Article

What's in the Mix? Mixed-Use Architecture in the Post-World War II Years and Beyond

Inbal Ben-Asher Gitler [1,2]

[1] Sapir Academic College, Israel; inbalbe@mail.sapir.ac.il
[2] Department of the Arts, Ben-Gurion University of the Negev, Israel

Abstract
Mixed-use housing (MUH) has proliferated in recent years, largely in connection with high-rise mixed-use housing and large urban developments. Whereas housing architecture integrating additional functions has been designed throughout history, post-World War II architects proposed innovative ideas and designs for modern MUH. This article explores MUH of that period as an experiment that articulated urban hierarchies by integrating elements belonging to the different scales of the city into housing plans. I analyze the terminological frameworks proposed by Team 10 in Europe and Denise Scott Brown and Harvey Perloff in the United States, tracing how these evolved into groundbreaking designs that redefined the architecture of MUH. I demonstrate how architects negotiated terms such as "habitat," which engaged community, as well as "human association" and "urban reidentification" in their practice. Thinking about these terms, I propose accessibility, participation, reuse, and diversity in formal design as elements from the recent past that can provide tools for rethinking present and future MUH.

Issue
This article is part of the issue "The Terms of Dwelling: Re-Theorizing Housing Through Architecture" edited by Yael Allweil (Technion—Israel Institute of Technology) and Gaia Caramellino (Politecnico di Milano).

1. Introduction

Buildings designated for several predefined uses are probably as old as architecture itself. In the twentieth century, several groundbreaking architectural theories, such as those of Team 10, Metabolism, and the megaform, as well as debates over high-rise buildings, engaged housing as a basis for mixed-use architecture. In the past few decades, multiunit housing schemes that designate spaces for additional functions have proliferated. However, this phenomenon seems to exist "under the radar" of architectural history and theory, with little discussion of what was or should be incorporated into housing, the challenges of mixing uses, and the possibilities that these present. This article examines the concepts of mixed-use housing (MUH) in the post-World

War II era and beyond. It interrogates the functions incorporated in MUH and the motivations for its design. In so doing, I seek to analyze the term "mixed-use housing" and offer insights as to this terminology's transformations over time.

The consideration of MUH as a term of dwelling, as this thematic issue proposes, involves differentiating it from mixed-use urban neighborhoods and zones. The sociocultural agendas of MUH are, nevertheless, intrinsically connected to the larger urban plan. This liminal characteristic—of belonging to both urban schemes and architecture—may provide a partial explanation of the fact that current research proposes little in the way of clearly defining MUH and that it has not received targeted historical consideration (Coupland, 1997; Mualam et al., 2019). Thus a key contribution of the present study

is the proposal of such a definition, acknowledging that it should be open-ended and flexible. To do so, I engage MUH as a distinct design problem. I seek to close a theoretical and historical gap by exploring modernist MUH as an architectural typology and investigate how this term was understood during the second half of the twentieth century. Moreover, the present discussion contributes to invigorating current debates on MUH and calls for a re-exploration of the full breadth of architectural possibilities available for this typology.

I first propose a definition for MUH, followed by a brief consideration of interwar developments. I then revisit key post-World War II urban and architectural concepts, identifying those aspects within them that, I argue, engaged MUH as a design idea. This discussion focuses on the theories and practices of Team 10 and, across the Atlantic, on Denise Scott Brown's interpretation of the latter, as well as on Harvey Perloff's "town intown" theory. I then examine the application of these ideas in connection with several key examples. In the concluding sections, I offer some thoughts on how modernist principles can provide tools for rethinking MUH as a typology and reflect on the diverse terminologies that define MUH today.

My methodology applies architectural history research that engages theory and explores practice through several case studies. I identify theories that addressed MUH and single out projects that shed light on the evolvement of MUH. These projects were selected following a comprehensive investigation of the architects' publications, secondary sources, and current studies on postwar housing architecture. The main case studies discussed in this article are projects conceptualized from the outset as MUH and whose basic design approach considered mixed-use as an inherent and central aspect. Some of these projects are known, but I have also attempted to highlight designs that have not been subject to in-depth research to date and others that merit renewed examination, which contextualizes them within the study of MUH as a distinct architectural-historical phenomenon. Furthermore, in relying on recent housing scholarship that has demonstrated the importance of global comparative studies (Glendinning, 2021; Stanek, 2020), I seek to convey a broad geographical perspective. Therefore, I present projects from Europe and the United States, as well as experimentation in Israel and Morocco; I also consider Japanese Metabolism and its discourse with Western ideas. I argue that the conceptual and formal connections between them were grounded in an international discourse that related similar concerns.

MUH research also has to address the players involved, that is, who participates in framing the requirements of the mixed-use dwelling and in creating the interaction that will address various—often conflicting—needs (Gualini & Majoor, 2007). It is also important to ask who has access to the MUH project, that is: Are the various uses of the MUH complex available only to its residents, or are they public, as in the case of shops? These aspects of agency and access have been discussed in housing scholarship that deals with the social and economic incentives and implications of housing and mass housing projects (Brown, 2017; Cupers, 2014; Wright, 1983). Although I touch upon these issues only briefly, the work of the scholars who have investigated them in depth reveals the importance of researching MUH in the context of state mechanisms and ideologies of gender and racial discrimination.

These global, national, social, and architectural perspectives underscore the importance of defining MUH and examining the terminology associated with it. In what follows I propose such a definition and consider these terminologies through a historical lens.

2. What's in the Mix?

In broad terms, MUH relates to dwellings that integrate functions beyond the residential unit. Delving deeper into its definition, however, requires engaging MUH as both a cultural issue and a design strategy conditioned by time and place. The time frame that provides the basis for my definition is post-World War II housing. In selecting this time frame, I follow recent research that identifies modern postwar housing as a distinct phenomenon that developed in the framework of the industrial, technological, and digital revolutions, and is the outcome of urban processes related to geopolitical transformations and capitalist and neoliberal economic systems (Majerowitz & Allweil, 2019; Mota & Allweil, 2019).

Relating to the postwar period, Francis Strauven defined MUH as architecture that integrates dwelling and additional urban functions, which were historically separated either structurally or by divisions into zones and districts (Strauven, 1998). Using this definition as a departure point, I argue and will demonstrate herewith that an important characteristic of the integrated urban functions is that they belong to different hierarchies of the city. I additionally enlist two interrelated criteria for defining MUH. First, MUH forms a comprehensive *architectural whole* by design. As such, it should be differentiated from housing proximate to urban functions conceived separately. Second, MUH functions enable diverse social interactions that transcend daily domestic activities, so they articulate a different relationship with their urban environment, one that impacts interactions with other urban facilities. These MUH functions may include commerce, recreation, education, and more. This criterion also suggests that basic utilities routinely planned for many housing complexes, such as a multipurpose activity room, a laundry room, and/or common landscaping elements such as lawns and playgrounds, do not answer to the definition of MUH.

As this article also explores transformations in the terminology that defines MUH and offers a reflection on its present status—one that is grounded in historical analysis—its contemporary conceptualization should be

considered. Presently, MUH is framed within discussions of large urban developments (LUDs) and high-rise buildings termed "hybrid" or high-rise mixed-use (HRMU) development. These combine mass housing and various uses and services that, as observed by several scholars, serve to generate municipal and commercial profit (Majerowitz & Allweil, 2019; Mualam et al., 2019; White & Serin, 2021). These financial goals differ dramatically from the resident-oriented design considerations that formed the core of modernist MUH.

In the following sections I demonstrate how the latter resident-oriented approach was developed into a distinct architectural typology that emerged within discussions of concepts of urban hierarchies, scale, and habitat.

3. Interwar Experimentation

To evaluate the importance of approaches developed for MUH after World War II, it is helpful to review some major developments of the interwar period. In the aftermath of World War I, modular housing and mass housing were both revolutionized in their designs as well as in the political and economic systems that developed and sustained them, such as municipalities that built them and policies that produced social housing (Glendinning, 2021). Important debates regarding the design of housing took place in the framework of broader urban discourses, dominated at the time by the idea of the "neighborhood unit" and the concept of zoning urban functions (Glendinning, 2021). These influential urban theories, which were implemented in numerous new plans, dictated the separation of housing from most other urban functions.

