Back to the Future:
New Metabolisms for Declining Urban Towers

by

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CONTENTS

ABSTRACT

As the number of residential towers increases with the growth of modern cities, we are faced with the question of how to handle the older towers that, little by little, no longer attract renters for their apartments. Is their decline unavoidable, or like many other building types, do they have the capacity for a second life? In this project, I look at the history of residential towers, how they go from exemplifying an ideal urban lifestyle to becoming obsolete urban ruins. Looking at Halifax's Fenwick Place in particular, I examine how a building that was designed to express an idealistic future through its brutalist idiom is now widely considered an architectural crime against humanity. To address this question, I draw upon ideas from the Metabolist movement, adapting concepts such as groupform, linkage, and megaform to twenty-first-century conditions, and propose that new urban futures currently lie fallow in our recent past.

ACKNOWLEDGEMENTS

We meet here, dear reader, as if in a clearing where I have set up a small camp. But before we proceed, I must tell you that I have not reached this place alone nor are these pages the product of my sole effort. I have arrived here through wilderness and trials, tried many pitfalls and wrong turns, and would not have found my way but for the grace and efforts of others.

I am thankful for my family, Butlers, Magills, and Amoses all, for setting my compass and my courage, you are both the country that I leave behind and the one I return to, and the way has never been so hard or so subtle that I could not prevail by remembering the gifts you have given me.

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To Dale Arsenault, Ken Kam, and Roland Hudson, thank you for lending me your skills and doing so with great character, and to Susanna Morash-Kent, Anita Regan, and Beverly Nightingale, thank you for amending my uncertainty with patience and high spirits.

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I would not have set out on this path if not for the initial encouragement of Cathy L'Orsa, who saw a way for me that I did not see for myself, nor would I be so bold in my endeavour if it were not for the example of Andrew Connidis, who made a practice out of curiosity and the love of people.

By these many and more I have found my way here, but for my wanderlust I am indebted solely to my wife Johanna, who is both companion and bonfire, my source of intrepidness and mystery. From her I have learned to love the wilderness as much as the camp, and even now I can hear her dashing back into the woods, uncovering new and hidden paths. It is with passion and joy that I follow her there and strive to meet her again along these unkown ways.

CHAPTER 1: INTRODUCTION

In a 2008 article for the Halifax newspaper *The Coast*, Andrea Klassen attempted to summarize public opinion of a notorious city landmark, Fenwick Place. Klassen writes, "I've heard it called an architectural crime against humanity, a monstrosity, a leftover set piece from Blade Runner, a giant erection, or—less imaginatively—ugly."[1] As the tallest building east of Montreal, located in the south end of the Halifax peninsula amidst two-hundred-year-old Georgian Revival neighbourhoods, Fenwick Place is an obvious target for public scrutiny. The residential tower stands out not only because of its incongruous height and massing, but because of its distinctive brutalist style and materiality. It is an unapologetic monument to an idea of urbanity that is distinct from its surroundings. While such extreme distinctions are viewed today as evidence of the building's flaws, they were originally the hallmarks of a bold, modern urban lifestyle.

Following the example of Le Corbusier's *Unité d'habitation* (see 4) and the social housing projects of Peter and Alison Smithson, brutalist structures employed standardized layouts and modular construction techniques in order to bring amenities such as light, fresh air, and open space to a broader segment of society. Originally imbued with utopian ideals, characteristics such as the unfinished concrete (*béton brut*) for which the style was

Fig. 1. Fenwick Place, tallest building in *Halifax, NS*.

Fig. 2. Fenwick Place, 2015.

Fig. 3. Fenwick Place in Victorian neighbourhood.

Fig. 4. Le Corbusier, *Unité d'habitation* at Marseille, 1952; photograph by Paul Kozlowsk, from Fondation Le Corbusier.

1 Andrea Klassen, "Tower of Wobble," *The Coast*, 2008.

named, and the decision not to conceal structural and mechanical elements, were coded as a form of architectural honesty and truthfulness intended to express the natural dignity of the structure's modern inhabitants. As an example of a "Tower in the Park," Fenwick Place, like its predecessors, embodies an idea that urban fabric, rather than sprawling away from the downtown core, can instead grow in density while at the same time providing the amenities and social interactions essential for modern lifestyles, a garden city in the air. Provided with the dual benefit of centrality and convenient mobility, tower residents could fulfill their individual needs in the privacy of their apartments, and their social needs in the city, or in the possibilities of travel, effectively achieving the best of both urban and suburban lifestyles.

Fig. 5. *Unité d'habitation's* béton brut; from Jenkins, *Unité d'Habitation: Marseilles*.

Fig. 6. Fenwick's un-faced concrete cladding and structure.

It is perhaps difficult to imagine in light of the building's current condition, but at its inception Fenwick Place was a luxury apartment tower, intended to accommodate the jet-setter lifestyle of intrepid, forward-looking, middle-class professionals of the 1960s. Many facets of the building – mobility, downtown location, and small, efficient living – remain hallmarks of contemporary urban tower design. So why is Fenwick Place, like other tower structures of its era, now viewed as an undesirable place to live, particularly considering that new developments offer few if not fewer additional amenities? While it can be argued that other building typologies improve with time, towers rarely do. What is it that prevents them

from ageing well? In this thesis, I explore these questions, proposing that a structural inability to change with changing individual and communal needs lies at the heart of the problem. Drawing upon the Metabolist principle of linkage, and by accommodating organic processes of change into design, my architectural response posits a revision of Fenwick Place and more broadly of the tower typology to one that is process based, and like the community it houses, is continually in a state of transition and growth.

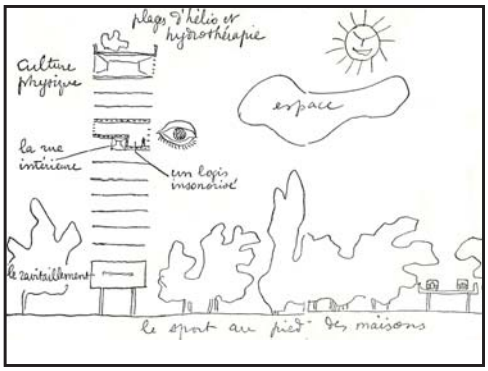


Fig. 7. Le Corbusier, conceptual sketch of the *Unité* principle, showing essential values of sunlight, space, park, and exercise, 1935; from Archidialogue. *Archive for Unite D'habitation in Marseille*.

Tower Typology

Inaugurated by William Le Baron Jenney's *Home Insurance Building* in Chicago (see 8), the modern tower typology began with innovations in steel-framed construction and technical improvements in caisson foundations, elevators, electrical lighting, and ventilation systems that allowed growing cities to expand vertically. These early towers were predominantly commercial buildings, at first housing financial institutions and corporate headquarters that found the new vertical form an apt expression for the ascendency and status of capitalist enterprise. Later, in the interwar years, they provided office space for white-collar professionals and signalled the urbanity of a growing middle-class workforce. Located in the central districts of New York and Chicago, these towers adapted the Italian Renaissance style of the French Beaux-Arts movement to the hard-nosed economic efficiency of their financiers and clients. Conceived in three

Fig. 8. William Le Baron Jenney's *Home Insurance Building*, 1884; from Wikipedia.

parts—a base, middle section, and roof line—the composition of early towers allowed for judicial use of ornament at ground level plinths that hosted restaurants, shops, and lobbies, while the bulk of the remaining building employed plainer details emphasizing the building's height, and advertising the excitement of new spectacular views upon which the penthouse level derived its privileged position.

It was not until the housing crisis in Europe after World War II created an urgent requirement for large-scale and efficient architectural solutions that accommodated all classes of society that the form was truly adopted for residential use. The principal proponent of this shift in tower typology was Le Corbusier, who since the presentation of his *Ville Contemporaine* scheme (1922) at the Salon d'Automne in Paris, had advocated for the rationalization of cities through the implementation of bold "Tower in the Park" planning schemes.[2]

In his description of "A Contemporary City of Three Million Inhabitants," Le Corbusier decried the haphazard organization and development of traditional cities, and the resultant squalor and moral lassitude of urban dwellers: "The city of today is a dying thing because it is not geometrical. To build in the open would be to replace our present haphazard arrangements, which are all we have today,

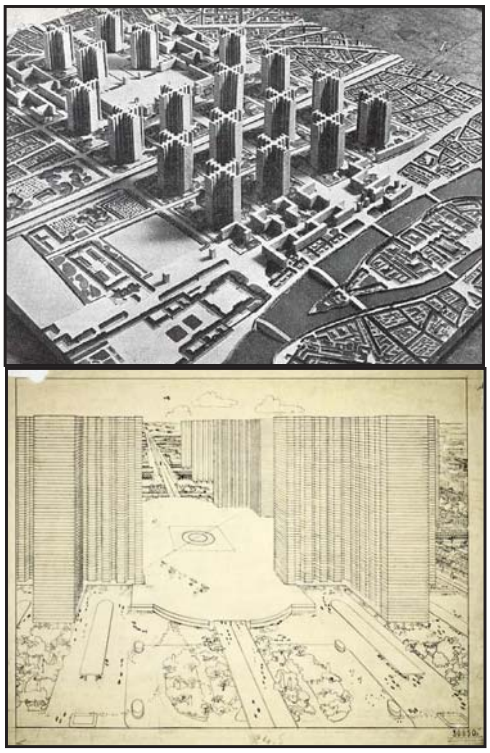


Fig. 9. and Fig. 10. Le Corbusier, *Plan Voisin*, 1925. Above: model shows repitition of cruciform towers. Below: Perspective shows rationalized streets; from Fondation Le Corbusier.

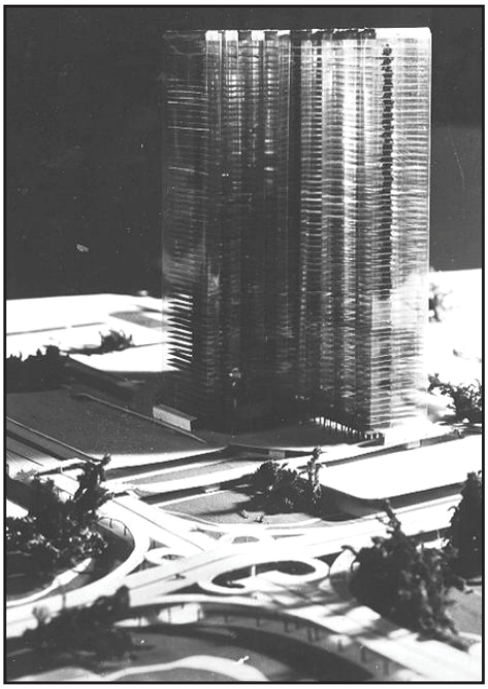


Fig. 11. Le Corbusier, *Plan de Paris*, 1937; from Fondation Le Corbusier.

2 Le Corbusier's work and writing was influential in the promotion of towers as a housing type in opposition to the long bars promoted by the German architects such as the first large housing project in New Frankfurt after WW I.

by a uniform lay-out. Unless we do this there is no salvation. The result of a true geometrical lay-out is repetition. The result of repetition is a standard, the perfect form."[3] However, as this passage indicates, Le Corbusier also felt that architecture had the potential to provide better living conditions and to contribute to a better society, polemically stating in *Towards a New Architecture* that society faces the ultimatum of "Architecture or Revolution," as "it is the question of building which lies at the root of the social unrest of today."[4] By way of a solution, Le Corbusier proposed development around two fundamental ideals for modern living; he suggested the evocation of geometric purity as a more perfect substitute for traditional architectural style, and secondly, he argued that architecture was primary in structuring human relationships and behaviours.

Fig. 12. Marianne Brandt, *Tea Infuser and Strainer*, 1924. Example of Bauhaus industrial form. Circle, sphere, and square are the basic forms of the construction; from The Metropolitan Museum of Art.

Le Corbusier's interest in geometric purism drew upon other theories of the time, from classical proportions and platonic forms to contemporary artistic conceptions of space formulated through Cubism and *De Stijl*. He was also influenced by new infusions to the language of form such as the functionalist principles developed by the Bauhaus and German Werkbund, as well as the archetypal simplicity of Adolf Loos and Frank Lloyd Wright. At the heart of Le Corbusier's synthesis of these

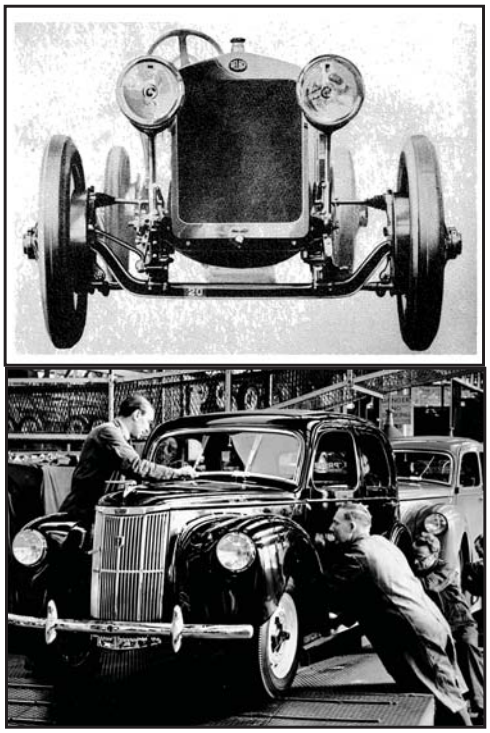


Fig. 13. and 14. Top: Delage chasis. Example of streamlined object-type; from Le Corbusier, *Towards a New Architecture). Bottom:* Ford Motors assembly line; from Ford Motor Company, *The Evolution of Mass Production*.

3 Le Corbusier, *The City of Tomorrow and Its Planning*, trans. Frederick Etchells (Mineola, NY: Dover, 1987), 373.

4 Le Corbusier, *Towards a New Architecture*, Frederick Etchells (trans.) (London: Butterworth Architecture, 1989), 269.

influences was a desire to discover a spiritual as well as a physical truth within the forces of industrial processes and the logic of mechanization. This is made evident in his vocabulary of *objet-types*, which testify to the simplicity of form and function that results from mechanical fabrication and the application of mathematics and geometry. For Le Corbusier, the automobile, the aeroplane, and the ocean liner were all new formal arrangements streamlined and simplified by the processes of their production. His examination of these *objet-types* led Le Corbusier to believe that the forces inherent to mechanical processes – efficiency, economy, and speed – would eliminate extraneous details and decoration and purify objects to a state of perfection confirmed by the object's inherent capacity for multiplication. Thus, in conceiving the ideal form of residential tower, Le Corbusier insisted that the solution must derive from designs that industrialize the housing type.

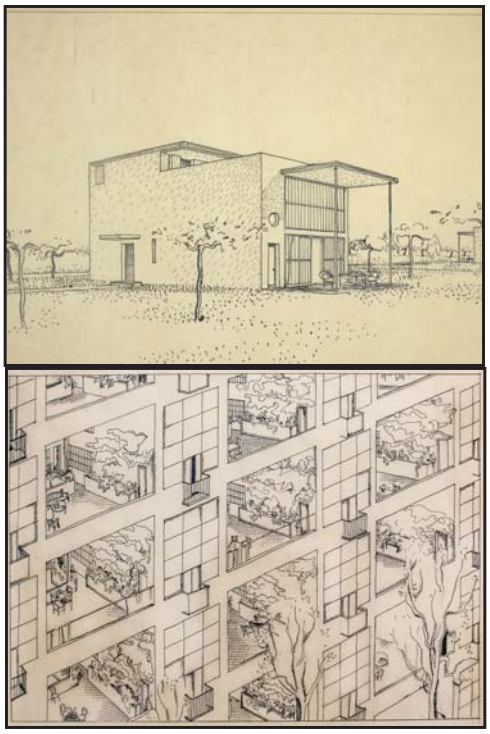


Fig. 15. and 16. Top: Le Corbusier, *Maison Citrohan,* not located, 1922; from Fondation Le Corbusier. Bottom: Le Corbusier, Immeubles-villas, not located, 1922, mass-produced and stacked *Maison Citröhan units*; from from Fondation Le Corbusier.

One of Le Corbusier's first experiments in the reconceptualization of housing types was *Maison Citröhan*, originally built in 1920 and redesigned five times thereafter. A prefabricated unit meant to be built in series, this fundamental structure formed the basis of residential tower designs to follow, including *Immeubles Villas*, an apartment superblock made up of *Maisons Citröhan* piled on top of one another and linked together by corridors and open terraces, and was an arrangement which was itself infinitely reproducible. For Le Cor-

busier, the perfection of the residential tower form was apparent in its modularity and its multiplicity.

Just as *objets-types* demonstrated how the forces of mechanization could produce ideal forms, early twentieth-century models of scientific management such as Taylorism and Fordism claimed a similar potential to improve the performance of factory workers. A method of labour discipline and organization, Taylorism employed principles of efficiency engineering and incentive systems to maximize factory productivity. The competitiveness of American society legitimized Taylorist claims that labour disputes could be overcome through the collective benefits of increased productivity. As Taylorists saw it, if both workers and management focused their energies on increasing productivity rather than negotiating the division of the profits, the benefits to all parties would be greater. Thus Taylorism seemed to transcend traditional politics by offering an escape from class conflict and ideological divisions.

Le Corbusier saw Taylorist principles as an affirmation that machine processes, when applied to people and social arrangements, had the potential to perfect humanity in the same way they perfect objects – through the systemization and rationalization of human needs and the mass production of housing. Le Corbusier's "machine for living," then, suggests that human needs can be streamlined into essential amenities, such as access to sunlight, fresh air, solitude, and exercise, and can

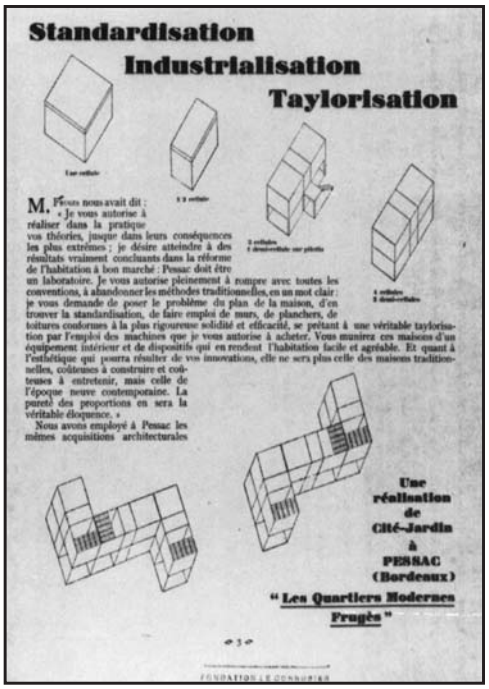


Fig. 17. and 18. Le Corbusier, *Pour Batir: Standardiser et Tayoriser*, Supplement au Bulletin du Redressement Francais, May 1, 1928; from McLeod, "Architecture or Revolution: Taylorism, Technocracy, and Social Change."

be brought about by the efficient organization of the modern house. Not only did the promise of industrial efficiency and greater productivity allow Le Corbusier to conceive of architecture as a social tool, but it allowed him to embed his ideas about the ideal modern lifestyle into that architecture.

In describing the apartment complex *Immuebles Villas*, Le Corbusier explained that the project was based on an image of communal life he observed at the Monastery of Ema, where, he claims, the individual and communal were harmoniously arranged. However, Le Corbusier's ideas about the ideal communal life were not informed by monasticism only, and he was also interested in the work of the nineteenth-century French social philosopher Charles Fourier (1772-1837). Fourier's ideas of a new utopian social order were formulated as the Industrial Revolution began to take hold, and he theorized that the force of human attraction, like the force of gravity, revealed natural human associations that were otherwise confused by society and interrupted by the physical necessities of common life. Provided with an environment that alleviated the effects of everyday drudgery, and which organized human passions into what Fourier called a "unity of action," his new society, the Phalanx, would find a natural order that aligned man with man, and mankind with God and the universe.[5]

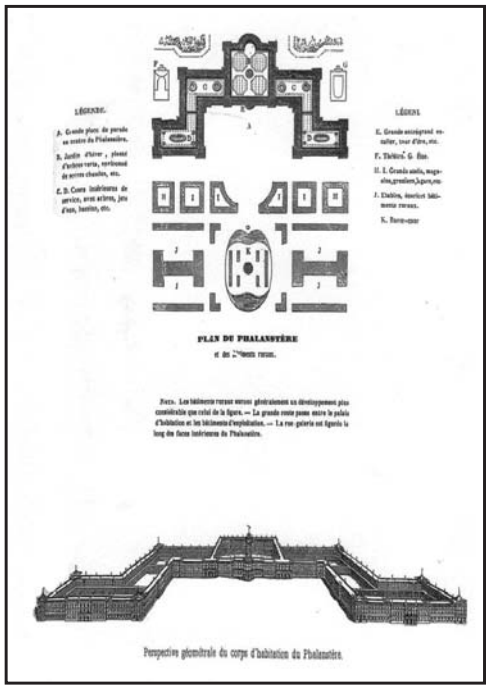


Fig. 19. Charles Fourier, *Phalanstère*. Noise producing activities were assigned to the wings, quiet actiities to the central area. Social amenties included child care, a theatre, and room to entertain visitors; from Serenyi, "Le Corbusier, Fourier, and the Monastery of Ema."

Contributing to and supporting Le Corbusier's own

5 Charles Fourier, *Oeuvres Completes* (Paris, 1841-48), 6: 85.

ideas about the inherent beauty and perfection of mechanical processes, Fourier's social theories are evident in some of Le Corbusier's earliest designs, such as *Project for an Art School* (1910). As Peter Serenyi points out, this project is a direct formal translation of Fourier's theory on human attraction, and the organization of human passions into private, communal, and distributive categories, providing a blueprint for the organization of human activity within a self-sustaining community.[6] This project also counters what Fourier and Le Corbusier saw as a failure of architecture – the production of an environment that failed to promote a natural harmony among people exists, but that such a unity is concealed and confused by the deleterious impediments of the human environment. Le Corbusier further attempted to tackle this failing through the development of housing capable of harmonizing human passions. As Serenyi states, "To achieve order, Fourier—as did Le Corbusier a century later—invited the world to unite in action. 'Unity of action,' he said, 'is the end of nature and it is the aim of God in the material and in the social world.'"[7]

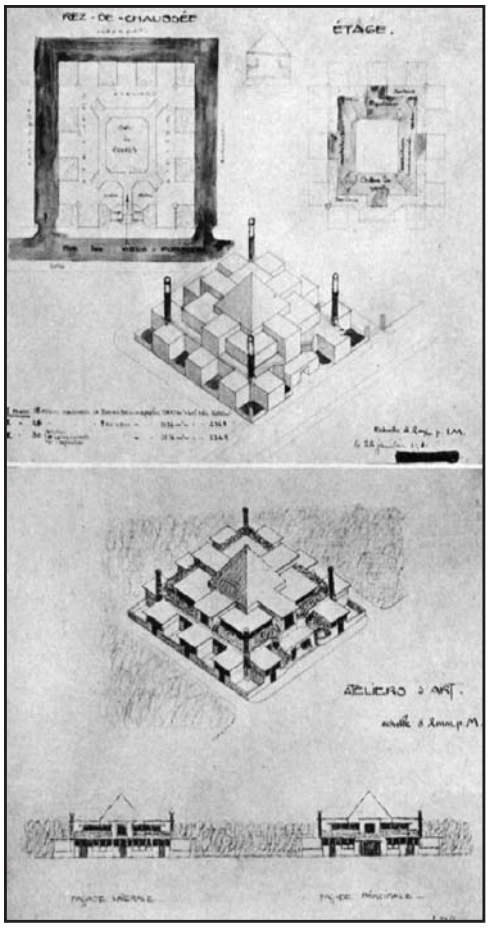


Fig. 20. Le Corbusier, *Project for an Art School*, 1910; from Le Corbusier, *Oeuvre Complète*.

Unité d'habitation at Marseille is widely considered to be the culmination of Le Corbusier's long search for a modern dwelling form, and the realization of the ideas behind his earlier housing schemes. It is also the clearest built expression of the social ideals

6 Peter Serenyi, "Le Corbusier, Fourier, and the Monastery of Ema," *The Art Bulletin* 49, no. 4 (1967) 279.

7 Ibid.,278.

Le Corbusier sought to bring about through residential tower design, and the best example of the tectonic relationships he used to manifest his ideal communal lifestyle. Following the same logic as *Immeubles Villas*, *Unité d'habitation* is comprised of individual units streamlined around a standardized ideal of private life, and which are repeated and collectivized into a communal form, itself designed to reflect the notion of collective work within a monastery and Fourier's *Phalanstère*. At *Unité*, the daily life within each unit is complemented by social amenities including a nursery school, daycare centre, doctor's office, gymnasium, restaurant, and shops. These communal features act as extensions of the individual dwellings, and contribute to the core concept of the ideal modern community as one self-contained and socially self-supportive. All of these features were locked into place by the tectonic strength and ruggedness of the un-faced concrete structure.

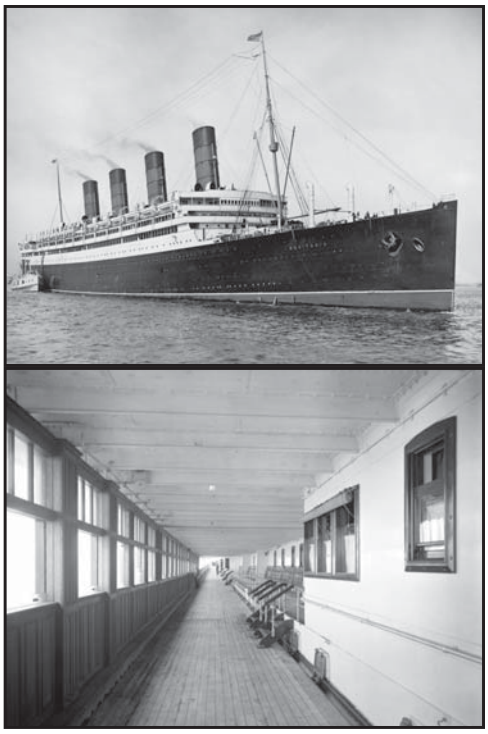


Fig. 21. and 22. Above: *RMS Aquitania*, 1913. Below: First-class promenade deck; from Wikipedia.

Distinct from the earlier steel-framed cruciform towers, *Unité d'habitation's* form closely resembles that of an ocean liner, one of the preferred objet-types from Le Corbusier's purist vocabulary. This is evident in the sculptural exhaust stacks and the chine of the cantilevered façade, as well as in the pattern of the individual units arranged on the long sides of the building, and the legibility of the public street on the seventh floor (see 21-24). Together these features express a tectonic integration of individual cells and monumental form in the same way that portholes and decks are inte-

Fig. 23. and 24. Above: *Unité d'habitation's units diffrentiated by colour. Below:* Seventh-storey commercial street; from Fondation Le Corbusier.

grated into the form of a ship's hull. The ocean liner metaphor further points to the building's aloofness, a distance from its surroundings implicit to the idea of a vertical garden city. As if on a voyage between two countries, *Unité d'habitation* floats above its traditional surroundings, its modern voyagers headed for the more idyllic shores of the future.

