Housing Adaptation: The Fall and Rise of Modernist Residential Districts

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By

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This thesis analyzes design strategies used to adapt modernist housing projects. During the first decades of the twentieth century, the modernist residential district was designed as the new and standardized form of collective living in response to the mass relocation of workers from the countryside into urban production centers. These districts became the most widespread manifestation of modernist architecture, housing millions of civilians worldwide. From the turn of the twentieth-first century, these projects face physical degradation, cultural obsolescence, and socio-economic challenges. In response, we are witnessing an unprecedented number of demolitions and adaptations of these architectures. Demolition is problematic because it necessitates the eviction of residents, typically elderly and low-income, and discards usable material and energy. In contrast, adaptation becomes a vehicle for social, environmental, and cultural regeneration of cities.

Through the analysis of one hundred case studies across the world, this research reveals six distinct spatial strategies of adaptation: addition, subtraction, diversification, reprogramming, camouflaging, and augmentation. The thesis deepens understanding of eighteen case studies turning the architectural, urban, and landscape practices deployed to enable this work and their impacts on communities into visible objects of contestation and debate. Collectively, these cases describe a renewed role for designers supporting the adaptation of modernist housing projects rather than their neglect, abandonment, or demolition.

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ADRIANA PABLOS
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HOUSING ADAPTATION

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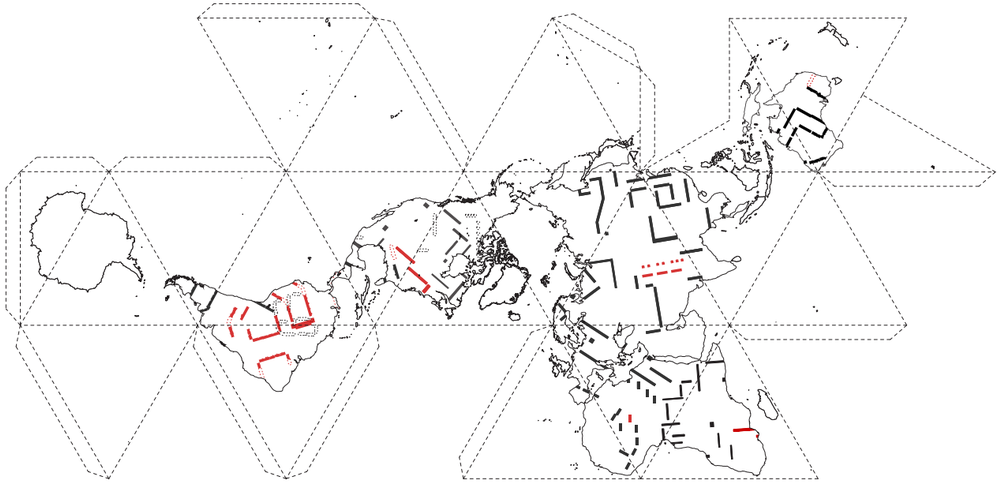

Adriana Pablos with the advice of Charles Waldheim and Eve Blau

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6 Sampling of modernist residential districts built worldwide from 1945 to 1973.

Modernist residential districts are self-contained, single-planned developments, built in exponential numbers after World War II from 1945 to 1973. They were most often built by one contractor in a limited period of time and according to the prevailing modernist design, resulting in a uniform and distinct appearance. Nation states funded the construction and maintenance of these projects to support the mass relocation of workers from the countryside to urban production centers. Modernist residential districts engineered a universal, economic, and standardized collectivity based on the nuclear family and the minimum for existence.

The adaptation of modernist residential districts has risen in the last quarter century (1995-2020). The adaptation of these housing projects is a global phenomenon that provides an environmentally sustainable solution to the carbon and energy embedded in their architectures as well as a continuity to their communities. In contrast to the homogeneity of the modernist collectivity, adaptation is driven by context. By adaptaing to the context, the modernist universal collectivity is becoming unique and local.

"I propose: one single building for all nations and climates"

Le Corbusier[1].

"Ecology must take people into account, the houses in which they live, (...) Otherwise, it's terrifying; it means moving everyone out and projecting them into a sort of better world."

Alexandre Chemetoff[2]

1 Le Corbusier. Lecture "Techniques are the very basis of poetry they open a new cycle in architecture" Saturday, October 5, 1929. Friends of the Arts. Translation by Reyner Banham in Architecture of the Well-Tempered Environment p. 159.

2 Public discussion "Ecological Neighbourhoods, Sustainable Development, and Principles of Reality" A lecture by Alexandre Chemetoff, Versailles, 2008 retrieved from "The projects of Grenoble and Allonnes or the economy of means", Journal of Landscape Architecture, 4:2, pp. 82-89.

introduction

At the start of the 20th century, the modernist residential district was designed as the new form for collective living to restructure society around modern productivity.[1] In the early 21st century, these districts have fallen into physical disrepair and cultural obsolescence. Two contrasting approaches to this degradation have emerged: demolition and adaptation. Demolition is problematic because it necessitates the eviction of residents – typically elderly and low-income – and discards usable material and energy. Conversely, adaptation offers continuity to the social, material, and cultural capital cultivated in modernist residential districts over their half a century of existence. This design research thesis focuses on emergent architectural, urban, and landscape practices deployed in the last quarter century (1995-2020) to transform these districts and the broader potentials for housing adaptation as a vehicle for the social, environmental, and cultural regeneration of cities.

The modernist residential district is the most widespread manifestation of modernist architecture. It was designed to house large numbers of rural migrants who arrived in cities in search of work at the turn of the 20th century.[2] These housing projects were planned as a universal, economical, and rapidly deployable housing solution based on the minimal existence. Their construction was informed by the technological advancements of the time including prefabrication, standardization, and sanitation. Nonetheless, the succession of two

1 During the 20th century the nature of manufacturing gradually changed. Modern productivity reflects the rise of industrial capitalism and the pressures that Fordism put on society in order to support its economic model, based on mass production and mass consumption of low cost-goods.

2 Rural flight is the migratory pattern of people from rural areas into urban areas. The rural migrants referred to in the text appeared after the first Industrial Revolution as the workforce relocated from the countryside into the urban factories. Prior to the invention of the modern welfare state, the ever-increasing demand for housing in cities resulted in an extreme scarcity and overcrowding of housing, the subsequent rise of unplanned slums, and the lack of sanitary living conditions for workers.

World Wars and the world economic downturn of the Great Depression in the 1930s pushed back the construction of modernist housing projects.[3] The post-war economic boom (1945-1973) finally fueled nation states across the world to fund the construction and maintenance of these self-contained and single-planned developments. Publicly funded modernist residential districts offered states a cost-effective way to curb the rise of insalubrious unplanned workers' slums and provide site for the allocation of mass-produced goods—key to sustaining their Fordist economic model. However, as the Keynesian economic theories of the post-war began to prove unsustainable,[4] welfare state regimes dissipated, and nations began to favor free-market capitalism. The resulting withdrawal in funding dramatically impacted the communities of modernist residential districts and the construction, maintenance, and ownership of these architectures. Cutbacks in funding have continued from the 1970s to the present, accounting for the neglect and abandonment of modernist residential districts and their communities.

In the last quarter-century (1995-2020), we have witnessed an unprecedented number of modernist residential district adaptations. In adaptation, designers' spatial knowledge is vital to assess existing conditions and potentials of the original structures, and to spatialize contemporary imaginaries of collective housing. Out of a range of design practices, this thesis documents six distinct spatial strategies of adaptation. These strategies, in addition to addressing the physical degradation of modernist architectures, spatially renegotiate contemporary challenges particular to modernist residential districts, such as new economic pressures, demographic changes, aging populations, lack of social diversity, and stigmatization. In doing so, these

3 With few exceptions. During the interwar period some innovative projects such as the Siedlungs were built. However, these projects, although very important in terms of innovation, provided only small-scale solutions.

4 Jessop, Bob (1991) The Politics of Flexibility: Restructuring State and Industry in Britain, Germany and Scandinavia. Burlington: Ashgate Publishing Company Ltd.

spatial strategies allow modernist residential districts to transition into new and contemporary collective forms that can better support the needs of their communities. The six spatial strategies in adaptation are:

- **Addition:** The spatial strategy of addition involves increasing a building's mass, multiplying its living surfaces, and optimizing its energy performance. This strategy allows modernist residential districts that have been enfolded into city centers over time to adjust to growing economic pressures.

- **Subtraction:** This spatial strategy reduces housing units in modernist blocks to mitigate their building vacancy. Subtraction allows modernist residential districts that were originally built to house workers next to sites of (now defunct) industrial production to adjust to the resulting population decline and economic deceleration.

- **Diversification:** The spatial strategy of diversification introduces alternative household structures into the repetitive nuclear family schemes of modernist residential districts. The strategy operates through strategic refurbishments, remodelings of existing units and new construction infills. As original inhabitants disappear, this spatial strategy is devoted to introducing new groups of residents.

- **Reprogramming:** This spatial strategy repurposes the extensive free ground of modernist residential districts through the (re)assemblage of its landscapes, public and private interactions, and water resilience. This program-driven spatial strategy allows modernist residential districts to renegotiate the social and economic interests of adaptation within the districts' communities and the city at large.

- **Camouflaging:** The spatial strategy of camouflaging transforms the material textures, colors, patterns, geometry, and contours of the modernist residential facades. This strategy allows modernist residential districts built under doctrines of cultural hierarchy and supremacy such as colonialism and racism, or dismantled political projects such as communism, to disguise their invalid founding ideologies and embody new ones.

- **Augmentation:** The spatial strategy of augmentation allows residents to enlarge and modify dwellings to better accommodate their needs in districts built under foreign and culturally different political regimes. This unplanned strategy reflects situations of immobility in housing choice[5] and fosters a genuine dialogue between local knowledge of construction, climate, and culture and the modernist aspiration of universality.

This thesis investigates the global phenomenon of the adaptation of modernist residential districts through the lens of space. This research establishes a methodology of analysis that focuses on the spatial operations deployed to enable the metamorphoses of modernist residential districts. The work additionally reveals participant stakeholders and the impacts of these adaptations on their communities. To do so, the thesis operates through case studies focusing on modernist housing projects that have already been adapted. From the initial survey of 100 cases, 18 case studies—three per spatial strategy—are selected to compile a manual of adaptation. Other than ascertaining that existing residents of the districts remained after adaptation,[6] personal

5 Immobility in housing choice is an often overlooked problem that affects low-income residents who cannot afford to move out of their dwellings despite a mismatch between their dwellings and needs.

6 This is key to the definition of adaptation: if residents are evicted, there is no adaptation. Following this definition, this work avoids other terms found in consolidated bibliography such as renewal, redevelopment, restructuring, retrofitting.

views and fetishisms regarding modernist housing structures have been avoided in the selection of cases in order to better highlight the breadth of architectural thinking that these adaptations reveal: from the most sophisticated to the most straightforward, and from the most politically motivated to the least. Each case study in the manual can be read separately. The juxtaposition of cases will allow the reader to discern a pluralistic vision of designers' roles when it comes to working within existing housing systems to adjust the spatial structures of outmoded economic models such as Fordism and Keynesianism, political ideologies such as communism or colonialism, and invalid social ideologies such as racism to contemporary aspirations.[7]

The breadth of spatial strategies of adaptation, design techniques, processes and scales of implementation, and aesthetics, demonstrate that the modernist idea of a universal collectivity has split into multiple models driven by the specificity of the local sphere. Adaptation is ending the isotropy[8] of the modernist collectivity. The local specificity driving adaptation delves into the architecture's immediate contexts: one strategy of adaptation and/or its implementation process may not work in two spatially alike modernist housing projects in the same city. For this reason, this thesis understands the adaptation of modernist residential districts as vehicles for the social, environmental, and cultural renegotiation of broad territories in cities. Through unique open and collaborative processes between local authorities, housing companies, developers, residents, and designers, each adaptation may reidentify new residents in the district, reshape its concrete, reconcile outdated household structures and their minimal existence with contemporary

7 This idea reflects Lefebvre's critique of urban form, by which "every [spatial] structure justifies itself through an ideology that it develops and nurtures" Lefebvre, Henri (2014) "Toward an Urban Strategy" in The Urban Revolution. Minneapolis: University of Minnesota Press, p. 136.

8 Having a physical property which has the same value independently of where it is measured.

aspirations, and redefine its future economic viability. Adaptation affords a high level of site-specificity, as well as constituent involvement.

Through adaptation, society can overwrite the inherited hegemonic modernist collectivity. As a collaborative process between stakeholders, adaptation contradicts the top-down governmental approach that gave birth to these projects and their collectivity. The adaptations that have been implemented show that national states are not the leaders in the preservation of modernist residential districts. In the 21st century, the power controlling the districts and their transformations is highly distributed among all stakeholders. As with space, there is no universal approach to renegotiating these territories. The role that each stakeholder takes expands differently in each adaptation. As a new approach to collectivity, existing communities inform the processes of adaptation with their knowledge and vision of the territory. Many local authorities and housing companies rely on this knowledge through mandatory community consultations and participatory planning. Society is also recognizing the environmental and social benefits of adapting modernist residential districts to preserve affordable housing and endorse climate mitigation through the rise of public and private grants available for that purpose. As a result, the adaptation of modernist residential districts is feasible in the contemporary era.

Housing Adaptation: The Fall and Rise of Modernist Residential Districts is structured in four chapters. The first chapter, ***Review***, introduces the reader to the modernist residential district through its history. Looking at its original mission and mass construction and then its later rejection and narrative of failure, the chapter closes by reflecting on the utility of the inherited design criticism for the adaptation process. Chapter two, ***Atlas***, presents the emerging geographies of adaptation. The atlas situates 100 cases of adaptation across five continents, 32 countries, and 62 cities. Each entry in the atlas is categorized under the six spatial strategies of adaptation and three scales of operation: small—when only a number of dwellings or one block is transformed; medium—when several blocks and/or public space are adapted; and large—when the spatial strategy of adaptation transforms the whole district. Chapter three, ***Manual***, assembles a guide for the adaptation of modernist residential districts. Its 18 cases are described through extensive drawings, collages, photographs, and texts. The manual systematically confronts the "before and after" adaptation situation as a means of depicting quantitative and qualitative coincidences and divergences in public and private life, aesthetics, construction techniques, land tenures, and delivery models. The final chapter, ***Letters***, gathers operative particularities and findings extracted from the case studies to ultimately present five proposal letters addressed to leading stakeholders who will potentially drive the adaptation of other modernist residential districts.

By exposing the abundance of adaptations, this thesis opens the global phenomenon of the adaptation of modernist residential districts to public scrutiny, turning their architectural, urban, and landscape practices into visible objects of contestation and debate. In doing so, the thesis reveals an evolving collectivity and the ways in which designers operate within the ongoing constitution and reconstitution of modernity[9] through its domesticity and culture. Finally, in light of the vast number of modernist residential districts that are still perishing in degradation, and the climatic, housing, and sanitary crises we are currently facing, this thesis seeks to inspire designers to join in the regeneration of cities through housing adaptation.

9 Eisenstadt, S. N. (2000) "Multiple Modernities". Daedalus 129, no. 1: 1-29. Accessed March 30, 2021. http://www.jstor.org/stable/20027613. p.2

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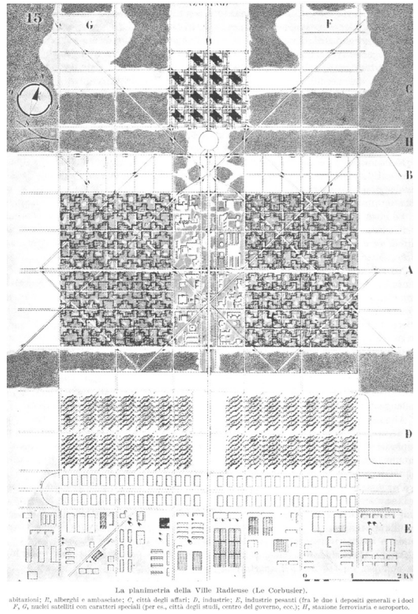


Fig. 1. Rural migrants in Spain; Fig. 2. Plan Ville Radieuse 1924

Modernist residential districts are monuments of the welfare state. The great transformations that took place in the 19th century with the development of industrial capitalism, rapid urbanization, economic growth, and intense population increase altered the social, cultural, economic, and political life at the time. These changes also destabilized the traditional forms of welfare provided by family networks, charity organizations, feudal ties, guilds, municipalities, and religious institutions, resulting in a massive pauperization.[1] Yet, the increased productivity that resulted from industrialization provided necessary resources to cope collectively with the emerging social question. By the end of the 19th century, institutional initiatives started to engage politically with social needs at local, regional, and national levels. As the turn of the 20th century was marked by a world economic depression and the succession of two World Wars, the construction boom of public housing was put on hold until the end of World War II. The post-war welfare state enjoyed a broad period of worldwide economic expansion sustained on high and continuous growth and full employment deriving from the Fordist economic model.[2] This growth finally provided states with the means to engage with the housing problem. In doing so, the modernist residential district became the housing structure through which nation states provided rural migrants with healthy and affordable dwellings near their new workplaces.

1 Swenarton, Avermaete, van den Heuvel (2015) "Introduction". In Swenarton, Avermaete, van den Heuvel, and Eve Blau, eds. Architecture and the Welfare State. First edition. London; New York: Routledge, Taylor & Francis Group, pp. 1-24.

2 G. Esping-Andersen (1990) The Three Worlds of Welfare Capitalism, Princeton: Princeton UP. And in relation to housing: Kemeny, Jim. "Comparative Housing and Welfare: Theorising the Relationship," n.d., 18.

The modernist residential district was envisioned by high modernist architects and planners in direct collaboration with politicians. Together they engineered the public provision of housing as a critical mechanism to get rid of unplanned slums and provide, economically, site for the allocation of mass-produced goods—needed for Fordism to function well.[3] Le Corbusier, with his theoretical studies for *La Ville Contemporaine* in Paris and his later master plan for *La Ville Radieuse*, spatialized the Fordist paradigm of specialization, mass production, and standardization[4] at the scale of both the city and housing. The *logement* presented proto-district housing for blue- and white-collar workers in *à redent* blocks scattered across continuous parklands. The extensive free ground floor allowed healthful air and light into the apartments, while density was accumulated vertically in the blocks' height. The modernist residential district was conceived as a mechanistic universal solution, breakable into standardized parts, easy to assemble, and ready to be mass produced. These housing districts were pliable enough to suit any political ideology. Modernist residential districts became the most frequent spatial structure in city-making during the three decades following World War II and, ultimately, the most widespread manifestation of modernist architecture.

After World War II, national states fully engaged in housing society. In the United States, the Housing Act of 1949, part of President Harry Truman's Fair Deal, expanded the role of the federal government in both public and private housing. This act authorized $1 billion in construction loans, and another $1 billion equally divided for slum redevelopment and mortgage guarantees, and set a construction goal of 810,000 units of public housing.[5] Likewise, with its sixth Five-Year Plan (1956–1960) the Soviet Union sought to double the capital invested in housing. In doing so, the number of units across the nation increased from 1.5 million in 1956 to 2.7 million in 1959—the highest yearly total ever achieved.[6] In England, where almost four million British homes were destroyed or damaged during World War II, the Parliament issued a Housing Act in 1946 that provided large subsidies for the construction of social housing. This resulted in the completion of over 800,000 local authority houses by 1951.[7] In short, the post-war economic expansion (1945-1973) witnessed widespread governmental investment in housing, unprecedented at the time and unmatched since.

The state support of public housing projects could not be maintained over time. As the Keynesian economic model of the post-war period proved unsustainable, nations began to favor free-market capitalism. By 1973, U.S. President Richard Nixon had halted national funding for numerous housing projects and crafted a new housing legislation that consolidated a market-based approach. Modernist architecture, dominated by its social ambitions, by planning, and by the preference for collectivity over the individual—and ultimately embodied by the modernist residential district—was at odds with the evolving capitalist society.[8] Though funding cutbacks varied across countries, in general

3 Based on mass production and mass consumption of low-cost goods.

4 Some authors who draw a clear connection between modernist discourse within planning practice and the rise of the Fordist paradigm include: Irving, Allan (1993) "The Modern/Postmodern Divide in Urban Planning". University of Toronto Quarterly. Summer, 474-488.; Calthorpe, Peter and William Fulton (2001) The Regional City: Planning for the End of Sprawl. Washington: Island Press; and Sandercock, Leonie (1998) Towards Cosmopolis: Planning for Multicultural Cities. Chichester, England: Wiley.

5 Committee on Banking and Currency United States Senate. Housing Act of 1949 "Summary of Provisions of the National Housing Act of 1949." July 14, 1949. Accessed April 22, 2021: https://web.archive.org/web/20160215080101/https://bulk.resource.org/gao.gov/81-171/00002FD7.pdf

6 Morton, Henry W. (1984) "Housing in the Soviet Union." Proceedings of the Academy of Political Science 35, no. 3: pp. 69-80. Accessed May 10, 2020. doi:10.2307/1174118. https://www.jstor.org/stable/1174118?seq=1

7 Michael E. Stone. (2003) "Social Housing in the UK and US: Evolution, Issues and Prospects", October. https://www.gold.ac.uk/media/documents-by-section/departments/research-centres-and-units/research-centres/centre-for-urban-and-comm/Stonefinal.pdf

8 Kaminer, Tahl. (2011) Architecture, Crisis, and Resuscitation: The Reproduction of Post-Fordism in Late-

they resulted in inferior construction materials, a lack of landscaping, and withholding of amenities. Those projects completed prior to state withdrawal experienced the removal of maintenance assistance. For the districts, the more modest the means of the residents, the direr the effects of the removal. Finally, many districts—especially outside of the United States—were privatized over the following years. In England, for instance, Margaret Thatcher introduced the Right to Buy in 1979, allowing the sale of a million social dwellings to the private sector.[9] Throughout the ensuing decades, it became a usual urban practice for states to transfer their public housing stocks.

Modernist residential districts responded to the needs and aspirations of the early 20th century society. Their mass construction reshaped the face of the Earth. Despite society's initial positive perception of modernist residential districts, within the design community these architectures became subject to a great deal of criticism. As a matter of fact, modernist residential districts have never been considered as "high" architecture, regardless of their remarkably consistent modernist logic and language.[10] To the point that the dominant reading of Modernist architecture as a failure is based on attacks against modernist residential districts. The initial body of criticism was elaborated in North America and Europe. The three most widely read contemporary critics were Jane Jacobs, Aldo Rossi, and Charles Jencks. In the first decades of the 21st century, their critical work still represents the bulk of contemporary attitudes towards the modernist residential district.

twentieth-century Architecture. New York: Routledge, p. 30.

9 Disney, Richard, and Luo, Guannan. (2017) "The Right to Buy Public Housing in Britain: A Welfare Analysis." Journal of Housing Economics 35, pp. 51-68.

10 Cupers, Kenny (2014) The Social Project: Housing Postwar France. Minneapolis: University of Minnesota Press, p. 14.

Jane Jacobs

The American Canadian journalist, author, and activist Jane Jacobs (1916 - 2006) embodied a unique "from-the-front" critical voice regarding modernist residential districts, which combined writing and activism as two lines of the same attack. *The Death and Life of Great American Cities* (1961) became her most-read work both within and outside the design community. Unlike other design critics, Jacobs widely influenced civilians' perception of modern architecture. This book introduced the new urban typology as the "city residential district".[11] The author recognized it as the new ideal neighborhood in North American planning and zoning theory. Inherited from Le Corbusier's *Ville Radieuse*, for her, it represented the "anti-city planning"[12] and became a "wrong turn in the search for understanding".[13]

To Jacobs, the failure of the modernist residential district—or city residential district as she refers to it— stemmed from its lack of diversity and its negative effects on broader city planning. Diversity, according to Jacobs, was created through four conditions: multifunction of neighborhoods—preferably more than two functions; block shortness; wide aging-range of buildings; and dense concentration of people. Modernist residential districts, illustrated by the author through the New York examples of Stuyvesant Town and Parkchester, met none of the four conditions. Indeed, these "large swatches of construction"[14] suffered from the "economic rigor mortis of one-age construction",[15] which made it impossible for them to embrace diverse populations, cultures, economies, and businesses. In Jacobs' opinion, modernist

11 Jacobs, Jane (1961) The Death and Life of Great American Cities. New York: Vintage Books, p. 176.

12 Ibid., p. 37.

13 Ibid., p. 129.

14 Ibid., p. 191.

15 Ibid., p. 195.

Fig. 3. Aerial view early 1950 of Midtown Manhattan with Stuyvesant Town and Cooper Village.

residential districts were doomed to death: "It does not smell yet, but it is just as dead, just as incapable of the constant adjustments, adaptations and permutations that make up the processes of life."[16]

The large number of modernist residential districts built during the decades following World War II agitated Jacobs. The city was being transformed into a "collection of repetitious towns",[17] and for many North American cities, the construction of these housing projects was associated with urban renewal programs. Jacobs' agitation led her to the second line of attack against modernist residential districts: activism. She became the public figure in New York who faced down stakeholders involved in urban renewal programs. As an activist, Jacobs led resistance to the replacement of urban communities by modernist public housing projects and brought the conversation about urban renewal to the street level. New York's public official, Robert Moses, a famous promoter of modernist residential districts and expressways, embodied her nemesis. Jacobs extended her criticism directly to design. Her critique granularly dug into the open space and block layout of these architectures. She found the proportion of free ground floor and the building footprint to be problematic. The low ground coverage (20-25%) stressed the need to find the most efficient way of packing dwellings into the reduced percentage of ground. As a result, the most efficient block was endlessly duplicated preventing any possibility to "reconcile high density and variation".[18] Due to the lack of block variation, ground spaces in between the blocks became all the same and therefore lost meaning. This was also aggravated by the excessive length of blocks. Finally, the disorder of conveying neither direction nor purpose prevented these spaces from being used and transformed them into hotbeds for social conflict. Jacobs' views left a lasting mark on the American understanding of modernist residential districts.

Aldo Rossi

Aldo Rossi (1931-1997) was an Italian architectural theorist, architect, and product designer. The uniqueness in his criticism comes from the construction of a discourse based on an analytical methodology and the development of a terminology to confront the legacy of modernist architecture. Conceived as an architectural project, his book *The Architecture of the City* (1966) offers an advanced rhetoric against the modernist theoretical framework. According to the author, the fragility of inherited modernist principles had left

16 Ibid., p. 198.
17 Ibid., p. 133.
18 Ibid., p. 215.

architecture under the influence of commercial taste by the mid-1950s. Overall, Rossi disapproved of the modernist denial of history, its "naive functionalism".[19] His book argues against those principles that were being mistakenly taken as dogmas or historiographical events. Rossi re-focused architecture on the city through amply discussing collective housing, and "residential districts" in particular. In doing so, he returned to the two central modernist problems—city and housing—and reprogrammed them with new meanings.

