community in the time of market economy
Nalasopara in the context of India

India
- Area: 3,287,259 km²

Mumbai M.R.
- Area: 4,355 km²

Vasai Virar
- Area: 311 km²

Nalasopara
- Area: 43 km²

Population Density (Per Sq. Km.), NITI Aayog (National Institution for Transforming India), Government India
Nalasopara in the context of India

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Population Density (Per Sq. Km.), NITI Aayog (National Institution for Transforming India), Government India
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<td>density</td>
<td>385.4 h/km²</td>
<td>4,793 h/km²</td>
<td>3,200 h/km²</td>
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*Population Density (Per Sq. Km.), NITI Aayog (National Institution for Transforming India), Government India*
The train as an urban growth booster
Mumbai
The train as a connector
Vasai Virar - Mumbai
The train as a boundary
Nalasopara West - East
Outbreak in density
single typological answer
lack of communal spaces and infrastructure
Failure as a response
to the complexity of inhabitants
and newcomers
In a context where due to the requirements for loans from banks and micro-financing institutes, only 5 to 6% of the households can afford a house in Mumbai. Developers find it more profitable to develop luxury and semi-luxury dwelling.

Sahil Gandhi, *Economics of Affordable Housing in Indian Cities: The Case of Mumbai*. (Environment and Urbanisation Asia, 2012)
Risk colonisation of the monotonous 5-storey chawls in the East
the disparity and disconnection between Nalasopara West and East,

the 5-storey chawls as the single answer of dwelling typology in Rahmat Nagar,

the lack of (designed) meeting places

and the difficulty of ownership are obstacles to achieve community and sense of belonging.
background
problem statement
research question
research framework
design hypothesis
design proposal
development
relevance
how can the introduction of punctual interventions in the public spaces, related to leisure and commercial activities, integrate the two detached and dissimilar neighbourhoods of Nalasopara West and East by encouraging the inhabitants of both areas to use those facilities?

how can the placement of high-dense mid-rise dwelling clusters on both sides of the railway embrace the formation of intimate communities?

how can the market-driven economy of contemporary India be used as a tool to pursue this quest?
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Imageability of the City
Sequence of places – Continuity and landmarks

Kevin Lynch, *The image of the city* (1960)
Transformation of a boundary into a border
Bandra Kurla Complex
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Dwelling Architecture
Understood beyond the house

Open to sky space – Participation – Equity – Income generation

Community
Sense of belonging understood in terms of scale

Courtyards with different levels of enclosure
Barrio Alfredo Palacios, Buenos Aires (Estanislao Kocourek – 1966)
Sequence of courtyards and hierarchy of collective spaces
Belapur Housing, Navi Mumbai (Charles Correa – 1985)
Local patterns of transformation
Techniques of encroachment in the chawls and slums
Local patterns of transformation
Techniques of adaptation and appropriation in the chawls
Sense of place – Familiarity
Nalasopara – Mumbai - India

the street as a gathering space

the courtyard as an extension of the house

the street as a place for income generation
Sense of place – Familiarity
Nalasopara – Patterns of inhabitation

the street as a gathering space

the courtyard as an extension of the house

the street as a place for income generation
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Competitive density
Necessity to provide a profitable alternative for developers

PK Das
achieving a sustainable density

FSI beyond 3.0 is physically not possible

affordable dwellings need to have a competitive FSI to be attractive for developers and economically affordable for dwellers

in order to discuss the possibility of a plan that can be reinterpreted in other development projects within Mumbai, the project:

proposes a spatial design that encourages sense of belonging within the inhabitants

deals with the issue of ownership, being flexible to host owners and tenants to be suitable for residents and newcomers

creates a profitable scheme for developers
Site plan
Design Hypothesis
Hierarchy of public and collective spaces
Design Hypothesis
sequence from the main road until the door to the house
Site plan
Main connecting axis
The bridge as the urban catalyst
The bridge as the urban catalyst
Existing infrastructure
Connecting infrastructure in Nalasopara West
Connecting infrastructure in Nalasopara East
Strategic areas to re-develop
Locations of the housing project
System of clustering – First proposal

West: New Frame + Infill

√ Porosity towards the public street
√ Direct relation house - courtyard

East: Existing Chawls as Frame

X Hierarchy of places
X Privacy and intimacy of courtyards
Configuration of the Cluster
The free-standing block and the emphasis on private space
Configuration of the Cluster
The corridor block and the emphasis on collective space
Configuration of the Cluster
The corner and the definition of an 'Inside' and 'Outside'
Configuration of the Cluster
The combination of the typologies and the courtyard for their integration
Configuration of the Cluster
Suitable for urban
Re-development in the East
Operation of the Cluster

Nalasopara West

Nalasopara East
Street corner

Core of the communal space
Nalasopara West – Longitudinal Section
Nalasopara West – Longitudinal Section
Nalasopara East – Ground Floor Zooms

