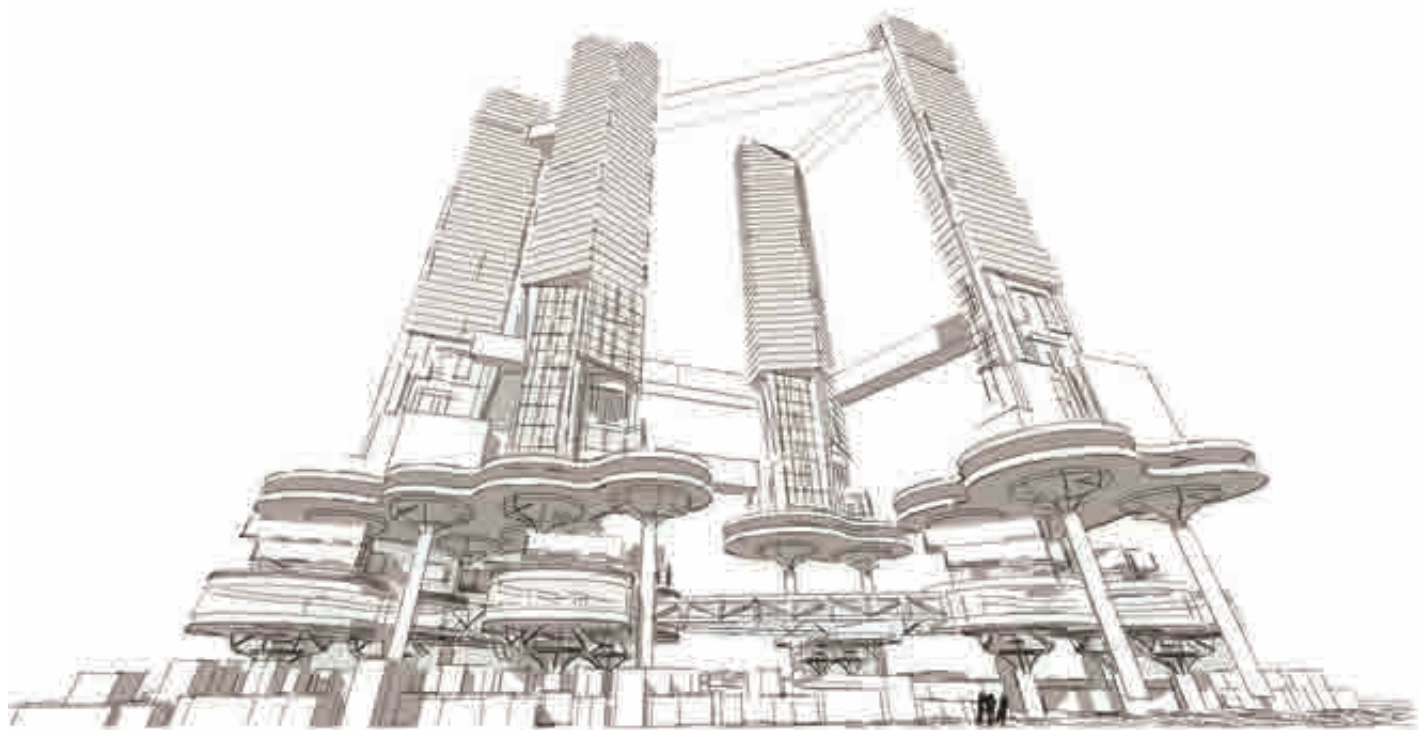


# Reinventing Dharavi: Without Public Funds and by Engineering the Economics

## 06

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The proposal is based on the assumption that the economic levels of residents should be uplifted to make alternative choices affordable. It proposes a public private partnership called Dharavi Ltd, comprising residents, private players and SRA with two scenarios: the idea of air rights, as new projects are developed above a sky platform while existing Dharavi continues as is below, and schemes to release saleable FSI to fund other projects. The jury found the concepts highly imaginative but impractical.



