

Repairs and Reappropriations:
Examining Cultures of Care, Production, Agency in Bombay/Mumbai Chawls

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

This thesis is driven by unravelling the intricate dynamics of 'marramat'/repair. As the focus broadened, the work began to consider reappropriation and reuse as spatial tactics of agency. The research is anchored within the unique context of Bombay/Mumbai Chawls and relies on narratives from the inhabitants to understand their everyday lives. These inhabitants, often from lower socio-economic backgrounds and traditionally pushed to the societal margins, play a pivotal role in shaping their spatial realities within the chawl typology. It links the universal to the subjective and argues that repair as a worldview holds significant value in how we view the every day, and that there is much to learn as architects when examining non-western ideas behind repair and mending.

Amidst the overarching challenges of breakdowns and the Capitalocene, this work aims to bring to the fore existing cultures of care and making and argues for reframing breakdowns and subsequent repairs as integral aspects of design processes. The study invites a nuanced understanding of how breakdowns, far from signifying the end, often mark the beginning of renewed cycles of use and significance.

The research employs a mixed-methods approach, blending primary fieldwork data (interviews, photographs) with secondary sources, supplemented by writings, drawings, and a stitching technique to draw attention to agency, care, and making. The research then narrows down by looking at micro-sites within the BDD chawl typology and its micro-narratives.

By tracing the socio-spatial transformation of the chawl typology from original design to its repaired states, this research posits an alternative to more disruptive approaches like demolition or redevelopment. Ultimately, it conceptualizes repair as more than a response, rather a deliberate act that challenges dominant design practices and paradigms, subverting the traditional role of the architect/planner.

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Dedication

To my parents, Murtuza and Sakina.
To my brother, Abi.
To my nani, Fatema.

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INTRODUCTION

A Memory of Repair

Intent

Introduction

Methodologies

Outline



Fig. 0.1 A photograph of my nani / maternal grandmother, in her newly repaired chawl home, 2007.

A Memory of Repair

My earliest childhood memories are that of my time at my nani's home in Mumbai. My maternal grandparents lived in a chawl- four stories high, sandwiched between two buildings in a dense urban fabric. It's where my mother grew up, and I would frequent it weekly for the first 22 years of my life. We had always repaired elements of our home and the objects it held. There seemed to be something to fix, reuse, take apart and assemble again. We did it as a family, I did it as an individual, and we did it without second thoughts.

I first encountered the needle as a tool for repair on one of the countless weekends I spent there. I watched Nani meticulously thread the eye of the needle and eventually sew, embroider or darn something. If I noticed my toe sticking out of my sock or needed my school uniform hemmed, I would save it for when I would see her next, knowing she would teach me how to mend it.

There was a similar affinity to mending and reusing in our own home. My mother inherited a Royal Dansk biscuit tin with graphics of sugar cookies on the top, but it no longer held them. Instead, it was reused, now doubling as a place to store needles, scissors, buttons, colourful spools of thread, pins, and even a stray screwdriver with some screws. It had become a permanent fixture in our home, used to carry out minor repairs on small belongings in idle moments- a missing screw here, a loose button there.

Sometimes, the sewing machine would emerge from the cabinet. The humming of the device and the foot pedal rhythmically stitched up hems of clothes, curtains, blankets, sheets and anything else that could use it.

A needle and sewing machine; my earliest memories of repair.



Fig. 0.2 A sketch of the Sewing Machine with a pen and needle.

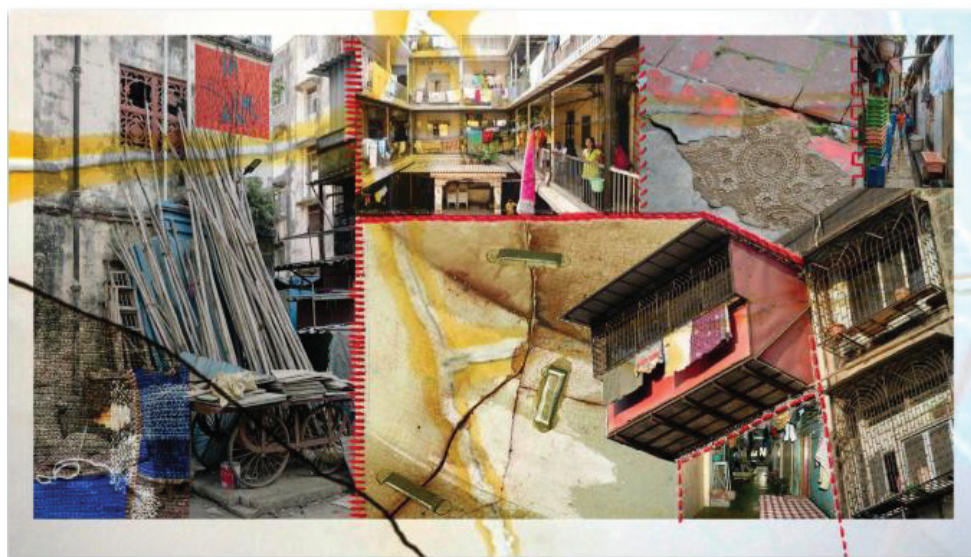


Fig. 0.3 Collage of repaired objects, textiles, buildings stitched together.

Intent

Why repair?

When I encountered design through architecture, I knew that if I could make something, I could also mend it, and if I repaired something, I could keep it for much longer. If I did not want to fix something, maybe I didn't want to keep it. Still, till I arrived upon it as an area of exploration for my architectural thesis, I never looked at it as a critical, valuable skill- it was just something I did as a way to care for my belongings.

So, I approached this work as a question to define my relationship with design and a prompt into a deeper introspection of the architecture I live with, study about, and the one I sought to contribute to. As humanity now faces a world fraught with increasing uncertainty, breakdowns and a myriad of crises that are local, systemic, social, political, economic, and environmental, many people within the field of architecture, design, and research are beginning to have conversations about alternatives, future-friendly ethics that we need to consider in our thinking and practice. Could repair be an entry point into this provocation- and what was once done without a second thought could be framed as something more?

Why chawls?

Repair, a ubiquitous concept, when rooted in particularities of site and context allow us to see it more clearly. Chawls, or chaalis as vernacularly known, were originally constructed as tenement-style housing for the working-class in colonial Bombay. Not only have these buildings persisted through time amidst neglect and lack of maintenance by top-down authorities, but also continue to subvert claims of being obsolete. We see visible adaptations and modifications- being framed as repairs in this work- by their inhabitants to suit their needs or reflect their aspirations. These repairs seem to be entangled and determined by certain spatial, social, economic and political factors that are specific to place.



Fig. 0.4 A contrast of Bombay/Mumbai's urban landscape: typical chawl and other tenement types of mid and low-rises in the foreground with modern high-rises looming in the background.

Introduction

A deliberate pattern of inequitable, extractive, and capitalist-driven decisions in housing and urban development is ubiquitous in many parts of the world, all under the guise of innovation, progress, growth, and redevelopment. Growing up in Mumbai/Bombay^(note), popularly referred to as the city of dreams, I witnessed firsthand the effects and stark consequences of this development; contrary to its claims, it is not for everyone, instead occurring at the expense of those at the margins- often disruptive to the lives, homes and communities the inhabitants have built slowly and incrementally over many decades.

I argue that spatial practices within their everyday life should be acknowledged and given importance in formal discourse. The underrepresented realities of how most people live show that dwellings are more than objects or containers- they are a continually evolving, adapting reflection of the needs and aspirations of the community they serve. The chawl typology- which is a form of low-cost housing characterized by a single, linearly arranged row of rooms with shared amenities, reflects an integral part of Mumbai's architectural and cultural fabric and is now sitting on prime land that developers are targeting for redevelopment- becomes especially poignant and critical. The chawls hold a particular resonance for the author, as generations of her family, once migrants like many others, made their place in the city.

The city is a complex patchwork with many threads representing diverse histories, cultures, and socio-economic realities as it negotiates between the traditional and the contemporary. Here, the city's transformation over time and the inhabitants' everyday practices are in constant flux, challenging the notion of a definitive beginning or end. The thesis intends to provide a critical exploration of the cultural phenomenon of repair and reappropriation within the affordances of the form of the chawls in Mumbai, India. It is an endeavour to shift the focus from the monumental to the mundane, from the novel to the enduring, from the singular authorship to the collective agency. By illuminating how inhabitants, through their everyday tactics, networks, and negotiations, change their built environment, the hope is to be able to frame both repair and reappropriation as individual yet interconnected strategies of architectural intervention as an alternative to our current extractive and violent building practices.

I then ask, "How can the cultures and practices of repair and reappropriation undertaken by inhabitants within Mumbai/Bombay chawls inform an alternative approach to sustainable design futures, potentially challenging traditional architectural and planning paradigms?" This question forms the axis of inquiry that then branches into specific aspects like repair, reappropriation, heritage, value, care, production and agency. Drawing upon diverse sites and narratives, from the large-scale contexts like BDD Chawls in Worli to micro-sites such as the domestic dwelling units and the corridors, the study aims to create a nuanced understanding of how urban culture embeds these practices. By navigating through concepts, theories, and tangible examples, the research sets the stage for exploring architectural modifications and the socio-cultural dimensions that shape the lives of those dwelling in the chawls. Whether it is the long-time resident's emotional connection to the space or the newcomer's innovative reconfiguration, the inquiry positions the chawls as more than mere buildings, transforming them into dynamic spaces of community, heritage, and resilience.

Note: In June 1995, the city's official name changed from Bombay to Mumbai. As far as the inhabitants- be they known as Mumbaikars, Bombaywallas, or Bombayites- are concerned, the words Mumbai, Bumbai, and Bombay all slip pretty quickly from their tongue.

Methodology

This study seeks to capture the multifaceted human experience and architectural form that chawls and everyday life represent. A multitude of methods and vehicles are adopted to explore the complexities of repair and reappropriation as tactics, with the chawls and their inhabitants grounding these practices.

On Interviews and Photographs

In December 2022, semi-structured interviews were conducted by the author as fieldwork to gather firsthand insights and capture narratives from the inhabitants' lived experiences, perspectives, as well as their everyday practices including those of repair and reappropriation in the BDD chawl typology. The interviews ground the study in the voices of those who inhabit the chawls- including long-time residents, newcomers, community organizers, homemakers and shopkeepers- providing unique perspectives on community dynamics, individual agency, and social change.

Accompanying the interviews, photographs were used to capture the visual essence of chawls and their surroundings, including spatial configurations and daily life, and they provide an immediate and visceral connection to the subject matter. In the course of putting the book together, other photographers supplemented their photos of the same site as added documentation.

On Drawing

Maps and drawings are used to visualize the spatial, material and architectural characteristics of chawls, highlighting both their original design and subsequent transformations by inhabitants. These are produced by analyzing photographs of various chawls in the city through archival material, news articles, films as well as first hand photographs gathered from field visits to the sites. Drawing acts as a bridge between the abstract and the concrete, translating complex spatial relationships into visual forms.

On Stitching as Metaphor and Method

Stitching or silai, as a method, signifies the act of repair, mending, uniting, and transforming. In the context of this work, it embodies the process of repair and reappropriation, evoking a sense of continuity and evolution, even when paradoxically involved in the making or production of a new artifact. It manifests the transformative power of small, incremental actions, as each stitch represents a decision, a moment, a part of a larger narrative, foregrounding notions of slowness, value, care and agency.

By stitching the urban fabric and plan of the selected BDD chawl typology, it represents the physical fabric of the buildings that came to be largely due to the presence of the textile industry. It is a provocation that introduces a tactile and emotive dimension, evoking a sense of connection, labor, and craft that resonates with the themes of reparation and reappropriation.

Outline of Thesis

01 Everyday Practice // Context

This chapter talks about the culture of everyday repair, situating it within the broader socio-political contexts of the Global South and the postcolonial city, with a specific focus on Bombay/Mumbai. It explores how everyday practices of repair are manifested, celebrated, and critiqued within these contexts. The concept of Jugaad, or frugal innovation, is introduced as a lens through which to understand and appreciate the ingenuity and resourcefulness inherent in everyday repair practices.

02 Setting the Stage // Concepts and Theories

This chapter explores the impact of the Capitalocene on contemporary design and architecture, highlighting the negative effects of capitalist dynamics, such as displacement, exclusion, and environmental degradation. It delves into the concepts of breakdown, repair, and obsolescence, discussing how these can help rethink design to address Capitalocene challenges. Scholars and practitioners advocating for alternative practices that defy normative expectations of consumption, obsolescence, and waste are highlighted, focusing instead on maintenance, repair, and working with the existing. Finally, it explores the potential of repair as a form of critical spatial practice and its implications for creating more sustainable futures.

03 Redefining Repair // Argument

Repair is argued as a multifaceted and deeply integrated concept with power dynamics, societal structures, and cultural practices. It involves navigating and challenging established power structures and strategies employed by those in power, raising questions about agency, authority, and decision-making in the community. This chapter redefines design as a more democratic, participatory, and sustainable practice, valuing community input and extending the lifecycle of existing structures. It emphasizes the social relations, practices, and meanings embedded in objects and spaces, acknowledging the ordinary and often invisibilized practices of repair. Finally, repair is framed as a possibility for reimagining and reshaping the world, involving creativity and agency in the process of making and remaking.

04 Chawls // Documentation

This chapter explores the configurations of the chawl typology, situating them within urban and architectural contexts of Bombay/Mumbai. It then delves into documenting two distinct typologies of chawls through three sites, exploring their spatial narratives through various site photographs, and grounding the understanding of repairs and reappropriations in the physical landscape.

05 Micro-Sites // Biography of Building Type

This chapter goes into depth about BDD chawls through photos and summarizing drawings. It highlights their original design and subsequent transformations, exploring the spatial narratives of chawls through various micro-sites within the chawls, from dwelling units to public courtyards. Each micro-site is examined and displayed through visuals, revealing the layers of repair, reappropriation, and reuse embedded within these spatial configurations.

06 Narratives // Inhabitants of BDD Chawls

Drawn from real-life narratives and open-ended interviews, this chapter brings forth voices of the residents, highlighting varied perspectives from long-time inhabitants to newcomers, entrepreneurs, and more. It offers a rich, textured understanding of life within BDD Chawls, Worli, and discusses the tension between repair and redevelopment from the perspective of the inhabitants.

Conclusion

The concluding chapter synthesizes the findings of the thesis, and connects the specific insights derived from Mumbai's chawls, purely through a lens of repair and reappropriation to universal themes of survival, adaptation, resilience, and creativity in everyday living. It then goes into a tangential exploration of stitching as method.

01 Everyday Practice // Context

Everyday Repair: A Culture

Global South and the Postcolonial City

Bombay/Mumbai

Jugaad

What does looking at repair allow us to see? Repair suggests a particular assemblage of practices. Repair suggests not just actions but a sensibility, one that sees materials in a constant cycle of use and reuse by the same actors and in the same setting over a long time period. The distinction between “repaired” and “new” then itself is diffused, allowing repair to hold a sense of endurance but also one of aspiration and renewal.⁽¹⁾

1 Bhan, Gautam. “Notes on a Southern Urban Practice.” *Environment and Urbanization* 31, no. 2 (October 2019): 639–54. <https://doi.org/10.1177/0956247818815792>.

Everyday Repair: A Culture

Repair in the Global South

Different cultural conditions and the needs and particularities of specific communities shape the subjectivity of repair. Those at the margins or from lower socio-economic backgrounds are associated with most repair, reuse, and reappropriation instances. These repairs are on objects of low value and easily replaceable artifacts, which may seem illogical to a disposable society. At the same time, repairs appear more logical, like the repair of structures which require some amount of resources or collectiveness in their upkeep, maintenance and subsequent repair. Repair in these contexts often becomes a way to negotiate between the past and the evolving present, a bridge that links memories with aspirations. It stems from scarcity, resilience, cultural memory, and a deep-rooted understanding of materials and their lifecycle. In such environments, the practice of repair is not just a necessity and a way of life but a choice.

Repair, Auto-construction, Incrementality

It is essential to emphasize how repair in the Global South often moves beyond mere functionality. It becomes an assertion of agency, a form of resistance against the relentless push of consumerism, disposability and global capitalism., and a testament to the inhabitants' innovation and improvisation. We are looking at repair practices as more than restoring the original by arguing that in many non-western cultures, the repairs aim to create new aesthetics and a new reality⁽²⁾. Gautam Bhan, in his work titled Notes from a Southern Urban Practices, writes that repair suggests an assemblage of practices that do not presuppose any actors and that in these contexts, The distinction between “repaired” and “new” is blurred, allowing repair to convey both endurance and renewal⁽³⁾.

Autoconstruction refers to the self-building practices often seen in informal settlements, where residents build and expand their homes incrementally, using available materials and resources. Incrementality refers to the gradual process of building and repairing, which is often necessary for scarcity but also represents a different approach to space, time, and materiality. Suppose one takes the production of space as an illustration of this empirical geography. In that case, one can look at Caldeira's writing about “peripheral urbanization” and auto-constructed realities, wherein she describes modes of the production of space that “(a) operate with a specific temporality and agency, (b) engage transversally with official logics [of law, property, and labour], (c) generate new modes of politics, and (d) create highly unequal and heterogeneous cities”⁽⁴⁾. Peripheral urbanization is remarkably pervasive, occurring in many cities of the south, regardless of their different histories of urbanization and political specificities⁽⁵⁾. It does not play out the same way in these cities, that the forms of “unequal and heterogenous cities” look the same, or that all cities in a geographical “South” exhibit it. It tells us that looking at a specific set of cities provokes particular lines of inquiry because of the particular nature of their urbanism.

2 Attia, Kader. “Repair: Architecture, Reappropriation, and The Body Repaired, 2013.” Accessed March 11, 2023. <http://kaderattia.de/repair-architecture-reappropriation-and-the-body-repaired/>.

3 Bhan, Gautam. “Notes on a Southern Urban Practice.” *Environment and Urbanization* 31, no. 2 (October 2019): 639–54. <https://doi.org/10.1177/0956247818815792>.

4 Caldeira, Teresa P.R. “Peripheral Urbanization: Autoconstruction, Transversal Logics, and Politics in Cities of the Global South.” *Environment and Planning D: Society and Space* 35, no. 1 (2017): 3–20. <https://doi.org/10.1177/0263775816658479>.

5 Caldeira, Teresa P.R. “Peripheral Urbanization: Autoconstruction, Transversal Logics, and Politics in Cities of the Global South.” *Environment and Planning D: Society and Space* 35, no. 1 (2017): 3–20. <https://doi.org/10.1177/0263775816658479>.

We have established that there are differences in cultural attitudes towards repair, particularly between the global north and global south. Understanding these differences through examples is crucial to developing new imaginations around the choosing of the context of chawl as a dwelling type. Some of the examples include-

1. Tequio in Oaxaca, Mexico: Tequio is a traditional form of community labour deeply rooted in the indigenous culture of Oaxaca practiced by the indigenous Zapotec and Mixtec peoples of Oaxaca, Mexico. It involves community members' collective unpaid work, such as building a school, repairing a road, or maintaining communal lands. It reflects a communal way of life that values cooperation, reciprocity and the collective good over individual interests.

2. Living Neighborhoods in Mexicali by Christopher Alexander: In the context of ‘Living Neighborhoods,’ Christopher Alexander emphasizes the importance of creating built environments that are generative and responsive to the needs and desires of their inhabitants. It is a participatory design process that engages residents in the decision-making and encourages incremental, organic development rather than top-down, master-planned approaches. In Mexicali, this approach has resulted in more human-scaled neighbourhoods, context-sensitive and reflective of the local culture and community.

3. Mudbrick Architecture Maintenance in Shibam, Yemen: Shibam is an ancient city in Yemen known for its high-rise mudbrick buildings, some of which are over 500 years old. The buildings require constant maintenance and repair to protect against erosion and rainwater. The response is to add new layers of mud plaster to the exterior walls, repairing cracks, and replacing damaged bricks. This maintenance work is typically carried out by the residents themselves, with the help of local artisans, and is considered a communal responsibility. This approach to building maintenance reflects a deep-rooted understanding of the local materials and building techniques, as well as a commitment to preserving the community's cultural heritage.

4. Autobarrios in Madrid, Spain: Autobarrios, or self-made neighbourhoods, refers to informal settlements or squatter communities in Madrid, Spain, where residents have built their homes and infrastructure without formal permissions or adherence to building codes. These communities often develop in response to a lack of affordable housing and are characterized by self-organization, resourcefulness, and a strong sense of community. Residents often reuse and recycle materials, engage in collective decision-making, and participate in constructing and maintaining their homes and communal spaces.



Fig. 1.1 Parents rebuilding a classroom in the San Juan Achiutla kindergarten damaged by the 2017 earthquake, Oaxaca, Mexico, 2021.



Fig. 1.2 In Mexicali, houses with lightweight vaulted roofs were constructed using woven baskets made of thin lattice strips with burlap and chicken wire stapled to them, and then plastered over.



Fig. 1.3 Five to nine stories, the mud buildings of Shibam are described as the oldest skyscrapers in the world, since some of the buildings are five hundred years or older. Obviously, given the non durable nature of the construction material, all the buildings need to be regularly renovated.



Fig. 1.4 A community-constructed playground at the entrance of a neighborhood, developed as part of a project to repurpose the unused space beneath the overpass of Avenida de Andalucía into a functional area. Puente de Colores, Madrid, Spain, 2012.