Despite this overarching principle, some architects did experiment with integrating urban functions and housing, both in vision and reality. In 1922, in his Ville Contemporaine, Le Corbusier, for example, who was among the most important formulators of CIAM's urban zoning concepts, introduced a scheme of twelve-story apartment buildings whose bases integrated various urban functions (Marmot, 1981). These included a theater, restaurants, and sports facilities. While Le Corbusier's plans of that period remained on paper, several innovative complexes, such as Highpoint in London by Lubetkin and Tecton (1933–1938) and, more famously, the Narkomfin apartments in Moscow by Ginsburg and Milinis (1928), were indeed built (Marmot, 1981; Mumford, 2019). They included communal rooms and shared functional rooftops intended for the residents' use. At Highpoint, a residential swimming pool was designed in the surrounding gardens (Diehl, 1999). However, these and several other housing complexes with shared spaces remained singular experiments. Moreover, the introduction of mixed uses was not the goal or overarching concept of these complexes, so they did not produce significant terminology for MUH. Although nonresidential uses were integrated into both middle- and working-class MUH and emerged from

novel, even revolutionary, social requirements, they were not approached as a design problem. Rather, their architecture was largely dictated by the apartment building as the basic design unit. As such, interwar precedents did not engender the integrative concepts of the postwar years—concepts that would present new terminologies merging urban and residential scales.

4. Post-World War II Urban Theories as Bases for Mixed-Use Housing

The post-World War II years proved a turning point in developing MUH as a novel concept. Transformations in urban and design theories intensely engaged the integration of dwellings and additional urban functions. In this section, I attempt to unpack several key theories to trace conceptual processes that promoted MUH as a distinct typology that negotiated new terms. I address Le Corbusier's pioneering designs for the Unités d'Habitation (or simply Unités) and focus on architects and planners who engaged MUH as related to the urban plan: Team 10, Denise Scott Brown, and Harvey Perloff. Their ideas are also discussed in relation to the concept of the megastructure.

Arguably Le Corbusier formulated the best-known theory for producing a mixed-use dwelling complex in Western Europe in the years immediately following World War II. His series of MUH complexes, the Unités d'Habitation, can be considered the first architectural experimentation that realized the integration of dwelling with urban functions. They were conceived in the framework of Le Corbusier's urban theory of the functional city and its four functions—dwelling, work, recreation, and transportation (Gold, 1998; Pedret, 2005). Six MUH buildings were constructed, one each in Marseille (1947–1952), Nantes-Rezé (1953–1955), Meaux (1956), Berlin (1957), Briey-en-Forêt (1959–1960), and Firminy-Vert (1965–1967; see Marmot, 1981). These were designed as narrow rectangular multistory buildings of exposed concrete that rested on visible piers and presented interlaced balconies, tightly linked across their longer sides.

Deeply invested in the problem of housing for the masses, Le Corbusier designed the Unités as novel solutions for the changing needs of urban populations. Designing MUH seemingly stood in contrast to the zoning he proposed in the functional city theory. However, Konstanze Domhardt reconciles this contradiction, explaining that Le Corbusier and other members of the CIAM did not exclude planning residential neighborhoods with functions that "belong" to the other three elements of the city, as fast-growing postwar urban centers demanded autonomous neighborhood facilities (Domhardt, 2012). Thus, the Unités represented a compact implementation of the functional city's mass-housing neighborhood. They were intended to foster communality and increase accessibility to modern urban functions, which included preschools, sports facilities,

COGITATIO

post offices, and more. For the Marseilles Unité—the first and most famous of the six complexes—no fewer than twenty-six facilities were planned (Marmot, 1981; Rendell, 2019). Modular floor plans and design elements were also key characteristics of the Unités. These were stacked to a maximum height of seventeen stories, as Le Corbusier perceived multistory vertical circulation as an impediment to successful family life (Marmot, 1981). The architect sought to replace vertical circulation with horizontal connectivity by designing internal "streets" on several levels of the tall apartment buildings. In addition to fostering family life, these urban-inspired "streets" were perceived as enhancing spatial mobility capable of promoting interaction among residents, which traditional staircases or elevators could not provide. Hence, in the Unités, Le Corbusier introduced an architectural micro-urban environment that delineated MUH as an architectural whole centered upon accessibility to urban functions, modularity, and spatial mobility.

Transposing autonomous neighborhood facilities to a single apartment building was not, however, an obvious step. This is indicated by the fact that the first Unité, along with the few above-noted complexes designed in the interwar years, remained exceptional projects until the late 1950s. Moreover, urban and architectural theories that were developed in the 1950s and 1960s criticized the concept of the functional city and the CIAM Grid and proposed new solutions for connecting housing and urban functions. Those critiques were also reflections of the generally negative sentiments regarding cities and to the alienation that architects perceived as a corollary to contemporary urban life.

In the framework of these theories, the concept of "habitat" was developed as a new approach (Boyer, 2017; van den Heuvel & Risselada, 2005; Mumford, 2019). While both architects and historians have offered nuanced interpretations of this concept, for the purposes of the present discussion it can be described as a framework that sought to create architecture that could foster community, would be more responsive to the specific cultural needs of its inhabitants, and would improve the connection to its immediate environment (van den Heuvel & Risselada, 2005). As a term that brought to the forefront more spiritual everyday requirements and engaged the links between the dwelling and its urban environment, the concept of habitat proved to be a theoretical turning point that impacted the design of MUH.

Among the most significant theoretical contributions was Team 10 architects' framing of MUH in this new context. This was done by developing a new set of terms that connected the rather abstract concept of habitat with actual design. Alison and Peter Smithson, two of Team 10's senior members and arguably their chief ideologists, saw "human association" with the different scales—or hierarchies—of the city as key to the social interactions and connections required for creating habitat (Avermaete, 2005; Boyer, 2017; van den Heuvel & Risselada, 2005). Habitat, they argued, was created when

architecture was conceived as an integral part of urban hierarchies, which included the house, street, neighborhood, and the town at large. They viewed architecture as the chief instrument in creating city dwellers' associations with the various accompanying urban functions, more so than streets and other connective elements.

Accordingly, Team 10 and other architects who shared their ideas promoted MUH as an architectural design solution capable of engendering communality within the most primary components of the urban environment, thus significantly adding to mixing functions from the various hierarchies within small-scale urban clusters (van den Heuvel & Risselada, 2005; Wagenaar, 2000). CIAM and Le Corbusier's earlier zoned functions were thus replaced by urban hierarchies. Although Team 10 admired the Unité d'Habitation for its innovations, they rejected the idea of creating a habitat by providing several prioritized urban facilities in a single high-rise building.

For the 1953 CIAM, the Smithsons, then part of the British MARS Group, presented a proposal they called the "urban re-identification grid." Their grid further explicates the role that these terms had in introducing MUH as a new design concept that could provide the spiritual everyday requirements of habitat. Figure 1 shows the left-hand part of the grid, which presented three columns: "house," "street, "relationship" (Figure 1). These terms were depicted by photographs of children jumping rope, riding bikes, and playing hopscotch in a paved open-air court. In each column photographer Nigel Henderson zoomed out, gradually broadening proportions and scale, indicating that "house," "street," and "relationship" were terms that addressed the scales of the city (for the full spread see van den Heuvel & Risselada, 2005, p. 30). The house was the basic element of the grid, yet the architects emphasized studying the "immediate environment of the dwelling unit: the matrix in which it is set; the space—covered and open— required for communal activities and services, affecting and affected by the way of life of the community" (as cited in Boyer, 2017, p. 107). The assertion that "house" and "street" are defined by the "relationship" between them assigned architecture a central role in prescribing the physical space of this relationship, enabling urban functions and creating a habitat. The new terminology introduced by the Smithsons and other Team 10 members included such terms as scales and relationships, as well as the more abstract concepts of habitat, human association, and urban reidentification. These thus created a significant conceptual and terminological shift that directly impacted ideas pertaining to MUH.

