

GROUND UP!

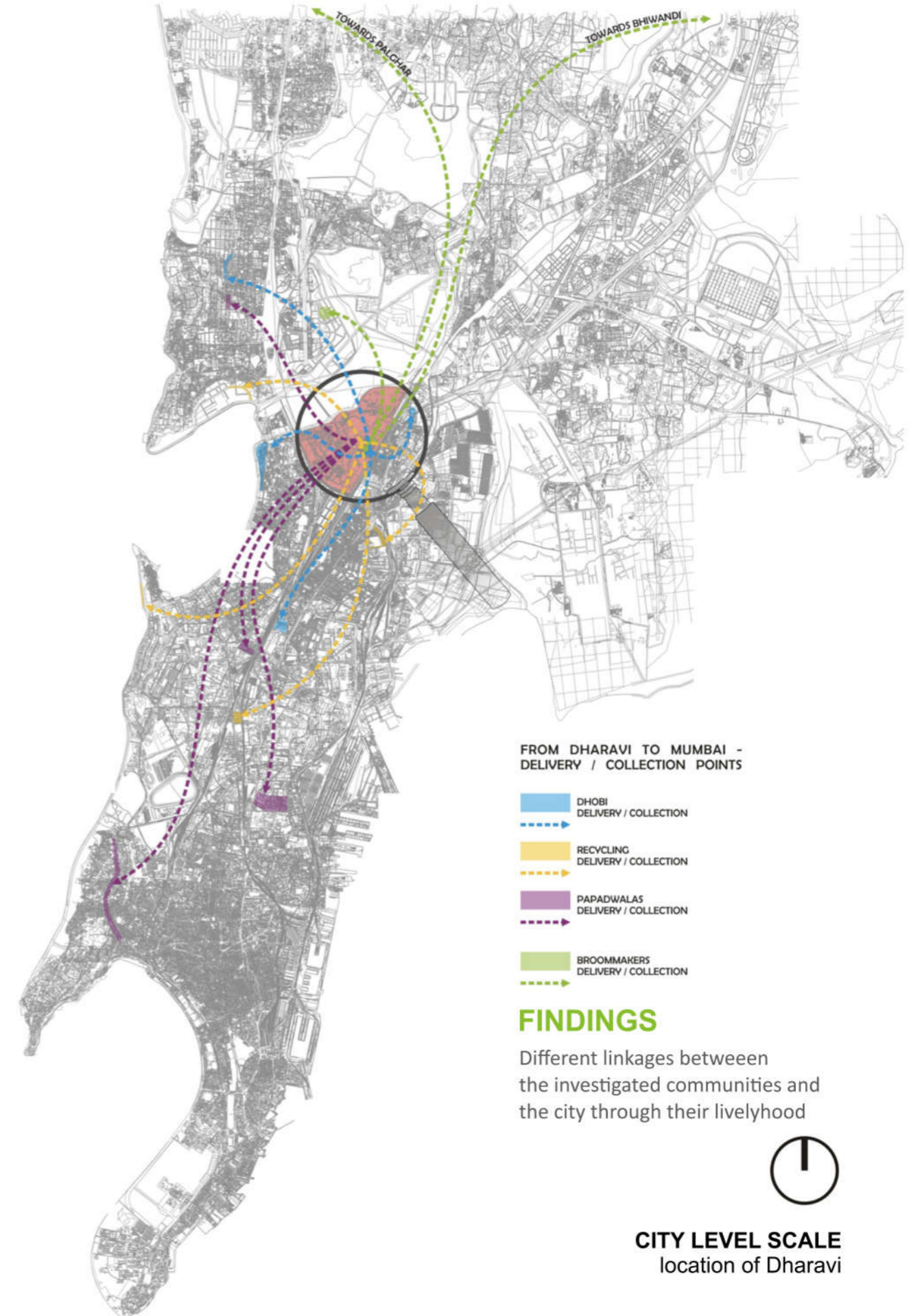
A Dwellers' focused Design Tool for upgrading Living Space in Dharavi, Mumbai (funded by KEF).