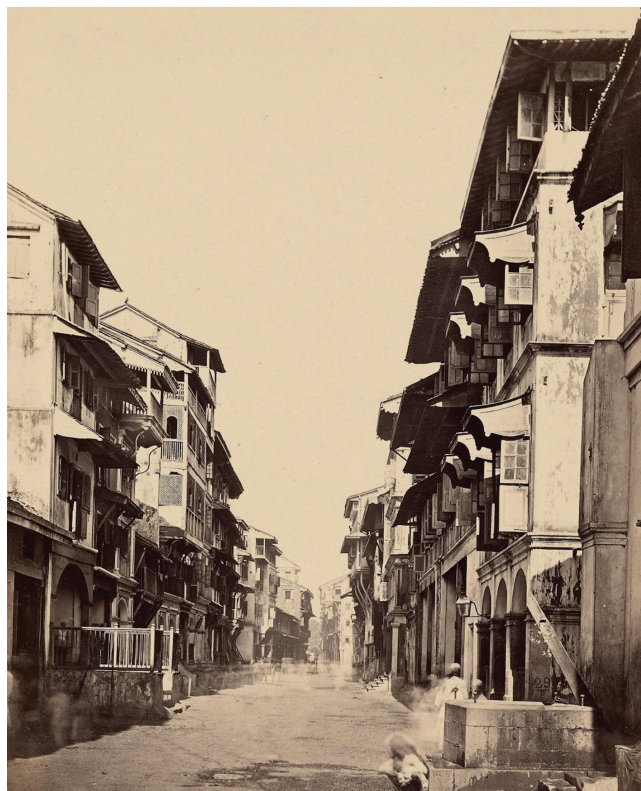


Fig. 1.5 Native Houses in Fort, Bombay, 1883.



Fig. 1.6 Urban landscape in Fort, Mumbai, 2022.

6 Rigg, Jonathan. *An Everyday Geography of the Global South*. London ; New York: Routledge, 2007.

7 Ganguly, Avishek. "Five Theses on Repair in Most of the World" In *Repair: Sustainable Design Futures*, edited by Markus Berger and Kate Irvin. Abingdon, Oxon: Routledge, 2023.

8 Roy, Ananya. "Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization." *Planning Theory*, 8, no. 1 (February 2009): 76–87. <https://doi.org/10.1177/1473095208099299>.

Global South and the Postcolonial City

What is the Global South?

The ethos of inquiry is rooted in and argues from a place. The city of Mumbai, and its fabric that holds old housing stock of chawls with high rises mushrooming within the fabric tells us that the global South is not just limited to the physical geographical bounds but rather; geography should be more readily understood as economic and migratory, the world understood through the “wider context of globalization or global capitalism”⁽⁶⁾. The relationalities and multiplicities that repair holds within these environments differ vastly from those in the Global North. The “South” then is a relational project and a currently discernible and defensible empirical geography. Mending has always existed in non-western cultures, embedded within the everyday practice that arises from deeply embedded histories and cultures and is about ensuring that traditions and practices get passed down through generations. The ritual of everyday repair is slow, and the result and process of various actors within the community carry out day-to-day negotiations. Before the rise of repair cafes and some ‘right-to-repair’ movements in some high-income countries, repair was a way of life in countries of the Global South and among some of the historically discriminated against minority communities in the North⁽⁷⁾.

When pivoting towards the Global South’s understanding of repair, it becomes necessary to recognize the distinctive nature of these practices that emerge in this context. Here, planning regimes tend to iron out the complexities through which people live, and this dynamic resonates with other cities as they unfold, albeit with different registers and outcomes. It is simultaneously heterogeneously particular yet irreducibly global⁽⁸⁾. Much of the composition and expansion of these cities are not intentional; they are more fragmented and isolated, not just geographically but also in terms of social and material access. ‘Cities where the majority holds political, economic, spatial and ecological vulnerability’ is the most apt definition of Southern cities⁽⁹⁾.

The Postcolonial City

The ‘post’ does not necessarily suggest that the city has ‘broken free from the rut of colonialism’⁽¹⁰⁾. The adjective ‘postcolonial’ is used to modify place names by scholars seeking to draw attention to aspects of urbanity that remain obscured if global capitalism is the primary reference point⁽¹¹⁾. However, some generalities about the postcolonial city are evident, one being modernity⁽¹²⁾. Modernity has become synonymous with Western development concepts and is deemed as progress. Robinson calls for reconceptualizing the term in ways that do not privilege the long-established link between modernity and the Western urban experience⁽¹³⁾. At the same time, cities in the global South constitute a ‘distinctive ‘type’ of human settlement;’ fundamental differences between/among cities need to be highlighted without ‘constructing cities in the South as pathological and in need of development interventions’⁽¹⁴⁾. The impetus for developing postcolonial urbanism is to understand better the residual critical urban theory cannot incorporate.

9 Bhan, Gautam. “Housing, Common Sense and Urban Policy in India.” In *Urban Parallax: Policy and the City in Contemporary India*, edited by H. Bhurte and A. Bhide, Yoda Press, New Delhi, 2018.

10 Yeoh, Brenda SA. “Postcolonial cities.” *Progress in Human Geography* 25, no. 3 (2001): 456–468. <https://doi.org/10.1191/030913201680191781>.

11 Derickson, Kate D. “Urban geography I: Locating urban theory in the ‘urban age.’” *Progress in Human Geography* 39, no. 5 (2015): 647–657. <https://doi.org/10.1177/0309132514560961>.

12 Anwar, Nausheen H. “The postcolonial city in South Asia.” *Singapore Journal of Tropical Geography* 35, no. 1 (2014): 22–38. <https://doi.org/10.1111/sjtg.12048>.

13 Robinson, Jennifer. “In the tracks of comparative urbanism: Difference, urban modernity and the primitive.” *Urban geography* 25, no. 8 (2004): 709–723.

14 Schindler, Seth. “Towards a paradigm of Southern urbanism.” *City* 21, no. 1 (2017): 47–64. <https://doi.org/10.1080/13604813.2016.1263494>.



Bombay/Mumbai

Mumbai, formerly known as Bombay, is located on the west coast of India. With a population of over 20 million, it is one of the most populous cities in the world⁽¹⁵⁾. It comprises a deep natural harbour spread over seven islands linked through land reclamation projects⁽¹⁶⁾. Like settlements not expected to become large towns, Bombay was not a result of even planning; instead, it came into being with every step of its growth being impulsive and incremental⁽¹⁷⁾. It is a city that has undergone rapid transformation, its growth mainly credited and traced back to the British colonial rule, which started with the East India Company.

The British East India Company established a trading post in the area in the 17th century, which led to an influx of migrants and merchants from parts of the hinterland as business opportunities increased. As the city grew, it became a hub for textile manufacturing, shipbuilding, and other industries. Introducing new technologies and transportation systems further fueled the city's growth. By the early 20th century, Mumbai had become one of India's largest and most important cities. Soon, the city became an arrival ground, with people from different parts of the country moving to Mumbai for opportunities. Migration to the city has continued to this day, with the city growing rapidly and bursting at the seams.

Ephemerality

By reframing the city through its situated spatial practices, one can start to see ephemerality as a key concept when framing ideas around autoconstruction and repair practices that are bottom-up. The process of seeing an architecture articulated through provisional forms and a precarious visibility has the potential to yield new cultural, political, and historical meaning⁽¹⁸⁾. We are challenged by the need to develop tools for intervening and thinking about such configurations in the context of the global south. An architecture of lightweight, additive elements, built of found, recycled, and remnant material, which signals transience even as it anchors hard infrastructures in the earth and sky⁽¹⁹⁾. Ambivalence towards transience is also a cultural response, one shaped within a western regime of value that extolled permanence as a virtue and preservation as a right of sovereignty⁽²⁰⁾. The ephemeral enables "action" as it has the power to transform and activate spaces. The many forms of the ephemeral support the functioning of the contemporary metropolis as the place of specialized and unexpected relations. The ephemeral paradigm of space coexists with the robust attributes of the permanent, allowing for the creation of a more fluid occupation of the territory⁽²¹⁾.

15 World Urbanization Prospects: The 2018 Revision. New York: United Nations, 2019.

16 Dwivedi, Sharada., Rahul Mehrotra, and Umaima Mulla-Feroze. Bombay : the Cities Within. Bombay: India Book House, 1995.

17 Dwivedi, Sharada., Rahul Mehrotra, and Umaima Mulla-Feroze. Bombay : the Cities Within. Bombay: India Book House, 1995.

18 Siddiqi, Anooradha. "Ephemerality." Comparative Studies of South Asia, Africa and the Middle East 40, no. 1 (2020): 24-34.

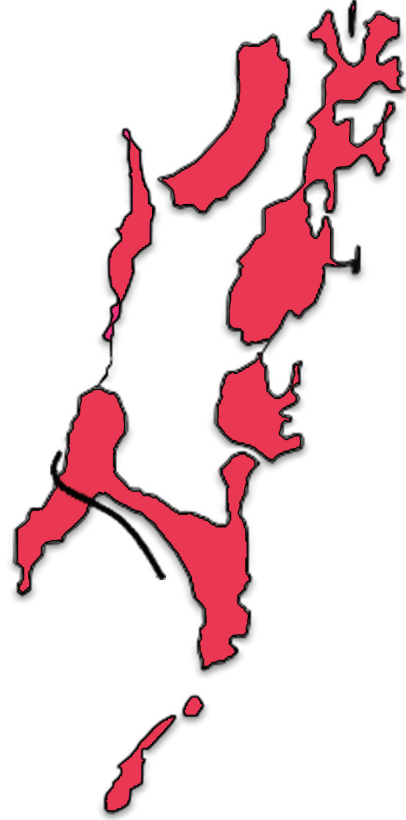
19 Siddiqi, Anooradha. "Ephemerality." Comparative Studies of South Asia, Africa and the Middle East 40, no. 1 (2020): 24-34.

20 Purpura, Allyson. "Framing the ephemeral." African Arts 42, no. 3 (2009): 11-16.

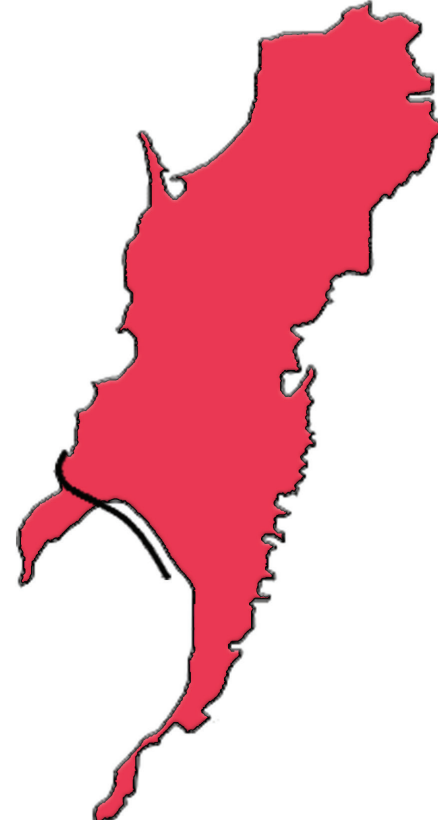
21 Mehrotra, Rahul, Felipe Vera, and J. Mayoral. Ephemeral urbanism. ListLab, 2017.

Fig. 1.7; 1.8; 1.9; 1.10 The many faces of Bombay/Mumbai, from its colonial architecture to ports to informalities to apartment buildings.

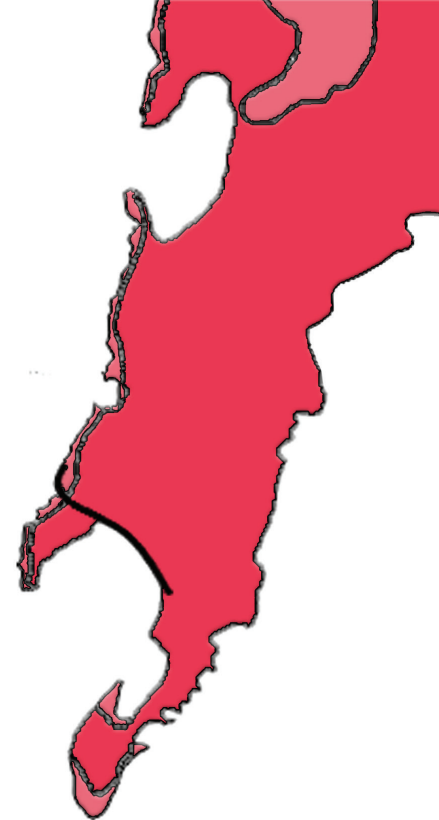
ISLAND OF BOMBAY AND COLABA
1843



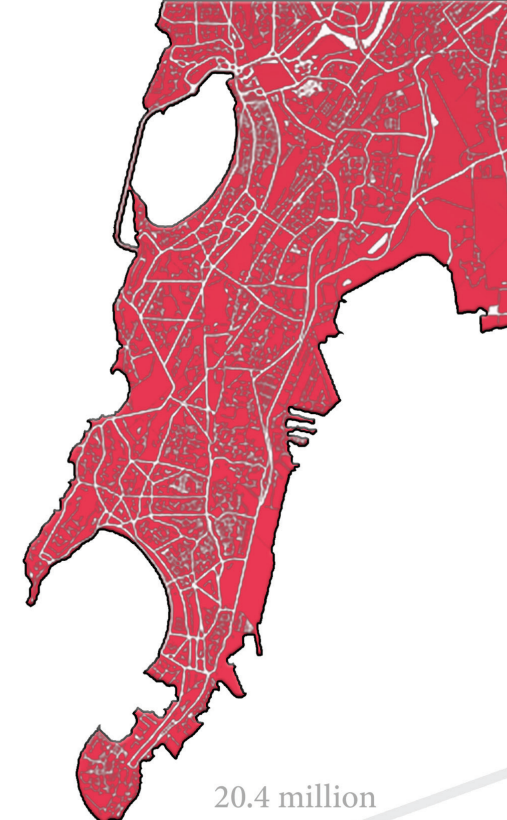
ISLAND OF BOMBAY
1890



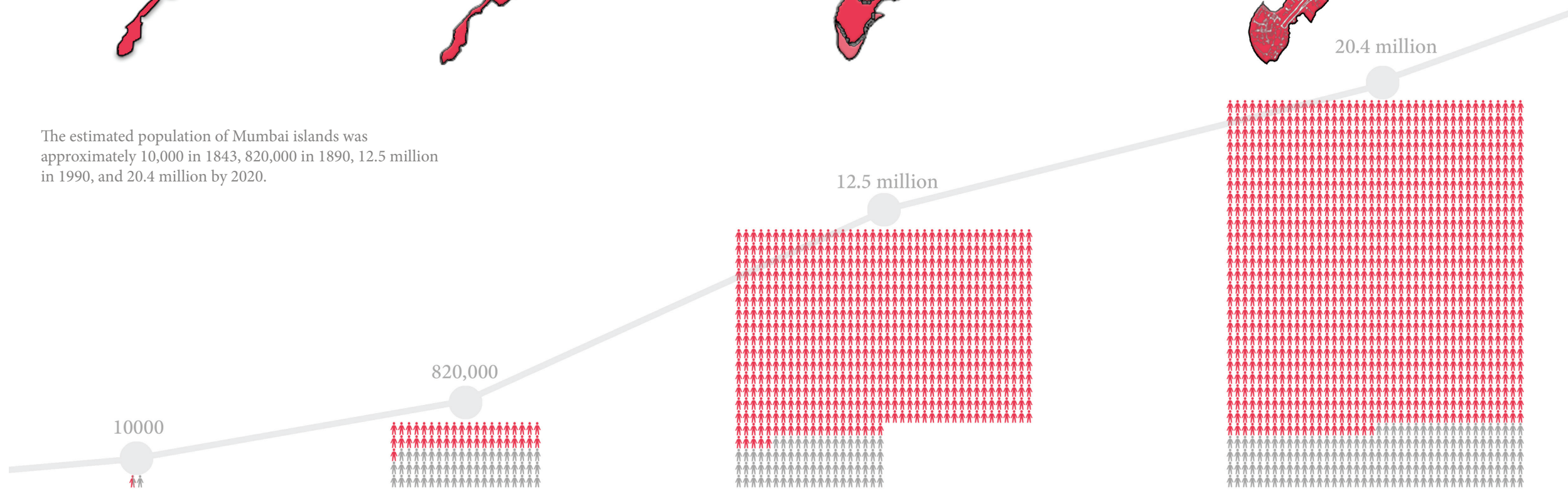
CITY OF BOMBAY
1990



SOUTH AND CENTRAL MUMBAI
2020



The estimated population of Mumbai islands was approximately 10,000 in 1843, 820,000 in 1890, 12.5 million in 1990, and 20.4 million by 2020.



To accommodate this population growth and the pressures it puts on the city that is landlocked with limited room to expand, about 60% of the city's population is now residing in informal settlements. Alarmed by the rising number of 'slums' and in order to free up land, the state government has been attempting to rehabilitate the informal settlements in Mumbai since the 1990s.

Fig. 1.11 Diagram showing how Bombay/Mumbai expanded physically through land reclamation and grew demographically.



Fig. 1.12 A photograph of an informal settlement from within, with upcoming high-rises looming in the background.

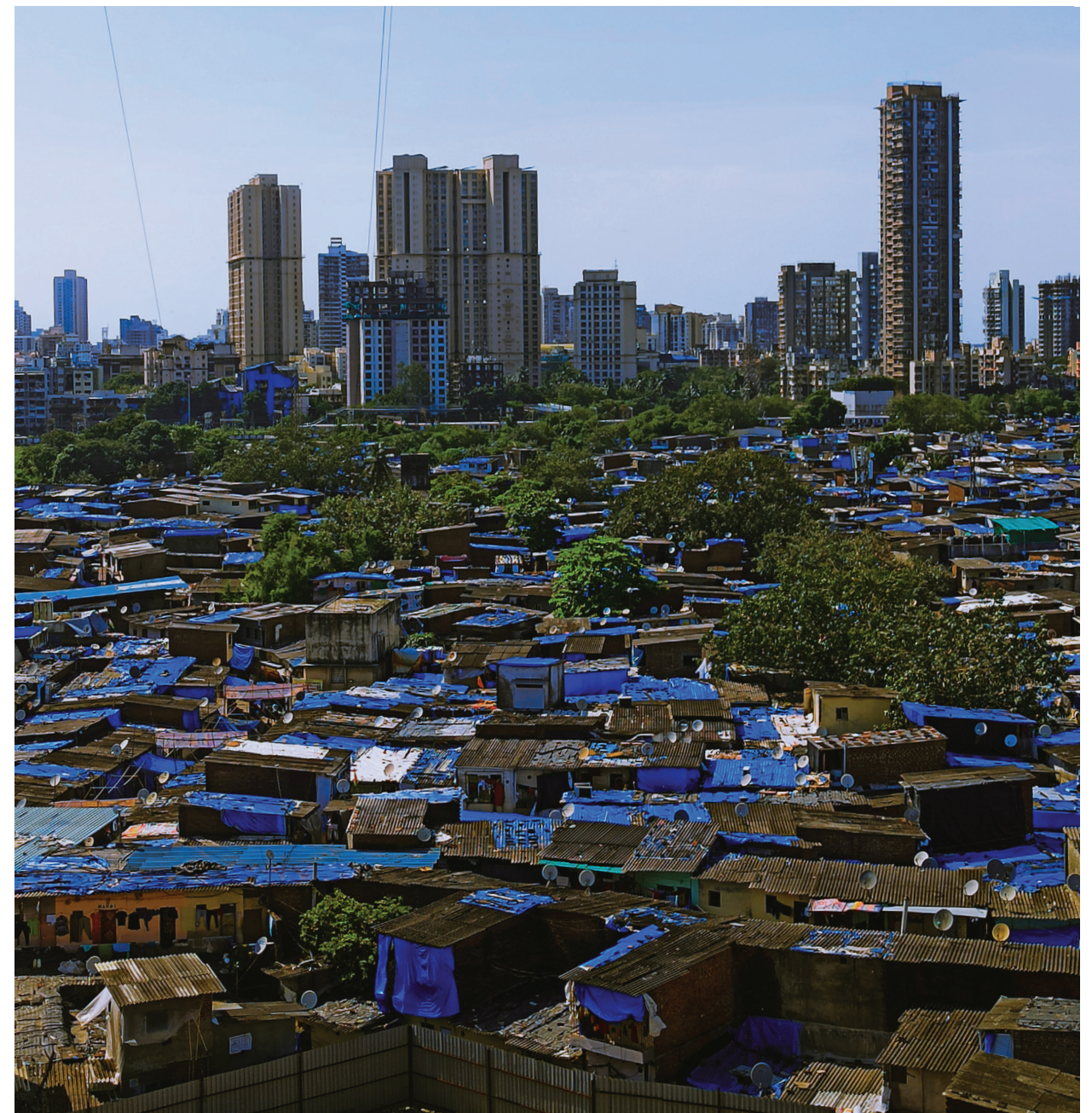


Fig. 1.13 An aerial shot of an informal settlement in Mumbai, with skyscrapers in the back, displaying the extremes within which the city is understood.

A city of dreams and disparities is often understood only through its extremes. Both tales of opulence and survival coexist in a complex urban dialogue, manifesting as towering skyscrapers and sprawling informal settlements known as “slums.” While these extremes capture global attention, a significant aspect of the city’s urban fabric often remains ignored in the discourse: the chawl typology.

As Datta suggests, examining low-income housing architecture for how multi-scalar actors produce it is essential⁽²²⁾. Typical informal settlements in India feature unstable housing structures, insecure tenure, insufficient living areas, and poor access to basic amenities.

22 Datta, A. “Architecture of low-income widow housing: ‘spatial opportunities’ in Madipur, West Delhi.” *Cultural Geographies* 15, no. 2 (2008): 231-253. <https://doi.org/10.1177/147447007087500>.



Fig. 1.14 A smaller window inside a window: Original wooden window on a weathered building, modified to add a security metal grill, a mosquito net attached with zipties for protection against insects, and a small, functional opening in the grill for accessibility.