For Rossi, the modernist subdivision of the city according to functions —dwelling, work, recreation, and circulation— was misleading and incoherent since function was not a permanent condition of either architecture or the city. Functionalism could not explain the complexity of architecture and the city, which led to modernist superficial aesthetics. Modernist residential districts built under these functionalist principles were "naive",[20] "weak",[21] "too superficial",[22] and "ambiguous".[23] Rossi claimed that instead of functionalism, typology needed to be considered the new backbone of architectural discourse moving forward.

Rossi argued that for any practicing architect in the 1960s it was impossible to negate the multi-layered historical city. Therefore, it was untenable to continue with high modernist tabula-rasa logics—present in modernist residential districts. Rossi's criticism is articulated in strong opposition to the modernist denial of history and its reinvention of the city without the consideration of the past. According to the critic, without history, there was no possible understanding of the city or architecture. The city was about experiencing permanence and this permanence was found in housing and residential districts—not individual dwellings. Therefore, although amply criticizing modernist residential districts, Rossi understood these architectures as artefacts of permanence in the city. In contrast to Jane Jacobs, Rossi did foresee the continuity of these housing projects and predicted their capacity to evolve over time.

19 Rossi, Aldo (1982) The Architecture of the City. Cambridge, MA: MIT Press, p. 170.
20 Ibid., p. 46.
21 Ibid., p. 46.
22 Ibid., p. 47.
23 Ibid., p. 47.

Charles Jencks

It happened at 3:32 pm in St. Louis, Missouri, July 1972. Pruitt-Igoe, the once-promising social housing complex, came tumbling down in a matter of minutes. "Boom, boom, boom." In Pruitt-Igoe's demolition, the American architect and theorist Charles Jencks "happily" saw not just the demolition of several buildings but also the failure of an entire architectural movement. Pruitt-Igoe's destruction proclaimed the death of modernist architecture and public housing.

Charles Jencks argued in his book *The Language of Post-Modern Architecture* (1977) that the ruins of Pruitt-Igoe's modernist residential district needed to be preserved to keep alive the memory of the "failure in planning and architecture"[24] that those architectures represented. According to the author, modernist residential districts were a simplistic and reductionist solution to an "oversimplified [housing] question".[25] Modernist residential blocks, as well as other modernist buildings, were "nasty",[26] "brutal",[27] and "too big".[28] Their impersonal and reduced language "impoverished" the environment. Because modernist

24 Jencks, Charles (1977) The Language of Post-Modern Architecture. New York: Rizzoli, p. 9.
25 Ibid., pp. 12-13.
26 Ibid., p. 14.
27 Ibid., p. 14.
28 Ibid., p. 14.

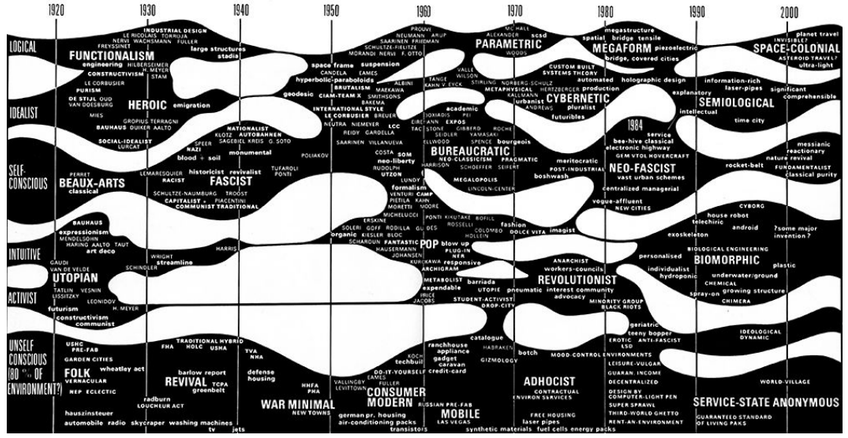


Fig. 4. Jencks, Charles "Evolutionary Tree" in Modern Movements in Architecture.

architects fetishized the means of production, they deployed an "elitist code"[29] that was insensitive to society. This code assumed not only the taste of people but also their needs. Modernist architects unilaterally designed a universal individual based on generalizing a statistical average: the "Mythic Modern Man", "Mr. Triple-M", or the "3M monster."[30] Recognizing an initial good intention from high modernist architects, Jencks condemned the Modern Movement for simplifying culture. According to the critic, this was a serious step back for the design discipline: "the major mistake architects made in this century, on this score, is perhaps to have been born at all".[31]

Charles Jencks surveyed the rich architectural plurality within modernist architecture from 1920 to 1970. With a diachronic diagram named *Evolutionary Tree*, he connected design, politics, and culture to evidence their joint variations over time. As a result, modernist

29 Ibid., p. 21.
30 Ibid., p. 25.
31 Ibid., p. 25.

architecture, understood as the original architectural response to the political and cultural context beginning in the 20th century, had lost its meaning. Jencks believed that the problematic nature of architecture—"that it crystallizes cultural values"[32]—explained the termination of modernist architecture. According to him, modernist architecture was left without much social content to symbolize, because society had changed.[33] In short, the initial problem of providing housing to the working class was no longer at the foreground, and other agents had come into play. Free markets and capitalism restructured the entire architectural realm. Architecture's production, clientele, and products changed—but, also, the contract between the state and society. By the 1970s, state-funded housing programs were no longer feasible. The demolition of Pruitt-Igoe became the final act in the state's responsibility to house society. The production of architecture—and housing—became subjected to the creation of profit through a process in which developers, landlords, and users were absent.[34] Housing was not a right anymore, but a commodity. Architects' main clientele became private corporations, demanding either profitable investment transformations or iconic symbols of their power.[35] Modernist architecture and its public housing projects were dead; postmodern architecture was born.

Throughout the three first decades after World War II, publicly funded modernist residential districts proliferated across Europe, Asia, North America, Africa, and South America, shaping a global narrative around state planning and modern architecture. The speed and scale at which these projects were developed fundamentally reshaped the

32 Jencks, Charles (1973) Modern Movements in Architecture. [1st ed.]. Garden City, N.Y.: Anchor Press, p. 372.
33 Jencks, Charles (1977) The Language of Post-Modern Architecture. New York: Rizzoli, p. 37.
34 Ibid., p. 14.
35 Ibid., pp. 10-13.

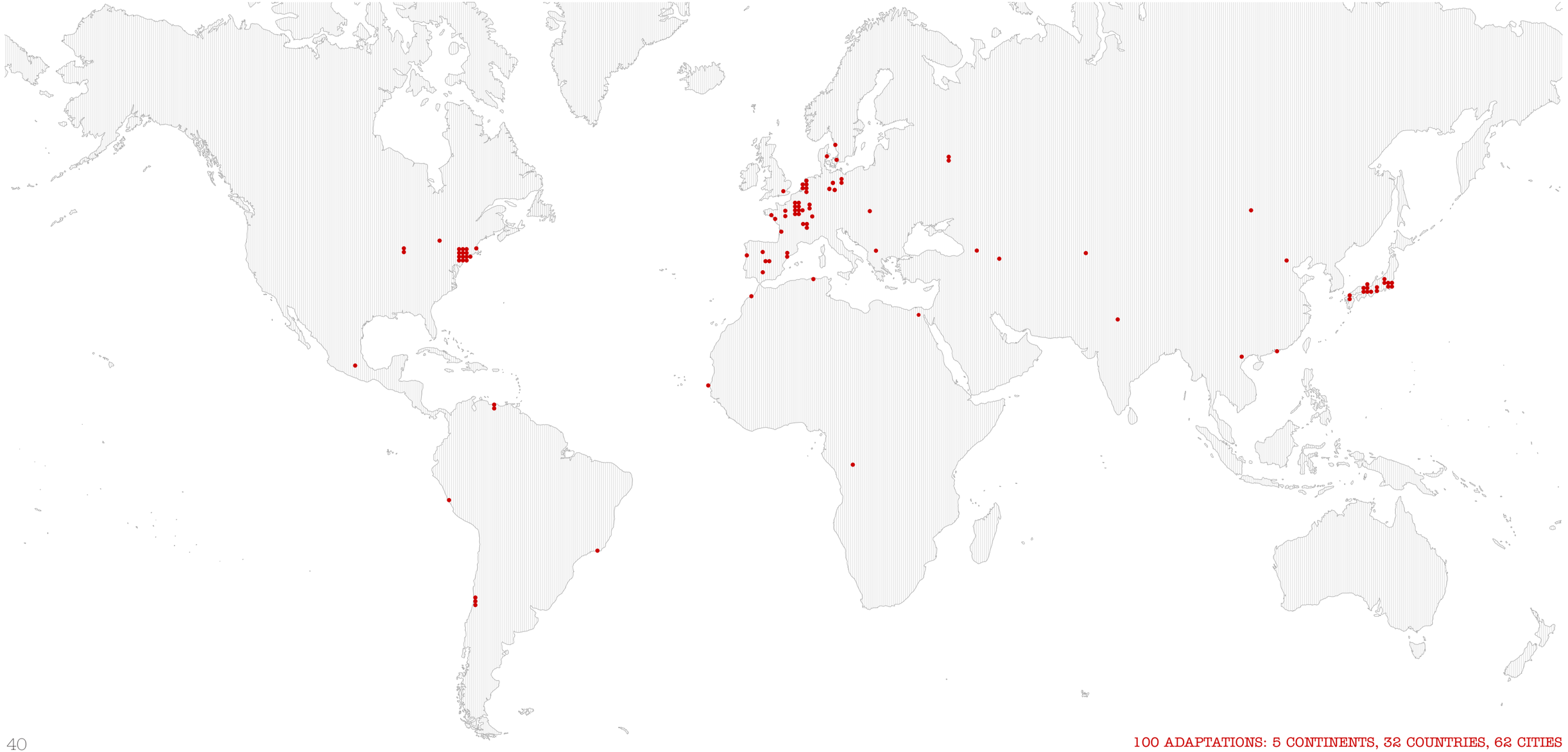
face of the Earth, while restructuring cultures. In addition to being diminished as mediocre projects, modernist residential districts became synonymous with modernism's failure. Indeed, the common portrayal of the Modern Movement of architecture as a failure—as "elitist", "oppressive", "simplistic", or "naive" —grew out of attacks on residential districts from 1945 to 1977. A survey of the three most widely read critics contemporary to the construction of modernist residential districts reveals two main threads within the failure narrative: physical determinism and discourse insufficiency. On the one hand, Jane Jacobs asserted physical determinism: that the poor design of these projects damned society. As an activist, she advocated for the existing communities that were evicted to build public housing projects in North American cities. However, she failed to consider the social challenges of the modernist communities after the withdrawal of public support. On the other hand, Aldo Rossi sought to introduce broader influences into the architectural discourse without exploring its social significance. Charles Jencks criticism combined both threads of criticism: modernist residential districts were "nasty" but also culturally obsolete. This taxonomy can be extended to other contemporary or later commentators on modernist residential districts such as Reyner Banham, Robert Venturi, Colin Rowe, and the Situationists.

Modernist residential districts remain the closest built attempt to provide housing as a public good at a global scale. Because of the vital social implications of these districts for those dwelling within, it is surprising that the leading critics of the modernist residential district—who experienced firsthand the rise and fall of these architectures, the downsizing of the state's role in society, and the accelerated commodification of housing—did not examine the social impact of these events on the communities who dwelt in these projects. Between Jacobs, Rossi, and Jencks, there was little critical evaluation of the social implications fundamental to these housing projects nor how the situation evolved after they were defunded and, in many cases, privatized. In her exploration of the economic aspects of American cities, Jane Jacobs concentrated on spatial conditions, such as scale or repetition of the districts and the length of blocks, as problematic for the economic health of the district and the city at large. Rossi only analyzed the modernist residential district in order to broaden the architectural discourse of the mid-1960s. Likewise, and in spite of structuring his criticism around a cultural change and widely discussing the fall of modernist residential districts and the transitioning ideologies, Charles Jencks failed to explore the social consequences of the withdrawal of state support on their communities. For this reason, in avoiding social implications, the two threads of critique, physical determinism and discourse insufficiency, become two sides of the same coin: that of architectural determinism.

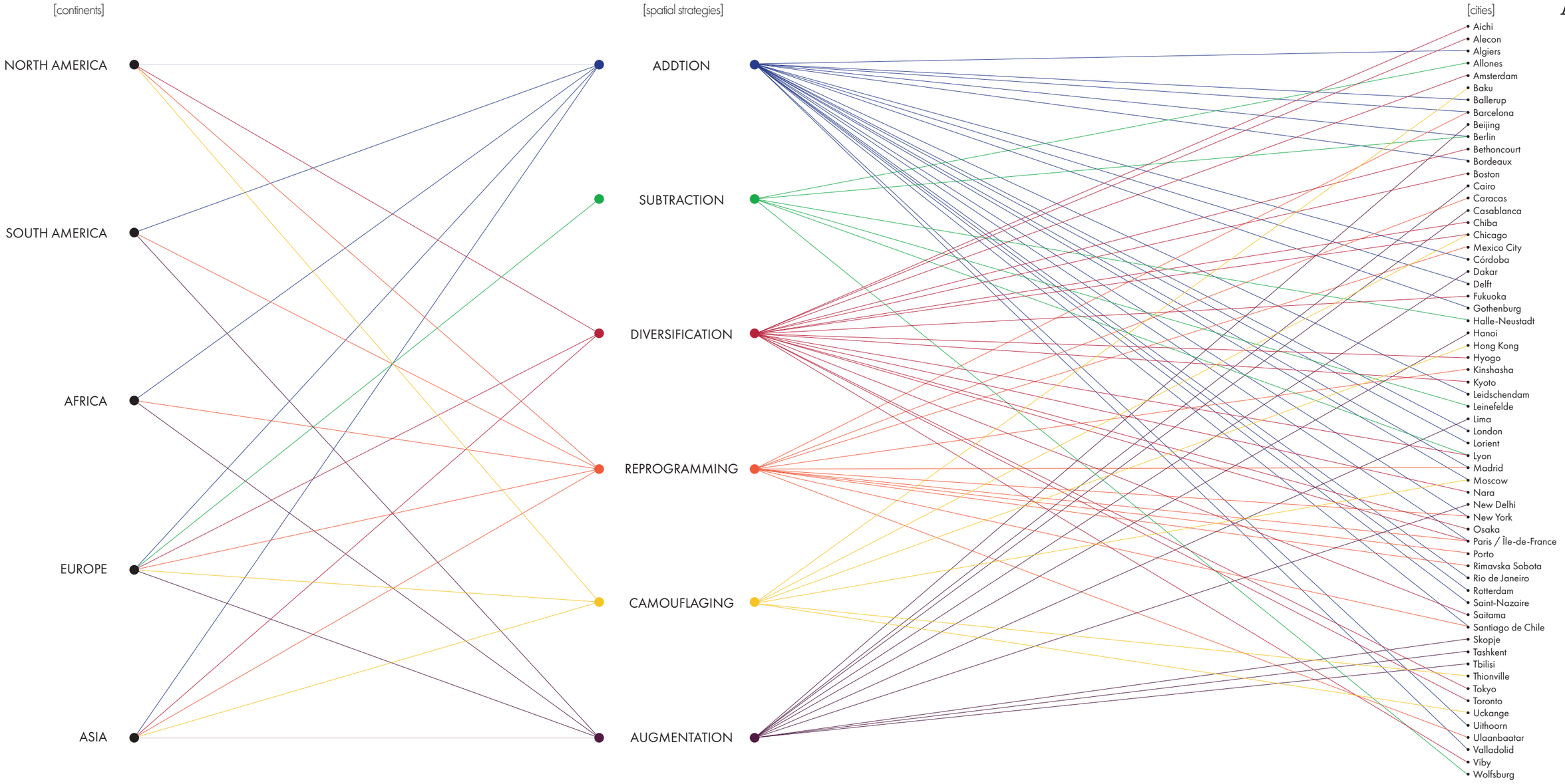
In light of the unprecedented adaptation of modernist residential districts, the question to be asked is whether this rich body of criticism has informed architectural, urban design, and landscape practices deployed by designers to transform modernist residential districts. The answer is no. Despite the accurate spatial descriptions that supported the criticism—too long, too tall, too large in scale, too repetitive, too much park, too self-isolating—no spatial pattern of lack or spares can be seen in adapted modernist residential districts. Some adaptations make blocks longer or taller, but others trim them on the sides or in height. Some adaptations preserve the unity of the facades; others rely on their atomization. And while many adaptations

densify the ground level, others recover its original free condition. It is the context that determines the spatial operations to transform these architectures, not the object. In fact, specific geographies establish patterns. For example, modernist residential districts located within city centers are often in need of increasing their mass and reducing their energy expenditures to adjust to new urban economic pressures. In contrast, socialist districts built next to factories that have been relocated or shut down seek to reduce their block vacancies by subtracting housing units and adjusting to shrinkage. As the case studies evidence, adaptation is driven by adjusting to the social, political, and economic change accumulated over half a century—not by formal amendments. Architects and critics contemporary to the construction of modernist residential districts searched for formal mistakes and misconceptions in modernist architecture. Since the turn of the 21st century, designers have worked to reshape the architecture of these projects in order to overcome the socio-economic challenges and the physical degradation diminishing the quality of life of their communities. Contemporary architects, urban designers, and landscape architects have, in the last quarter century (1995-2020), superseded the inherited narratives of failure (1960-1995) with a new environmental approach.

a t l a s



100 ADAPTATIONS: 5 CONTINENTS, 32 COUNTRIES, 62 CITIES


[continents]
NORTH AMERICA
SOUTH AMERICA
AFRICA
EUROPE
ASIA
[spatial strategies]
ADDTION
SUBTRACTION
DIVERSIFICATION
REPROGRAMMING
CAMOUFLAGING
AUGMENTATION
[cities]
Aichi
Alecon
Algiers
Allones
Amsterdam
Baku
Ballerup
Barcelona
Beijing
Berlin
Bethoncourt
Bordeaux
Boston
Cairo
Caracas
Casablanca
Chiba
Chicago
Mexico City
Córdoba
Dakar
Delft
Fukuoka
Gothenburg
Halle-Neustadt
Hanoi
Hong Kong
Hyogo
Kinshasha
Kyoto
Leidschendam
Leinefelde
Lima
London
Lorient
Lyon
Madrid
Moscow
Nara
New Delhi
New York
Osaka
Paris / Île-de-France
Porto
Rimavska Sobota
Rio de Janeiro
Rotterdam
Saint-Nazaire
Saitama
Santiago de Chile
Skopje
Tashkent
Tbilisi
Thionville
Tokyo
Toronto
Uckange
Uithoorn
Ulaanbaatar
Valladolid
Viby
Wolfsburg

m a n u a l

ADDITION

AD-S-001 : De Dillenburgh
AD-M-001 : Grand Parc
AD-L-001 : Europarei

SUBTRACTION

SU-S-001 : Quartier Chaoué
SU-M-001 : Marzahn Nordwest
SU-L-001 : Leinefelde Südstadt

DIVERSIFICATION

DI-S-001 : Klarenstraat
DI-M-001 : Hanamigawa
DI-L-001 : Columbia Point

REPROGRAMMING

RE-S-001 : Rimavská Sobota
RE-M-001 : San Pablo Xalpa
RE-L-001 : Les Courtillières

CAMOUFLAGING

CA-S-001 : Lenin Square
CA-M-001 : Choi Hung
CA-L-001 : Dearborn Homes

AUGMENTATION

AU-S-001 : Loggias Extensions
AU-M-001 : Nid d'Abeille
AU-L-001 : Nguyen Cong Tru


52.038860020842395,4.402184070348025


47.96822819685922 4,0.16258960726684 31


52.350790868948662, 4.831609613597525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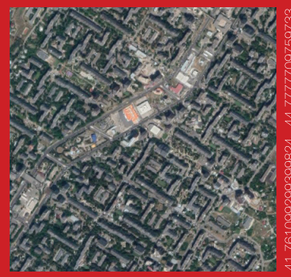
40.37790454329398 4,49.86642111245926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51.37875374160818,10.327579910351687


42.31922414523367 6, 71.04213985868869


48.91274846516043, 2.412470614806543


41.84037981780727, -87.62784396640807


21.012863937922 89,105.85293381920405

Y: Operational Scales

X: Spatial Operations

ADDITION

AD-S-001 : De Dillenburgh
AD-M-001: Grand Parc
AD-L-001 : Europarei

SUBTRACTION

SU-S-001: Quartier Chaoué
SU-M-001 : Marzahn Nordwest
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RE-S-001 : Rimavská Sobota
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RE-L-001 : Les Courtillières

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CA-S-001 : Lenin Square
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CA-L-001 : Dearborn Homes

AUGMENTATION

AU-S-001 : Loggias Extensions
AU-M-001 : Nid d'Abeille
AU-L-001 : Nguyen Cong Tru

No.	
	AD-S-001
	AD-S-002
	AD-S-003
	AD-S-004
	AD-S-005
	AD-S-006

No.	
	AD-M-001
	AD-M-002
	AD-M-003
	AD-M-004
	AD-M-005
	AD-M-006
	AD-M-007
	AD-M-008
	AD-M-009
	AD-M-010
	AD-M-011

No.	
	AD-L-001
	AD-L-002
	AD-L-003
	AD-L-004
	AD-L-005
	AD-L-006
	AD-L-007

ADDITION

Etymon: *French addicioun; Latin additiōn-, additiō.*

The action, process, or fact of adding something to something else; the joining of one thing to another so as to increase it or alter it in some way.

In mathematics, the action or process of combining matrices, vectors, or other non-scalar entities in order to obtain their sum or resultant.

In heraldry, a device added to a coat of arms as a mark of honour; opposed to abatement or diminution; (also) the action, process, or fact of adding such a device.

In music, point (also note, prick) of addition: a dot placed immediately after a note to make the note half as long again. Now historical.

In chemistry, the combination of one molecule with another to form a larger molecule with no other products.

In distilling, anything added to the wash or liquor in a state of fermentation.

U.S. A plot or piece of land added to an existing holding to which it is adjacent; (regional) a piece of land developed as an extension of a town (now chiefly in the names of such districts).

Scottish. A further discourse on a passage of scripture, made after the exercise. In later use frequently in exercise and addition. Now historical.

The spatial strategy of addition maximizes the value of the original modernist residential structures. It does it through spatial operations that allow the accommodation of more tenants, improve and increase living surfaces, or upgrade the energy performances. This strategy is commonly deployed in districts that have witnessed stout increases in the price of land and energy as well as a change in tenant aspiration for housing.

Martine
Cité du Grand Parc
Resident, 2016
“Sure **it was really painful**, but frankly, look at the added surface, I’ll never have that anywhere else.

“**I have everything I need in this neighborhood**, everything is at the foot of the building or a stone’s throw from my house. The neighborhood has certainly changed a lot since I arrived but I’ve never had a problem, I love living there, moreover my sister also lives in the Grand Parc, I don’t see myself living elsewhere, especially with the tram in down! »

“It’s huge. **When I found out, I couldn’t believe it, and neither did my kids.** I wondered what I was going to do with it, I never thought it would be so big. I love the light, I love the day, I would suffocate without light, there I am spoiled, it gives me air.“

Dominique
Cité du Grand Parc
Resident, 2016

“After a while the noise becomes really heady and you are more than fed up, you even plan to move but when you see the result, you say to yourself that we did well to hold out, **it’s an incredible gift** . “

“I volunteer in an association for people with disabilities, **now they can move around my house,** I have a lounge area and a workshop area with a huge table. I love the sun, I have a lot of plants, I have more than a balcony, I have a garden and a workshop! “

“We are part of the beautiful in the neighborhood, that’s new, if everyone takes care of it, **it will make us proud,** maybe it will change the image of the neighborhood.”

Monique
Cité du Grand Parc
Resident, 2016
“**The people of Bordeaux don’t like the Grand Parc**, but maybe that can change with a project like this. »
“It was dirty all the time. No matter how much dust I cleaned up, it was coming back ... and will keep coming back, it’s painful to feel that my apartment is still dusty.

It’s huge, it’s the biggest area I’ve ever had. **I didn’t think I would ever be so great in my personal situation, I can’t afford it.** »

Michel
Cité du Grand Parc
Resident 2016
“The first time I visited it was sunny, it reminded me of my home, Reunion, I thought I was going to be fine here. »

“For us it is a space of conviviality and well-being, there is serenity that emerges when I am there, and yet there is work opposite in the H. We have put plants and with the straw furniture and the view, it gives us the impression of being in the countryside.“

“People are going to want to come to the Grand Parc now, they are going to be jealous! Those who criticize the “city”, they are going to want our apartments now, the look has changed, **it is no longer the rotten city,** it is beautiful.”

Dalila Ouland
Cité du Grand Parc
Resident, 2018
Before we just had 50m2 for a 2-bedroom aparment. today we have twice as much.

Yes. It is a great living room, as you can see. We eat here, we have a living room where we meet. In the evening very pleasant.

Before there was no insulation. Now everything is well insulated. **In winter is nice, its warm**

Dalia: Lacaton & Vassal’s Grand Parc Bordeaux, winner of 2019 EU Mies Award ; Video produced by Nihao Films

Rest of residents: Le Magazine d’Aquitanis; number 6 - 2016. pp. 41-43.

1. Enclosure
Prefabricated, dynamic, light, transparent, modular glass and polycarbonate screens transform the climatic behavior of the addition into a winter garden: A device that converts solar energy into a local energy resource for the heating and ventilation of the dwellings.

2. Balcony
Unheated, unprogrammed, semi-external, pre-fabricated, self-bearing loggias of 3,80 m. deep that in less than 16 days per dwelling disrupted the social dwellings' fixed layout by increasing surface, circulation, and functions in the dwelling.

3. Insulation
External Thermal Insulation System (SATE) added on the facades that were not extended. In doing so, the SATE system provided a new, clean, continuous white skin that washed off the old geometrical patterns.

4. Circulation
Blocks' circulation has been completely redesigned at various scales. On the one hand, the access to the dwellings has been secured with an additional elevator in each vertical core. On the other, the balcony, as an undetermined space, provides a fluid connection between different functions of the dwelling.