THE AIM OF THIS WORK

The study takes an intertwining of sociology and architecture as its beginning point. It has been planned as two independent but linked studies, one where sociological concerns are dominant and another where architectural study has taken the lead.

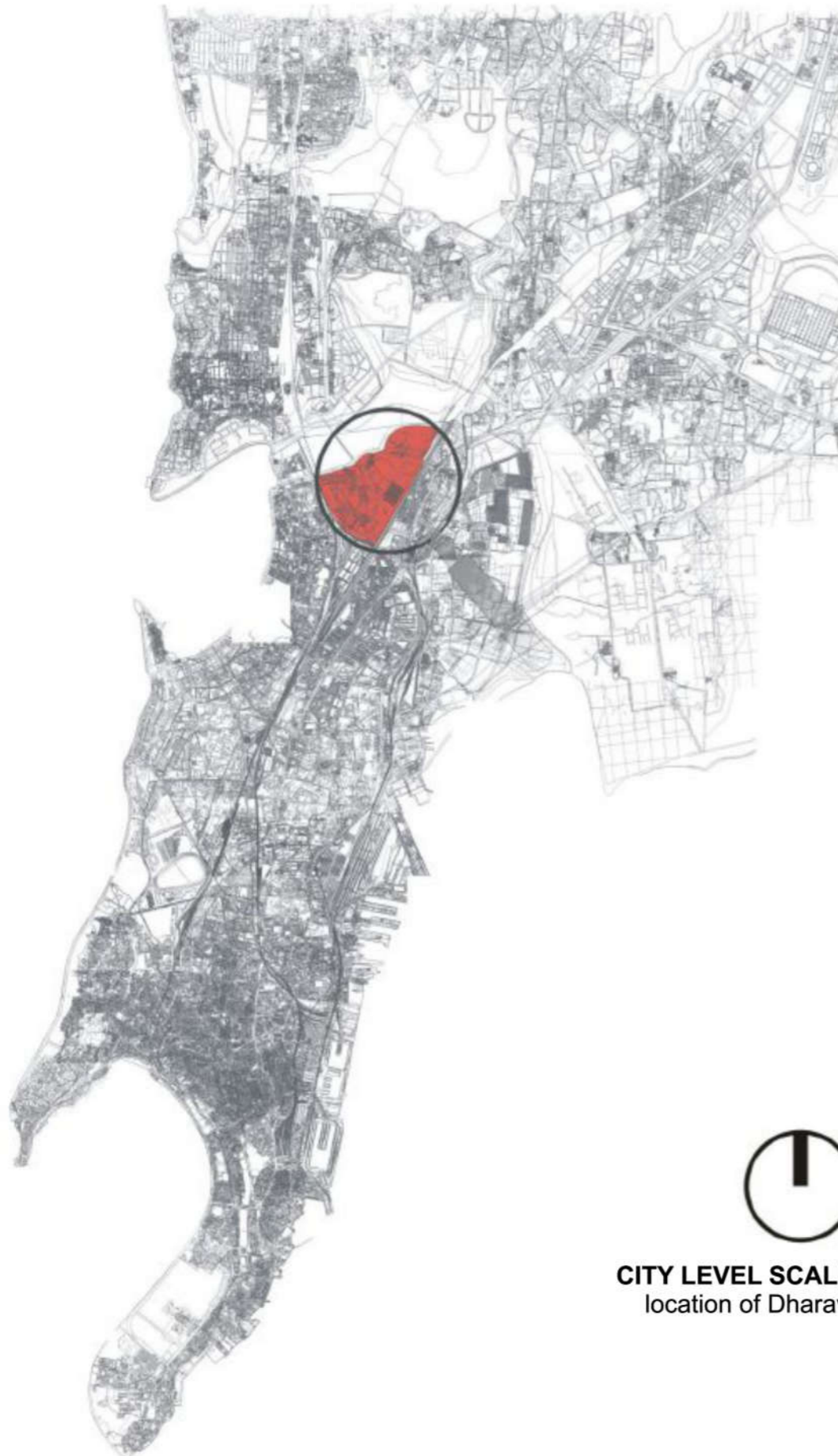
The conceptualisation, design and analysis of the two studies have been done jointly by the researchers. This linked but distinct approach was found necessary to bring in the strength of each of these disciplines to provide an in-depth insight into issues of livelihood and space while appreciating the inter-linkages between them. Both the studies have used same groups of participants and tools that have fed into each other. Insights and suggestions have been shared with each other at several midway points.