## PREMISE

People in Dharavi work and live within their own social networks, fearing that any alternative will disrupt their way of life while generating profits for a few. The status quo thus assumes that no one in Dharavi has agreed to move and hence improving existing infrastructure and living conditions within the existing horizontal boundary is a must. Attractive alternatives may be acceptable only if both the short term and long term economic benefits far outweigh the costs of remaining a slum dweller. In addition, dwellers need economic assurance, shelter and much more, in the form of incentives to agree to relocate horizontally or vertically or out of their current location. Residents will move to a less dense and better living environment only if their economic levels are lifted, making alternate choices affordable.

The vision and approach both emerge from a premise of health, and complemented by the appropriate level of minimum wealth required to sustain health. Clusters of dwellings will have to be serviced by physical infrastructure to create clean and healthy environments for sustaining life (physical). These clusters have to be complemented by public spaces for social and market interactions. Our vision is that food, shelter, clean water, safety, security and freedom are essential human rights to be fulfilled through governance.

The challenge of this proposal therefore is: *How can one improve Dharavi 'as is' and still generate enough funds for its improvements through other economic means without free public funds?*

## GUIDING PRINCIPLES

1. To provide basic human rights for people of Dharavi as described by the World Health Organisation (WHO) in its definition of health "as not only the absence of disease but a state of complete physical, mental and social well-being" (1947).
2. No one should be forced to move.
3. Improve the lives in Dharavi in situ to build confidence for future proposals.
4. Architect a holistic solution so attractive that the current "status quo" becomes unattractive.
5. Generate sustained income for people to elevate them out of poverty.
6. Engineer the economics of a solution such that it requires no tax payer subsidized public funds.
7. Provide environmental measures for reducing epidemics.

## GOVERNANCE

### A Public Private Partnership known as Dharavi Ltd is proposed to be set up

To manage the project and invite competitive bids from private parties, whose tenure and rewards will be based on their stipulated performance measured by predefined criteria.

The preconceived notion that for-profit entities cannot have goals beyond currency profits measured is thus challenged. Enterprises cannot succeed if there is no satisfaction from products or services and no sales, and hence no profit.

DHARAVI LTD Shareholders					
	To whom	Type	Value	Quantity issued based on parameters	Condition of Sale
1	Owners	Preferred	10	100 shares / sq ft owned	50% available for five years after property is sold to developers
2	Tenants	Preferred	10	50 shares / number of years lived	80% available for 5 years after they move out
3	Investors	Preferred	10	Any number of shares with preferred like dividend	Freely tradable on market
4	Micro-enterprises	Common	10	50 share per sq ft	Freely tradable on market only if they move out
5	On site utility operator	Preferred	10	10000 shares per MW generated and supplied on site available 1 year the generation	Tradable to PPP
6	Cleaning company	Common	10	1000 shares per year per 1000 tons of garbage delivered to utility company /year for 10 years	Tradable to PPP
7	Developers	Preferred	10	1 share for every 10 sq ft of green space	Freely tradable
8	MMRDA	Common	10		Freely tradable
9	MHADA	Common	10		Freely tradable
10	SRA	Preferred	10	100,000 shares after completion of project	Not tradable
11	Maharashtra State Government	Common	10	100 share for every INR 1 cr of tax exemption	Freely tradable
12	Government of India	Preferred	10	100 share for every INR 1 cr of tax exemption	Freely tradable
13	Corporate sponsors	Common	10	100 share for every young person trained, recruited and relocated outside Dharavi along with family	Freely tradable
14	Corporate owners	Preferred	10	1 share per sq ft owned	Freely tradable
15	NGOs, WB, IFC etc.	Preferred	10	1 share per INR 1,000 invested	Can be liquidated to PPP
16	Political parties	Common	10	1,000 shares for support	Can be liquidated only to SRA

## FINANCE

### Scenario 1

Status Quo – It is assumed that we will have to improve existing infrastructure and living conditions within the existing boundary. To finance this approach, SRA, PPA will exercise “air rights” and develop new projects above a “sky platform” connected by an existing “skywalk” at a reasonable height while Dharavi continues to function “as is” below this platform. Sale of FSI on this new project, above this platform, will generate funds for infrastructure provision below.

However, it should be noted that not all residents could be provided with replacement units of 300 sq ft in vertical towers as per existing FSI laws. The mathematical rationale behind this is that demand of area required may not meet the supply. Even if the area provision meets the total requirement, it has to be reduced by some other means. Mechanisms for this are addressed in scenario 2.