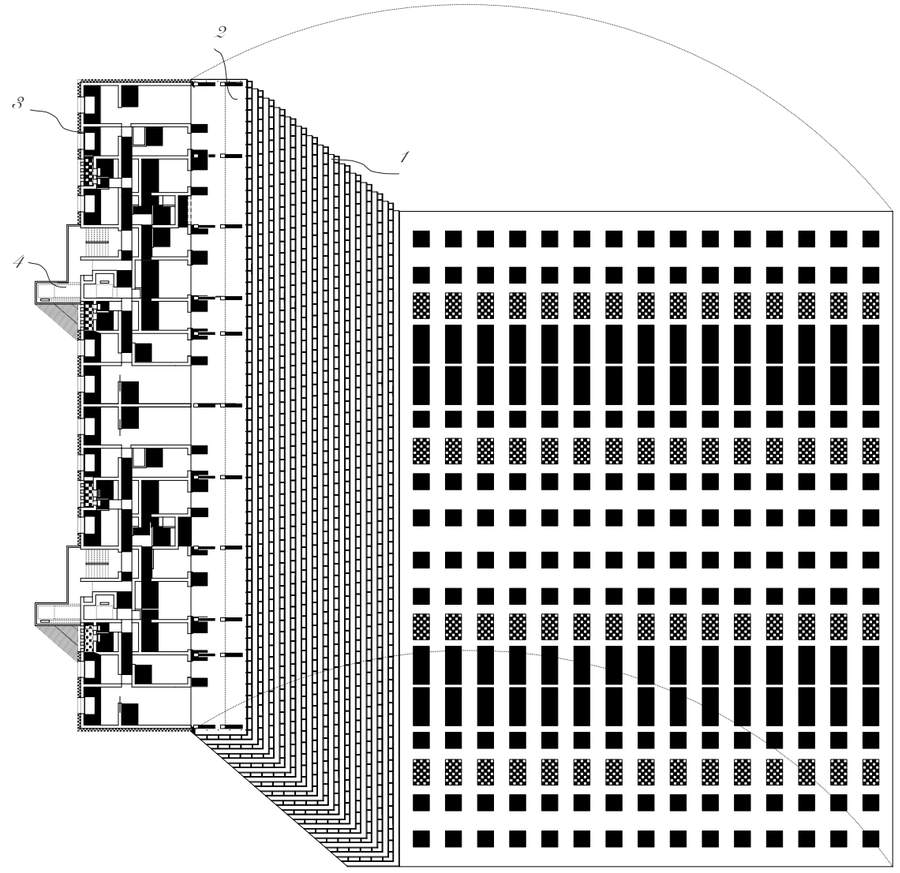


Fig. 1

Witnessed in:
Bordeaux, France

by:
Lacaton et Vassal, Druot, Hutin

Fig. 2. A view of Bordeaux quays in November 1921

Fig. 2. View of the Bordeaux quays with Cité du Grand Parc in the background in 2002

Situated at the north edge of Bordeaux's city center, on reclaimed marshland, the Grand Ensemble of Cité du Grand Parc was planned by Jean Royer and Claude Leloup in 1954 to house civil servants, Algerian returnees, and relocated residents from the Mériadeck district. The project housed up to 25,000 people in 22 buildings surrounded by a rich social and commercial infrastructure. Over time, the large families that populated the district disappeared and were replaced by a decreasing, aging population that lived in decaying and energy-inefficient blocks. In response to the disrepair, the authorities of Bordeaux approved a regeneration program for the whole district. In the initial phase of the program, the three blocks in most disrepair were scheduled for demolition. However, after demolition, a local urban plan would not allow new construction to be rebuilt at the same height as the original 11-story block. Unwilling to lose housing stock, Aquitanis—the housing company that owned the district's blocks—mobilized, negotiating with the city's authorities to include the Cité du Grand Parc within the UNESCO site boundary of Bordeaux. The granted boundary protected the district from any demolition plan. Aquitanis then launched a design competition to renovate and adapt the original three blocks.[1] This competition was won by Lacaton & Vassal with Druot.

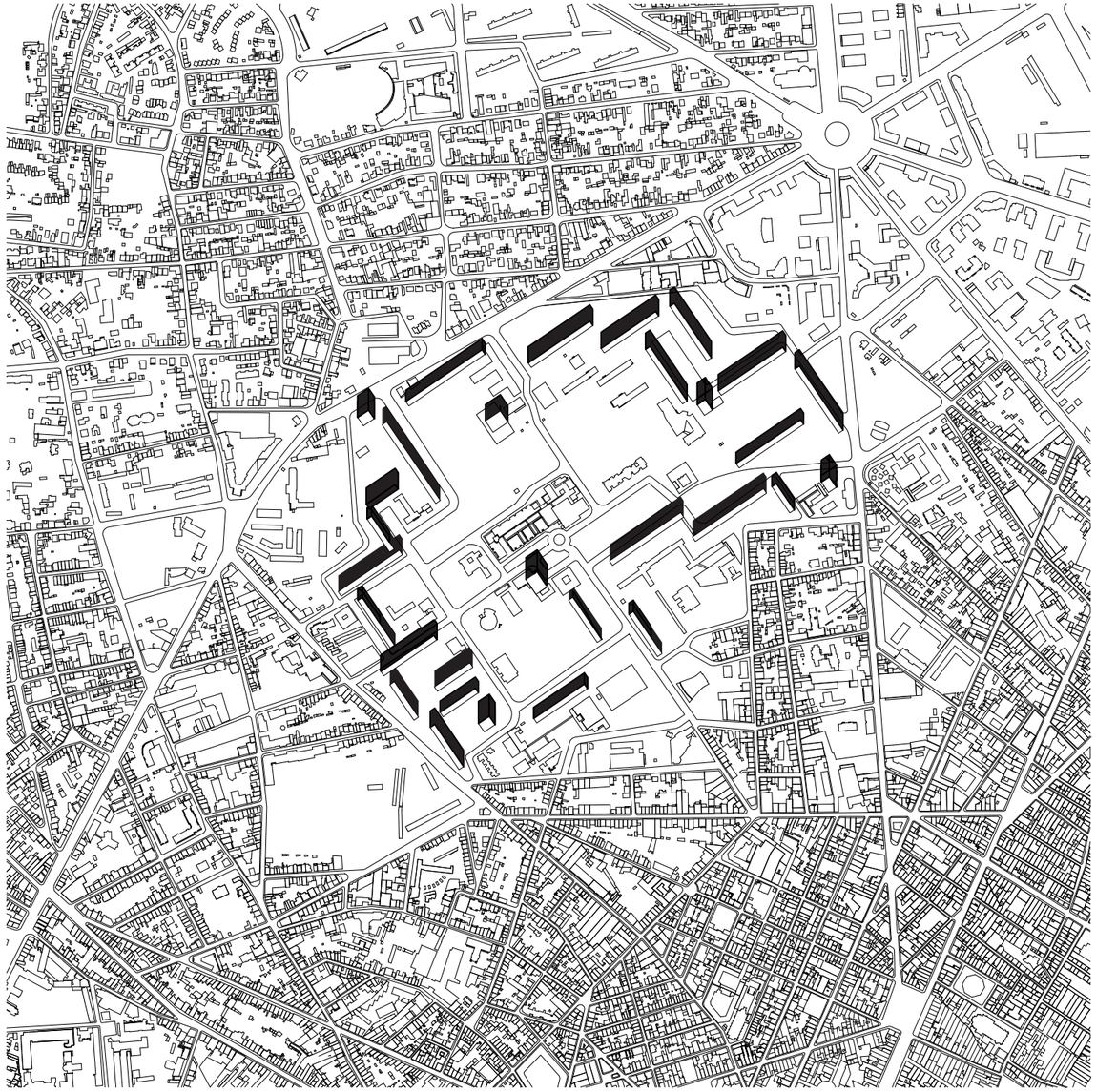
The architects used winter gardens as a primary driver to improve living conditions. The addition of winter gardens in the three blocks previously scheduled for demolition in Cité du Grand Parc transformed the domestic life of the residents and considerably improved the building's energy performance. The prefabricated and self-bearing winter gardens appended 3.80-meter-deep (12 ft) loggias that increased the original dwellings' light, air, and occupiable space from 140% to 200%.[2] The placement of the winter gardens in entire facades transformed the climatic behavior of the buildings as a whole while providing a new aesthetic. Finally, the winter gardens were installed in less than 16 days per dwelling, which minimally disrupted the life of the residents and saved Aquitanis significant relocation expenses and loss of rent during construction.

The adaptation of Cité du Grand Parc is a prime example of local constraints creating innovative solutions. In addition, it also proved that adaptation is cheaper than demolition and a new build when considering construction, energy, and relocation costs for a housing company. Lacaton & Vassal with Druot actively controlled these elements and were able to negotiate with the housing company to keep residents' rents stable. This adaptation is therefore laudable for giving all stakeholders an added value. For the housing company, this adaptation cost 30%[3] less than demolition and new construction. This adaptation also considerably reduced its monthly energy expenditures, increased the desirability of its stock, and with the construction of the penthouses, provided additional revenue. The residents of the adapted blocks gained generous additional space, light, and air into their apartments without an increase in rent. For local authorities, the stigmatization of the district was reduced, and the adaptation was presented as evidence of their successful support for ameliorating housing in the city.

1 *Vital Neighborhoods — Lessons from international housing renewal.* Publica and Stanhope, 2017, pp. 61-74.

2 This data was calculated by the author following the analysis of the dwellings. See "HOUSING" in the Manual section.

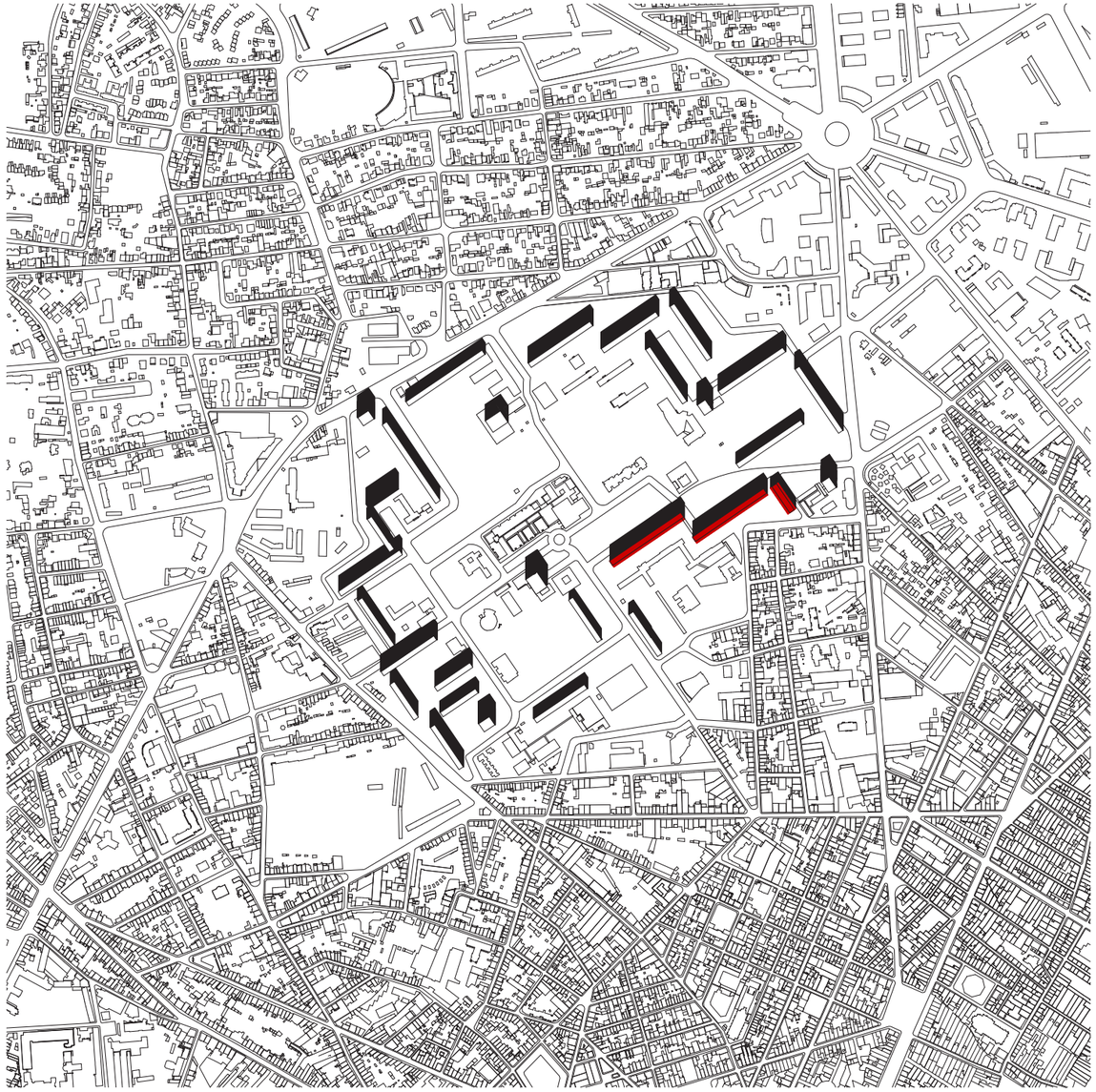
3 Lacaton, Anne and Vassal, Jean-Philippe (2012) 50,000 new dwellings, Communauté Urbaine de Bordeaux, études urbaines. https://www.lacatonvassal.com/index.php?idp=74 and Druot, Frédéric, Lacaton, Anne, and Vassal, Jean-Philippe (2007) PLUS. Barcelona: Editorial Gustavo Gili, pp. 60-63.



Date	1954-1975
	2016
Architect	Jean Royer, Claude Leloup
	Lacaton & Vassal, Druot
Client	Societé Bordelaise d'Urbanisme et de Construction (SBUC)
	Aquitanis Office Public de L'Habitat (O.P.H.) de la Communauté Urbaine de Bordeaux (CUB)
Site Area	60 Ha.
	6.8 Ha.
Units	4,000
	530 adapted + 8 added
Habitants	16,000
	1,290
Floors/Block	22,16, and12
	+1 (16 floors)
Open Space	78%
	75%
Uses	Sanitary, cultural, commercial, religious, sportive, educational
	–
Cost	–
	27,2 M€ net adaptation + 1,2 M€ net new dwellings
Awards	–
	European Union Prize for Contemporary Architecture Mies van der Rohe (2019)

original

Architect	Government Commisioned	Developer Commisioned	H. Company Commisioned			
Delivery Model	Public	Private	Public&Private	Self-help		
Original Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Adapted Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Spatial Strategy	Addition	Subtraction	Diversification	Reprogramming	Camouflaging	Augmentation
Key Challenges	Living Surface	Economic Pressure	Social Homogenity	Shrinkage	Stigmatization	Urban Space



adapted

SITE PLAN

Fig. 8. Block before adaptation

Fig. 9. Adapted block

original

adapted

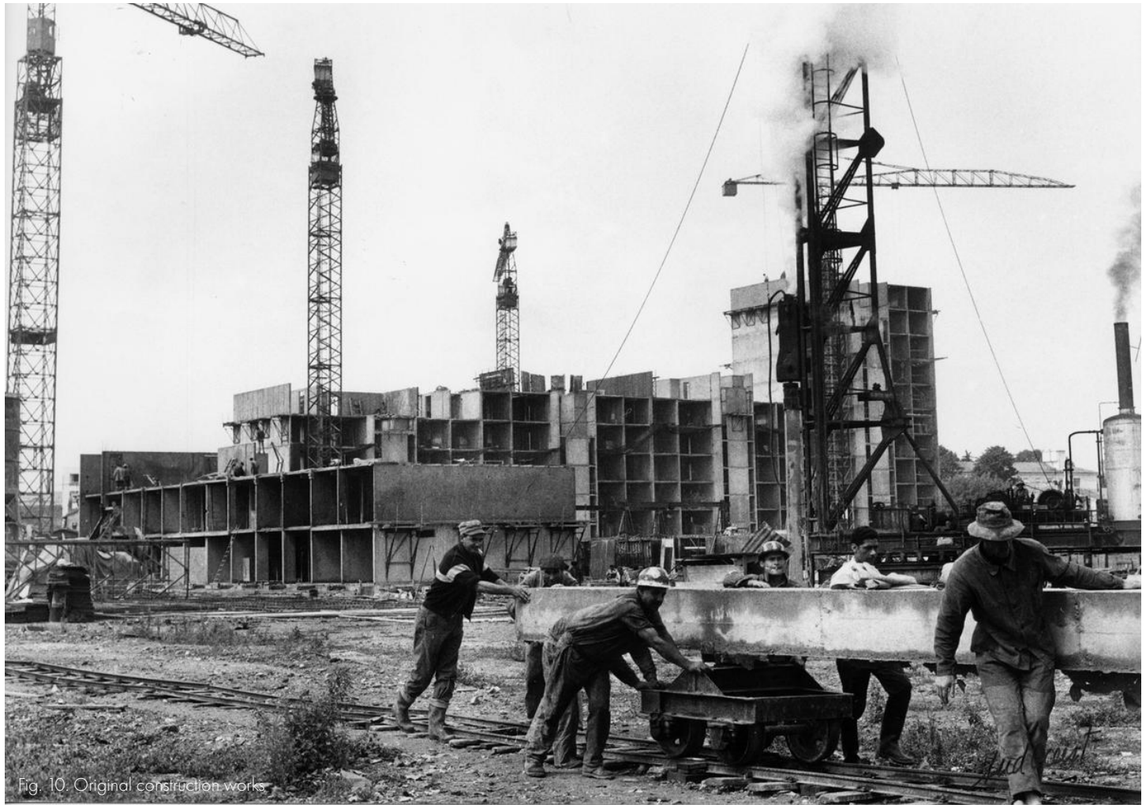


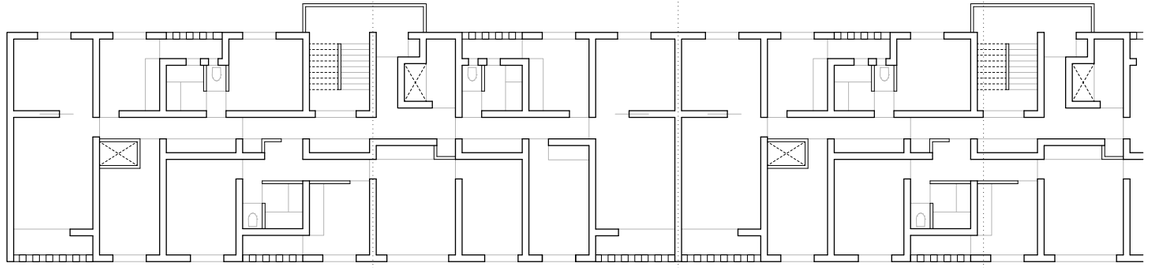
Fig. 10. Original construction works

Fig. 11. Works during adaptation: installation of winter gardens at ground level

Fig. 12. Winter gardens installation

Fig. 13: Interior view of the winter garden

Fig. 14. Views of Bordeaux from the new penthouses

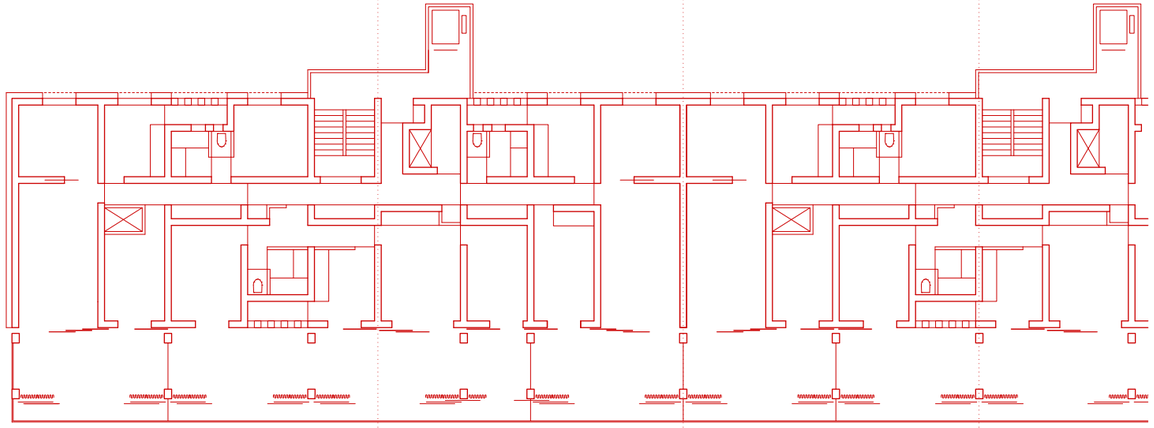


3B
78 m²
840 sq ft

2B
60 m²
646 sq ft

2B-CV
67 m²
721 sq ft

original

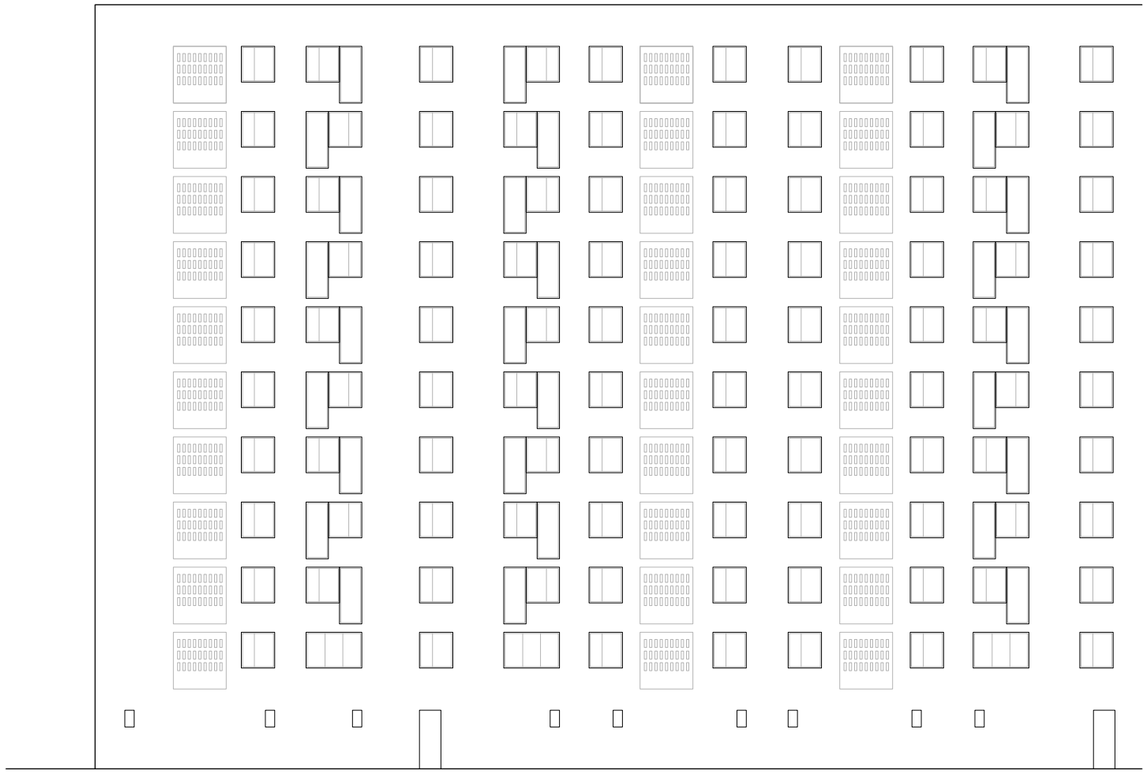


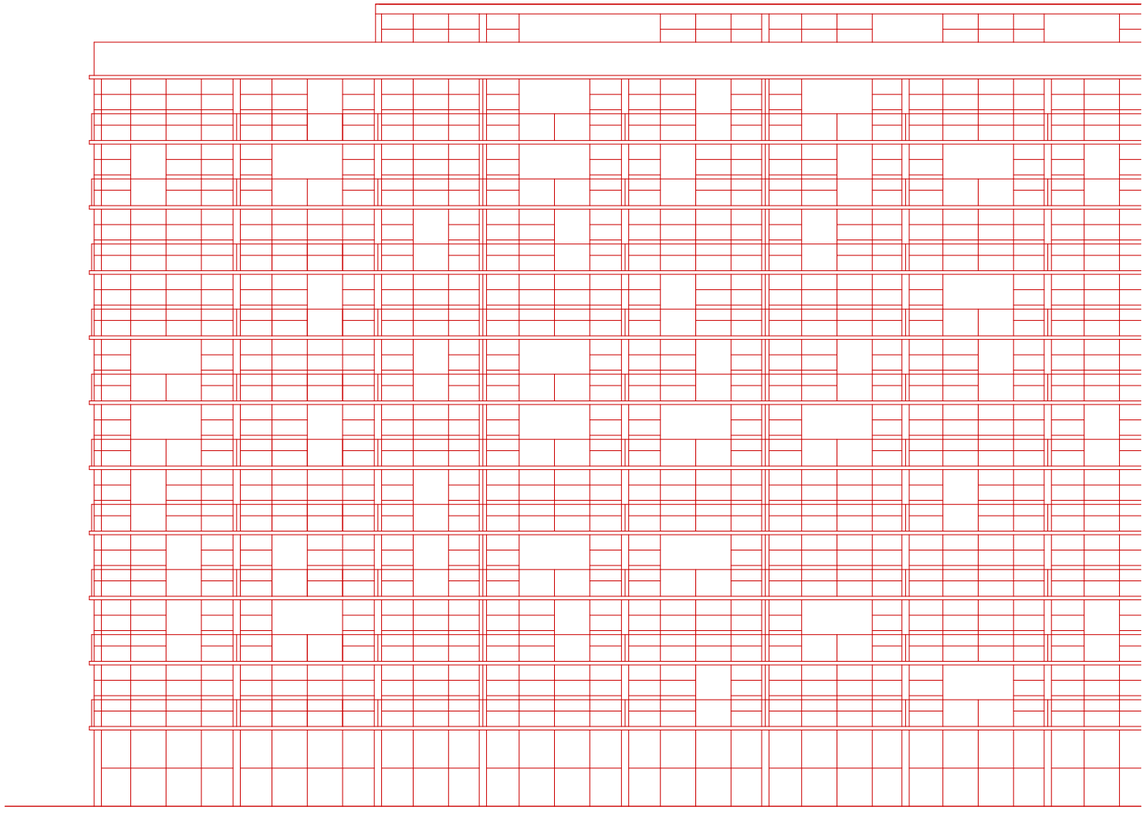
3B
103 m²
1109 sq ft

2B
122 m²
1313 sq ft

2B-CV
93 m²
1001 sq ft

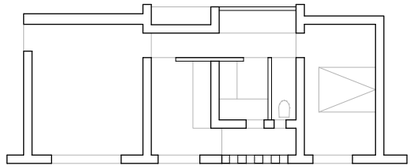
adapted

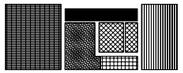




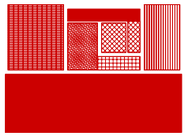
original

adapted

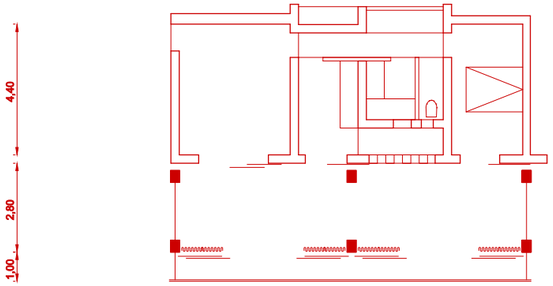


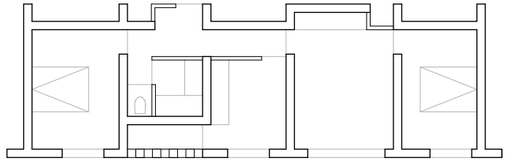


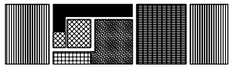
1B	m2	sq ft
living room	16.3	175
kitchen	6.6	71
bathroom	4.8	52
circulation	4.0	43
bedroom 1	10.5	113
semi-exterior	2.2	24
Living SUR	44.4	478
Constructed SUR	50	538