Jugaad

Within this context, one can look at an existing but undermined practice of making do with limited and existing resources- the ethos of 'jugaad', a colloquial term^(note), an inherent part of Indian culture, often translated as a 'hack' or a creative workaround improvising solutions to navigate constraints. It is often used to describe low-cost solutions developed using limited resources⁽²³⁾. They are shaped by the evolving needs and circumstances of the inhabitants and influenced by a confluence of economic, social, and political factors. It operates within the framework of survival and adaptability, displayed in varied degrees- it points to the vulnerability of the masses, but also the innovation by them in the face of it. Thus, the narrative on jugaad is about the non-architect's agency- the inhabitants.

Jugaad originates from a word, yukti- which means making an effort to produce something new by bringing together the existing. The jugaad approach manifests in the architecture through repair, reappropriation and reuse practices seen in Mumbai, wherein inhabitants, till today, transform and produce their living spaces, adapting them with care and makeshift solutions. In the context of dwellings in Mumbai, 'jugaad' could refer to the creative ways residents expand their living spaces to accommodate growing families or make their homes more comfortable and functional. It could involve adding a loft, extending a room into a common area, or converting a window into a balcony. These solutions are often developed informally, and sometimes bend the rules.

The ideas of 'Bricolage' by Claude Lévi-Strauss and 'The Ideal of the Broken' by Alfred Sohn-Rethel provide further context when looking at repair with reuse and aesthetics. The former relates to creating and constructing from a diverse range of available things, suggesting an inherent improvisation within repair. At the same time, the latter delves into the acceptance and valorization of imperfections, hinting at the nuances between intentional non-repair and the act of fixing. Anthropologist Claude Lévi-Strauss saw the 'world of the bricoleur as being closed: he collects tools and materials because they might come in handy. Bricolage depends on functional arrogance, an assumption that the bricoleur knows what he is doing and is in the position to define his success. His first step is always to consider new projects for what he has on hand'⁽²⁴⁾. According to philosopher Elizabeth Spelman, being 'constrained by the contingency of what happens to be at hand,' bricoleurs 'collect and make use of pieces of the past but do not try to return them to an earlier function,' instead 'envisioning new uses for remnants and leftovers'⁽²⁵⁾.

Improvisation is often crucial in repairing- often stemming from the failure of an artifact or the lack of one, one views improvisation as unfavourable and associated with poverty. Using what is to hand, these adaptive strategies develop or repair objects with greater regard for function than form. While it would not be accurate to say that all repairers are bricoleurs, nor is every bricoleur a repairer, they have a strong relationship.

Note: Also see, Cultural Lexicon, pg. 63-66 of book.

23 Rangaswamy, Nimmi, and Melissa Densmore. "Understanding Jugaad: ICTD and the Tensions of Appropriation, Innovation and Utility." In Proceedings of the Sixth International Conference on Information and Communications Technologies and Development: Notes - Volume 2, 120-23. Cape Town South Africa: ACM, 2013. <https://doi.org/10.1145/2517899.2517938>.

24 Lévi-Strauss, Claude. The Savage Mind. 5. impress. Chicago: Univ. of Chicago Press [u.a.], 1970, 138.

25 Spelman, Elizabeth V. Repair: The Impulse to Restore in a Fragile World. Boston: Beacon Press, 2002.

02_SETTING THE STAGE// CONCEPTS AND THEORIES

Design as a Dominant Paradigm

The Capitalocene in the Built Environment

Breakdowns

Situating Repair as Design

The way you design the world is the way you relate to it. When you design it as dead matter to be exploited, you will exploit it. When you design it with deep recognition of planetary interconnectedness, you will nurture these relationships.⁽²⁶⁾

Design as a Dominant Paradigm

Our world is one of designed objects, textiles, buildings, infrastructures, environments, and systems. Design is a process that has shaped the course of human civilization, allowing us to conceive, invent and devise something for a specific purpose. Design in architecture is concerned with combining the technological and aesthetic to craft something new. In most allied disciplines that employ design, its role has always been central to creating or producing something. However, design precedes professions and disciplines.

One can trace the origins of techne or craft back to the earliest days of human existence when the homo habilis⁽²⁷⁾ first created tools and artifacts. Hundreds of years later, the pre-industrial design era revolved around hand artisanship, local materials, and cultural specificity, and it celebrated human ingenuity and the tactile quality of objects, spaces, and buildings, resulting in rich, diverse outcomes. Many a hundred years later, the advent of industrialization- which began in Britain- meant that there was an increased demand for resources. Colonialism played a pivotal role in fulfilling this demand, with colonies being exploited for raw materials and labour. Consequently, design underwent a significant shift from individual artisanship to mass production.

Industrialization, post-industrialization

Industrialization had a profound impact on design and development. The advent of mass production methods brought about standardized, repeatable and scalable design solutions catering to the consumer category. Architectural design transformed, with industrial spaces necessitating new types of buildings such as factories, warehouses, and workers' housing. The architectural forms of these buildings reflected this industrial aesthetic and were designed primarily for function, often resulting in utilitarian structures. The post-industrial period that followed led to economic and social changes caused by the reduction and decline of industrial activity. It led to a shift towards service-based economies, and design began to focus more on individual needs and user experience, influenced by a growing consumerist culture. Many factories and mills were abandoned or repurposed into commercial or residential units or demolished and replaced by high-rise buildings and new developments, often driven by privatization and real estate profits. An example of this is Mumbai's Lower Parel area, which was once a hub of textile mills during the peak of the industrial age, which then met the fate of demolition or repurposing.

Post-industrialization, often called the information age or digital age, has ushered in a new era where the production of information and services as an economy dominates over manufacturing goods. This shift has led to significant changes in design, with an increased emphasis on flexibility and adaptability. Design is increasingly influenced by global trends, technological advancements, and mass production, leading to a universalization of aesthetics and processes.

Nevertheless, amidst this global homogeneity, it is also witnessing a re-emergence of interest in craft, locality, and sustainability as designers grapple with the challenges of globalization and environmental degradation caused by the Capitalocene.



Fig. 2.1 Abandoned machinery at Madhusudhan textile mills, Lower Parel, Mumbai. 2008.

27 "Homo Habilis," The Australian Museum, October 2, 2020, accessed April 8, 2023, <https://australian.museum/learn/science/human-evolution/homo-habilis/>. The word 'habilis' is based on a Latin word meaning 'handy' or 'skilful'. This species known as 'handy man' because stone tools were found near its fossil remains and it is assumed this species had developed the ability to modify stone into tools.

The Capitalocene in the Built Environment

What is the Capitalocene?

Capitalocene is a term coined by Parenti and Moore to define the current era as being shaped not merely by humans (as implied by the more common term Anthropocene) but specifically by global systems of capitalism. The Capitalocene does not stand for capitalism as an economic and social system, but rather, the Capitalocene signifies capitalism as a way of organizing nature—as a multispecies assemblage, a world-ecology of capital, power, and nature⁽²⁸⁾. The impacts, although vast, are not homogenous, with capitalist dynamics asserting dominance variably and with distinct intensity across different geographies and societies. Nowhere is this more evident than in the realm of our built environment. We are now at a critical inflection point- How does the Capitalocene affect contemporary design thinking and the everyday lives of those marginalized by these extractive systems?



Fig. 2.2 Fragmented landscape of development the city of Mumbai

28 Parenti, Christian, and Jason W. Moore, eds. *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. Kairos. Oakland, CA: PM Press, 2016.

While the dominant paradigm of design today is that of innovation, technology, novelty, development, and progress, it is not immune to the influence of hegemonic social orders, economic structures and other systemic forces that prioritize the interests of the few at the cost of the many. Design and architecture are painfully oblivious or actively complicit in this process. Within this context, a normalized design culture has emerged, favouring destruction, disposability, replacement, commodification, and planned obsolescence in the guise of making and innovating something. If we look closely enough, we can see that design has historically operated in the service of the powerful, ever-concealing ugliness of global capitalist exploitation⁽²⁹⁾, and we as a community of designers now acknowledge that design has a capacity to both manifest and destroy⁽³⁰⁾.

Contextualizing the Capitalocene, Design, Breakdowns

The impact of the Capitalocene is visible in cities such as Mumbai. Once known for its blend of colonial and indigenous architectures and rich biodiversity, today, luxury residential high-rises punctuate the city landscape. Behind this transformation is the mighty hand of the real estate and corporate sector. Rapid urbanization, backed by real estate ambitions, often overlooks long-term urban sustainability, leading to inadequate infrastructure, lack of open spaces, and environmental degradation. In the context of global capitalism, with different regions competing for a share of global flows of capital, states often provide extraordinary deals to corporate investors- this planning of cities is explicitly anti-poor⁽³¹⁾.

Consider the plight of a 60-year-old woman, a lifetime resident of Mumbai. She once lived in a modest chawl- the first home to her grandparents, who moved to the city for work- now deemed an “urban slum” and inadequate by city planners. Enticed by the promise of ‘better living conditions,’ her community was relocated to make way for a swanky residential complex. Today, she finds herself in an SRA (Slum Rehabilitation Authority) building with poor light and ventilation on the city’s outskirts, facing frequent challenges regarding services like water and sanitation. Profit-driven or quantitative solutions to affordable housing, like those constructed under the Slum Rehabilitation Authority, may work on paper, but the lived realities tell us that it becomes another instrument of marginalization. Poor communities face displacement, relocating to transit camps far removed from essential city services or waiting years to be resettled on-site in rehabilitation buildings. Under the threat of redevelopment, some are in varied negotiations to remain in their chawls, regardless of being in a state of disrepair owing to lack of funds, no maintenance, or simply the natural or accelerated progression of breakdowns.

This cycle of displacement, exclusion, eviction or neglect is not a random byproduct but a systemic outcome deeply entrenched in capitalist mechanisms. The tangible decay of some of the chawls and the marginalized communities on the fringes of a rapidly urbanizing city are microcosms of a larger narrative.

29 Crosby, Alexandra, and Jesse Adams Stein. “Repair.” *Environmental Humanities* 12, no. 1 (May 1, 2020): 179–85. <https://doi.org/10.1215/22011919-8142275>.

30 Vaughan, Laurene, ed. *Designing Cultures of Care*. London: Bloomsbury Visual Arts, 2023.

31 Roy, Ananya. “Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization.” *Planning Theory* 8, no. 1 (February 2009): 76–87. <https://doi.org/10.1177/1473095208099299>.

Breakdowns



Fig. 2.3 A photomontage created from overlaid photographs depicting construction, high-rises, demolition, and breakdowns.

While design is everywhere, what is in common with any of these designed commodities, infrastructures or technical artifacts today is the effect of time:-

1. Natural Change, Weathering or Decay: This is the inherent nature of all things, from living organisms to materials to human-made structures. It follows a fixed lifecycle that is conception, growth and decline. In the built environment, the gradual destruction of buildings by nature in time is weathering⁽³²⁾. When such a breakdown goes unaddressed, often stemming from neglect—intentional or otherwise—it leads to decay and eventual ruin.

2. Obsolescence engages with the temporality of use- and disuse- that goes beyond the creators' intentions and individuals' experience of place⁽³³⁾. Historically, obsolescence had a natural progression. However, in the post-industrial era, it became the predominant mode of change within the built environment. The concept of 'built-in obsolescence'— designing with an intentionally limited lifespan — accelerates the natural progression of its demise and overall encourages a throwaway culture. The term obsolete infers that an object or building is useless and has no value. Therefore, one can say it is not a categorical fact but a value decision⁽³⁴⁾, and that it is often used in architecture to justify demolishing and starting anew. It implies failure, but what if we use it to force us to redefine notions of value and time?

Either way, one thing is sure- in our contemporary world, breakdowns are more visible for all to see. Whether through use, weathering, neglect of maintenance, or everyday wear and tear, all things break down occasionally and are touted to become obsolete in their original function eventually.

These breakdowns manifest in two distinct forms. The first is the inherent flaws within our systems and thinking, characterized by brokenness entangled in our current hegemonic systems and dominant paradigms of design thinking and practice. The second form is the tangible wear and tear experienced by objects. It brings us to the question of design in architecture in the contemporary world and the pressing questions of resilience and fragility that have cast a spotlight on design's role and responsibilities in addressing the challenges due to the Capitalocene.

Breakdowns as a Starting Point invites us to reconsider what we deem worthy of our attention and care. Some thinkers tackle the question of breakdown from different angles. However, the works of scholars like Steven Jackson and Shannon Mattern represent categories of inquiry that are helpful. They both elaborate on how breakdowns reveal the fragility and fundamental limits of the world and its design and then engage repair and maintenance as a category of inquiry. The notion of "broken-world thinking"⁽³⁵⁾ asks what happens when one takes erosion, breakdown, and decay as starting points rather than novelty, growth, and progress. Breakdown is our epistemic and experiential reality⁽³⁶⁾; we are surrounded by it, and they have world-disclosing properties⁽³⁷⁾.

Jackson's theorization was in the field of media technology and talks about engaging with the world through the repair that occupies and constitutes aftermath, growing at the margins, breakpoints, and the interstices of complex sociotechnical systems as they creak, flex, and bend their way through time⁽³⁸⁾. In her work, Mattern weaves together different historical and contemporary strands of feminist thought on maintenance and care work. Breakdowns, to her, are a starting point, but we need to study how the world gets put back together⁽³⁹⁾.

It fills the moment with hope and fear in which bridges from old worlds to new worlds are built, and the continuity of order, value, and meaning gets woven, one tenuous thread at a time⁽⁴⁰⁾.

32 Mostafavi, Mohsen, and David Leatherbarrow. *On Weathering: The Life of Buildings in Time*. Cambridge, Mass: MIT Press, 1993.

33 Abramson, Daniel M. *Obsolescence: An Architectural History*. Chicago ; London: The University of Chicago Press, 2016.

34 Cairns, Stephen, and Jane M. Jacobs. *Buildings Must Die: A Perverse View of Architecture*. Cambridge, Massachusetts: The MIT Press, 2014.

35 Jackson, Steven J. "Rethinking Repair." In *Media Technologies*, edited by Tarleton Gillespie, Pablo J. Boczkowski, and Kirsten A. Foot, 221–40. The MIT Press, 2014. <https://doi.org/10.7551/mitpress/9780262525374.003.0011>.

36 Mattern, Shannon. "Maintenance and Care." <https://placesjournal.org/>. Accessed March 7, 2023. <https://placesjournal.org/article/maintenance-and-care/?cn-reloaded=1>.

37 Jackson, Steven J. "Rethinking Repair."

38 Jackson, Steven J. "Rethinking Repair."

39 Mattern, Shannon. "Maintenance and Care."

40 Jackson, Steven J. "Rethinking Repair."

Situating Repair as Design

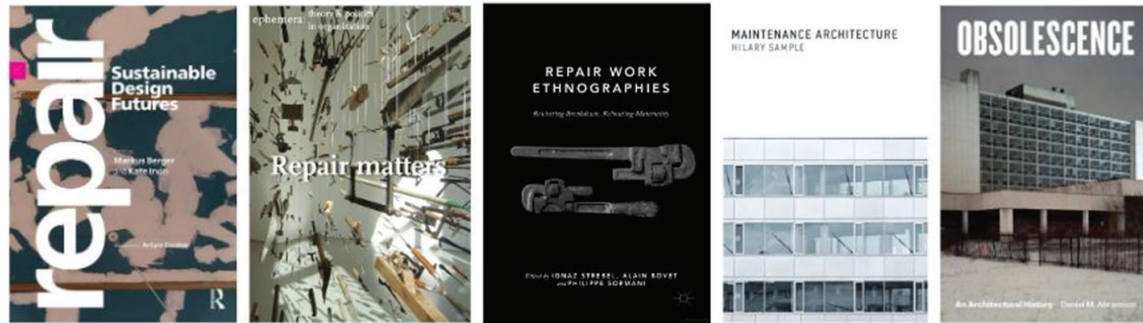


Fig 2.4 A selection of foundational texts exploring the concepts of repair, maintenance, and obsolescence that inform my theoretical framework.

Rethinking Design through Repair

Jane Rendell introduced the concept of Critical Spatial Practice, aiming to incorporate the essential qualities of critical theory—self-reflection and social transformation—into practice. Critical spatial practices question and transform the social conditions of the sites into which they intervene and test the boundaries and procedures of their discipline.

Using this as a foundation, a critique of the hegemonic design model questions our current ways of thinking and doing. It invites us to reconsider what we deem worthy of our attention and care and seek alternative modes of practice that defy or subvert the normative expectations of consumption, obsolescence, waste, and disregard. Architecture provides a platform for breakdowns and shapes social values and their dilemmas. Thus, it is deeply entangled in complex interdependencies in both the ‘brokenness of the world and the potential for its reframing’⁽⁴¹⁾.

The Capitalocene has cast a further spotlight on design’s roles and responsibilities in addressing these challenges— and many activists, architects, artists, urbanists and designers have risen to the challenge to offer alternative modes of thinking and practice toward more sustainable futures. These alternatives are not only about new methodologies but also about revisiting and recognizing already existing practices.

Can we consider repair as one of those alternative modes of thinking and practice? What are the contours of considering repair work in design? What does it offer?

Repair takes uncertainty and breakdowns as starting points and develops forms of action predicted on that which exists⁽⁴²⁾. In doing so, it gestures at forms of critical presence, critical forms of occupying space, and orientations towards a politics of restoration⁽⁴³⁾.

41 Association of Collegiate Schools of Architecture and JSTOR. “Pedagogies for a Broken World.” *Journal of Architectural Education*, Fall 2022, 76, no. 2 (1986): 2–4. <https://doi.org/10.1080/10464883.2022.2017694>.

42 Millington, Nate. “Critical Spatial Practices Of Repair.” Accessed May 11, 2023. <https://www.societyandspace.org/articles/critical-spatial-practices-of-repair>.

43 Millington, Nate. “Critical Spatial Practices Of Repair.”

The Value within the Existing

What the world will become already exists in fragments and pieces, experiments and possibilities⁽⁴⁴⁾.

Technology’s political, social, cultural, and ecological contexts (and, more broadly, techne or craft) have shaped maintenance and repair⁽⁴⁵⁾. Overall, they are not concerned with ideas of newness; instead, they engage with the existing by redirecting flows and patterns already here.

“A Global Moratorium on New Construction,” a 2021 research practice by architect and urban designer Charlotte Malterre-Barthes, is one such initiative and provocation within which the argument for repair as a worldview can be situated. It calls for a drastic change in construction protocols, advocating for suspending new building activity. This initiative asks broad, radical questions from various angles: ‘Can we design ourselves out of the crisis? What does it mean for designers to stop building? What would it mean for spatial disciplines to shift from creating anew to dealing only with existing stock?’⁽⁴⁶⁾

Alternatively, consider, for instance, ETH Zurich’s 2015 project “Repair, Maintenance, and Urban Assemblage,” which directly focuses on repair. This project uses repair and maintenance as a lens for sustainability questions, such as: What does repair work mean for societies and cities? Is it merely about fixing or replacing faulty components? Or can repair and maintenance be creative forces, leading to sustainable urban development because we continue to work on what’s already built?⁽⁴⁷⁾

In today’s architectural landscape, architects like Anne Lacaton emphasize making do using what we already have— framing each situation as an opportunity consisting of elements, qualities, and capacities that can be integrated, reactivated, and reused⁽⁴⁸⁾. The projects undertaken by her firm, Lacaton and Vassal, mirror the ethos of repair and working with the existing.

So, how does design come into the picture? Repair engages with the existing and inherited objects or spaces. Meanwhile, one can define design as the production of something new. Design is purposeful and intentional, and it involves carefully considering how to arrange elements to achieve a desired outcome. Looking at repair through the definition of design or vice versa, one can see a synonymy between the terms repair and design.

“Repair does not come after designing. It is an integral part of the same process... repair is not making do; it is about revealing the open-endedness of things, their limitless potentiality.”⁽⁴⁹⁾

44 Gilmore Wilson, Ruth, “Making abolition geography in California’s Central Valley”. In “The Funambulist Magazine” 2021 <https://thefunambulist.net/magazine/21-space-activism/interview-making-abolition-geography-california-central-valley-ruth-wilson-gilmore>

45 Mattern, “Maintenance and Care.”

46 Indexhibit, “A Global Moratorium on New Construction : Charlotte Malterre-Barthes,” 2023, n.d., <https://www.charlottemalterrebarthes.com/practice/research-practice/a-global-moratorium-on-new-construction/>.

47 “Edition Wohnen: Hauswartung,” Edition Wohnen: Hauswartung – ETH Wohnforum - ETH CASE | ETH Zurich, n.d., <https://wohnforum.arch.ethz.ch/en/publications/edition-wohnen/edition-wohnen-hauswartung.html>.

48 Lacaton, Anne. “Make Do.” In *The Materials Book*, edited by Ilka Ruby and Andreas Ruby, 2nd edition., 58–79. Berlin: Ruby Press, 2021.

49 Van der Zanden, Joanna. “Platform 21 - Platform 21 = Repairing,” (C) 2005-2008, Design Mediamatic Lab, Content Management (Cms) anyMeta, n.d., <https://www.platform21.nl/page/4315/nl@lang=en.html>.

03_REDEFINING REPAIR // ARGUMENT

Argument

Repair as Making, Production

Repair as Care and Agency

Exploring Repair, Reappropriation, Reuse

Strategies and Tactics

As Possibility

What if we could detach repair not only from restoration but also from the very idea of the original- not so that repair comes first but that it comes before. Then, making and repair are inseparable, devoted to one another, suspended between and beside themselves.⁽⁵⁰⁾

50 Moten, Fred. "Nobody, Everybody." In *Black and Blur*, 168–69. Duke University Press, 2017. <https://doi.org/10.2307/j.ctv11cw2x3>.

