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Charting Hybridity in Dharavi for New Potentials of Collaboration

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Abstract: Dharavi is an informal settlement in Mumbai reputed for its commercial enterprise. This article documents the spatial configuration of a typical pottery production unit in Kumbharwada, Dharavi, demonstrating the complexity and juxtaposition of prevalent uses. The manufacturing process has been recorded through extensive fieldwork and interviews with the potters on site. The paper proposes that such data, although laborious to collect, should be used to integrate user requirements into slum-redevelopment initiatives to preserve hybridity and ensure the continuation of vital urban functions and livelihoods. It illustrates the possible role of architects in such processes of collaboration for understanding, recreating, and further developing the informal spatial organization of socio-economic functions.

Keywords: Informal Settlement; Slum Redevelopment; Dharavi; Kumbharwada; Pottery.

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Introduction and Theoretical Framework

> »Dharavi is an interesting and exceptional place. Here, people live most of their daily lives within the borders of Dharavi and yet are connected to the rest of the city by the two railroads. This way of life – local, with your entire daily needs within walking distance and yet with the possibility to interact with the city around you – is an ideal situation« (Engqvist/Lantz 2008: 59).

This quote from Engqvist and Lantz attests to Dharavi's hybrid nature. The term hybridity has, until now, mainly been used in the Western context of planning and real-estate development (Fernández Per et al. 2014; Mueller 2017; Le Fort 2019). Vernacular architecture, however, is also hybrid in nature and exists across the globe (cf. Oliver 1997). Informal settlements in Mumbai are one such example. From a planning perspective, it is important to understand existing correlations of socio-economic activities, as the spatial fabric has evolved over the decades to cater to the specific needs of those who built it. Dharavi, also known as Asia's densest slum, internationally renowned for its small businesses and production units, is used as a case study for an approach towards slum redevelopment that integrates these aspects.

On November 29, 2022, the *Adani Group* won the bid to redevelop Dharavi, bringing the area back into the international debate on planning and governance. The proposed redevelopment project is to be completed within the next 17 years, with the timeline for rehabilitation set at at seven years (Adimulam 2022). Commercial establishments and the inhabitants of about 58,000 »eligible« structures are to be resettled within the settlement while an equal number of inhabitants are to be relocated to other parts of the city (Indorewala 2022; Lewis 2022). The results of negotiations with inhabitants conducted over the years for the Dharavi Redevelopment Project have been erased and an entirely new master plan will be created which no longer facilitates inhabitant participation (Indorewala 2022). The architect's role will be that of a top-down planner, imposing a scheme on an existing structure without communicating with current residents. This role is problematic since Dharavi offers not only shelter but also employment to thousands of its inhabitants. Various economic activities exist, from recycling and plastic industries to food and leather production. Artisans like potters, carpenters, and tailors also live and work here, exporting their products domestically and abroad (Engqvist/Lantz 2008; Patel/Paul 2010). These deep-rooted economic systems, or micro-ecologies, have to be integrated into redevelopment plans

to ensure the continuation of vital economic patterns, conforming to contemporary knowledge about how cities should best be configured (cf. Meerow/Newell/Stults 2016; Moreno et al. 2021; Pozoukidou/Chatziyiannaki 2021). And, according to Indorewala (2022), as well as Patel (1996), such a scheme could be possible: If Dharavi's redevelopment was carried out without the intention of making profit from extra apartments built for sale, all the inhabitants could be resettled on the site without deeming half of them ineligible. Integrating inhabitants into the planning process could also help safeguard their economic systems and incorporate these into the master plan. The authors add that since the settlement is primarily on government land, it is mainly the costs of planning and construction that inhabitants would need assistance with, an amount that the government could provide.

In this context, the article attempts to identify and document collaborations between functions prevalent in one section of Dharavi: Kumbharwada, also known as the potters' colony. It builds on the work of Patel and Paul (2010); Dovey and Tomlinson (2012); Indorewala and Wagh (2014); Rosa et al. (2014); Nijman (2015); as well as Bray and Shyam (2018b), who documented existing structures and processes in Mumbai's informal settlements on the urban scale to enable the integration of bottom-up initiatives into their redevelopment. This article deepens the existing work by extensively studying a single production unit cum household in Kumbharwada to understand the spatial requirements of current collaborative processes. This is done by analyzing existing constructions through the perspective of hybrid buildings to account for their multi-functional nature. In doing so, the article seeks not only to contribute to a better understanding of the specific case study but also attempts to show how hybridity, rooted in a specific place, should be understood as a first step toward a sustainable transformation of cities; as hybrid buildings use resources more effectively than those separated by functionalist planning (cf. Fernández Per et al. 2014; Le Fort 2019). Apart from this, the article also attempts to understand how the role of the architect as collaborator could be strengthened to deal more effectively with the environmental and social crises of the 21st century.