As a self-contained cellular-community, *Unité d'habitation* at Marseille embodies Le Corbusier's ideals about how to live as an individual and in a group, and about how society as a whole should progress. Hugely influential, these ideals came to define and structure the principle components of the modern residential tower, and further aligned the high-rise tower with processes of industrialization and capitalist economics. Le Corbusier's argument for large-scale housing was also an economic one; he suggested that a whole-scale "Towers in the Park" approach would take advantage of mass production and economies of scale and provide a more cost-effective solution to public housing.[8] While the actual cost of *Unité d'habitation* at Marseille has been criticized for being greater than anticipated, four subsequent *Unités* were constructed along stricter financial guidelines, and, as a result, many of the social spaces that made the prototype a successful village, were reduced or removed

Fig. 25. Le Corbusier, *Unité d'habitation* in Firminy-Vert, 1965; Photograph by XYX from *Unité d'Habitation: Marseilles*.

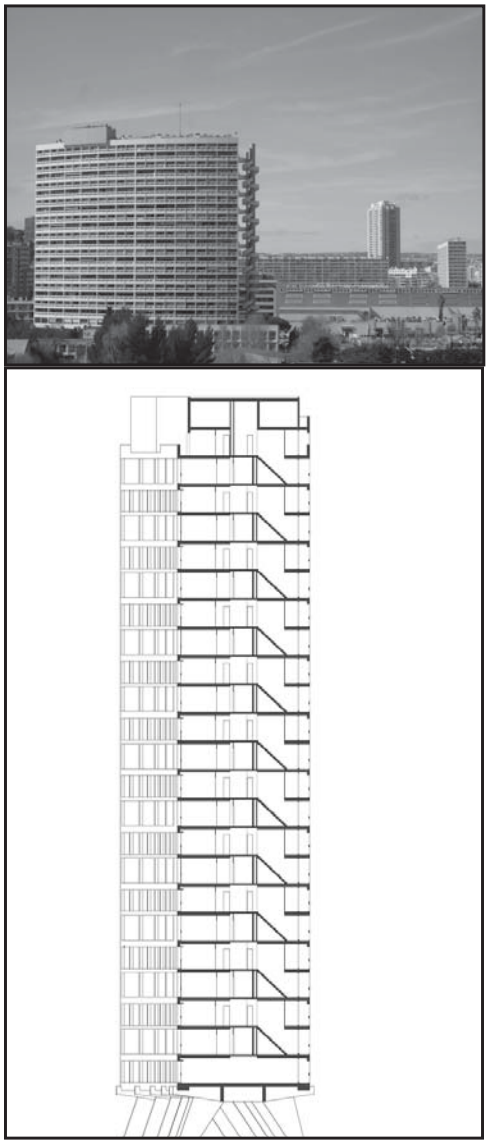


Fig. 26. and 27. Fernand Boukobza, Le Brasilia, 1967; top: photograph by emmanuelsaussier2003, from Flikr; bottom: section from Drac Paca. Based on the *Unité* principal, Le Brasilia retains the pilotis of the original, however, the section has already been reduced and only half of the apartments have dual aspects. The double-height living space and heroic roofscape have also been abandoned.

8 Donald Tomkinson, "The Marseilles Experiment," *The Town Planning Review* 24, no. 3 (1953) 208. For further analysis of Le Corbusier's relationship to mass-production, see David Gutman, *From Autos to Architecture: Fordism and Architectural Aesthetics in the Twentieth Century* (New York: Princeton Architectural Press, 2009).

altogether, the *Unité d'habitation* at Firminy-Vert, constructed after Le Corbusier's death, being a prime example.[9]

In this criticism lies the paradoxical influence of the precedent: as subsequent social housing projects attempted to replicate the ideals exemplified by the original, the very forces that Le Corbusier imagined would perfect the housing type, actively stripped subsequent iterations of the artistic and social aspirations that distinguished their predecessor. In winnowing the tower typology to its core elements, this streamlining process, over time, further revealed and exaggerated certain flaws and shortcomings, including the rigidity of the tectonic relationship between unit and framework, the homogenous and simplified outcome of standardized lifestyles and living spaces, and the segregation of space and society into mass socioeconomic groups. With a few notable exceptions, the majority of public housing projects that attempted to undertake Le Corbusier's original thesis have proven that utopian intentions, when implemented universally, result in dystopian environments. Public open spaces, inadequately

Fig. 28. and 29. Ernö Goldfinger, above: *Balfron Tower*, Poplar, 1967, 27-storeys; from Metalocus. Below: *Trellick Tower*, North Kensington, 1972, 32-storeys; from Pulse. Unite's wine-bottle and rack tectonics and expressive external stairwell are clearly legible.

9 "The double-height living room at Marseilles is drastically reduced at Nantes-Reze and disappears altogether at Firminy, with depressing consequences to the already small space. The articulation at mid-building afforded by the two-storey zone of commercial and office space at Marseilles was not possible in later programs, and the results are plastically less satisfying. The roofscape, so dear and ideologically essential at Marseilles, is but the ghost of its former self at Briey-en-Foret, and Firminy has been so cheapened and stripped of excellent detail as to seem to be almost of another hand." Roger Sherwood, *Modern Housing Prototypes* (Cambridge: Harvard, MA: University Press, 1978), 125.

supervised and effectively belonging to no one, became unattractive and difficult to maintain; "streets in the sky" meant to foster resident interaction became dismal antisocial corridors; units streamlined around particular lifestyles became cramped; and the monastic solitude of the individual was infringed upon by noises, smells, and faulty services.

The failures of government initiated housing projects, including Pruitt-Igoe in St. Louis and Park Hill Estates in the United Kingdom, have provided cause to doubt the power of architecture to ameliorate modern social conditions; however, it is possible that tower architecture in fact succeeded in manifesting Le Corbusier's machine-aesthetic, and that this trust in the forces of mass-production is partly the cause for the subsequent loss and reduction of social ideals exemplified by the original. In particular, the desire to find social harmony by standardizing human nature into essentials, and to create order through universal truths that attempt to arrest change in an all-too-rapidly changing world, are a problematic basis for anticipating future concerns and social needs. Yet despite these flaws, commercially developed high-rise apartment buildings have become a staple in all large cities. Still an attractive solution to overall scarcity of land and a demand for housing, the residential tower has become a fixture of the urban landscape.

Fig. 30. Robert Rigg, Greater London Council, *Thamesmead*, 1963; photgraph by Joseph Salmassian, from Wigwamblog. Part of a modernist planning scheme for the Southbank of the Thames, residential towers are standardized further to provide 60,000 homes for 600,000 inhabitants.

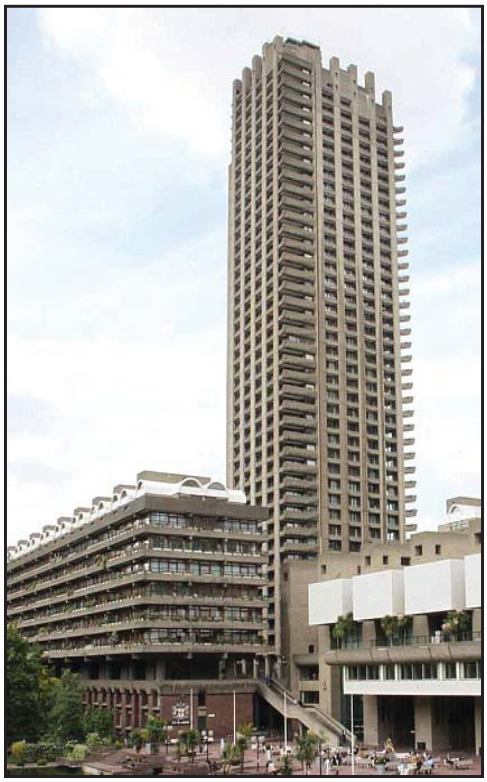


Fig. 31. Chamberlin, Powell, and Bon, *Shakespeare Tower*, Barbican Estate, 1976; from the Daily Mail. One of three similar towers, the tallest buildings in London at the time of their construction.

Decaying Urban Towers: Locating the Problem in Halifax, NS

North America is the most urbanized region in the world, with 82% of the population living in cities.[10] In Canada, 90% of total population growth is occurring in the 33 metropolitan areas[11], and within Nova Scotia, Halifax and Truro continue to grow while rural areas are undergoing population decline.[12] While Halifax is by no means experiencing the same level of population growth as some of the globe's major centres, with projects such as The Pavilion, The Alexander, and The Willow currently under construction, and several more residential towers on the horizon, the city is joining the global trend of increasing high-rise, mixed-use development.

Fig. 32. W.M. Fares Group, rendering of the proposed 29-storey Armco Tower on Quinpool Road, 2015; from the Haligonia. While the facade is contemporary, the building system and structure are similar to Fenwick Place.

Similar to today, in the 1970s Halifax underwent a significant building boom. 1969 was a record year for urban development, with 1,850 building permits worth $74 million in construction value issued.[13] The major projects of the time were Scotia Square (1969-73) and the Law Courts (1971),

10 UN, Department of Economic and Social Affairs, Population Division, *World Urbanization Prospects: The 2014 Revision, Highlights*, 2014.

11 Statistics Canada. *Census Snapshot of Canada: Urbanization*, Statistics Canada Catalogue no. 11-008. Ottawa, Ontario. Analysis Series, 2006.

12 Statistics Canada. *Census: Language--Focus on Geography Series, 2011 Census, Census year 2011, no. 4: Province of Nova Scotia*. Statistics Canada Catalogue no. 98-314-XWE2011004. Ottawa, Ontario. Census.

13 Staff Reporter, "New Apartment Tower Puts Cap on Record Year," *Halifax Mail Star*, January 5, 1970.

Cogswell Interchange (1969-71) and the A. Murray Mackay Bridge (1970), the Killam Library (1966-71) as well as Dalhousie University's Arts Centre (1971) and Life Sciences Building (1968). Residential development also boomed as available land on the peninsula decreased and the demand for housing rose. Many residential tower developments were highly anticipated, including Embassy Towers on Spring Garden Road (1967), Park Victoria Apartments on South Park Street (1969), Winchester Plaza on Morris Street (1970), the Macdonald Apartments on Cunard Street (1971), and Ogilvie on the Park Apartments on Ogilvie Street (1971). These buildings ranged in height from twelve to twenty-one stories, but all were dwarfed by another eagerly awaited structure, that of the thirty-three storey Fenwick Place (1971). The excitement and significance of the building boom was expressed by the Honourable Ralph F. Fiske, Minister of Trade and Industry, who stated, "New high-rise office and residential apartment complexes, combined with the exciting port developments, are helping to make historic Halifax one of the fastest growing, most exciting cities in North America."[14] While Fiske's assessment, backed by the economic confidence of the time, appears now to be a bit of an overstatement, his idealistic aspiration helps to describe the boldness in scale and style with which these new urban developments were executed.

Many of the major projects that formed Halifax's

Fig. 33. Scotia Square, Halifax, NS, (1969-73).

Fig. 34. Leslie R. Fairn, Killam Memorial Library, 1966-71. The use exposed aggregate concrete panelling is characteric of brutaist structures.

Fig. 35. Charles Fowler and Junji Mikawa, Dalhousie Arts Centre, 1968-71. Precast exposed-aggregate panels and the expression of the concrete slab structure are brutalist hallmarks that are also employed in the construction of Fenwick Place.

14 Staff Reporter, "N.S. Economy Makes Significant Advances," *The Chronicle Herald*, January 18, 1971.

twentieth-century boom, were executed around modernist urban planning ideals. Closely related to contemporary developments including the Don Valley Parkway and Thorncliffe Park in Toronto, and based on Le Corbusier's urban planning schemes that linked modern high-rise offices and high-rise towers through transportation infrastructure, the Scotia Square commercial complex, Cogswell interchange, and the unrealized Harbour Drive highway, boldly attempted to restructure historic Halifax to address a future grounded in capitalism, the automobile, and industry.

This new, modern Halifax was also signified through the adoption of brutalist values, made legible in several developments of the period. The brutalist idiom, as a youthful and vigorous signification of modernity, was embraced as the Canadian national aesthetic at that time and supported by the Federal government by supporting a whole set of buildings for the occasion of the Centennial of Confederation in 1967.[15] Common to these projects is the use of poured concrete as a material expression of durability, longevity, dignity, and honesty. The expression of structural elements demonstrated the desire for the exterior appearance of the building to match its interior use, and for the industriousness of the building's production to be linked with the industriousness of its new, modern tenants. The stylistic newness and idealistic intent of these buildings is perhaps difficult

Fig. 36. Park Victoria Apartments, 1969. 21-storeys tall.

Fig. 37. Ogilvie on the Park Apartments, 1971. 12-storeys tall.

Fig. 38. Macdonald Apartments, 1971. 14-storeys tall.

15 Marco Polo and Colin Ripley, eds., *Architecture and National Identity* (Halifax: Dalhousie University Press, 2014).

to imagine today, but Peter B. Waite, Dalhousie University historian, describes the impression new projects such as the Life Sciences building had at the time of their construction:

> The Montreal architects came up with a building unique to Halifax, not to everyone's taste, but which won the award of excellence from the Canadian Architectural Yearbook in 1968. The architects ignored both cut stone and concrete slab, and went for a highly innovative building—what one biologist dared to call the most advanced building in Nova Scotia of the time—constructed of poured concrete with the finish sand-blasted to expose the aggregate underneath. The type is now familiar; thirty years ago it was not. The shape of the building resolutely reflected its interior functions. […] There was an aesthetic integrity to it, no frills, no fuss, and on the inside it looked much the same as it did on the outside. Ray Affleck [the architect] told Dalhousie people that at first they would be horrified at the lack of interior paint and finish, but in time they would come to like it. It proved serviceable and sensible to its users, though often a surprise to visitors.[16]

Fig. 39. Ray Affleck, Life Sciences Building, 1968; from Ableweb.

The response to the housing crisis on the Halifax peninsula also drew upon the arguments and solutions of the brutalists and post-war modernists, and residential tower developments that promised idyllic urban density and modern amenities were adopted. As a reporter for the *Chronicle Herald* summarized, "The limited boundaries of the Halifax Peninsula do not allow for sprawling estate grounds of yesteryear, perhaps the only way for the future growth of the city is into the sky."[17] In-

16 Peter B. Waite, *The Lives of Dalhousie University, 1925-1980,* vol. 2, *The Old College Transformed*, (Montreal: McGill-Queen's University Press, 1998) 307-08.

17 Jim Gourlay, "Limited Dividend Housing Idea Impresses MacNutt," *The Chronicle Herald*, December 3, 1970.

deed, many of the ideals that appealed to the early modernists in the 1920s, such as the basic amenities of light, fresh air, and open space, couched in utopian rhetoric that emphasized hygiene and social improvement, were used to advocate for the new towers in Halifax fifty years later. As one reporter noted:

> Land absorption through sprawling low-density living is eating up Halifax's precious land for the growing population. High-rise living may become a reality for persons, especially young couples, senior citizens and students. This type of living is certainly not a bad living condition—it eliminates lack of air, light, overcrowding, and space for personal hygiene and upkeep—things that are common in typical 'slum' conditions.[18]

Fig. 40. Crombie REIT, rendering of proposed renovation and 14-storey addition to the Scotia Square commercial complex; from Haligonia.

Looking at these residential towers today, it is difficult to imagine the excitement and forward looking sentiments of their inception. Indeed, several of Halifax's residential towers are currently in decline. Plagued by issues including bed-bug infestations, decaying infrastructure, and high vacancy and turnover rates (see 43-45), the residential giants of the 1970s are increasingly seen as undesirable places in which to live – particularly when compared with their newer, glossier counterparts. However, we need only to look at the relics of Halifax's last great enthrallment with urban living to get an idea of where today's confidence in tower typology is headed.

Fig. 41. Michael Byrne, Fenwick Place, 1969-71.

The defects of towers have been widely reported. Notable urbanists including Jane Jacobs, and more

18 Staff Reporter, "Housing Problem: More Critical Than Ever," *The Chronicle Herald*, April 3, 1971.

recently Charles Montgomery, point to the lack of sociability and consideration for human interactions as principle deficiencies of the type.[19] Yet the decay of residential towers points to another issue – the inability of these structures to adapt to the new ideals of urban life.

The current strategy for remedying the poor condition of ageing towers it to either protract the inevitable by gutting and refinishing apartments or renovating the building's façade, or, more dramatically, to demolish the structure, and slate the site for redevelopment. In the following sections, I posit an alternative to this approach. Using Fenwick Place, arguably Halifax's most dilapidated urban tower, as a case study, I use the Metabolist principle of linkage to reimagine the residential high-rise as an organic structure primed for social and structural interventions that can lead to regeneration and growth and turn processes of decay to their advantage.

19 Jane Jacobs, *The Death and Life of Great American Cities*, 1961 (New York: Random House, 2011), 54-56, and Charles Montgomery, *Happy City: Transforming Our Lives Through Urban Design* (Toronto: Doubleday, 2013), 128-34.

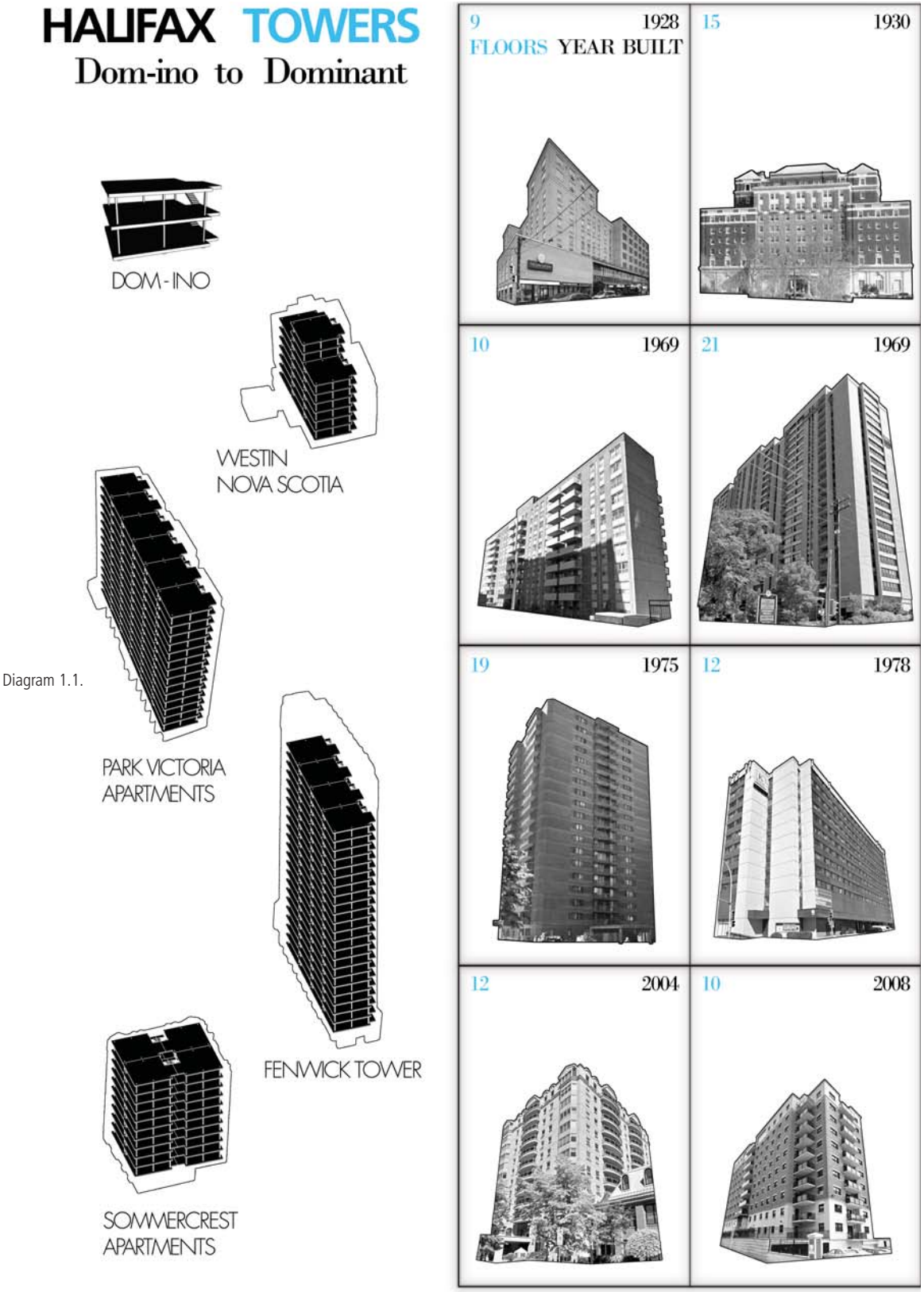


Diagram 1.1.

Fig 42a. This drawing shows an abbreviated visual history of the development of residential towers on the Halifax peninsula. While there are modulations in massing, height, materials, and the texture of the facade, the essential components of the type remain constant. The structural system of poured concrete slab and elevator core establishes the basic tectonic relationship between individual units and the building as a whole, while the facade is free to adapt to the style and constraints of its time. In this way, the logic of the Dom-ino can be traced to the present day.

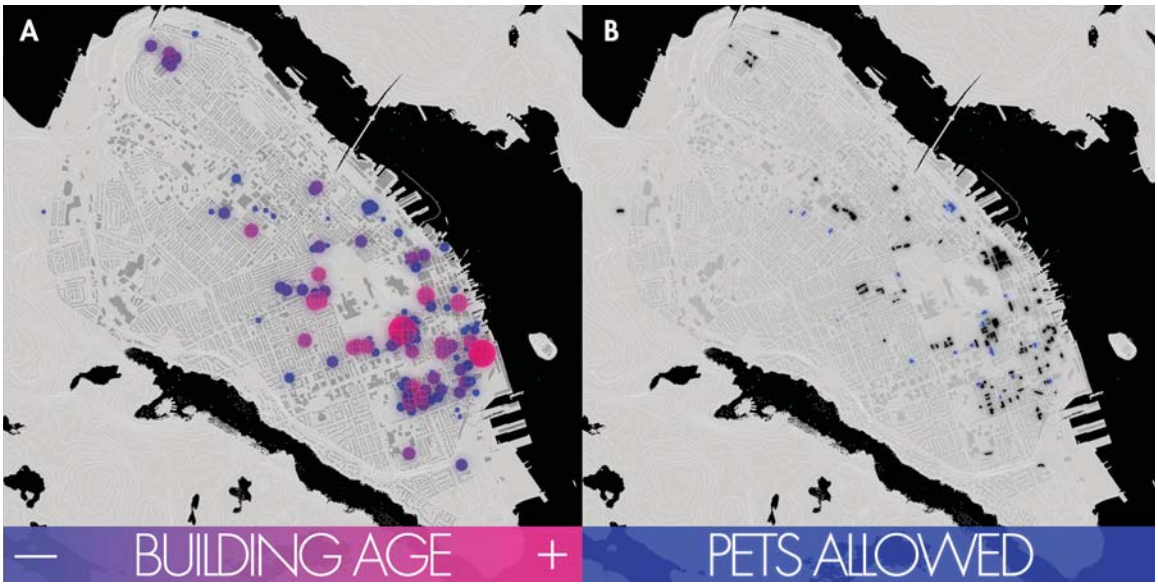

6 1950
10 1957
13 1963
14 1967
33 1971
14 1973
13 1974
19 1974
12 1980
18 1982
17 1983
21 1989
19 2010
11 2011
18 2014
20 2018

Diagram 42b.