All these iterations perceived dwelling as the basic building block of urban life, yet, significantly, the idea of association with the different scales of the urban environment derived not only from criticism of earlier models but also from a re-examination of the virtues of historic cities. In relation to the grand modern urban schemes, the former evolved in a more spontaneous way over
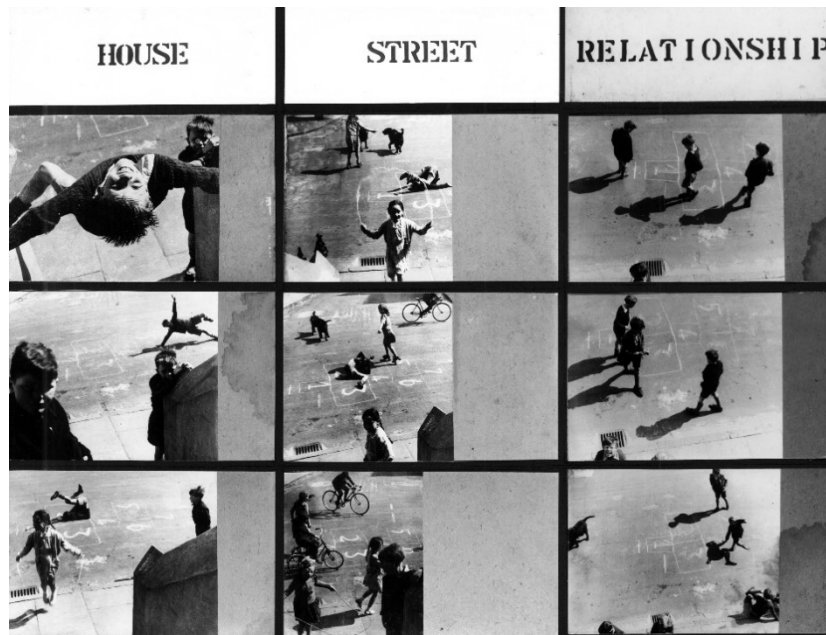
Figure 1. Urban re-identification grid: Panel 1, 1953. Source: Courtesy of Smithson Family Archive.

centuries. In this respect, the Smithsons were inspired by MARS. For example, in 1953, MARS member Erwin Anton Gutkind published *How Other Peoples Dwell and Build*, underscoring the diversification of dwelling in different locales and the importance of community as a basis for architectural thought (Boyer, 2017). As with the historic city, this perspective, which derived from vernacular and traditional architecture, afforded yet another departure point for thinking about MUH. Similarly, Alison Smithson pointed to the dense Muslim casbahs and their mixed functions (Smithson, 1974), while Aldo van Eyck sought to "re-create the traditional city's unity in diversity" (Strauven, 1998, p. 562).

To no small degree, referencing historic cities relied on sociological and urban studies from both sides of the Atlantic—studies that investigated traditional neighborhoods where low- and middle-class inhabitants resided. These studies concluded that the mixed-use character and high density of traditional neighborhoods fostered communality and urban vitality (Boyer, 2017; Cupers, 2016; Jacobs, 1961).

In the United States, several theories that considered such sociohistorical explorations can be seen to have promoted the design of MUH. In the present context, both Denise Scott Brown's critique of Team 10 and Harvey Perloff's "town intown" theory created important frameworks for MUH. In an often-overlooked 1967 critique of urban planning, Scott Brown analyzes the impact of Team 10 on such American architects as Robert Venturi, Charles Moore, and Louis Kahn (Scott Brown, 1967). She refutes what she describes as the precedence that urban planning has over architecture and discusses "the non-architect-designed parts of cities that few architects, except the Brutalists, seem to notice" (Scott Brown, 1967, p. 47). Architecture, she argues, and

the design of the single building or complex in its setting are the focal points of urban functions: "Buildings and cities must be appreciated in their economic, technological and expressive functions *all at once*, since all are part of one architectural experience" (Scott Brown, 1967, p. 48, original emphasis). This reassertion of the role of architecture proposes the building as key to mixing uses and hence firmly relates to the idea of MUH. Moreover, Scott Brown's text further demonstrates that these approaches emerged from an international discourse that related similar concerns.

With marked suburban development of detached homes and the controversy regarding federal involvement in housing policies in a capitalist economy (Wright, 1983), MUH was a rather rare phenomenon in America. Moreover, the above-mentioned studies that favored mixed-use neighborhoods were slow to translate into urban plans and, as Heathcott demonstrated in his study of St. Louis, many planners continued to perceive mixed-uses in urban slums as detrimental to communal welfare, viewing them as a source of residential distress (Heathcott, 2011). Nevertheless, the postwar era saw new European influences and novel public housing programs that, for the first time, provided subsidies and municipal-owned housing on a wide scale. These offered incentives for designing innovative multiuse high-rise complexes (Prudon, 2013).

In the decade between 1955 and 1965 Chicago-based urban planner Harvey Perloff developed a novel approach that articulated new concepts of urbanism and architectural modernism. Termed the "new town intown," it focused on and underscored the concept of community. Perloff's heightened awareness of racial and economic diversity was translated into dense urban schemes for existing neighborhoods. Instead of building

"public housing *projects* and…'removing the slums' or 'doing something about run-down housing'" (Perloff, 1966, p. 155, original emphasis), he proposed gradual intervention in what he termed the "original fabric of the Intown" (Perloff, 1966, p. 157) while introducing mixed uses to encourage communality and social heterogeneity. Perloff strongly promoted mixing uses within a neighborhood and, like his European colleagues, emphasized connectivity achieved by architecture. Echoing Le Corbusier, Perloff regarded a residential tower as a "city-within-a-city" (Perloff, 1966, p. 160). As argued by Judith Martin, his was a far more pragmatic approach than Jane Jacobs's and other planners who were devising urban schemes (J. A. Martin, 1978). Moreover, Perloff's "town intown" fostered architectural design capable of implementing ideas intended for social improvement. It clearly conceived of communality as contingent on MUH and not only on a successful urban plan. Both Perloff's and Scott Brown's theories thus focused on architecture's central role in creating cities and communities; they introduced terminologies relating to extant neighborhoods, intervention, and reuse, thereby echoing Team 10's historicity.

Metabolism and the megastructure are theories that complicate any attempt to understand the evolution of MUH in the postwar years. Formulated in Japan in the early 1960s and inspired by Team 10 and the GEAM group, Metabolism advocated a rearrangement of urban functions within novel megastructures (Deyong, 2001; Tange, 1961). However, architects such as Fumihiko Maki and Masato Ohtaka saw this rearrangement as inclusive of clear, even strict, functional zoning within the megastructure (Maki & Ohtaka, 1960). Moreover, since the Metabolist megastructure provided optimal access to all urban functions through intricate systems of highways, streets, and pedestrian routes, the hyperdense apartments or "capsule towers" included in these schemes interfaced with the other facilities and hence did not require anything beyond the dwelling unit (Imamura, 2014). The megastructures proposed by Yona Friedman, as well as by the architects of Archigram, provided additional theoretical models for increased density, mobility, and flexibility, wherein mass housing was perceived as an organic part of the mega-urban scheme (Deyong, 2001, 2008; Langevin, 2011). Like Metabolism, their approach emphasized connectivity of functions rather than their mix. Nevertheless, these innovative theories were thought-provoking in terms of how urban components relate to one another—a design problem that occupied a central place in the architecture of MUH as built.

5. Mixed-Use Housing: Invention Rather Than Interpretation

From the schemes and ideas discussed above, we can trace a process that identifies MUH as an architectural experiment that articulates urban hierarchies by integrating functions belonging to the different scales of the city into housing design. To explain how these designs function as an architectural whole—part of the definition proposed at the outset—this section considers MUH that was realized throughout the 1960s and 1970s and further explores modernist ideas that paved the way to the design of mixed-use complexes. The timeline of the MUH discussed here is represented in Figure 2 and the discussion is guided by the design terminologies that turned theory into practice.

Van Eyck's writings help to identify more clearly a shift to the architectural mixed-use project as a term of dwelling capable of creating communality. In his discussion about designing mass housing through the multiplication of dwellings, van Eyck (1962, p. 351) considered facilities at the neighborhood scale, writing:

> Each multiplicative stage should…achieve its appropriate identity by assimilating spontaneously within its structural pattern those public facilities this stage requires, and which inseparably belong to it….Those housing projects which are real sources of inspiration…demonstrate…integrating public facilities through a single complex, constructive and sequential discipline.