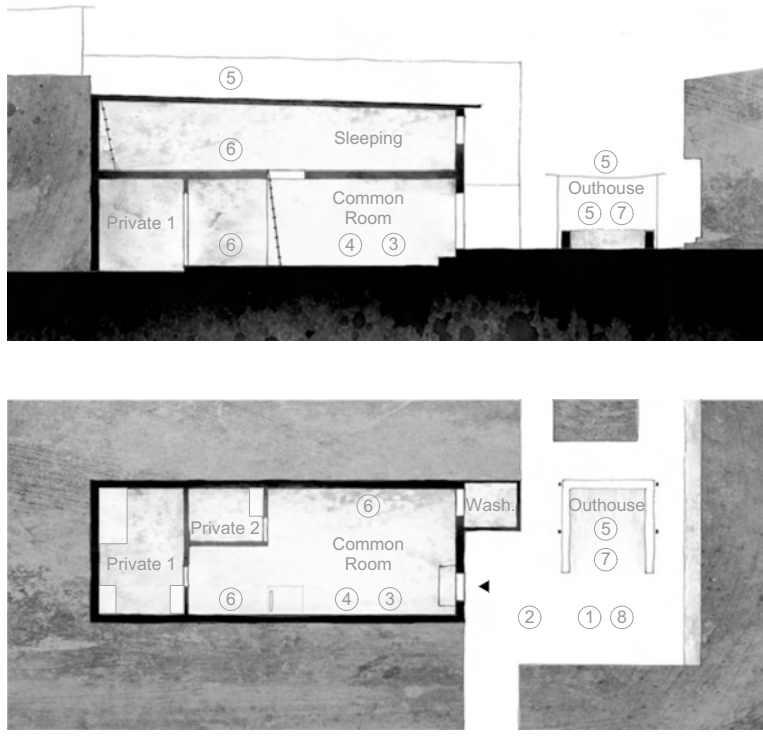
1.
Ayesha Mueller-Wolfertshofer: Kumbharwada in Dharavi, Mumbai, 2023.

Case Study and Methodology

The pottery processes in Dharavi are as old as Dharavi itself (Engqvist/Lantz 2008: 166; Patel/Paul 2010: 22). The community of Kumbhwarwada was formed in the 1800s as the potters, or Kumbhars, were shifted out of the city center due to the pollution created by their kilns (Ohlsson 2013; Bray/Shyam 2018a). Together with the leather manufacturers, they were the first businesses to settle in Dharavi, then a marshy area on the outskirts of the city (Sharma 2000; Engqvist/Lantz 2008). Over the years, the settlement grew and was engulfed by the city as it expanded to the north. Today, Dharavi consists of over one million people living in about 2 square kilometers of prime real estate in the heart of the city of the city (Patel et al. 2009). Kumbharwada covers about 2 per cent of this area and accommodates about 5000 potters that live and work here (Saglio-Yatzimirsky 2015: 95) (fig. 1). These families are fourth-generation inhabitants of Dharavi and constitute one of the settlement's three most extensive manufacturing sectors, accounting for about 18% of all production units (Saglio-Yatzimirsky 2015: 157). Their processes are deep-rooted and their artifacts internationally reputed (Burman/Datta 1971).

The article reflects on the pottery process and proposes a methodology that could be the basis for similar studies and subsequent projects in Dharavi and beyond – leading, through the integration of knowledge gained from user collaboration to a continuation of vital functions while improving aspects that are currently detrimental to the inhabitant's health as well as their economic activities. It comprises the following sections: »Collaboration in the Family and its Spatial Constellation«; »Collaboration in the Neighborhood«; and »Hybrid Principles for Redevelopment and the Need for the Architect as Collaborator«.