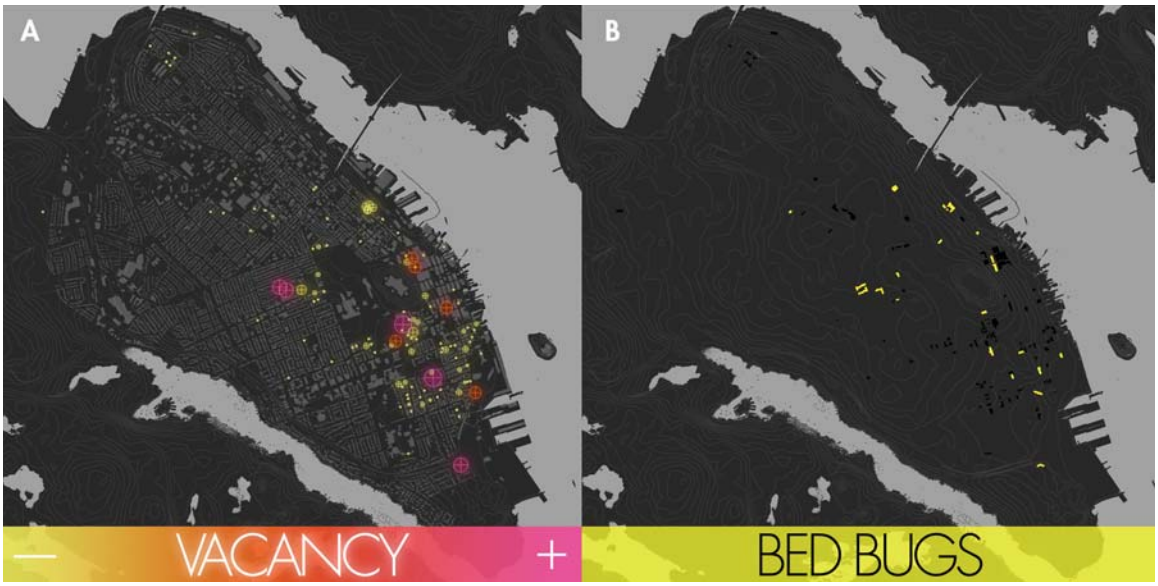
	built	flrs	name	type	plinth	parking	pets	bed bugs
1	1971	33	Fenwick Tower	apt.	y	y	-	y
2	2020	28	Willow Tree Tower	apt.	y	y	-	-
3	2020	24	2032-2050 Robie Street	apt.	y	y	-	-
4	2018	24	22nd Commerce Square	condo/hotel	y	y	-	-
5	1974	23	TD Building	office	n	y	-	-
6	1971	22	Loyola Residence Tower	res.	y	y	-	-
7	2017	22	The Roy	condo	y	y	-	-
8	1985	22	Purdy's Wharf Tower II	office	n	y	-	-
9	1986	22	1801 Hollis	office	n	y	-	-
10	1969	21	Park Victoria Apartments	apt.	y	y	c,d	y
11	1989	21	Summer Gardens	condo	n	y	c,d	-
12	2016	21	The Maple	apt.	y	y	-	-
13	2016	21	Icon Bay Halifax	apt.	n	y	y	-
14	1971	20	Barrington Tower	office	y	y	-	-
15	1975	20	Cogswell Tower	office	y	y	-	-
16	1973	19	The Welsford	apt.	n	y	c	y
17	1975	19	Spring Garden Road Apartments	apt.	n	y	c,d	-
18	2011	19	Trillium	condo	y	y	no	-
19	2018	19	The Alexander	condo	y	y	-	-
20	1977	19	Maritime Centre	office	y	y	-	-
21	1982	18	Coburg Place	condo	y	y	no	-
22	1988	18	Cunard Court	apt.	n	y	no	y
23	2014	18	19twenty	apt.	y	y	no	-
24	2016	18	Point North	apt.	y	y	-	-
25	1984	18	Purdy's Wharf Tower I	office	n	y	-	-
26	1983	17	Harbour View Apartments	res.	n	y	y	y
27	1983	17	Harbour View Apartments	res.	n	y	y	y
28	1983	17	Harbour View Apartments	res.	n	y	y	y
29	1983	17	Harbour View Apartments	apt.	n	y	y	y
30	2017	17	Monaghan Square	res./condo	y	y	-	-
31	1969	17	Edmund Rice Residence	res.	n	n	-	-
32	2004	16	Paramount Apartments	apt.	y	y	c,d	-
33	1967	16	Embassy Towers	condo	n	y	no	-
34	1967	16	Winchester Plaza	apt.	n	y	-	-
35	1974	16	Gordon B. Isnor Manor	senior	n	n	-	y
36	1976	16	Spring Garden Place	apt.	y	y	-	-
37	2005	16	The Martello	condo	y	y	-	-
38	2014	16	Homewood Suites Halifax Downtown	apt.	y	y	-	-
39	2014	16	Hampton Inn Halifax Downtown	apt.	y	y	-	-
40	2014	16	The Craigmore	apt.	n	y	-	-
41	1967	16	Tupper Building	campus	n	y	-	-
42	1970	16	Duke Tower	office	y	y	-	-
43	1971	16	Bank of Montreal	office	n	y	-	-
44	1977	16	CIBC Building	office	n	y	-	-
45	2017	16	Nova Centre Hotel	hotel	y	y	-	-
46	1930	15	Westin Nova Scotian	hotel	n	y	-	y
47	1974	15	Atlantica Hotel Halifax	hotel	n	y	-	-
48	2018	15	Pavillion	condo	y	y	-	-
49	1989	15	Founders Square	office	y	y	-	-
50	2017	15	Nova Centre Office I	office	y	y	-	-
51	1967	14	Gerard Hall	res.	n	n	-	-
52	1973	14	Macdonald Apartments	apt.	n	y	no	-
53	2017	14	Nova Centre Office II	office	y	y	-	-
54	1973	13	Somerset Place	apt.	y	y	-	-
55	1974	13	Convoy Towers East	condo	y	y	no	-
56	1979	13	Halifax Apartments	apt.	y	y	no	y
57	1980	13	South Tower	apt.	y	y	no	-
58	1987	13	Century Tower	condo	n	y	c,d	-
59	2014	13	St. Lawrence Place	apt.	y	y	no	-
60	1967	13	Centennial Building	gov	n	y	-	-
61	1965	12	Phoenix Supervised Apartment	apt.	y	y	-	-
62	1972	12	Delta Halifax	hotel	y	y	-	-
63	1975	12	Oglivie on the Park	apt.	n	n	-	y
64	1975	12	Quinpool Towers	apt.	n	y	-	y
65	1981	12	Plaza 1881	apt.	n	y	no	-
66	2004	12	Summer Crest	condo	n	y	-	-
67	2007	12	Gladstone Ridge South	apt.	y	y	no	-
68	2007	12	Gladstone Ridge North	apt.	y	y	no	-
69	2008	12	The Westwood	apt.	n	y	no	-
70	1963	11	Spring Garden Terrace	apt.	n	y	no	-
71	1971	11	Northwood Manor	apt.	n	y	-	y
72	1974	11	Joseph Howe Manor	senior	n	n	no	-
73	2004	11	Garden Crest Tower and Villa	condo	n	y	-	-
74	2009	11	Armoury Square	condo	n	y	-	-
75	2011	11	Vic Suites	apt.	y	y	no	-
76	1958	10	Ralston Building	apt.	n	y	-	-
77	1966	10	5670 Spring Garden	apt.	y	y	-	-
78	1969	10	Scotia Towers	apt.	y	y	no	y
79	1974	10	Southpoint	apt.	n	n	-	y
80	1976	10	The Carlyle	condo	n	y	c,d	-
81	1976	10	Northwood Centre	public	n	y	-	y
82	1985	10	Young Tower	apt.	y	n	-	-
83	1996	10	Radisson Suite Hotel	hotel	n	y	-	-
84	2001	10	Waterford Suites	apt.	n	y	no	-
85	2008	10	St. James Place	apt.	n	y	-	-
86	2009	10	5800 South	apt.	n	y	c,d	-
87	1985	10	Ahern Manor	public	n	n	y	y
88	1987	10	H. P. MacKeen Manor	senior	n	n	no	y
89	1928	9	Lord Nelson Hotel	hotel	n	y	-	-
90	1967	9	Fort Massey Apartments	apt.	y	y	no	y
91	1968	9	Dr. Samuel Prince Manor	senior	n	n	-	-
92	1969	9	Kingsbury Tower Apartments	apt.	n	y	no	-
93	1970	9	Garden Park Apartments	apt.	y	y	-	-
94	1983	9	The Sherwood	apt.	n	y	no	-
95	1992	9	The Lexington	apt.	n	y	no	-
96	1962	8	Queen Sana	apt.	n	y	no	-
97	1965	8	5713 Victoria Road	apt.	n	y	c,d	-
98	1971	8	Point Pleasant Lodge	hotel	n	y	-	-
99	1973	8	Churchill Apartments	apt.	n	y	no	-
100	1974	8	Skyline Towers Apartments	apt.	n	y	no	y

Diagram 43a.

Diagram 43b. A map of the existing and proposed towers on the Halifax peninsula. Towers are listed by the number of floors, descending from most to least. Residential towers are shown in white, while office towers, which are more typically of a steel-frame construction and have greater floor-to-floor heights, are shown in grey. The relative height of the towers are showin in a gradient of dark (shortest) to light (tallest) green.

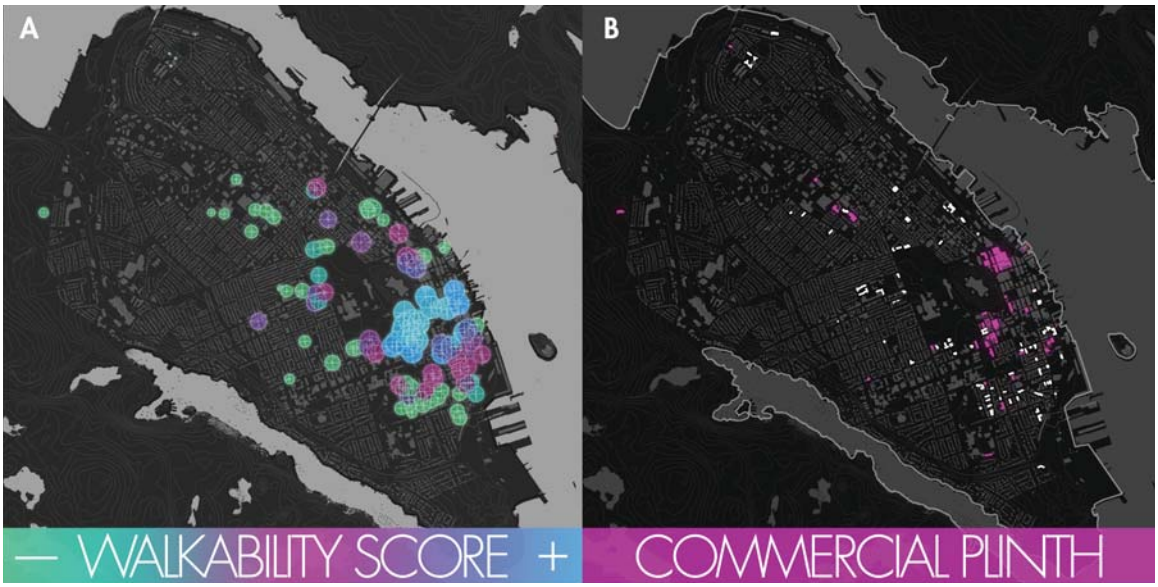


Comparison of the age of towers to towers with pet friendly policies. This metric compares the age of towers with pet friendly policies. The desire for residents to live with pets is common, but can often disrupt the commons and create complaints and damage if the community within the building has declined. The pet policies of towers are an indicator of the degree to which community and individual interests within a building are harmonized. It is remarkable that many residential and condominium projects currently under development advertise that they are pet friendly and even provide pet spas as an amenity. While this is smart marketing aimed towards retired couples and therefore a luxury, it is not a common feature in buildings that have aged into middle to lowermiddle-class stages of life. However, as towers age further, pet policies become friendlier as landlords attempt to bolster their market appeal. Older towers with pet friendly policies reveal an opening in the relationship between individual and community relationships, and present an opportunity and willingness to incorporate new social dynamics.

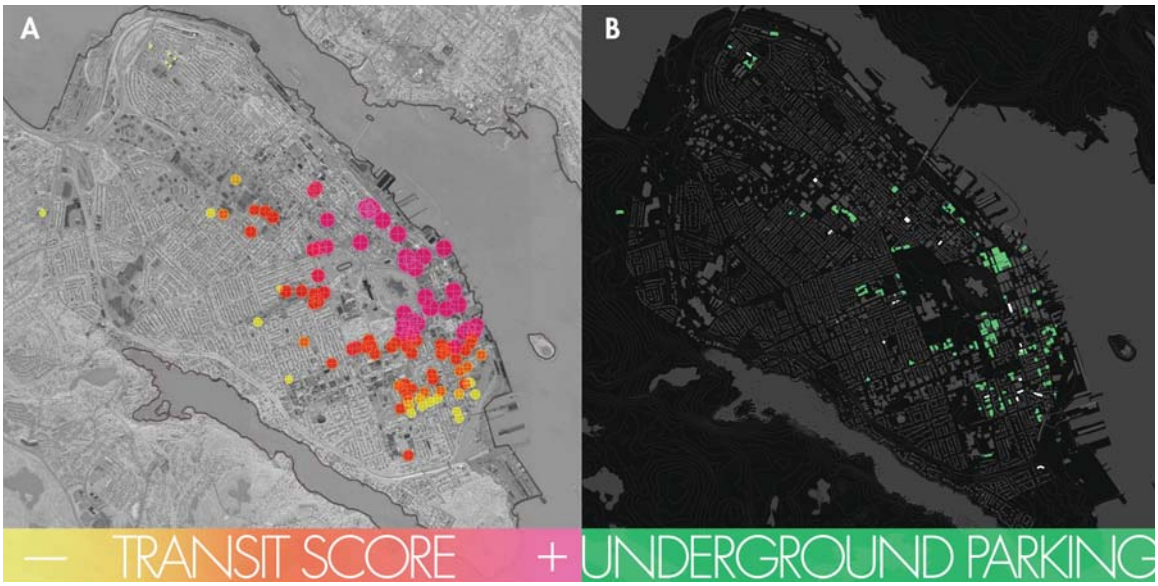


Comparison of towers that have higher vacancy rates to those that have reported cases of pests. This metric compares towers that have higher vacancy rates to those that have reported cases of pests. Bed bugs are a good indicator of high resident turnover and the declining rental value of the property. They are also a sign of the socio-economic homogenization that many residential towers produce, demonstrating both the communal condition of the tower lifestyle, and its tragic vulnerabilities. This indicator highlights that the lifespan of residential towers tracks a declining socio-economic trend, and proposes a moment in that course when an interruption becomes viable, as financial determinants begin to fail. When towers begin to experience higher vacancy rates and pests such as bed bugs, their current use opens up to new orientations and unintended uses.

Fig 44a. This series of maps shows the process of identifying dilapidation and abandonment withing the existing residential tower stock on the peninsula. Comparing factors such as the building's age to its pet policy, this mapping process speculates on which towers on the peninsula have the greatest need, and therefore potential, for new adaptive reuse interventions.



Comparison of towers that are close to commercial, recreational, and cultural amenities to towers that have their own commercial plinth. This metric compares towers that are close to commercial, recreational, and cultural amenities to towers that have their own commercial plinth. The commercial plinths of towers are often designed as a part of a mixed-use development model that seeks to mitigate risk by diversifying across commercial and residential clients. Boutique hotels are often a third component to this strategy. The intended self-sufficiency of this model is presented as a positive – residents get a local coffee shop, coffee businesses get local clientele, and the building gains a certain level of activity and social life. However, this dynamic works equally well in reverse; the declining state of residential value hurts local businesses which propels a lower perception of building. As towers with commercial plinths decline in urban areas with adjacent amenities, these plinth structures have a greater potential to be opened up to new orientations and uses.



Comparison of towers close to public transit hubs and towers with underground parking facilities. This metric compares towers close to public transit hubs and towers with underground parking facilities. It reveals towers with potentially unused space below grade. As towers continue to age, we can expect these areas to open up as the demand for their current use wanes. Increased urban density promotes public transportation and exacerbates the inefficiencies of individual automobile traffic. Furthermore, this thesis takes the position that the trend of current technological development—towards more efficient, autonomous, and shared modes of transportation—will contribute to freeing up underground parking structures. In addition, as towers decline, their lower-income tenants are less likely to own cars and to have a use for the parking structure. Increasing urban density does, however, place greater value on available parking. Thus, the parking structure presents a fallow space in which public amenities could be incorporated, providing a social hub and incubating a reversal of the tower's declining social status.

Fig 44b.

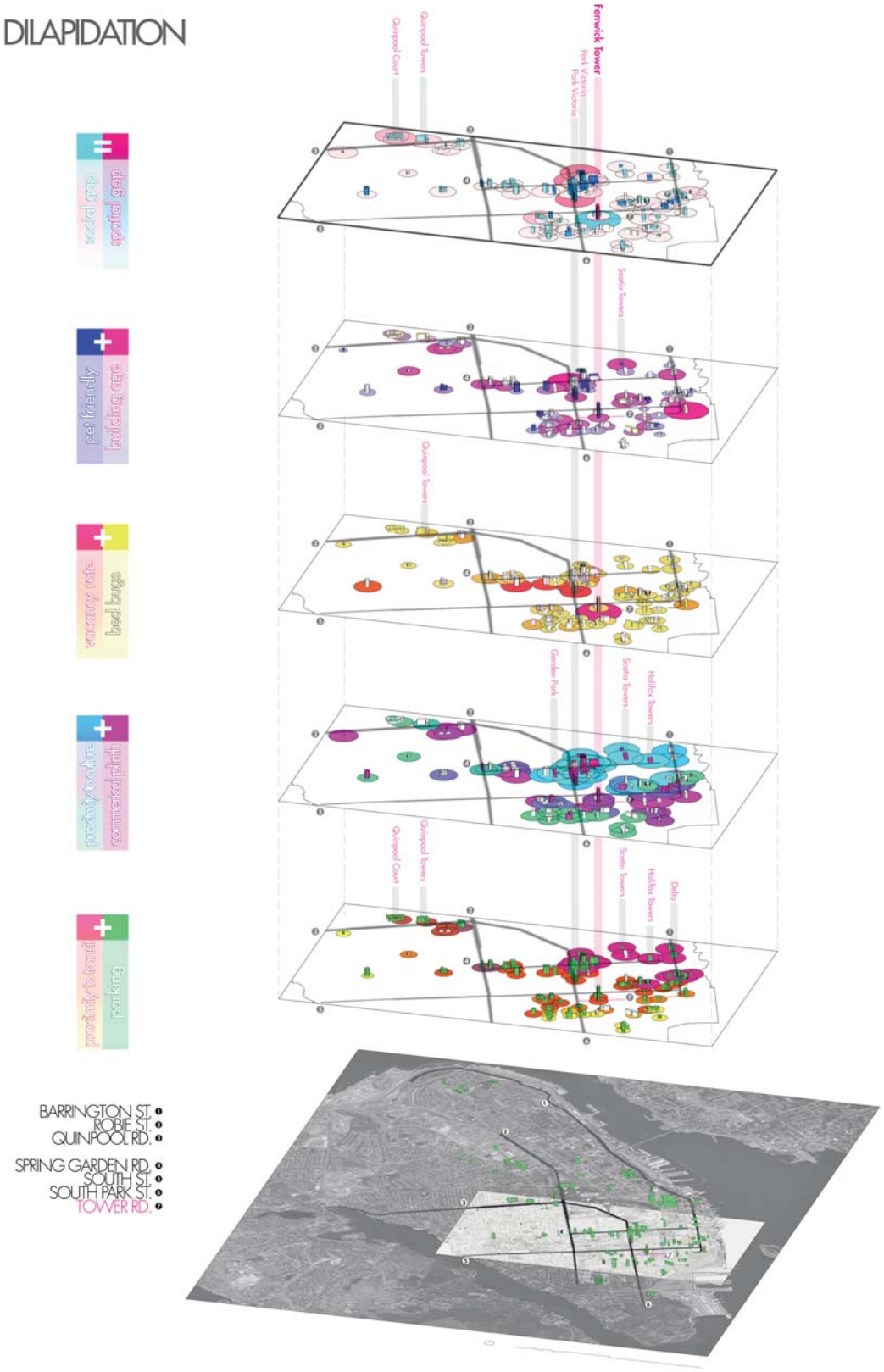


Fig 45. This diagram shows a synthesis of the previous dilapidation maps. Combining the various metrics described above, these parameters isolate residential towers that have key structural and cultural characteristics which signal a peak in undesirability. This moment of dilapidation and abondonment is a critical moment for intervention that typically leads to renovation or redevelopment, but could also lead to new adaptive resue interventions.

CHAPTER 2: FENWICK TOWER

It is within the context of the modernist planning initiative and brutalist architectural idiom that characterized Halifax in the late 1960s that Fenwick Place was planned and constructed. Designed by Michael Byrne MRAIC, of Dumaresq and Byrne Architects, Fenwick is a poured-in-place concrete-slab structure with compact unit layouts. Completed in 1971, like the modernist residential towers, Fenwick Place is organized by a double-loaded corridor, elevator core, fitness amenity, and lobby/parking garage sequence – characteristics that are also consistent with many towers being built today. Fenwick's rough aggregate precast concrete aesthetic and dominant expression of its structural elements also link it with the brutalist idiom that characterized many structures of its time. Fenwick Place thus has qualities that link it with Le Corbusier's imagined ideal, but as a 1970s imitation of this concept, it also suffers from the processes of replication that distanced Le Corbusier's residential dream from the new reality.

Like the cruciform towers of Le Corbusier's *Ville Contemporaine* (see 9-11), Fenwick Place was conceived as a monumental and isolated form connected to the city via the automobile, as a comparison of the original renderings for Fenwick Place to those for the *Ville Contemporaine* illustrates. In the renderings of Fenwick (see 46 and 47), the mass of the tower is elevated and separated from the street by a commercial plinth,

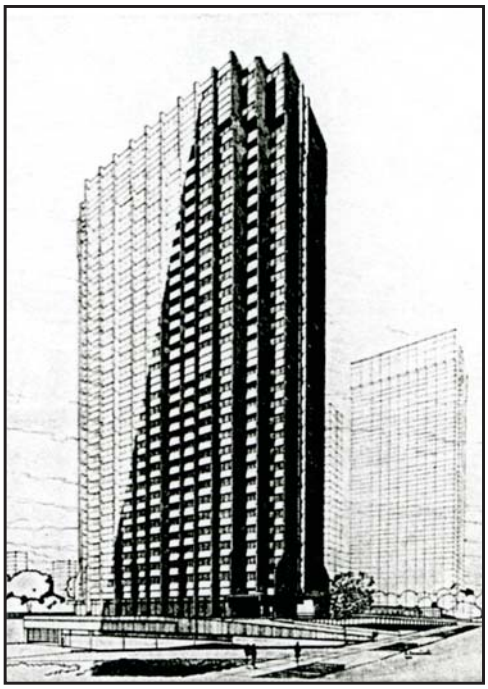


Fig. 46. Michael Byrne, *Fenwick Place*, rendered perspective of looking Northeast on Fenwick Street; from Dumeresq and Byrne Architects. This rendering was used on the cover of the original drawing set.

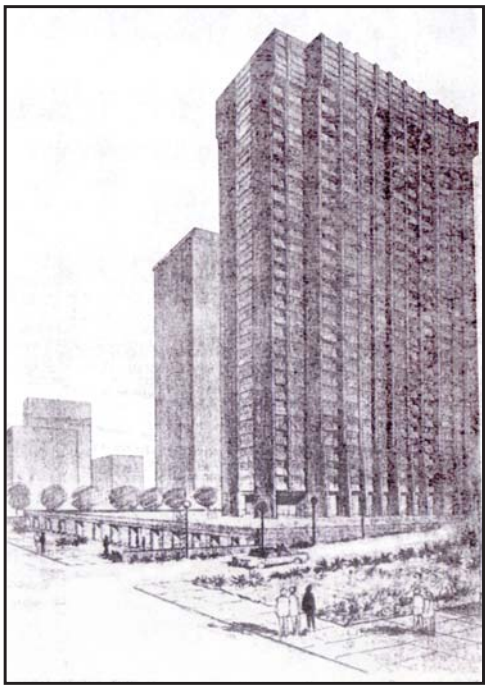


Fig. 47. Michael Byrne, *Fenwick Place*, rendered perspective looking Northwest on Fenwick Street; from *Halifax Mail Star* June 5, 1969.

and an automobile drives up the entry ramp, allowing potential residents to imagine a lifestyle based around the automobile. Furthermore, these renderings outline a network of towers, equal in height to Fenwick, and surrounded by trees – suggesting adjacent parkland, and anticipating future high-rise development. These drawing thus situate Fenwick, not in the incongruous context of its Victorian neighbourhood, but in the ideal context of a future Halifax developed according to "Tower in the Park" principles.

Fenwick Place also exhibits aspects of Le Corbusier's housing theories. Similar to *Unité d'habitation*, the generative concept behind Fenwick Place's monumental form is derived from the relationship between its structural framework and its individual units. In *Unité d'habitation*, Le Corbusier used the objet-type metaphor of the wine bottle and wine rack, making the structural "rack" a legible grid pattern on the facade, and the individual "bottles" or units distinct through variation and colour. The tectonic relationship between structure and unit in Fenwick Place is similarly expressed in the protruding structural members that differentiate the vertical latticework from the recessed balconies and glazed openings of individual units. The relationship between structure and unit was the project's defining concept. As designer and project architect Michael Byrne confirmed in a 1999 interview with Dalhousie students:

> The basic character of the building was generated by the structural requirements, it has,

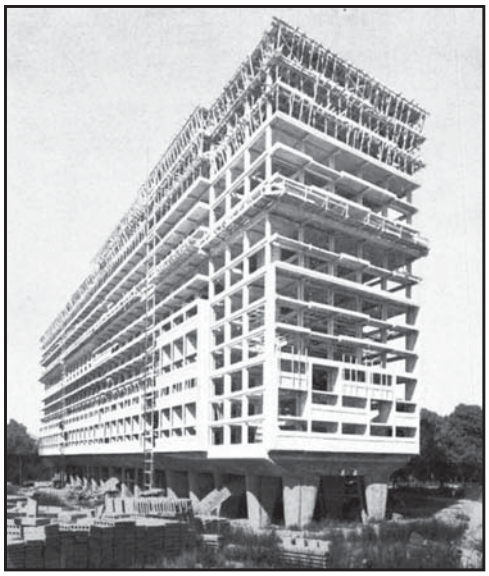


Fig. 48. *Unité d'habitation* at Marseille under construction; from Domus. The concrete frame is clearly visible, while the first level of units have been installed.

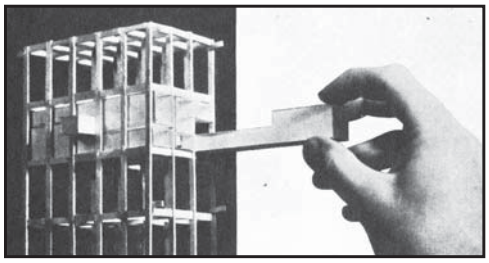


Fig. 49. Le Corbusier, *Unité d'habitation*, *Prefabricated Cell*, 1947; from Archive of Affinities. Photomontage showing prefabricated cell being inserted into structural frame, the conceptualization of the tectonic relationship of the *Unité d'habitation.* Le Corbusier "went so far as to envisage complete apartments being hoisted directly into position as prefabricated units, an idea depicted in a provocative photomontage where a godlike hand simply inserts factory-made dwellings into the frame, like stacking bottles in a wine rack . . . although this was not the manner in which the units could finally be fabricated and assembled." (Kenneth Frampton, *Le Corbusier: Architect and Visionary*, Thames & Hudson: London, 2001, 156)

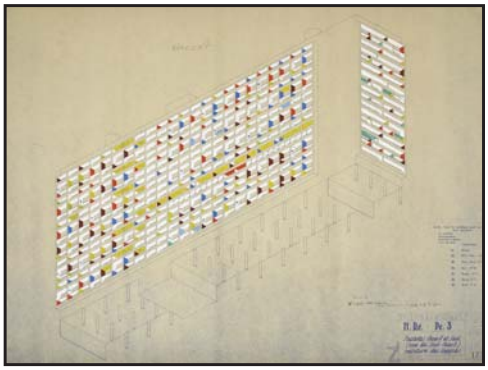


Fig. 50. Le Corbusier, *Unité d'habitation* at Nantes-Rezé, 1952; from Fondation Le Corbusier. Drawing of the West facade showing articulation of units through the use of colour.

