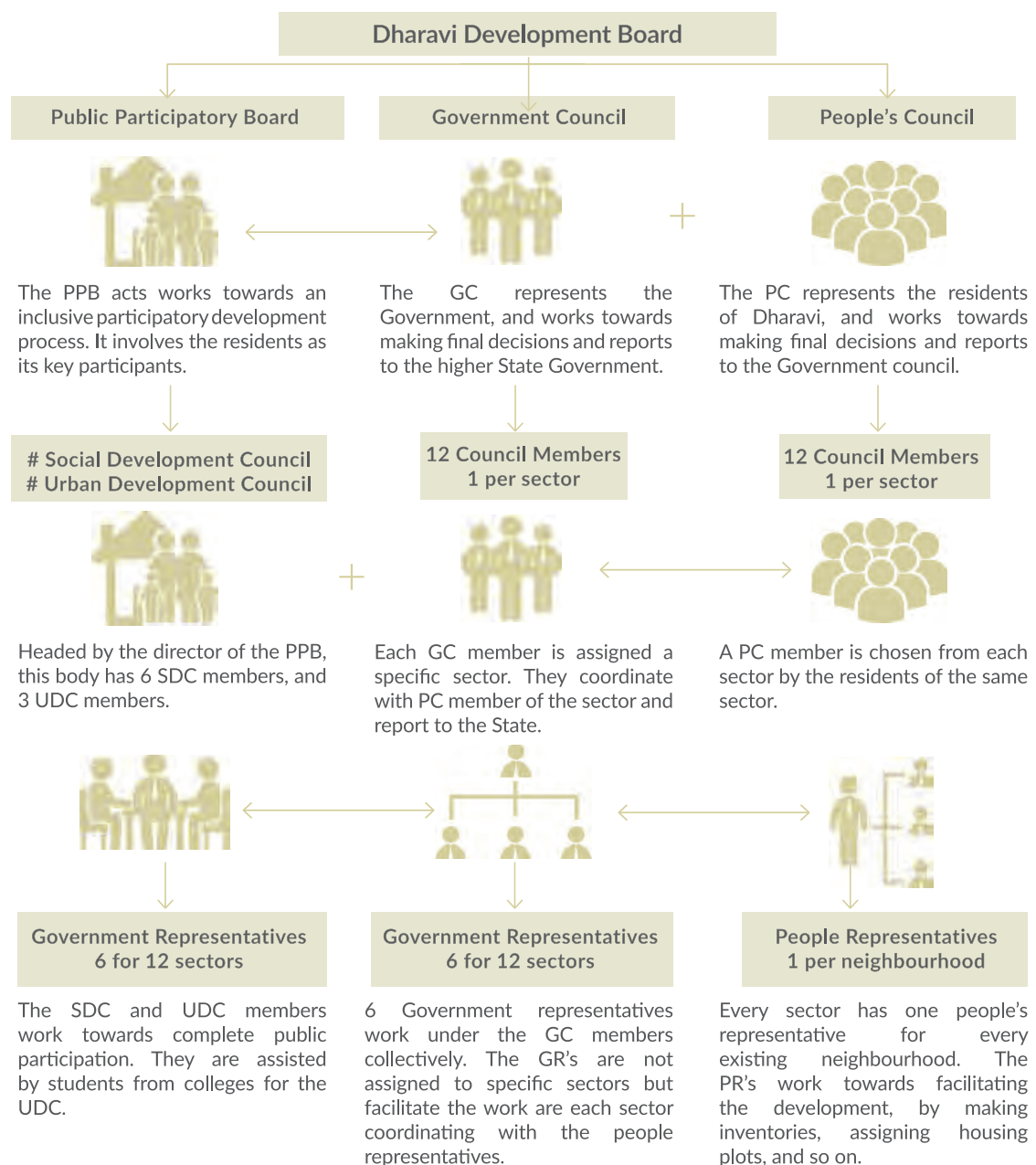
Stage 1: Social Development Council informs people about the development process.

Stage 2: Nomination of people's council members and people's representatives from each sector.