With a qualitative framework, this research has documented the multi-faceted use of spaces for economic purposes in one household in Kumbharwada. To collect the data, the family's confidence first had to be gained, the most difficult part of the process. With severe political and financial pressure to redevelop Dharavi, inhabitants distrust strangers, especially planners, who approach them. Without collaboration, however, explicit and implicit user requirements cannot be understood. A large amount of time was therefore spent getting acquainted with the family whose home was to be examined before interviews were conducted. This is the first step in an alternate role of the architect, who, to become a collaborator, first has to become an acquaintance. Even so, not all interviews could be documented.



1 Loading / Unloading
2 Mixing Clay
3 Storing Mouldable Clay
4 Throwing Clay - Potters' Wheel
5 Drying Clay
6 Storing Shaped Clay
7 Firing Shaped Clay in Kiln
8 Packaging finished Artifacts

2.
Ayesha Mueller-Wolfertshofer: Constellation of uses in the pottery unit, 2023.

The fieldwork took place in two phases. The first was from February to March 2022 and consisted of gaining an overview of the area, understanding socio-economic processes, and interacting with inhabitants. The second phase of research occurred during the monsoons in September 2022 in order to study the changes in the production process during this period. Communication was in the national language, Hindi, since most inhabitants do not speak English or any other foreign languages. The exact location of the unit will not be disclosed in order to retain the family's anonymity.

Collaboration in the Family and its Spatial Constellation

The unit studied is the home of a family of five: the grandmother (80 y.o.) with her her two sons (40–50 y.o.), daughter-in-law (40 y.o.), and grandchild (15–20 y.o.). A worker who mixes clay for the family (50 y.o.) also lives with them and pays rent. While the granchild goes to school, the sons tend to the family's financial needs. The daughter-in-law assists her husband and his brother in their economic processes, as well as the grandmother in the domestic chores. The close proximity between domestic and economic activities is an important feature that enables the family members to carry out different tasks-like watching over children or caring for the sick-flexibly, while collectively ensuring financial stability.

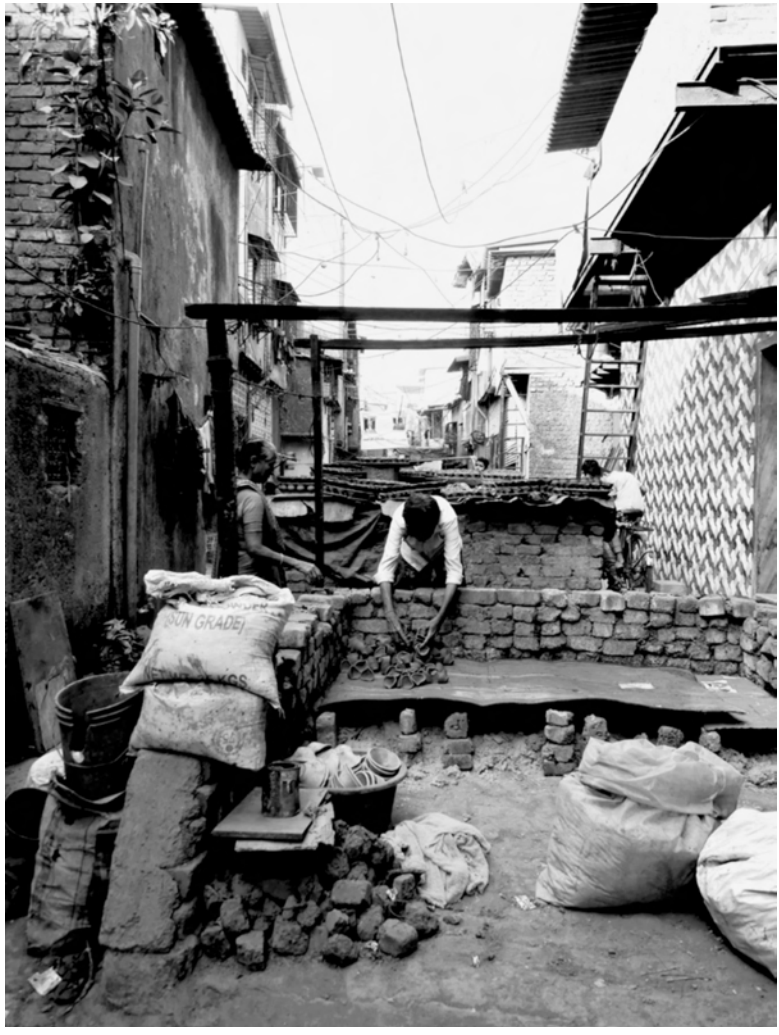
The unit, with a similar layout to others in the neighborhood, is long and rectangular. It covers about 60 square meters and only has openings on one side (fig. 2). It has two private rooms on the ground floor. The larger room is mainly used by the grandmother to cook and sleep in, as she is no longer able to access the upper floor. The smaller room is a private area for the daughter-in-law and is mainly used for cooking. Both rooms open into a large common area for production. A ladder connects this common room with the upper floor, where the rest of the family and the worker sleep. The ground floor has been extended with a small washroom containing a toilet on the outer facade. There is an open outhouse of about nine square meters opposite their entrance, which is converted into a kiln when required. Work with wet clay is restricted to the production room and areas outside the home to reduce the spread of soil and moisture in the areas for domestic activities. The private rooms are used for storing clay artifacts when necessary. The unit is predominantly constructed of brickwork and incorporates recycled materials for doors, windows, roofs, interior partitions, and other elements.