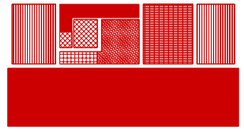
1B'	m2	sq ft
living room	16.3	175
kitchen	6.6	71
bathroom	4.8	52
circulation int.	4.0	43
circulation ext.	46.9	505
bedroom 1	10.5	113
semi-exterior	2.2	24
Living SUR	91.3	983
Constructed SUR	104.6	1126
Demolished SUR	0	0
Added Living SUR	46.9	505



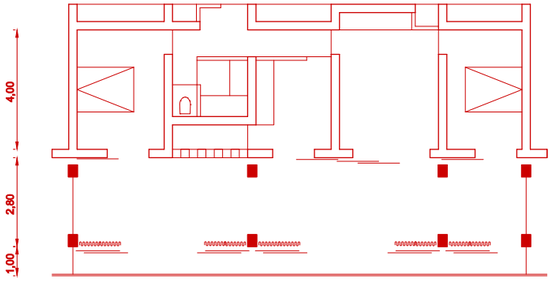


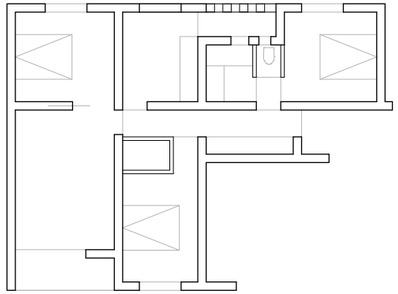


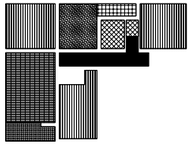
2B	m2	sq ft
living room	14.7	158
kitchen	7.8	84
bathroom	3.9	42
circulation	5.9	64
bedroom 1	11.7	126
bedroom 2	10.1	109
semi-exterior	2.3	25
Living SUR	56.4	628
Constructed SUR	60	646



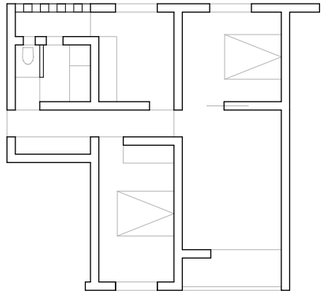
2B'	m2	sq ft
living room	14.7	158
kitchen	7.8	84
bathroom	3.9	42
circulation int.	5.6	60
circulation ext.	61.2	659
bedroom 1	11.7	126
bedroom 2	10.1	109
semi-exterior	2.3	25
Living SUR	117.3	1263
Constructed SUR	132	1420
Demolished SUR	0	0
Added Living SUR	60.6	662

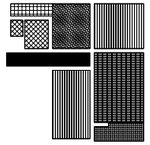




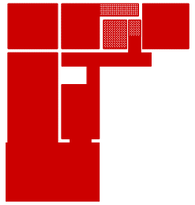


3B-CV	m2	sq ft
living room	15.4	166
kitchen	7.6	82
bathroom	3.9	42
circulation	6.3	68
bedroom 1	10	108
bedroom 2	9.3	100
bedroom 3	10.2	110
semi-exterior	2.2	24
balcony	4.3	46
Living SUR	69.2	746
Constructed SUR	91.2	982

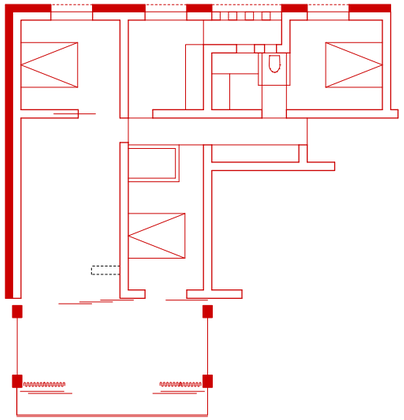




2B-CV	m2	sq ft
living room	15.5	167
kitchen	7.6	82
bathroom	3.9	42
circulation	5	54
bedroom 1	10	108
bedroom 2	11.6	125
semi-exterior	2.3	25
balcony	4.2	45
Living SUR	60.1	648
Constructed SUR	79.1	851



3B-CV'	m2	sq ft
living room	20.1	216
kitchen	7.6	82
bathroom	3.9	42
circulation int.	6.3	68
circulation ext.	25.9	279
bedroom 1	10	108
bedroom 2	9.3	100
bedroom 3	10.2	110
semi-exterior	2.2	24
Living SUR	95.5	1029
Constructed SUR	122.6	1320
Demolished SUR	0.27	3
Added Living SUR	26.3	328



2B-CV'	m2	sq ft
living room	20.1	216
kitchen	7.6	82
bathroom	3.9	42
circulation int.	5.9	64
circulation ext.	23.3	251
bedroom 1	10	108
bedroom 2	11.6	125
semi-exterior	2.3	25
Living SUR	84.7	913
Constructed SUR	107.8	1160
Demolished SUR	0.27	3
Added Living SUR	24.6	265

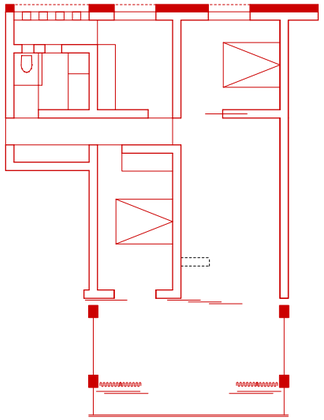


Fig. 23. Interior view in dwelling before adaptation

Fig. 24. Interior view in dwelling after adaptation — with new winter garden

No. SU-S-001
SU-S-002

No. SU-M-001
SU-M-002

No. SU-L-001
SU-L-002
SU-L-003

SUBTRACTION

Etymons: French subtraccion; Latin subtraction-, subtractio.

The act or operation of taking a part from the rest.

In Mathematics, the process of taking one quantity or number from another to ascertain the remainder or difference: an instance of this. Also: the action or process of taking one group, matrix, set, etc., from another in order to obtain their difference.

Frequently with of. The withdrawal or withholding of something beneficial, useful, or valuable, or of something to which another person is entitled; an instance of this. Now chiefly historical.

The spatial strategy of subtraction reduces housing units to mitigate building vacancy. In doing so, this strategy customizes and upgrades existing dwellings and renegotiates a new identity to the aftermath of shrinkage. This strategy allows modernist residential districts built to allocate workers next to sites of industrial production that have been discontinued or relocated to adjust to the resulting demographic decline and under-utilization. As an ecology of removal, subtraction benefits from modernist standardized and prefabricated construction, enabling the reuse of subtracted precast concrete panels in other projects.

Mrs. B
Leinefelde Südstadt
Resident, pensioner

I have been living in Leinefelde since 1962, which makes me a first-generation resident of the New Town. I left my native Saxony for Eichsfeld because of my work here. I've been living in the sameflat ever since I moved here. Our building was among the first to be renovated, right after1991. I'm still quite happy with the standards used back then. Of course, the rents have gone up, understandably so — given the investments. **We continued to live there during the renovations.** Those days weren't easy, but **we had been informed in good time, so we knew what to expect.** We put up with it as best we could.
I only know the Japanese Garden from the outside. But really, the whole town is much more beautiful now, which is why I would recommend Leinefelde as a place to live. Only things somehow aren't as friendly anymore among people. We older people would also like to have a place where we could sit together on weekends, as used to be at the Kohlersgrund.

Ute Engel
Leinefelde Südstadt
Resident, teacher

We moved to Eichsfeld in 1973 because of my parents' work. I myself have moved house several times within the Südstadt— first because we started a fa mily; then because somehow we weren't very lucky. **For a start, our block on Heinestrasse was demolished, and after that the one on Planckstrasse was also pulled down.** Now I live on Gausstrasse. Let's hope things staythat way for a while. Everything in our building is new, except for the electrical wiring. **On the whole, I like it, especially that the rent hasn't gone up.** I used to live on the street where they have built the town houses. I don't know what the new flats look like inside.

I'm happy actually, except that the neighbourhood isn't as closely knit as it used to be before the Reunification. Also, there could be more cultural events. Still, I'd recommend living in Leinefelde anytime— not least because of its beautiful l a n d s c a p e .

Ramona Tiegel
Leinefelde Südstadt
Resident, Self-employed beauty and wellness consultant

At 18, I moved from a village to Leinefelde because I was in love. Initially, we lived on Büchnerstrasse, and then in 2000 we moved out of the Sudstadt closer to what used to be the former centre of the village into an older block which had been modernised back in 1994. It is conveniently located and always looks very neat. As our building had previously been completely renovated, **our rent hasn't changed since 1979.**

On the whole, Leinefelde has become greener and is very much improved. **Still, people are frustrated by unemployment.** The fact that we now have some beautiful architecture does credit to the town, but it can't replace the lack of jobs or infrastructure. **There's room for improvement — we could do with more recreational areas, cafes and playgrounds, and a bench here and there.**

Kil, Wolfgang. The Marvel of Leinefelde : A Town Reinvents Itself. Dresden: Sandstein, 2008. pp. 123-126.

Susanne Mnich
Leinefelde Südstadt
Resident, On maternity leave

Originally, I come from Wilbich, a village in the former border area. My parents moved to Leinefelde in 1984 because of their work. I've lived at several Südstadt addresses. My first flat was on Kellerstrasse. When the family needed a bigger place, we moved to Buchnerstrasse. Our house is among those which weren't simply modernised, but properly converted by the architect Forster. Fortunately, we were spared the actual experience. **We quite like the result, even though the rent has gone up slightly.**

Only for the children, there should have been created more possibilities for playing in the courtyard. Otherwise**, I do believe that our wishes played a part in the conversion. Our area has obviously changed visibly; but our neighbours are still the same people. Therefore, it somehow still feels familiar.** Nevertheless I wouldn't advise anyone to move to Leinefelde right now - because there simply aren't enough jobs.

1. Partial Demolitions
Partial demolitions reduced the availability of dwellings while bestowing a new identity to the district. Buildings were trimmed at their edges, cut and sliced into parts, and carved and reduced in height.

2. Balcony
The addition of balconies singularized the blocks while exploding the limits of the flat and repetitive socialist facade.

3. Terrace
The architects created terraces through a process of variently carving the upper levels of the blocks. These terraces offered to the many above-ground-residents the perks of private ground level gardens.

4. Colored Coating
The counting of the facades with a homogeneous colored layer made invisible the modulations of the prefabricated concrete panels. This operation contributed to the re-identification of the district.

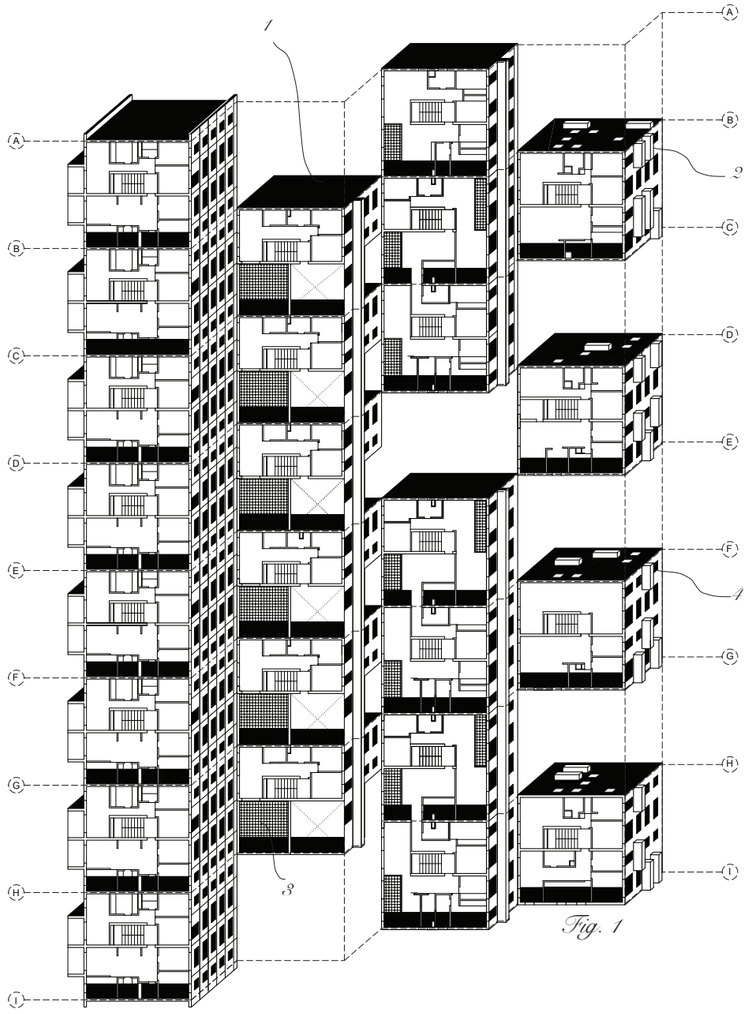


Fig. 1

Witnessed in:
Leinefelde-Worbis, Germany

by:
Stefan Forster Arcjoteckten, Muck Petzet Architekten

Fig. 2. The workforce of Leinefelde's cotton mills was mainly women.

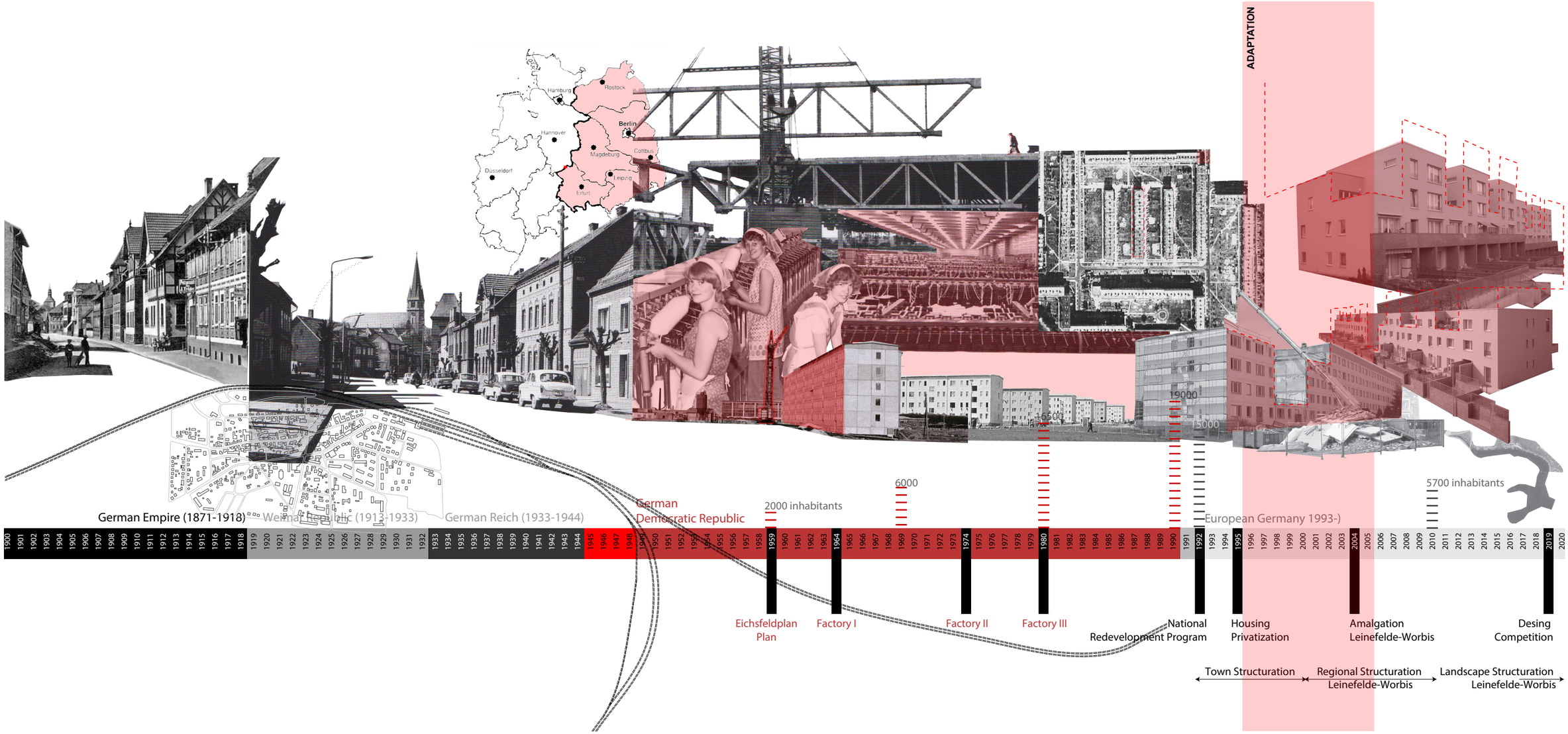
The German town of Leinefelde had a remote geographical condition within its country until the end of World War II when it became a border between East and West Germany. In 1959, the GDR (East Germany) formulated a governmental program to develop and consolidate its presence on the border. To do so, the socialist government established one of Europe's largest cotton mills in Leinefelde. Six thousand jobs were created at once, and this number would triple in the following years. To house those textile workers, an extensive residential district rose up: Leinefelde Südstadt. However, with the reunification of the country in 1991, the factories abruptly closed, and the monolithic economic structure plunged the town into a deep crisis. Four thousand people fled the town in the first year after the closure, and soon half of the housing units in the district were vacant.[1] From 1992 to 2016, Leinefelde's newly elected mayor would actively look for funding programs and organize design competitions to end the district's building vacancies and reshape the town's identity.

Through the spatial strategy of subtraction, half of the housing units were removed. Blocks were trimmed at their edges, cut and sliced into parts, and carved and reduced in height. Each block became unique. The use of color on the facades, the addition of individual balconies, the appropriation of the ground floor, and customization of the dwellings' distribution reinforced individuality. It became possible to identify one's own dwelling from the exterior through the unique combinations of elements. In a reversal of its original socialist—and modernist—planning principles, Leinefelde's homogenous residential landscape became heterogeneous, with the individual positioned and recognizable within the territory.

Leinefelde Südstad is an exemplary town in mobilizing and embracing de-densification, deceleration, under-utilization, and loss of profitability as an opportunity. Through the spatial strategy of subtraction, the town embraced the process of becoming less. In doing so, the rapidity with which the town reduced its housing infrastructure by half proved to be critical. This agility was supported by the local authorities' determination, a consistent policy of high-quality architecture, and the adaptability of the prefabricated modernist construction. After the successful downsizing of Leinefelde's housing infrastructure, the town was able to consider other urban processes that would further advance quality of life in the district. These processes included a regional restructuration through which Leinefelde amalgamated to the neighboring town of Worbis (2004) to enlarge the distribution of services and an ongoing landscape restructuring that aspires to improve the town's relationship with its surrounding landscape.[2] Looking back, in Leinefelde the spatial strategy of subtraction became a survival tool to continue life in the district.

1 Kil, Wolfgang (2008) The Marvel of Leinefelde: A Town Reinvents Itself. Dresden: Sandstein, p. 26.

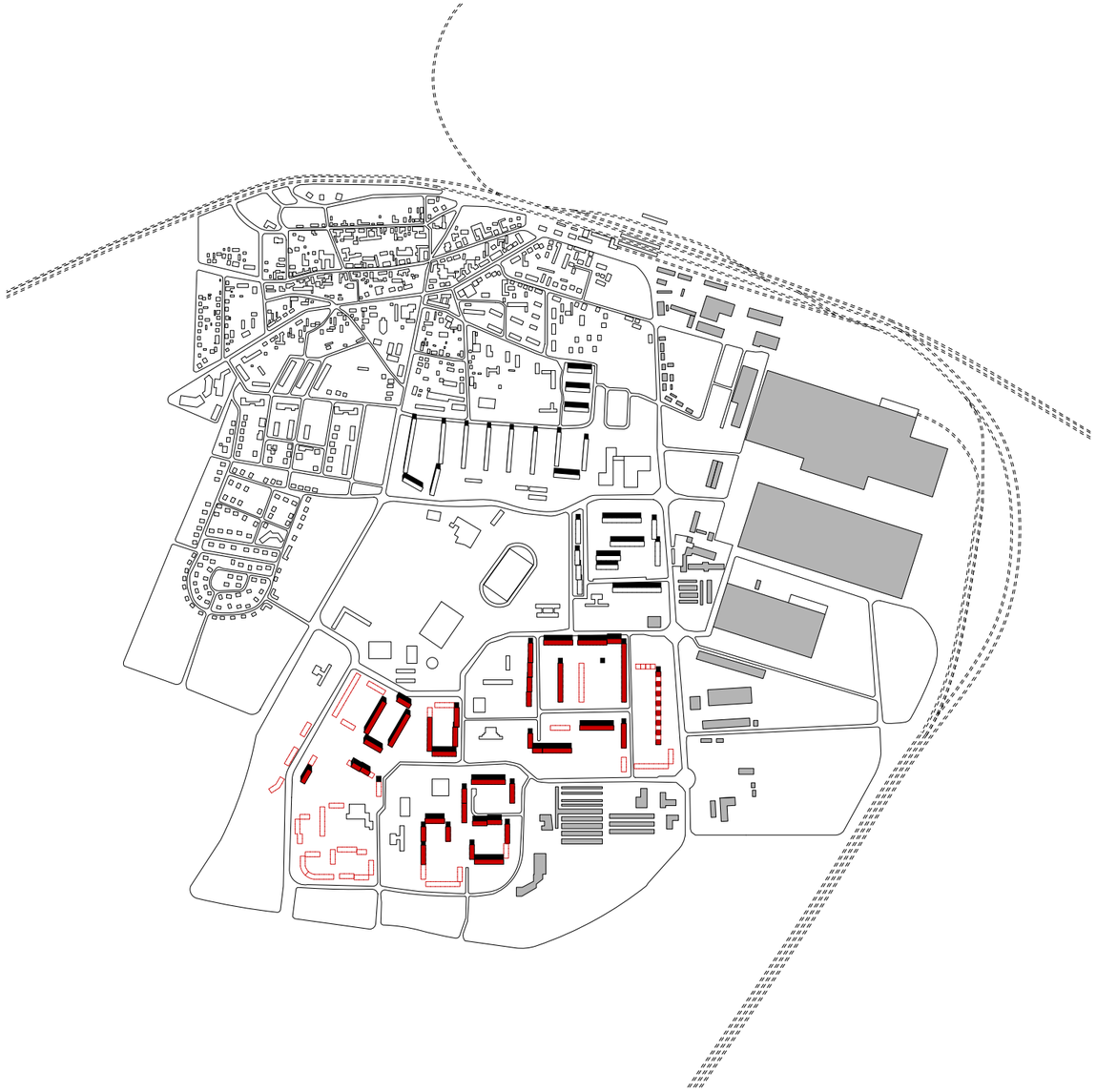
2 "Reconciliation between city and landscape" Landscape Architecture Competition for State Garden Show 2024 in Leinefelde-Worbis. https://www.leinefelde-worbis.de/stadtentwicklung/landesgartenschau-2024/


Hamburg
Rostock
Berlin
Hannover
Magdeburg
Cottbus
Düsseldorf
Leipzig
Erfurt
ADAPTATION
16500
19000
15000
6000
2000 inhabitants
5700 inhabitants
German Empire (1871-1918)
Weimar Republic (1913-1933)
German Reich (1933-1944)
German Democratic Republic
European Germany 1993-)
Eichsfeldplan
Plan
Factory I
Factory II
Factory III
National
Redevelopment Program
Housing
Privatization
Amalgation
Leinefelde-Worbis
Desing
Competition
Town Structuration
Regional Structuration
Leinefelde-Worbis
Landscape Structuration
Leinefelde-Worbis

Date	1960-1990
	1997-2007
Architect	–
	Stefan Forster Architekten, Muck Petzet Architekten
Client	German Democratic Republic. 1959 Eichsffeldplan
	WVL and LWG GmbH Leinefelde
Site Area	94.2 ha / 233 ac
	94.2 ha / 233 ac
Units	–
	- 50%
Habitants	16000
	–
Blocks	80
	80
Floors/Block	5
	3,4, and 5
Open Space	81%
	84%
Uses	Sanitary, cultural, commercial, religious, sportive, educational
	cutural, sanitary
Cost	–
	–
Awards	–
	2007 World Habitat Award; 2007 Future Living Architecture Prize; 2001 German Architecture Prize; 2003 The German Urban Planning Award for master planning and implementation; 2004 European Council of Twon Planners, Urban&Regional Planning Award; 2009 Nationaler Preis für integrierte Stadtentwicklung und Baukultur Physiker Quartier; 1999/2001/2003/2005 & 2007 Deutscher Bauherrenpreis Commisioned Building Award.