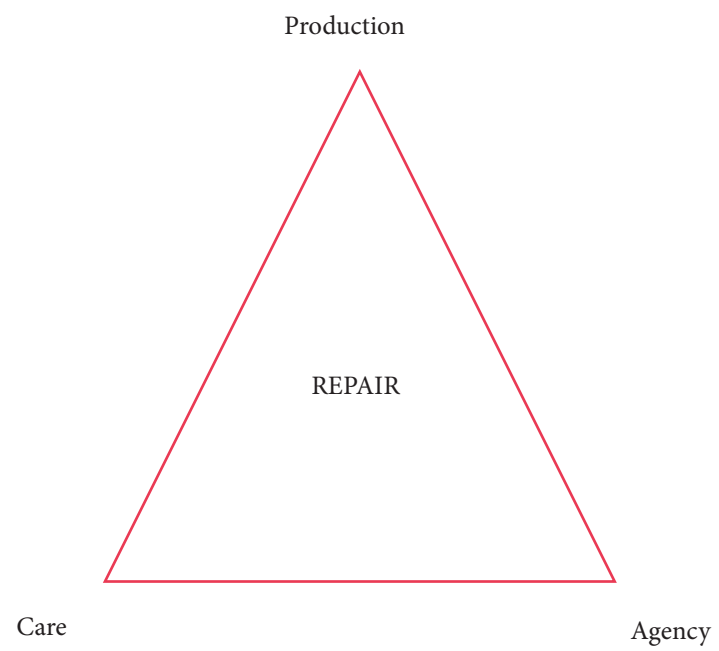


Fig. 3.1 Framework for Argument.

Argument

This thesis argues for spotlighting the underappreciated repair processes, arguing that they are a practice of **care** that employs **agency** towards a **form of production or making**. This provokes us to value the existing, the worn, the repaired, and the reinterpreted, to see them not as inferior but as viable, sustainable, and meaningful alternatives.



Fig. 3.2 Repair and its varied intersections with making.

Repair as Making, Production

One commonly understands Repair as fixing or restoring something damaged or broken, but it also involves nuanced perspectives and complex layers of meaning.

The popular meaning of Repair is to fix or restore something that is damaged or broken, often to its original state or functionality. However, it is imperative to understand the nuanced perspectives that hint at the depth and breadth of the idea of Repair. Various thematic constructs illustrate the complex layers inherent in the discourse of Repair and operate on varied degrees:

1. Tabula Rasa Principles:

Demolition is the deliberate act of destruction, often to create something new in its stead.

Rebuilding means constructing something again after it has been compromised or wholly destroyed.

Rehabilitation encompasses actions to restore a damaged or destroyed entity to its prior condition, a notion that often overlaps with returning to the original.

2. Return to the Original:

Repair takes the broken and puts it together.

Maintenance refers to keeping something in good condition, sometimes requiring Repair.

Restoration signifies the act or process of returning something to its earlier good condition or position.

Renovation aims to restore something to a better state through cleaning, repairing, and rebuilding.

3. Keeping Parts of the Old and Adding New:

Repair, in this context, is replacing a part or mending the broken, adding a new layer within the existing one.

Retrofit involves adding a component to something that did not initially possess it.

Adaptive reuse involves repurposing existing buildings for different functions.

We can then argue that Repair is an extension of fabrication- and that ‘mending and restoring objects often require even more creativity than original production’⁽⁵¹⁾.

What happens when we frame it as a form of making? When looking at the etymology of the word “repair” comes from the Old French word “reparer,” which means “to restore.” The origin of the word derives from the Latin word “reparare” (from re- ‘back’ + parare ‘make ready’), which means “to make good again.” Repair, by its etymology, has the word make in it. From patching a hole in a shirt to fixing a leaky roof, the Repair is present as a material act of darning, fixing, mending, refashioning, layering, reusing, repurposing, suturing, patching, adapting, reappropriating, reassembling, making better- a poiesis (making, production) in its own right.

51 Strasser, Susan. *Waste and Want: A Social History of Trash*. First Owl Books edition. An Owl Book. New York: Henry Holt and Company, 2000.

Repair as Care...



Fig. 3.3 A woman tending to a plant in BDD chawls, Worli.

One can view care as a species activity that includes everything done to maintain, continue, and repair' the world' so that all can live in it as well as possible. That world includes everything we seek to interweave in a complex, life-sustaining web⁽⁵²⁾.

Care is vital in preserving and mending our world, both in material and social terms. To repair is to recognize the value, history, and potential of what exists. It signifies a conscious decision to maintain, restore, and extend life rather than discard or replace. An aspect of repair has always considered conservation or preservation, understanding it as a form of care. In this light, 'repair is conservation of an object of cultural significance // safeguarding ... the material remains of the past ... to use or enjoy today and in the future'⁽⁵³⁾.

If repair and maintenance are the tools, then care is the larger framework in which it operates. It is not only concerned with isolated or individual acts of care but extends beyond to hold collective ones. Care prompts us to acknowledge and navigate feminist discourses surrounding the personal and communal efforts invested in care—and these dynamics vary across different geographical settings. Mattern's work on Maintenance and Care expands on this dynamic: '1. Maintainers require care; 2. Caregiving requires maintenance; 3. The distinctions between these practices are shaped by race, gender, class, and other political, economic, and cultural forces'⁽⁵⁴⁾.

Who gets to organize the maintenance of infrastructure, and who then executes the work? Who gets cared for at home, and who does that tending and mending? Agreements about what things deserve repair — and what "good repair" entails — are always contingent and contextual⁽⁵⁵⁾. We need to anchor forms of care as a hopeful practice as a deliberate choice in the face of crisis by the Capitalocene and its intersection with practices of power. It highlights everything as impermanent or in constant process, needing recurring maintenance and attention to continue their function—this is hard work.

...and Agency

Care and production as frameworks for repair imply a conscious decision, an agency. Repair involves the technical aspects of fixing or restoring and the social and ethical dimensions of deciding what deserves repair, how one should repair it, and who gets to make these decisions.

This aspect of agency is crucial in understanding the broader implications of repair in our society. They allow us to transform our environments, reshape our experiences, and reclaim our autonomy from consumerism pressures and mainstream design's influence. They encourage us to be resourceful, inventive, and empathetic. They are acts of resistance against the homogenization and commodification of design and against the marginalization and invisibility of specific ways of living and doing.

Examining the question of 'repair by whom' highlights that repair is often undertaken by individuals at the margins of extractive systems. Yet, it's important not to frame this solely as a matter of survival. Overemphasizing the survival narrative can portray these individuals as victims, overlooking their agency, which is inaccurate.

Although underplayed and dismissed in architecture due to a disregard for specific forms of labour and knowledge, repair exists outside architectural imaginations as production or design through individual and collective agency of the everyday inhabitants. Communities self-organize for collective survival through the institution of the household; how the principle of a moral economy (trust, reciprocity, voluntarism) emerges in many communities; and how they may utilize their "social power" (free time, social skill, networking, associations, and instruments of production) to improve their conditions"^(56, 57).

Hence, it is essential to look at the individual and collective agency of the inhabitant within the particularities of place/ context when reframing repair and maintenance as an architectural practice and acknowledging that most of these worlds are constructed outside the imagination and purview of the architect.

52 Fisher, Berenice, and Tronto, Joan. "Toward a Feminist Theory of Caring." *Circles of Care: Work and Identity in Women's Lives*, 1990, 35–62.

53 Spelman, Elizabeth V. *Repair: The Impulse to Restore in a Fragile World*. Boston: Beacon Press, 2002.

54 Mattern, Shannon. "Maintenance and Care."

55 Mattern, Shannon. "Maintenance and Care."

56 Friedmann, John. *Empowerment: The politics of alternative development*. John Wiley & Sons, 1992.

57 Friedmann, "Rethinking poverty: empowerment and citizen rights." *International Social Science Journal* 48, no. 148 (1996): 161-172.

In architecture, the act of creation- of the initial design and building- often overshadows the more minor, subtle, ongoing processes of—



Fig. 3.4 Overlaps between terms around the acts of repair, reuse, reappropriation

Exploring Repair, Reappropriation, Reuse

As already existing everyday spatial practices- the related terms (see figure 3.4) are not exhaustive but are entangled within the spectrum of what I define broadly as 'repairs' and 'reappropriations.' One can foreground them as an alternative lens when looking at our built environment- both concepts or series of actions, often seen as reactionary or passive in mainstream architectural discourse, are, in fact, dynamic and proactive acts that reflect how buildings and their dwellings continue to live, breathe and evolve long after their initial design, often extending its lifespan beyond imagined use. It pushes us to understand the built environment not as static objects but as an ongoing process and evolving entity that absorbs and reflects the influences of its inhabitants within the constraints of the larger social, economic and political landscape.

Repairs typically refer to restoring a building or structure to a good or sound condition after breakdown, decay or damage. The aim is to return the structure to its original, usable, and functional condition. However, in this work, we look at more expanded definitions of repair to contain the idea of making, where repair becomes involved in the imagination of creating something new within the bounds of the existing. It distances itself from the formal discourse of adaptive reuse and heritage.

Reappropriations involve taking an object, space or architectural element and using it for a purpose different from its original intention. It could involve physical modifications but is more about the use or purpose. Beyond a shift in the use or purpose of a space or building, it can also result from the necessity for repair, maintenance, or adaptation due to changing socio-cultural or economic circumstances.

While repair here is a tangible spatial response changing the built form materially, reappropriation is more ephemeral in its space adaptations. There is a significant overlap between the two concepts. One does not see repair exclusively as restoring to a former condition but as a culturally embedded practice that sometimes leads to reappropriation within the act or acts of repair- a change in aesthetic, function or meaning. A reappropriation might involve small repair work to make a space suitable for its new use. Alternatively, a repair might involve reappropriation when the repair changes the function to a new use. Nevertheless, they are distinct concepts, emphasizing different aspects of our interaction with the built environment. If one goes to look, these acts of repairs, reappropriations, and reuse can be made visible everywhere, from the monumental to the everyday.



Fig. 3.5 Flatbed of cutout images and objects to conceptualize the idea around repair spatially.

By Author.

Repair and maintenance are intertwined. But why emphasize “repair” over “maintenance”?

While repair and maintenance are usually used interchangeably, maintenance can be defined as a set of continuous, proactive and cyclical acts performed on materials and systems. Maintenance, in most general terms, aims at renewal and involves both conservation and replacement⁽⁵⁸⁾. It is typically preservative and preventive in nature, and essentially concerned with maintaining, or the upkeep of something. While maintenance can engage fixes or repairs, it is centered around human action and processes, and is usually recurring after fixed intervals. Relatively, repair usually occurs post-facto, and is typically defined as a response that arises from lack, injury, disruptions, breakdowns, or damages, usually demanding spatial and material interventions to restore, renew or even reinvent. Hence, repair becomes the point of entry for this work, rather than maintenance, because allows us to address tangible alterations and focus on spatial and architectural reconfigurations.

From Heritage and Adaptive Reuse to Everyday Repair

Repair shows up in everyday life, but is so rarely defined and broken down as a design practice, with exceptions of heritage, conservation or adaptive reuse. Looking into the formal structures of spatial disciplines, repair stands out and takes various forms. Repair at its etymological core signifies restoring something damaged and impaired, to its original function. It implies that there is an original state that was once perfect, functional and aspirational. As is, this definition is often applied in the context of heritage where restoration as a return to the original, and preservation of a structure of the past is given value.

In a similar vein but on the other end of the spectrum is adaptive reuse, which looks at the damaged and impaired and reimagines it with a new function or use. Thematically, there was a notable and enduring emphasis on the legacies of industrialism and re-using redundant industrial buildings and structures. One example is the High Line in New York, once a disused elevated railway, which is now a popular public park, shows how old infrastructures can be reimagined to serve new purposes, adding new layers of meaning and value to the city’s fabric. At its most immediate, repair as heritage-preservation or adaptive reuse respond directly to the environmental degradation caused by the cycle of rapid production, use, and waste. Yet, by viewing repair purely as a response or reaction limits its potential.

Yet it is crucial to note that both heritage-preservation and adaptive reuse are choreographed, singular visions, and are typically structured, top-down approaches to design and repair. They also remain within the realm and scale of large infrastructures, important buildings and follow a certain aesthetic, albeit with some exceptions. It usually involves a huge allocation of funds and assumes the typical role of the architect as the master designer, restorer, repairer.

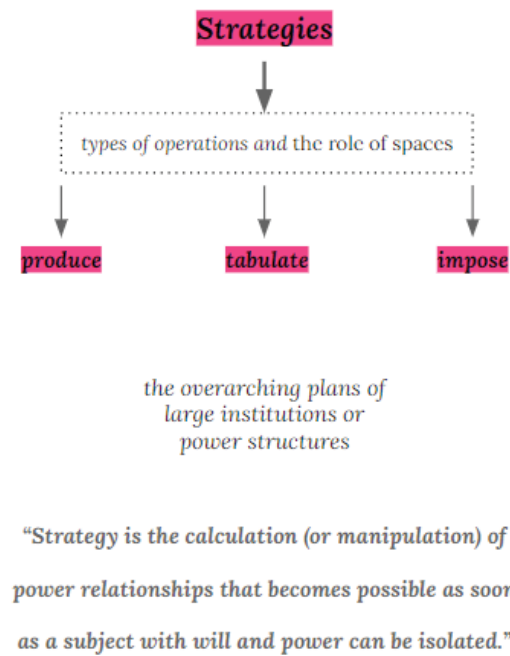


Fig. 3.6 Diagram explaining Michel de Certeau's Strategies.

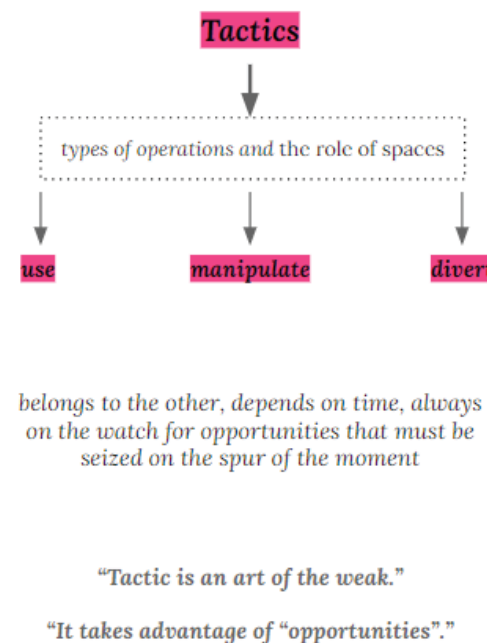


Fig. 3.7 Diagram explaining Michel de Certeau's Tactics.

Strategies and Tactics



Fig. 3.8 Diagram illustrating the interplay between top-down strategies and bottom-up tactics, demonstrating how grassroots tactics operate within overarching strategic frameworks.

Top-down strategies

The top-down approaches to repair is only one aspect of this research. It is only in recent years that it has taken on new resonance and expanded into new forms⁽⁵⁹⁾. Repair can be defined as an inevitable, incremental, and sometimes invisibilized practice within the everyday. Redefining design through the lens of repair means we have to ask the question- who does the repair? For whom? To what purpose and end? Who gets to decide? Under what notions of value?

Bottom-up Tactics

“Strategy is the mode by which legitimated power operates from within a designated field; through language, political structures of representation, the assignation of gender roles, the regulation of space, discourses of the body and so on. In short, it is the productive mode of hegemonic power. Tactics, by contrast, has no proper site, discourse or language, of its own - it insinuates itself into the other's place. It adorns itself in the other's garb, speaks through the other's language, and, because it has no fixed address or permanent mode, never consolidates its own achievements or preserves its conquests”⁽⁶⁰⁾

Acts of repair, especially in the global south, are often fragmented and derailed by systemic strategies used by people in power to stay in power, subsuming a capitalist model. To navigate and situate repair in this complex landscape, we borrow Michel de Certeau's seminal notion of strategies and tactics- 'strategies' are employed by institutions or structures of power, who have a proper place from which they can control and manage space. On the other hand, 'tactics' are the creative and adaptive actions taken by individuals or groups who lack this kind of control over space yet find ways to use these spaces in unintended or unanticipated manners. The institutional designs of the city, its urban planning, its buildings, and infrastructures, can be seen as 'strategies' that impose a certain order or usage on the space. They stand for a design vision that is often distant from the realities of the residents' everyday lives. Conversely, inhabitants pushed to the margins take the given 'strategic' structures and inject their own 'tactics' through acts of repair and produce a lived space that reflects their reality or desires. While the brokenness is perpetuated through top-down strategies, repair is a localized, subjective, and diverse practice of bottom-up tactics. Repair is a production and praxis that can potentially convert the brokenness in architecture into its opposite.

This kind of thinking challenges the established notions of who a designer is and what design can be, opening the concept of design to include more diverse and inclusive practices. It also highlights the importance of considering the lived experience and knowledge of inhabitants in the design process.

59 Millington, Nate. “Critical Spatial Practices Of Repair.” Society and Space, 2019. Accessed March 27, 2023. <https://www.societyandspace.org/articles/critical-spatial-practices-of-repair>.

60 Certeau, Michel de. The Practice of Everyday Life. 2. print. Berkeley, Calif.: Univ. of California Press, 2013.

As Possibility

The concept of repair seems radical- however, like design, it is not new. Humans have been repairing since our earliest days as a species, and it has proven a remarkably adaptable practice. We live in a world constantly in need of repair, where homo habilis is actually homo reparens- engaging in activities that are at once very ordinary and yet quite mysterious⁽⁶¹⁾. The ritual of everyday repair is slow and a result and process of day-to-day negotiations carried out by various actors within the community.

What if we let go of hard boundaries and rigid terminologies, and looked at repair as one that encompasses a spectrum of activities: from the simple act of fixing an object to the more complex processes of adapting and reappropriating spaces, by the inhabitant and a network of non-architects. Repair as such can impact not only design thinking, but also the social life of things; and our relationship to material culture. This is through a close examination of the inevitable, incremental, and sometimes invisibilized practice within the everyday.

Repair entails looking at existing structures, materials, and systems to find ways of improving and extending their lifecycle rather than replacing them as a whole. It forms part of design's history that has invisibly sustained ways of keeping going. It is through this which stability is maintained, broken things are restored one not-so-metaphoric brick at a time, and lifecycles are extended beyond imagined use. What does visibilizing these everyday practices of repair do for architecture?

Using the multifaceted definition of repairs going forward, we can frame the all encompassing term 'repair' as possibility. This possibility includes:

repair as a process
repair as a tactic
repair as a cultural storyteller
repair as a provocation
repair as a paradigm shift
repair as a methodology
repair as a design practice
repair as a worldview
repair as _____

Elizabeth Spelman, in *Repair: The Impulse to Restore in a Fragile World*, widely acknowledged as the first philosophical examination of repair, comments on the 'complicated attitude'⁽⁶²⁾. In the same vein, I suggest we look at repair as something capable of holding multiplicities and relationalities⁽⁶³⁾: it bridges the old and the new, the past and the present-allowing for a more holistic approach and facilitating conversations that might not occur otherwise. It suggests that nothing is every truly complete or finite, and that it is a constant process that requires acts of agency, care, production to keep it sustained.

61 Spelman, Elizabeth V. *Repair: The Impulse to Restore in a Fragile World*. Boston: Beacon Press, 2002.

62 Spelman, Elizabeth V. *Repair: The Impulse to Restore in a Fragile World*. p. 125-6.

63 Simone, A. M. (Abdou Maliqalim). "People as Infrastructure: Intersecting Fragments in Johannesburg." *Public Culture* 16, no. 3 (2004): 407-429. muse.jhu.edu/article/173743.

04_CHAWLS // DOCUMENTATION

A Cultural Lexicon

Different Configurations of the Chawl Typology

The Evolution of Chawls

Documenting a Courtyard Chawl: Bhatia Chawls, Bhuleshwar

Documenting a Double-loaded Corridor Chawl: BIT Chawls, Agripada

A Cultural Lexicon

The idea of a cultural lexicon is drawing from Raymond Williams's iconic Keywords: A Vocabulary of Culture and Society⁽⁶⁴⁾- whose structure was provided from the 'magic pentagram' of culture, democracy, art, class and industry. It was an exercise in unraveling the new ways of the world through historical and cultural connotations of words.

It seems important to build a similar lexicon towards the question of understanding repair and reappropriations in the chawl typology. This lexicon is by no means exhaustive, however it begins to act as a repository of relational linguistic atlas to multiply opportunities for concept formation and define the contours of this topic of investigation. First, it borrows language through my own colloquial, contextual and cultural knowledge, as well as academic discourse not just from architecture, but from allied practice-based disciplines concerned with the design and crafting of objects, textiles, buildings and environments that make up our spatialities. Second, by evolving loose thematic categories (Concepts, Settings, Networks, Politics) it acknowledges that these disciplines do not operate in silos, and takes cognisance of a will to converse across disciplinary boundaries. Third, it allows a conversation to critically examine the similarities, differences, interdependencies, analogies and metaphors to reorient repairs and reappropriations within and as an architectural practice.

Williams wrestled with a difficulty in writing his keywords book which was regimented entirely according to the Roman Alphabet, confessing that a strict alphabetic order failed to capture 'clustering' between words that he wanted. Although it appears that he chose to title it a 'vocabulary' rather than using the term 'lexicon'. Yet to me, lexicon seemed like an obvious choice since lexis refers to a 'stock of words within a language'. Being born and raised in Mumbai, I found that a lot of the words spoken colloquially hold multiple relational meanings when translated to the English language, words that represent concepts that cultures tend to uphold stubbornly. These words then support the creation of tools for meaning-making, as underscored in an essay on 'linguistic diversity' by Shaylih Muehlmann (2004). She also invokes Raymond Williams' work, arguing that:

"Raymond Williams' Keywords: A vocabulary of culture and society (1976) provides a useful framework for understanding the complexity of meanings. Williams' notion of a 'keyword' is one whose complexity is the result of... three effects: a keyword connects areas that are generally kept separate, masks radical semantic variation by its continuous verbal identity; and often expresses a contradiction."⁽⁶⁵⁾

For example, Marammat (مَرْمَمَت) means repair, but it also simultaneously means mending, restoration, remaking, refit, renovation and reparation, holding a multiplicity of meanings within one word.