METHODOLOGY

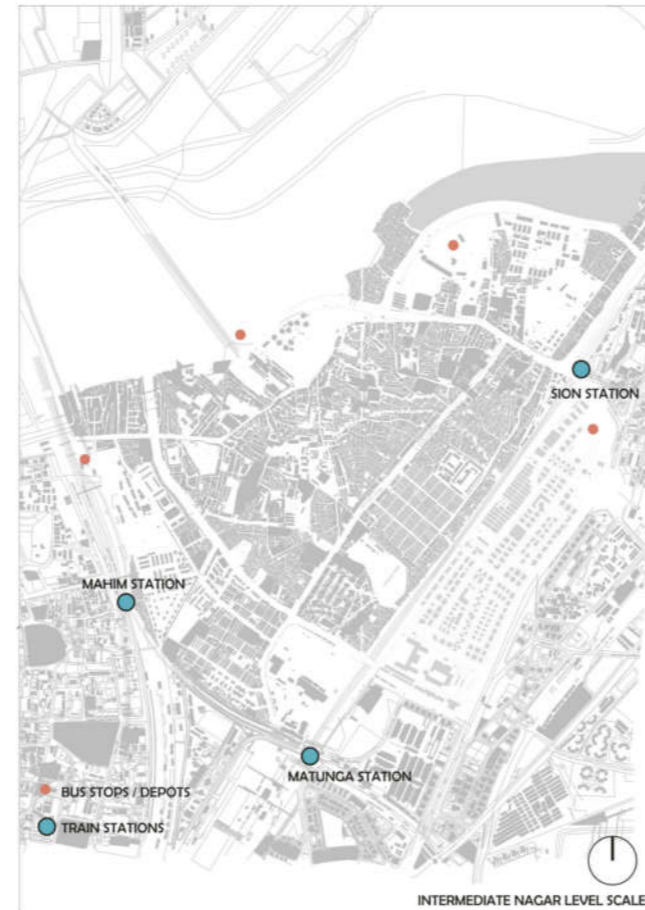


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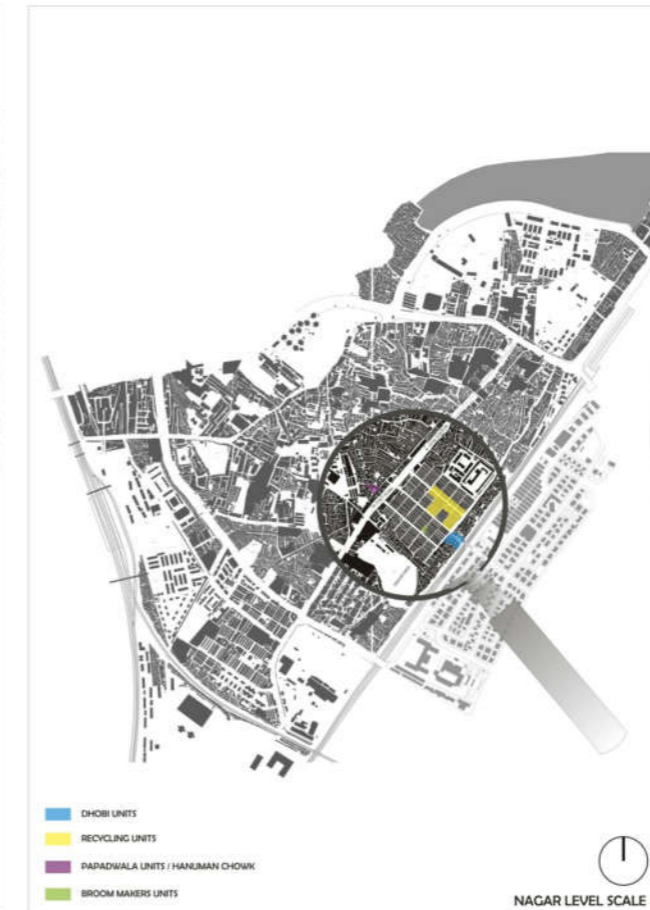
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CITY LEVEL SCALE
location of Dharavi