In the above quote, van Eyck was probably relating to the five then-completed Unités d'Habitation and the Lijnbaan complex in Rotterdam (1948–1953) built by his Team 10 colleague Jaap Bakema in his newly established partnership with Jo van den Broek. That complex comprised a pedestrian street that served as an axis for low-rise shops and high-rise housing, a design partially dictated by local urban legislation (see Figures 3 and 4; Wagenaar, 2000). Van Eyck himself, along with his firm, Van Eyck & Bosch, experimented with this type of MUH later in his career in the Sint-Antoniebreestraat project, also known as the Pentagon (designed in 1969–1975 and built in 1982–1984; see Figures 5 and 6). This project, part of the urban scheme for Nieuwmarkt in Amsterdam, was a social housing complex designed following a lengthy discourse between the architects and the residents, the latter of whom were mostly working-class natives and immigrants (Strauven, 1998). The Pentagon featured three and four stories of apartments above a row of shops and an internal court and gallery inspired by Mediterranean bazaars. This element reflects van Eyck's well-known references to ancient global vernacular architectures (Strauven, 1998; Theunissen & Kaal, 2009). The combination of vertical volumes for apartment blocks and interconnected horizontal ones for commercial functions clearly embodied the translation of urban hierarchies into terms of practical design. Shops created everyday interactions; cafés and restaurants—still in use today—increased accessibility to urban dining amenities. Also significant were the plazas and courts of both the Lijnbaan and the Pentagon. They provided open spaces that articulated height by designing varied elevations connected through

Le Corbusier, Unité d'Habitation, Marseille	1947–1952
Jaap Bakema and Jo van den Broek, Lijnbaan, Rotterdam	1948–1953
ATBAT-Afrique, Nid d'Abille, Carrières Centrales, Casablanca	1953
Bertrand Goldberg, Marina City, Chicago	1959–1967
Ram Karmi, Negev Center, Be'er-Sheva	1960–1963
Rappoport, Glieberman, and Frenkel, Lincoln Building, Tel-Aviv. Re-use: 2015–2018	1960 (2015–2018)
Herman Herzberger / AAH, Herzberger Park (formerly Centraal Beheer Headquarters), Apeldoorn. Expected completion of re-use: 2022	1968–1972 (2022)
Van Eyck and Bosch, Sint-Antoniebreestraat ('The Pentagon'), Amsterdam	1969–1975
Ralph Rapson and Lawrence Halprin, Cedar West (Riverside Plaza), Minneapolis	1970–1974

Figure 2. Timeline of postwar MUH.

stairs, thereby giving meaning to connectivity (Figures 4 and 6). These were spaces that enhanced urban reidentification through their creation of communality and recreational opportunities, as can be seen in the images of the Pentagon's internal court and people's evident enjoyment of the Lijnbaan water elements.

The Smithsons' first MUH design was the unrealized Golden Lane project (1952–1953), a mass housing complex in which they brought social interaction to the forefront of their design concerns by multiplying dwelling units and integrating facilities such as a garden room, a playroom, shops, and more. Golden Lane comprised long, multistory apartment sections that created a massive complex whose reflex angles framed the existing neighborhood. Pedestrian passages and "streets in the air" connected the complex's sections—all intended to promote community life (Boyer, 2017; Webster, 1997). Hence, additional formal elements inspired by the city,

such as the "street" or "bridge" for mobility and the "square" as a meeting place, became terms of MUH, indicating that "uses" are experiential and social no less than they are practical.

The Smithsons revisited the Golden Lane project in their book *Without Rhetoric*, explaining their desire to provide an "ordering" and a form that would establish identity (Smithson & Smithson, 1973). Alison Smithson developed these ideas further in her text *Mat Building* published in 1974 (Avermaete, 2005). Writing in connection with the Smithsons' proposal for modernization of Kuwait's city center, she presented the concept of interchangeability, advocating the use of the individual "cell structure," which forms the basic module of dwellings and services so that "the size of the cell unit and its organization [would be] devised as equally suitable for several…new functions" (Smithson, 1974, p. 576). The integration of various functions into housing was

thus intrinsically tied to modularity as a design method. The concept of interchangeability or flexibility was, of course, not unique to the Smithsons but was also popular among structuralists and Metabolists (Avermaete et al., 2011; Deyong, 2001).

However, as noted earlier, ideas pertaining to flexibility did not necessarily translate to MUH. In complexes such as these, Team 10 architects had to invent forms for physically joining functions to housing, such as the courts and plazas mentioned above. Although they continued Le Corbusier's vertical experimentation in mixed

uses, their approaches to architectural form, as well as to new technologies and materials, were innovative in three key ways: (a) They presented new opportunities for mobility within the complexes and in connection to the urban spaces around them; (b) they applied innovative spatial configurations to the modularity of the basic units; and (c) they engaged the relationship between horizontal and vertical masses. Thus, these and other MUH projects represented the invention of a typology within modernist concepts, rather than merely interpreting urban schemes or earlier high-rise MUH.

Figure 3. Lijnbaan, Rotterdam, 1948–1953. Source: Bakema and van den Broek (1953).

Figure 4. Lijnbaan, Rotterdam, circa 1974. Source: Skyscrapercity (2008).

Figure 5. Sint-Antoniebreestraat (the Pentagon), 1969–1975, Amsterdam, by Van Eyck & Bosch. Source: Courtesy of Ronald Klip.

Figure 6. Sint-Antoniebreestraat (the Pentagon), 1969–1975, Amsterdam, by Van Eyck & Bosch. Source: van Eyck and Bosch (1975).

As demonstrated above with van Eyck's Pentagon project in Amsterdam, engagement with place and traditional built environments played an important role in the design of MUH. Hence, in addition to looking at historic cities, vernacular integration of housing and urban functions created by traditional societies in America, as well as in third world countries, surfaces repeatedly as a model for MUH. For example, the now-renowned Carrières Centrales experimental housing in Casablanca by ATBAT-Afrique also included a mixed-use complex: The Nid

d'Abille had some 100 dwellings as well as eight shops and internal courtyards that reflected facilities for urban functions inspired by the traditional Muslim Casbah (Eleb, 2000). Built in 1953, the Casablanca project was pioneering on a global scale and ensuing Team 10 projects were indebted to it. As I have argued elsewhere, the use of local forms such as the bazaar and the courtyard was dictated by climatic, residential, and communal design issues (Ben-Asher Gitler, 2021). These features added an aesthetic and symbolic terminology to such projects.

Similar design experiments continued in other locales in the Middle East and North Africa, including several MUH designs, such as architect Ram Karmi's Negev Center in Be'er Sheva, Israel (Figure 7). In this Brutalist complex, a bazaar forms the central passageway for four stories of apartments, offices, shops, and cultural facilities (Ben-Asher Gitler, 2021). An unrealized extension of the complex, a detail of which can be seen in the floor plan in Figure 8, was to include additional shops, a movie theater, lecture hall, café, restaurants, a high-rise hostel, and more. Here, too, an innovative spatial relationship was devised by pentagon-shaped spaces that cascaded along a series of stairs leading to an open plaza (Figure 8).

The application of historical or vernacular elements to complexes such as the Nid d'Abille and the Negev Center had dual interrelated objectives. One was to create a regional context—as in the above examples of Kuwait, Casablanca, and Be'er Sheva, where they contributed to establishing modernism as a progressive colonial project or national architecture. Another was to create a matrix for communality and reidentification in housing, regardless of locale, through a discursive design process grounded in precedents that were historically and sociologically recognized as successful. Thus, in designing MUH, architects tackled the details of the aesthetics and formalism of functional integration. As suggested by Alison Smithson and Scott Brown, architects' engagement with terms such as place, tradition, and history normalized modern architecture (R. Martin, 2010; Scott Brown, 1967; Smithson, 1974). Although there are significant differences between Smithson's and Scott Brown's approaches to historical appropria-

tions, both acknowledged that these were necessary since modernism, with its innovations of scale, technology, and form, demanded mediation to promote social values. They further indicated postwar architects' variant approaches to reasserting architecture as a cultural practice (Hays, 2001). In this respect, MUH allowed not only for the "appropriation" of urban facilities as cultural spaces, but defined their visibility, which, depending on the architect and the locale, negotiated and abstracted histories and cultures (R. Martin, 2010; Scott Brown, 1967; Smithson, 1974).