original

Architect	Government Commisioned	Developer Commisioned	H. Company Commisioned			
Delivery Model	Public	Private	Public&Private	Self-help		
Original Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Adapted Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Spatial Strategy	Addition	Subtraction	Diversification	Reprogramming	Camouflaging	Augmentation
Key Challenges	Living Surface	Economic Pressure	Social Homogenity	Shrinkage	Stigmatization	Urban Space



adapted

SITE PLAN

Fig. 8. Block 1 before adaptation

Fig. 9. Block 1 adapted

original

adapted

Fig. 10. Block 3 before adaptation

Fig. 11. Block 3 adapted

original

adapted

Fig. 12. Block 3 entrance before adaptation

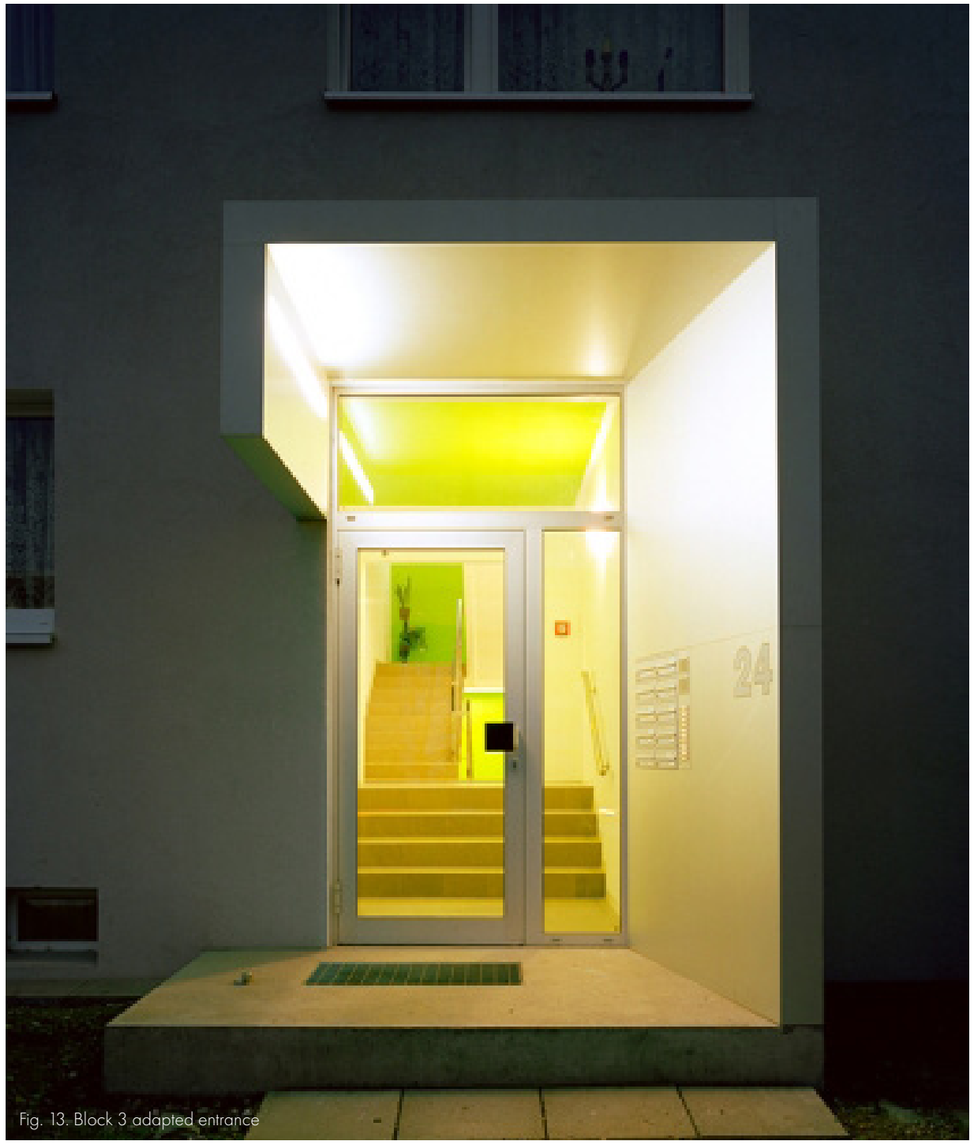


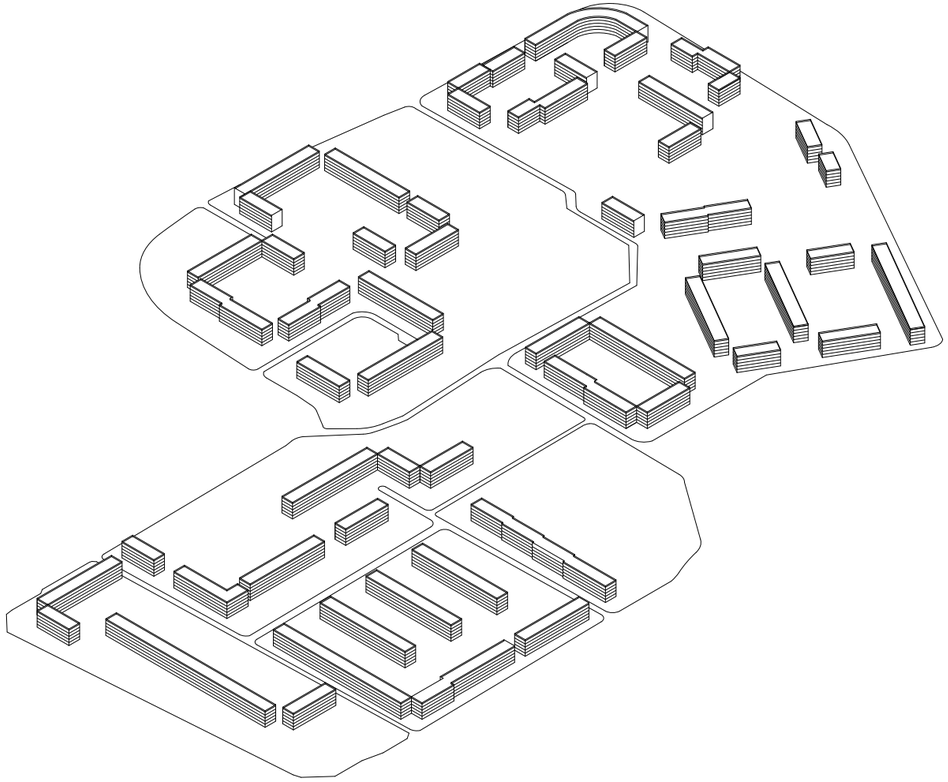
Fig. 13. Block 3 adapted entrance

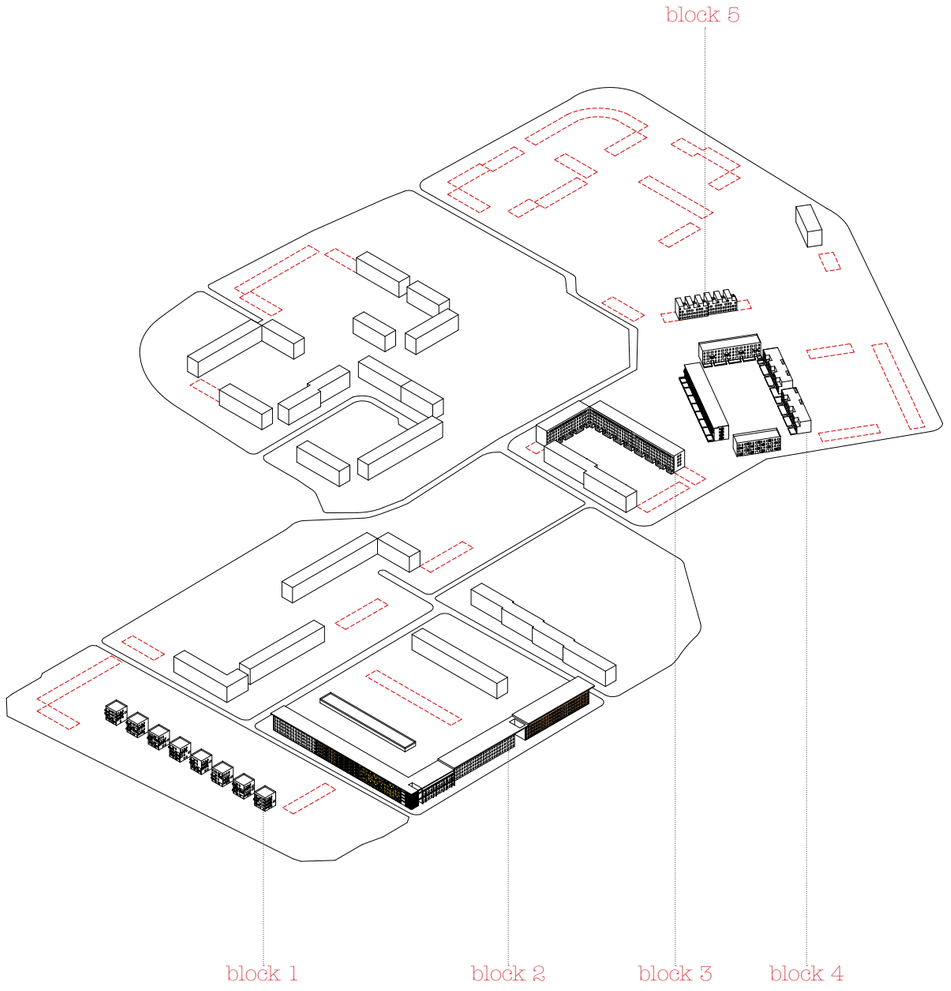
Fig. 14. Crane lifting precast panels

Fig. 15. Crane removing precast panels

original

adapted





original

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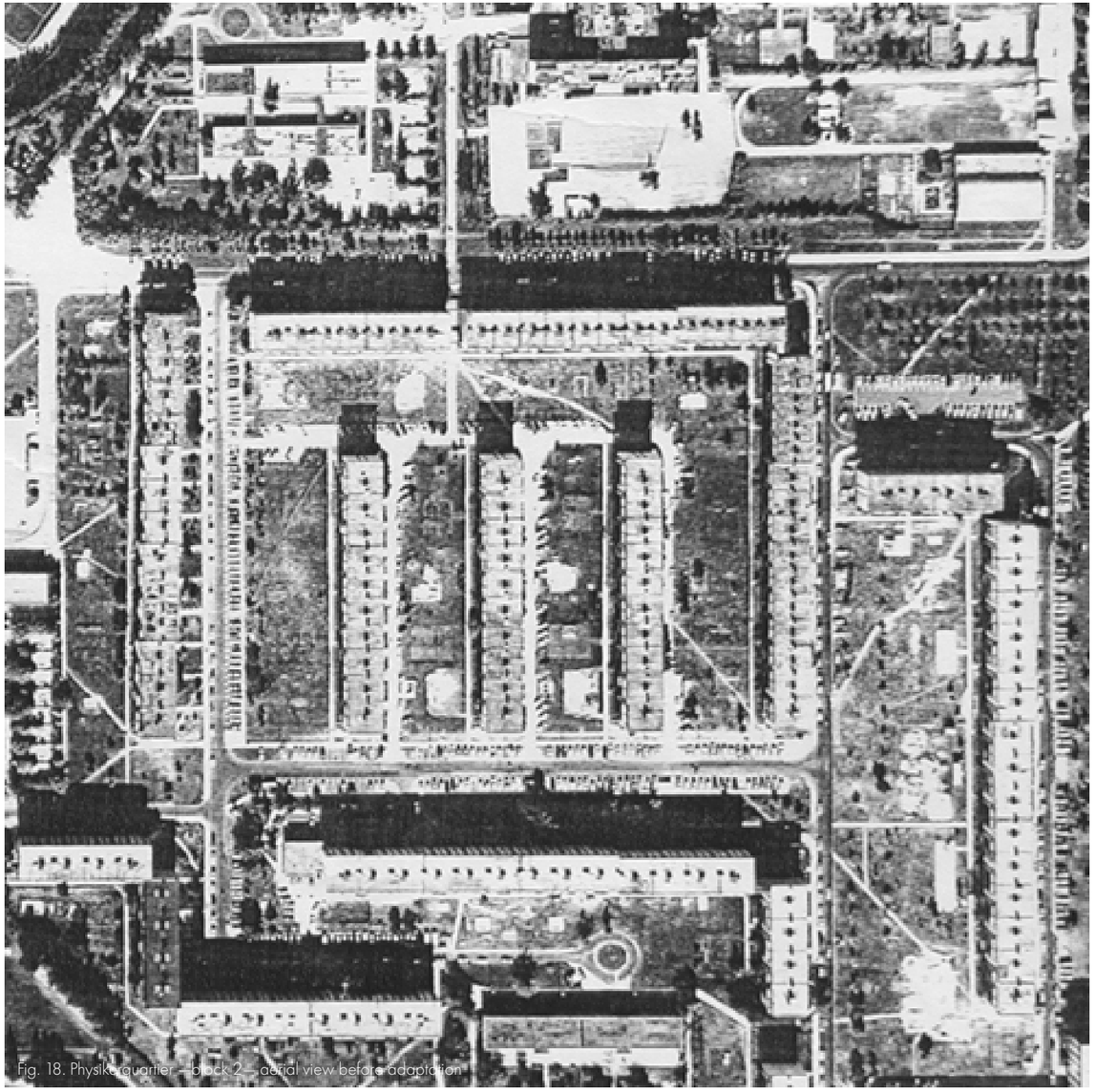
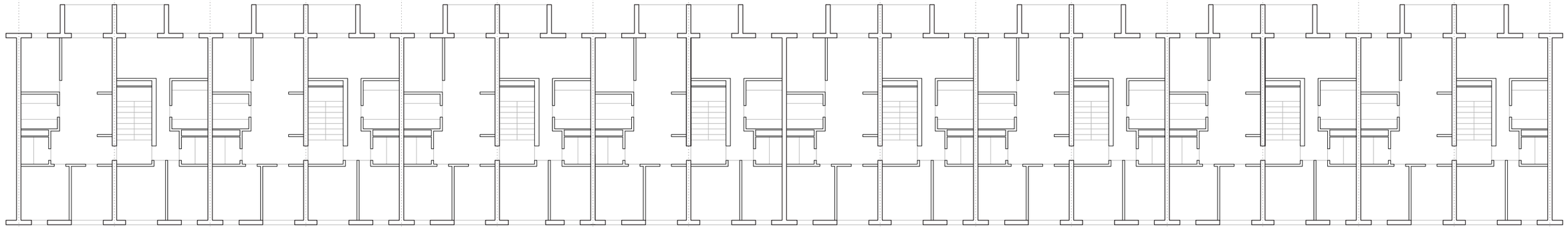
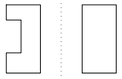


Fig. 18. Physikerquartier – block 2 – aerial view before adaptation

Fig. 19. Physikerquartier – block 2 – aerial view after adaptation

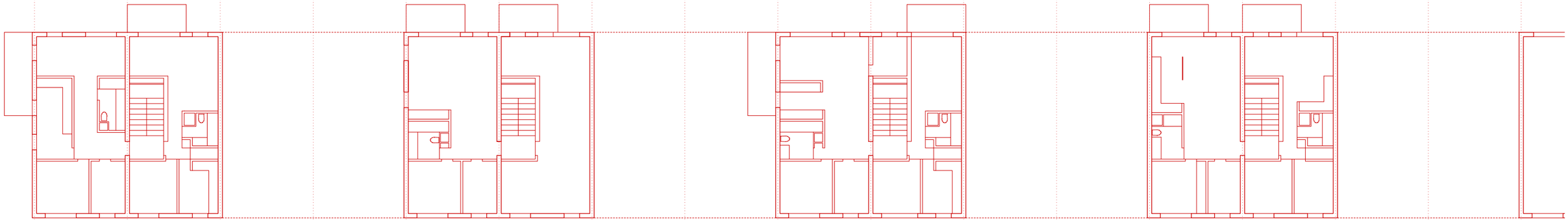
Fig. 20. Subtraction process of block 1 —200 m. (656 ft)— into 8 villas