64 Williams, Raymond. Keywords : a Vocabulary of Culture and Society. New York :Oxford University Press, 1985.

65 Muehlmann, Shaylih. "Conservation and Contestation: In the Crossfire over 'Diversity.'" 2004.

Marammat // मरम्मत // مَرْمَت

Mending, Restoration, Remaking, Refit, Renovation, Renewal, Refurbishment, Rectification, Amendment, Set, Put on the right path

Parvah // परवाह // پرواہ

care, take care, take care of, care about, care for, maintain

Parvarish // परवरशि // پرورش

ward, care, foster, nourish, nurture, sustain, solicitude, maintenance, servicing, protectorate, trusteeship, custodianship

Banavat // बनावट // بناوٹ

Architecture, Arrangement, Assembly, Build, Cast, Composition, Conception, Development, Edifice, Elevation, Fabrication, Figure, Form, Improvisation, Invention, Making, Manufacture, Planning, Shape, Structure, System, Type

Roop // रूप // روپ

Form, Look, Shape, Nature, Aspect, Figure, Beauty, Aesthetics, Allure

Jugaad // जुगाड़ // جگاڑ

Makeshift solutions, thinking outside the box, innovation, frugal engineering, innovation, resourcefulness, flexibility, improvisation, ingenuity, bootstrapping, kludge, hustling, self-reliance, creativity, tactics

Settings // Material, spatial, infrastructure

Chhajja: This is a projection at the lintel level of doors and windows that acts as protection against rain and sun. It is commonly found in traditional Indian architecture and is a functional as well as decorative element.

Jaali: A Jaali is a perforated stone, latticed or metal screen, usually with an ornamental pattern. The Jaali screens provide privacy, allow light and air to enter the room, and also help to lower the temperature during hot seasons.

Otla: This is the verandah or porch area outside a house. It is a common feature in traditional Indian homes and serves as a transitional space between the outside and the inside of the house.

Charpae: A traditional cot or bedstead usually made of wood and woven rope.

Mori: A traditional drain or outlet that is used for the flow of water and waste.

WC: Water Closet, a bathroom, usually consisting of a toilet and sometimes a sink.

Wadi: A compact residential precinct within a town. It is often a self-contained community with its own shared facilities and social structures-known as the predecessor of the chawl typology.

Redevelopment: The process of rebuilding existing structures. It typically involves demolishing old buildings and constructing new ones in their place.

Chawl or Chaali: A multi-storied housing structure divided into several single-room tenements. Chawls are commonly found in Mumbai and were built in large numbers during the industrialization period in the 20th century.

Tenement: A room or a set of rooms forming a separate residence within a house or block. It is a term used to describe any rented accommodation.

Networks // Social, economic, cultural, community-based, neighborly interactions

Galli: A narrow alley or street. Gallis are common in densely populated urban areas in India.

Balwadi: A pre-school or a community-based childcare center. Balwadis often provide basic education and nutrition to children from disadvantaged backgrounds.

Akhara: Gymnasium, but also meeting place. Traditionally, Akharas were places where wrestling and physical training were practiced.

Mandal: Association, committee, society. Mandals often organize social, cultural, and religious events in a community.

Mohalla: A neighborhood or a specific area within a town or city. It often refers to a residential community with shared facilities and social structures.

Bazaar: A market where goods and services are bought and sold. Bazaars are often bustling centers of activity in towns and cities.

Politics: Political and urban governance aspects

Cessed Buildings: Buildings (mostly constructed before 1940) that pay a cess or tax for maintenance. The cess is often used to fund repairs and maintenance of the buildings. When these buildings become too dangerous to live in or beyond repair, the MBRRB undertakes the reconstruction of these buildings.

FSI: Floor Space Index, a ratio that describes the buildable area on a plot of land. It is often used by urban planners and developers to determine the maximum amount of construction allowed on a plot.

Rent Control: Regulation of rent costs. Rent control laws often limit the amount by which rent can be increased.

Carpet Area: The area of an apartment/building excluding the thickness of the walls. It is the actual usable area within an apartment or building.

Free Sale Component: Market housing aspect of a development. It refers to the portion of a development that can be sold on the open market.

BIT: City of Bombay Improvement Trust. It was an organization responsible for urban planning and development in Bombay (now Mumbai).

BDD: Bombay Development Directorate. It was a government agency responsible for the development of Bombay.

SRA: Slum Rehabilitation Authority. It is an agency responsible for the rehabilitation of slums in Mumbai.

MMRDA: Mumbai Metropolitan Region Development Authority. It is a government agency responsible for the planning and development of the Mumbai Metropolitan Region.

MHADA: Maharashtra Housing and Area Development Authority. It is a government agency responsible for the construction and maintenance of housing in the state of Maharashtra.

MBRRB: Mumbai Building Repair and Reconstruction Board. It is a board under the Maharashtra Housing and Area Development Authority (MHADA), which is responsible for the repairs and reconstruction of buildings in Mumbai.

GOB: Government of Bombay. It refers to the government of the Bombay Presidency, a former province of British India.

BMC: Brihanmumbai Municipal Corporation. It is the civic body responsible for the governance of Mumbai.

Stitching techniques

Kantha // Visible Stitching: The word Kantha derives from Sanskrit and refers to rags. In parts of the Indian subcontinent, women create kantha textiles by stitching patchwork layers of fabric into something new.

Rafoo // Darning: Rafoogari, the traditional skill of darning, has existed in India for centuries. It involves repairing holes or worn areas in fabric by sewing with a needle and thread.

Silai, Taka // Hand stitching, embroidery: 'Silai' means sewing and 'Taka' means embroidery in Hindi. It refers to the process of creating designs on fabric using a needle and thread or yarn.



Fig. 4.1 Gallery of a chawl in Bombay.

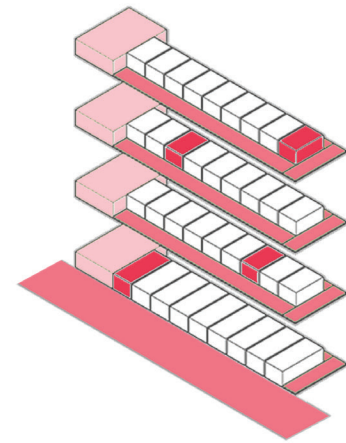


Fig. 4.2 Form and layout of a Bar Chawl.

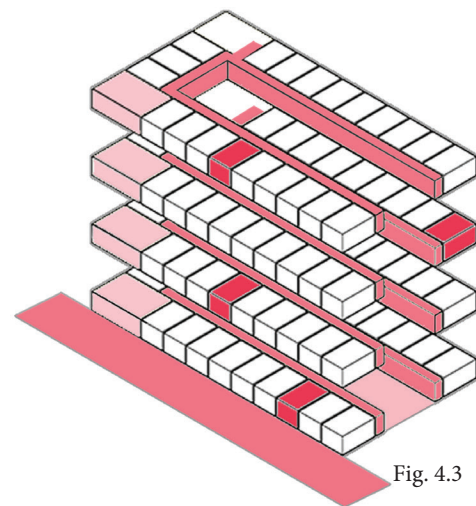


Fig. 4.3 Form and layout of a Courtyard Chawl.

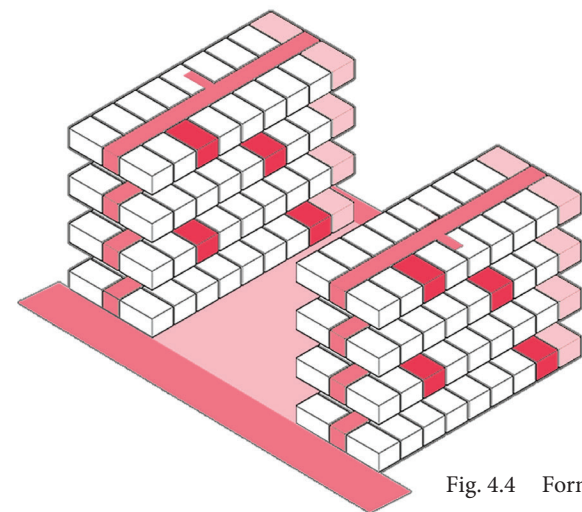


Fig. 4.4 Form and layout of a double-loaded corridor Chawl.

Different Configurations of the Chawl Typology

A chawl is a multi-storied building characterized by long corridors or galleries and a series of small, 10x12 single-room units, commonly with shared amenities like toilets and washing areas. The architecture typically features 'kholis', or dwelling units, arranged in rows and connected by passageways. These passageways are primarily of two types: a gallery located at the front of the dwelling unit entrances or flanking both the front and back (the latter being for services, making the unit more porous); or a corridor with dwelling units on both sides. What remains consistent between all the configurations of the type are the common services and washrooms shared by residents living in the multiple individual units. It is important to understand the different configurations of a chawl typology as its form promotes sociability and a sense of community.

Bar Chawl: A chawl with a gallery that flanks the rows of units and acts as the main circulation for the dwelling units. They act as corridors flanking one or both sides becoming spill out spaces for the dwellings. While the building has multiple storeys and is usually linear, it takes the shape of the plot of land it was built on, cleverly fitting itself on any site and irregular shape, still following the logics of the typology.

Courtyard Chawl: A Courtyard Chawl is organized around a central courtyard. The courtyard is enclosed by the building on all sides. The dwelling units or 'kholis' are arranged around the courtyard, and there may be multiple floors with galleries or corridors overlooking the courtyard. The courtyard is an inward looking open to sky space with the corridors holding the entrances for the individual units and become spill out spaces. It provides light and ventilation to the units and a shared space for residents.

Double-loaded corridor Chawl: A Double-loaded corridor Chawl features a central corridor with dwelling units or 'kholis' arranged on both sides. This design maximizes the number of units that can be accommodated in the building but may result in less natural light and ventilation for the individual units. The central corridor serves as a communal space, where neighbors can interact and children can play, and also provides access to shared amenities like toilets and washing areas. When repeated over a large mass of land, the spaces in between the repetitive blocks acts as a courtyard.

EVOLUTION OF CHAWLS IN BOMBAY/MUMBAI

Working Class Housing in Colonial Bombay

- 1668** East India Company leased the city for industrial pursuit
- 1715** With the growth of Bombay Island's castle population there was an increased encroachment of dwellings and a fort wall was constructed in place of the castle
- 1803** The Great Fire damaged a large portion of Indian merchant property and led to the restructuring of the city
- 1850** North of the walls, the British set up textile mills. Such industrialization triggered the rise of chawls
- 1854** Bombay Spinning and Weaving Company was the first cotton mill to be established in Bombay
- 1860** Further rise of chawls as worker class housing in close proximity to the mills due to the Cotton Boom
- 1863** British orchestrated the construction of a robust and affordable transportation system of local railways
- 1872** Inception of public transportation like trams, trains, and bus routes throughout the available to only the fortunate classes
- 1890** The addition of 70 textile mills in the city as well as more housing- although it was estimated one million people still slept on footpaths
- 1900s** Industrial land during the early 1900s was inexpensive due to its proximity to the outskirts of the fort area
- 1911** Approximately 80% of Mumbai's population lived in chawls, and the census of 1911 shows that 69% of the population lived in one-room dwellings
- 1930s** An average of around four people lived in each tenement, with over two million tenements throughout the city
- 1940s** With the end of World War II and in the midst of India's independence and partition - Mumbai experienced yet another influx of migrants and refugees
- 1942** Rent Control Act made investment in building unprofitable to the landlord and properties became impossible to maintain

Working Class Housing in Post-Colonial Bombay/Mumbai

- 1947** With the demand for housing rising, rents started skyrocketing and were frozen under the Rent Control Act by the government- it prohibited eviction, gave a sense of property to inhabitants
- 1950s** Landlords lost interest in the chawls because the Rent Control Act prevented profits, and many of the other spaces in chawls like straicase landings began to be occupied by tailors, electricians, ironing services
- 1960** The Maharashtra Co-operative Societies' Act, enforced by MHADA, empowered some chawl residents to transition from landlord ownership to collectively managed co-operative housing societies
- 1980** The cotton mill strike in Mumbai led to the closure of mills, catalyzing a shift in the city's economy from manufacturing to services and real estate
- 1990** Economic liberalization in India prompted many residents to venture into smaller commercial businesses within and around chawls, diversifying their income sources
- 1991** The Development Control Regulations (DCR) 33(7) for Mumbai facilitates the redevelopment of cessed buildings through schemes by MHADA, partnering with the private real estate sector to replace old structures with higher density structures, albeit with subsequent amendments to the regulations over the years
- 2016** It is announced that BDD Chawls will be going under redevelopment- it is met with mixed reactions, and many residents oppose this displacement to transit camps in the name of development

The Evolution of Chawls

Industrialization in Bombay was a direct consequence of the British Raj and colonialism. Chawls constructed during the colonial times were planned as formal, but over time they have transformed to operate using informal logics. Chawls, or 'chaalis' in the vernacular, were mainly constructed during the nineteenth and twentieth centuries by state agencies like the Bombay Development Directorate (formerly Bombay Improvement Trust) or mill owners acting as private landlords. From the 1860s until the early 1900s in colonial Mumbai, chawls emerged as four or five-storeyed buildings of one-room tenements - about twenty to thirty rooms per floor sharing two or three common bathrooms in the egress space. Mill owners and private builders constructed these to house mill workers from lower socio-economic backgrounds and the massive influx of immigrant male labourers to Bombay during the era when Bombay dominated the maritime trade of opium and cotton and overall the textile industry- which initially attracted the British colonialists to Bombay. Mill owners addressed this issue by establishing private chawls on plots or allocating a portion of workers' wages for housing, while the colonial government also made investments. Chawls were designed as affordable housing and initially accommodated the burgeoning workforce of the city's flourishing mills, ancillary small industries, and workshops⁽⁶⁶⁾. Initially, these spaces were cramped, accommodating up to 16 men in one room. During colonial times, overcrowding in chawls made it increasingly difficult to rent space. This challenge led chawl owners to devise innovative ways to accommodate new occupants or migrants, such as dividing single rooms, installing foldable wooden planks as bunk beds, and constructing mezzanine lofts for storage and sleeping purposes.

In post-colonial times, chawls saw the emergence of commercial activities within residential units, blending work and home life. Others were modified to accommodate extended families or new amenities. Over time, chawls adapted to changing socio-economic conditions, reflecting Mumbai's complex urban dynamics. The decline of the textile industry led to changes in occupancy and usage, showcasing the adaptability of these structures. However, as the nature of work evolved and became less tied to the mills, chawls transformed into residences for families and extended relatives. Sometimes, the inhabitant rents the front of the dwelling unit or a sleeping space to newcomers seeking work in the city.

Often perceived as one large household, extending from individual living units to the streets, they blur the hard lines between private and public spaces. The spatial configuration of chawls fosters a unique form of community living, encouraging close-knit relationships among residents. While familial connections are prevalent, it is not uncommon for neighbours in chawls to provide support and care for each other. Due to the small spaces within dwelling units, corridors, streets and courtyards became venues for cooking, washing, sleeping, and entertainment. Chawl corridors bustled with older men playing carrom or children playing games, streets in chawl areas teemed with hawkers, convenience stores, repair shops, tailors, electronic stores, liquor shops, and other informal services. Sometimes, chawls shared a common space, serving as grounds for playing tennis, cricket, and street games, showcasing dance performances, hosting social and religious gatherings, and parking cars, two-wheelers and bicycles. This courtyard space is crucial for the residents' entertainment and social well-being - it promotes social interaction, cultural heritage, and an open-door environment.

66 Kidambi, Prashant. *The Making of an Indian Metropolis: Colonial Governance and Public Culture in Bombay, 1890-1920*. 1st ed. Routledge, 2007. <https://doi.org/10.4324/9781315238500>.

Fig. 4.5 A timeline tracing the evolution of chawls as workers housing through colonial and post colonial evolution of the city of Bombay/Mumbai.

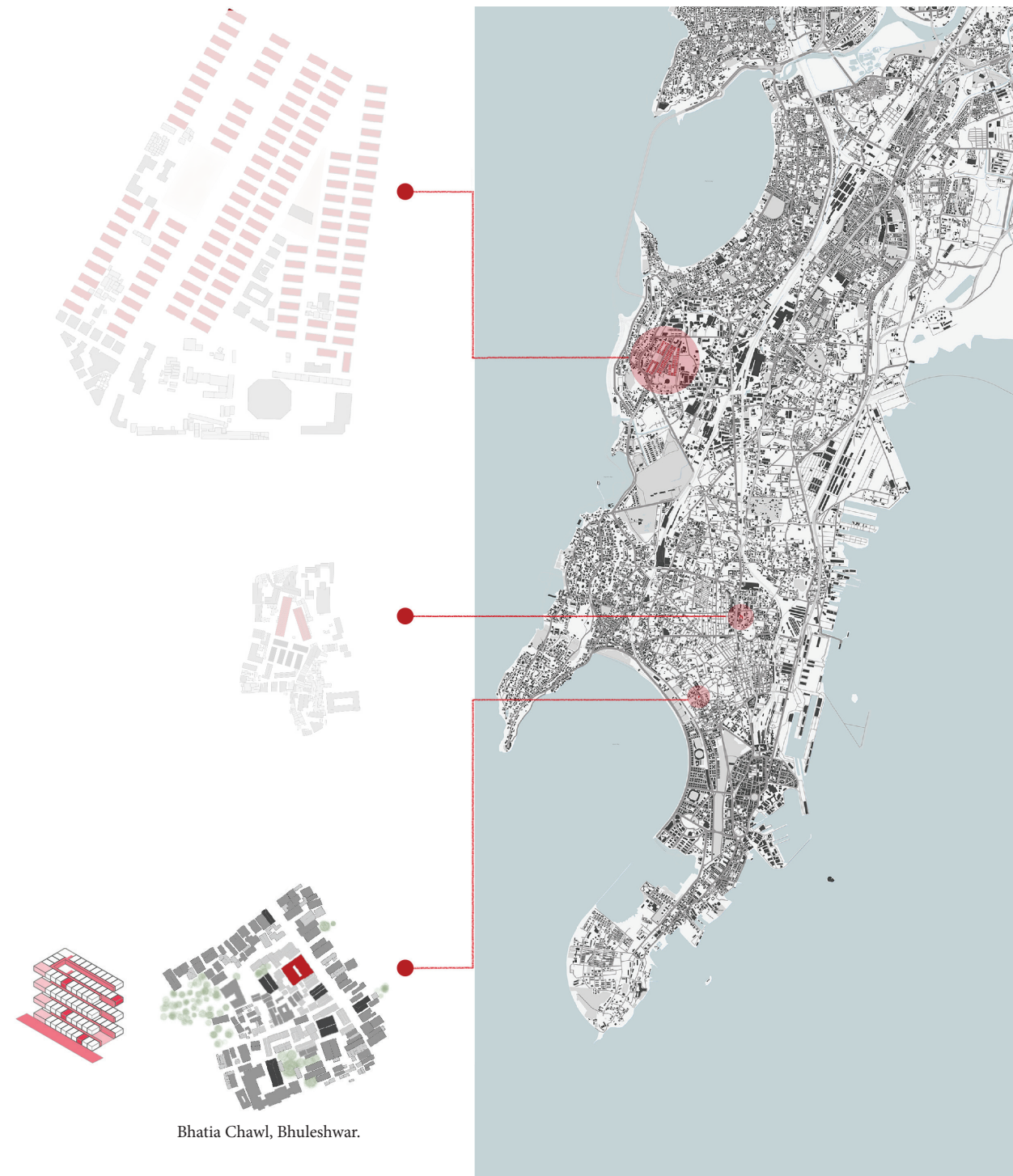


Fig. 4.6 A map of Mumbai and the location of the three selected chawls with Bhatia Chawls highlighted.

Documenting a Courtyard Chawl: Bhatia Chawl, Bhuleshwar

Location: Bhatia Chawl, Bhuleshwar.

Type: Privately-owned housing- Landlord-tenant chawl turned into Co-operative Housing in 1975⁽⁶⁷⁾.

The chawl is located in Bhuleshwar, a commercial district in the inner parts of the city. The units that face the street on the ground floor are all commercial enterprises, with their window storefronts and signage. All of the other units are residential in nature. Currently, because of the chawl now operating under the free market after turning into Co-operative housing, a lot of the residents have sold their units and moved out.

67 Padora, Sameep. How to Build an Indian House : the Mumbai Example. Rotterdam: nai010 publishers, 2020.



Fig. 4.7 Street facing view Bhatia Chawl.



Fig. 4.8 Inner courtyard view Bhatia Chawl.