Preparation of an inventory, listing those eligible residents in coordination with Government and people's representatives.

Stage 3: As the construction process starts, the Social Development Council, works with the Urban Development Council to provide solutions.

Stage 4: People's Representatives then allocate houses for the residents who have submitted necessary documents for eligibility.



FINANCE

Housing Cost: Government

Housing Unit (sq m)	Cost per Unit (INR)
6	1.62 lakh
8	1.98 lakh
14	3.63 lakh
22	4.99 lakh
28	6.19 lakh
34	7.69 lakh

The Government undertakes the cost for the construction of foundation, structural columns, structural beams and floor slabs.

Housing Cost: People

Housing Unit (sq m)	Cost per Unit (INR)
6	2.18 lakh
8	2.66 lakh
14	3.70 lakh
22	4.48 lakh
28	4.87 lakh
34	5.62 lakh

The people undertake the cost for the construction of masonry, plastering, flooring, doors and windows, wall paint. The cost above is taken as an average rent, residents however may build their housing units as per individual requirements.

Total Project Cost

Proposed area for development	345.63	acres
Proposed Government area (15%)	51.84	acres
Remaining area for development	293.79	acres
Road area (45%)	132.2	acres
Built up area (Ground)	161.58	acres
Total built up area	484.75	acres
Cost per sq m	8,197	INR
Total construction cost for Government	633.41	INR cr
Total cost for Road	150.41	INR cr
Cost for services 10% (electrical, sanitation)	339	INR cr
Total cost for housing development	2,122.8	INR cr
Cost for 1 Transit Camp	2.83	INR cr
Total cost for 48 Transit Camps	135.84	INR cr
Total project cost	2258.66	INR cr
(Excludes peoples construction cost of INR 1,604 cr)		
Total income from saleable component	4,237	INR cr
Total profit to Government	1,979	INR cr

Out of 557 acres, the land available for development is 345.63 acres (including roads, but excluding green spaces, and existing built area - SRA/private). Considering the 15% release of land from each neighbourhood as proposed, 85.1 ha of land is made available to the Government.

Out of this 15% land available, the Government is allowed a sale component of 10% (34.56 acres) and the remaining 5% of land is for community uses that include public health centres, parks, playgrounds and gardens, community halls, dhobi ghats, localised areas for markets and the like.

Key areas are identified within the fabric of Dharavi to locate sale component buildings. These areas have been chosen because the built fabric consists mainly of SRA or privately developed structures that are around G+7 or G+8.

PLANNING

Restructuring Roads

Roads are used as the structuring mechanism: Primary and secondary roads divide Dharavi into 12 sectors; tertiary roads divide sectors into neighbourhoods (based on existing land parcels); streets and lanes further divide these into clusters or nagars of 1,200-1,500 families. By structuring roads in this manner, clear transport networks are achieved with some being vehicular and some being pedestrian.



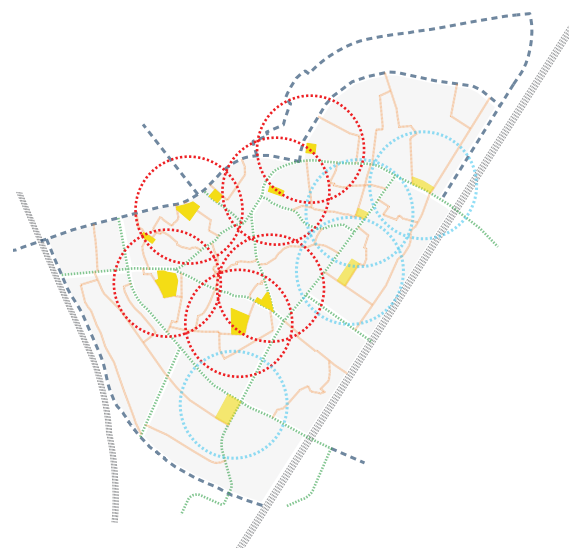
- Primary Road
- Secondary Road
- Tertiary Road

Transit Camps

Stage I- Transit camps will be built in the existing open spaces.