### Scenario 2

In this scenario, the SRA will offer incentivised immediate, short or long term de-population schemes that will release saleable commercial and residential FSI to partly fund various scenarios.

Three types of funds will be required :

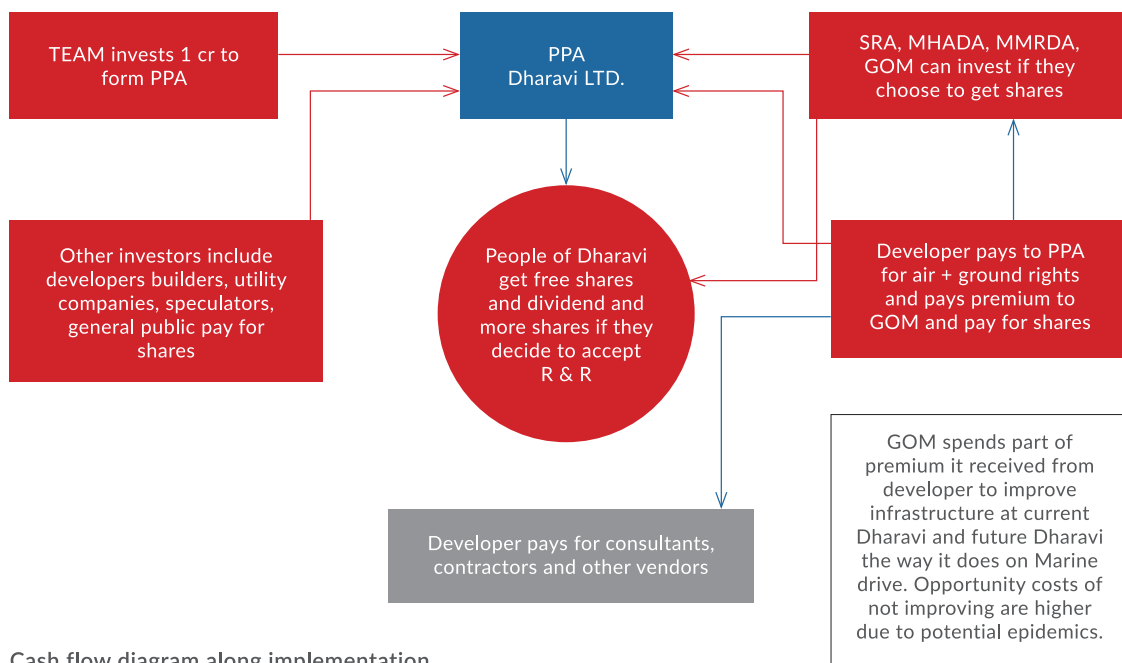
1. Initial project fund for capital costs.
2. Operational funds for reoccurring expenses year after year.
3. Incentives and reward and resettlement if any family or individuals at Dharavi so chooses.

Projects funds and incentive funds will be created by selling volumetric air development rights, commercial spaces in hollow box girders, parking spaces and solar and wind turbine rights for energy generation.

Operational funds will be generated by maintenance fees, advertisements, heliport fees, flying car port fees and by all other commercial activities.