3.
Ayesha Mueller-Wolfertshofer: Mixing of clay, 2023.

The work process, as explained by the family and observed in the field, is as follows: Clay soil is brought to the settlement by trucks from Gujarat, the state from which the family originates. The soil is transported in sacks and delivered to the family's doorstep by laborers. The family buys one tonne at a time, which is usually processed within four days. Once the sacks are delivered, the powder is spread on the ground outside the entrance and mixed with water to create the clay with which they work. This is done by the worker who lives with the family (fig. 3). The clay is then cut into workable pieces and thrown onto the potters' wheel in the common room. Within seconds a handmade Dia, an Indian oil lamp, or a small earthen pot is shaped and placed to dry. The family explained that, when placed in the open, either in the shed outside the home or on the roof of the unit, the shaped clay dries in a day because of its exposure to sunlight and wind. If left indoors, it needs three days until it is ready to be burned. The family's daily routine thus consists of throwing clay, forming work-pieces, leaving them out to dry during the day, and finally bringing them into the dwelling at night, until enough of the pieces are accumulated to be burned.

The process of firing the clay artifacts takes over a day and occurs about once a week, in summer and winter. For this, the outhouse is converted into a kiln (fig. 4). The first step is preparing the layers of waste cotton and insulation material. The family did not specify what these consist of; it was only mentioned that the kiln can burn for long periods and reach temperatures of about 1200 Celsius degrees. A metal sheet is placed over this material and the molded clay forms are stacked on it. Metal sheets and roof tiles then protect the forms on the top before another layer of fabrics and insulation material is used to cover the entire mass. Once completed, the furnace is lit, and the clay is burnt for a few hours. According to the family, the clay must be burned for four hours at a temperature of 1200 Celsius degrees. The smoke created by this process spreads into all of the households in the immediate surroundings (fig. 5). The burned clay is left to cool overnight and collected the following day.

The shaped clay forms, once burned, are transported to shops and workshops throughout the city. The family states that their business is not registered, so they do not have a permit for retail sales. Therefore, they only work for orders they receive from known clients and sell their artifacts to them at wholesale rates. The Dias, for example, are transported to workshops where they are painted using bright colors before they are sold as oil lamps in shops. Small earthen containers are filled with milk sweets like rabdi or lassi



4.
Ayesha Mueller-Wolfertshofer: Creation of the kiln,2023.

before they are likewise sold in shops. Other objects like pots, are re-sold by merchants as they are. As the artifacts are packed and delivered to the customers by hired workers, the family prepares for the next pottery batch, thus entering a new cycle of production.

This process changes during the monsoon period, which usually lasts from June to September and is characterized by massive rainfall. During the site visit at this time, the family stated that work was much slower. This was confirmed by observation in the field: although the shaped clay had been placed under fans in their private rooms for over a week, it still hadn't dried. Almost all of the steps in the production process are conducted within the home during the monsoons, leading to very cramped conditions. The clay is prepared and cut for throwing in the common room. The potters' wheel is surrounded by shaped clay left to dry. Molded clay is also placed in all the private rooms, under fans, in an attempt to accelerate its drying. The only processes undertaken outside are firing the clay, and water collection (fig. 6). The furnace is constructed the same way as in summer or winter, with metal sheets placed over it for protection from the rain. Barrels are also placed outside to collect water for mixing the clay, as well as for domestic purposes. The extremely high humidity delays the whole manufacturing process, which accounts for the family's reduced income during this season, along with their cramped living conditions.