Fig. 4.9 Gallery Bhatia Chawl



Fig. 4.10 Gallery and Courtyard Bhatia Chawl



Fig. 4.11 Courtyard from the stairs Bhatia Chawl



Fig. 4.12 Gallery of Bhatia Chawl



Fig. 4.13 Gallery with woman drying clothes Bhatia Chawl



Fig. 4.14 Bhatia Chawl courtyard with high rises in background



Fig. 4.16 Shot of an entrance of home in Bhatia Chawl



Fig. 4.15 Courtyard and Roof Bhatia Chawls



Fig. 4.17 Courtyard and corridor of Bhatia Chawls



(clockwise from top) Fig. 4.18; 4.19; 4.20; 4.21 Interior images Bhatia Chawls



Fig. 4.22 Wooden stairs Bhatia Chawls

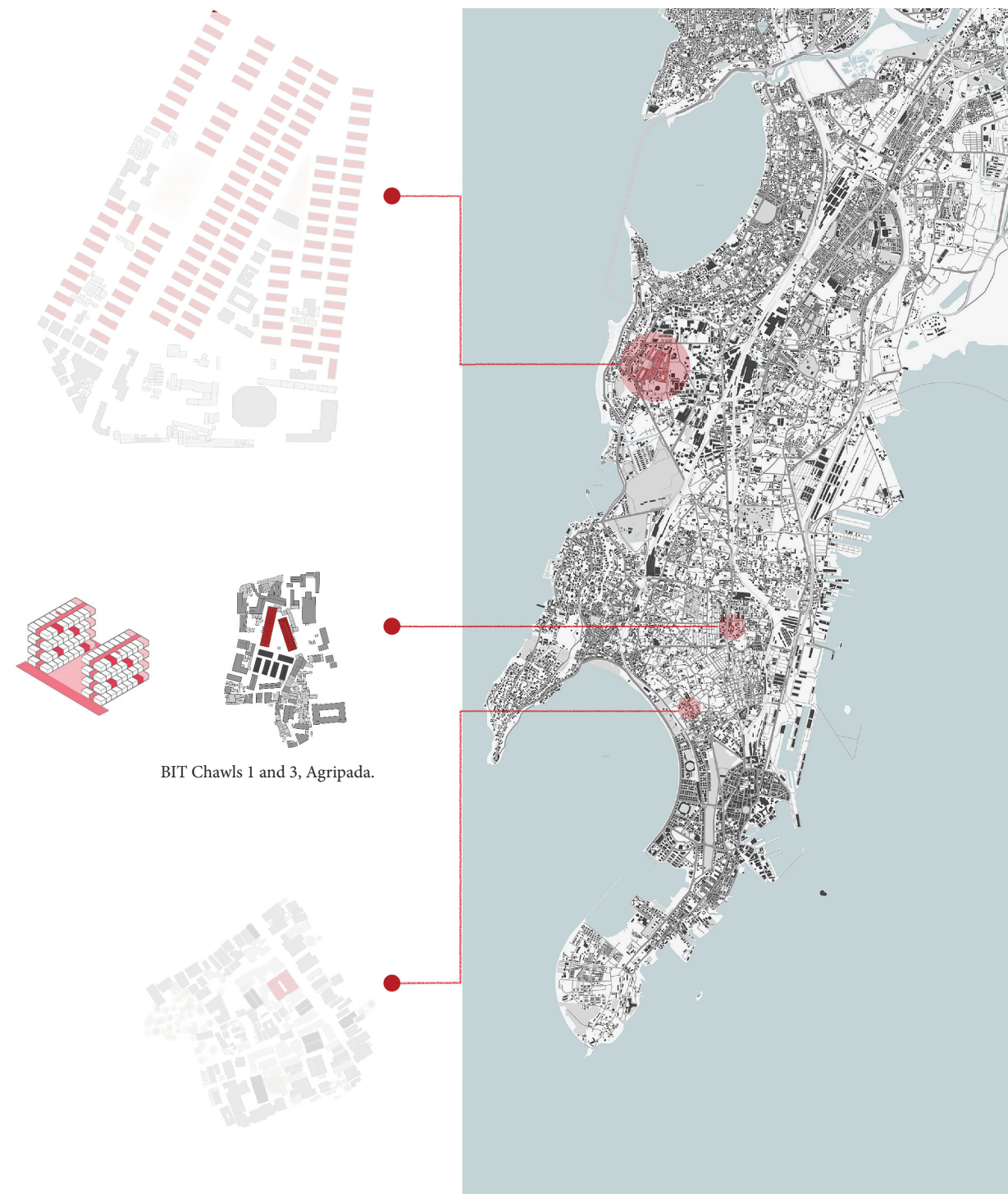


Fig. 4.23 A map of Mumbai and the location of the three selected chawls with BIT Chawls 1 and 3 highlighted.

Documenting a BIT Chawl

Location: BIT Chawl no. 1 and 3, Agripada.

Type: Public housing- Built by BIT (Bombay Improvement Trust) between 1905 to 1916, now under BMC (Brihanmumbai Municipal Corporation).

A total of 133 chawls built by BIT exist in the areas of Mumbai Central, Agripada, Sion, Parel, Mazgaon, Love Lane, Chinchbunder, and Mandvi Koliwada⁽⁶⁸⁾. During its 35-year existence, the Bombay Improvement Trust achieved phenomenal results. A notable accomplishment was the provision of housing for key workers in the city; the Trust either built or acquired land for the construction of 3,476 tenements for the police and 1,244 rooms for mill workers in chawls⁽⁶⁹⁾.

68 CRIT, "Housing Typologies," May 2007, accessed December 2022, <https://crit.in/initiatives/housing/housing-typologies/>.

69 Dwivedi, Sharada., Rahul Mehrotra, and Umaima Mulla-Feroze. Bombay : the Cities Within. Bombay: India Book House, 1995.



Fig. 4.24 Courtyard BIT Chawls



Fig. 4.25 Facade under repairs BIT Chawls



Fig. 4.26 Extensions from facade BIT Chawls



Fig. 4.27 Corner of BIT Chawl building



Fig. 4.28 Window of BIT Chawl



Fig. 4.29 Facade with extensions and personalisations BIT Chawls



Fig. 4.30 Facade with its extensions and modifications BIT Chawls



Fig. 4.31 Photo of a pile of construction material and waste in courtyard BIT Chawl



Fig. 4.32 Corridor with reappropriations BIT Chawl



Fig. 4.34 Corridor with everyday objects and furniture BIT Chawl



Fig. 4.33 Corridor with furniture spill out BIT Chawl



Fig. 4.35 Circulation BIT Chawls



Fig. 4.36 Stairs BIT Chawls



Fig. 4.37 Many uses of the end of the corridor BIT Chawls



Fig. 4.38 Corridor with window at the end BIT Chawls.



Fig. 4.39 Shared services BIT Chawls



Fig. 4.40 Common space used for keeping furniture and goats BIT Chawls



Fig. 4.41 The decay of facade BIT Chawls



Fig. 4.42 Scaffolding and extensions BIT Chawls



Fig. 4.43 A close up of one extension BIT Chawls

05_MICRO-SITES // BIOGRAPHY OF BUILDING TYPE

Documenting a Double-loaded Corridor Chawl: BDD Chawls, Worli

Micro-Site 1: The Dwelling Unit

Micro-Site 2: The Extensions

Micro-Site 3: The Circulation: Corridor and Stairs

Micro-Site 4: The Public: Courtyard, Streets

Drawing Everyday Repair

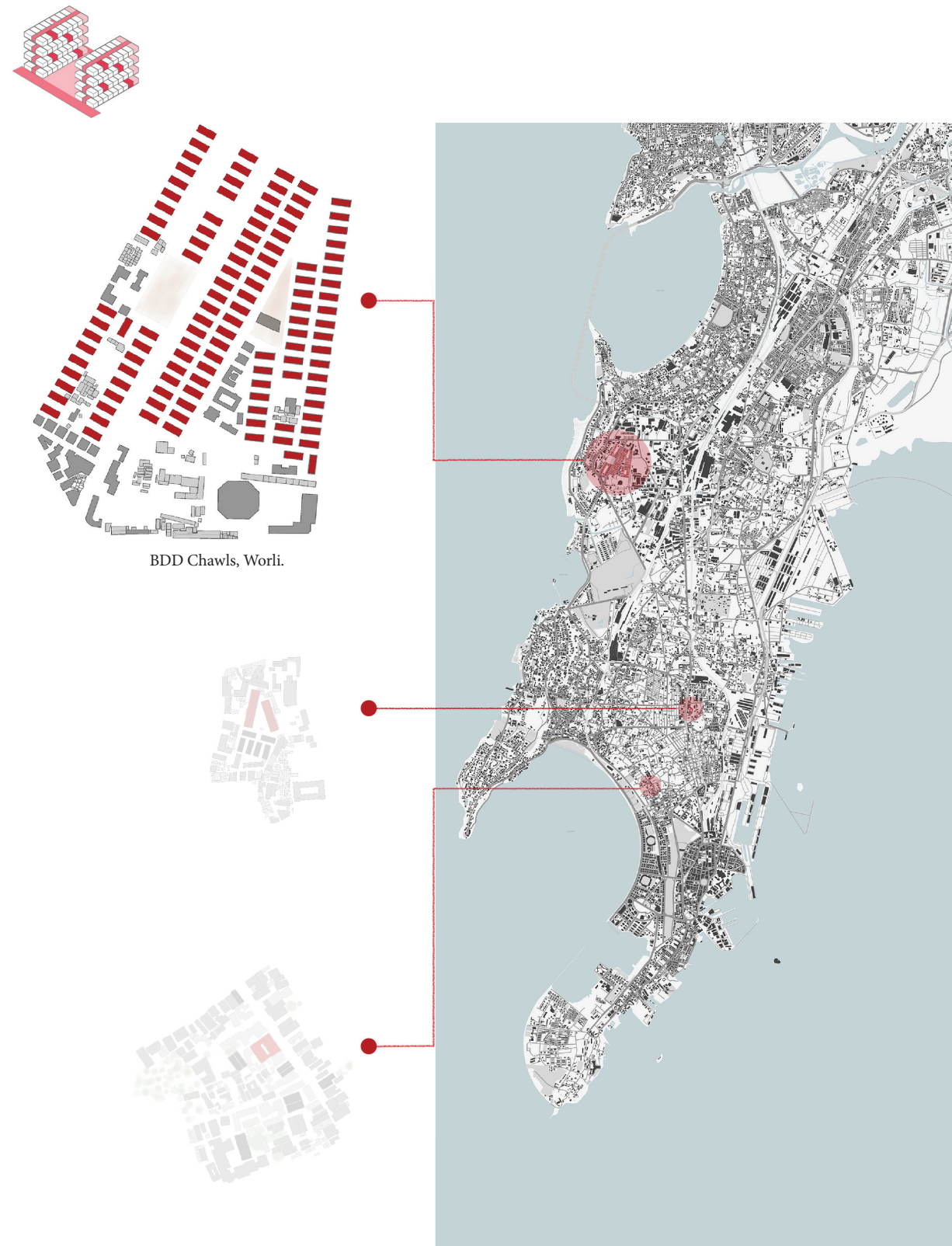


Fig. 5.1 A map of Mumbai and the location of the three selected chawls with BDD Chawls, Worli highlighted.

Documenting a Double-loaded Corridor Chawl: BDD Chawls, Worli

Location: BDD Chawls, Worli, Mumbai.

Type: Public housing- Built by BDD (Bombay Development Directorate), now under PWD (Public Works Department).

Through the decade of the 1920s the Directorate built 207 chawls in RCC, each containing 80 single roomed tenements; of these, 32 chawls were built at Delisle Road, 42 at Naigaum, 121 at Worli and 12 at Sewri⁽⁷⁰⁾.

The ones at Worli are the selected chawls for documentation, interviews and analysis. They have all been slated for redevelopment since 2016, and demolitions started in 2020, before being halted by the pandemic.

As of 2023, the plans for redevelopment have since resumed.

70 Dwivedi, Sharada., Rahul. Mehrotra, and Umaima. Mulla-Feroze. Bombay : the Cities Within. Bombay: India Book House, 1995.



Fig. 5.2 Figure ground



Fig. 5.3 Old archival photo of BDD Chawls



Fig. 5.4 BDD chawls today.



Fig. 5.5 Dwelling Unit 1 BDD Chawls- sleeping and living

Micro-Site 1: The Dwelling Unit



Fig. 5.6 Dwelling Unit 1 BDD Chawls- kitchen and living



Fig. 5.7 Dwelling Unit 2 BDD Chawls- living, WC and kitchen



Fig. 5.8 Dwelling Unit 2 BDD Chawls- entrance and sleeping



Fig. 5.9 Dwelling Unit 2 BDD Chawls- living and kitchen



Fig. 5.10 Dwelling Unit 3 BDD Chawls- entrance and living



Fig. 5.11 Dwelling Unit 3 BDD Chawls- living and kitchen



Fig. 5.12 Dwelling Unit 3 BDD Chawls- kitchen and extension



Fig. 5.13 Residential extension 1



Fig. 5.14 Residential extension 2

Micro-Site 2: The Extensions



Fig. 5.15 Residential Extension 3



Fig. 5.16 Commercial extension 1



Fig. 5.17 Residential Extension 4



Fig. 5.18 Residential Extension Corner Unit 1



Fig. 5.19 Residential Extension Corner Unit 2



Fig. 5.20 Residential Extension 5



Fig. 5.21 Residential Extension 6



Fig. 5.22 Residential Extension 7



Fig. 5.23 Residential Extension Corner Unit 3



Fig. 5.24 Residential Extension 8



Fig. 5.25 Commercial Extension 2



Fig. 5.26 Commercial Extension 3



Fig. 5.27 Residential Extension 9



Fig. 5.28 Residential Extension 10

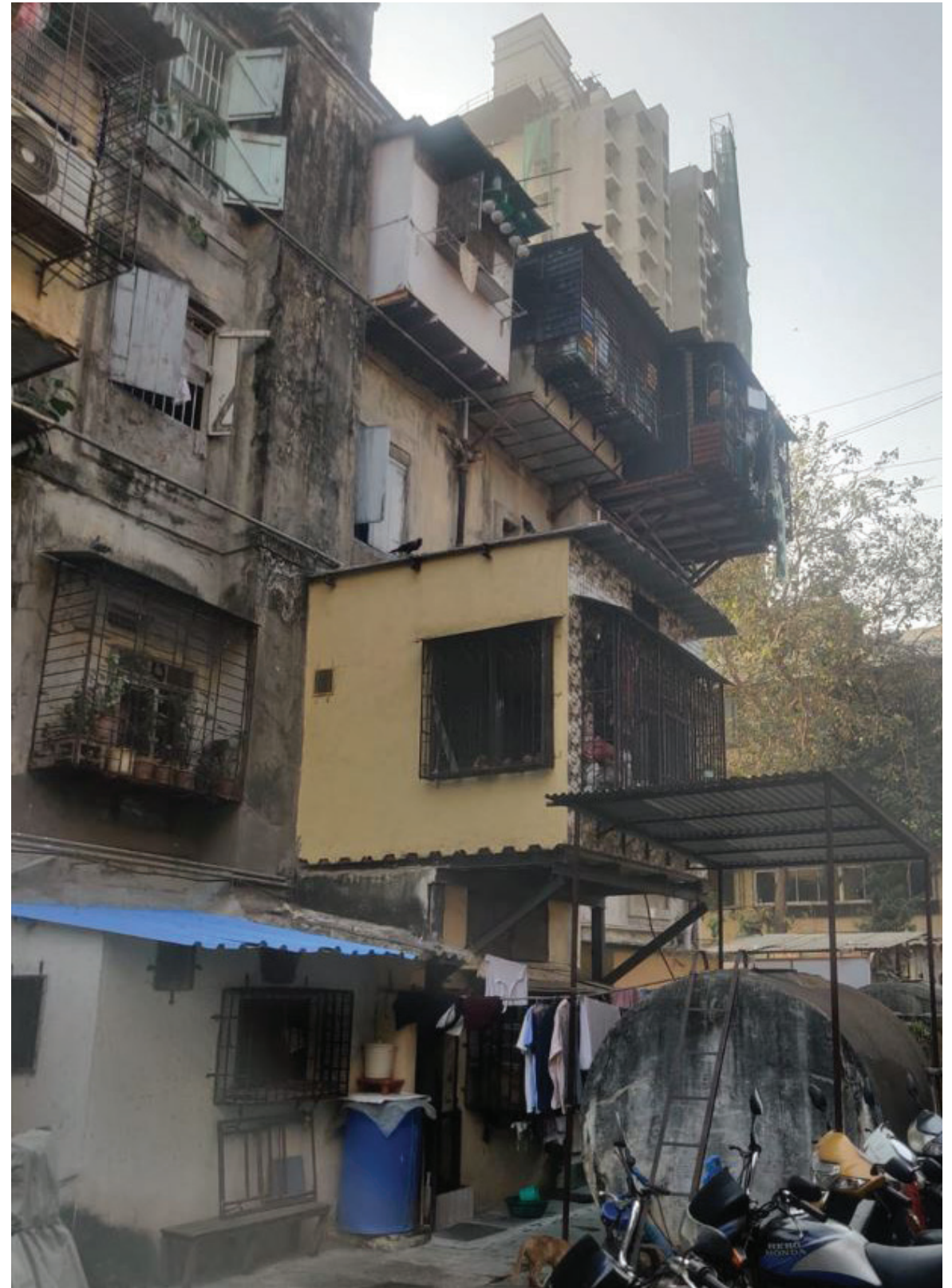


Fig. 5.29 Residential Extension 11



Fig. 5.30 Residential Extension Ground



Fig. 5.31 Commercial Extension 4



Fig. 5.32 Commercial Extension 5



Fig. 5.33 Entrance from Courtyard



Fig. 5.34 Upper floor corridor

Micro-Site 3: The Circulation: Corridor and Stairs



Fig. 5.35 Ground floor corridor



Fig. 5.36 Door to dwelling 1



Fig. 5.37 Door to dwelling 2



Fig. 5.38 Door to dwelling 3

Micro-Site 4: The Public: Courtyard, Streets



Fig. 5.39 Courtyard with temple.



Fig. 5.40 Children playing in courtyard.



Fig. 5.41 Mandal near a BDD Chawl



Fig. 5.42 Interior of temple.



Fig. 5.43 Commercial enterprises on street



Fig. 5.45 A makeshift restaurant seating.



Fig. 5.44 Micro-economies of the chawl



Fig. 5.46 A bazaar.