In the United States, the amalgamation of urban planning and MUH was evident in Perloff's theories (Prudon, 2013). His ideas were for the first time directly applied in the Cedar West MUH in Minneapolis, a complex designed between 1970 and 1974 by leading Minnesota architect Ralph Rapson in association with Lawrence Halprin (see Figure 9; J. A. Martin, 1978). Cedar West is considered a milestone in American urban middle-class housing. Some groundbreaking postwar designs predate Cedar West—for example, Marina City (1959–1967) in Chicago, by Bauhaus graduate Bertrand Goldberg (Brown, 2017; Lucking, 2012)—but Cedar West was novel in its implementation of new federal housing policies. Moreover, its design involved a lengthy process generated by residents and additional stakeholders (J. A. Martin, 1978). Martin further distinguishes this complex from earlier American public and middle-class mass housing because of its "total community concept" and mixed uses, which were intended for an economically and ethnically diverse population (J. A. Martin, 1978).

Figure 7. Negev Centre, Be'er-Sheva, 1960–1963, by Ram Karmi. Source: Karmi (1963a).
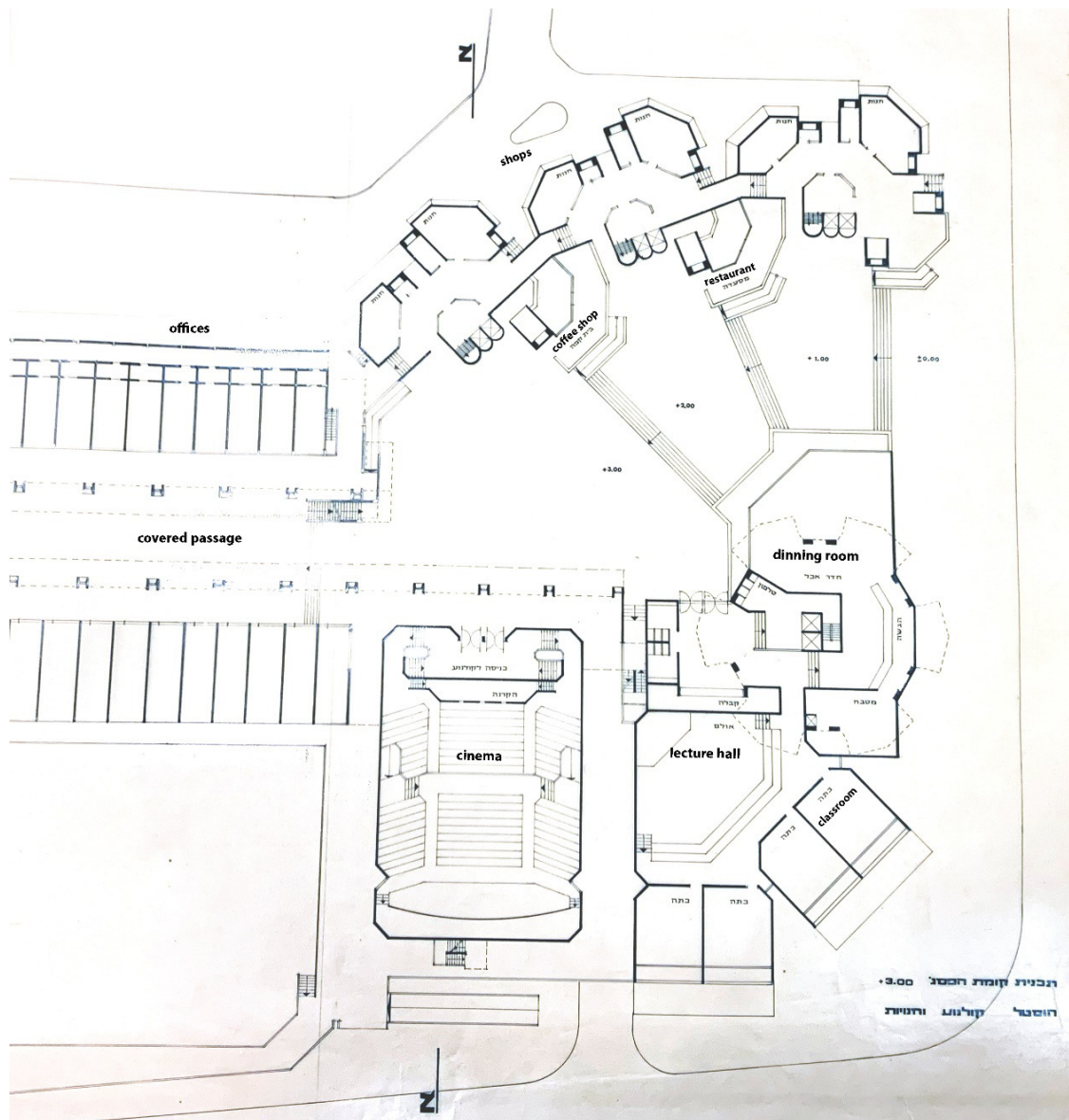
Figure 8. Negev Centre, Be'er-Sheva, 1960–1963, by Ram Karmi: Detail of plan for urban functions and youth hostel. Source: Karmi (1963b).

The European impact on the design of Cedar West was significant: The developers—not just the architects—made a special tour of European towns in 1968 and the renowned Finnish town planner Heiki von Hertzen was an adviser for the project (J. A. Martin, 1978). Known today as Riverside Plaza, Cedar West is a Brutalist complex that comprises eleven high-rises that accommodate 3000 dwellings, with commercial and community spaces that include a school, sunken plazas, playgrounds, and other facilities on the lower floors and in low-rise buildings, all interconnected by several levels of pedestrian walkways and internal passages, articulated by Rapson in Figure 9A. The buildings were designed in exposed concrete and brick, as can be seen in Figure 9B. Figure 9 also shows the buildings' varied volumes and façade depths. Their spatial arrangement formed a series of semienclosed and closed courts, which enhanced com-

munality, minimized noise from the freeway, made good use of summer breezes, and protected from the winter chill (J. A. Martin, 1978). The dense layout and integrative functions of Cedar West indeed realized Perloff's "town intown" concept in a novel way. The complex's components created an architectural whole, reaffirming Scott Brown's above-cited emphasis on the single building or complex as the focal point for urban functions.

Postwar MUH thus represented innovative design practices engendered by novel terminologies of association with urban functions, communality, and reassessment of the terms of tradition and place. These ideas and forms were mobilized into practice through modularity and volumetric diversity. Their architecture presented creative solutions to design issues that, despite the changes discussed in the pages that follow, remain relevant and can continue to inspire MUH.
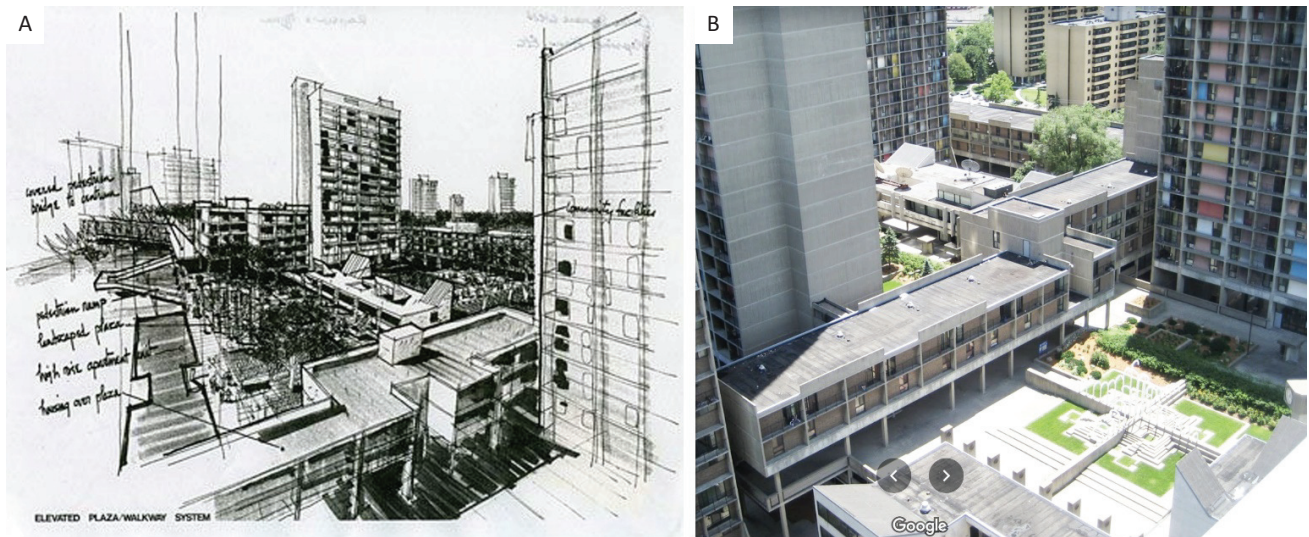
Figure 9. Cedar West (Riverside Plaza), Minneapolis, 1970 and 1974, by Ralph Rapson and Lawrence Halprin: (A) Drawing of elevated plaza/walkway system; (B) view of the central plaza in 2014. Sources: (A): Rapson and Halprin (1974); (B) Google Maps.