Humidity levels are not however, the only cause of economic loss during the monsoons. Mumbai often faces severe problems due to flooding and the people worst affected belong to the informal sector (Hallegatte et al. 2010; Patankar/Patwardhan 2016). They are forced to vacate their homes when water levels rise too high, which causes the destruction of, and damage to, their homes and places of work, sometimes resulting in a loss of life (Indorewala/Wagh 2018; Shantha 2018; Goyal 2021). In one of the interviews, the family stated that they are not insured. Any loss they experience, the family has to bear on their own, there is no assistance from the authorities. This places the family in a highly precarious position.

Collaboration in the Neighborhood

There is a strong sense of community among all the potters living and working in Kumbharwada. They share the same ancestry, from Gujarat, and religion, Hinduism. The structures have evolved for over a century, catering to their socio-economic requirements, and have resulted in the built environment

5.
Ayesha Mueller-Wolfertshofer: Smoke created during firing clay artifacts,2023.

6.
Ayesha Mueller-Wolfertshofer: A metal roof over the kiln and water collection in the monsoons, 2023.

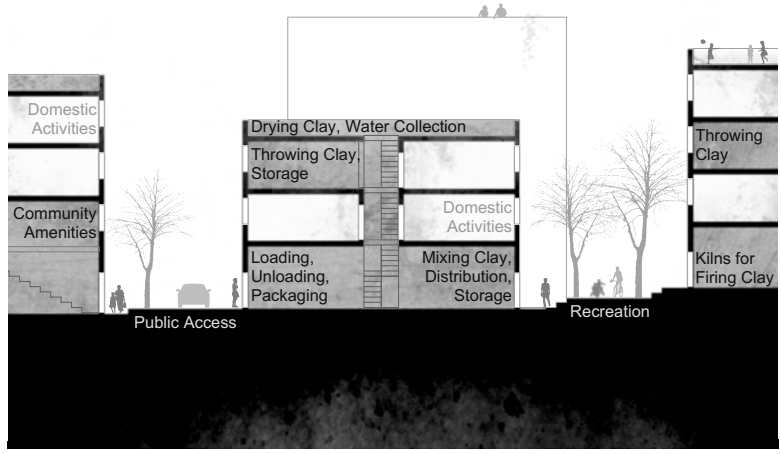
seen today. Although the spaces are private, external areas are used communally for shared festivals and ceremonies, an example of which is the creation of an idol of Lord Ganesh by the neighborhood and their procession to the sea during Ganesh Chaturthi.

Since inhabitants largely follow the same manufacturing techniques, their processes are carried out in sync with other households; with collaboration taking on several forms: Kilns are shared for burning clay, as households next to each other are often at different stages of the production process. These staggered processes enable the family's lodger, who mixes the clay, for example, to be employed by other production units in the area. There is also a Muslim family who coordinate the import of clay to Kumbharwada. Sacks of clay are stacked into trucks in Gujarat, about 17–18 tonnes per truck, then transported to the area, unloaded, and distributed to the potters according to the orders given. Staggered processes enable a cost-effective and continuous workflow of import and distribution by a relatively small number of people with fixed occupations. Similar tendencies can also be seen in the packaging and transportation processes of finished artifacts. In addition to the synchronization of production cycles, the potters, at times, also work for each other. For example, one of the brothers in the family studied also shapes clay in a larger manufacturing unit nearby for additional income. A micro-ecology is thus formed, with co-relations and dependence on one another at various steps of the manufacturing processes, where the synergy of collaboration profits the entire neighborhood.

Collaboration also means that if there are problems, all the other actors are directly affected. When pottery processes dramatically slow down during the monsoons or in the case of natural calamities like floods, the connected businesses of transportation or mixing clay also suffer significant losses. Safeguarding and enhancing pottery processes would therefore strengthen the entire micro-ecology.