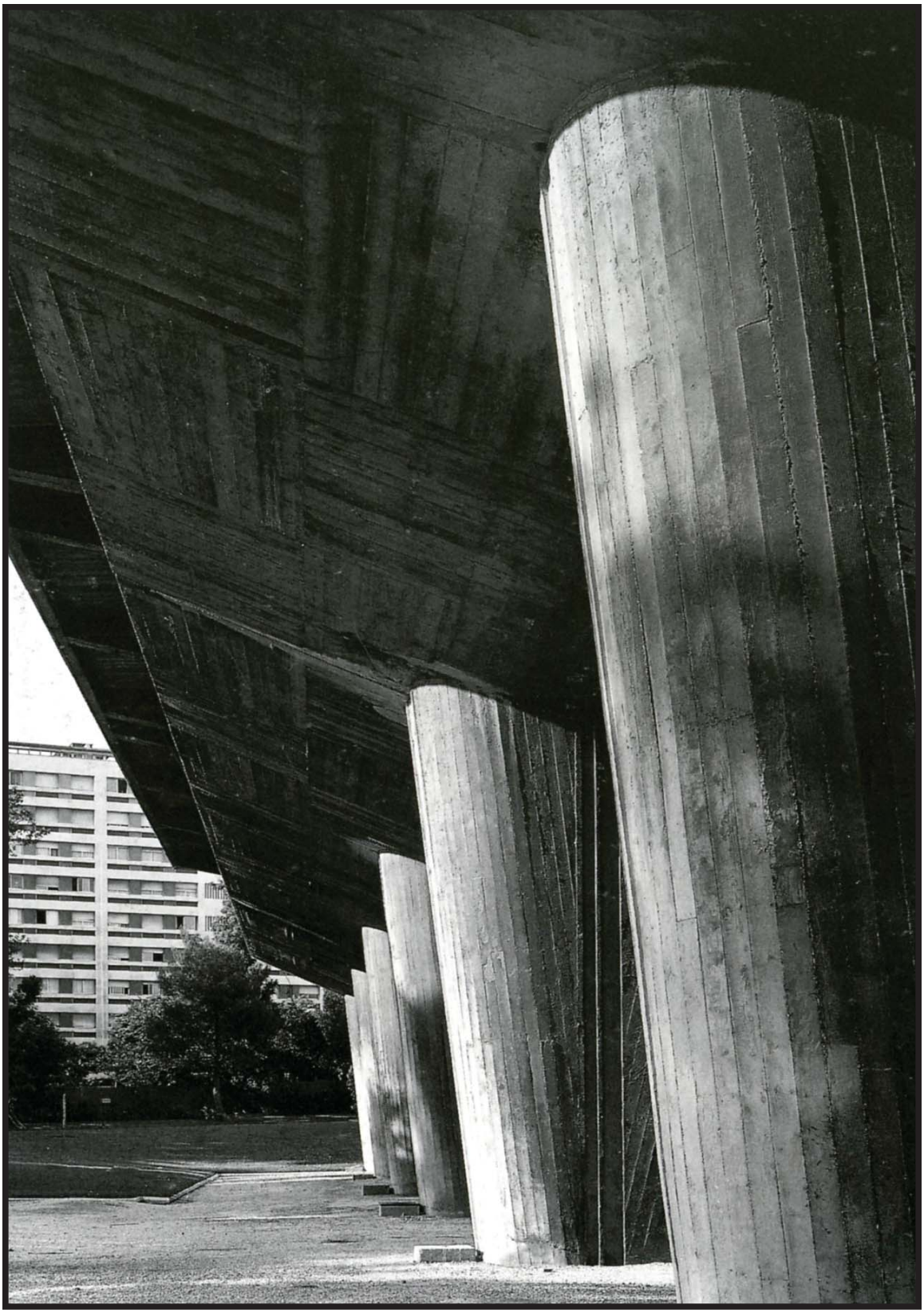


Fig. 51. Photograph of the pilotis of the *Unité d'habitation* in Marseille, a consitant feature of Le Corbusier's residential schemes. Departing from earlier expressions, at the *Unité* the pilotis evince the materiality of concrete, the texture of the cast-in-place- process of construction, are heroic in their scale, while at the same time humanized by the organic taper of their form. These attributes in part inspired the brutalist movement; Photograph by David Jenkins, from *Unite d'Habitation: Marseille*s.

Fig. 52. Photograph of the structural fins of Fenwick Place. The associations to the *Unité d'habitation* are legible in the materiality of the unfaced concete and the heroic scale and expression of the structural forms.

> as you can see, a protruding series of east-west fins that run across its short axis. […] So in that respect what we did was thread the residential units in between these necessary structural elements having chosen an appropriate residential-scale module between the structural units which are somewhere in the neighbourhood of twelve to fourteen feet apart.[20]

This description indicates that Byrne clearly perceived the structural system and the "module" of the individual units as separate tectonic elements woven together through the process of design, a conceptualization of the residential tower derived from the work of Le Corbusier. Furthermore, like the brutalist idiom that developed out of *Unité d'habitation*,[21] Fenwick Place exhibits its concrete materiality and the process of its construction as principal elements which, left unadorned, assert an integrity assumed to be outside the vagaries of style (see 52). This is emphasized in the interview with Byrne, who denied he was influenced by any particular style, arguing instead that his design method derived from the necessities of economy and structure: "Form is bred out of necessity and

Fig. 53. Feniwck Place under construction; from *4th Estate* October 15, 1970.

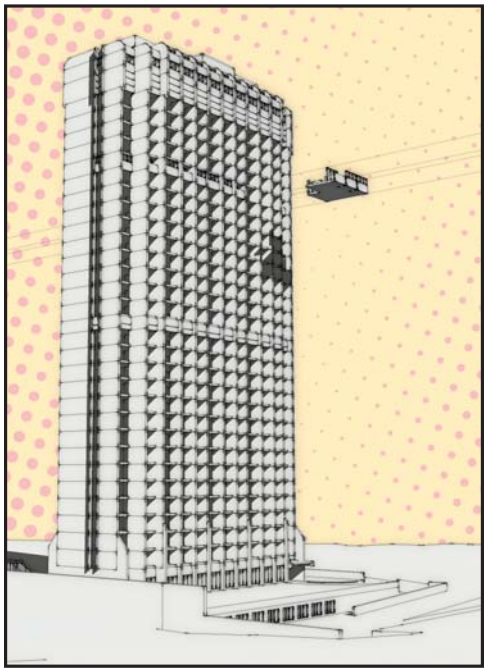


Fig. 54. Drawing showing the tectonic relationship between structural grid and individual unit.

20 Michael Byrne, interview by Ly Tang, Michael Farrar, and Ania Gudelewicz, April 16, 1999, interview transcript, Dalhousie School of Architecture archive, Halifax, NS.

21 Inspired by the texture of the clapboard formwork used in the cast-in-place concrete of Unité d'habitation, the Brutalist movement, as represented by Alison and Peter Smithson and third-generation modernists, was concerned with the specificity of building processes and materials. By emphasizing raw materials and structural clarity, the movement sought to emphasize the local, haptic, and authentic rather than the universal, visual, and purity of form that dominated earlier modernist thought. See Andrew Higgott, "The Shift to the Specific: The New Interpretation of Materiality in Brutalism and the Functional Tradition," *Mediating Modernism: Architectural Cultures in Britain* (New York: Routledge, 2007), 86-116.

in this case it was a structural necessity. So any attempt to follow a design theme or a style was just totally absent. There was economy and structural requirements that led to the shape."[22] Byrne further aligns Fenwick with the brutalist idiom in his discussion of materials and the decision to use exposed aggregate precast panels (see 55):

> The intent there was to really jazz up the part that you can see and feel and touch. I mean who cares what the surface of the concrete is up fifteen floors, you can't see it. What you can see is the shadows created by that washboard spandrel thing that we created. Here we said look let's give it a bit of human scale at the bottom, something to visually rest itself upon the ground and thus we recessed the panels, all of those little ribs in the red panels at the bottom have little pieces of polished granite in them which I think I would do today.[23]

Fig. 55. Precast concrete panels with exposed aggregate finish and recessed texture, used at plinth level to enhance brutalist materiality and humanist expression.

While Byrne's comments display an interest in building processes and raw materials, one of the hallmarks of the brutalist movement, he also expresses lesser-known brutalist values such as the desire to humanize the products of a mass-produced society.[24] Considered within the Brutalist idiom, the structural fins and concrete panels that define Fenwick's shape and character not only express a directness of form and an economy of

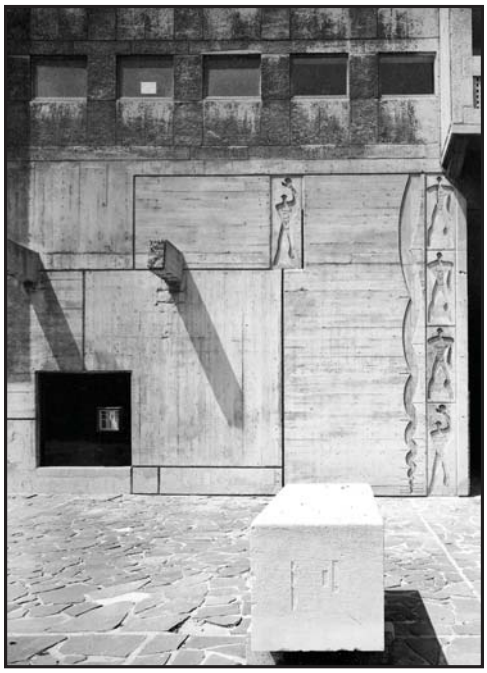


Fig. 56. Entrance of the *Unité d'habitation* at Marseille; from Jenkins, *Unité d'Habitation: Marseilles*. Photgraph showing the relief of Le Corbusier's Modular on the building's facade. The Modulor was an attempt to introduce a human dimension into the processes of mass-production, and thereby strike a better balance between man and machine.

22 Michael Byrne, interview by Alicia Yip, Amita Vulimiri, and Dion Lassau, February 2, 2005, interview transcript, Dalhousie School of Architecture archive, Halifax, NS.

23 Byrne, 1999 interview.

24 "After some years of debate on the term they felt they had originated, the Smithsons wrote on the New Brutalism: 'Brutalism tries to face up to a mass-produced society, and drag a rough poetry out of the confused and powerful forces which are at work. [It] has been discussed stylistically, whereas its essence is ethical.'" See Higgott, 96.

design, but the unmediated authenticity of the everyday and functional traditions.

Within, Fenwick Place, like *Unité d'habitation*, provides a simplified and standardized conception of urban living. Although at thirty-three storeys, Fenwick Place is significantly taller than *Unité d'habitation* (eighteen stories), both provide a series of residential units at varying scales complemented by a host of public or communal amenities. Fenwick is comprised of two-hundred and fifty residential units (in contrast to *Unité's* three-hundred and thirty-seven) in three different sizes (bachelor, one, and two-bedroom suites) which offer views of the city and harbour. These individual units are similar to those at *Unité* in size and the hierarchy of living, dining, and kitchen areas, although they are differently configured. At *Unité d'habitation* the standard unit, based on the needs of a single family with two children, was planned as a stepped block crossing the width of the building so as to have a dual aspect (see 58) and double-height living areas with controlled access to balconies that extend the indoor space and brought light and passive air flow into each unit (see 57 and 68). With each unit occupying a part of a single storey and not crossing the central corridor, Fenwick's residential space is more conventionally planned. However, common to both structures is the access to fresh air via balconies (see 61 and 62), along with an emphasis on modern conveniences – central heating, garbage chutes, and ice boxes at *Unité*, and washers, driers, and

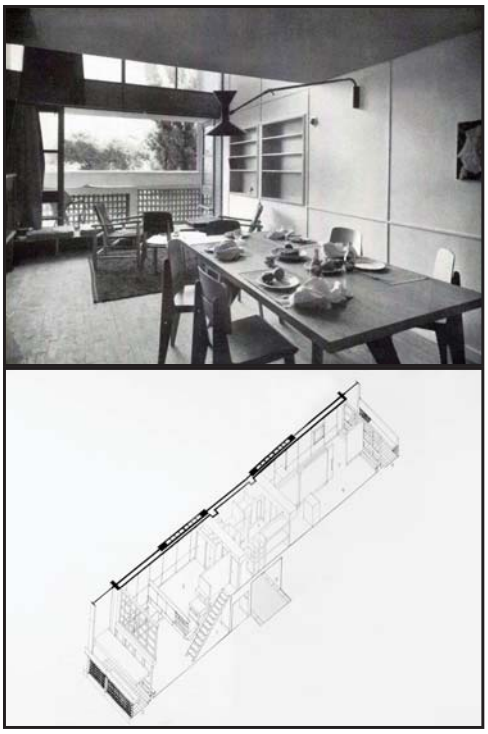


Fig. 57. and 58. *Unité d'habitation* at Marseille; from Jenkins, *Unité d'Habitation: Marseilles*. Above: Photgraph of living and dining space in standard apartment. Below: Axonometric projection of standard apartment, showing dual aspect and relation to corridor.

Fig. 59. and 60. Fenwick Place. Above: Photgraph of living and dining space in standard apartment. Below: Axonometric projection of standard apartment, showing dual aspect and relation to corridor.

CCTV at Fenwick – that affirm the forward looking character of the inhabitants.[25]

The standard unit at *Unité*, stacked together with corresponding units around corridors at every third level, generated the basic layout of the building and integrated the fundamental requirements of the single family with those of the larger residential community – an idea drawn from Le Corbusier visit to a Carthusian monastery in 1907. The efficiency of the corridors in *Unité d'habitation* allowed Le Corbusier to provide greater communal facilities, including a two-storey commercial street in the centre of the building with a restaurant, shops, grocery, and doctor's office, as well as a hotel (see 24). The rooftop (see 63 and 72) was dedicated to exercise and children, with a kindergarten and art school, paddling pool, running track, and open air gym, while the ground level was committed to parkland through the heroic use of pilotis (see 51).

As *Unité's* standardization of space required a concomitant standardization of lifestyle orientated around an idealized family unit, the designers of Fenwick also had a specific demographic unit in mind when configuring their standard unit; they

Fig. 61. and 62. Residential tower balconies. Above: The balconies of *Unité d'habitation* at Marseille; from Jenkins, *Unité d'Habitation: Marseilles*. The *Unité* provides greater environmental control to tenants. Use of concrete brise-soleil, blinds, and cross-unit ventilation help to mitigate the heat of summer months, while enhanced habitability of the balcony allows the living areas to expand outdoors, and favorable outdoors conditions to permeate the interior space. Below: The balconies of Fenwick Place are much smaller and provide much less desirable conditions for habitation. The added environmental buffer that was capitalized in the prototype has been reduced to wire mesh screens that prevent birds from roosting and tenants from throwing items in protest.

25 Many of these attributes were listed in a 1969 advertisement for Fenwick Place: "Facilities in the building will include a year-round roof top swimming pool, private sauna bath for tenants, patio on the ground floor for tenants and a top sundeck and terraces. There will also be a formal lobby, entertainment room, and a room where tenants can keep food freezers, plus a washer and drier on each floor. Another innovation in the building will be a closed circuit TV which will scan the front door, enabling tenants to see who is calling at their apartment." See Bernie Raine, "33-Storey Apartment Block Going Up Soon in Halifax," *Halifax Mail Star*, June 5, 1969.

seemingly intended to take advantage of the demand for housing on the peninsula and the large number of young adults entering the housing market.[26] With respect to communal activities, Fenwick, like *Unité*, emphasized exercise and health, and in the promotional rhetoric at least, attempted to conjure up the ideals of air, light, and openness. The desire for self-sufficiency as seen at *Unité* is also evident in the mixing of commercial and residential programs; the thirty-thousand square feet of commercial space and three levels of underground parking provide greater convenience for inhabitants, and a built-in market for businesses. Even the commanding views from rooftop amenities, a swimming pool and spa, affirm an independence, and orient the building and its inhabitants, not on a street or within a neighbourhood, but within a heroic and natural setting. In this way, Fenwick Place fulfills the basic categories of the modern, urban lifestyle laid out by Le Corbusier and *Unité d'habitation*.

However, while the similarities discussed above affirm the link between Fenwick and Unité d'habitation, and attest to the perennial characteristics of the tower type, there are also obvious differences between the two structures. The role of children in the communal ideal of modern life,

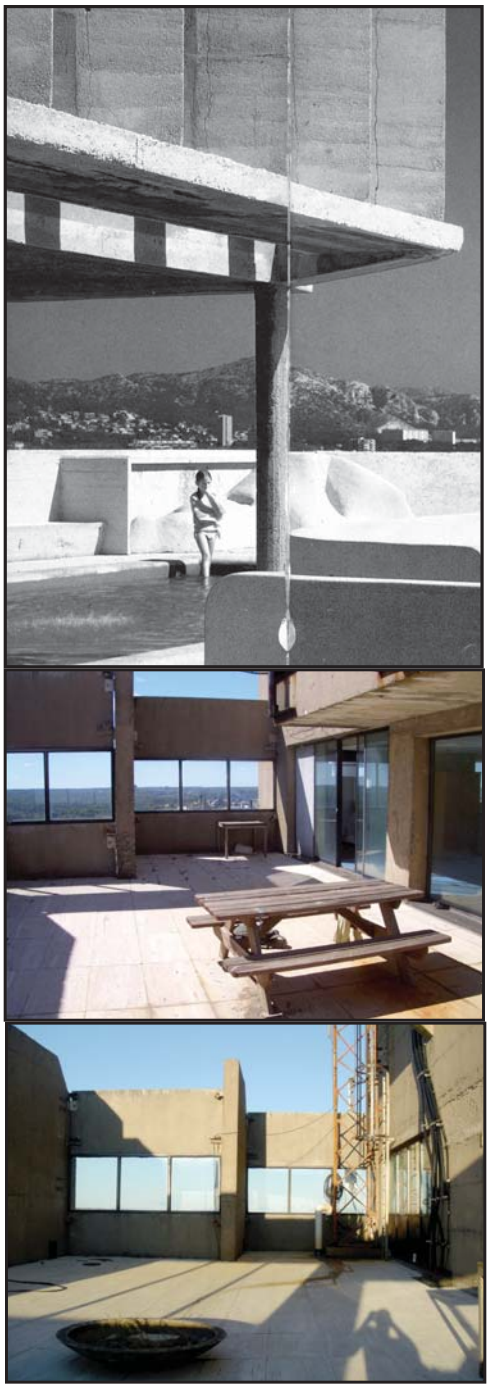


Fig. 63., 64, and 65. Residential tower roofscapes. Above: The roofscape of *Unité d'habitation;* from Jenkins, *Unité d'Habitation: Marseilles*. *Unité* provides a communal landscape for excercise, children, art, and views of Marseille and the Mediterranean. Below: The roofscape of Fenwick Place originally intended to provide sunbathing terraces to accompany the interior pool, and equivalentl views of the Halifax harbour and the Eastern Passage.

26 A 1968 article in the *Chronicle Herald* advised newlywed couples to consider the virtues of residential tower lifestyles: "Remember high rises—they have conflicting reviews, but ultimately they are a wonderful place for young couples with all the modern conveniences and close to the city center—leaving more time for you and your loved one." See Staff Reporter, "Holding Down the Rent,' *Chronicle Herald*, April 18, 1968.

central to the configuration of *Unité d'habitation*, for instance, was replaced in later iterations, including Fenwick, with more commercial values. This is obvious in the programming of space at principal locations including the plinth and rooftop. Within Fenwick the rooftop was allocated to pools and private saunas (if only for a moment in its history), and even these public amenities were surmounted by penthouse suites. The pilotis that invited parkland up to the inhabitant's doorstep in the case of *Unité*, were replaced in Fenwick with a commercial plinth and raised terrace. While still separating the residential component of the tower from the ground, this arrangement replaces a natural medium with a commercial one, and consequently eliminates the necessity of diversifying the interior of the tower with commercial streets, or any amenity which may have otherwise drawn the public into the building. This arrangement also eliminated the need to treat corridors as "streets in the sky," and therefore endow them with more than functional qualities. All of this resulted in a decidedly more efficient and segregated organization of the tower's communal space.

Life within the individual unit is similarly reduced. The designers of Fenwick pared down the spatial qualities of structures like *Unité d'habitation*: the double-height living rooms do not exist, the size and integrated quality of balcony areas has been reduced, and the consideration of daylight and the dual-aspect ideal have been eliminated. Instead, the qualities of Fenwick's finishes were relied on

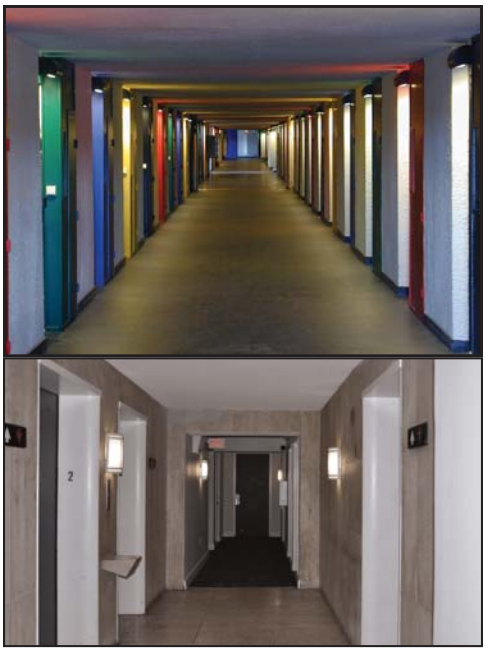


Fig. 66. and 67. Residential tower corridors. Above: A typical corridor in the *Unité d'habitation* is 10.5 feet wide, generous enough that children will use the space for impromtu football matches; from Fondation Le Corbusier. Below: A typical corridor and elevator lobby in Fenwick Place is 6.5 feet wide. The material quality of the lobby, finished in Carrara marble, is used to enhace the more effecient corridor. The built-in marble ashtray, reveals a different idea of how the corridors would be used and by whom.

Fig. 68. and 69. Residential tower living. Above: The living area of *Unité d'habitation* provides a dynamic and dignified space with access to light, air, and space; from Jenkins, *Unité d'Habitation: Marseilles*. Below: The principal living areas of Fenwick Place have reduced access to light, air, and space, and do not achieve the dynamism or dignity of the prototype.

to provide a sense of quality and desirability, as evidenced by the use of travertine marble.

This reduction of the ideal set by *Unité d'habitation* at Marseille was initiated by Le Corbusier himself, who in subsequent iterations of the *Unité* principle, had to make similar concessions to meet tighter budgets. As Roger Sherwood points out, "the double-height living room at Marseille is drastically reduced at Nantes-Rezé and disappears altogether at Firminy, with depressing consequences to the already small space."[27] Sherwood continues, listing the reduction in the quality of the roofscape, and elimination of the two-storey commercial zone in subsequent *Unités*, with similar grim results for the buildings' overall character. This streamlining of space, inherent to processes of mass production, is what Le Corbusier invited into residential tower design when he invoked the platonic form of the wine bottle, and expressed his desire to make residential architecture into an objet-type and "machine for living."

Considering the fundamental design intention of the residential tower, Fenwick Place is not only similar to *Unité*, but is an iteration whose streamlined form and function reveal a truer objet-type form than that of the original. However, this same streamlining process also reveals that the qualities which make *Unité d'habitation* at Marseille a desirable place to live today, may in fact be the atypical characteristics which were removed as unnecessary

Fig. 70. and 71. Residential tower kitchens. Above: A typical kitchen in the *Unité d'habitation*; from Jenkins, *Unité d'Habitation: Marseilles.* Designed by Charlotte Perriand and Le Corbusier, based on the Frankfurt Kitchen, it is augmented to integrate with the living area and create a continuous space. Below: A typical galley kitchen in Fenwick Place, also based on the Frankfurt Kitchen, is less integrated into the apartment space.

Fig. 72. and 73. Residential tower amenities. Above: The *Unité d'habitation* integrates ideas of well-being and fitness with the outdoors and across a broad age range, 1959; photograph by René Burri, from Obra. Below: The fitness room at Fenwick Place, a standardized and isolated provision for the health and well-being of its tenants.

27 Sherwood, *Modern Housing Prototypes*, 125.

and uneconomical in the future, more "perfect" iterations. This also helps to explain why Fenwick, like other residential towers of its time which followed the Unité principle and the brutalist idiom, has not succeeded to the same extent as the original ideal. As Nietzsche as famously believed to have stated, "be careful, lest in casting out your demon you exorcise the best thing in you."

Fig. 74. and 75. Residential tower entrance. Above: The porte-cochère of the *Unité d'habitation;* from Fondation Le Corbusier. The entry of the *Unité* is both sculptural and links the building to existing pedestrian paths and boulevard. Below: The porte-cochère at Fenwick Place, connects entrance to a private driveway off of Fenwick Street.

Fenwick Tower: A Framework for Change

While Fenwick Place is the tallest structure on the Halifax peninsula, boasting spectacular views and a proximity to the downtown core, it also has one of the highest rates of vacancy and is reported to suffer from other issues associated with decay, including bed bug infestations. Moreover, in its current condition, the two-storey commercial plinth is abandoned, the terrace level is a bleak forecourt, and the three levels of underground parking are underused. How can this discrepancy between desirability and use be explained?

Fenwick Place's undesirable condition could possibly be attributed to its years as a student residence, and the natural consequence of housing such a transient community. Its decay could be the result of an inadequate maintenance schedule which failed to keep up with the ravages of time. Or perhaps it suffers because the distinctiveness of its brutalist styling which no longer represents the height of modern living. While possible, these reasons better explain why Fenwick Place has lapsed

Fig. 76. and 77. Residential tower facade. Above: The variation of the balcony openings and colours expresses a variation of life and activity; from Fondation Le Corbusier. Below: the uniformity of the balcony openings and the dreariness of the condition in which they are kept and used (compare the sheet used in the Fenwick balcony to the awnings of *Unité* above) expresses a uniformity and dreariness of life and activity.

as a desirable commodity, as a place to rent or as an investment, than why Fenwick Place is no longer a desirable place to live. Despised by those living in the surrounding neighbourhood, as well as by the people who live within, Fenwick, like other structures of its type, instead resists organic change and devalue human interaction.

Intended as a luxurious residential centrepiece in the modern plan of Halifax, Fenwick Place never fulfilled its role as a result of construction difficulties. Due to a labour strike and other setbacks including unexpected flooding, the project required extended financial support to reach completion. This support came from Dalhousie University, which, at the time, needed an expedient solution to a student housing crisis. Fenwick was purchased by Dalhousie before construction was complete; the developers had completed interiors up to the tenth floor, some of which were already occupied. Certain luxurious details were already finished, including the travertine marble elevator bays and the layout of the large, spacious units, features which the university used to market the new student residence as the height of urban living. Others luxuries, such as the private saunas and pool, were abandoned. In this respect, Fenwick Place departs from other residential towers of its time, in that its progress from luxury apartments to student accommodation happened almost immediately.

Fig. 78. Series of photographs showing the existing connections between tower and its urban context. The quality and condition of these areas are poor and discourage potential pedestrian interest and activity. They are currently abandoned.

In a 2005 interview with Mateo Yorke, the Facilities Manager of Fenwick, several of these issues were discussed. Yorke confirmed that as a Dalhousie residence, Fenwick provided apartment-style accommodation to 450 adult and foreign students, and featured private washrooms and kitchens, along with shared common spaces. However, these layouts were modifications of the original plans, and living areas were walled-in and converted into bedrooms. Yorke noted that even while there was high demand for these bachelor and one-bedroom units, the building also experienced a high turnover rate, which he partly attributed to challenges in renovating and updating Fenwick posed by the structure and height of the building:

> It [the structure] certainly means renovating it is a big challenge; if we wanted to change the layout of the interior of the building in any dramatic way, there are quite a few structural supports within the building that kind of lend themselves to the apartments being laid out in a particular way and we don't have a lot of flexibility with that.[28]

According to Yorke maintenance schedules within Fenwick were determined by Recap, an industry-standard computer program which inventoried and anticipated necessary replacements from mechanical systems to furniture. This maintenance program suggested that every year one to two floors should be renovated, and thus attests to a natural process of aging and dilapidation within the structure. In 2008, Fenwick Place was sold to

Fig. 79. Series of photographs showing the sequence of spaces leading to the commercial space on the ground floor, which is currently vacant.

28 Mateo Yorke, interview by Alicia Yip, Amita Vulimiri, and Dion Lassu, January 21, 2005, interview transcript, Dalhousie School of Architecture archive, Halifax, NS.

Templeton Properties, a developer who is currently renovating the building, installing modern-looking panelized cladding and refurbishing units over a two-year period.