Threshold to the community

Sequence of courtyards
Nalasopara East – Cross Section
Nalasopara East – South Facade
Open Cluster Module – Lower Floor Plan
Dwelling Types

Type A
28m²

Type B
Working + Bedroom
19m²
Dwelling Types

Type C
House + Rent
54m²

Type D
36m²

Type E
18m²

Type F
36m²
Variations in the Dwelling Types
Access and Outdoor Spaces

Outdoor space connected to the collective space

Private outdoor spaces
Variations in the Dwelling Types
Expansion of Visuals

Visual range of 7-9 meters between buildings

Visual range of 10-18 meters between buildings
Variations in the Dwelling Types
Appropriation

Encroachment over the collective corridor and the inside of the dwelling

The middle units can be annexed to the lower ones for rental or house expansion
Variations in the Dwelling Types
Materials

Affordable floor ceramic tiling and only wooden louvres in the protected openings

Higher quality floor ceramic tiling and glass + louvres in all the openings
Synchronicity of Activities
Structural scheme and possible adaptations

- Encroachment over corridor
- Storage in the 1 ½ height
- Hanging of platforms
- Combination of units in section

Bamboo Roofing

Concrete Gutters + Tanks

3,00*3,00
3,60*3,60
In Situ Concrete Grid
Image of the Cluster – After Construction
Image of the Cluster – Modifications and Appropriations
Detail: the threshold
Openings and possibility for modification
Detail: the joint concrete – bamboo
Structural transition at the roofing
Water Strategy

Yearly precipitations in Mumbai
Wind and Ventilation Strategy

Windrose Mumbai

Open corners
Ventilated roof

Crossed ventilation in dwellings
Sunlight Strategy

Solar Diagram Mumbai
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Stakeholders Involved

Authority
- Frame of conditions
  - Maximum FSI 3.0
- Regulations of housing measurements
  - illumination - ventilation
  - sanitation
- Transfer land in the west for low price

Newcomers
- Opportunity to start their lives in the city and possibility to grow
- Flexible units for rental
  - profit for the locals and opportunities to settle for the newcomers

Existing Residents
- Ownership of 110% (in the West) of the total m² they used to own in the East

East Owners
- Relocation in affordable dwellings with proper sanitation and communal places

Developer
- Dense scheme (FSI 2.7)
  - Profitability - 50% of units for sale in the west - 100% in the East

Architect
Cost Calculation – Profitability and Affordability

Land Price
15,000 ₹ / m² *

Construction
16,000 ₹ / m² **
(+10% demolition)

Charges
7,698 ₹ / m² **

Market Price
60,000 ₹ / m² ****

Dwellings for Sale
2,760 m²

Relocation
1,280 m²

Total Costs
1.190 Lakh ₹
37% Profit Margin

Total Earnings
1.632 Lakh ₹

Current Stage:
32% of new dwellings for relocation
37% profit)

West - East integration by public amenities, infrastructure and architectural image

Replicability:
20% to 60% of new dwellings for relocation
(20% to 50% profit)

Relocation of dwellers within the neighbourhood
Policy and Development

Frame of conditions: each development must be undertaken in West and East

Developers agree relocation with neighbours of Nalasopara East (different group sizes can be created)

Development companies of different sizes can take part in the process

Construction in the West

Relocation of communities to the West and demolition of Chawls in the East

Construction in the East
Areas of Intervention
Development: First Operation

Consolidation of the main road as connecting and commercial axis
West: up to 620 new dwellings
Development: Possible Large-Scale Operation

West: up to 836 new dwellings / East: 420 dwellings demolished - Up to 260 new dwellings
50% of new west development destined for relocation
Development: Possible Large-Scale Operation

West: up to 836 new dwellings / East: 420 dwellings demolished - Up to 260 new dwellings
50% of new west development destined for relocation
Development: Possible Small-Scale Operation

West: up to 250 new dwellings / East: 112 dwellings demolished – Up to 80 new dwellings
44% of new west development destined for relocation
Development: Possible Small-Scale Operation

West: up to 250 new dwellings / East: 112 dwellings demolished – Up to 80 new dwellings
44% of new west development destined for relocation.
Development: Possible Operations
Development: Final Outcome

West: up to 3,658 new dwellings / East: 1,440 dwellings demolished - Up to 924 new dwellings
38% of new west development destined for relocation
Urban amenities along the main road
Mid-scale amenities in the cores of the communities
Small-scale amenities in the courtyards
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Urban sequence from East to West

01. The house threshold
Urban sequence from East to West
02. The courtyard
Urban sequence from East to West

03. The integration with the existing
Urban sequence from East to West

04. The bridge
Urban sequence from East to West
05. The main street
Urban sequence from East to West
06. The corner
Urban sequence from East to West

07. The community threshold
Urban sequence from East to West
08. The house
thank you