2B
52 m²
560 sq ft

3B
66 m²
704 sq ft

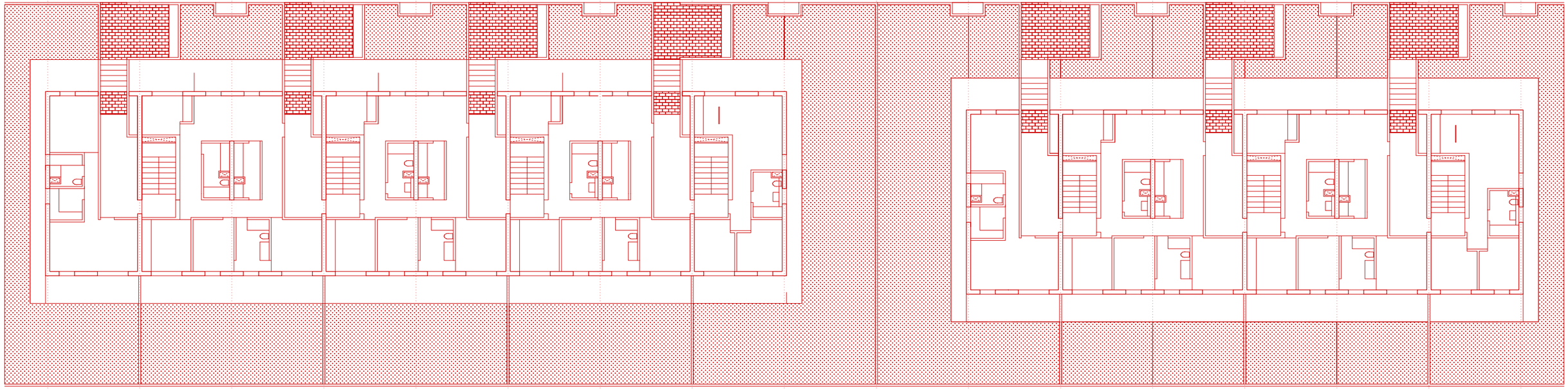


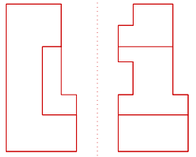
< 3B-BL1
72 m²
775 sq ft

> 1B-BL1
45 m²
484 sq ft

2B-BL1-TA
65 m²
704 sq ft

2B-BL1-TB
52 m²
560 sq ft

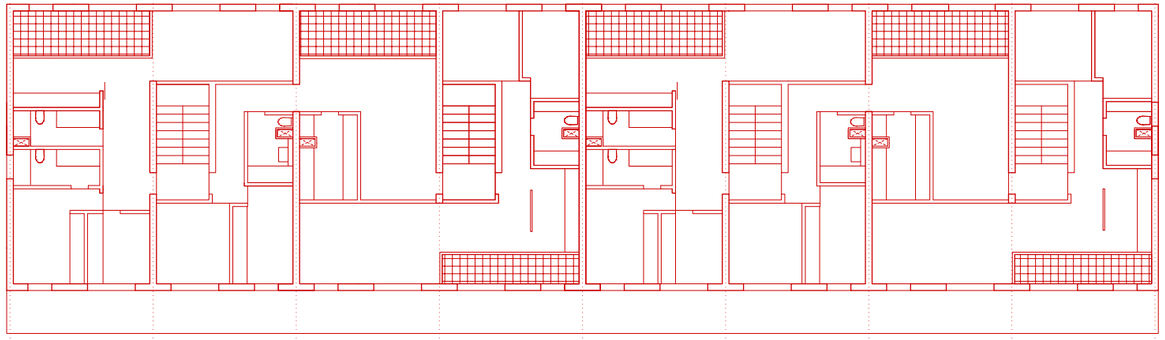




2B-BL2-TA-F0
253 m²
2723 sq ft

2B-BL2-TB-F0
52 m²
560 sq ft

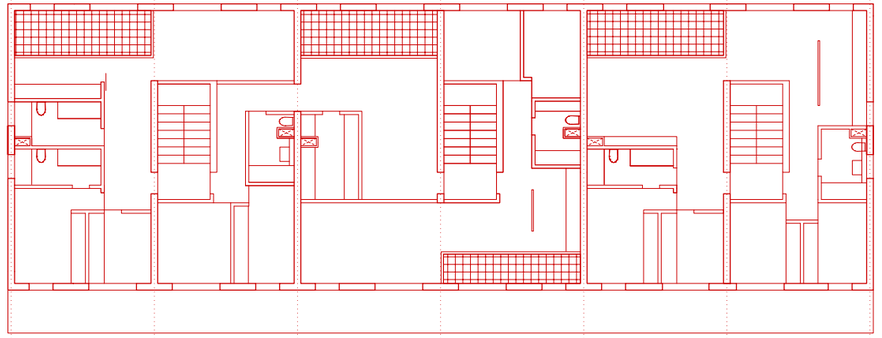
2B-BL2-TA-F0
65 m²
704 sq ft



2B-BL2-TA-F2353 m²
2723 sq ft

2B-BL2-TB-F2
52 m²
560 sq ft

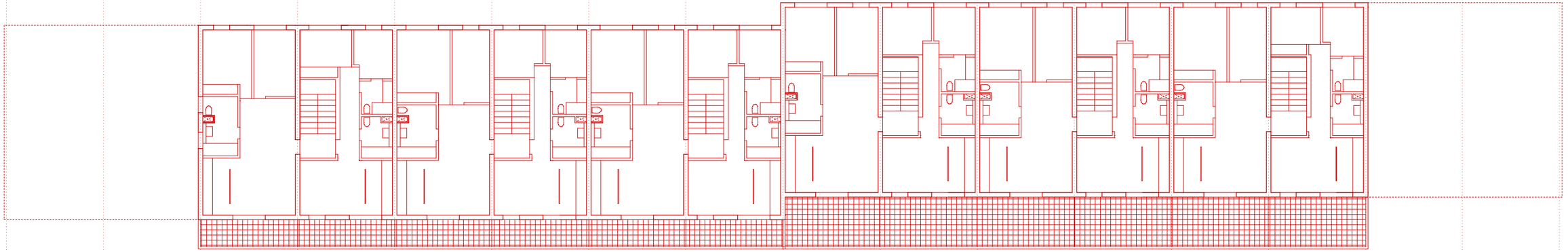
2B-BL2-TB-F2
52 m²
560 sq ft



block 4 - second floor

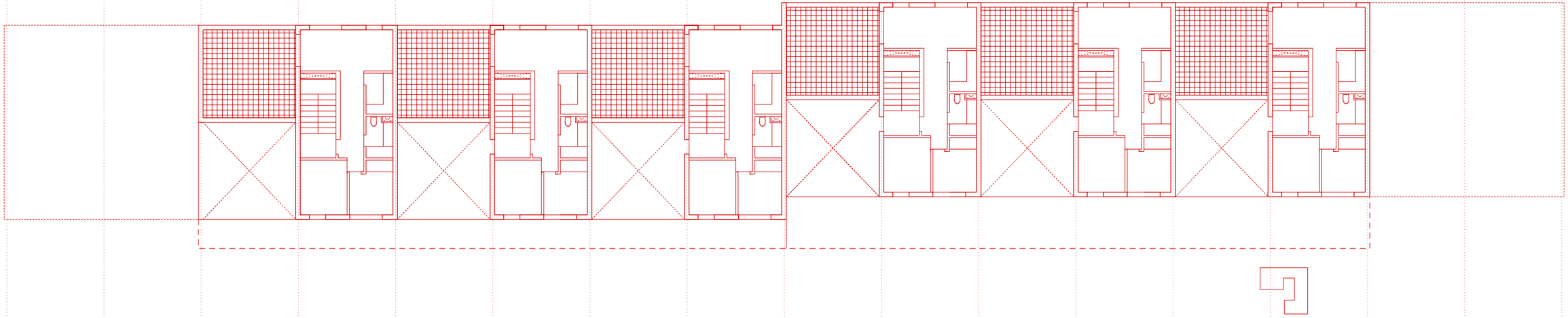
adapted

Fig. 25. Block 4 adapted



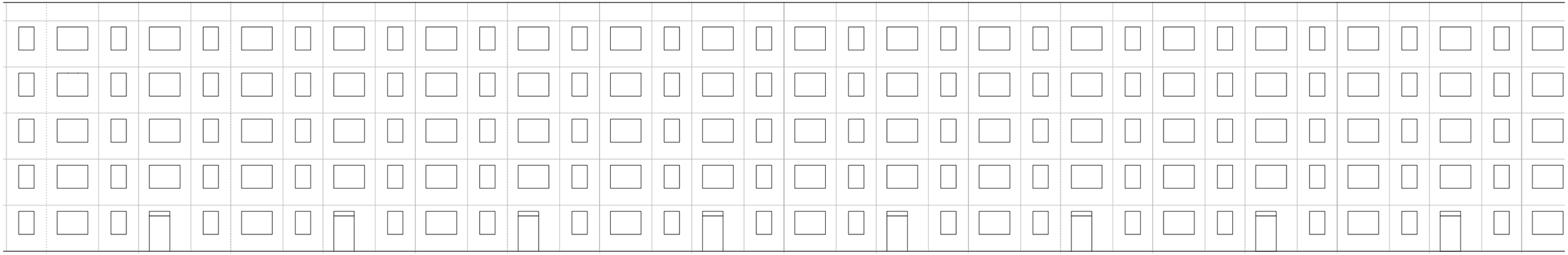
2B-BL3-TA-F1
253 m²
2723 sq ft

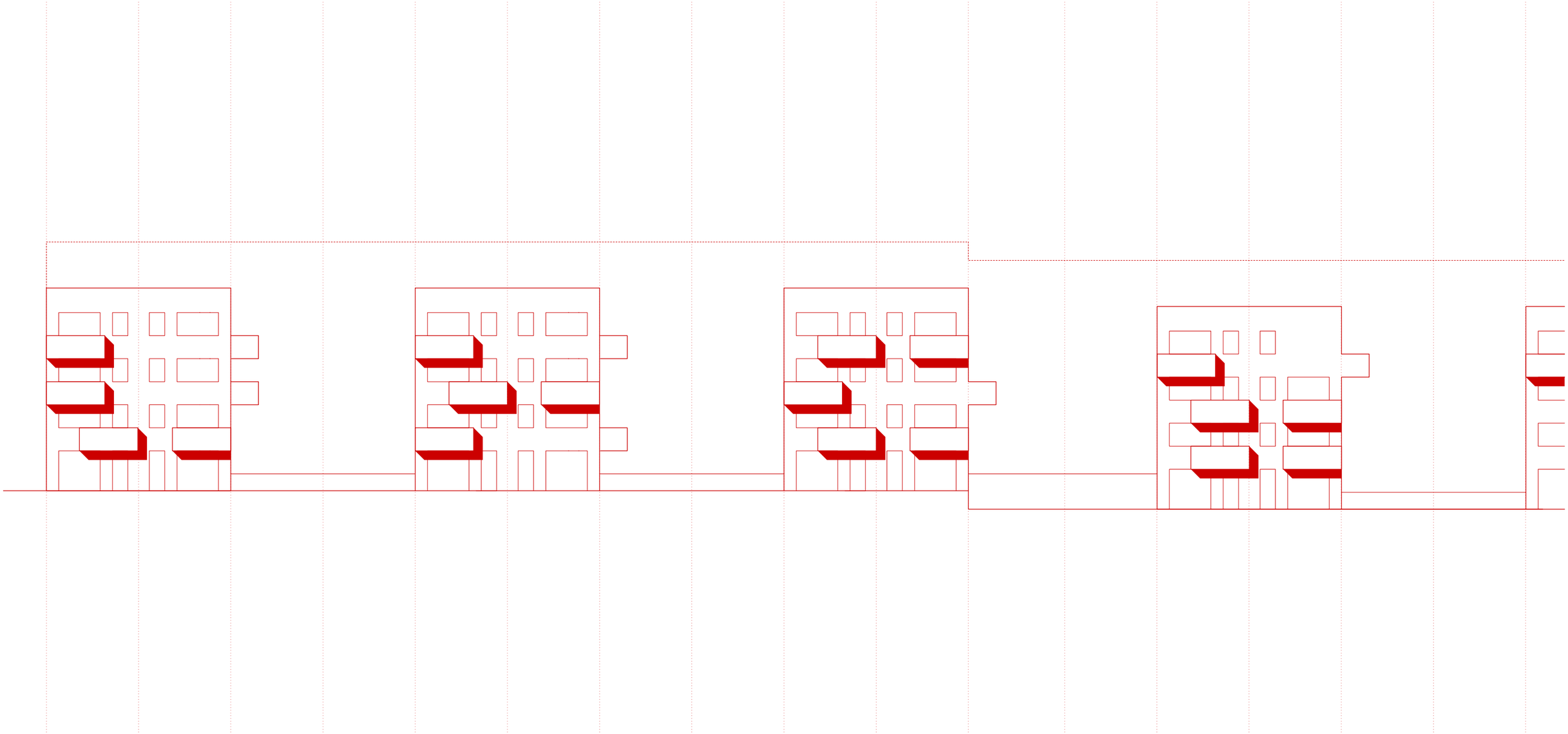
2B-BL3-TB-F1
52 m²
560 sq ft

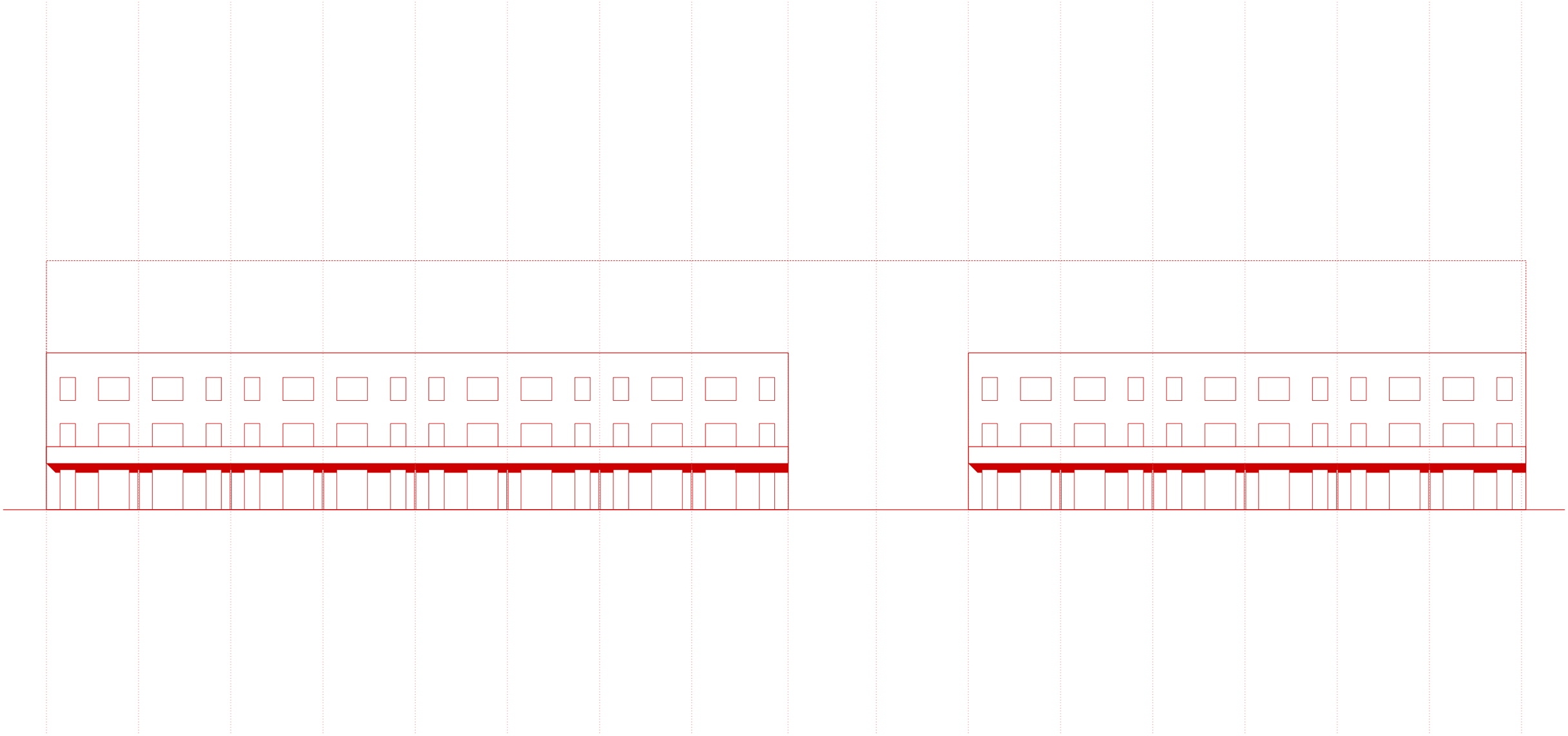


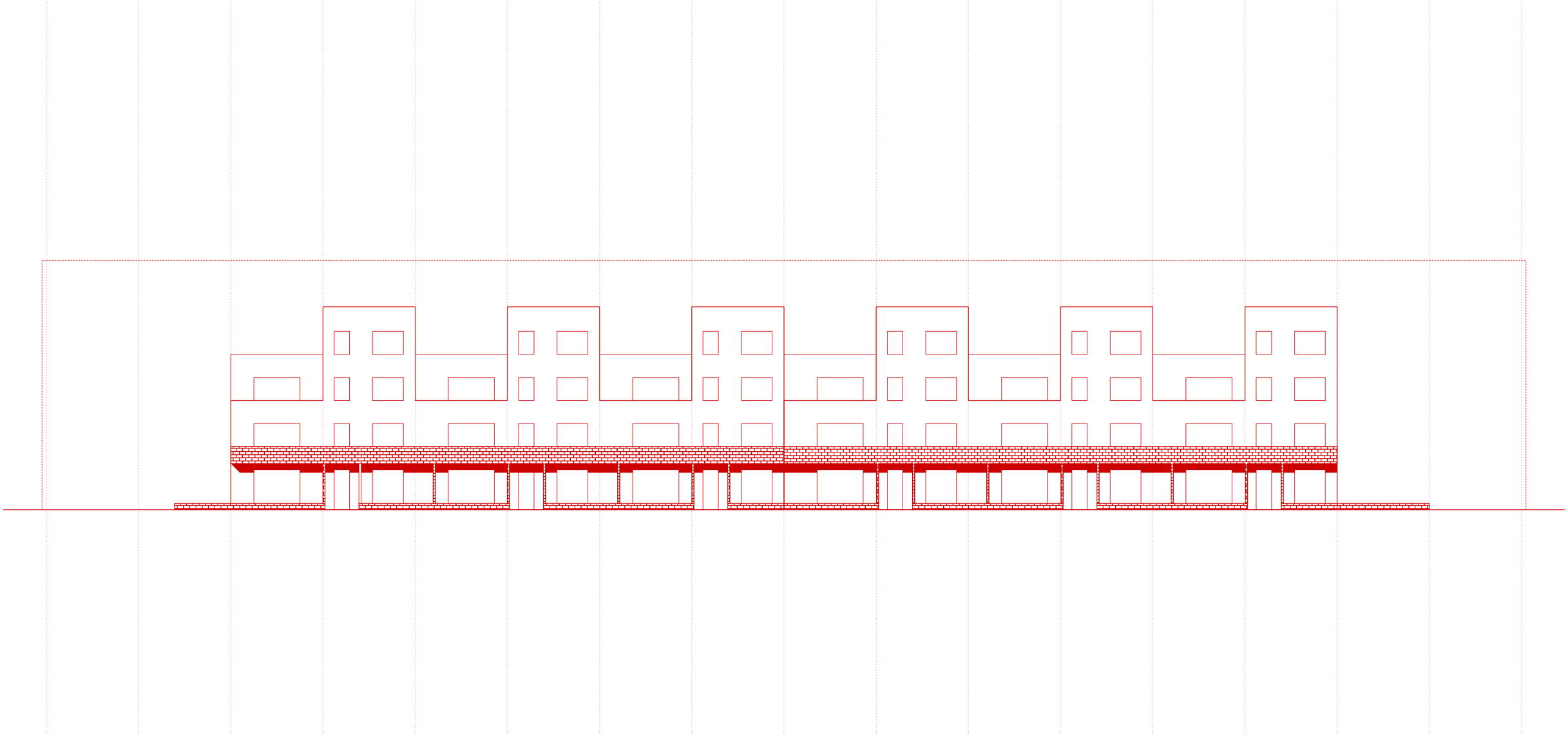
2B-BL3-TB-F3
52 m²
560 sq ft

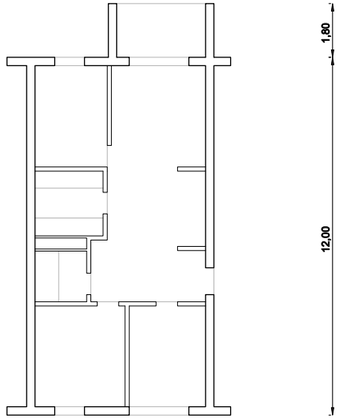
Fig. 29. Block 5 adapted

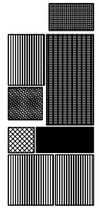






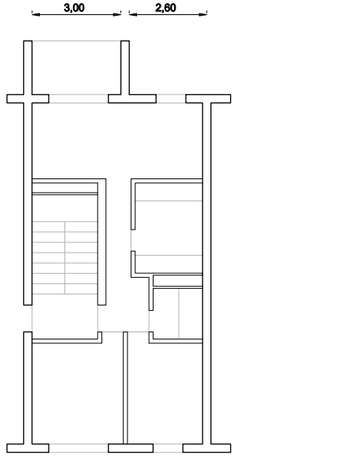


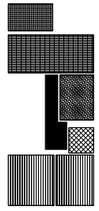




3B

	m2	sq ft
living room	19.1	205
kitchen	5.0	54
bathroom	2.9	31
circulation	6.6	71
bedroom 1	8.2	88
bedroom 2	10.2	110
bedroom 3	8.7	94
balcony	5.4	58
Living SUR	66.1	711
Constructed SUR	81.7	879



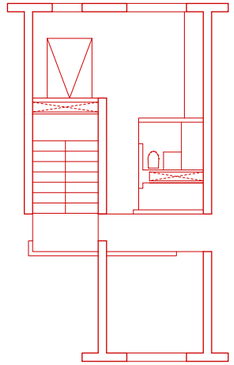


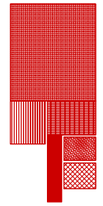
2B

	m2	sq ft
living room	14.6	157
kitchen	6.8	73
bathroom	2.8	30
circulation	5.4	58
bedroom 1	10.4	112
bedroom 2	8.5	91
balcony	5.4	58
Living SUR	53.9	579
Constructed SUR	69.6	749

STU-BL1-F0

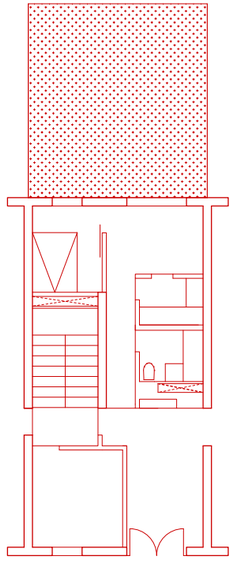
	m2	sq ft
living room	11.5	124
kitchen	7.2	78
bathroom	3.2	34
circulation	3.4	37
terrace	12.0	129
Living SUR	66.3	402
Constructed SUR	44.9	483

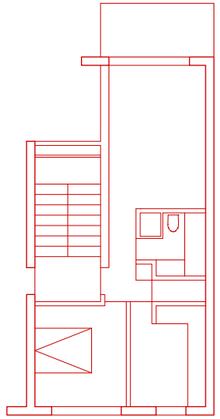




1B-BL1-F0

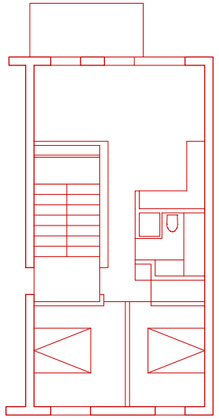
	m2	sq ft
living room	7.4	80
kitchen	3.4	37
bathroom	3.7	40
circulation	4.4	47
bedroom 1	6.8	73
garden	39	420
Living SUR	64.7	697
Constructed SUR	35	377

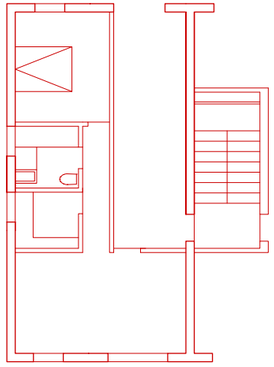




1B-BL1	m2	sq ft
living room	15.6	168
kitchen	8.5	91
bathroom	3.8	41
circulation	2.8	30
bedroom 1	10.3	111
balcony	6.8	73
Living SUR	47.8	514
Constructed SUR	61.8	665

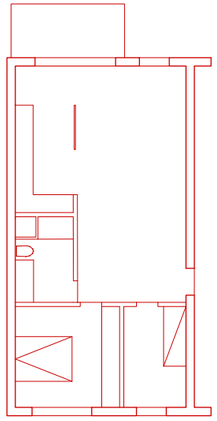
2B-BL1-TB	m2	sq ft
living room - kitchen	21.9	236
wardrobe	2.0	22
bathroom	3.8	41
circulation	2.8	30
bedroom 1	10.3	111
bedroom 2	8.5	92
balcony	6.8	73
Living SUR	56.1	605
Constructed SUR	67.3	724

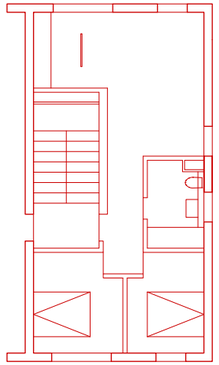




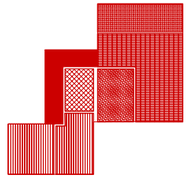
1B-BL2-F0	m2	sq ft
living room	19.3	208
kitchen	4.0	43
bathroom	4.4	47
circulation	3.8	41
bedroom 1	11.7	126
Living SUR	43.2	465
Constructed SUR	53.2	573

2B-BL1-TA	m2	sq ft
living room	28.8	310
kitchen	9.5	102
bathroom	5.6	60
bedroom 1	11.8	127
bedroom 2	7.0	75
balcony	6.8	73
Living SUR	69.5	747
Constructed SUR	82.2	885

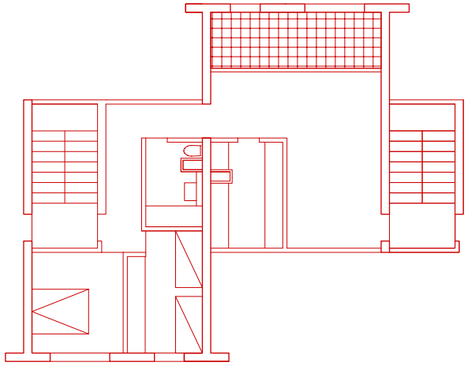


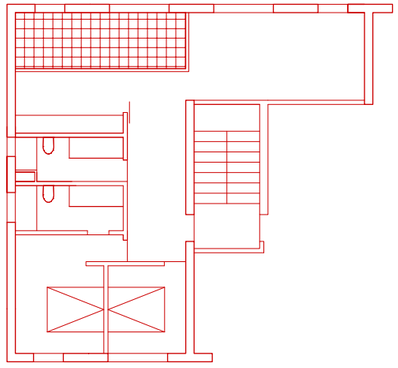


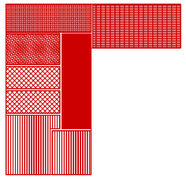
2B-BL2-F0	m2	sq ft
living room	17.8	192
kitchen	4.1	44
bathroom	5.6	60
circulation	4.7	51
bedroom 1	9.6	103
bedroom 2	8.3	89
Living SUR	50.1	539
Constructed SUR	75.4	812



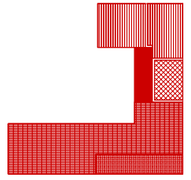
2B-BL2-TB-F2	m2	sq ft
living room	24.4	263
kitchen	8.6	93
bathroom	5.4	58
circulation	8.6	93
bedroom 1	10.3	111
bedroom 2	9.8	105
terrace	10.8	116
Living SUR	77.9	839
Constructed SUR	92.8	999



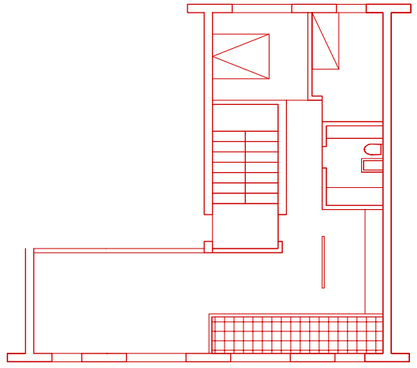


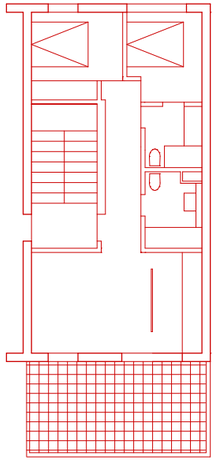


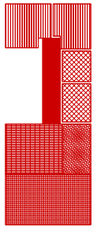
2B-BL2-TA-F2	m2	sq ft
living room	17.4	187
kitchen	7.5	81
bathroom 1	5.4	58
bathroom 2	5.4	58
circulation	12.5	135
bedroom 1	12.4	133
bedroom 2	7.7	83
terrace	10.8	116
Living SUR	79.1	851
Constructed SUR	95.2	1025



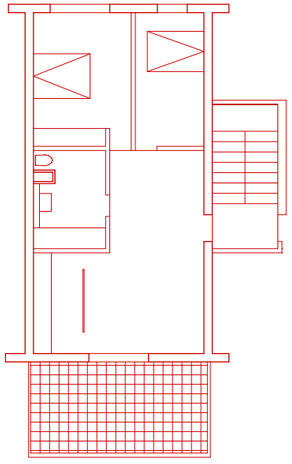
2B-BL2-TC-F2	m2	sq ft
living room	29.5	318
kitchen	7.1	76
bathroom	5.1	34
circulation	4.4	47
bedroom 1	9.4	101
bedroom 2	8.4	90
terrace	7.7	83
Living SUR	71.6	749
Constructed SUR	86.2	928



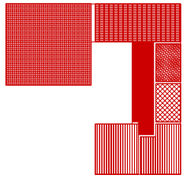




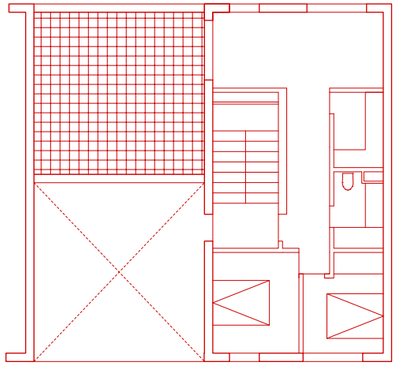
2B-BL3-TA-F1	m2	sq ft
living room	13.6	146
kitchen	5.7	61
bathroom 1	3.9	42
bathroom 2	4.9	43
circulation	6.9	74
bedroom 1	8.5	91
bedroom 2	7.2	78
balcony	19.7	212
Living SUR	70.4	747
Constructed SUR	81.4	876

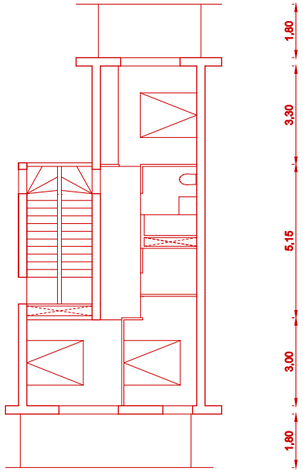


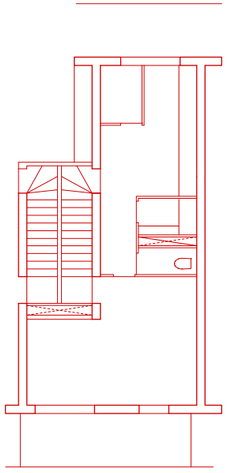
2B-BL3-TA-F1	m2	sq ft
living room	24.5	264
kitchen	5.7	61
bathroom	8.0	86
bedroom 1	14.7	158
bedroom 2	10.3	111
balcony	20.0	215
Living SUR	83.2	895
Constructed SUR	95.5	1028



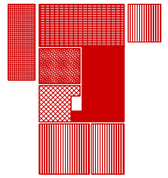
2B-BL3-F3	m2	sq ft
living room	14.6	157
kitchen	4.2	45
bathroom	4.3	46
circulation	8.6	93
bedroom 1	9.8	105
bedroom 2	8.2	88
terrace	31.3	337
Living SUR	81	871
Constructed SUR	95.6	1029

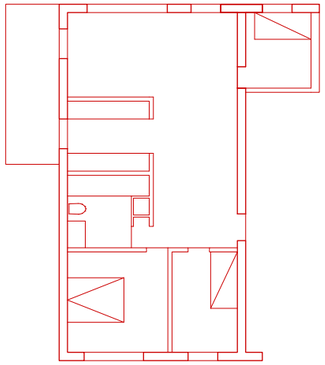




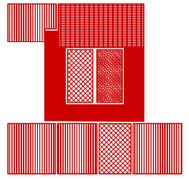


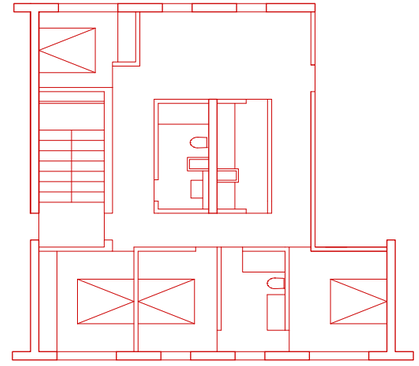
3B-DUPLEX	m2	sq ft
living room	21.2	228
kitchen	11.3	122
bathroom 1	4.1	44
bathroom 2	4.2	45
circulation	10.2	110
bedroom 1	10.7	115
bedroom 2	9.2	99
bedroom 3	8.5	91
balconies	33.1	356
laundry	2.8	30
Living SUR	115.3	1240
Constructed SUR	147.5	982





3B-BL1	m2	sq ft
living room	16.3	175
kitchen	6.5	70
bathroom	5.7	61
circulation	14.9	160
bedroom 1	5.6	60
bedroom 2	11.4	123
bedroom 3	7.4	80
balcony	9.7	104
Living SUR	77.5	833
Constructed SUR	90.7	976





4B-BL2-F0	m2	sq ft
living room	16.9	182
kitchen	6.0	65
bathroom 1	6.1	66
bathroom 2	7.3	79
circulation	18.9	203
bedroom 1	7.6	82
bedroom 2	10.8	116
bedroom 3	9.0	97
bedroom 4	11.1	119
Living SUR	93.7	1009
Constructed SUR	110.0	1184

Fig. 43. Housing interiors in block 2

DIVERSIFICATION

No.	
	DI-S-001
	DI-S-002
	DI-S-003
	DI-S-004

No.	
	DI-M-001
	DI-M-002
	DI-M-003
	DI-M-004
	DI-M-005
	DI-M-006
	DI-M-007
	DI-M-008
	DI-M-009
	DI-M-010
	DI-M-011
	DI-M-012
	DI-M-013
	DI-M-014

No.	
	DI-L-001
	DI-L-002
	DI-L-003
	DI-L-004
	DI-L-005
	DI-L-006
	DI-L-007
	DI-L-008
	DI-L-009
	DI-L-010
	DI-L-011

Etymons: medieval Latin dīversificāre to diversify v.: compare French diversification (14th cent. in Littré)

The act of changing forms or qualities, or of making various.

In economics, the spread of investment over a variety of enterprises, or the production of a variety of different articles, services, etc., often as a safeguard against the effects of fall in demand for a particular product.

In oratory, to vary a subject, by enlarging on what has been briefly stated, by brief recapitulation, by adding new ideas, by transposing words or periods, etc.

The spatial strategy of diversification is deployed to accommodate new social groups into modernist residential districts. As the original inhabitants disappear, planning the identity of the new residents becomes the true engine in shaping the future of the communities. Spatially, the strategy of diversification is implemented through strategic refurbishments, remodelings, or new dwelling infills. The correct scale of implementation determines the social cohesion that this spatial strategy achieves.

Noortje & Remmelt
U.J. Klarenstraat
DIY'ers of 120m2, 2nd floor, balcony
Household: 3

We joined the poroject late and therefore had not so many expectations except an affordable home that we could design and realize to our taste. The search for homes in Nieuw-West proved to be quite difficult, I was especially unimpressed with the new buildings with small windows and traditional layouts. And the homes of the 50s and 60s were often too small. The combination of an "older" home in this neighborhood and the huge amount of light and space made me excited about the porject. Plus the collaboration with the other DIY'ers . I have a lot of respect for what the group realized in the time before we joined the project,

We placed as litle walls as possible and created in this way a very opened apartment. We did the demolishing ourselved , but for the actual finishing we hired porfessionals. Without a project manafer to save costs. I was our own project manager and I managed quite well. Planning, purchase materials, direct workmen, design the light plan, budget control.

Lisa & Chris
U.J. Klarenstraat
DIY'ers of 74m, 4th floor, greenhouse, balcony, and terrace. Household: 2

We found an affordable home in Amsterdam, furnished to our liking, with no neighbors above and no roommates. We were prepared to do a lot ourselves and put a lot of time. We are very happy with the quality of the porperty we have achieved (as newby DIY'ers), and ultimately within budget. Also very pleased withthe atmosphere in the street and the pleasant contact with the neighbors.

We would take part again in a similar project , it gives you many opportunities to steer matters yourself, determine what you want.

Elian & Hanneke
Leinefelde Südstadt
DIY'ers of 166 m2, ground, 1st, and 2nd floor, garden. Household: 3

To be able to design and realize a house enirely according to your own idea. An active neighborhood wih pleasant contacts with the neighbors. To build a home that "normally" cannot be realized in Amsterdam (in terms of living space, price, quiality).

To realize a house that feels like a cocoon, completely adapted o our wishes. In our view, there is no other possibility to realize a property like this.

Lilian
U.J. Klarenstraat
DIY'er of 100m2, ground and 1st floor, garden. Household: 1

I wanted to get out of my old house which was becoming increasingly more expensive. I also, for the longest time, have wanted to live on the ground floor, see the street from my window and work in my garden. I had few expectations about the renovation and completition except that it would be very complicated. It was definately complicated and that is why I was glad I had the right people around me. The layout of the spaces was a different story: where to put the toilet and how many, where to put the kitchen? It was of course great that I could determine all of that myself, but how...? I looked at lots of pictures and had lot of advice from others. Fortunatelly I had excellent handymen for the finishing, they were very flexible and though t along, so a lot of things were able to emerge during the process. And the sleepless nights of course.

I am quite satisfied with everything. It really becomes your dream palace! The upper floor for instance is very spacious thanks to the large interior window, and there is a nice compact stairway you can almost look through wich takes up very little space.

Ludo & Patricia
U.J. Klarenstraat
DIY'er of 148m2, ground and 1st floor, garden. Household: 4

We were interested in much space for not too much money and the realization of a dream: build your own home (or at least the interior).

The best was the pleasant contacts with the other residents, we had not expected that there would be sich a feeling of solidarity. As for the house, we are very pleased with the hidden luxuries. We are very proud of the stairs, we designed the shape and chose the steel ourselved. The porduction took much longer than planned, which created a lot of tension because all the other works had to continue. This meant tthat, for a time, we and all the builders had to climb up and down on a wobbly ladder, We are very satisfied with the end result, the staircase has the desired effect, namely visually connecting the space above and bellow. The high cupboard behind the staircase reinforces this effect.

Yes, we would take part in a similar project, even though it was a lot of work, it was definately worth it!

Ulzen, Patricia Van., Rufus De. Vries, and Antoin. Buissink. DIY Klarenstraat : Zelfbouw En De Herontdekking Van De Portiekflat = a New Perspective on the Post-war Social Housing Block. Heijningen: Jap Sam Books, 2017. pp. 89-128.