6. Learning From the Recent Past

Recent decades have seen profound transformations in the "terms of dwelling" that ground the design concepts of MUH and their relation to their urban environment. The first is the terminological "turn" to HRMU. As noted at the outset, much contemporary MUH is designed as HRMU that, in turn, forms part of LUDs. These new terms dictate a different set of economies and design considerations, reflected first in the new urban functions defined for them. Postwar MUH, which included schools, shops, and community centers, were perceived by Team 10 architects and Perloff as a means of creating urban association, that is, they focused on resident-oriented connections to their neighbors and their town. Today, however, facilities such as gyms, swimming pools, and spas, as well as retail spaces, are included chiefly as a profit-bearing outlet for developers (Coupland, 1997; Grant, 2002; Majerowitz & Allweil, 2019). Additionally, MUH may include governmental and public services that inherently reflect both the privatization processes some are undergoing and the state-developer relationship (Mualam et al., 2019).

In this section I consider these changes in function and terminology by examining three key issues that were identified by the postwar architects and which, I maintain, remain central to MUH design: the structuring of vertical versus horizontal spaces, access to amenities and services, and residents' participation. A fourth, separate, term is the reuse of postwar modernist architecture, which can be part of the contemporary process of architectural design in exciting new ways. Hence, this section proposes that learning from the recent past through design terms, concepts, and livable spaces can invigorate current architectural engagement with MUH as a typology.

The first issue—horizontality versus verticality—constitutes a central formal aspect with crucial social, economic, and environmental implications. Recent LUDs are often planned as HRMU clusters, whose design is defined by verticality. As argued by Reinhold Martin in his general discussion of recent (postmodern) architecture, although the design of such buildings is grounded in the concepts of "'place,' 'the street,' and 'human scale,'" their users do not experience nor are they even aware of those aspects (R. Martin, 2010, p. 164).

By contrast, postwar modernist housing reflected incredibly diverse combinations of verticality and horizontality. Le Corbusier objected to very tall buildings and Shadrach Woods of ATBAT-Afrique similarly perceived them as isolating. In America height projected a newfound "human association" through density, yet at Cedar West it was integrated with low-rise functions (J. A. Martin, 1978; Scott Brown, 1967; van den Heuvel & Risselada, 2005). However, these combinations, too, did not always produce the desired results: Much MUH was criticized as having failed to achieve its most important goals—goals similar to those described above by Martin—of urban reidentification, human scale, and socialization.

Nevertheless, over the years modern MUH has been reappraised. This is partially due to the complexes' locations, but I maintain owing in no small measure to their diverse volumes and heights. I argue that reintroducing varied heights into MUH as a design term interrelated with the above terminologies, which describe connections to place and society, can achieve these desired goals. Examination of contemporary MUH demonstrates that verticality is not necessarily a precondition of density (Majerowitz & Allweil, 2019). Moreover, articulating horizontality and verticality lends itself to new ways of exploiting modularity. A key design concept for Team 10, modularity continues to engage architects as a design

aspect engendered by technology and prefabrication, as well as by social and economic considerations. The visual and experiential versatility that modularity enables also recalls the qualities that these architects attached to traditional cities—qualities reiterated by Scott Brown.

The second term, access, is presently the subject of professional and public debates (Coupland, 1997). It seems, however, that the very interpretation of the word has changed. Team 10's terms of mobility, connectedness, and relationship, which centered on social issues, have been replaced by the more utilitarian criteria of physical and economical accessibility. Within this framework, issues of private vs. public access have become more pertinent. Whereas in postwar MUH the term access meant open to the public, in present-day MUH there are restrictions to public access that engender intracomplex discrimination. Public access is a term currently discussed at the neighborhood or LUD scale, while in HRMU access to certain amenities is precluded through exclusion policies based on ownership, the location of the dwelling, and/or the imposition of charges, which leads to physical and economic segregation (Ross, 2014; Siemiatycki, 2015; Wall, 2021). In contrast, private access to amenities in complexes is lucrative and has been shown to have the potential to transform neighborhoods in positive ways (Nethercote, 2019).

The question again arises as to how these contradictions can be resolved by design. I suggest that the term "urban hierarchies" developed by van Eyck and the Smithsons can possibly reconcile them. By designing hierarchies of access, MUH architects might be able to create a template for integrating private and public services. Such an integration could be achieved by introducing the "street" and the "square" and using them as design criteria to propose novel approaches to form and function, thus offering possibilities for MUH design other than high-rise models.

The third issue is participation. Studies of current modes of resident involvement in shaping housing reveal that while this is a socio-political process with no small measure of idealism, various types of participation have been successfully implemented (Mota, 2019; Siemiatycki, 2015). Participation was successfully carried out by van Eyck in the design process of the Pentagon and by Minneapolis residents when effecting Perloff's ideas. Through their practice, both van Eyck and Perloff emphasized the importance of inhabitants' participation in delineating their social habits and needs as well as their involvement in the design process (Avermaete, 2005; Perloff, 1966).

Finally, attention should be drawn to the reuse of postwar modernist architecture by transforming it into MUH. Reuse is a new term, yet it reflects the modernist architects' sustainable approach to MUH as a design that retains the original fabric of neighborhoods and derives inspiration from historic cities. Examples of architecture-turned-MUH have proliferated in recent years, as seen in Figure 10, which shows the Lincoln Building in Tel-Aviv (1963, Figure 10A) and Centraal Beheer Headquarters in Apeldoorn (1968–1972, Figure 10B). The Lincoln building was designed by Rappoport, Glieberman, and Frenkel as MUH with offices and retail and was recently redesignated to also fulfill a role in social housing; Centraal Beheer Headquarters was designed by Team 10 architect Herman Herzberger and is presently being transformed by his firm, Architectuurstudio HH, into a MUH complex that will integrate work and community spaces.

These criteria—of vertical and horizontal forms, access, participation, and reuse—promote discussion and reconsideration of social and cultural values for the design of MUH, as well as their visibility. In this context, visibility inspired by the diversity of postwar MUH can serve as a basis for new engagement with architecture and image—not as a spectacle but as a coupling that provokes thought on modularity, scale, and mobility when rethinking MUH within architecture's role in providing habitation.