INTERMEDIATE NAGAR LEVEL SCALE



NAGAR LEVEL SCALE



QUARTER LEVEL SCALE

As Identified in the Research paper of **GROUND UP**

ABOUT DHARAVI

Mumbai is the most populous city in India and has the **highest GDP** of any city in the South, West or Central Asia. The Seven Islands that came to constitute Mumbai were home to communities of fishing colonies. During the colonial period Mumbai grew to an industrial town and in the course of urbanisation it turned into a mega city with about **20 million inhabitants**.

The economic capital still attracts tens of thousands of people from different rural parts of India. However, the development of infrastructure and housing cannot keep up with this influx. In turn nearly **50 per cent of Mumbai's population is without a home or lives in illegally built structures in slums**, those of which have propped up all over the city and it is believed that there are **2,000** slum settlements.

Dharavi, is one of these slums and comprises of **80 Nagars** built and dominated by **different ethnic groups and communities**. It is a central area within the megacity and one of the largest informal settlements of Asia and was set up by immigrants from Gujarat in the 19th century. Over the next few decades immigrants came from all parts of India to work in the booming textile industry.

A city within a city, it has become an unending stretch of **narrow dirty lanes, open sewers, cramped hots and even multi-floored buildings**. **Extremely dense and complex systems** of living and working quarters were built, but only a minor group of the people living in the slum have property rights on land and housing.

The **Urban Structure** is very intricate, as **living and work space are always inextricably linked**. Only a minor group of people living in the slum have property rights on land and housing. Many people work as day laborers or do **unhealthy and inhumane activities**. The houses are **poorly lit and ventilated**. Private toilets are an exception rather than the rule, and public toilets are in a **dilapidated condition in most cases**. On average, **fifteen families share a water pipe**.

Estimates of the scale of **Economic activity** in Dharavi can only be guesses at best due to several enterprises being in the shadow of illegibility. An off the cut estimates of the redevelopment study puts the daily turnover at **Rs 5 Crore(500 million) a day or Rs 1500-2000 Crores a year**. The presence of Industry in the settlement is so vibrant that every second or third house seems to be the site of some of the other Economic Activity.

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THE QUARTER SCALE

The above diagram shows all important networks, public toilets, hierarchy of streets, temples, public utilities, activity nodes and commercial zones.



- DHOBI UNITS
- RECYCLING UNITS
- PAPADWALA / HANUMAN CHOWK
- BROOM MAKERS
-
-
-
-
- PUBLIC UTILITIES
- TEMPLES
- TOILETS
- COMMERCIAL AREAS
- ACTIVITY NODES
- ⋯ RAGPICKER'S PATH

- RESIDENTIAL BUILDINGS
- BMC PRIMARY SCHOOL
- SRA HERITAGE BUILDING
- KAMRAJ ENGLISH SCHOOL
- SOCIETY FOR HUMAN ENVIRONMENT & DEVELOPMENT
- JAIN SHIKSHAN SANSTA
- COMMUNITY WELFARE CENTRE
- URDU HIGH SCHOOL WITH MASJID
- FACTORY
- CHURCH
- BALWADI
- VIDYA MANDIR SCHOOL