An iteration of Le Corbusier's original concept that has undergone further industrial streamlining, Fenwick Place lacks many of the characteristics of Le Corbusier's more socially idyllic prototypes. True to its modernist origins, its design is based on a principle that the machine perfects the human, and resists human modifications. Fenwick's undesirability, then, can be seen to be rooted in this resistance, in its inability to maintain a successful correspondence between social and cultural ideals of the good life, and liveable spaces. However, while this rigidity has currently led to Fenwick's decay, it also provides a framework within which to reimagine the life cycle of the residential tower. Similarly interested in the tectonic arrangement of a singular structural framework accommodating multiple modular units, the Japanese Metabolists of the 1960s, saw ruins as necessary sites for incubating future generations. In the next section, I draw upon Metabolist strategies for incorporating time into the design of buildings and cities, to suggests that the concrete slab structures of ageing buildings including Fenwick Place, offer an existing megastructural framework, an imminent site for new Metabolist interventions.

Dalhousie Gazette

Vol. 101 February 19, 1971 Number 17

Fenwick Towers

It's almost ours

Fig. 80. Article anticipating the conversion of Fenwick Place into a university residence. The construction lift reveals that construction was not yet complete; from *Dalhousie Gazette*, February 19, 1971.

Site Survey

An adaptive reuse project requires a thorough survey of the existing building and its conditions. The following drawings are the results of such a survey. The first page shows a survey of the vacancy within Fenwick Place was conducted by photographing the elevations from the same position over the course of a month, and the results were synthesized into a model (see 82). This formed the basis of the drawing of Fenwick's elevations (see 83) where underused and therefore fallow units are shown in pink, and are meant to show the potential field and form for a new building within the existing tower. A photographic survey of Fenwick's visual influence on the surrounding neighbourhood and a street elevation of Fenwick Street facing North (see 86). These drawings show that Fenwick is a dominant structure on the peninsula, affecting not only its local neighbourhood, but visually impacts the wider urban community. The site survey of the local neighbourhood (see 84) shows that it is primarily residential, with the notable inclusion of a several senior's apartments, and few social amenities. A shadow survey (see 85) shows the environmental impact of Fenwick Place is limited to its immediate surroundings.

Fig. 81. Photograph of Fenwick Place at night. The pattern of illimunated units can be observed as a loose representation of real and ongoing human activity within the building. Unilluminated areas suggest fallow areas available for new interventions.

An orthogonal projection of the tower (see 87) showing various sections of the building, reveals the critical elements such as the concrete slab structure and standardized unit modules, as well as the lobby-elevator core-corridor-unit sequence,

the existing links within. The standardized units are further analyzed by floor (see 88) and by type (see 89, 90, and 100) and show that while there is a three-size fits all range, the proportional layout of these units are almost identical, revealing the impoverished variety within the building.

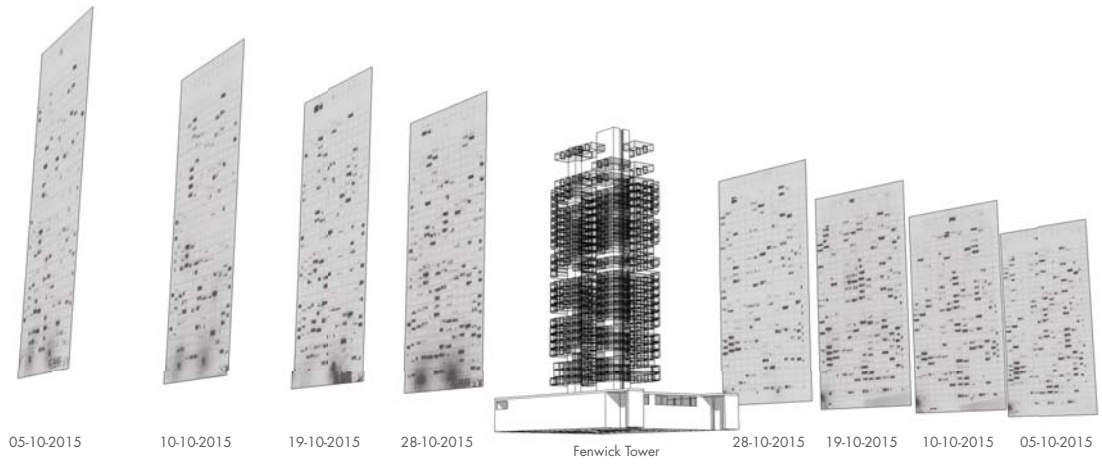


Fig. 82. Photographic study of apartments within Fenwick Place and their use.

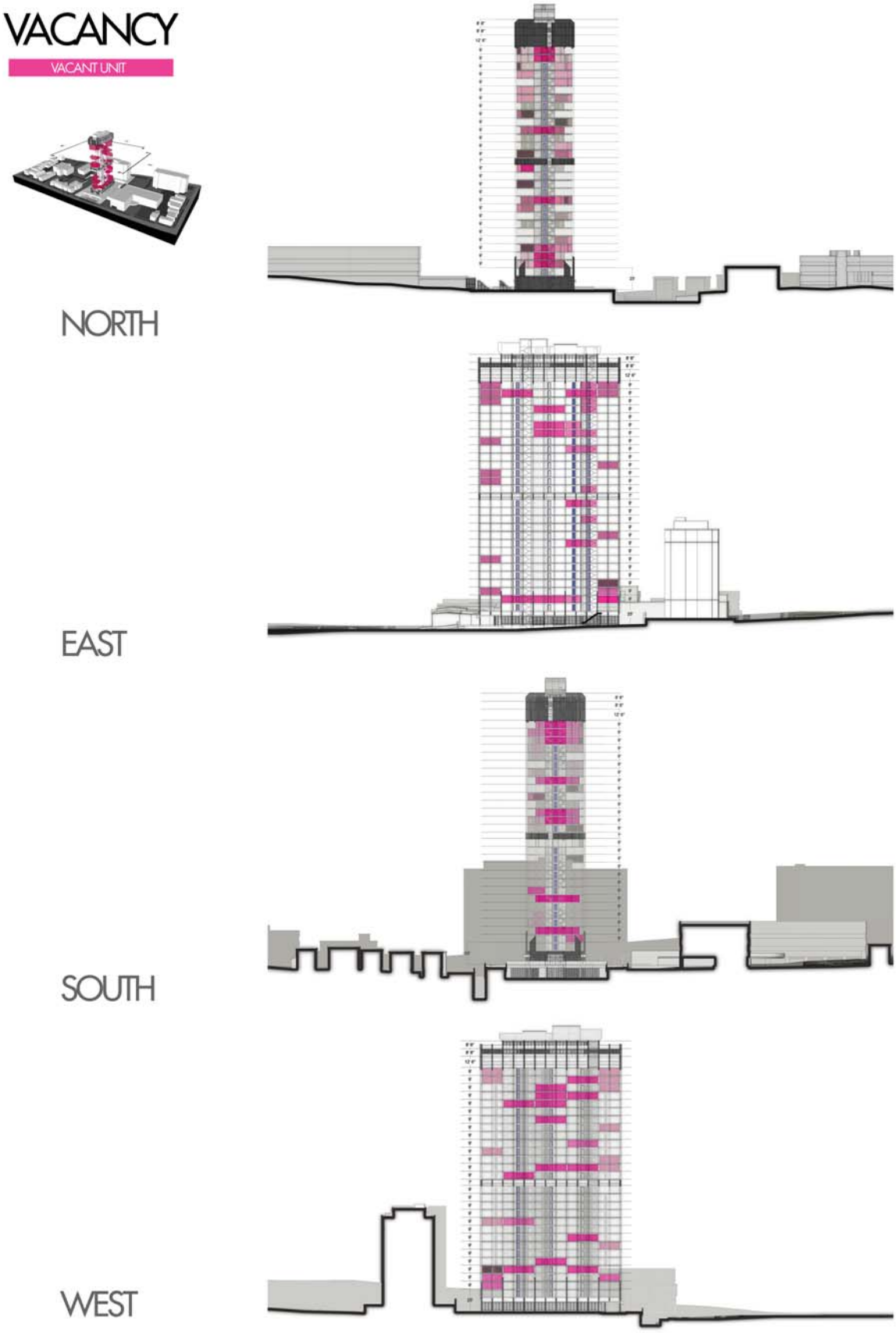


Fig. 83. Elevations showing potential underused and vacant units within Fenwick Place.

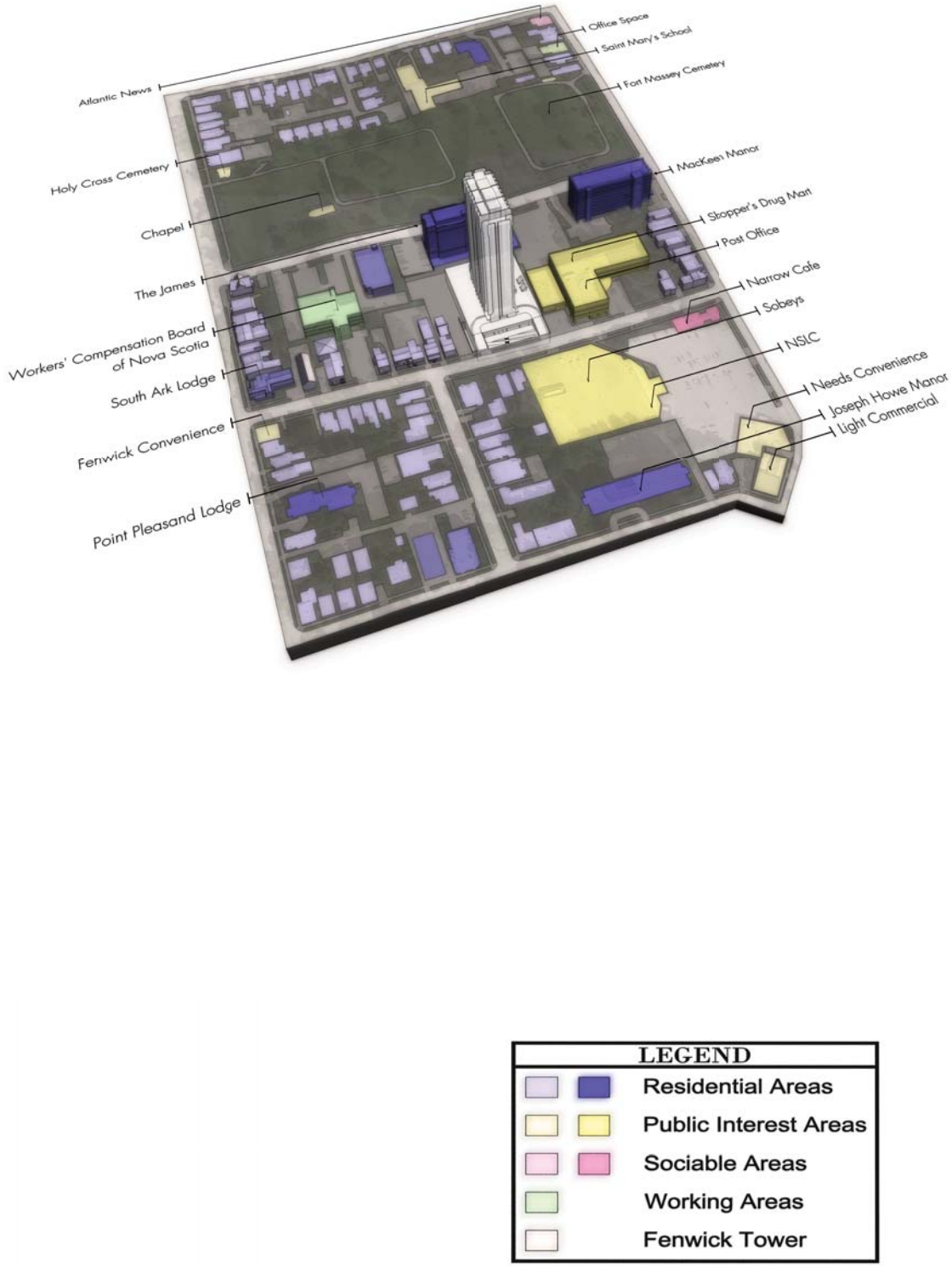


Fig. 84. Site model showing programatic zones of the neighbourhood surrounding Fenwick Place.

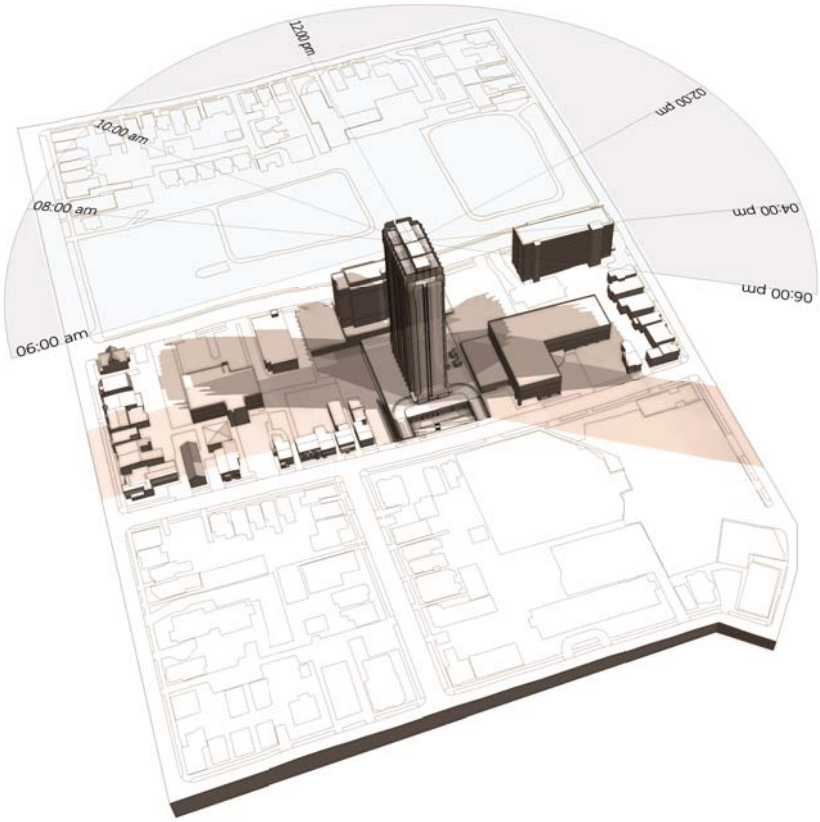


Fig. 85. Shadow study of Fenwick Place.

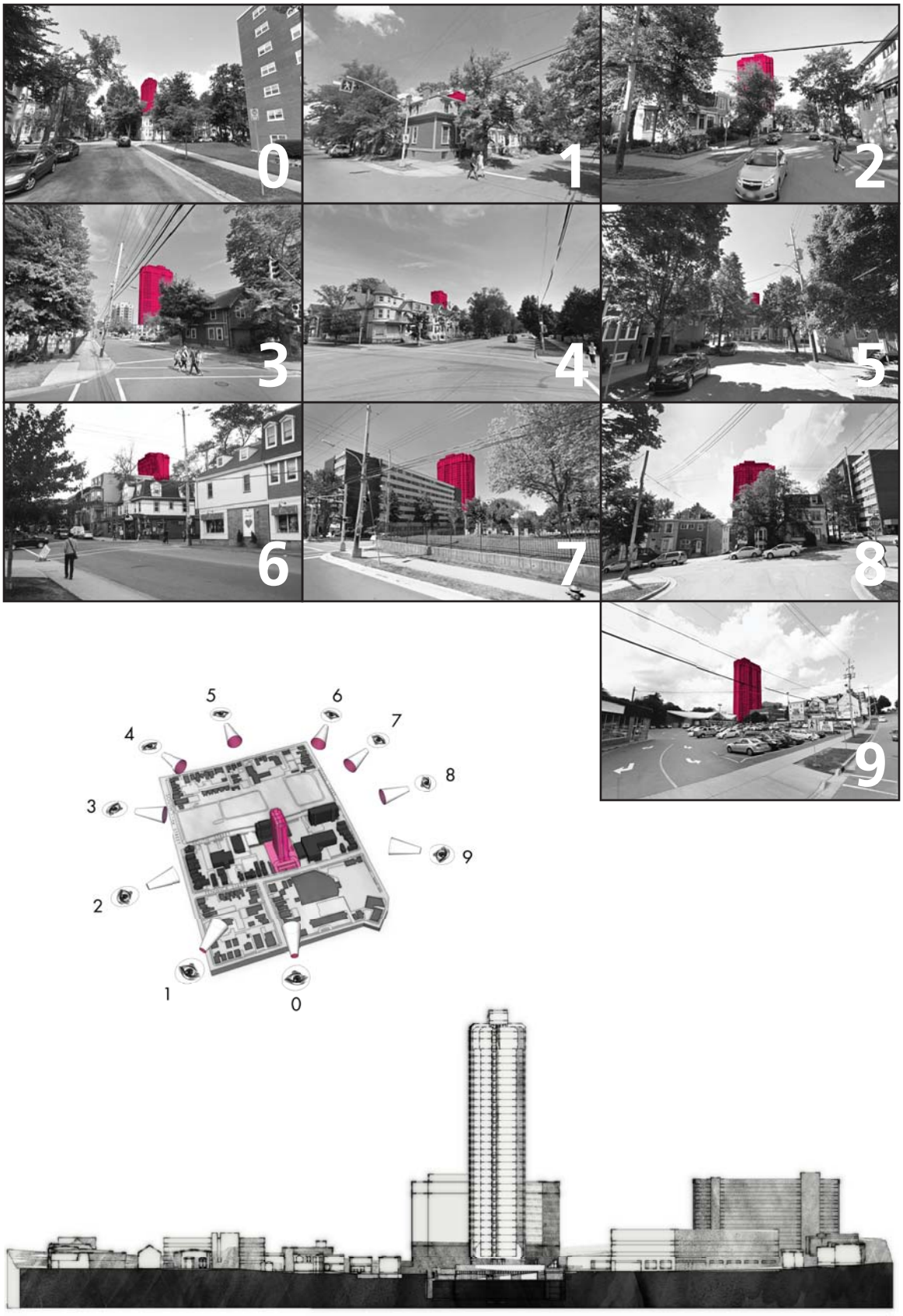


Fig. 86. Fenwick Street elevation and photographic survey showing visual influence of the Fenwick Tower on surrounding neighbourhood.

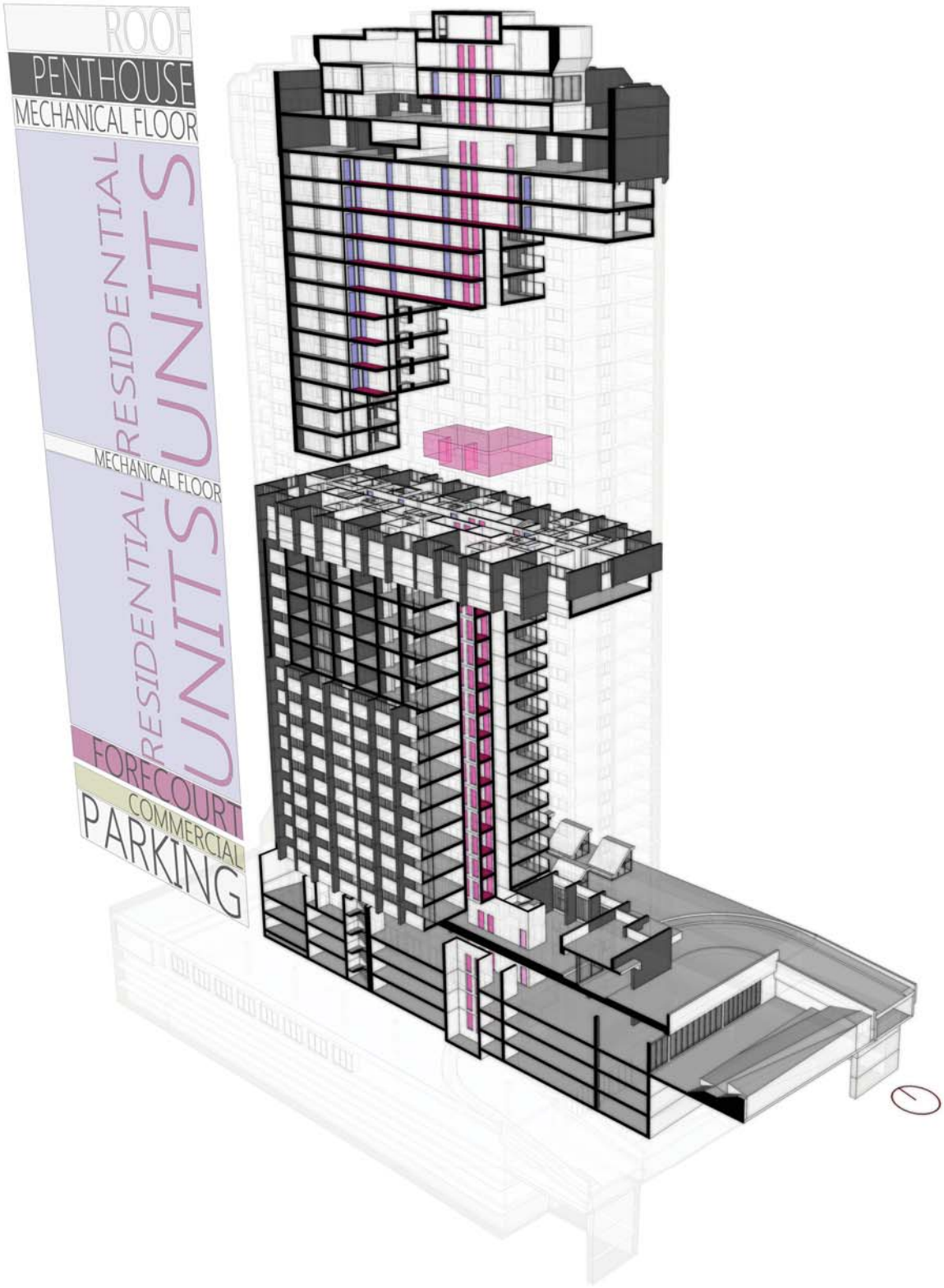


Fig. 87. Sectional axonometric drawing showing key elements of Fenwick Place.

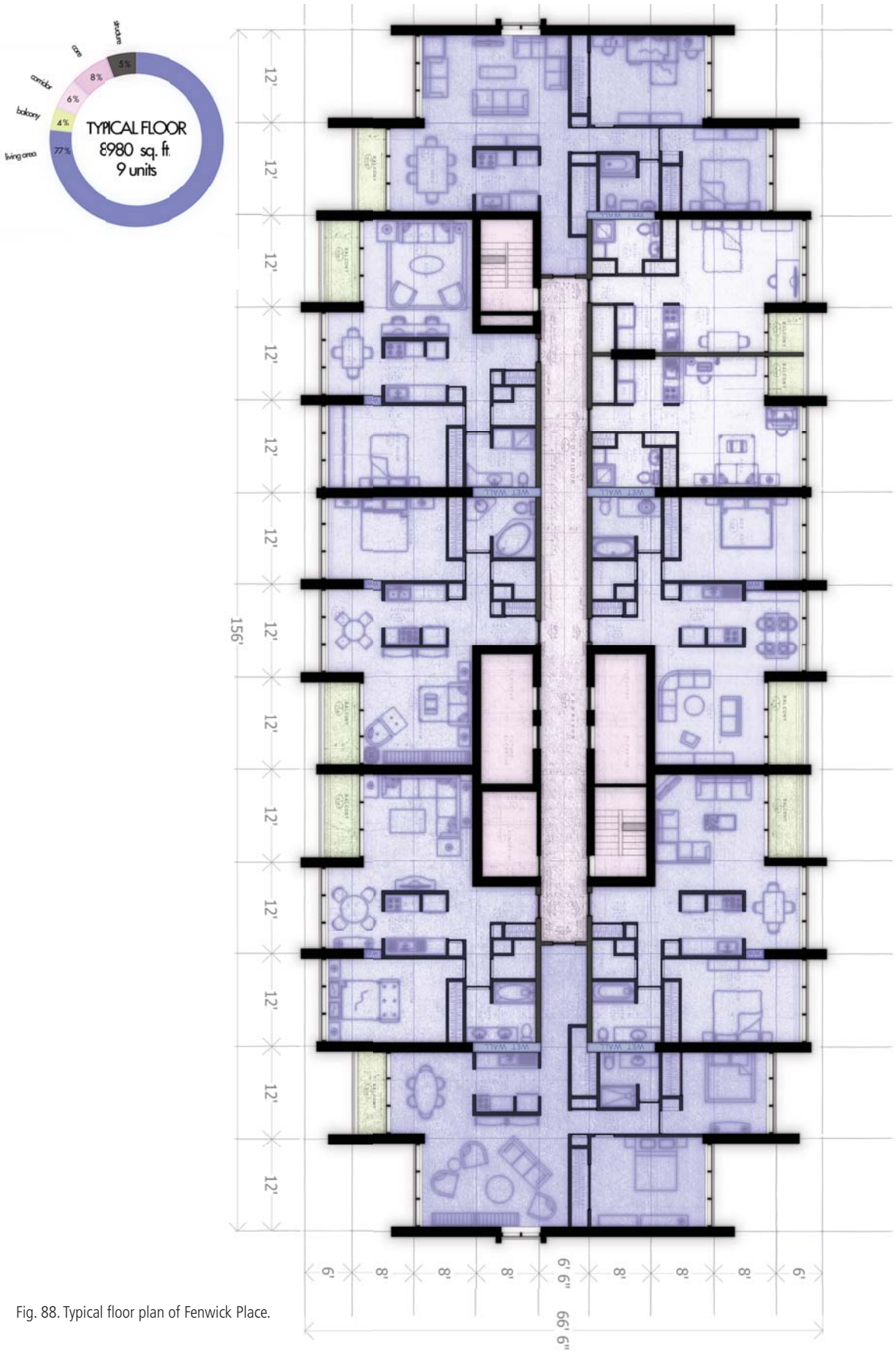


Fig. 88. Typical floor plan of Fenwick Place.

Fig. 89. Studio apartment plan.

Fig. 90. One-bedroom apartment plan.

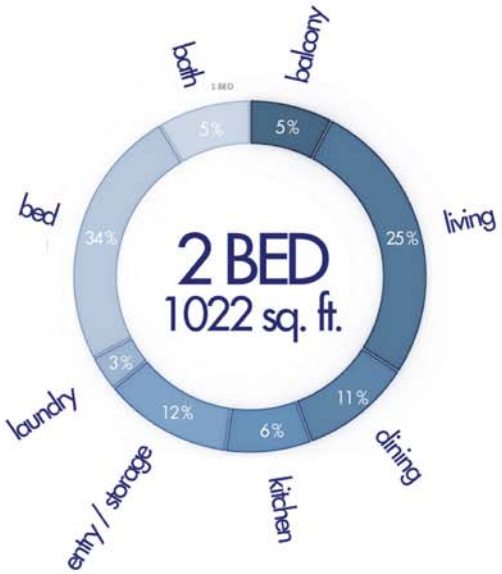


Fig. 91. Two-bedroom apartment plan.