7. Conclusion

In this article, I revisited modernist theory and practice to research the terms of dwelling in MUH and its design.
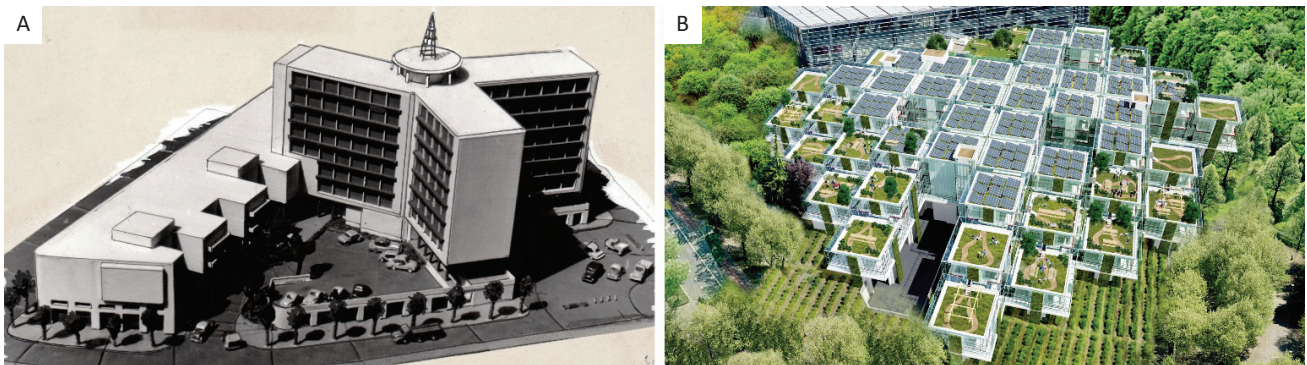

Figure 10. Examples of post-World War II buildings converted into contemporary MUH: (A) Lincoln Building, Tel-Aviv, 1963, by Rappoport, Glieberman, and Frenkel; (B) study of possible reuse of the Centraal Beheer Office Building at Housing Herzberger Park (former Centraal Beheer Headquarters), 1968–1972, by Herman Herzberger and Architectuurstudio HH. Sources: (A): Rappoport et al. (1963); (B): Herzberger and Architectuurstudio HH (2021).

I revealed postwar MUH as a novel concept that redefined the relationship between the dwelling, its immediate environment, and the city at large, which transformed interwar concepts into a fully developed design idea by introducing new terminology. Architectural historians have discussed these terms in various contexts and in connection with many case studies. I investigated several key terms as they related to and impacted the design of MUH, proposed a rethinking of modernist terminologies, explored their implementation in MUH, and thus provided an important analytical perspective on postwar design.

In summarizing this discussion of postwar theory and practice, we can trace two terminological frameworks for the design of MUH, both of which supported the ideation of mixing uses and revealed its advantages. First, a theoretical framework that engaged the terms habitat, human association, mobility, connectivity, relationship, urban hierarchies, and reidentification; this framework further established the terms for discussing the undesigned parts of cities and the concept of the intown fabric—all intended to achieve communality, socialization, and quality of life. Second, a practical framework, which formalized and gave shape to modularity, low- and high-rise volumes, passages, streets-in-the-air, bridges, open or enclosed courts, and plazas. I discussed these terminological frameworks as a basis for MUH and demonstrated that Team 10, Perloff, and Scott-Brown's ideas evolved into groundbreaking strategies that redefined the architectural design of MUH, rendering it not as a "by-product'' of dwelling or commercial streets but as a new type of urban and neighborhood habitability.

In light of these observations, I would propose that we reimagine current and future MUH as a design problem, rather than as a factor in the real estate market and the broader urban economy. To great extent, MUH is currently defined almost entirely by the state, investors, and developers (Gualini & Majoor, 2007; Majerowitz & Allweil, 2019; Mualam et al., 2019). Planning experts and sociologists address it using terms such as "vertical allocation" when investigating aspects of "urban vitality" and "environmental quality" (Kern, 2007; Mualam et al., 2019); they focus on "neighborhood resources," and restaurants and cafés have become "retail food environments" (Finlay et al., 2020). Granted, this body of research is intended to assist in producing many of the social goals aspired to by postwar architects. However, these terms, which to a great extent reflect economic considerations, are formulated and promoted by stakeholders and are concurrently developed in sociological academic disciplines. In such a discourse, architects and designers provide second and third tiers of terminological buttressing of MUH. Considering this, Scott Brown's lament that architecture has lost its precedence over urban planning reverberates and seems even more potent today. Her observation underscores the need to redefine the relationship between creating markets, planning cities or LUDs, and designing MUH.

Finally, modern postwar MUH architecture can inspire because even today it remains intricately related to current design concerns involving economies of space, culture, technology, and micro-urbanism as expressed in functions and connectivity. As Dirk van den Heuvel wrote in relation to Team 10 designers and what present-day neoliberal housing architecture should glean from them, these now historic examples remind us that housing is "not only an economic powerhouse but also an assemblage of social spaces" (van den Heuvel, 2019, p. 136). Relating these thoughts to contemporary MUH, I do not propose limiting their conceptualization and visibility to a supposed postwar historicity; rather, I argue that their architecture can and should reflect the communal and urban elements that compose them. Be they for the residents' semiprivate, complex-designated communal use or for public association, MUH should constitute design elements that create habitat, communality, and reidentification through architecture itself.

Acknowledgments

Conflict of Interests

The author declares no conflict of interests.

References

Avermaete, T. (2005). MAT-building: Team 10's reinvention of the critical capacity of the urban tissue. In D. van den Heuvel & M. Risselada (Eds.), *Team 10: 1953–81, in search of a utopia of the present* (pp. 307–312). NAI.

Avermaete, T., Valena, T. F., & Vrachliotis, G. (Eds.). (2011). *Structuralism reloaded: Rule-based design in architecture and urbanism*. A. Menges.

Bakema, J., & van den Broek, J. (1953). *Lijnbaan, Rotterdam, 1948–1953*. [Photograph]. Collection Stadsarchief (Image 4273_L-6215). Stadsarchief Rotterdam, Rotterdam, the Netherlands.

Ben-Asher Gitler, I. (2021). New brutalism, new nation: Ram Karmi's assimilation of brutalism in Israel's arid region architecture. *The Journal of Architecture*, *26*(3), 316–339.

Boyer, M. C. (2017). *Not quite architecture: Writing around Alison and Peter Smithson*. MIT Press.

Brown, M. A. (2017). Integration by design: Bertrand Goldberg, Stanley Tigerman, and public housing architecture in postwar Chicago. *Journal of the Society of Architectural Historians*, *76*(2), 218–238.

Coupland, A. (Ed.). (1997). *Reclaiming the city: Mixed-use development*. E & FN Spon.

Cupers, K. (2016). Mapping and making community in the postwar European city. *Journal of Urban History*, *42*(6), 1009–1028.

Cupers, K. A. (2014). *The social project: Housing postwar*

France. University of Minnesota Press.

Deyong, S. (2001). Planetary habitat: The origins of a phantom movement. *The Journal of Architecture*, *6*(2), 113–128.

Deyong, S. J. (2008). *The creative simulacrum in architecture: Megastructure 1953–1972* [Doctoral dissertation, Princeton University]. DataSpace. https://www.proquest.com/openview/8eee3217c34a22f361fe1b5c31bf45ba/1?pq-origsite=gscholar&cbl=18750

Diehl, T. (1999). Theory and principle: Berthold Lubetkin's highpoint one and highpoint two. *Journal of Architectural Education*, *52*(4), 233–241.

Domhardt, K. S. (2012). The Garden City idea in the CIAM discourse on urbanism: A path to comprehensive planning. *Planning Perspectives*, *27*(2), 173–197.

Eleb, M. (2000). An alternative to functionalist universalism: Ecochard, Candilis and ATBAT-Afrique. In S. W. Goldhagen & R. Legault (Eds.), *Anxious modernisms: Experimentation in postwar architectural culture* (pp. 55–71). Canadian Centre for Architecture; MIT Press.

Finlay, J., Esposito, M., Tang, S., Gomez-Lopez, I., Sylvers, D., Judd, S., & Clarke, P. (2020). 4430 coffee shops and fast-food restaurants: Potential neighborhood resources for cognitive health and well-being among aging Americans. *Journal of Clinical and Translational Science*, 4(s1). https://doi.org/10.1017/cts.2020.57

Glendinning, M. (2021). *Mass housing*. Bloomsbury.

Gold, J. R. (1998). Creating the charter of Athens: CIAM and the functional city, 1933–43. *The Town Planning Review*, *69*(3), 225–247.

Grant, J. (2002). Mixed use in theory and practice: Canadian experience with implementing a planning principle. *Null*, *68*(1), 71–84.

Gualini, E., & Majoor, S. (2007). Innovative practices in large urban development projects: Conflicting frames in the quest for "new urbanity." *Planning Theory & Practice*, *8*(3), 297–318.

Hays, K. M. (2001). Prolegomenon for a study linking the advanced architecture of the present to that of the 1970s through ideologies of media, the experience of cities in transition, and the ongoing effects of reification. *Perspecta*, *32*, 101–107.