Drawing Everyday Repair

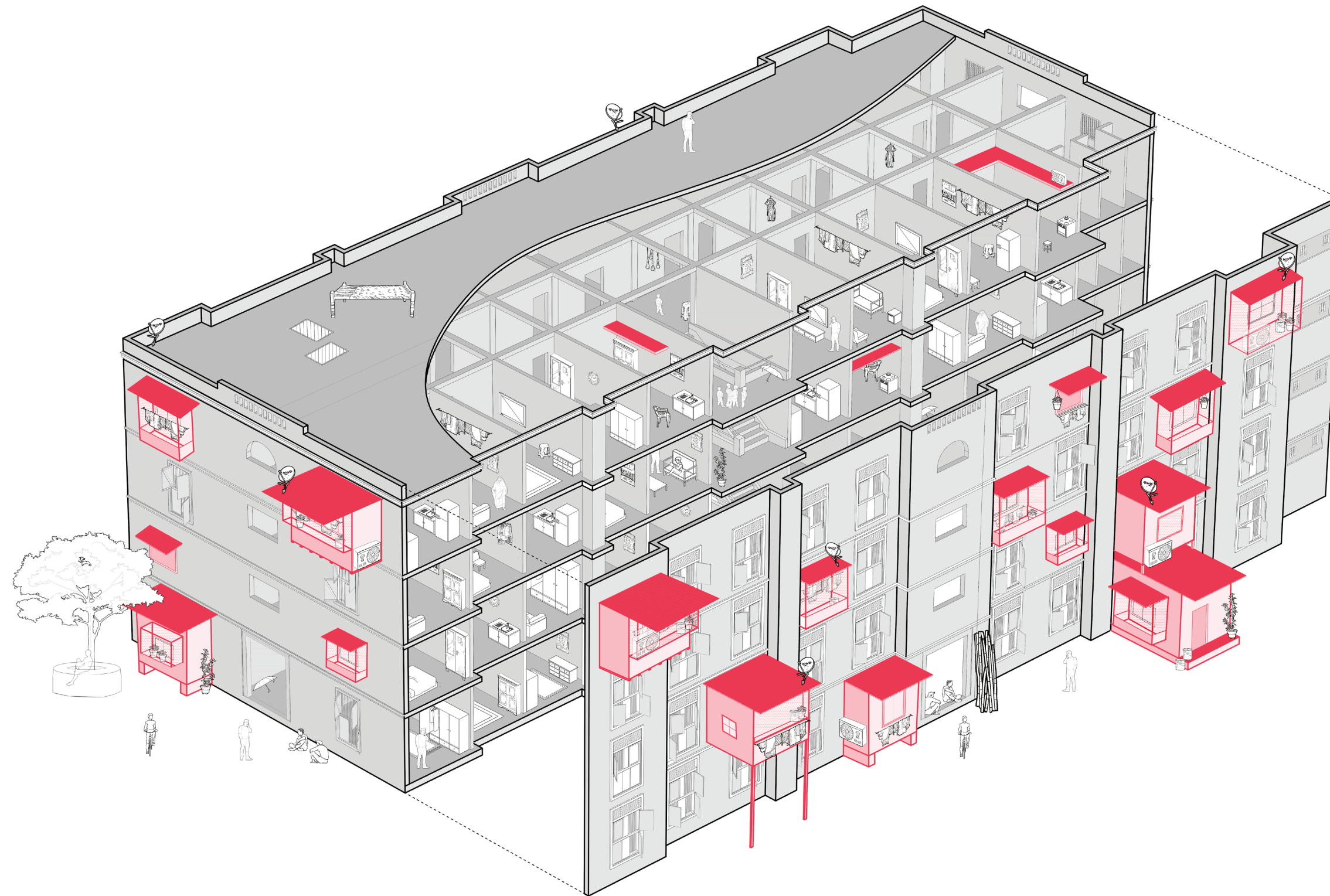


Fig. 5.47 Axometric Drawing BDD Chawls

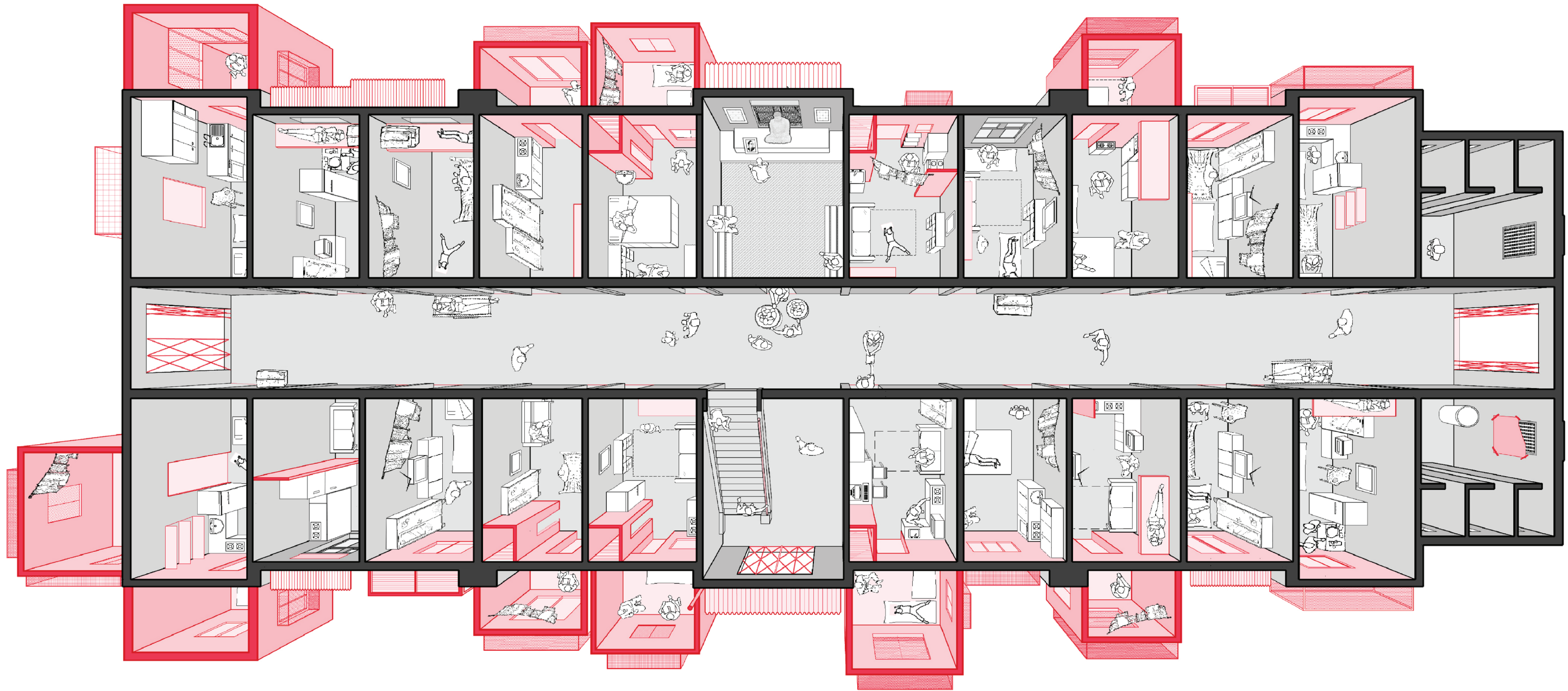


Fig. 5.48 Drawing in Plan Perspective BDD Chawls

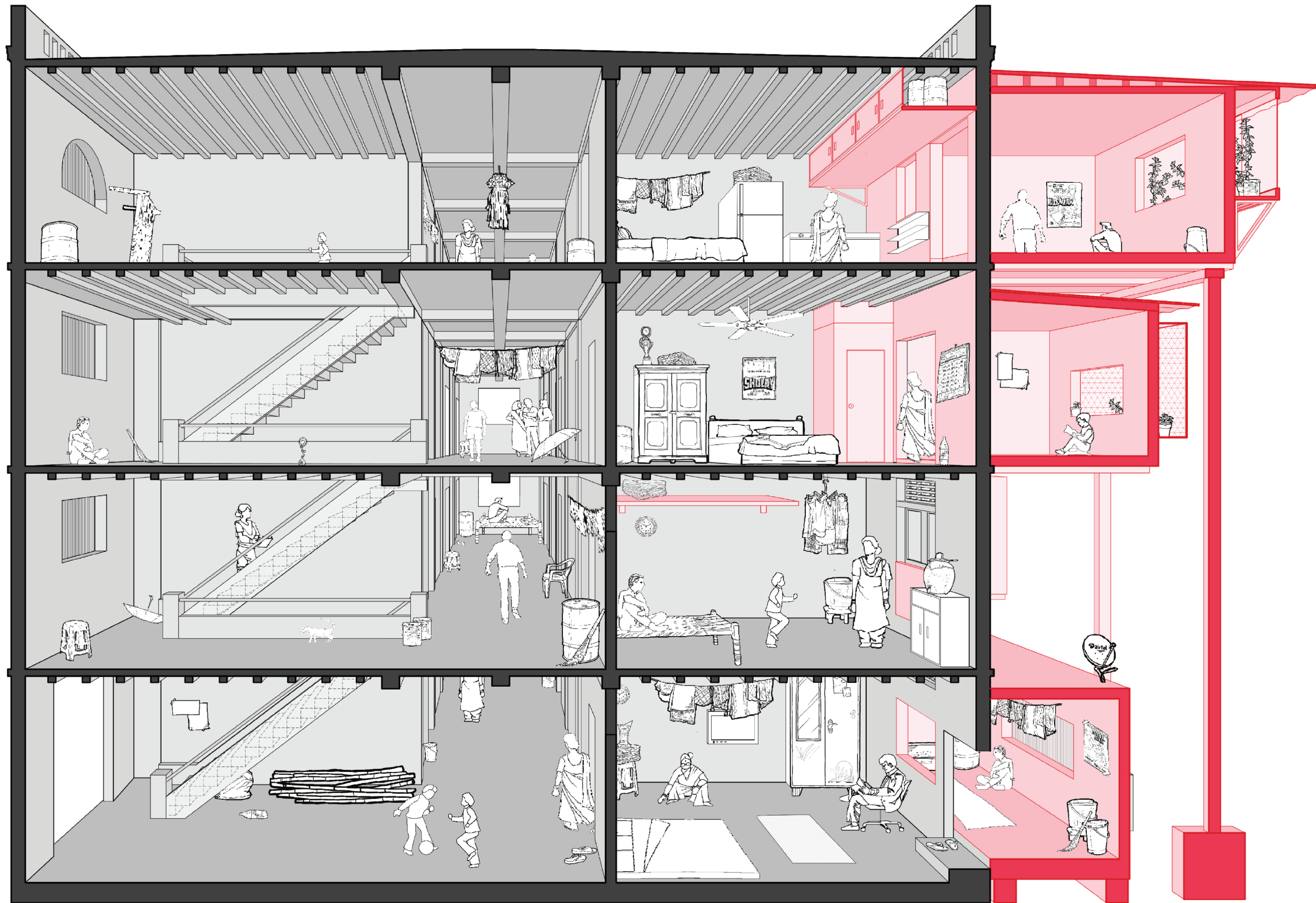


Fig. 5.49 Drawing in Sectional Perspective BDD Chawls

06_MICRO-NARRATIVES // INHABITANTS OF BDD CHAWLS

Repair or Redevelopment?

- 1 // The Reluctant Resettler
- 2 // The Long-Time Resident
- 3 // The Entrepreneur
- 4 // The Shopkeeper
- 5 // The Space-Reconfigurer
- 6 // The Ingenious Shopper
- 7 // The Custodian Fixer

Repair or Redevelopment?

Chawls, traditionally seen as fostering community and evoking nostalgia, should be reframed as moving beyond the social to spotlight more spatial constructs that reflect its adaptability and the cultures of care, production, and agency within the typology. Chawls are more than a historical artifact or a relic of Mumbai's past. Even today, they are living, breathing spaces that have evolved and adapted to the changing needs and dynamics of the city and its inhabitants. How their residents design chawls through repair, use, reuse, and modifications showcases their ability to creatively manage space and resources and their capacity for collective action and community support.

Recently, the land on which chawls stand has become increasingly valuable, leading to redevelopment pressures. Today, families continue to live in chawls, refusing to move out despite the promise of more extensive square footage, primarily due to emotional attachment to cultural heritage and geographic location. In a constantly congested city like Mumbai, chawls are a maximum of 15 minutes walk from main local markets, places of worship, education centers, and, more importantly, railway stations. The Rent Control Act has frozen the rent rates to the rates of the 1940s, which is about 250-500 rupees a month, making living in chawls very affordable, and this is one of the biggest reasons residents have lived in chawls for generations. At the same time, it caused a lapse in maintenance taken up by the landlord/government due to a lack of funds. With no profit incentive, they did not have a stake in the upkeep of the chawls and residents took it upon themselves to upkeep their homes. It has sparked debates about heritage, urban renewal, and inhabitants' rights⁽⁷¹⁾.

Chawl inhabitants' resistance to moving out despite redevelopment pressures, their use of shared spaces for multiple activities, and the modifications made to accommodate changing needs all highlight the cultures of care, production, and agency embedded within this unique urban typology. It is essential to recognize and value these narratives that are invisibilized in the larger discourse around the future of their homes when considering the future of chawls in urban planning and development discussions.

Redevelopment vs repair should not be an all or nothing decision, instead the chawls should be looked at as critical inquiries of how they have adapted over changing times and conditions.

71 Nijman, Jan.
"India's Urban Future:
Views From the Slum."
American Behavioral
Scientist 59, no. 3
(2015): 406-423. <https://doi.org/10.1177/0002764214550304>.

1 // The Reluctant Resettler

The residents of the chawl have been hearing about the proposed redevelopment of their area for years now- they even had a young man come around and take signatures for consent- initially, some residents did not agree and were hesitant, but now that 70% of the consent signatures are met they have no option. Some people have already moved out.

The authorities keep making promises, but the residents are skeptical. "They initially told us the new building would be 20 floors, but now they are saying it's doubled to 40 floors, and two households will have to share a parking space," says Najma, the woman I spoke to, a 40-year old resident of the chawl. "How is that even possible?" The residents are also worried about the maintenance costs that come with living in high-rises. "They have offered each household 22,000 rupees per month, but that is not enough to cover the costs," says her son, Aadil. "We are not wealthy people. We live from hand to mouth. We signed the papers and agreed to move out in good faith," Aadil continues. "But now they are moving us to the outskirts of the city. They say it's temporary, but what are we supposed to do about work and our children's schools?"

The residents feel that the authorities do not care about their well-being. "They just want us out. We are not important to them. They see us as a problem to be solved, not as people with lives and families." The prospect of moving to the SRA buildings and the inadequate resettlement sites and transit camps is a bitter pill for the residents to swallow. They have built their lives in the chawl, and the thought of leaving it behind is heartbreaking. "This is our home," says Najma. "We have lived here for generations. We never wanted to move, but it seems we have no choice. We have to change with the times..." she trails off. The redevelopment of the chawl is a double-edged sword for its residents. On one hand, it promises better living conditions, but on the other hand, it brings with it a host of problems and uncertainties. The residents are caught in a dilemma, and the future seems uncertain.

2 // The Long-time Resident

Savitri, an older woman, paused her cleaning and sweeping of the corridor, setting aside the bag of waste to converse with me. She guided me to the benches and shed adjacent to the chawl's entrance. Soon, her friend Alka, a relatively new resident of four years, joined us. "This chawl is over a century old," Savitri shared. "Initially unoccupied after its construction, it served as barracks or jails for prisoners during the World War by the British, and later as a detention center for activists during the freedom struggle." Alka added, "The walls here are incredibly resilient. It costs 200 rupees just to hammer in a nail." Alka bought her unit four years ago with her husband and two grown children, after collecting funds and saving for years. They paid about 10,00,000 rupees to buy the house, and spent another 1,00,000 rupees in its repairs and modifications, mainly making the unit bigger by extending it out into the courtyard.

Curious about the residents, I asked them about the chawl's inhabitants. "Primarily the working-class," Savitri explained, "those involved in the service sector - small businesses, shops, security guards, cleaners, construction workers, mill laborers, dock workers, and low-level government employees." Alka added, "The chawl's location is advantageous; with schools, doctors, temples, and the railway line nearby, commuting is convenient. That is why we moved."

Savitri, a resident for 36 years since her marriage, shared the changes she witnessed over the years. "The building comprises 80 tenements, 20 on each of its four floors, all sharing a common washroom. Each household took it upon themselves to carry out these works of repair. We were the first family to construct a WC inside our home. We also added a habitable loft by extending into the additional floor-to-ceiling height available on the ground floor, and that's where we keep our own water tank- we do not have to rely on communal taps anymore. A lot of our other neighbours have done the same in the last decade or so when their income was good." Savitri detailed the modifications to her own dwelling. "We installed new tiles, replaced the windows, modernized the kitchen, repainted the walls, and in some places, even removed interior walls. However, such modifications are not uncommon here."

As the redevelopment progresses, Savitri anticipates a larger living space, enabling extended relatives to move to the city. "The real estate developer used a small area in the empty maidan nearby to construct a sample flat- which convinced our family to give our consent for the redevelopment. But who knows how long till its ready- all we can do is wait." Yet, she softly expressed her preemprive nostalgia for her home, neighbors who have become like family, and the elaborate celebration of festivals that bring the whole community together.

3 // The Entrepreneur

For 45-year-old Sweta, living in the chawl has always been about making the most out of every situation. I encountered her in the middle of drying clothes out in the corridor, and she remarked, "I saw you out of my window taking photos, I was curious to know what its about." When I asked her what she does, how long has she been in this chawl for, she said, "I have lived in this chawl for 25 years... I was a domestic worker... but the pandemic changed all of that and I lost my job. Now, I cook and take care of the grandchildren. My daughter works in the beauty service industry... and helps me on my off days," she said, pointing to an apartment building visible from the corridor.

Sweta lives with her widowed daughter and two grandchildren. Her husband, a security guard residing in employee-provided housing in the outskirts of the city, sends money monthly and visits on odd weekends. "Even though their rent is low at 500 rupees, the cost of water, electricity, groceries, medicines, education, healthcare along with all the modifications to our house eventually added up," she explained. These modifications were done many years ago, and included replacing window grills with sliding windows and outer grills, and installing air conditioning—all at their own expense.

To manage rising costs, Sweta started a tiffin service. "It started out with just me, at a very small scale, but soon word got around and my food was claimed to be the best in the neighbourhood!" she proudly says with a smile. She already had a well-established rotating fund with the other women in her chawl since years, "going so far back it has become second nature and a great resource" and used the money she got from that yearly and invested it in growing her business. Wanting to scale up, she partnered up with a few other women in her neighbourhood, and now they all run the business together. They usually work in her kitchen and her neighbour's newly updated kitchen with modern appliances, starting their day at 5 a.m. Their work spills out of the dwellings into the corridor, and they divide tasks of buying groceries and prepping, before coming together to cook, and packing the tiffins up- everyone keeps an eye on the children. "In the summer months, we have the additional task of cleaning and soaking vegetables, before using the roof of the chawl to sun dry food collectively. This is hard to keep up during the monsoon, so they move their work back indoors."

Most of their customers started out from their chawl, but now their business has spread over other chawls- so much so that she had to hire a young man from her neighbourhood to make deliveries. She enjoys working with other women in the chawl, and the cooking process always ends with conversations over tea, usually centering around new happenings in the neighbourhood.

4 // The Shopkeeper

I met Aarti at a small shop outside the chawl, just one amongst many- next to her is a tailoring shop, an electronics store, a printing enterprise and a newspaper stand. She is an elderly woman, who has resided in the chawl since she got married and moved to the city. “It feels like a lifetime ago.” she says. Her husband used to work in the mills for many years, and was an active part of the union strike and a key community organizer in the 1980s- “the movement was born right here in these chawls.” After the decline of the mills, they sought permission from the authorities to open up their own shop outside their chawl, and they have now been running this small business of a ‘kirana’ convenience store for years- selling water bottles, snacks, milk and groceries. “My husband doesn’t keep very well, and since our son is not in the city and pursuing his education in Bangalore, I am his full-time caretaker. On days like this, when he cannot sit at the shop, I take over. Someone has to keep the house running.”

With a warm smile, she goes on to describe the chawl as one big family. “We fight, but which family doesn’t? At the end of the day everyone helps everyone here. My neighbours always check in on him when he’s not well and I am not home, younger kids with vehicles drop us off to the doctor when we have regular check-ups, and our door is always kept open. We recently began renting out the front of our room to a migrant worker for a nominal rent of 20 rupees a night- we treat him like a second son, and when he is home he helps around the house and takes care of my husband, runs small errands. It is only temporary, till my son moves back in.”

Over the years, the couple has incrementally repaired and improved their house. “Some years back, when things were going well, we started by adding a loft space, as extra room for storage which sometimes doubles as an additional space to sleep or study for their son, or for when other relatives come to visit.” Their neighbours had done a full renovation of their homes, and had a few leftover tiles that remained unused. “We paid them 1000 rupees and got their contractor to apply the tiles around the entrance of our home.”

During the COVID-19 pandemic, the remaining tenants, including almost all on the ground floor, also constructed private washrooms within their 160 sq.ft spaces. They realized the necessity of converting their ‘mori’ (open drain) into a washroom with a private water tank in the ceiling. Some of their neighbors had hired a contractor for this purpose, and after securing some loans, they proceeded with the construction, completing it in two months. This made life and all of the caretaking significantly easier- it meant no longer queueing up outside the shared toilets. I asked her if she had any other plans, to which she pointed at the chawls around us- “We want to be able to extend our unit space and add an extra room for when our son eventually gets married. Till that happens, the extra space could prove useful for keeping things or taking time for leisure. And maybe, one day, we can save enough to upgrade our interiors and kitchen- make it fancy like it is in the TV shows.”

5 // The Space Reconfigurer

Mr. Sharma lives in his chawl with five of his family members- including two young school aged grandchildren. He has been here for decades, and remarks how he has observed changes in the chawl. “Over the years, the paint on the walls has chipped off and been repainted numerous times. none of the original paint colors remain on the walls; they are now layers of different shades, painted and repainted to create their own unique shade.” His opinion seems to be well regarded in the community. He remarks, “I suggested to all my neighbours in our monthly informal meeting about how it might be wise to tile the walls in the corridors and staircases, to improve the appearance and make cleaning an easier task. We all chipped in a marginal amount, and we got it done. We also had a structural engineer come in to conduct some tests on the structure of the building.”

Motivated by a desire for a better living environment and inspired by their neighbor who upgraded the interior of the home and expanded outwards, they too decided to renovate their unit with modern interiors and create an extension outwards to create more space for their family. “It was a challenging decision, as our cramped living conditions had always been a concern. I had to sometimes sleep in the corridor outside the dwelling, or on the roof in the hot summer. The plan was to create an additional private room for the children to study in, install air conditioning, and reduce some of the clutter in the modest 200 sq. ft of space.”

The project was ambitious, especially since they needed to construct a whole structure to support the extension. Contractors were hired on a word-of-mouth basis, and the family had to take informal loans from their employers to finance the construction. They got the contractor to demolish the window wall beyond the kitchen and covered it with tarpaulin temporarily to construct the extension. They had to hire contractors that would be quick, and along with the loan they spent most of their savings on these modifications. “The kitchen was also eventually upgraded with compact shelves and modern appliances, making it more functional.”

During the renovation process, the children had to find alternative spaces to study. “They would usually take the plastic chairs out, sit on the staircases, and find a quiet spot under the landing or roof to study. Sometimes, when it was raining, they would use the loft inside the kholi.” Overall, the renovations and repairs took about a month, and the adults in the household had to rely on their neighbours kitchens and common spaces to carry out daily activities and sleep. Living on the last floor of the chawl had its advantages; they had easy access to the roof and were responsible for the keys to the makeshift lock- many of the family members resorted to taking mattresses up to sleep on the roof. “We spent so much on creating the extension and making sure it was made using proper reinforcements, that we could no longer afford to fix the leaks in the roof.” This meant that they had to secure tarpaulin on the roof above their dwellings well in advance, using heavy stones to ensure water did not leak through the cracks in their ceiling during the rainy season. It was a trade-off, and one that he seemed confident in. “Now, the extra space is enjoyed by all, and the movable partition is opened during the day to create a more expansive living area.”

6 // The Ingenious Shopper

Deepa, an elderly woman living alone on the fourth floor of the chawl, has spent her entire life there, witnessing generations of her family come and go. Now, with her children married and moved out, she has had to find ways to adapt to her solitude and the physical limitations that come with old age. The chawl is not designed for the elderly, and the physical infrastructure does not support their needs. The stairs are steep, and there is no elevator. The residents had brought in an engineer to see if they could install an elevator, but that would mean two units would have to give up some of their unit space to install the machine, and there were negotiations but it ultimately fell through.

“It’s not easy to get down the stairs every time I need something, and I don’t want to bother my neighbors all the time,” she explains. Despite her challenges, Deepa has created a support system with her neighbors that is irreplaceable. They share meals, visit during idle times, and vendors even come to her doorstep to provide services like laundry, ironing, and delivering medicines.

To do some of her shopping without having to navigate the stairs, Deepa devised a clever system. With the help of a neighbour, she installed a rod and keeps a rope hanging outside her window. “When I hear the call of the vendors, I go to my window, tie a bag to the rope, and lower it to the ground,” she explains. The bag contains a list of items she needs, and the vendor fills it with the requested items and either writes the total cost on the list or yells it out to her. Using this pulley system, she lifts the bag with the items up, then puts the money in cash back in the bag and lowers it to the vendor to pay him. “On some days, I have a running tab with the vendor,” she says, “and sometimes he puts in some mava cake for me as a kind gesture.”