QUARTER LEVEL SCALE



- DHOBI UNITS
- RECYCLING UNITS
- PAPADWALA / HANUMAN CHOWK
- BROOM MAKERS

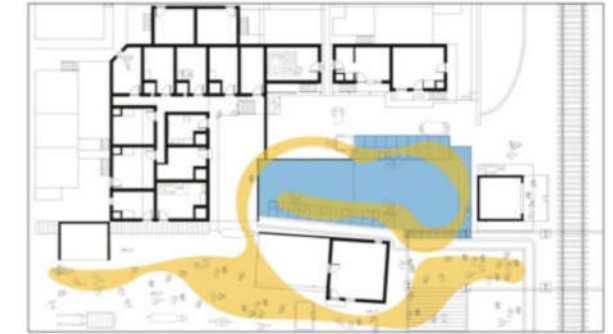
QUARTER LEVEL SCALE

The rules of aggregation of the houses and their interaction with various larger networks and structures has been studied (see drawing 1). This leads to more detailed information on the development structure, open space network, densities etc. and shows norms (and aberrations /anomalies) in the layout of open and closed spaces.

THE CELL SCALE



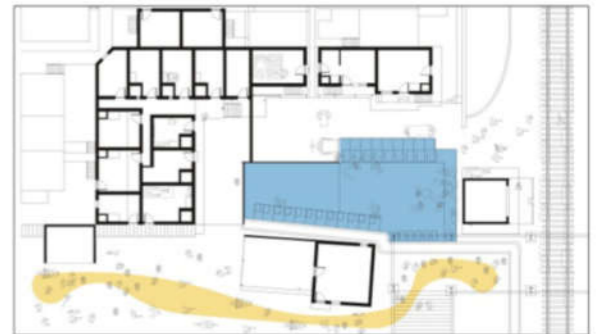
7:00
Household chores
Municipal Water supply time- Every household storing water, washing, cleaning
Temple gets morning visitors



9:00
Clothes collected from customers; dhobi women and children soak it in drums
Pedestrians using the foot-over-bridge increase (predominantly school children and office goers)
Market street gets busy



10:00
Clothes being washed
Pedestrians use the foot-over-bridge
Market street gets busier



11:00
Clothes being washed, dried on the railway tracks



2:00
Dried clothes collected and delivered back to clients



4:00
Dried clothes collected and delivered back to clients meanwhile
Used by broom makers to soak hard grass and strips and soften it