Hybrid Principles for Redevelopment and the Need for the Architect as Collaborator

The built environment in Kumbharwada is hybrid, making maximum use of the space available with residential and commercial processes intertwined. Spaces are used flexibly depending on the stage of production or season of the year. Only a redevelopment initiative that understands, as well as integrates, existing processes could improve the conditions for inhabitants by



7.
Ayesha Mueller-Wolfertshofer: Schematic section of hybrid redevelopment, 2023.

keeping socio-economic relations and livelihoods intact. This section reflects on the data gathered during the research and hypothesizes possibilities for redevelopment.

One idea is a vertical separation of the now primarily horizontal connection between functions. If residences were planned above the ground floor, inhabitants would not only be protected from heavy flooding during the monsoons but would also live at a greater distance from noise, pollution, and insects belonging to the immediate surroundings, aspects favored by inhabitants as discovered by Sanyal and Mukhija (2001: 2052). An essential aspect of retaining hybridity is, however, maintaining close proximity between areas for production and domestic activities and enabling the flexibility of uses as in the present circumstances (fig. 7). Another aspect is the activation of roof areas. Currently, these areas are being used for drying clay, albeit without safety considerations. Replacing ladders with stairways and installing railings are measures that would improve the inhabitants' safety and make it easier for people with restricted mobility to access the upper floors of buildings. If appropriately planned, roof areas could also collect water for clay production and domestic use during the monsoons, enhancing current processes and conserving resources. If implemented on a large scale, rainwater harvesting can help reduce flooding during heavy rainfall. Another idea is the improvement of sanitary conditions in living areas by confining clay work to production zones. Although work with wet clay is restricted to the production room and areas outside the unit examined in this article, soil and moisture still spread into domestic areas. Separating these areas could improve hygiene for inhabitants.

Ideas for improvement were also found at the neighborhood level. Since kilns are already shared in current processes, units could be combined, used collectively, and fitted with cost-effective filtration systems to drastically reduce air pollution in the immediate surroundings. Having fixed kilns of superior quality would also reduce the work involved in re-building the small kilns each week, for each family, as observed in the current processes. Areas for unloading and distributing sacks of clay could also be optimized along with zones for mixing clay and distribution. Another option to be considered is the collective use of dehumidifiers to maintain production cycles during the monsoons. Integrating areas for public amenities and recreation is yet another vital aspect that redevelopment projects must facilitate (cf. Patel/Sheth/Panchal 2007; Indorewala 2018). Flexible spaces for community use can be designed within hybrid buildings to integrate amenities for

requirements like education or healthcare. When zones outside buildings are no longer required for production they can also be collectively used for cultural and recreational activities. If these areas are transformed into green areas, they could provide additional climatic advantages of water absorption during the monsoons and heat regulation in the summer.

To plan the redevelopment of Dharavi, more qualitative as well as quantitative research is required. One major aspect to be addressed is that of financing the project. For this, data about the exact number of inhabitants and their financial status is needed, to understand which citizens require financial assistance and which can contribute to the cost of redevelopment. In one of the interviews with the family, for example, it was mentioned by the grandmother that the family would like to renovate and extend their house. Some units in Kumbharwada have already been extended by the inhabitants, into three- or four-story buildings, to accommodate their growing families. This demonstrates that certain families are able to cover the costs of simple construction. These families would only need assistance in planning and implementing technology in their hybrid buildings – like the air filtration systems in kilns, water-harvesting methods, or the integration of green spaces. Similarly, further data is also required on sources of pollution in the area, inherent inequalities and precarious living and labor conditions, for a more wholistic approach towards redevelopment in general.

This research is the beginning of an alternative approach toward, not just the redevelopment of Dharavi, but the development of sustainable cities worldwide. Crucial to the success of such a method is a fundamentally different role of the architect than the one envisaged by developers and authorities. When architects become collaborators, based on a thorough and continuous dialogue with inhabitants, making their implicit practices explicit and formulating them in plans, the essential principles of vernacular architecture can be retained and directed toward a new developmental phase. Such a different role of the architect could help to identify and incorporate other beneficial properties of this architecture. Aspects of circular economies (cf. Dabaieh/Maguid/El-Mahdy 2021) are for example, embedded into their micro-ecologies, like the potters' use of waste cotton for firing the kiln, rainwater collection during the monsoons or the inclusion of recycled materials in the construction of their buildings. Such processes can only be observed, understood, documented, and integrated into planning strategies if attention is paid and a new role of the architect accepted.