Stage II- The development process yields open spaces in every neighbourhood up to 15% in which transit camps can be accommodated.

Locations for the transit camps are within a 500m radius of current housing locations. The camps are proposed to be temporary structures.



- Transit camp at existing open space
- Transit camp at proposed open space
- 500m radius of relocation
- 500m radius of relocation

CROWDING ANALYSIS

Existing Crowding

Area of neighbourhood: 21,672 Sq.M
 Area of roads: 7,847 Sq.M (36.2%)
 Number of housing: 954 (477/Floor)
 Number of commercial: 345
 (230 at Ground, 115 at First)
 Total number of units: 1,299
 Existing Indoor Crowding: 3,391 people/ha
 Existing Street Crowding: 16,188 people/ha
 Existing FSI: 1.2

Proposed Crowding

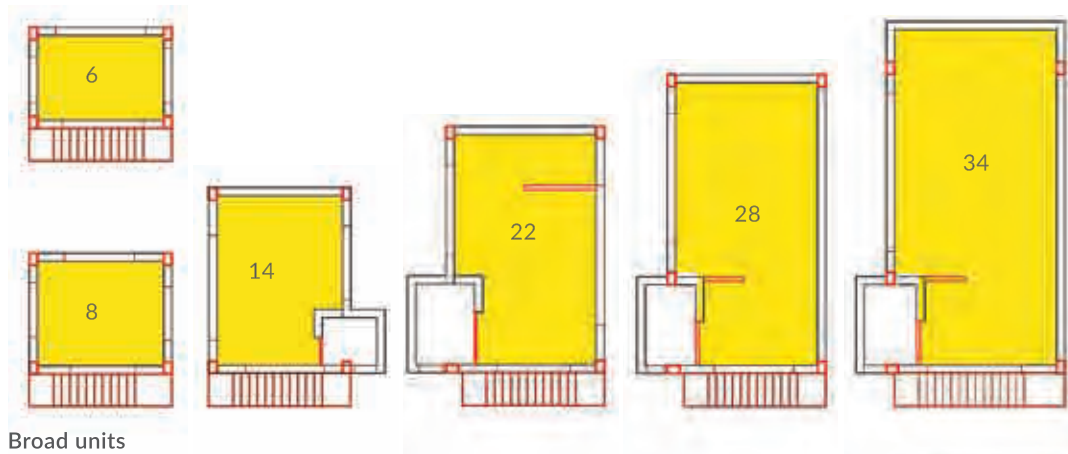
Area of neighbourhood: 21,672 Sq.M
 Area of roads: 9,878 Sq.M (45%)
 Number of housing/commercial units: 443 units/
 floor
 Total number of units: 1,329
 Proposed Indoor Crowding: 3,216 people/ha
 Proposed Street Crowding: 14,830 people/ha
 Existing FSI: 1.8

The proposed crowding is lesser than the existing only marginally. This is because the proposal aims at housing all current residents of Dharavi.