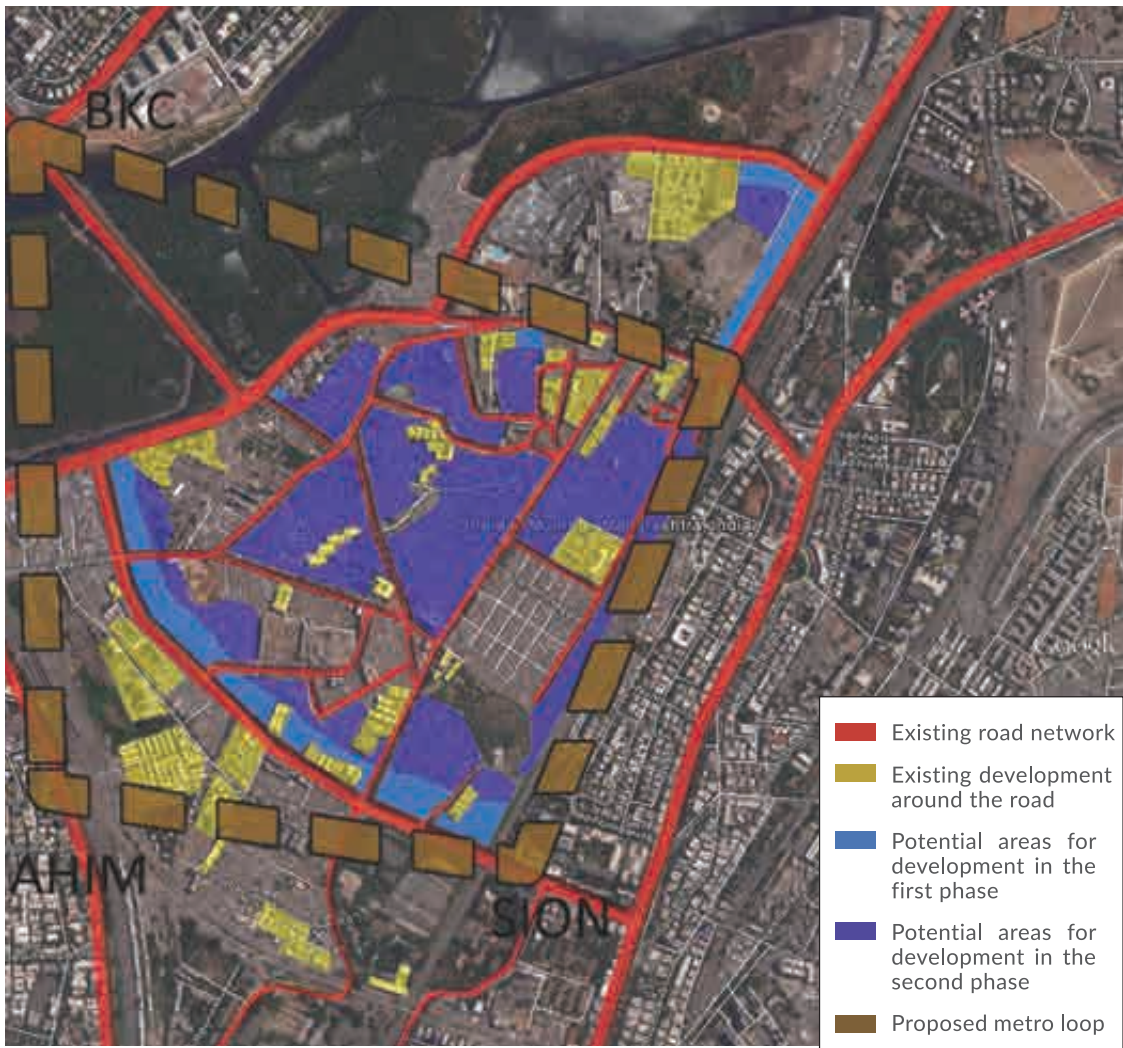
The following diagram shows streams of revenue or cash inflows, expenses, cash outflows, net income and reserves for future that will be earned and sustained over the years, as interests are threaded to create a symbiotic, self-sustaining mutually beneficial dynamic micro-economic system.

The idea is to thread vested interests by a corporate type of structure including Government, public sector agencies and NGOs by providing each with shares so that they receive a stream of income through dividends year after year and are able to perform their self-declared duties using these funds.