Heathcott, J. (2011). "In the nature of a clinic": The design of early public housing in St. Louis. *Journal of the Society of Architectural Historians*, *70*(1), 82–103.

Herzberger, H., & Architectuurstudio HH. (2021). *Study of possible reuse of the Centraal Beheer Office Building at Housing Herzberger Park (former Centraal Beheer Headquarters), 1968–1972*. Architectuurstudio HH.

Imamura, S. (2014). Flexibility in the density metabolism: Freedom in a large complex. *Docomomo Journal*, *50*, 53–57.

Jacobs, J. (1961). *The death and life of great American cities*. Random Books.

Karmi, R. (1963a). *Negev Centre, Be'er-Sheva, 1960–1963*. [Photograph]. Ram Karmi Collection (Box No. 8267-379999-044). Azrieli Architecture

Archive, Tel Aviv, Israel.

Karmi, R. (1963b). *Negev Centre, Be'er-Sheva, 1960–1963: Detail of plan for urban functions and youth hostel*. [Plan]. Ram Karmi Collection (Box No. 826734402-8008). Azrieli Architecture Archive, Tel Aviv, Israel.

Kern, L. (2007). Reshaping the boundaries of public and private life: Gender, condominium development, and the neoliberalization of urban living. *Null*, *28*(7), 657–681.

Langevin, J. (2011). Reyner Banham: In search of an imageable, invisible architecture. *Architectural Theory Review*, *16*(1), 2–21.

Lucking, M. (2012). The Goldberg variation: On "Bertrand Goldberg: Architecture of invention." *Design Issues*, *28*(2), 85–89.

Majerowitz, M., & Allweil, Y. (2019). Housing in the neoliberal city: Large urban developments and the role of architecture. *Urban Planning*, *4*(4), 43–61.

Maki, F., & Ohtaka, M. (1960). Toward group form. In J. Ockman & E. Eigen (Eds.), *Architecture culture, 1943–1968: A documentary anthology* (pp. 319–324). Columbia University Graduate School of Architecture, Planning, and Preservation.

Marmot, A. F. (1981). The legacy of Le Corbusier and high-rise housing. *Built Environment*, *7*(2), 82–95.

Martin, J. A. (1978). *Recycling the central city: The development of a new town–in town*. Center for Urban and Regional Affairs, University of Minnesota.

Martin, R. (2010). *Utopia's ghost architecture and postmodernism, again*. University of Minnesota Press.

Mota, N. (2019). Álvaro Siza's negotiated code: Housing with citizens' participation in the urban renewal of The Hague in the 1980s. *Urban Planning*, *4*(3), 250–264.

Mota, N., & Allweil, Y. (2019). The value of housing. *Footprint*, *13*(1), 1–10.

Mualam, N., Salinger, E., & Max, D. (2019). Increasing the urban mix through vertical allocations: Public floorspace in mixed use development. *Cities*, *87*, 131–141.

Mumford, E. (2019). CIAM and its outcomes. *Urban Planning*, *4*(3), 291–298.

Nethercote, M. (2019). Melbourne's vertical expansion and the political economies of high-rise residential development. *Urban Studies*, *56*(16), 3394–3414.

Pedret, A. (2005). Dismantling the CIAM grid: New values for modern architecture. In D. v. d. Heuvel & M. Risselada (Eds.), *Team 10: 1953–81, in search of a utopia of the present* (pp. 252–256). NAI.

Perloff, H. S. (1966). New towns in town. *AIP Journal*, *32*(3), 155–161.

Prudon, T. (2013). Modern housing redux: The (un)loved and the (un)learned. *Historic Environment*, *25*(2), 12–36.

Rappoport, Y., Glieberman, A., & Frenkel, Z. (1963). *Lincoln Building, Tel-Aviv, 1963*. Rappoport, Glieberman, and Frenkel Architects and Engineers.

Rapson, R., & Halprin, L. (1974). *Cedar West (Riverside Plaza), Minneapolis, 1970 and 1974: Drawing of elevated plaza/walkway system.* [Drawing]. Ralph Rapson Papers. Northwest Architectural Archives, University of Minnesota Libraries, Minneapolis, MN, USA.

Rendell, J. (2019). May mo(u)rn: Transitional spaces in architecture and psychoanalysis—A site-writing. *Null*, *24*(2), 223–286.

Ross, B. (2014). *Dead end: Suburban sprawl and the rebirth of American urbanism*. Oxford University Press.

Scott Brown, D. (1967). Team 10, Perspecta 10, and the present state of architectural theory. *Journal of the American Institute of Planners*, *33*(1), 42–50.

Siemiatycki, M. (2015). Mixing public and private uses in the same building: Opportunities and barriers. *Journal of Urban Design*, *20*(2), 230–250.

Skyscrapercity. (2008). *Postcards Schouwburgplein/ Lijnbaan/Binnenwegplein*. https://www.skyscrapercity.com/threads/ansichtkaarten-schouwburgplein-lijnbaan-binnenwegplein.587686

Smithson, A. (1974). How to recognize and read Mat-Building: Mainstream architecture as it developed towards the Mat-Building. *Architectural Design*, *9*, 573–590.

Smithson, A., & Smithson, P. (1973). *Without rhetoric: An architectural aesthetic 1955–1972*. MIT Press.

Stanek, Ł. (2020). *Architecture in global socialism: Eastern Europe, West Africa, and the Middle East in the Cold War*. Princeton University Press.

Strauven, F. (1998). *Aldo van Eyck: The shape of relativity*. Architectura & Natura.

Tange, K. (1961). A plan for Tokyo, 1960: Toward a structural reorganization. In J. Ockman & E. Eigen (Eds.), *Architecture culture, 1943–1968: A documentary anthology* (pp. 327-334). Columbia Univer-sity Graduate School of Architecture, Planning, and Preservation.

Theunissen, K., & Kaal, S. (2009). Het Pentagon Amsterdam Aldo van Eyck and Theo Bosch. *DASH: Delft Architectural Studies on Housing*, *1*, 132–137.

van den Heuvel, D. (2019). There is no such thing as a free market: Public planning versus private opportunity in housing. *Footprint*, *13*, 129–138.

van den Heuvel, D., & Risselada, M. (Eds.). (2005). *Team 10: 1953–81, in search of a utopia of the present*. NAI.

van Eyck, A. (1962). Steps toward a configurative discipline. In J. Ockman & E. Eigen (Eds.), *Architecture culture, 1943–1968: A documentary anthology* (pp. 348–360). Columbia University Press.

van Eyck, A., & Bosch, T. (1975). *Sint-Antoniebreestraat (the Pentagon), 1969–1975, Amsterdam*. [Photograph]. (Item No. 010122020674). Amsterdam City Archives, Amsterdam, the Netherlands.

Wagenaar, C. (2000). Jaap Bakema and the fight for freedom. In S. W. Goldhagen & R. Legault (Eds.), *Anxious modernisms: Experimentation in postwar architectural culture* (pp. 260–277). Canadian Centre for Architecture; MIT Press.

Wall, T. (2021, February 27). "Poor floors": Anger over new plans to segregate Tower Block residents. *The Guardian*. https://www.theguardian.com/society/2021/feb/27/poor-floors-anger-over-new-plans-to-segregate-tower-block-residents

Webster, H. (Ed.). (1997). *Modernism without rhetoric: Essays on the work of Alison and Peter Smithson*. Academy Editions.

White, J. T., & Serin, B. (2021). *High-rise residential development: An international evidence review*. University of Glasgow.

Wright, G. (1983). *Building the dream: A social history of housing in America*. MIT Press.

About the Author

Inbal Ben-Asher Gitler is a senior lecturer of architecture and visual culture at Sapir Academic College. At Ben Gurion University of the Negev, she is a teaching fellow. Her latest work, *Architectural Culture in British Mandate Jerusalem, 1917–1948* (Edinburgh University Press, 2020), is the recipient of the Concordia University Library–Azrieli Institute Award for Best Book in Israel Studies for 2021. She is also co-editor of *Israel as A Modern Architectural Experimental Lab, 1948–1978* (Intellect Books, 2020) with Anat Geva.