CHAPTER 3: METABOLISM

Considering the scale and scope of society's investment in residential towers, is there any possibility for the remediation of inadequate designs? The inherent cycles of our consumer society offers redevelopment as the best strategy, but as Stanly Russell points out, how tenable is this solution as we forecast greater economic, ecological, and energy instabilities.[29]

New methods are required, not only to avoid the impossible expense of replacing our current building stock, but to discover new ways of enhancing the social space within the type, rather than simply finding greater efficiencies. Metabolist conceptions of architecture propose an alternative value system, in which time is incorporated as an active principal in design, and which can therefore enrich, elaborate, and correct initial designs. Drawing upon organic models of sustainability and cycles of renewal from traditional Shinto practice, the Metabolists proposed grouping and systemizing urban elements according to their life-spans. They experimented with the redesign of the city through a series of concepts, including capsules, megastructure, groupform, and linkage, all of which would provide for the regeneration of the urban environment.

Fig. 92. Kenzo Tange, *Plan for Tokyo*, 1960; photograph by Kawasumi Akio, from Domus, *Metabolism, the City of the Future*. Prototype of a megastructure and inaugural project of the Metabolist movement.

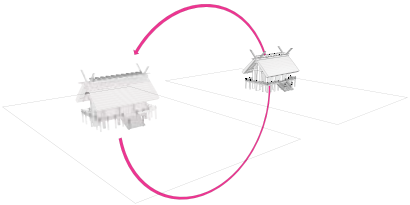


Fig. 93. and 94. *Ise Grand Shrine*, 640 BCE; photgraph from Yamato People; diagram by author. Shown halfway through renewal process, the old shrine at the bottom is about to be dismantled and the site left blank for the next twenty years.

29 Stanley Russell, "Metabolism Revisited: Prefabrication and Modularity in 21st Century Urbanism," in *Without a Hitch: New Directions in Prefabricated Architecture*, ed. Peggi Clouston, Ray Kinoshita Mann, and Stephen Schreiber (London: Lulu, 2009), 248.

The Metabolist's vision of a future where successive generations of construction are synthesized by organic principles provides an alternative ethos to the modernist machine aesthetic, and helps to establish a method through which tower structures such as Fenwick Place can be reimagined.

Responding to the post-World War II destruction of Japanese cities, the Metabolists proposed large-scale urban renewal projects with the aim of inaugurating the city of tomorrow, and looked to modern manufacturing processes as the potential means of accomplishing these ideas. Like Le Corbusier, they were concerned with the tectonic relationship between the cell and its framework, and sought to harmonize individual and communal scales in their reordering of urban life. However, the Metabolists differed from the early modernists in their approach toward time and change. Where Le Corbusier sought ideal social needs and relationships, and to bring about universal solutions to cities, the Metabolists sought ways to accommodate the inherent change and disorder of urban society.

In the 1950s, Kenzo Tange, patriarch of the Metabolist movement, called for a new tradition in Japanese architecture, one based on the spirit of the Ise Shrine, which would address the crises of mass urbanization and social upheaval of the time. The Metabolist response was a synthesis of Shinto rituals emphasizing renewal and regeneration, and modernist urban planning strategies.

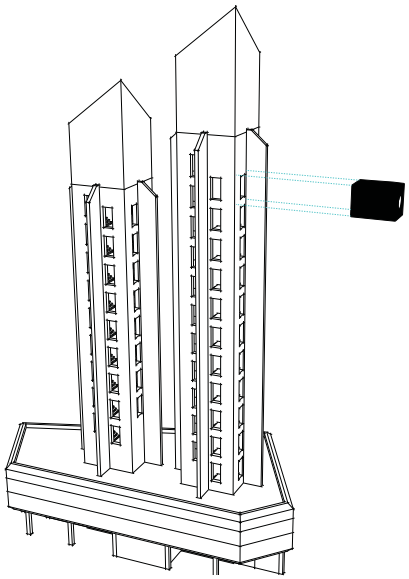


Fig. 95. and 96. Kisho Kurokawa, *Nakagin Capsule Tower*, 1972; photograph from Domus, *Metabolism, the City of the Future*; diagram by author. Each capsule is attached to the steel tower with four bolts and gasket, and are intended to be replaced with modern capsules with updated technologies.

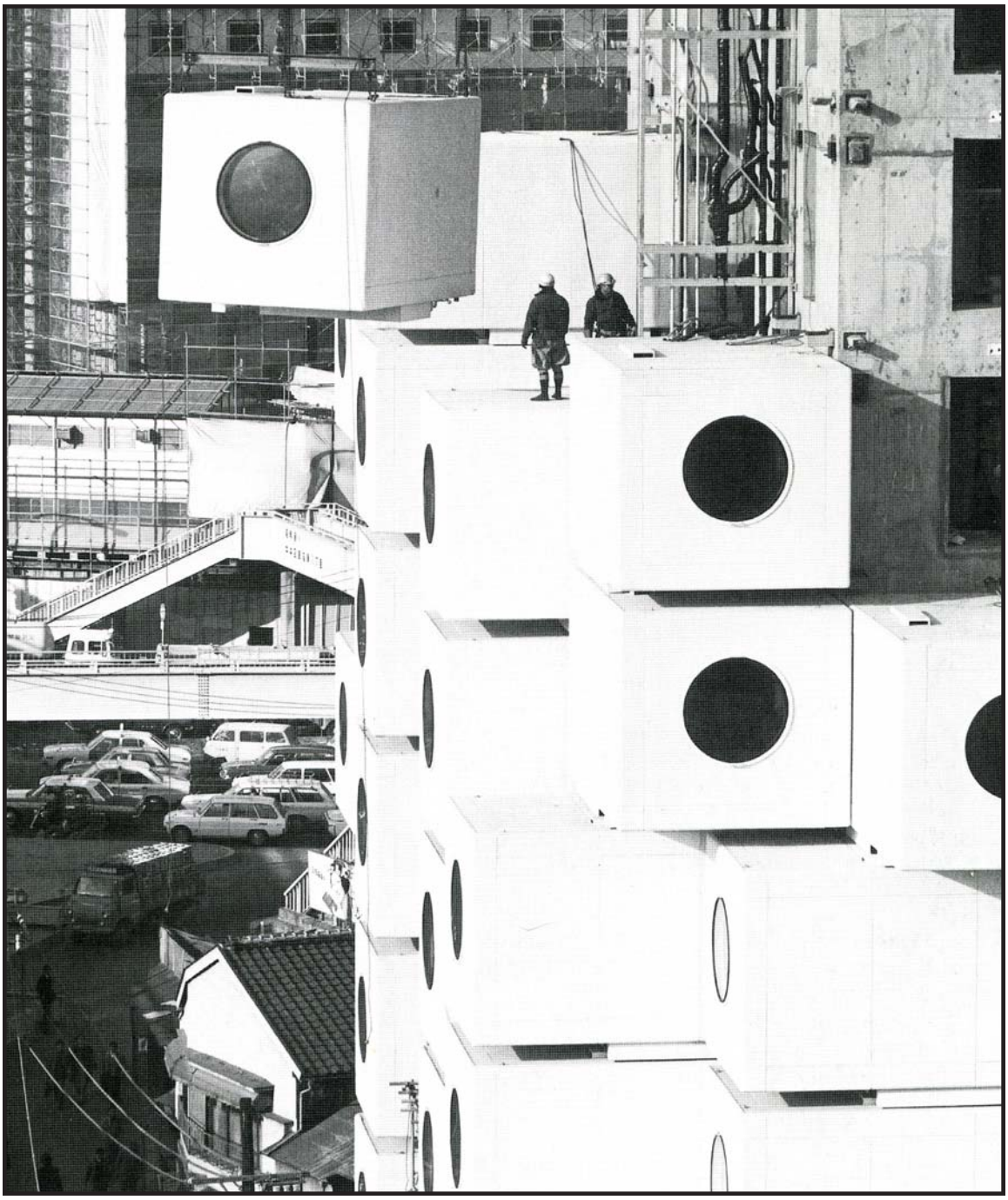


Fig. 97. Kisho Kurokawa, *Nakagin Capsule Tower*, 1972; from Lin, *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan*. Shown under construction, the tectonic relationship between structure and module is even more defined than in the modernist residential tower type.

This foundation allowed the Metabolists to not only see the destruction of Tokyo and Hiroshima as natural processes creating an opportunity for renewal, but to see the ruin of these centres as the critical condition for incubating the future city. Drawing upon organic models, the Metabolists proposed that the architecture of the future rely upon the grouping of urban elements according to their rates of change, and the systemization of the connections between these groups.

One strategy that came out of this approach – the one for which the Metabolists are now most widely known – was to contain whole urban programs, including transportation, energy, and waste systems, in monumental structural frameworks. Within these megastructures, shorter-lived elements, such as residential houses, were distributed. Because these individual elements were designed to a human scale and life-span, they could be replaced, exchanged, and renewed without having to reinvest in the cost of the structure or the services. Thus, proponents argued that megastructures could continually adjust and adapt to changes in technology and culture. The image of the megastructure became the dominant image of the Metabolist movement – it represented the city as a process that could grow and transform like an organism by fixing structure at the collective scale and allowing human-scale units the freedom and mobility to change and develop – and is perhaps best illustrated by one of the few Metabolist structures to be realized, the *Nagakin Capsule Tower*.

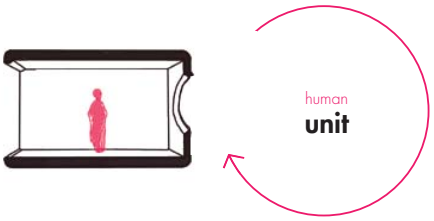


Fig. 98., 99., 100., and 101. Kisho Kurokawa, *Nakagin Capsule Tower*, 1972; photographs by Noritaka Minami, from Ignant; diagram by author. While the capsule is meant to have the capacity to adapt, the tower has failed to metabolize, and instead it emphasizes the variety of human use within the original parameters.

The first practical application of megastructure and capsule architecture, the Nagakin Capsule Tower is a legible example of architecture capable of metabolic cycles, as the 140 prefabricated steel modules that comprise the building's façade were designed to be detached from the two supporting concrete tower structures and replaced every twenty-five years. The separation of structure and capsule allowed the individual living areas to be manufactured using the same manufacturing processes used for vehicles, therefore utilizing similar production cycles, while the longer lasting structural framework remained constant. Although the capsules were designed to be combined and replaced, that capability has yet to be implemented, and many of the units are currently vacant or have fallen into disrepair. Forty-three years later, then, the Nagakin Capsule Tower has failed to metabolize and its hope for preservation lies not within its tectonic and functional ability to swap out old technology for new, but ironically in its cultural value; it remains a unique example of an architectural dream, and a reminder of the Metabolists hope for megastructure types.

In his essay "Investigations in Collective Form," Fumihiko Maki, a principal member of the Metabolist Movement and the originator of the term megastructure, examined the form and composition of cities as total environments in an attempt to address the incongruity of designing cities with visual and physical order while also striving to accommodate the rapid and continual

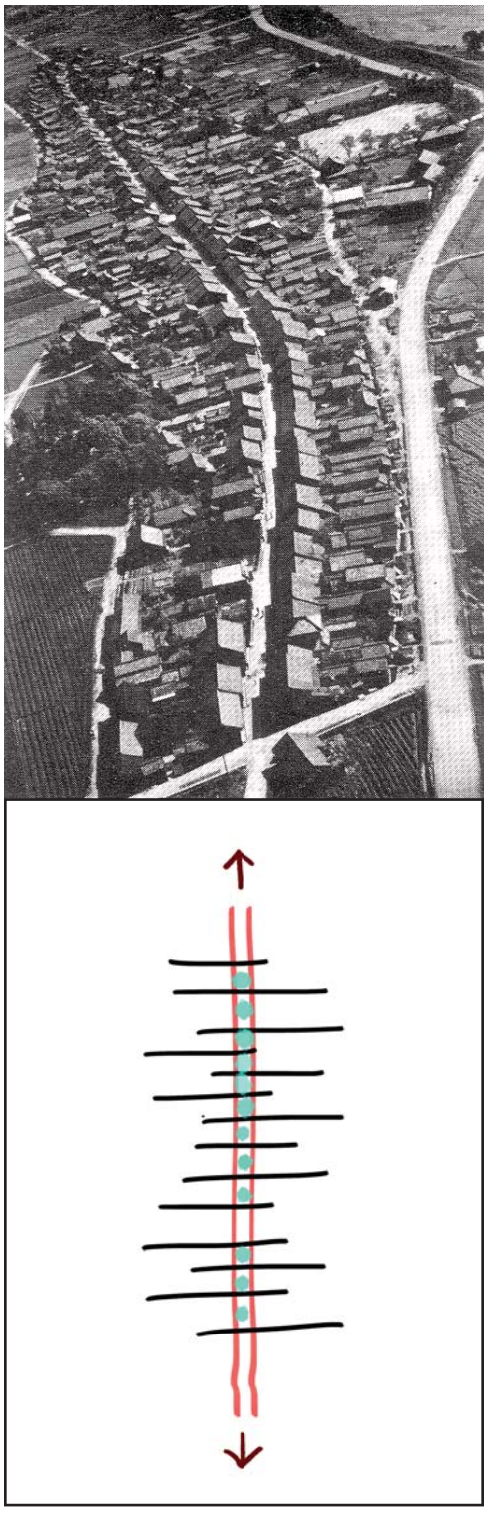


Fig. 102. and 103.Traditional Japanese village; photgraph-from Maki, *Investigations in Collective Form*; diagram by author. Houses are linked together along a street in a sequence of perpendicular spaces: business front, private dwelling, yard, agricultural field. The groupform has the capacity for variety and individual customization, as well for growth in the direction of the street.

change of urban life and technology. To better define this issue, Maki offered new spatial language, using collective form to describe the total arrangement and organization of the city, and outlined three distinct design approaches: compositional form, megaform, and groupform. Maki criticized the first two approaches for having inherently static outcomes. According to Maki compositional form promoted buildings that offered disparate attempts to complete formal statements, while megaform relied on a hierarchy of urban systems based on unpredictable categories of permanence and transience. Taking issue in particular with the top-down approach inherent to the concept of megaform, Maki advocated for the alternative concept of groupform.

Distinct from compositional form and megaform, groupform was characterized by the sequential development of generative elements, and was formulated through an analysis of traditional villages in which individual buildings interacted over time and developed a visual, spatial, and social coherence.[30] Maki cited traditional Japanese villages where houses were juxtaposed with one another perpendicular to a country road, consequently organizing street, shop, dwelling, courtyard, and farm spaces as well as their related activities as an example, suggesting that this relationship between elements and group was responsive to the lifestyle of the village's inhabitants, and allowed

Fig. 104., 105., 106., and 107. Top to bottom: *The Murmurations of Starlings*; from Photos of the Week. *Schooling Herring*; from School of Herring. *Herd of Sheep*; from Notey. *Pedestrians Crossing, Shibuya Ward*, Tokyo; from Mural Unique. Photographic sequence showing the potential for form to emerge from the interaction of discrete elements. The rules that define the links between discrete elements produce a dynamic arrangement that is responsive to change and capable of undergoing evolutions.

30 Fumihiko Maki, "Investigations in Collective Form," Special Publication (School of Architecture, Washington University, St. Louis) 2 (1964): 14.

for individual variation while maintaining a coherent and ordered whole.[31] As Maki wrote:

> The element of group-form is often the essence of collectivity, a unifying force, functionally, socially, and spatially. It is worth noting that generally group-form evolves from the people of a society, rather than from their powerful leadership.[32]

Groupform, then, is the aggregation of individual elements following a logic of addition, repetition, and variation through shared physical, spatial, and social links, and enables a greater degree of disorder and spontaneity than megastructure. In groupform, the removal or addition of any individual unit does not affect the formal cohesiveness of the whole. Instead, the collective form is defined by the responsiveness of its elements, which at any given time express the logic and vitality of the linking strategy. While in megastructure change is anticipated and controlled by the constancy of the overarching framework, in groupform it is the constancy of the links between elements that allows the overall form to adapt and respond.

In laying out a method for designing groupform, Fumihiko Maki established basic principles by translating the design elements of individual buildings to equivalents at the scale of the city. Critical among these was the linking element, which invariably established the relationship between dis-

Fig. 108., 109., and 110. Photographic sequence showing the traditional European cities that exhibit successful groupform and their constituent links. From top to bottom: Rivello, c. 1000; from Wikimedia. Example of an Italian hilltown where the geography and shared materials produce coherent groupform. Amsterdam, c. 1275; from Wikimedia. Dutch stoep links canal and private dwellings. Perugia, c. 1308; from Wikimedia. Bridges add a dimension to the city and link buildings across streets.

31 "There exists unquestionably a clear structural relationship between the village and the houses, between village activities and individual family life, or between the movement of villagers and cows." Maki, 18.

32 Ibid., 19.

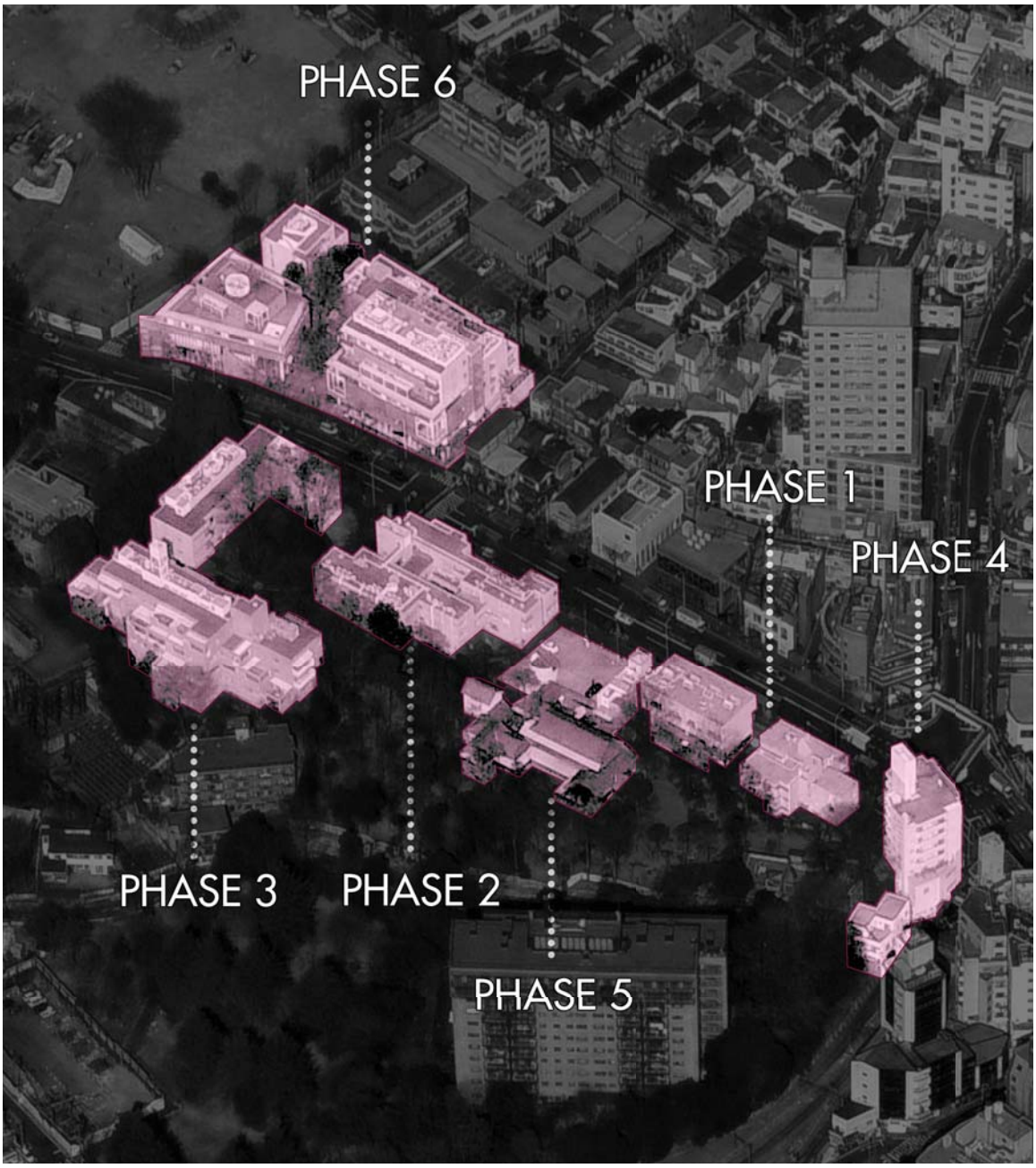
crete parts. Linking elements could be physical, implied, or built-in, but more than simply organizing mechanical forces and making unity from diversity, they also needed to recognize natural processes of human association and the order such association produces. Due to this relationship, Maki argued, link and unit evolve together to produce a coordinated physical entity.[33]

Traditional examples of making and disclosing links offered by Maki include the *stoeps* of sixteenth-century Dutch housing and the medieval street bridges in Perugia. The *stoep*, a raised apron at the front of Dutch canal houses, functions as a social place for children and neighbours, but also provides privacy by raising the windowed façade above street level. According to Maki, the *stoep* effectively relates the physical and spatial aspects of the house to the communal lives of its inhabitants, and establishes a formal arrangement that gathers other elements including adjacent houses, the street, and the canal into a larger urban form.[34] Similarly, the medieval street bridges over the Via Ritorta in Perugia join two buildings at their second storey and reinforce structurally weak walls, while also spatially defining the pathway of the street. While houses are conventionally connected at street level, these street bridges make explicit a third dimension of the city and articulate the existing social interactions between neighbours and the greater urban public. Again, as these bridges are

Fig. 111., 112., 113., and 114. Fumahiko Maki, *Hillside Terrace*, 1969-1992; photgraphs by Evan Chakroff, from Flikr. Photographic sequence showing the various links in between buildings that create a successfull groupform over time.

33 Ibid., 29-30.

34 Ibid., 18-19.



groupform

Fig. 115. Undertaken in seven phases from 1967 to 1992, Hillside Terrace is a urban scheme designed according to groupform principals. The project includes residential, office, and cultural buildings as well as the Royal Danish Embassy, which are linked together by plazas, loggias, external stairs, and public squares.

repeated, they produce a recognizable groupform from the elements of house, street, and bridge.[35]

Maki's ideas concerning groupform were realized in the Hillside Terrace Complex, a medium-density, mixed-use development of apartments, shops, restaurants, and cultural facilities located in the Daikanyama district of Tokyo that was developed over seven phases from 1969 to 1992. The project demonstrates how various urban programs and spatial elements, organized and connected by well-designed links, can improve and grow over time so as increase in character and generate desirable places to live. Based upon Maki's examples of medieval hillside towns and traditional Japanese villages, the project employs exterior public spaces — green areas, plazas, sunken gardens, exterior stairs, sidewalks, and transparent entrance halls — as linking elements which create a continuous cityscape while also allowing for localized variation. As a result, changes in architectural character reveal a progression in social attitudes and ideal lifestyles, encouraging connections between elements and time periods.

At the smaller scale, the contrast between the planned and unplanned growth at Kiyonori Kikutake's *Sky House* provides another example of groupform principles. Located in the Bunkyo-ku district of Tokyo, Sky House is a successful Metabolist exploration of the changeability inherent to a single family. The house consists of a single 10 x 10

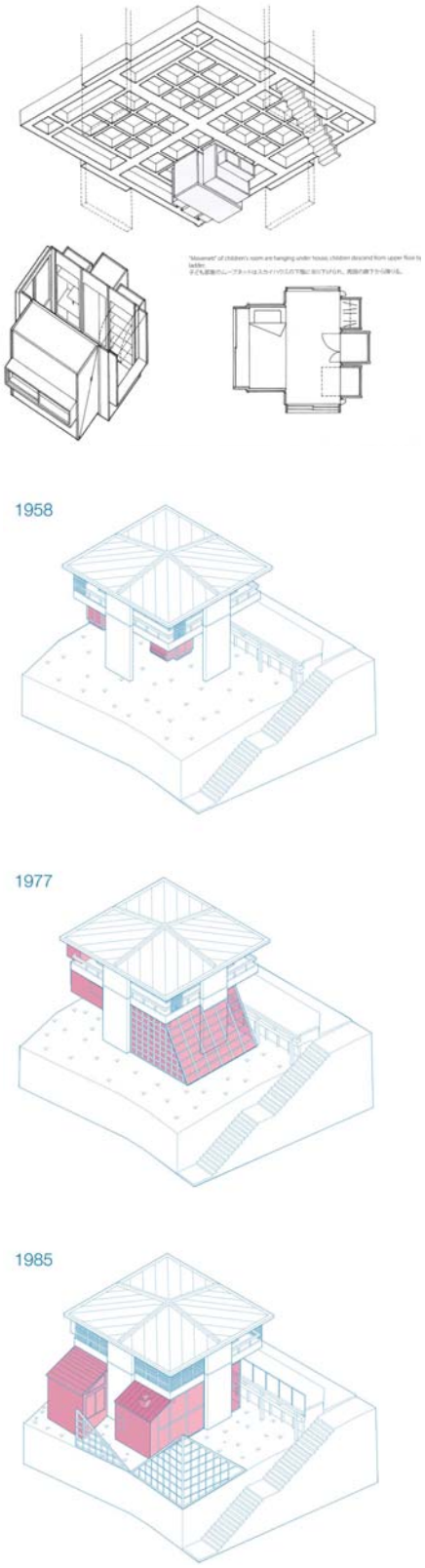


Fig. 116. and 117. Top: Movenette diagram. Bottom: Diagram of the evolution of the Sky-House; diagrams by Gareth Cotter, from Socks Studio.

35 Ibid., 31.

module

Fig. 118. Kiyonori Kikutake, *Sky House*, 1958; from Socks Studio.

metre slab raised on 4.5 metre piers at the central axis of each side. In contrast to the "machine for living" ideal that defined Le Corbusier's housing concepts, the Metabolists chose an organic process as their generative concept, seeking a method of perfecting private urban lifestyles through a responsiveness to human needs and changes in culture and technology. Testing this idea in the design of his own home, Kikutake organized his private domestic needs into permanent and temporary spaces. The components most likely to change – the kitchen, bathroom, and spaces for children – were designed for ease of replacement and are capable of various configurations. These "movenets" are distributed around a perennial open living space. Over sixty years, the *Sky House* has undergone several changes, some following the intrinsic logic of the original design, others more dramatically altering the house's configuration.[36]

While its initial design exemplifies megastructural organization – a hierarchy of space and program are organized according to fast and slow rates of change – the active capacity for Sky House's change derived from the accidental circumstance of the open space left in the design. This open space provided opportunities for changes beyond the parameters of the original tectonics, and created links and relationships which closer resemble the ideals and processes of groupform. In its attempt to facilitate future needs and to recognize

36 The exterior empty space beneath the main slab which was intended to accommodate the children's rooms, for example, was infilled in several unintended mutations.

the inevitability of change, Sky House demonstrates how empty space can be an essential and resilient link between generations, and unites the Metabolist concepts of groupform and megaform.