1. Tatami module
The modulation of the dwellings through the dimensions of the tatami is continued in the refurbishment as a means to increase the flexibility of the dwellings resulting from the standardization and interchangeability of spacer elements, furniture, and other elements of the refurbishment.

2. Kitchen
The original wall-mounted kitchens are transformed into a face-to-face counter kitchen with a unique height. This maximizes the use of the surface (the cook can use the counter as extra workspace), and allows the cook to face diners during the process of preparing the food. The kitchen becomes a living room programmed to enhance reunion while eating.

3. Domestic Working Space
Working space is a programmatic need that incoming residents seek but the original dwellings did not contemplate. Without specific or additional rooms, Muji is claming in-between spaces that offer the possibility to telework with reasonable privacy in order to connect and disconnect with/from work and home.

DIVERSIFICATION
No. AD-M-001
18 Sheets - Sheet 1
scale M
>2003

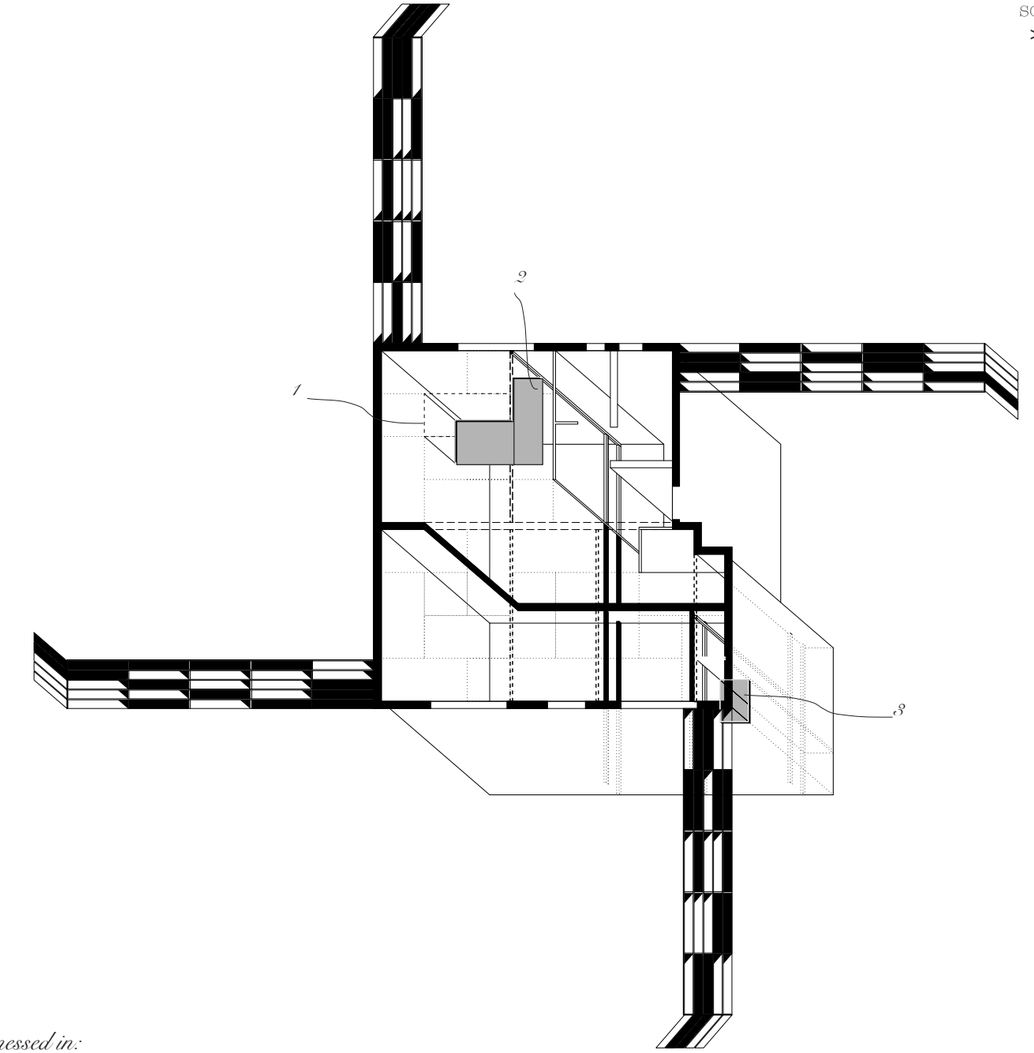


Fig. 1

Witnessed in:
Chiba, Japan

by:
MUJI X UR

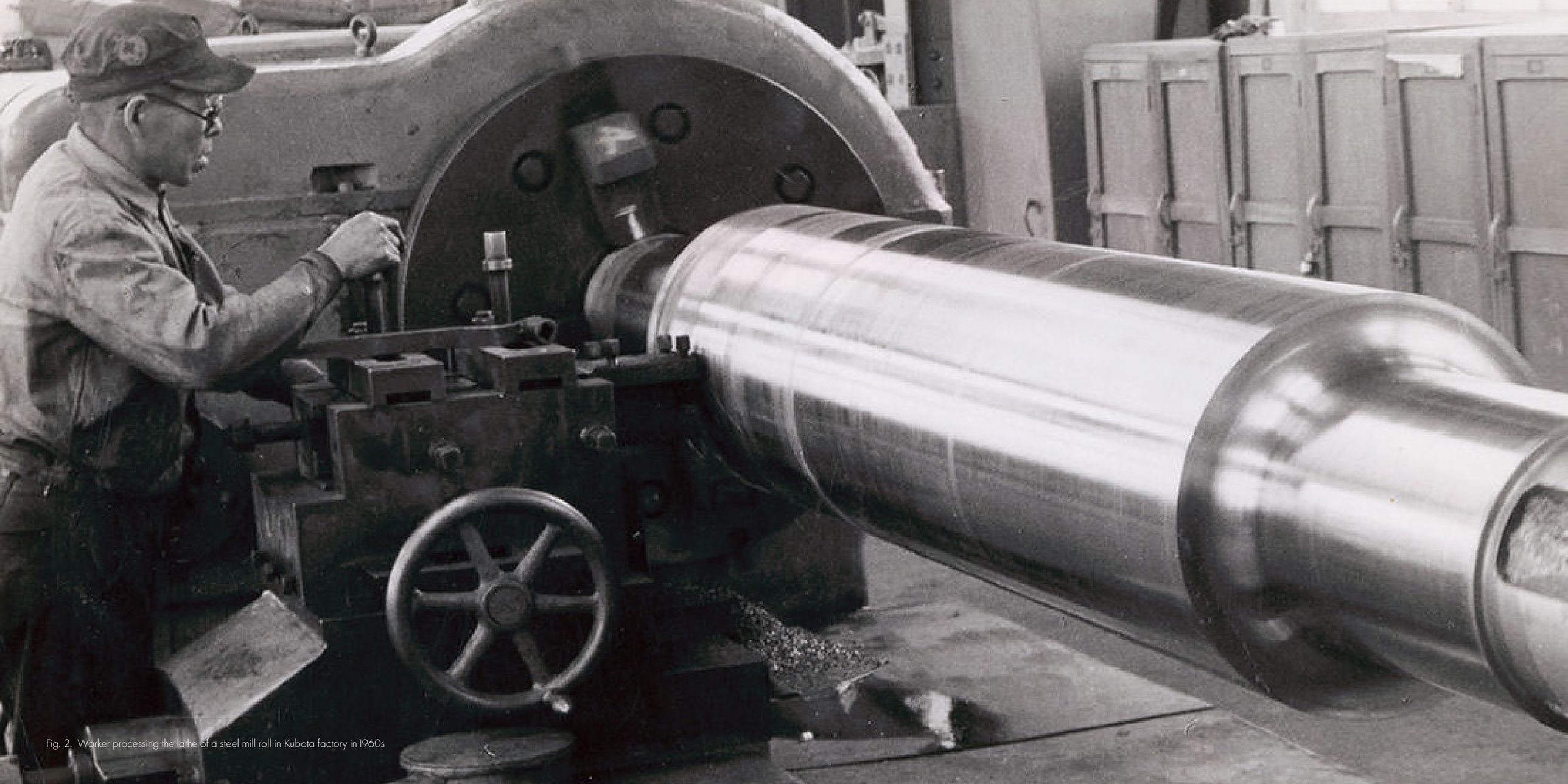


Fig. 2. Worker processing the lathe of a steel mill roll in Kubota factory in 1960s

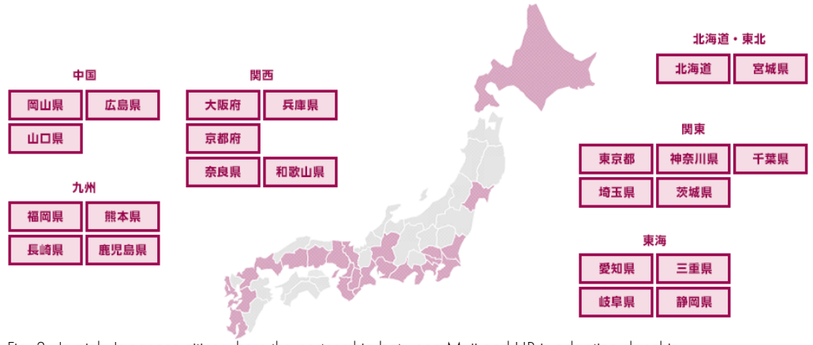


Fig. 3. In pink, Japanese cities where the partnership between Muji and UR is adapting danchis

Modernist residential districts in Japan were named Danchi (Japanese: **団地**, literally "group land"). Like their Western counterparts, the state built and maintained Danchis to house Japanese workers next to urban production centers. In the early years, the population moved into danchis feeling fortunate. After the aerial bombings of World War II had reduced wooden homes to ash, their concrete construction had great appeal.[1] Today, however, fewer and fewer Japanese citizens live in danchis, preferring detached houses or condominiums. The original inhabitants, now senior pensioners with their dependents living elsewhere, face isolation and are susceptible to *kodokushi*,[2] the phenomenon of dying alone and not being discovered. Since the 2000s, the spread of this social issue combined with the lack of young people is additionally causing nearby stores, public facilities, and schools to close down.

Adapting danchis has become a national response to tackle the social problem of lonely deaths. The spatial strategy of diversification seeks to incorporate young tenants who can consolidate life in the danchis by providing assistance to the seniors and preventing the abandonment of the architecture. Aware of both the scarcity of resources and the urgency of the challenge, the Urban Renaissance Agency (UR)—formerly Japan Housing Company—paired with the national furniture brand Muji to redecorate the empty units of selected danchis with the brand's furniture and aesthetics in order to attract young people. With a minimum revamp of the building, the strategic redecoration of apartments, and a marketing campaign, there are now lists of young Japaneses waiting to live in danchis across the country.

The national adaptation of danchis through the public-private partnership of Muji and UR and the spatial strategy of diversification has merit for its scalability and rapid mobilization to address a social problem. Simultaneously, it stands as an experiment in shifting public perceptions towards a culturally obsolete collective housing structure. Therefore, the spatial strategy of adaptation in Japan introduces the post-war Danchi into the contemporary housing imaginaries of a new generation.

1 Neitzel, Laura L. (2016) The Life We Longed for: Danchi Housing and the Middle Class Dream in Postwar Japan. Studies of the Weatherhead East Asian Institute, Columbia University. Portland, Maine: MerwinAsia, p. 3.
2 Dahl, Nils (2020) "Governing through Kodokushi. Japan's Lonely Deaths and Their Impact on Community Self-government." Contemporary Japan (Berlin, Germany) 32, no. 1: pp. 83-102.

Date	1968
	2003 - to date
Architect	–
	–
Client	Japan Housing Company
	Urban Reinassance Agency (UR)
Site Area	–
	–
Units	–
	–
Habitants	–
	–
Blocks	174
	7
Floors/Block	5
	–
Open Space	–
	–
Uses	Social, cultural, commercial, sportive, and religious
	None
Cost	–
	–
Awards	–
	–

original

Architect	Government Commisioned	Developer Commisioned	H. Company Commisioned	Community		
Delivery Model	Public	Private	Public&Private	Self-help		
Original Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Adapted Land Tenure	Public	Social-Rent	Rental	Cooperative	Owner-Occupied	Private
Spatial Strategy	Addition	Subtraction	Diversification	Reprogramming	Camouflaging	Augmentation
Key Challenges	Living Surface	Economic Pressure	Social Homogenity	Shrinkage	Stigmatization	Urban Space

adapted

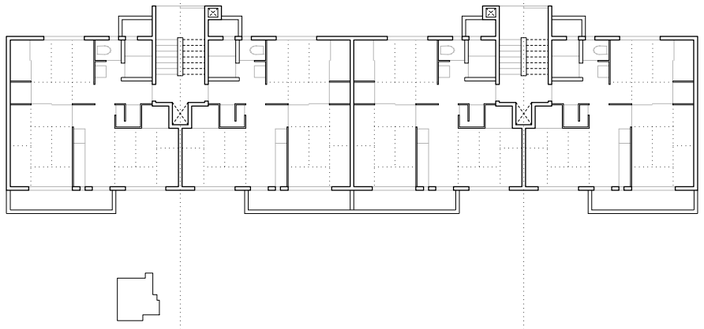
SITE PLAN

Fig. 8. Life scene of original residents in the public space

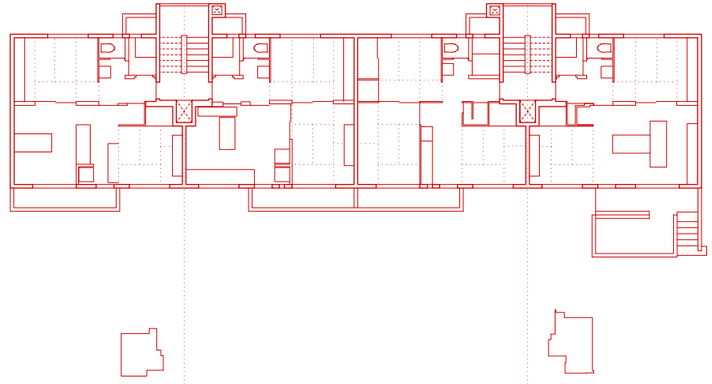
Fig. 9. Life scene of current residents in the public space

Fig. 10. Bamboo scaffoldings during danchi's construction

Fig. 11. Works during dwelling's adaptation



1B
50 m²
538 sq ft



D26-1B
50 m²
538 sq ft

D36-1B
59 m²
630 sq ft

original

adapted

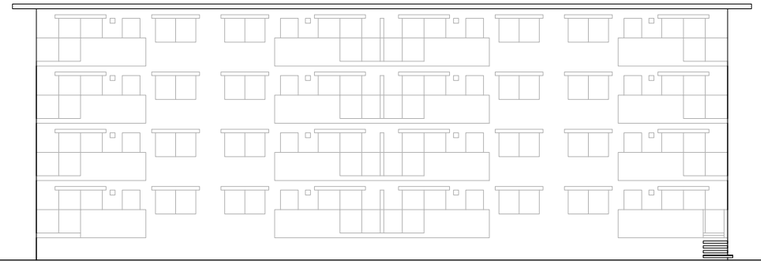


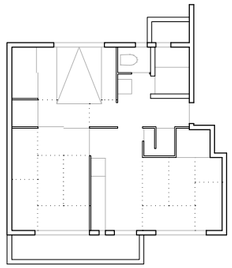
Fig. 15. Aerial view of the danchi adapted

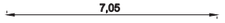
original

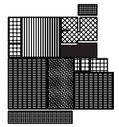
adapted

Fig. 16. Interior view of a bedroom left and kitchen right

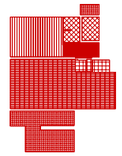
Fig. 17. The kitchen is incorporated to the dining room so the cook is not isolated when preparing meals







1B-CV	m2	sq ft
living room	15.5	166
kitchen	5.9	63
bathroom	3.7	40
circulation	2.1	22
bedroom 1	7.0	75
balcony	4.3	46
semi-exterior	1	11
Living SUR	39.5	423
Constructed SUR	50	538



D36-1B-CV	m2	sq ft
living room/kitchen	21	226
bathroom	3.6	38
circulation	2.3	25
bedroom 1	9.3	100
semiexternal	10.2	110
stall	1.6	17
Living SUR	48	516
Constructed SUR	58.6	630
Demolished SUR	0	0
Added Living SUR	9.3	110

D26-1B-CV	m2	sq ft
living room/kitchen	21	226
bathroom	3.6	39
circulation	2.3	25
bedroom 1	9.3	100
semiexternal	4.4	47
stall	1.7	18
Living SUR	42.3	455
Constructed SUR	50	538
Demolished SUR	0	0
Added Living SUR	0	0

Fig. 20. Continuity of tatami modulation, highlighted with ornamental wooden beams

Fig. 21. Kitchen and living room integrated

Fig. 22. New open distribution

Fig. 23 Flexibility in compartmentalization

Fig. 24 Ground level dwelling's terrance extention

Fig. 25 Domestic working spaces

l e t t e r s

Modernist residential districts are the most substantial collective housing structures inherited by cities across the world. During the three decades following World War II, the welfare state reshaped the face of the Earth through the concrete of these architectures, and it redefined the identity of civil society through their universal collectivity. Modernist collectivity, based on the nuclear family and the minimal existence, is now culturally obsolete. Yet, it represents a vast resource of affordable housing within urban centers. The physical wear of these housing projects and the accumulation of socio-economic changes have left these architectures and their communities in a critical situation, one in which action must be taken. Of the two possible actions—demolition or adaptation—adaptation responds sensitively to the residents and the environment. The unique spatial knwoledge that designers hold is vital to adapting modernist residential districts into state-of-the-art contemporary collective forms. The six spatial strategies of adaptation—addition, subtraction, diversification, reprogramming, camouflaging, and augmentation—and the architectural, urban, and landscape practices documented in the *Manual* evidence how designers, civilians, authorities, housing companies, and developers are rewriting—with their local knowledge—modernist residential districts' physical wear, socio-economic challenges, and top-down, universal, "20th-century" collectivity. Given today's extreme shortage of affordable housing in cities, and the fatal environmental consequences of demolition, the adaptation of modernist residential districts presents to designers an active work field that supports both affordable housing and climate mitigation.

As authors like David Harvey and Adrian Forty acknowledge in their writings, never in history has concrete been poured onto the surface of our planet at such a rapid rate as today.[1] Today, the production and consumption of concrete has shifted toward new "developing countries". China and India are leading the concrete industry.[2] While a good percentage of this concrete is dedicated to civil engineering projects, another portion goes into housing civilians. The new housing projects that are being built in these and other countries, and their delivery model, are not dissimilar to the post-war modernist residential districts. In keeping with this continuous (re)production, this work—like its subject of study—situates itself within a fluid time frame. The conclusions below may inform both present and future design practices of housing adaptation.

Following the selection and close examination of 18 cases of adaptation crafted according to the most diverse architectural thinking and delivery models, this design research thesis concludes with the following five key understandings regarding the transitioning situation of modernist residential districts across the world:

Sampling of new residential districts built in the last ten years (2010-2020) in Angola —Kilamba New City—, Teheran —Maskan Mehr Project—, and People's Republic of China —Yingkou District—

1 Harvey. David, "The crisis of planetary urbanization" in Gadanho, Pedro and Museum of Modern Art, Host Institution, Issuing Body. Uneven Growth: Tactical Urbanisms for Expanding Megacities. New York: Museum of Modern Art, 2014, pp. 26-39 and Forty, Adrian. "The Geopolitics of Concrete" in Concrete and Culture: A Material History. London: Reaktion Books, 2012, p.118.

2 Of an estimated world production of cement of 2,600 million tons in 2007, China produced 1,300 million tons, and India 160 million tons. Data from US Geological Survey, "Cement" (2008), retrieved from Forty, Adrian. "The Geopolitics of Concrete" in Concrete and Culture: A Material History. London: Reaktion Books, 2012, p. 118.

1. The adaptation of modernist residential districts is ecologically and socially sustainable.

As was declared at the UN Conference on the Human Environment in 1972,[3] the Stockholm Conference, "A point has been reached in history when we must shape our actions throughout the world with more attentive care for their environmental and social consequences." Looking at the ecological and social consequences of demolition and adaptation, we cannot afford to demolish modernist residential districts, especially when these housing structures constitute sizable portions of our cities. Demolition is a wasteful process. Reusing building materials saves approximately 95% of their embodied energy.[4] Adaptation is inherently environmentally sustainable because it involves less resource consumption, less transport energy, less energy consumption, and less pollution during construction.[5] Demolition, in requiring the destruction of the original structure, evicts residents, who are typically elderly and low-income, forcing them to leave their homes and discontinue the social networks that provide them with economic resilience and social identity. Adaptation, by contrast, offers continuity to the social, material, and cultural capital cultivated in the modernist residential districts over half a century. Adaptation is the way of the future.

3 Extract from the Declaration of the UN Conference on the Human Environment (1972), available online at https://documents-dds-ny.un.org/doc/UNDOC/GEN/NL7/300/05/IMG/NL730005.pdf?OpenElement. Accessed April 7, 2021.

4 Reference to Binder M, "Adaptative Reuse and Sustainable Design, 2003" in Wilkinson, Sara, Hilde Therese Remøy, and Craig A. Langston. Sustainable Building Adaptation: Innovations in Decision-making. Innovation in the Built Environment. Chichester, West Sussex: Wiley Blackwell, 2014.

5 Johnstone, I.M. "An Actuarial Model of Rehabilitation versus New Construction of Housing", Journal of Property Finance, 1995, 6 (3), pp. 7-26.

2. Adaptation reverses conflicted situations of modernist residential districts.

Modernist residential districts were envisioned and implemented under failed economic structures such as Fordism and Keynesianism, failed political systems such as communism and colonialism, and invalid social ideologies such as racism. These outmoded doctrines have brought consequences and unrest to the communities living in modernist residential districts. The post-war economic expansion and the Keynesian belief in linear progress sustained the public construction of a housing stock that nation states have not been able to maintain over time. A continuous decrease of public subsidies results in the increasing economic struggles of housing companies managing modernist residential districts. Moreover, Fordism's reliance on mass production as a source of economic growth, paired with Keynesianism, propelled the construction of new towns with single factories as a source of development and employment in the post-war era. With the discontinuation and/or relocation of industrial production, these monolithic economic structures have plunged their communities into deep crises of unemployment and deceleration.

Through their spatial definition, modernist residential districts served nation states to support their Fordist economies. In support of mass consumption, modernist residential districts were built solely for the nuclear family. As original inhabitants disappear, contemporary household structures struggle to fit into the district's nuclear-family monotype dwellings. Moreover, modernist separation of uses, frequently paired with a lack of amenities due to cutbacks during their construction, led to inadequate urban spaces that residents must deal with. Once again, poor maintenance due to the state's withdrawal of funds has advanced the marginalization and lack of safety on the ground floor of modernist housing projects. Finally, modernist residential districts built by colonial, racist, or communist regimes face stigmatization after their original ideologies have been publicly rejected. In certain regions, the distinct aesthetic of the modernist residential district has absorbed disgraced connotations. The contemporary processes of adaptation overcome these inherited conflicts to ameliorate the districts' social status quo. Following these renegotiations, public perceptions are also reshaped. Formerly notorious and dilapidated districts have become advantageous places to live.[6] Modernist housing projects and their collectivity is spatially, culturally, and economically evolving through processes of adaptation.

3. Adaptation profits from Modernist design principles.

No architectural movement in history was more obsessed with rationality than modernism. This rational logic translates today into flexibility, which offers an easy groundwork for spatial modifications in adaptation. Of the urban and architectural modernist design principles, four emerge that are highly advantageous to adaptation. The first two—standardization and the curtain wall—are related to the economy of means and fast construction. Amidst the extreme housing shortages at the turn of the 20th century, the construction of modernist residential districts allowed cheaper and faster construction through standardization and the repetition and prefabrication it allowed. Over half a century later, standardization is facilitating and speeding up structural analyses and favoring load redistributions, [7] which ultimately supports a wide range of spatial modifications in modernist blocks. The economy of means also led to the redefinition of buildings' facades through the curtain wall. Modernist architects made the facades structurally independent

6 See in the *Manual* the adaptations of Columbia Point, Grand Parc, Hanamigawa, Rimavska Sobota, Choi Hung Estate, or Les Courtillieres

7 See in the *Manual* the adaptations of Europarei, Grand Parc, Chaoué, Marzahn, Leinefelde, Klarenstraat, or Nid d'Abeille.

from the rest of the building as a means to simplify construction, reduce its cost, and allow more light into the dwellings. Through this independence, modernist curtain wall residential facades can be fully redesigned without structurally compromising the blocks.[8]

The next two modernist design principles that remain relevant today focus on human health. They are cross-ventilation and vacuous landscapes. In order to reduce the accumulation of moisture, odors, and other gases during occupied periods, modernist architects embraced the cross-ventilation of block dwellings as a means to create air movement that would increase salubrity. Today, cross-ventilated dwellings allow greater possibilities for alternative re-distributions since air and light come from more than one facade.[9] This understanding of the potential of the natural elements also informed the landscape strategy. In response to the insalubrious, unplanned, dense slums that collapsed cities at the end of the 19th century, modernist architects planned apartment blocks scattered across ample and continuous parklands. The separation between blocks introduced healthful air and light into the dwellings. The resulting large open space, through its densification, serves as a broad arena for social and economic renegotiation in adaptation.[10]

4. The adaptation of modernist residential districts is cheaper than demolition and building anew.

The economic benefits of adaptation versus demolition and new construction yield enough profit to interest stakeholders considering both the continuity of existing communities[11] and the introduction of different groups of residents.[12] Adaptation is highly economical for a variety of reasons. Adaptation fully spares the cost of demolition. This cost typically accounts for 30% of the total process. Since adaptation spares demolition and is quick to implement, tenants can remain in the building, reducing the loss of rent that the owners of the districts suffer during demolition and construction by 95%. Construction costs can be reduced by 47% due to the reuse of structures and infrastructure. The cost of tenant relocation is reduced to the minimum since adaptations are rapidly implemented. All in all, adaptation leads to a median cost reduction of 58.6%.[13] Therefore, the economic benefit of adapting is sufficient to propose a profitable business model for owners of modernist residential districts, authorities, and developers while saving money for housing companies, securing their housing stock, and substantially upgrading the living conditions of residents. Adaptation forms a strong business model.

8 See in the *Manual* the adaptations of De Dillenburgh, Grand Parc, Europarei, Rimavska Sobota, or KTT Nguyen Cong Tru.
9 See in the *Manual* the adaptations of Klarenstraat, Leinefelde, Grand Parc, or Les Courtillieres.
10 See in the *Manual* the adaptations of San Pablo Xalpa, Les Courtillieres, De Dillenburgh, Chaouè, Leinefelde, Columbia Point, Rimavska Sobota, Choi Hung Estate, or Nid d'Abeille.