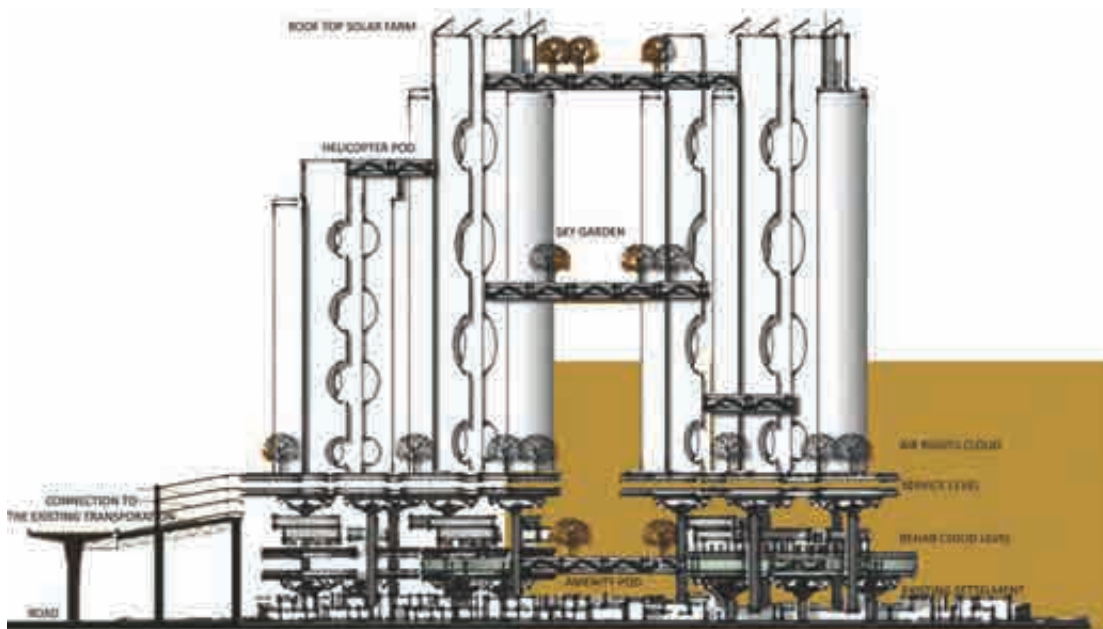


Cash flow diagram along implementation

	Parameter Table for Real Estate Analysis	Quantity
1	Land area	214 ha
2	Land area	23,034,768 sq ft
3	FSI	4
4	Land area multiplied by 4 FSI	92,139,073 sq ft
5	Deducted for infrastructure, services and green spaces	16,625,073 sq ft
6	Provision for resettlement and rehabilitation on site for people of Dharavi	32,365,000 sq ft
7	Net area that any developer (Dharavi Ltd) can sell	43,149,000 sq ft
8	Rate of premium of Government of Maharashtra	INR 5,000
9	Income to Government of Maharashtra through premium	INR 21,575 cr
10	Minimum sale price per sq ft	INR 31,000
11	Total project revenue at minimum sale price	INR 133,762 cr



Proposed master plan



Proposed housing typology

## PLANNING

Development along roads will take place first, followed by internal areas. An FSI of 4 is assumed in the proposal.

Four new concepts are introduced:

### Concept 1

Measure of land in joules per hour, as a net sum of kinetic, potential, static, organic, dynamic entity.

### Concept 2

Land to be viewed as a plane, relatively static and parallel to the circumference of earth and either supported naturally or artificially kept apart from gravitational pull of that planet.

### Concept 3

Solar farms at a higher altitude resolves the conflict of food versus fuel.

### Concept 4

Volumetric density as opposed to area density, augments and better captures the resource and energy value of land making it more economical to develop.

## PHASING

Phase 1: Confidence building measures

Phase 2: Highlight remaining problems to solve

Phase 3: Sell air rights + ground rights

Phase 4: Move residents to L3

Phase 5: Construction of super structure

Phase 6: Provision of other Services

## HOUSING

The typology proposes the creation of housing over the existing settlement. The housing will contain elevated gardens, skywalks, metro connections, solar farms and commercial spaces.

## SERVICE INFRASTRUCTURE

1. Composite platforms and boxed columns will act as structure and carriers of physical infrastructure.
2. WIMAX to provide free internet access.
3. On-site "Integrated Agro-Energy Generation System" that uses four fuel sources on site to generate energy and treat the waste of Dharavi and its surrounds.
4. Jumpstart Dharavi into the digital world and internet of things.

## TRANSPORT

1. Pave existing streets by embedding infrastructure underground.
2. Provide site with services in future proposals at upper levels.
3. Connect skywalks at upper levels.
4. Use higher platforms for parking, helipad and mini airport for flying cars of the future.
5. A metro rail connecting Mahim, Bandra, Sion stations and BKC complex will pass through Dharavi road network.