Recently, a neighbor gifted her a new phone, and while she is still learning how to use it, she is slowly learning that she can order things online and request things on demand by calling the store, so everything can arrive at her doorstep. “It’s not easy living here,” she admits, “but we make it work. We always have, we always find a way.”

7 // The Custodian Fixer

Under the staircase landing of the chawl, resides an electrician. He first started coming with his father, but since his father’s death and the loss of his shop, he dropped out of school and started doing electrical work. As residents started installing air conditioning, televisions, and other technologies in their homes, he became the go-to person for any issues. He also addresses water issues and other problems in the chawl. They allowed him to take up 2 feet of space beneath the staircase, which over the years has grown to be more of a permanent fixture.

Ambivalences always arise between assigned work tasks and additional care work. Beyond his primary responsibility for maintenance and repair, he organizes a variety of social activities, acting as the caregiver and contact person for the older residents. He is regularly present to organize social get-togethers such as coffee and cake, lunch, or game afternoons. Everyone treats him like a son - he’s been here for 20 years. The residents are attentive, feel responsible for each other, and are also competent in performing maintenance and caring work.

The boundaries between where he works and sleeps are a blur. At night, he sleeps next to his set up under the landing. One of the neighbors offered him a charpae, which he drags out from the corridor to his now collapsed workspace. Dwelling for him is inextricably tied to work. He also acts as security for the remaining residents of the chawl, and has many a stories about deterring robbers and other unsavoury characters. He made friends with someone who runs a cloud kitchen out of his chawl, and he offers him lunch on most days for 50 rupees. Otherwise, he eats at the last remaining mess nearby, made for people from the informal work sector.

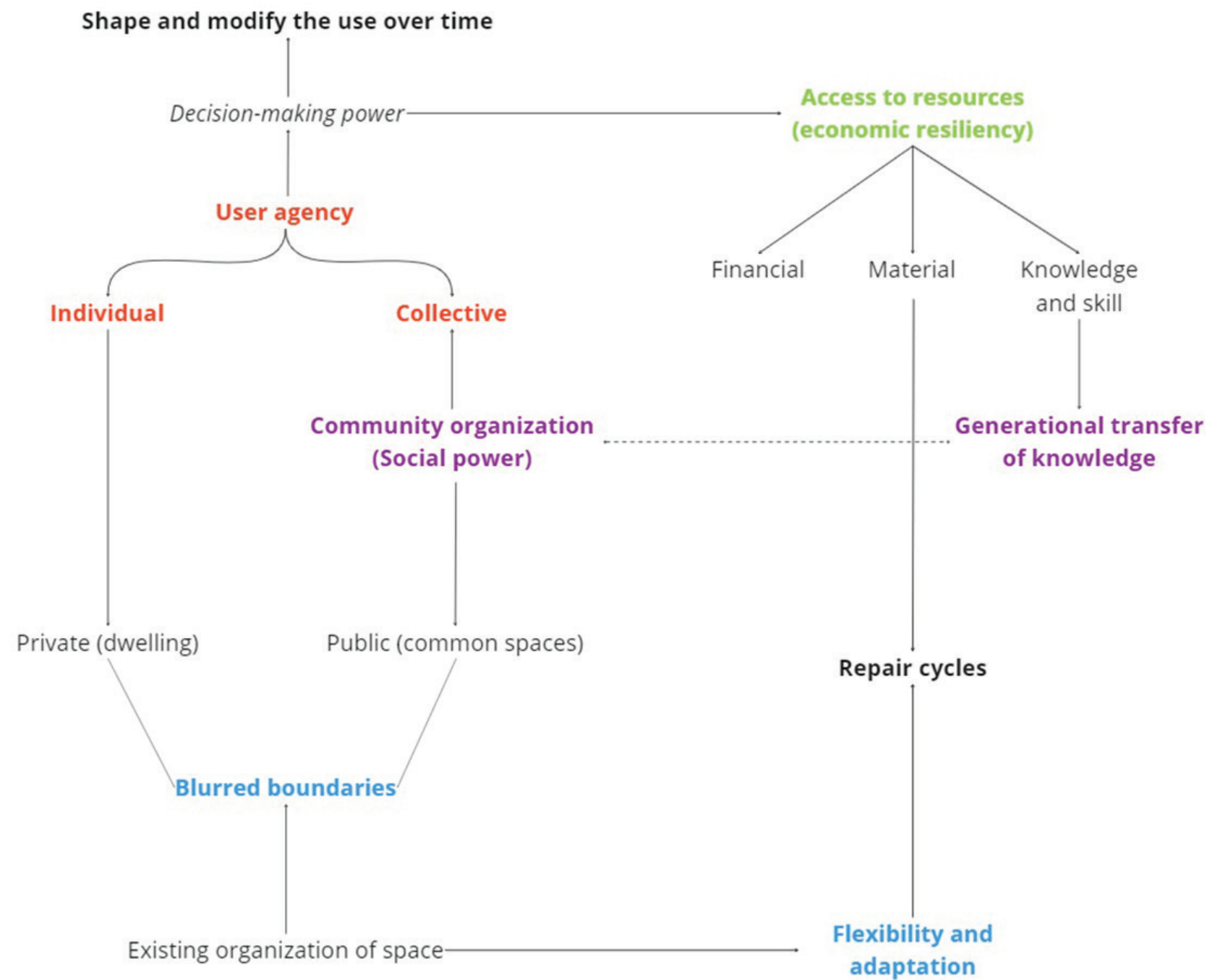


Fig. 6.1 Diagram of systems that enable repair.

Systems that Enable Repairs

The chawls of Mumbai represent a unique interplay between individual and collective agency of the users, access to resources, funding, and economic resilience, as well as the exertion of social power through community organization. Moreover, the blurred boundaries between public and private spaces within the chawls contribute to a sense of community and shared experience, while the flexibility and adaptability afforded by the existing building structures enable a visibility and dynamism in the reappropriation of spaces by the inhabitants. Furthermore, the lifecycle of these structures and their repair cycles and its complex dynamic has been the result of the generational transfer of knowledge and the tacit culture of building that characterizes these spaces.

They reveal the ongoing effort and commitment of the community to maintain and adapt their living spaces to meet evolving needs and challenges- and are reflected in the narratives.

1. Individual and collective agency of the user- reflected in the ways the inhabitants take initiatives to improve their living conditions, both individually and collectively. For example, Deepa's ingenious solution for shopping without navigating the stairs, and Mr. Sharma's suggestion to tile the walls, which was implemented with contributions from all neighbors.

2. Access to resources, funding, economic resilience- reflected in the ways the inhabitants manage to finance and carry out renovations and repairs despite financial constraints, as seen in the case of Mr. Sharma and his family.

3. Social power through community organization- reflected in the collective decision-making and pooling of resources for common goals, as well as the support system created by the inhabitants, as seen in Deepa's relationship with her neighbors and the vendors, and the community's response to Mr. Sharma's suggestion.

4. Generational transfer of knowledge/ tacit culture of building- reflected in the way the electrician under the staircase has taken over his father's role in the community and become an indispensable part of it.

5. Blurred boundaries of public private spaces- reflected in the way the inhabitants use common areas for personal activities during renovations, and in the electrician's living and working space under the staircase landing.

6. Flexibility, adaptability afforded by the existing building (visibility and dynamism of the reappropriation)- seen in the way the inhabitants creatively adapt and modify their living spaces to meet their evolving needs, as in the case of Deepa and Mr. Sharma.

7. Lifespan and repair cycles- evident in Mr. Sharma's observation about the layers of paint on the walls and the ongoing efforts of the community to maintain and adapt their living spaces.

CONCLUSION

Repair as a Strategy

Repairing Chawls

The Culture of Reuse

Future Implications

Stitching

Conclusion

Repair as a Strategy

Chawl households and neighbourhoods usually constantly repair their houses to improve quality and reflect their aspirations. It involves processes, mobilizations, negotiations, and design engagements to produce, repair, and improve their homes, sometimes while living in them. Migrants arriving in the city for work usually have temporary housing, generally excluded from state initiatives. Their homes are artifacts of impermanence, excluding them from the larger housing discourse. Their temporary building practices over the existing remnants of post-colonial buildings are usually framed as something other than an architectural question. However, the living conditions of migrants, suspended between precarity and temporality, are a central aspect of urbanization. Many are subjected to eviction threats and displacement, a ubiquitous phenomenon. By reframing their situated spatial practices and the heterogeneous components accompanying them, we can start to visibilize repair working within this precarity, claiming its stake in the city. The visible repairs in BDD chawls can be framed as a form of agency- it's important to understand that marking an object can have political implications, not necessarily in a programmatic sense, but more importantly, in terms of establishing one's presence in an objective manner. It highlights the need to establish some type of systemic support for these already existing networks and practices, instead of immediately deeming them as illegal or encroachers.

Repairing Chawls

Dwellings, in their nature, are constantly evolving, expanding, contracting, and adapting to the needs of their inhabitants. A familiar premise in housing discourse is that there is a shortage of houses, and this shortage is due to the inadequacy of available houses. This leads to people wanting to build more, newer, denser housing. The slums, or as referred to more respectfully, 'self-built' houses or chawls in Mumbai, are often cited as examples of such inadequacy. However, while valid, this dimension only paints part of the picture. Yes, people have inadequate houses, but they also have agency in finding ingenious tools to approach them. Chawls are not merely architectural forms; they symbolize the city's social fabric and history of migration, community living, survival, and resilience. They also represent a vernacular architectural response to urban housing needs, challenging conventional design and planning notions. Rather than viewing chawls solely as a problem, we can also see them as spaces that offer ingenious solutions. This shift in perspective suggests a strategy focused on repair, retrofitting, and improvement rather than a complete overhaul.

The Culture of Reuse

The culmination of this research calls for reconsidering our roles and responsibilities within the existing socio-cultural fabric. The inequitable, extractive, capitalist-driven nature of building and rebuilding processes prompts the question: Is there a more conscientious alternative? This alternative could be in the overlooked practices of repair and reappropriation embedded within the cultural context of Mumbai. Each thread of the city's tapestry holds a unique narrative, representing diverse histories, cultures, and socio-economic realities as it negotiates between the traditional and the contemporary. Mumbai has an inherent culture of reusing, repurposing, and repairing. Whether it is a street vendor using

discarded pieces of tarpaulin to patch up their canopy, a mechanic in Chor Bazaar sourcing and reapplying parts from old vehicles to new ones, or people informally and incrementally being involved in the process of building and extending their homes, this culture is present throughout the city. This perspective invites us to value the existing, the worn, the repaired, and the reinterpreted as viable, sustainable, and meaningful alternatives. It also requires us to question the ethics of the discipline, reduce barriers between architects' architecture and inhabitants, and engage in a metamorphosis of the discipline.

Future Implications

Repair and maintenance have emerged as a re-starting point across diverse fields from textile design, arts, architecture, and urban studies to technology, humanities, and social, political and cultural sciences.

Repair, as a worldview, involves integrating ethics and politics within architectural design, embracing open-endedness, acknowledging that nothing is complete, and recognizing repair as survival. This research calls for architects and designers to rethink their roles, responsibilities, and the ethics and politics of their practice in a world characterized by brokenness, inequity, and the need for reparative thinking and practice. It raises critical questions about affordable housing, the trade-off between quantity and quality, the role of repair as a tool for improvement and empowerment, and how to facilitate access to resources while empowering existing systems of repair.

In conclusion, this research underscores the urgent need for architects and designers to rethink their practice's roles, responsibilities, ethics and politics. It is a call to action to embrace a more conscientious and ethical approach to architecture and urban development, recognizing the potential of repair and reappropriation to address housing challenges and valuing the existing, the worn, the repaired, and the reinterpreted as meaningful and sustainable alternatives.



Fig. 7.1. Artefact Image 1

Stitching

Stitching or silai, in this context, serves as a metaphorical tool to map the urban fabric of the selected chawls for documentation. As a method, it signifies the act of mending, uniting, and transforming. In the context of this work, it embodies the process of repair and reappropriation, evoking a sense of continuity and evolution, even when involved in the making of a new artefact. It manifests the transformative power of small, incremental actions, as each stitch represents a decision, a moment, a part of a larger narrative.

The black thread is used to fill in the outlines of buildings that are identified as a part of the chawl typology as it sits embedded within the rest of the urban fabric.

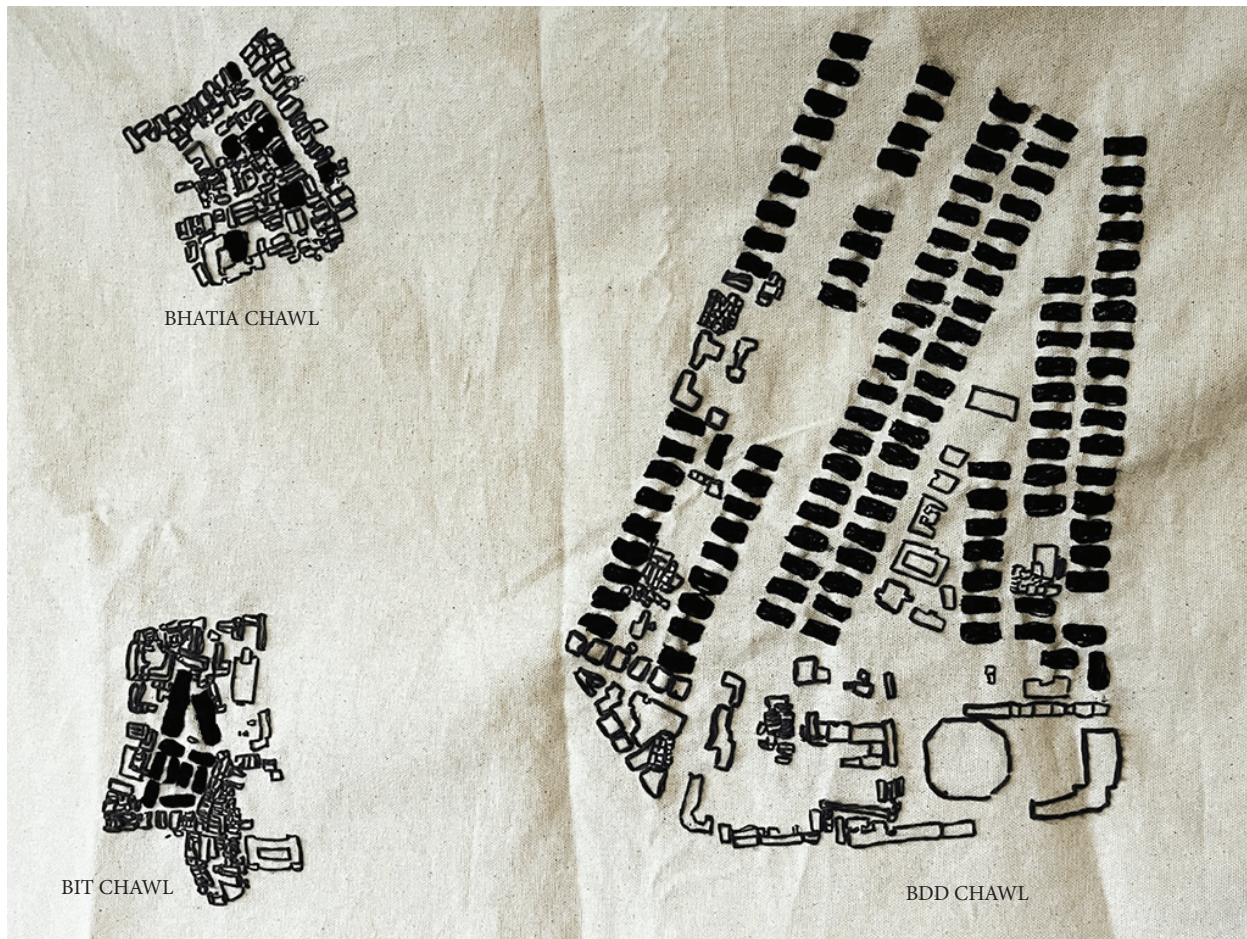


Fig. 7.2. Artefact Image 2

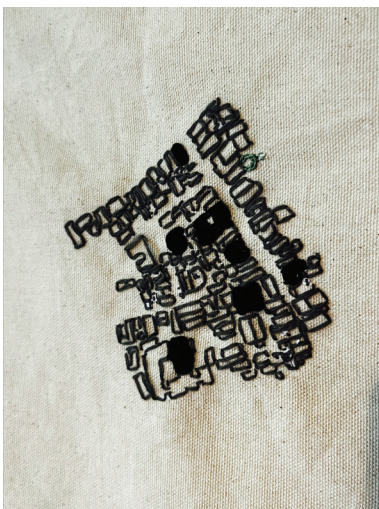


Fig. 7.3. Zoomed in site 1



Fig. 7.4 Zoomed in site 2

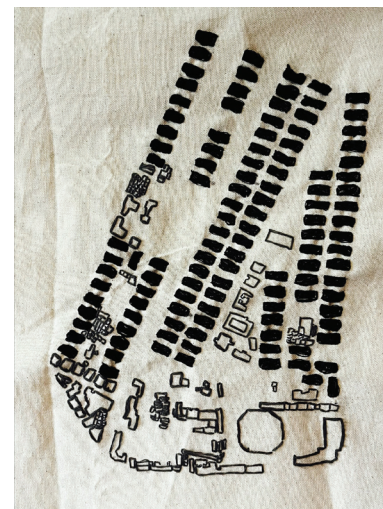


Fig. 7.5 Zoomed in site 3



Fig. 7.6. Back of Artefact Image 1



Fig. 7.7 Back zoomed in site 3



Fig. 7.8 Detail of threads in back

Exposing the back of the stitching unmasks the unseen labor and intricate processes- stories that are often overlooked, underrepresented, or erased in the dominant spatial narratives. The chaotic interweaving threads, knots, and the seemingly random patches embody the less polished, but equally significant narratives of survival, resistance, and aspirations of the inhabitants.



Fig. 7.9 Artefact as installed during defence.

LETTERS OF COPYRIGHT PERMISSION

From: info.philippecalia.com <info@philippecalia.com>
Sent: August 17, 2023 7:49 AM
To: Alifayah Merchant <alefiyah.merchant@uwaterloo.ca>
Subject: Re: Permission Request: Mumbai Chawls_Photos for Academic Purposes

Dear Alifayah,

First of all many apologies for replying so late.
Early July was a really busy time for me as I was opening an exhibition in France, after which I was travelling.
Now that I am back in India, I finally get time to reply to emails...

So to answer your question, yes I am happy to grant you permission, considering this is an academic / non-commercial project.
So I hope it is not late ?
Please let me know, in which case I am happy to share with you to share the files you have selected, and even (if you d like so) to share a wider edit with you.

Please let me know, and sorry again for the delay in answering.

With best wishes,

Philippe

PHILIPPE CALIA
Photography & Film | www.philippecalia.com | @philippecalia
Mobile: +33 761 48 72 22 | +91 98 33 49 72 76

Re: **Permission Request: Mumbai Chawls_Photos for Academic Purposes**

jp info.philippecalia.com <info@philippecalia.com>
To: Alifayah Merchant

You replied to this message on 2023-09-05 1:34 AM.

Thanks Alifayah.
I was asking about online use because then it becomes referenced on google.
And this is not necessarily the work I want to put forward at the moment for various reasons.. So for your online version you can just put P.C.
Thank you !
Philippe

Reply Reply All Forward Wed 2023-08-23 4:27 AM

On 23-Aug-2023, at 6:48 AM, Alifayah Merchant <alefiyah.merchant@uwaterloo.ca> wrote:

Hi Philippe,

Thank you so much for sending over the signed letter, I appreciate it!
I wanted to let you know that the thesis would be published on UWSpace (<https://uwspace.uwaterloo.ca/>) once it is completed- I expect it would be around October first week onwards, but I will let you know as soon as it is published, of course!
Thank you for the links- I will go through them and give you a list of the selected photos in a day or two, if that's okay.

I'll speak to you soon,
With warmth,
Alifayah

From: info.philippecalia.com <info@philippecalia.com>
Sent: August 21, 2023 5:52 AM
To: Alifayah Merchant <alefiyah.merchant@uwaterloo.ca>
Subject: Re: **Permission Request: Mumbai Chawls_Photos for Academic Purposes**

Hi Alifayah,

PFA the letter signed :) you will see that I added a few points, hope they suit you.

And here is the [link](#) to the broad edit of the BDD chawl shoot I did last
I did another one as part of [this project](#); please let me know in case you would like to see these images as well.

Once you have done your selection I can edit the files and send you the high-res.

Thanks and speak soon,

Philippe

Approval Letter

I, Philippe Calia, am pleased to grant Alefiyah Merchant explicit permission to incorporate my photographs of Mumbai into her research thesis titled 'Reparations and Reappropriations: Examining Cultures of Care, Agency, Production in Mumbai Chawls'.

The following terms and conditions apply:

1. You have permission to use the photographs provided by me exclusively for your thesis at the University of Waterloo School of Architecture.
2. You have permission to use the photographs that we agreed on and for which I provided you with the high-res edited file.
3. The photographs must be acknowledged appropriately in your thesis, stating the source and creator of the work. I would appreciate it if you could use the following format: "Photograph courtesy of Philippe Calia".
4. Any alterations and edits of the photographs for the purpose of academic explanation and clarity are within the terms of use.
5. In case the thesis will be published online, I shall be intimated beforehand

Date: 21.08.2023

Signed:



Philippe Calia

Approval Letter

I, Abhishek Mishra, am pleased to grant Alefiyah Merchant explicit permission to incorporate my photographs of Mumbai into her research thesis titled 'Reparations and Reappropriations: Examining Cultures of Care, Agency, Production in Mumbai Chawls'.

The following terms and conditions apply:

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Signed: 

Date: 5/06/23

Abhishek Mishra
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