In developing approaches to designing collective form and considering the physical, spatial, and social links that constitute the city, the Metabolists expanded the scope of design to include the heterogeneity, elasticity, and continual change of urban life and culture. However, as Stanley Russell points out, these bold theoretical aspirations were never fully realized, as the large majority of Metabolist projects expressed the very industrial aesthetic they intended to replace, and few "actually achieved the flexibility and interchangeability that was the essence of the underlying concept."[37] Russell argues that this failure was not the result of a lack of vision, but of the economic, technical, and political conditions of the time. The megastructural schemes of the Metabolists were by their very scale an economically prohibitive solution. However, I propose that such monolithic infrastructure has already been designed and built. They are the residential urban towers of Le Corbusier, the Brutalists, and modern-day developers that have proliferated to the very places that the Metabolists had planned their utopian interventions. All that is required to transform these structures is an opportunity for a second wave of growth, an opening for a new seed, one which once grafted will renew

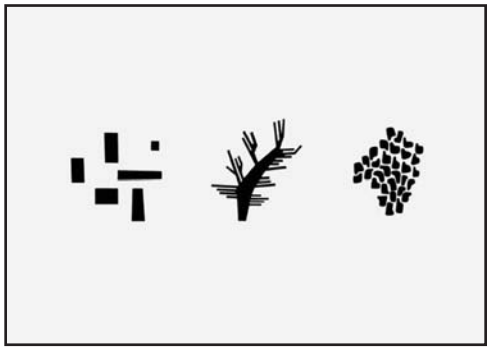


Fig. 119. Fumihiko Maki, diagram of his three categories of collective form: compositional form, megaform, and groupform,1964; from Maki, *Investigation in Collective Form*.

37 Stanley Russell, "Metabolism Revisited: Prefabrication and Modularity in 21st Century Urbanism," 247.

societal investment in tower structures.

While the examples left by Metabolists failed to fulfill the promise of their radical manifesto, their vision of a future where human cultures and urban systems are harmonized by organic principles is more relevant than ever before. By adapting Metabolist concepts—such as groupform and linkage—to declining residential structures such as Fenwick Place, I suggest that new forms of organic resilience can emerge from these imminent urban ruins.

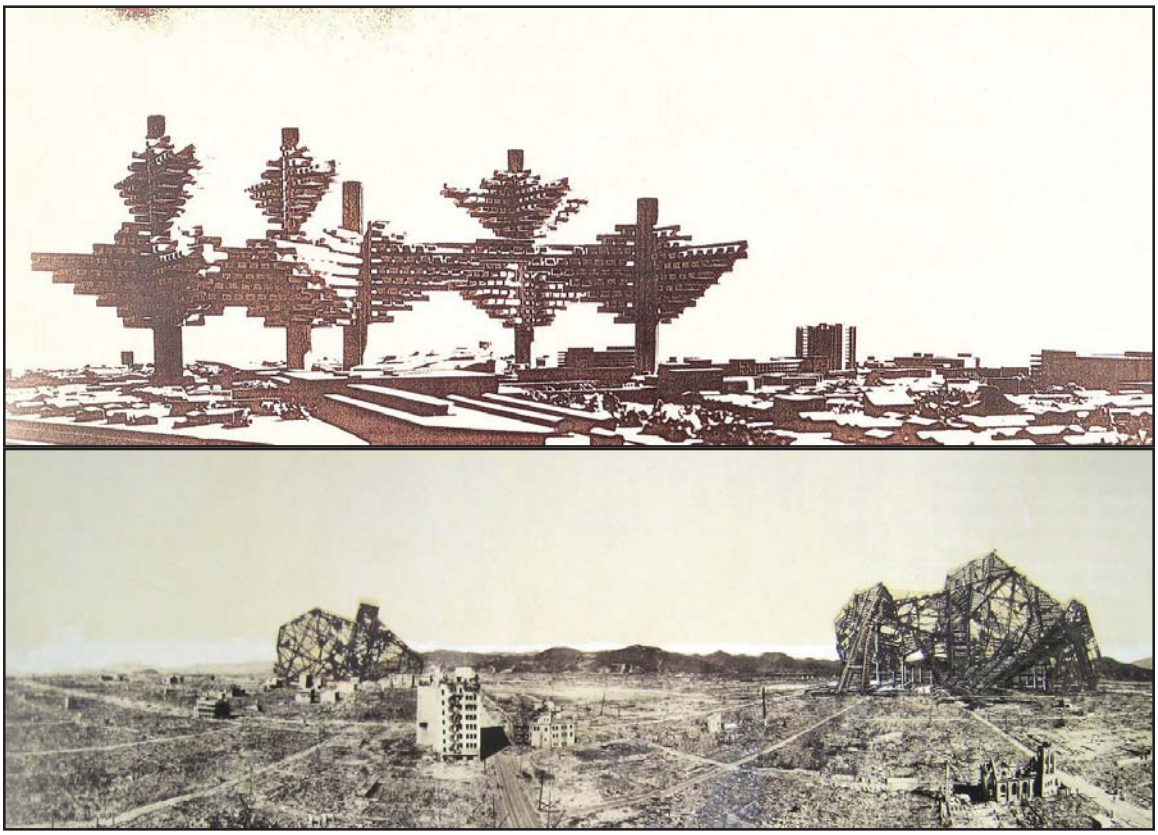


Fig. 120. and 121. Arata Isozaki. Above: *City in the Air*, 1961. Below: *Destruction of the Future City*, 1968. Montage; from Lin. In this work, Isozaki shows the megastructural schemes of the metabolists collapsed and in ruins, asserting that ruination is the constant inaugurator of change. "Isozaki contended that metamorphosis would be both destructive and constructive and, as a result, human society repeatedly cycled between city and ruins: 'In the incubation process, ruins are the future state of our city, and the future city itslef will be ruins'" (Lin Zhongjie, *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan*, [New York: Routledge, 2010], 124).

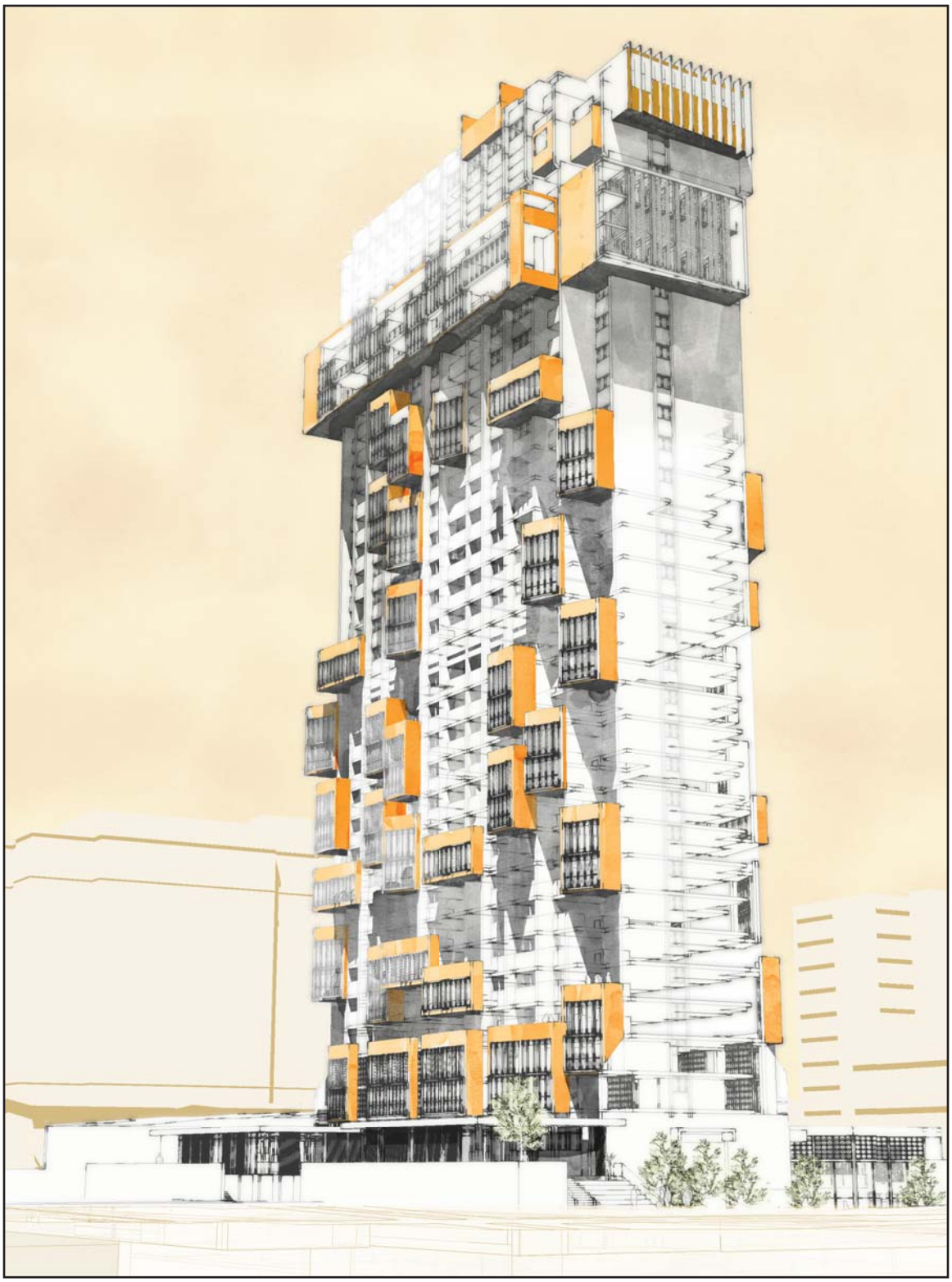


Fig. 122. Drawing of Fenwick Place and New Metabolist interventions.

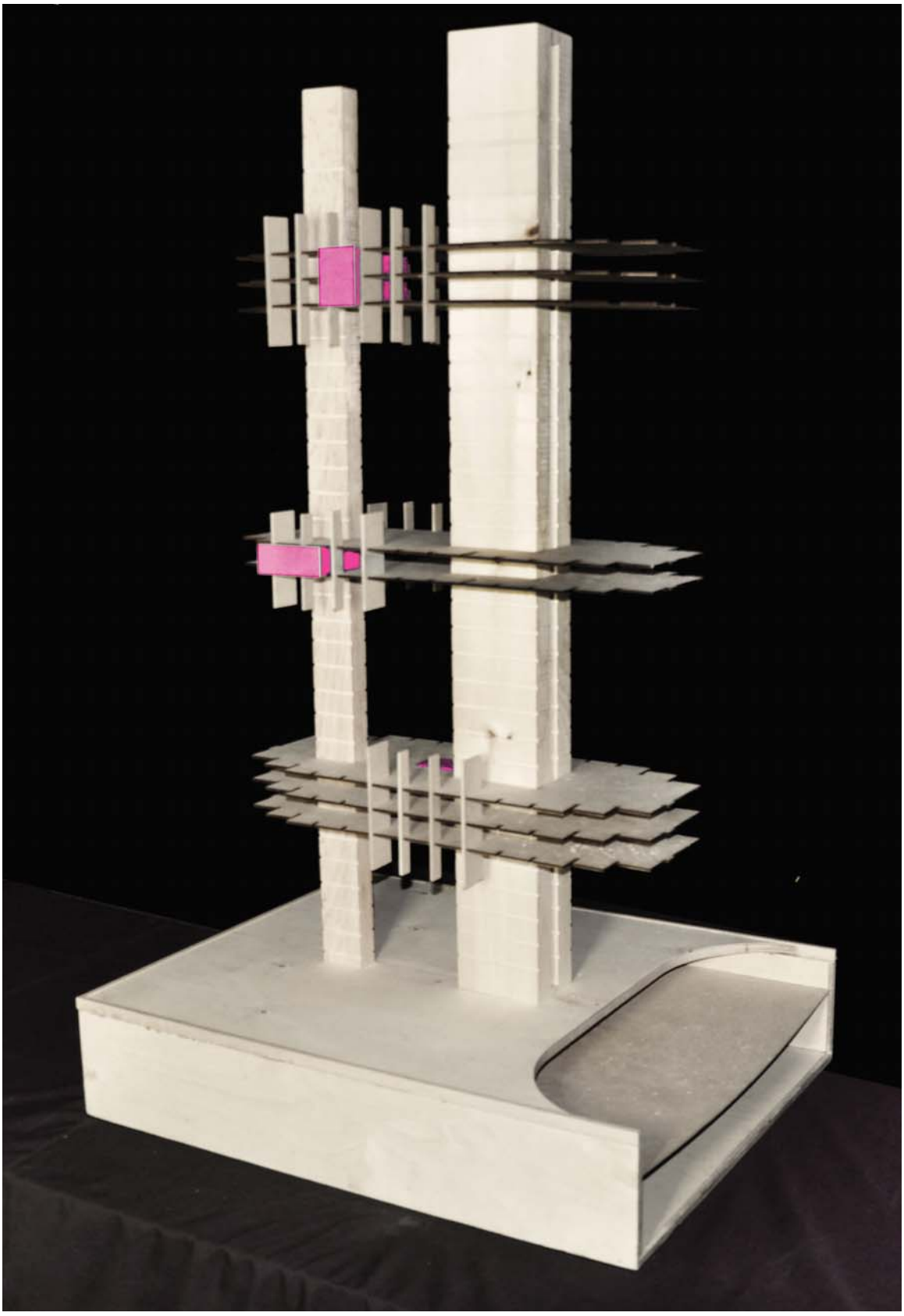


Fig. 123. Structural model showing three variations of links in blue, hinge, clip, and cut (from bottom to top).

CHAPTER 4: NEW METABOLISMS: ADAPTIVE REUSE OF THE URBAN TOWER

Residential towers, built with the logic of standardizing space, designed in response to market forces rather than urban conditions, and optimized for maximum market value[38] rather than architectural value, do not age well nor are there good strategies to ameliorate their defects over time. Their life cycle charts a gradual decline, as the aging infrastructure is sold to a lower and lower segment of the market until a point where its low value and concomitant array of social problems prompts a need for redevelopment. However, as products of a standardized building system and organization of space, these structures possess certain architectural qualities. They are unique in producing height and density. Their primary structural elements are elevator cores and concrete slabs, a durable "artificial land" in Metabolist terms. Typically, they are located near urban services and transportation nodes, and entail some form of shared or social organization, however rigid or reduced. Their building envelope is a clearly separ-

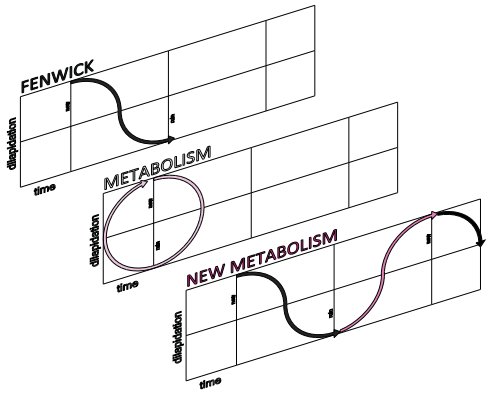


Fig. 124. Diagram comparing existing strategies for renewal to Metabolist and New Metabolist processes.

38 Stewart Brand, "Unreal Estate," in *How Buildings Learn: What Happens After They're Buil*t (New York: Penguin, 1995), 72-87. Brand suggests that "Every building leads three contradictory lives—as a habitat, as property, and as component of the surrounding community. The most immediate conflict is financial. Is your house primarily a home or primarily an asset? Economists dating back to Aristotle make a distinction between 'use value' and 'market value.' If you maximize use value, your home will steadily become more idiosyncratic and highly adapted over the years. Maximizing market value means becoming episodically more standard, stylish, and inspectable in order to meet the imagined desires of a potential buyer. Seeking to be anybody's house it becomes nobody's." Brand, 73.

ate element, and is normally due for replacement by the time towers have grown to be undesirable places. Furthermore, concepts of floor, wall, and column are latent in the exposed concrete structure, and create a rich foundation upon which to express alternative conceptions of space. As an alternative to the destruction and redevelopment of residential towers, I propose that within the tower framework lies the potential for renewal through Metabolist interventions, and suggest that by integrating new groupform elements into declining residential towers such as Fenwick Place, a capacity for change at both the human and the city scale can be introduced.

While Fumihiko Maki developed the concept of groupform to address the design of the collective form of cities, the concept can be applied to the design of new elements for residential towers. Believing that cities should evolve from the interaction between people and their environment, Maki argued that the connective tissue between buildings is the critical element that generates vital, dynamic, and resilient places. Applying the concept of groupform to residential towers, then, necessitates an examination of how elements within a building are linked together, and a consideration of how these existing links might accommodate change or the adaptation of related parts.

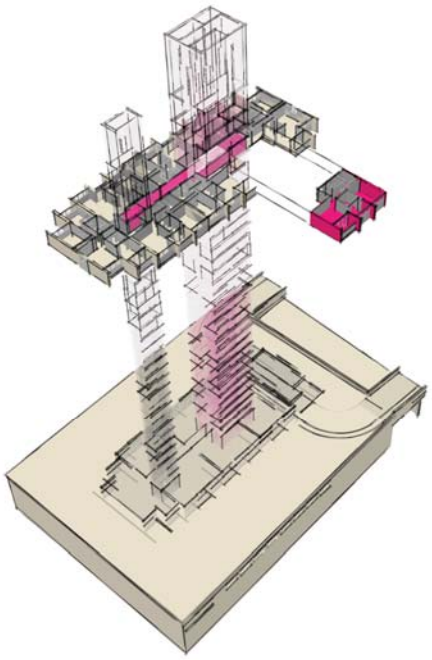
Within Fenwick Place, as within numerous residential towers, the principal elements of individual units and communal amenity spaces are linked

Fig. 125. Diagram identifying the areas of ruin within Fenwick Place as potential areas for renewal.

together by corridors and elevator cores. These links produce an efficient and compact organization of the distinct elements, yet they do so by limiting the possible dimensions within the framework of a tower. That is, the double-loaded corridor organizes space in a planar dimension, while the elevator orders these separate layers into a stack. The potential variety of travelling between the multiple levels is thus collapsed into a generic path from the door of a unit, to elevator, to lobby, without any experience of the levels that are passed through, or any possibility of interactions therein. While corridors and elevators efficiently arrange individual units into stacked floors, the rigidity of this organization does not allow for the units themselves to change in any substantial way. The range of possible adaptation is limited to interior finishes and furnishings. New linking elements have the potential to alter this dynamic.

According to Maki, while good linking elements are physical, they must do more than simply organize mechanical forces and make unity from diversity. Strong links must also recognize the natural process of human association. The success of the link thus depends upon its ability to coordinate human activity and physical space.

In the case of Fenwick and other residential towers, the social quality of corridors and cores is generally poor. In older buildings, corridors are long, bleak passages in which the floor-to-floor height of the structure is oppressively felt. In newer tow-



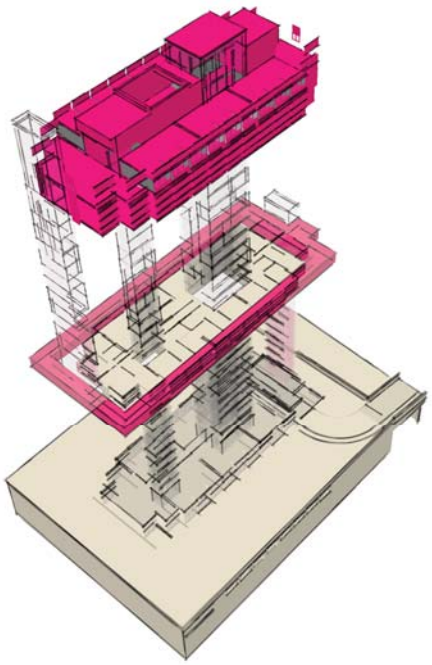


Fig. 126. and 127. Diagrams showing existing links and possibility for new links within Fenwick Place.

ers, efforts have been made to improve corridors, including the articulation of doorways to include small alcoves and places in which tenants can personalize their entry. Corridors have also become shorter and more efficient, reducing the length of the banality, and in some cases, use different materials to create interest and variation (see 128). However, for the most part, corridors and elevators, as Charles Montgomery points out, produce conditions that are unfavourable to sociability by reducing the possibility of social interactions.[39] Montgomery argues that the narrowness of corridors and elevators encourages people to treat each other as strangers; neighbours who meet in corridors or elevators tend to ignore one another. Seeking to introduce groupform elements into the existing corridor-core framework of residential towers, a new Metabolist approach looks for alternative ways to link units and amenity spaces, so that link and unit can evolve together to produce a coordinated physical-social entity. These new links must therefore integrate structural, social, and spatial elements, and allow for greater variation and adaptation within the tower.

Using Fenwick Place as a test case, I draw upon the Metabolist principles of groupform and linkage to propose new metabolisms, and a redesign of the urban residential tower. In doing so, I explore a range of interventions that increase in degree from clipping onto to the structure to cutting

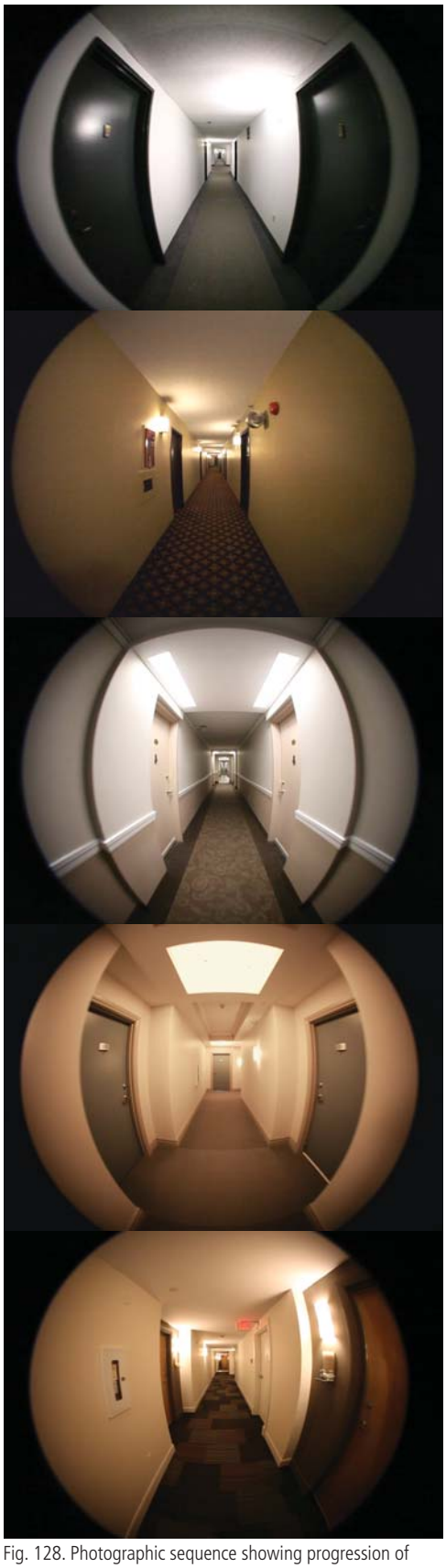


Fig. 128. Photographic sequence showing progression of corridors in local Halifax residential towers over time.

39 Montgomery, *Happy City: Transforming Our Lives Through Urban Design,* 123-34.

into the structure, and that provide increasing levels of interactivity, as well as increasing size and variation in spatial qualities. This range of interventions, with the smallest near the base of Fenwick and the largest at the penthouse and plinth levels, correspond to new programmatic insertions that follow a generational progression. Interventions at the plinth level focus on children and daycare, while new live/work and hobbyist amenities for young professionals are inserted near the bottom of the tower. Family growth and community are accommodated midway up, and assisted living and garden spaces crown the structure. The penthouse level will be restored to its original function, with a pool and the addition of an outdoor/indoor fog garden/spa, a place in which the community can enjoy the great prospect of Fenwick's height, as well as its unique occlusion in Halifax's foggy

Fig. 129. Photograph of Fenwick Place in fog, a common maritime weather phenomenon.

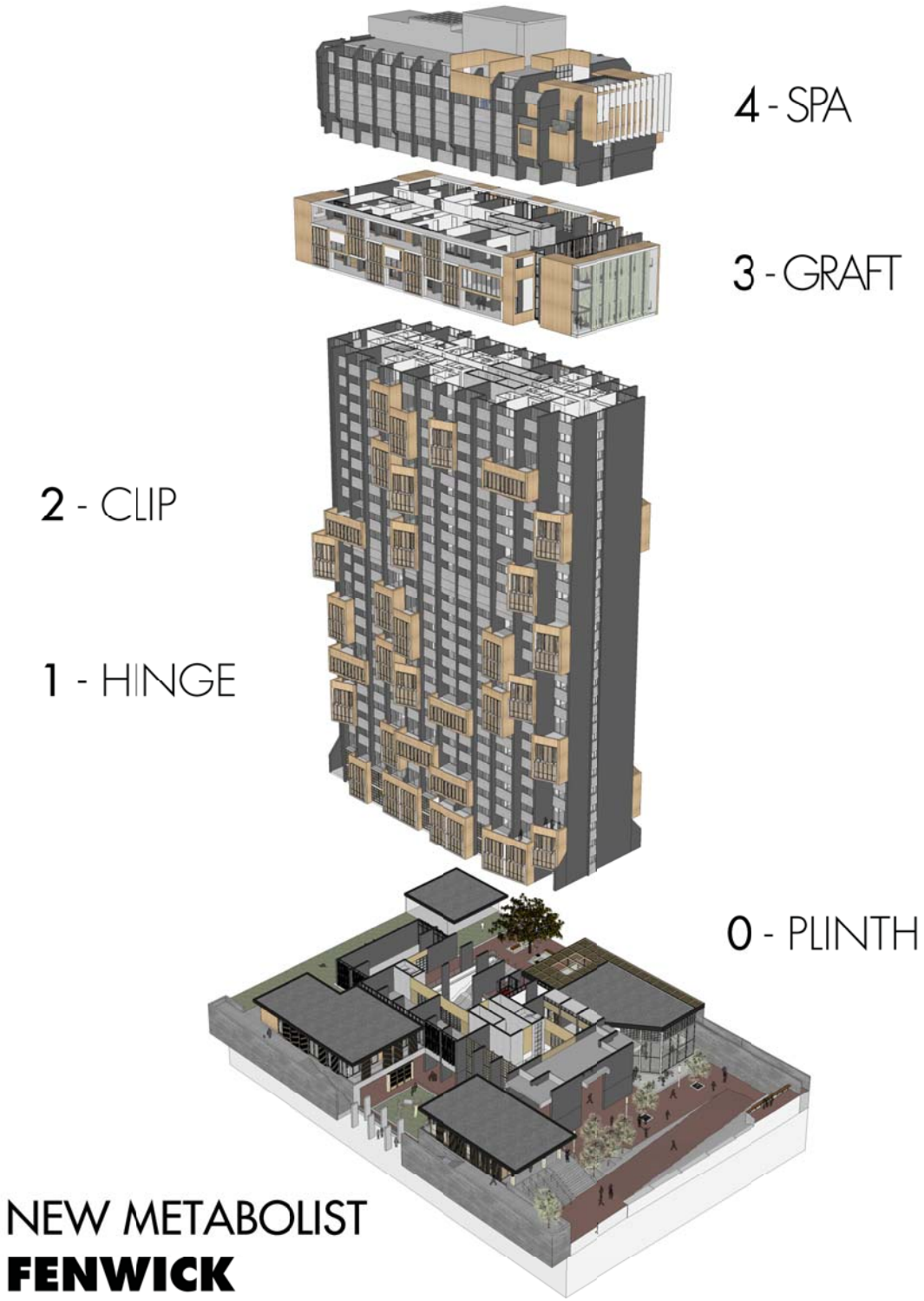
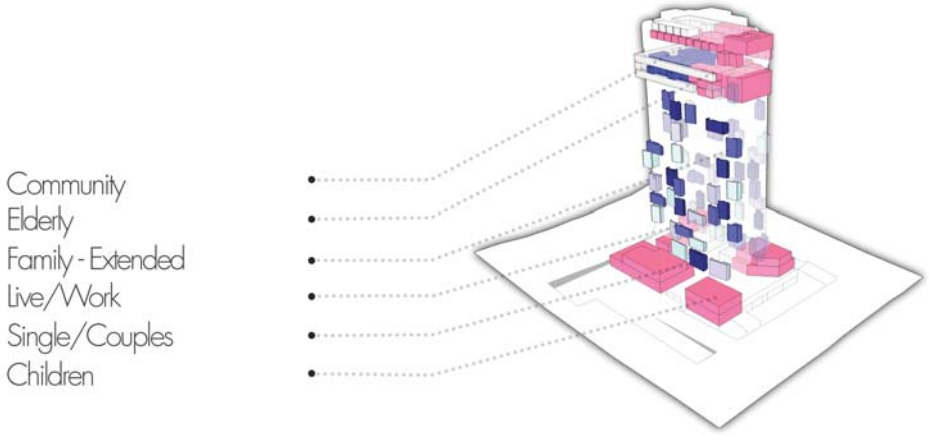


Fig. 130. Exploded axonometric drawing showing distinct New Metabolist interventions and where they occur within Fenwick Place.



weather.