Conclusion

Within the various districts of Dharavi, deep-rooted economic systems – or micro-ecologies – have grown over the decades, with collaboration at different stages of the manufacturing process. An example is the potters' unit studied in this article. The preservation of these micro-ecologies is essential, not just for inhabitants to retain their economic autonomy but also to strengthen the settlement, and thus the city in general. As in most of the world's urban areas, the data to understand such relationships is scarce; laborious fieldwork, such as exercised for this article, is necessary to discover, understand, and document them. While this study clearly indicates that the hybridity of buildings is fundamental to how the life of the family and the neighborhood is organized and should be retained, it also provides ideas for redevelopment. It is an attempt to show the depth of the results that can be achieved through the method of collaboration. While this method is not new, the case study proves its effectiveness.

In taking the inhabitant's perspective and trying to understand their livelihood and reasoning, the architect becomes their accomplice. The architect's role thus becomes a vital one: Not just for spatial mapping but through collaborative techniques that make informal, hybrid processes tangible for planning initiatives. It is the only way in which implicit user requirements, whether social, cultural, or economic; can be understood, recorded, and incorporated into development initiatives. In the future, our urban surroundings will have to be intelligently transformed from their present condition; the according techniques and mindset will be decisive architectural tools.

Acknowledgments

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References

Adimulam, Sweety (2022): »Adani Group Wins Bid for Dharavi Redevelopment Project«, in: *The Indian Express*, https://indianexpress.com/article/cities/mumbai/ adani-group-wins-bid-dharavi-redevelopment-project-8296428/, accessed December 20, 2022.

Bray, Cameron/Shyam, Krisha (2018a): »Kumbharwada – A Pottery Village«, in: *Make in Dharavi*, https://urbz.net/articles/kumbharwada-pottery-village, accessed December 6, 2022.

Bray, Cameron/Shyam, Krisha (2018b): »Kumbharwada – Incremental Innovation to Reduce Pollution«, in: *Make in Dharavi*, https://urbz.net/index.php/articles/kumbharwada-incremental-innovation-reduce-pollution, accessed December 6, 2022.

Burman, B.K. Roy/Datta, M.S. Shri (1971): »Pottery at Kumbharwada Maharashtra«, in: *Census of India 1961* I, 6.

Dabaieh, Marwa/Maguid, Dalya/El-Mahdy, Deena (2021): »Circularity in the New Gravity: Re-Thinking Vernacular Architecture and Circularity«, in: *Sustainability* 14/1, 328.

Dovey, Kim/Tomlinson, Richard (2012): *Dharavi: Informal Settlement and Slum Upgrading*, Melbourne: The University of Melbourne.

Engqvist, Jonatan Habib/Lantz, Maria (2008): *Dharavi, Documenting Informalities*, Värnamo: Fälth Hässler.

Fernández Per, Aurora/Mozas, Javier/Arpa, Javier (2014): *This Is Hybrid: An Analysis of Mixed-use Buildings*, Vitoria-Gasteiz: a+t architecture publishers.

Goyal, Anubhav (2021): *Strategies and Approaches Pertinent to Public Space For Addressing Floods: An Assessment From Coastal Urban Slums in India*, Lisbon: University of Lisbon. doi: 10.5821/ siiu.10153

Hallegatte, Stéphane et al. (2010): »Flood Risks, Climate Change Impacts and Adaptation Benefits in Mumbai«, in: *OECD Environment Working Papers* 27, 1–61.

Indorewala, Hussain (2018): »Resettling the City: Discriminatory and Environmental Deregulation in Mumbai«, in Design Cell, Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies (KRVIA) (eds.), *Building Inclusive Urban Communities*, Mumbai: 3–29.

Indorewala, Hussain (2022): »Dharavi Dreams: The New Redevelopment Plan Ignores the Rights of the People who Built It«, in: *Scroll.in*, https://scroll.in/article/1039858/dharavi-dreams-the- new-redevelopment-plan-ignores-the- rights-of-the-people-who-built-it, accessed December 18, 2022.

Indorewala, Hussain/Wagh, Shweta (2014): *Malvani People's Plan: A Study and Physical Plan for the Development of the Malvani Area of Mumbai*, Mumbai: Design Cell, Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies (KRVIA), Youth for Unity and Voluntary Action (YUVA).