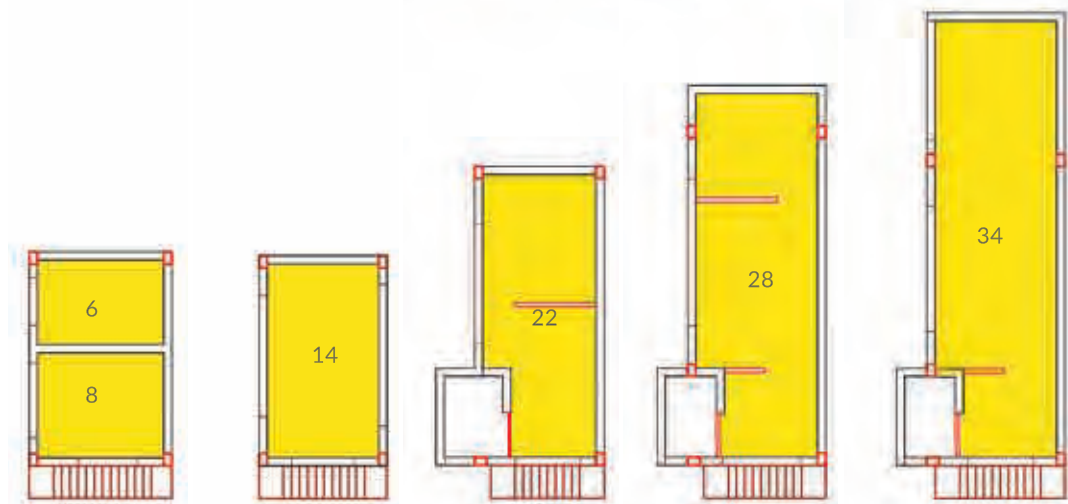
HOUSING

Housing process begins with identification of existing housing area units. In this neighbourhood sample, out of 477 units, 10-16 sq m units and 16-24 sq m units are predominant.

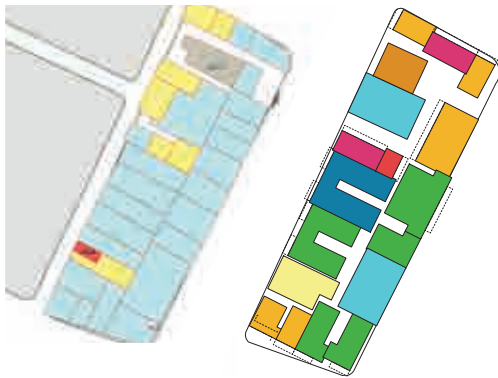
Proposed housing thus makes five categories of housing ranging from 6 to 34 sq m units. Of these only 6-8 sq m units have common toilets, while the rest of the units have individual toilets.



Broad units



Linear units



Existing neighbourhood sample

6	28
8	34
14	Toilet
22	Existing

Proposed typologies



Proposed neighbourhood master plan



1

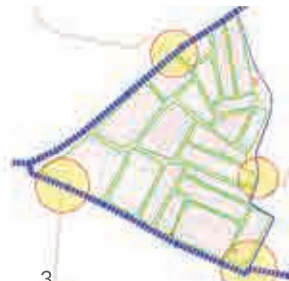
Existing neighbourhood sample is taken.

Currently road widths vary between as low as 0.6m to 3m



2

Existing block shapes and geometries are taken into consideration and the land is parcelled accordingly



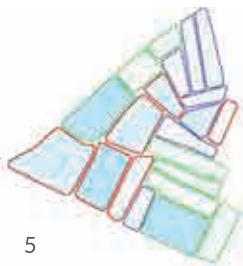
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Land parcels are further regulated. The context plan in the sector is overlaid to oversee the connections into other neighbourhoods and sectors



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The route for the main street is identified and it is made sure that the neighbourhood is linked to the surroundings through two or three main points



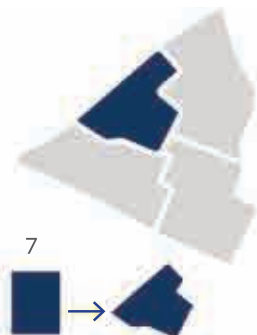
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Land parcelling should also keep in mind type of physicality (linear, cluster, or mixed) and the type of function (residential, commercial-residential, manufacturing residential)



6

Land parcels are then shrunk in-order to accommodate wider roads. Streets are 4.5m wide and lanes are 2.5m wide



7

The development scheme adopted provisions that 15% of land to be given to the Government. The process next identifies the correct land parcel for this purpose



8

The land parcel then accommodates existing religious/public structures. It also makes provisions for future provision of open space, amenities and infrastructure

PHASING

Phase 0

A period of one year is taken to complete an inventory of the 12 sectors and list residents eligible for development as per the 1995 cut-off date.