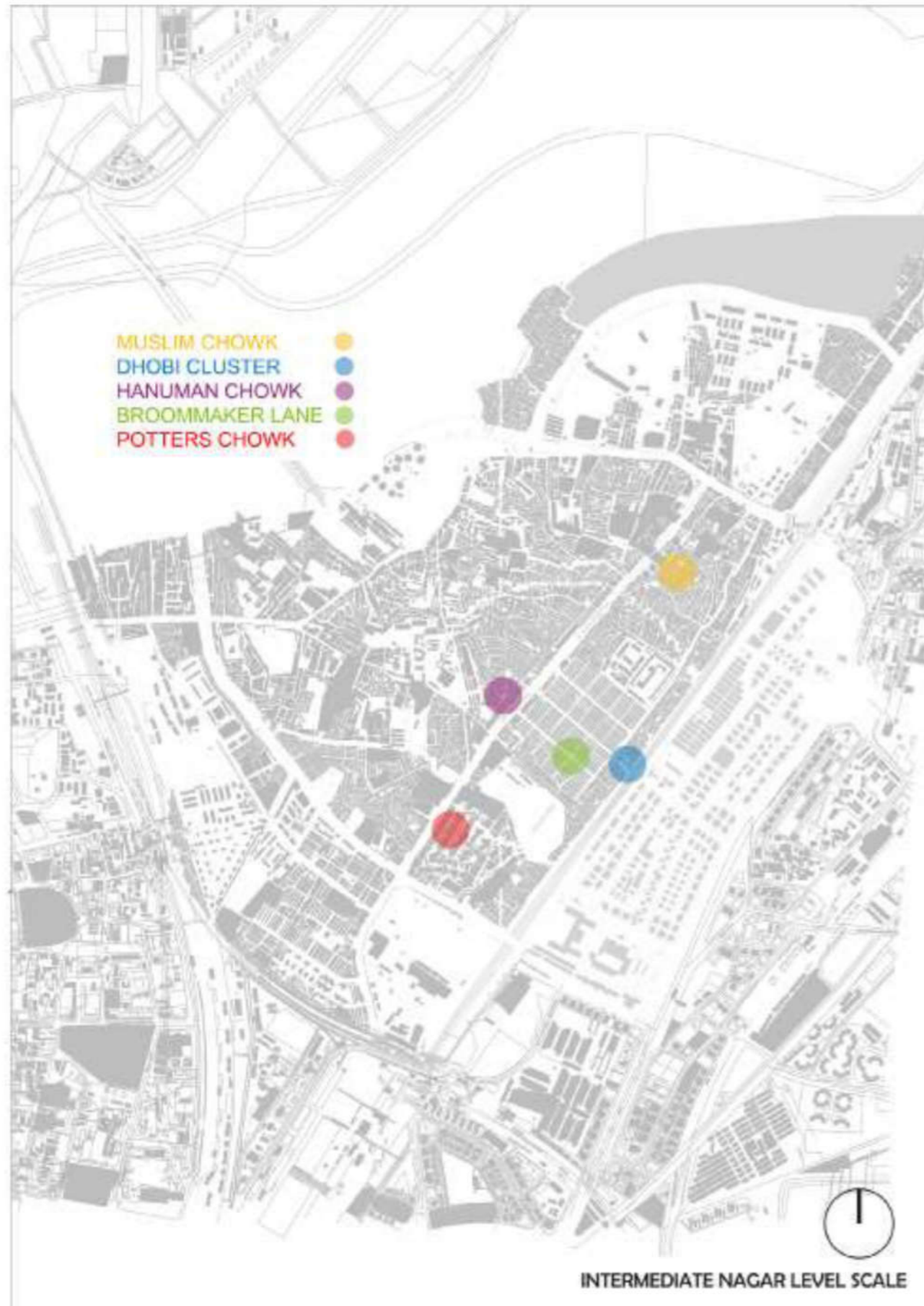


6:00
Resting time, women chat

The individual buildings and their relationship to the surrounding open spaces have been examined through an architectural survey.

Specific features have been discovered as a repeating pattern: the use of concrete and steel and the extension of living space (cantilevered spaces) in the upper floors are characteristic for building typologies with Dharavi.

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THE NEIGHBOURHOOD

The different usages of the five selected places / neighbourhoods / clusters are important for the research project. However, all have one thing in common:

The place acts as a or , as social, societal and economic focal point that is spatially, culturally and socially characterised by the people. The investigated places as hot spots are mostly characterised by the activities that are undertaken directly at the spaces or in the surrounding houses; by the families' traditional professional practices that were also carried out in the villages of

origin (for example potters and broom makers) to activities with direct economic connections to the official city (for example the *papad*-making women at Hanuman Chowk to Lijjat).

The field work in Dharavi was undertaken between 2011 and 2015 when about 300 visits were made to Dharavi. For the annotations as list of references, between ten to fifteen informal conversations with selected inhabitants, about 20 observations, on average three interviews with experts and three group discussions were protocalled in the research diary per investigated place.

SELECTION CRITERIA

Five neighbourhoods each consisting of a spatially connected group of houses (cluster) within Dharavi were identified, chosen, and examined as spatial units. The selection criteria for the investigated neighbourhoods and their geographic location are presented. By way of a broad spectrum of information, the selected neighbourhoods differentiate in the following criteria:

- Location within Dharavi
- Inhabitants' religion and caste
- The size and scale of the place / street

- inhabitants' origin
- inhabitants' livelihood
- Inhabitants' 183 : Different usages of the enclosing public space / the place and the urban gaps
- Levels of spatial and structural improvements (upgradings)
- Inhabitants' possible connections to their home villages
- Spatial character
- Cultural character
- Social character