Indorewala, Hussain/Wagh, Shweta (2018): »Here's Why Mumbai Floods Year After Year«, in: *TheWire*, https://thewire.in/urban/mumbai-heavy-rains-floods-reasons, accessed December 15, 2022.

Le Fort, Barbara (2019): »Heterogeneous Urban Fabrics. Typo-Morphological Diversity as Enabler of Urban Resilience: The Case of Brussels«, 2nd International European Urbanisms Seminar, Leuven.

Lewis, Clara (2022): »Adani Group Bags Dharavi Redevelopment Project with Bid of Rs 5,000 Crore«, in: *The Times of India*, https://timesofindia.indiatimes.com/city/ mumbai/adani-group-bags-dharavi-redevelopment-project-with-bid-of- rs-5000-crore/articleshow/95860546.cms, accessed December 20, 2022.

Meerow, Sara/Newell, Joshua P./Stults, Melissa (2016): »Defining Urban Resilience: A Review«, in: *Landscape and Urban Planning* 147, 38–49.

Moreno, Carlos/Zaheer, Allam/Didier, Chabaud/Catherine, Gall/Florent, Pratlong (2021): »Introducing the 15-Minute City: Sustainability, Resilience and Place Identity in Future Post-pandemic Cities«, in: *Smart Cities* 4/1, 93–111.

Mueller, Ayesha (2017): *Industrie Wird Stadt: Transformation of the Industrial Neighbourhood Berlin-Steglitz*, Master Thesis at the Munich University of Applied Sciences.

Nijman, Jan (2015): »India's Urban Future: Views from the Slum«, in: *American Behavioral Scientist* 59/3, 406–423.

Ohlsson, Helena (2013): *Gendered Spaces, A Socio-Spatial Study in the Informal Settlement Dharavi in Mumbai*, Master Thesis at the Blekinge Institute of Technolog, Stockholm.

Oliver, Paul (1997): *Encyclopedia of Vernacular Architecture of the World*, Cambridge: Cambridge University Press.

Patankar, Archana/Patwardhan, Anand (2016): »Estimating the Uninsured Losses Due to Extreme Weather Events and Implications for Informal Sector Vulnerability: A Case Study of Mumbai, India«, in: *Natural Hazards* 80/1, 285–310.

Patel, Sheela/Arputham, Jockin/Burra, Sundar/ Savchuk, Katia (2009). »Getting the information base for Dharavi's redevelopment« in: *Environment and Urbanization* 21(1): 241–251.

Patel, Sheela/Paul, Aneerudha (2010): *Re Dharavi*, Mumbai: SPARC and KRVIA.

Patel, Shirish/Sheth, Alpa/Panchal, Neha (2007): »Urban Layouts, Densities and the Quality of Urban Life«, in: *Economic and Political Weekly* 42/26, 2725–2736.

Patel, Shirish (1996): »Slum Rehabilitation in Mumbai: Possible if Done Differently«, in: *Economic and Political Weekly* 31/18, 1047–1050.

Pozoukidou, Georgia/Chatziyiannaki, Zoi (2021): »15-Minute City: Decomposing the New Urban Planning Eutopia«, in: *Sustainability* 13/2, 928.

Rosa, Marcos/Weiland, Ute (eds.) (2014): *Handmade Urbanism: Mumbai, Sao Paulo, Istanbul, Mexico City, Cape Town: From Community Initiatives to Participatory Models*, Berlin: Jovis.

Saglio-Yatzimirsky, Marie-Caroline (2015). *Dharavi: From mega-slum to urban paradigm*, Delhi: Taylor & Francis.

Sanyal, Bishwapriya/Mukhija, Vinit (2001). »Institutional Pluralism and Housing Delivery: A case of Unforeseen Conflicts in Mumbai, India«, in: *World Development* 29/12, 2043–2057.

Shantha, Sukanya (2018): »As Mumbai Rains Wreak Havoc, Slum Dwellers the Worst Affected«, in: *TheWire*, https://thewire.in/government/as-mumbai-rains-wreck-havoc-slum-dwellers-the-worst-affected, accessed December 15, 2022.

Sharma, Kalpana (2000). *Rediscovering Dharavi: Stories from Asia's Largest Slum*, India: Penguin Books.