11 See in the *Manual* the adaptations of Grand Parc, Dearborn Homes, Tbilisi Loggias Extensions, Nid d'Abeille, or KTT Nguyen Cong Tru.
12 See in the *Manual* the adaptations of Klarenstraat, De Dillenburgh, Rimavska Sobota, and Columbia Point.
13 This data comes from Druot, Lacaton & Vassal in "State of Accounts" found in Druot, Frédéric, Lacaton, Anne, and Vassal, Jean-Philippe (2007) PLUS. Barcelona: Editorial Gustavo Gili, pp. 60-63 and the author's own analyses through a final paper (graded with distinction) for the course Project in Innovation Delivery at Harvard University Graduate School of Design, Fall Semester 2020, taught by Mark R. Johnson.

5. Adaptation distributes power among stakeholders.

The top-down, mass-produced, public, and homogenizing housing models that gave birth to modernist residential districts during the post-war period are no longer sustained. Unlike in the 1950s and 1960s, nation states do not have the strength or economic capacity to orchestrate on their own the preservation of modernist residential districts or their communities. This time, the power is highly distributed among stakeholders. Adaptation becomes a collaborative, open process between local authorities, housing companies, developers, civilians, and designers. After half a century, each modernist residential district's community and urban context is unique. Districts' stakeholders collaborate and arrive at agreements to reshape the districts' original spatial homogeneity, to better serve everyone's needs. In the process, each of the five stakeholders holds specific opportunities and roles. As illustrated by the 18 case studies from the *Manual*, different adaptations have different stakeholders as determinant actors propelling the transformations. The following five letters serve to illustrate those opportunities and roles held by each stakeholder in adapting modernist residential districts. These letters have been written both as the final statement of this thesis and a starting point for the work that the author plans to do in the near future, namely, promoting the adaptation of districts in disrepair. The geographic scope of the recipients of these letters has been reduced from the five continents in the *Atlas* and *Manual* to the two continents with which the author is familiar: Europe and North America. The purpose of this reduction is to be as specific as possible.

The first letter, addressed to the residents of a modernist residential district in London, responds to the determination of this country to demolish and redevelop its modernist heritage while acknowledging the rise of a "resistance" among British architects. The second letter is written to the New York City Housing Authority (NYCHA) —with some differences, NYCH's role corresponds to that of a housing company in other parts of the world— and reflects on the unique opportunity that this country has in adapting modernist residential districts, especially in cities like New York. Although defunded, the U.S. public housing system did not sell its housing stock and is now offering centralized management that eases the process of decision-making. The third letter is addressed to Madrid's local authority. The letter draws up an action plan to adapt a specific modernist residential district with European funding. Since the dwellings were sold to the original residents, the state —owner of the district's public space—, becomes the determinant actor to initiate this adaptation. The fourth letter is addressed to a big company of developers that operates in two European countries where modernist residential districts account for sizable portions of their cities. This letter presents adaptation as a profitable business model. Finally, the fifth letter is sent to the GSD community as a formal invitation to faculty and students to engage with urban regeneration through housing adaptation.

April 20, 2021

Community Brandon
Andrews Walk Brandon Estate
London SE17 3JQ
United Kingdom

To the Honourable residents of the Brandon Estate,

Your district is in disrepair. The degradation will continue to grow in the upcoming years, but it can be fixed. However, if you plan to continue living in your district, your community needs to come together and advocate for its adaptation instead. If you don't do this, chances are that local authorities and housing companies will not act until the disrepair is such that they can declare your home unoccupiable and sell the whole district to private developers. When this happens, you and your neighbours will be evicted. However, if you come together and claim your agency, this process can be stopped. Residents of similar social housing estates like West Kensington and Gibbs Green Estates have halted their programmed demolitions and are now receiving investment for the adaptation of their district.

In response to London's aggressive waves of demolition and redevelopment in the last 10 years, a new sensibility and social conscience is rising to protect the continuity of communities like yours. Below, I offer a two-step strategy to set in motion the resistance to the abandonment and demolition of your district and push for the adaptation of your estate:

1. Call a community meeting to vote on whether it is relevant for you and the other residents to stay in the district with a 10-year perspective.

If there is a majority that votes yes to continuity:

2. Contact Architects for Social Housing (ASH). This London-based NGO is dedicated to advocating and negotiating with authorities on your behalf. They will support you through the development of policy and design scenarios for the estate. Contact founder and director Geraldine Dening at **info@geraldinedening.com.**

I urge you to act quickly, as your housing company may already be negotiating the demolition of your homes.

Wishing you success,

Adriana Pablos
Principal, Office for Adaptation

April 23, 2021

Gregory Russ
New York City Housing Authority
250 Broadway, New York, NY 10007

To the Honorable Chair and Chief Executive Officer of the New York City Housing Authority,

The lack of public funding and the increasing disrepair of your modernist housing projects is putting New York City's public housing stock at risk. Cities around the world that are facing these same problems are adapting their public housing projects. Chicago recently completed the full renovation of Dearborn Homes, one of its oldest districts, for less than the cost of a housing voucher per unit. Below is a list of adaptive strategies and measures to put to an end the flood of breakdowns and repair orders in your housing projects. You will also find attached a manual of adaptations deployed by other housing companies. The sooner you adapt, the cheaper and easier it will be to restore wellbeing in the projects and their communities.

STRATEGIES

1. Upgrade housing stock

The architecture no longer provides household structures and comfort standards that match with the contemporary needs and aspirations of the communities. To meet today's demands, you should rearrange the blocks' dwellings according to the demographics of your population. If the dwellings are too small, add living surface by either attaching loggias to the facades or combining dwellings. If the dwellings are too dark, redefine the facades. If there are insufficient elevators, consider adding new ones.

2. Become financially secure by increasing revenue

Adaptation can be planned to increase your revenue in the future as the government withdraws funding. If a district is not at full capacity, consider introducing new social groups to the districts. Additionally, upgrading the dwellings will attract new tenants. If you are at full capacity, consider adding new dwellings and programs within the district. Finally, consider partially filling public space to incorporate new programs within the dwellings.

3. Reduce energy expenditure

Energy-efficient upgrades boost your net operating incomes by saving money on energy bills. Additionally, they improve your environmental outcomes. Given the size of your housing stock, the impact of improving the energy performance of your dwellings is significant in relation to your company's operating costs and the environment. To stabilize indoor temperatures and reduce the energy demand for space conditioning in dwellings, consider external insulation, facade redefinition, and solar panels.

MEASURES

1. Start by setting up a consultation with residents. Through interviews, learn about the district's problematic aspects and the assets that affect community life. The inquiry should consider large and small scales within the district (i.e., urban spaces and dwellings) and include immediate issues while also envisioning the district's future.

2. Look for funding opportunities from federal and state authorities, public and private institutions, as well as developers. Consider the physical degradation as well as climatic mitigation as main arguments to apply for funding. Consider hiring a financing and grant-writing expert.

3. Launch a design competition to find spatial solutions. These competitions generate new concepts and stimulate public debate. They may introduce you to new ideas and spatial conflicts you had not previously imagined.

4. With the competition results in hand, establish a committee to workshop these visions with the community. Based on the drawings, the clear reactions and suggestions from the community will advance the planning process. You may include the architects and community planners to assist you in this process and redefine the design.

The purpose of these measures is to protect the continuity of your housing stock and its service to New Yorkers.

Sincerely,

Adriana Pablos
Principal, Office for Adaptation

April 26, 2021

José María García Gómez
Dirección General de Vivienda y Rehabilitación
Calle Maudes, 17, 28003, Madrid, España

To the Honorable Director of Madrid's General Authority of Housing and Rehabilitation,

Cities around the world are mobilizing to adapt modernist residential districts. As their decay continues, over the next 15 years, the metropolitan area of Madrid will lose its greatest affordable housing resource: the residential districts built during the 1960s. The European Union has recognized the urgency and social, environmental, and economic benefits of adapting these districts, raising communitarian funds to support the continuity of these architectures and their communities. Paris, Amsterdam, and Berlin are leading the way in adaptation. The capital is eligible to receive this support; Madrid needs it.

El Barrio del Pilar in Fuencarral-El Pardo should be the district to start Madrid's grant application. Its size, physical degradation, demographic situation, and location within the city are similar to the conditions that have served other cities to secure EU funding. Below are a set of strategies and benefits to set in motion El Barrio del Pilar's much needed adaptation.

STRATEGIES

1. **Start a consultation with the residents of El Barrio del Pilar.** This consultation should be conducted through interviews. Its purpose is to reveal the challenges and advantages of the district impacting its community. The interviews will lay bare the different interests and visions within the diversity of residents. This inquiry should consider the district but also its relation and context within the whole city.
2. **Prepare a report to synthesize the present situation of the district.** This report is framed to reveal the district's social and economic changes over time, its relationship with the urban context, and the physical conditions of the blocks and urban space. Include the residents' interviews as evidence. The report of El Barrio del Pilar will illustrate the district's census (13,000 residents), rate of abandonment, new household structures, its privileged context within Madrid, and its spatial disrepair with a priority list for renovation. For additional funding, commission a study on the carbon embedded in the district.
3. **Organize a design competition.** With this report ready, set a design competition to find spatial scenarios that respond to the needs of the district. In mobilizing the design community, the Architects' Association of Madrid (COAM) is your ally. I would happily arrange a conversation with them. The results must be shared and opened to consultation with the residents of El Barrio.
4. **Estimate the cost of adaptation.** With the design competition results, create a public bid for contractors. The purpose is to find a preliminary estimate of the total cost of construction.
5. **Apply to grants.** As soon as you share the design competition results with the community, start writing the application to the European Regional Development Fund (ERDF).

2. BENEFITS

Adapting El Barrio del Pilar will be a triple political victory for your administration. This adaptation will exemplify the success of your commitment to addressing the scarcity of affordable housing in Madrid, it will advance the city's ambitious climate 2030 Agenda, and serve as a prime example for attracting international investment to the capital. Consuming very few of your resources, the adaptation of El Barrio del Pilar will become an environmental statement from your cabinet in support of affordable housing.

Sincerely,

Adriana Pablos
Principal, Office for Adaptation

April 27, 2021

Walter de Boer
Bouwfonds Property Development Head Office
IJsbaanpad 1, 1076 CV Amsterdam, The Netherlands

To the Honorable CEO of Bouwfonds Property Development,

Today, fewer and fewer families resemble the nuclear family for whom modernist residential districts were built. The mismatch in household structures, paired with the increasing physical degradation of these projects, cultural obsolesce, and the disappearance of the original residents, account for the progressive abandonment of modernist residential buildings. Despite the demographic flight that these districts are experiencing, modernist residential districts are still adequate for living. This presents a remarkable opportunity for developers. The adaptation of modernist residential districts in European countries like the Netherlands and Germany, where you are located, holds great potential for you. Most of the modernist districts situated in Amsterdam, Rotterdam, Frankfurt, Berlin, or Munich are now located within urban centers. By adapting these structures, you avoid demolition, sparing the tenants eviction and reducing construction costs and time. In fact, on average, adaptation reduces 30% of the total operational cost as well as 47% of the construction expenses of demolition. While yielding economic profit, your investment will protect affordable housing, reinforce social mixing in the city, and offer new and exciting housing possibilities within consolidated urban fabrics.

OPPORTUNITIES

1. With direct grants from the state now drastically reduced, your investment is potentially eligible for tax incentives, low-interest mortgages, and grants supporting climate mitigation and low-income housing.

2. Despite the vast footprint of the districts, adaptation can be implemented on many scales: from a number of dwellings, blocks, and public spaces to the entire district. This allows a variety of investors to join the venture.

3. There is an existing community holding valuable knowledge about the district. Community members know how the space is used and perceived, as well as the problematic aspects of its design and its potentials to make the territory thrive. This information will facilitate successful planning.

4. The free ground of districts typically constitutes 75% of the ground floor. Its densification is an enormous economic opportunity.

5. The structural solidity of modernist residential buildings allows extensions in height (more apartments) and additional balconies (more living space) without the need for additional columns and without compromising the buildings' safety.

STRATEGIES

1. As soon as possible, partner with the community. Where politicians might ignore a developer's vision, it is harder for them to ignore a community demand for better housing.

2. Likewise, establish an open relationship with the housing company that manages the site, and with whom you would like to partner. Present the housing company with your explorations of potential grants available.

3. Involve architects in the early stages to spatially illustrate your interactions with the community, housing company, and local authorities. Represented visions will advance negotiations and push forward your work.

Only a developer knows how to establish 100% occupancy in modernist residential blocks.

Sincerely,

Adriana Pablos
Principal, Office for Adaptation

May 1, 2021

Harvard University Graduate School of Design
48 Quincy St,
02138 Cambridge, MA
United States

To fellow architects, urban designers, and landscape architects of Harvard University's Graduate School of Design,

The continuity of communities living in modernist residential districts is at stake. Despite curated perceptions of failure within our discipline, these inherited monuments from the welfare state represent the most substantial low- and middle-income collective housing resources worldwide. Because of their construction dates (1945-1973), they have reached a pivotal point where physical degradation and cultural obsolesce threatens the well-being of their residents. In response, two contrasting approaches have emerged: demolition and adaptation. Demolition evicts these vulnerable residents and discards usable material and energy. Conversely, adaptation offers continuity to the people, material, and culture cultivated in these architectures over their half century of existence.

We are vital to the efforts of adapting these housing structures. Unlike in other building models where the expertise of design is plainly disregarded in favor of capital, the preservation of modernist residential districts is impossible without our ability as designers to assess existing conditions, reimagine the potentials of the original structures, and spatialize contemporary public housing imaginaries.

OPPORTUNITIES

1. Contributing to stopping the displacement of lower income residents to marginalized and economically isolated urban geographies.
2. Reprogramming an outdated legacy through contemporary domesticity. The built form of housing has always been seen as a tangible, visual reflection of the organization of society. Adaptation offers the spatialization of new forms of cohabitation, typologies, and residential landscapes while ideologically reprogramming the most widespread manifestation of modernist architecture.
3. Working with the end-user in an open process. This is atypical in the work of designers and a great opportunity to implement community methods that use a hands-on approach with residents.
4. Saving energy and preventing the waste of resources within our built environment.
5. Claiming agency within society and taking on expanded roles in housing design and development processes as a means to advance a more equitable housing system.

SIGNIFICANCE

This is the opportunity to work cleverly within existing housing systems while advocating to change them, and potentially bolstering efforts by and for those who are at risk. In the words of Lacaton&Vassal: "This is work where the goal is precision, delicacy, amiability, and attentiveness: being attentive to people, uses, buildings, trees, asphalt or grass surfaces, to what already exists. It is a question of causing the least inconvenience or no inconvenience at all. It is a question of being generous, giving more, facilitating usage, and simplifying life."

Let's work together.

Sincerely,

Adriana Pablos
Principal, Office for Adaptation

BIBLIOGRAPHY

Ábalos, Iñaki, and Harvard University. Department of Architecture. Design Techniques. A T (Vitoria, Spain) ; Issue 45. Vitoria-Gasteiz, Spain: T Architecture Publishers, 2015.

Allen, Judith. Housing and Welfare in Southern Europe. Real Estate Issues (Oxford, England). Oxford ; Malden, MA: Blackwell Pub., 2004.

Avermaete, Tom, Maristella Casciato, Yto Barrada, Takashi Honma, Mirko Zardini, and Centre Canadien D'architecture Host Institution. Casablanca Chandigarh : A Report on Modernization. 1st ed. Montréal : Zürich: Canadian Centre for Architecture ; Park Books, 2014.

Avermaete, Tom. Another Modern : The Post-war Architecture and Urbanism of Candilis-Josic-Woods. Rotterdam: NAi, 2005.

Aynsley, Jeremy., and Harriet. Atkinson. The Banham Lectures : Essays on Designing the Future. English ed. Oxford ; New York: Berg, 2009.

Banham, Reyner. Theory and Design in the First Machine Age. 2d ed. New York: Praeger, 1970.
Benton, Tim. Precisions on the Present State of Architecture and City Planning. New ed. Zurich, Switzerland: Park Books, 2015.

Bitter, Sabine, Helmut. Weber, Kathy Slade, Charles H. Scott Gallery, and Revolver - Archiv Für Aktuelle Kunst. Caracas, Hecho En Venezuela : [on the Occasion of the Exhibition Held at the Charles H. Scott Gallery in Vancouver from June 22 to September 11, 2005]. Vancouver : Frankfurt Am Main: Charles H. Scott Gallery ; Revolver, 2005.

Blau, Eve, Ivan Rupnik, and Iwan Baan. Baku : Oil and Urbanism. Zurich: Park Books, 2018.

Blau, Eve., Ivan Rogić Nehajev, Ivan. Rupnik, and Harvard University. Graduate School of Design. Project Zagreb : Transition as Condition, Strategy, Practice. Barcelona ; New York: Actar D, 2007.

Bouman, Ole., and Nederlands Architectuurinstituut. Architecture of Consequence : Dutch Designs on the Future. Rotterdam: NAi Publishers, 2009.

Britto, Alfredo, Flávia Brito Do. Nascimento, and Renato. Lemos. Pedregulho : O Sonho Pioneiro Da Habitação Popular No Brasil. Rio De Janeiro: Edições De Janeiro, 2015.

Castillo, Greg. Cold War on the Home Front : The Soft Power of Midcentury Design. Minneapolis: University of Minnesota Press, 2010.

Chemetoff, Alexandre. Patrimoine Commun : Leçon Inaugurale De L'École De Chaillot, Prononcée Le 26 Janvier 2010. Cinisello Balsamo, Milan: Silvana, 2010.

Chemetoff, Alexandre., Sandrine. Gill, and Arc En Rêve Centre D'architecture. Visits : Town and Territory : Architecture in Dialogue. Basel ; Boston: Birkhäuser, 2009.

BIBLIOGRAPHY

Druot, Frédéric, Anne. Lacaton, and Jean-Philippe. Vassal. Plus : La Vivienda Colectiva : Territorio De Excepción = Les Grands Ensembles De Logements : Territoire D'exception = Large-scale Housing Developments : An Exceptional Case. Barcelona: GG, 2007.
Engels, Friedrich, and P. J. Proudhon. The Housing Question. New York, N.Y.: International Publishers, 1938.

Fernández Per, Aurora, Javier Mozas, Álex S. Ollero, A T Research Group, Author, and A T Architecture Publishers, Author. 10 Stories of Collective Housing : Graphical Analysis of Inspiring Masterpieces. Vitoria-Gasteiz, Spain: T Architecture Publishers, 2013.

Fernández Per, Mozas, Arpa, Mozas, Javier, Arpa, Javier, and A T Research Group. Density Is Home. A T Density Series. Vitoria-Gasteiz: T Architecture Publishers, 2011.

Gadanho, Pedro, and Museum of Modern Art , Host Institution, Issuing Body. Uneven Growth : Tactical Urbanisms for Expanding Megacities. New York: Museum of Modern Art, 2014.

Geddes, Patrick. Cities in Evolution : An Introduction to the Town Planning Movement and to the Study of Civics. London: Williams & Norgate, 1915.

Giménez, Antonio., and Conchi. Monzonís. Collective Housing. 1.st ed. Vivienda Colectiva/ Contemporary Housing ; 4. Alboraya: Pencil, 2006.

Graaf, Reinier De. Four Walls and a Roof : The Complex Nature of a Simple Profession. Cambridge, Massachusetts: Harvard University Press, 2017.

Habraken, N. J. Supports, an Alternative to Mass Housing. London: Architectural Press, 1972.

Hatherley, Owen. Landscapes of Communism : A History through Buildings. New York: New Press, 2016.

Hays, K. Michael. Modernism and the Posthumanist Subject : The Architecture of Hannes Meyer and Ludwig Hilberseimer. Cambridge, Mass.: MIT Press, 1992.

Herz, Manuel, Hans Focketyn, Ingrid Schröder, Julia Jamrozik, Iwan Baan, and Alexia Webster. African Modernism : The Architecture of Independence : Ghana, Senegal, Côte D'Ivoire, Kenya, Zambia. Zurich, Switzerland: Park Books, 2015.

Jacobs, Jane. The Death and Life of Great American Cities-Vintage Books, 1961.
Jencks, Charles. Modern Movements in Architecture. [1st ed.]. Garden City, N.Y.: Anchor Press, 1973.

Jencks, Charles. The Architecture of the Jumping Universe : A Polemic : How Complexity Science Is Changing Architecture and Culture. Rev. ed. London: Academy Editions, 1997.
Jencks, Charles. The Language of Post-Modern Architecture. Rev. enl. ed. New York: Rizzoli, 1977.

Kaminer, Tahl. Architecture, Crisis, and Resuscitation : The Reproduction of Post-Fordism in Late-twentieth-century Architecture. Abingdon, Oxon [England] ; New York, NY: Routledge, 2011.

Karakusevic, Paul, and Abigail Batchelor. Social Housing : Definitions & Design Exemplars. Newcastle upon Tyne: Riba Publishing, 2017.
Kil, Wolfgang. The Marvel of Leinefelde : A Town Reinvents Itself. Dresden: Sandstein, 2008.

Kries, Mateo, Mathias Müller, Daniel Niggli, Andreas Ruby, Ruby, Ilka, and Vitra Design Museum, Host Institution. Together! : The New Architecture of the Collective. Weil Am Rhein : Berlin: Vitra Design Museum ; Ruby Press, 2017.

Kroll, Lucien. Tout Est Paysage. 10/vingt. Paris: Sens & Tonka, 2001.
Kubey, Karen. Housing As Intervention. Architectural Design. Newark: John Wiley & Sons, Incorporated, 2018.

Lassus, Bernard., Monika. Nikolic, and Michel. Conan. Villes-paysages : Couleurs En Lorraine. France] : [Belgium]: Batigére ; P. Mardaga, 1989.
Lefebvre, Henri. The Urban Revolution. First edition ed., Minneapolis: University of Minnesota Press, 2014.

Leupen, Bernard., Harald Mooij, Rudy Uytenhaak, Birgit. Jürgenhake, Robert. Nottrot, John. Zondag, Mohamad Ali. Sedighi, Alexander Van. Zweeden, P. Bouvier, and Laura Vroomen. Housing Design : A Manual. 2nd Rev. English Language ed. Rotterdam: NAi Publishers, 2011.

MacEwen, Malcolm. Crisis in Architecture. London: RIBA Publications, 1974.
Madden, David J., and Peter Marcuse. In Defense of Housing : The Politics of Crisis. London ; New York: Verso, 2016.

McClelland, Michael, Graeme Stewart, and ERA Architects Inc. Concrete Toronto : A Guidebook to Concrete Architecture from the Fifties to the Seventies. 1st ed. Toronto: Coach House Books, 2007.

Merewether, Charles. The Archive. Documents of Contemporary Art Series. London : Cambridge, Mass.: Whitechapel ; MIT Press, 2006.

Meyer, Hannes, Louise. Noelle, and Consejo Nacional Para La Cultura Y Las Artes. Hannes Meyer : Pensamiento. 1.st ed. Cuadernos De Arquitectura ; 5. Mexico: Conaculta, INBA, 2002.

Mikan. Mikan : Save the Danchi : Mass Estates, a Project of the Future. Architektur-Positionen. Berlin: Jovis, 2011.

Mumford, Lewis. The City in History : Its Origins, Its Transformations, and Its Prospects. 1st ed. London: Secker & Warburg, 1961.

BIBLIOGRAPHY

Nägeli, Walter, Niloufar Tajeri, and James Roderick O'Donovan. Small Interventions New Ways of Living in Post-war Modernism. Basel: Birkhäuser, Part of Walther De Gruyter GmbH, Berlin, 2016.

Neitzel, Laura L. The Life We Longed for : Danchi Housing and the Middle Class Dream in Postwar Japan. Studies of the Weatherhead East Asian Institute, Columbia University. Portland, Maine: MerwinAsia, 2016.

Nicol, Lee Ann. Sustainable Collective Housing : Policy and Practice for Multi-family Dwellings. Abingdon, Oxon ; New York: Routledge, 2013.

Oswalt, Philipp, Tim Rieniets, Henning. Schirmel, Grafik: 1 Kilo, and Kulturstiftung Des Bundes. Schrumpfende Städte. Atlas of Shrinking Cities = Atlas Der Schrumpfenden Städte. Ostfildern : Maidstone: Hatje Cantz ; Amalgamated Book Services [distributor], 2006.

Plunz, Richard. A History of Housing in New York City : Dwelling Type and Social Change in the American Metropolis. Columbia History of Urban Life. New York: Columbia University Press, 1990.

Power, Anne. Hovels to High Rise : State Housing in Europe since 1850. London ; New York: Routledge, 1993.

Price, Cedric., Hans Ulrich. Obrist, Arata. Isozaki, Patrick. Keiller, and Rem Koolhaas. Re:CP. Basel ; Boston: Birkhäuser, 2003.

Roessner, Jane. A Decent Place to Live : From Columbia Point to Harbor Point - a Community History. Boston: Northeastern University Press, 2000.

Rossi, Aldo, Diane Yvonne. Ghirardo, Joan. Ockman, Peter Eisenman, and Graham Foundation for Advanced Studies in the Fine Arts. The Architecture of the City. Oppositions Books. Cambridge, Mass.: MIT Press, 1982.

Rowe, Peter G. Modernity and Housing. Cambridge, Mass.: MIT Press, 1993.
Rowlands, Robert., Sako. Musterd, and Ronald Van Kempen. Mass Housing in Europe : Multiple Faces of Development, Change and Response. Basingstoke, UK ; New York: Palgrave Macmillan, 2009.

Scott, James C. Seeing like a State : How Certain Schemes to Improve the Human Condition Have Failed. Yale Agrarian Studies. New Haven: Yale University Press, 1998.
Smets, Peer, and Paul Watt. Social Housing and Urban Renewal : A Cross-national Perspective. First ed. Bingley, UK: Emerald Publishing, 2017.

Snopek, Kuba. Belyayevo Forever : A Soviet Microrayon on Its Way to the UNESCO List. Basics (Berlin, Germany) ; 39. Berlin : Moscow: Dom Publishers ; Strelka Institute, 2015.
Ulzen, Patricia Van., Rufus De. Vries, and Antoin. Buissink. DIY Klarenstraat : Zelfbouw En De Herontdekking Van De Portiekflat = a New Perspective on the Post-war Social Housing Block. Heijningen: Jap Sam Books, 2017.

Swenarton, Avermaete, van den Heuvel, and Eve Blau, eds. Architecture and the Welfare State. First edition. London; New York: Routledge, Taylor & Francis Group, 2015.

Vassal, Jean-Philippe, and Anne Lacaton. Freedom of Use. Incidents (Series). Cambridge, Massachusetts : Berlin: Harvard University Graduate School of Design ; Sternberg Press, 2015.

Vital Neighborhoods — Lessons from international housing renewal. Publica and Stanhope, 2017.

Wilkinson, Sara, Hilde Therese Remøy, and Craig A. Langston. Sustainable Building Adaptation : Innovations in Decision-making. Innovation in the Built Environment. Chichester, West Sussex: Wiley Blackwell, 2014.

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REVIEW

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CHAPTER 3:
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