Phase 1

7 Months Construction time for 24

18 Months Transit Camps Relocating to transit camps (1.5 months); Constructing serviced layouts (7 months); Constructing individual tenements by people (8 months); Relocating to residence (1.5 month)

18 Months Repetition of Process after the relocation of first set of 5,616 families.

Phase 2

18 Months Relocation of 5,616 families

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11,232 families

7 Months Additional 24 camps

18 Months Relocation of 5,616 families

18 Months Relocation of 5,616 families

22,464 families

Phase 3

18 Months Relocation of 11,232 families

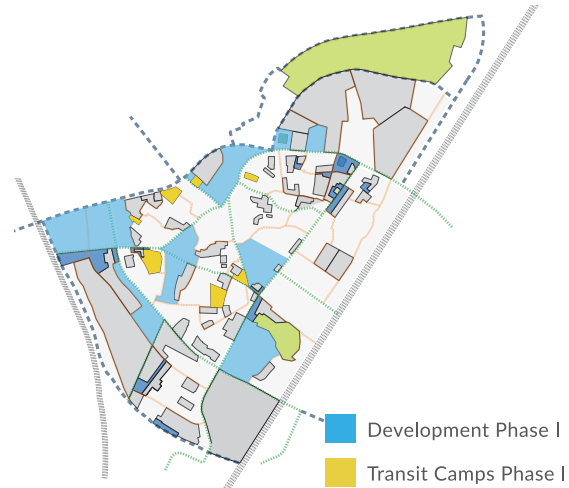
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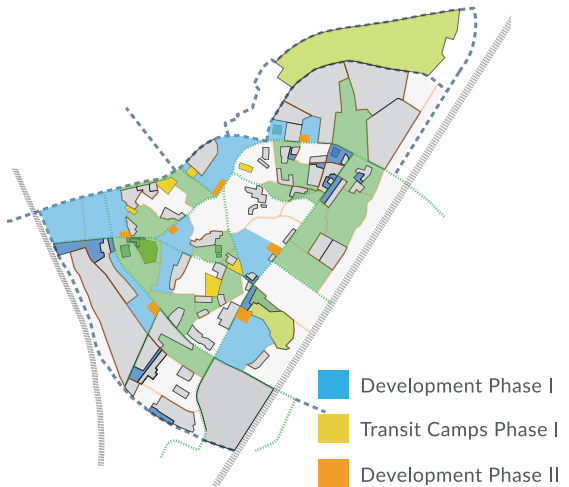
33,696 families

Project Phasing

12 Years ~ 70,000 families



Phase 1



Phase 2



Phase 3

POLICY

Eligible residents receive first choice in selecting houses, followed by a lottery system for others. It is proposed that any requirement of changing allocated house be exchanged with other residents and notified in a maximum period of 15 days from the date of allotment.

The Government is allowed to sell saleable land only for small scale industries or commercial uses that restrict building heights to G+2 floors (10m height). This restriction prevents the increase in the density of Dharavi.

TRANSPORT

The proposal brings in hierarchy in the road networks, providing for all facilities that are currently lacking such as water supply, sewer and electrical lines. All roads are designed to

accommodate underground utilities under the footpath. The proposal eliminates the concept alleys with minimum width of lanes around houses being 2.5 m.

Roads are classified into:

<p>Primary (external connectivity) include Sion Dharavi Link Road and Lal Bahadur Shastri Marg</p> <ul style="list-style-type: none">• 6 Lanes• Parking provision along one edge	<p>Tertiary (Neighbourhood) include the Dharavi Cross Road, Valmiki Road and similar</p> <ul style="list-style-type: none">• 3 Lanes• 2 Push cart lanes• Parking optional
<p>Secondary (Internal) include 60 Feet Road and 90 Feet Road</p> <ul style="list-style-type: none">• 4 Lanes• Parking provision along two edges• Push cart and cycle lanes along both edges	<p>Streets and lanes (Cluster)</p> <ul style="list-style-type: none">• Shared spaces with pedestrian priority over cars

INDUSTRY

The proposal aims at improving connectivity and road network and safety standards. Similar industrial units are combined into a single industrial unit. The parties share equal

percentages of profit. Apart from annual revenue, the combined industrial unit also pays a nominal fee to the Government for improvement and maintenance.