New Metabolism: Programmatic Interventions

The new links and structural and environmental interventions to Fenwick proposed by a new Metabolist approach are further complemented by the programmatic development of the building over time. This potential transformation is laid out here in three speculative phases: existing, roots and canopy, and from fins to trellis.

Phase 1: Standard Ruin

The existing condition is segregated into three homogenous zones: commercial plinth, amenity space, and residential units. As the tower begins to decline and vacancy rates increase, areas of ruin and dilapidation can be mapped out. The commercial front is vacant along with the second level terrace. Units that are higher up, and on the north side of the building are abandoned first, due to

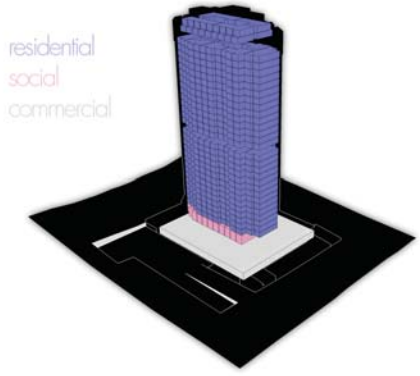
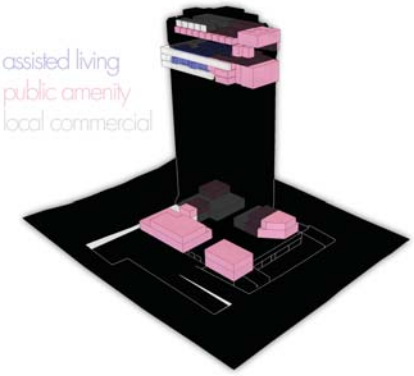


Fig. 131., 132., 133., and 134 (below). Diagram series showing physical and social links. Top: The ideal groupform untifies the building with a diversity of programs and spatial variation. Bottom: The existing condition is characteriztically homogenized and segregated, and it's spatial links are compact, effecient, and rigid.

poor natural light, wind exposure, and inconveniences caused by elevator maintenance. West facing units also suffer from solar gain. Larger units are abandoned as families and social groups have greater collective ability to find better alternatives. The socio-economic status of residents declines, while their transience increases. The generic social relationships within the tower remain: Life is isolated within units, and social or communal activities have to overcome the rigidity of the tectonics and circulation. The tower is ready for a New Metabolist intervention.

Phase 2: Roots and Canopy

By introducing new community-oriented programs at the plinth and the penthouse level, local public interest and interest from commuters can be harnessed. This is achieved by providing amenities such as a day care, pet care services, a public fitness centre, a café/restaurant, and commuter facilities at ground level, arranged in a fashion that is integrated into the city as if the tower were indeed in a park and connected through organic paths. This alternative linking strategy between plinth and sidewalk will free up space for exterior malls, plazas, and courtyards, subverting the typical orientation of commercial street-frontage and the existing tower pedestal. Additions at the penthouse level – an assisted living facility, public solarium and greenhouse, and community spa and fog garden – will also accommodate the broader urban community and will be visible across the city.



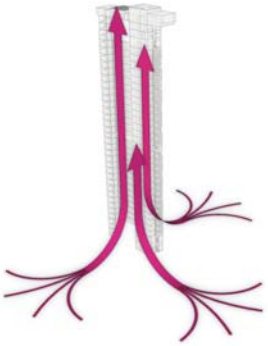


Fig. 135. and 136. Diagram showing ideal social links within Fenwick Place. A vibrant and dynamic plinth level provides activity and interest to invigorate change.

Thus the activity at the base will be drawn up into the tower. This second phase replaces the potted plant with a Japanese garden, aiming for a greater balance of order and chaos, breaking down the homogeneity of the tower, and generating new social dynamics and interest.

Phase 3: From Fins to Trellis

Connecting the plinth and penthouse level, the tower becomes a trellis for organic growth. Using the new flexibility provided by the metabolic links elaborated above, the standard regiment of stacked residential spaces can adapt to accommodate various social relationships: singles/couples can develop live/work spaces; floor levels can be tied together to support shared solariums and garden space, and growing families can link units across the building. This interconnectedness will create greater resiliency as it better represents individual lifestyles and accommodates a broader spectrum of life. It will also expand amenities so that the building becomes unique and creates a sense of belonging that is more local than it is universal. Expressing life cycles that are shorter than that of the community itself, the trellis phase will bring individual needs into harmony with those of the collective through its fine-grained develop-

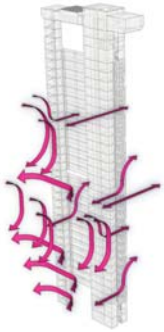
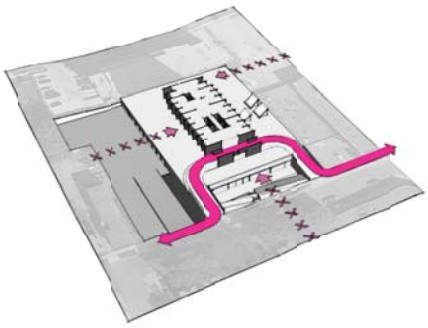
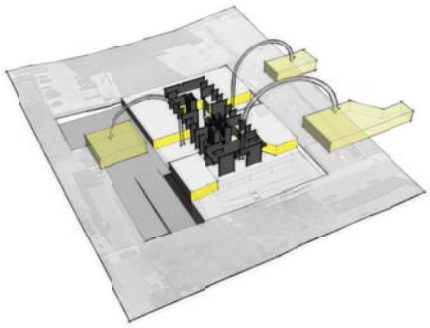


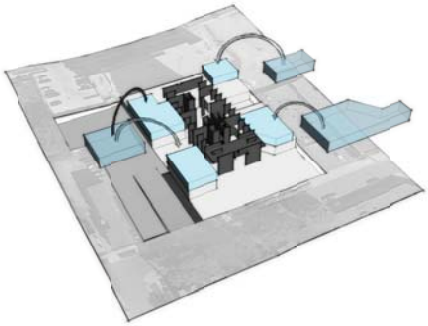
Fig. 137. and 138. Diagram showing ideal social links between residents living in Fenwick Place. Expanding and diversifying the standard living arrangements, families and social groups can grow and interact in new meaningful ways.



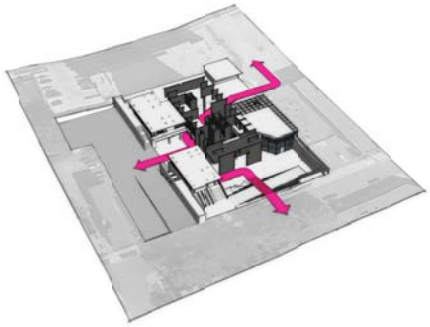
1 - Existing Links: Plinth interrupts potential pedestrian paths.



2 - Cut: Areas within plinth are removed to create outdoor space.



3 - Insert: Removed areas are restored in new forms.



4 - New Links: Paths are enhanced and plinth gains new activity.

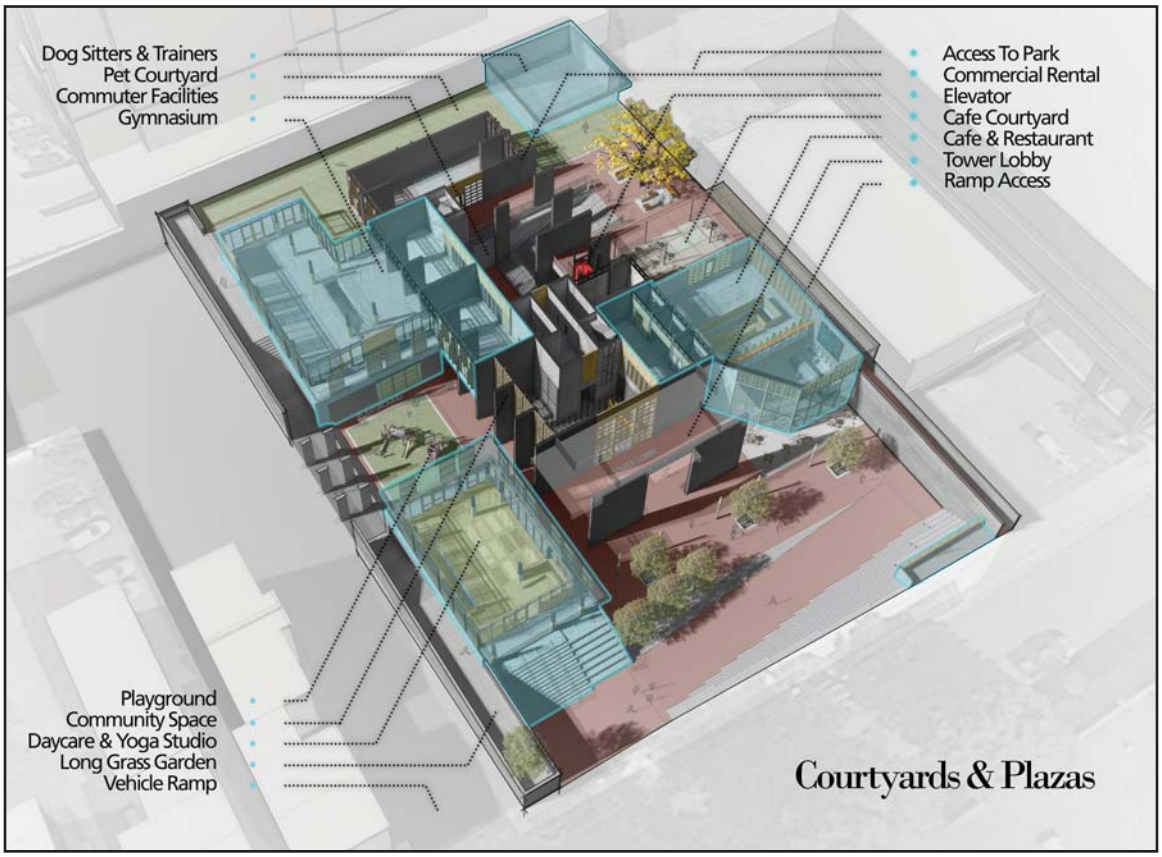
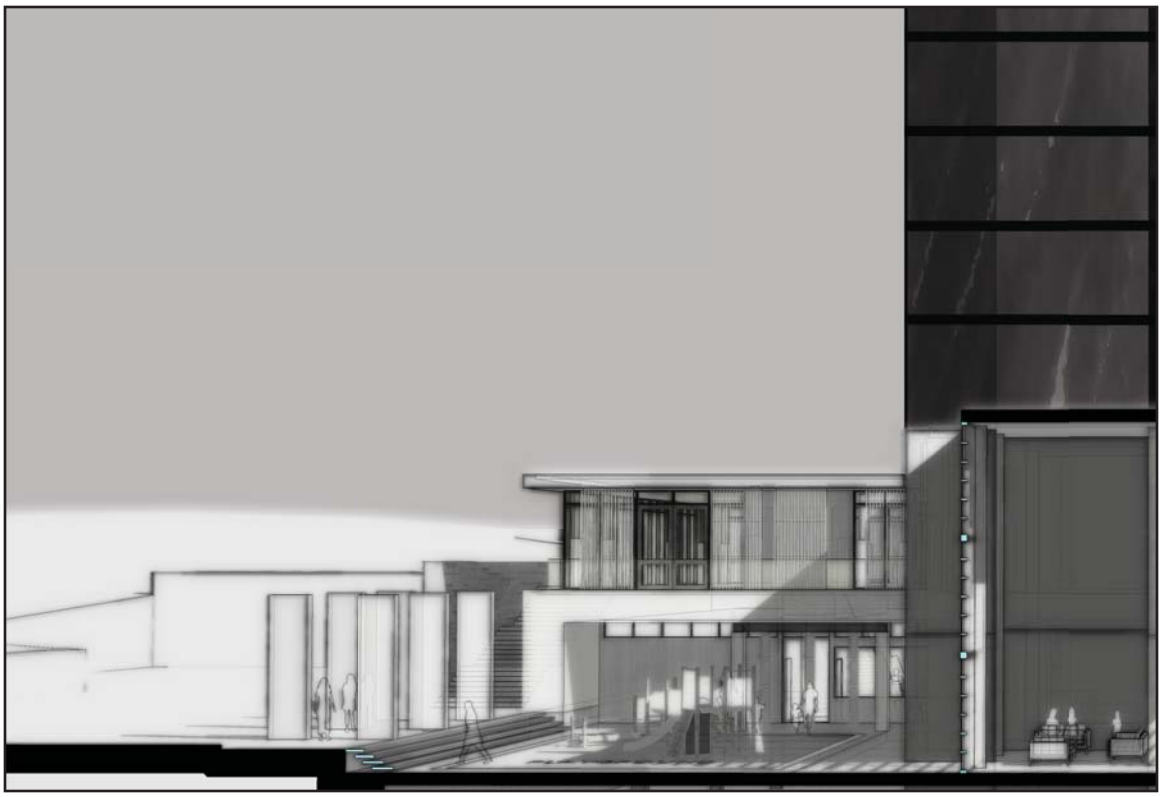


Fig. 139. Drawing of proposed plinth intervention. Top: Diagrams showing sequence of interventions opening up new courtyards and plazas at the base of the tower. Floor areas that are removed to create outdoor public amenities are restored at periphery to enhance massing and potential links to surrounding context. Bottom: Programmatic diagram showing how these new spatial arrangements can be used to enhance hybridity of public and tower amenities, focusing on health and children.

Fig. 140. and 141. Top: Terrace level sectional plan. Bottom: Street level sectional plan. Blue section fill represents new addition, black section fill represents existing structure.



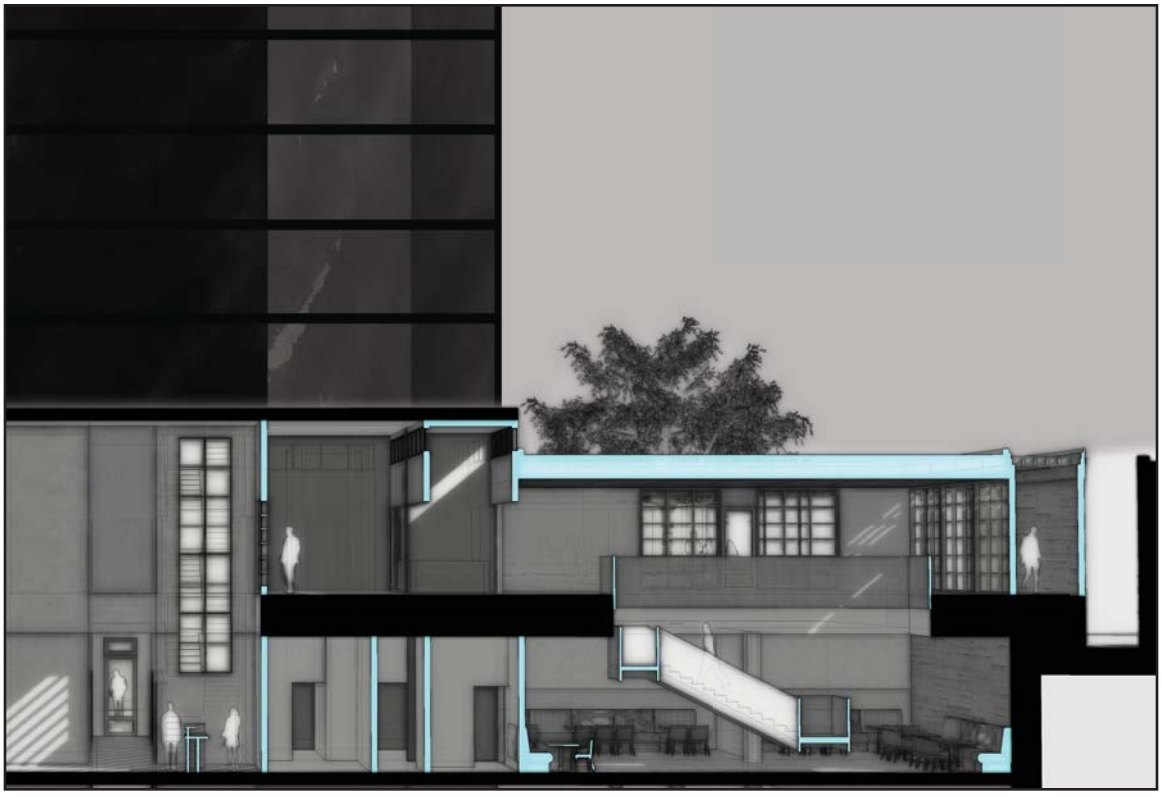


Fig. 142a. and 142b. Longitudinal section A of plinth. This section cut shows the variantion and interconnection betweenn indoor and outdoor spaces, between public and tower amenity space, and between old and new structure.

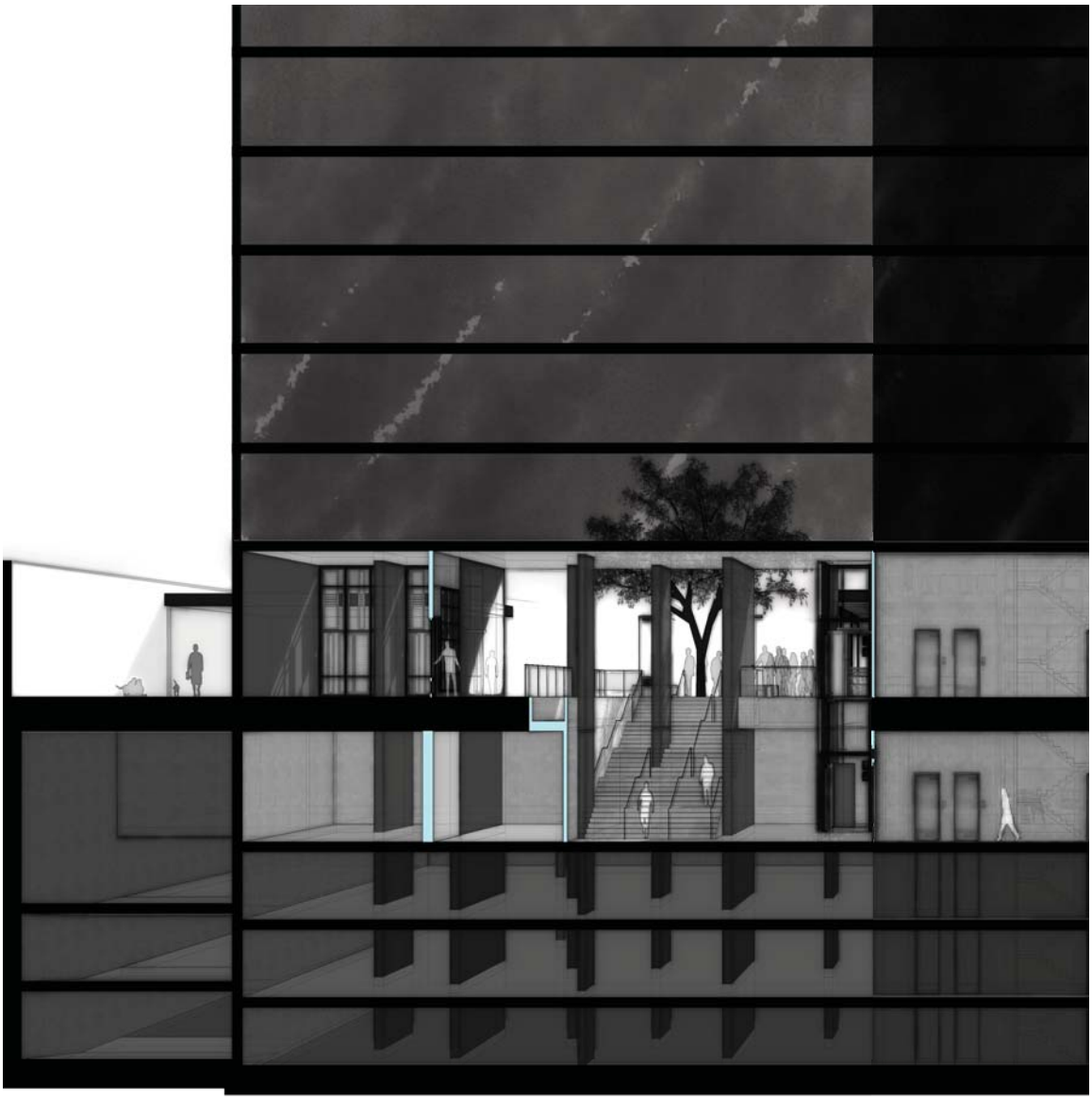


Fig. 143a. Longitudinal section B of the plinth showing public pedestrian path through New Metabolist plinth. By removing interior space at the base of the tower, intervention restores an openess true to the pilotis of the prototype, *Unité d'habitation* at Marseille.

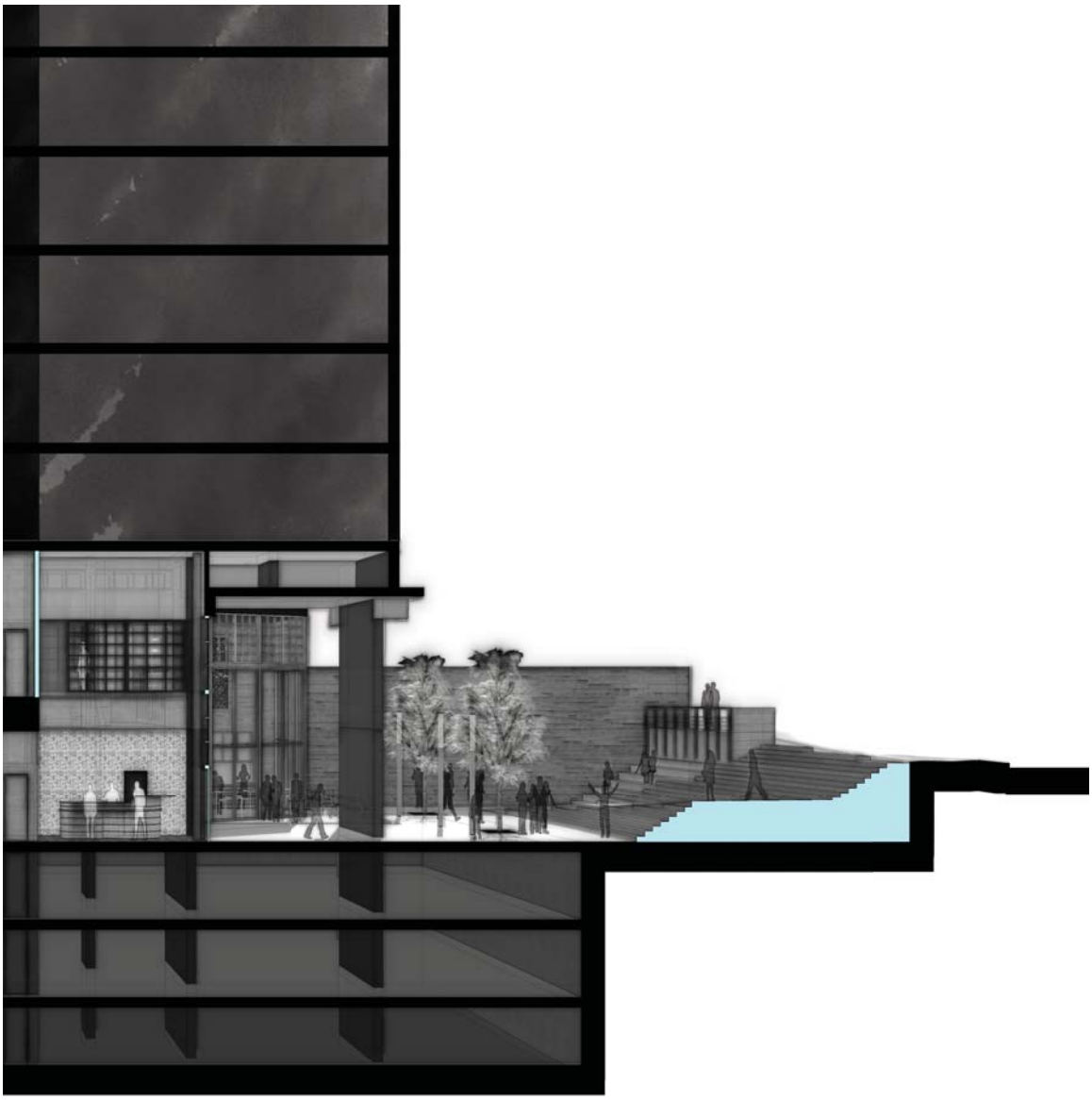


Fig. 143b.

Fig. 144. and 145. Above: Drawing showing plaza from Fenwick Street. Below: Drawing showing courtyard at Northeast terrace level.

ment.

New Metabolism: Structural Interventions

While the development of a new linking strategy within Fenwick is in some measure an attempt to overcome the existing structural logic of the building, there are certain parameters that dictate the size and orientation of any additions or cuts to the structure. These parameters were established in consultation with David Bowick P.Eng of Blackwell Structural Engineers. Broken into three component parts, slab, compression, and shear, the structural parameters produce a logic for intervention that supports large cuts to the plinth, fine-grained interventions at the base of the tower, and larger more permanent interventions near the top. Furthermore, the orientation of these interventions rotate from an East-West clipping strategy at the bottom, to a North-South cutting strategy near the top.

Slab

The concrete slab is the most flexible structural component of the typology. While providing resistance to lateral shear, the fact that the program requires a concrete slab roughly every ten feet of elevation means that there is more than adequate resistance built into every tower. Thus, up to eighty percent of interior slab material can be removed, provided that such cuts avoid leaving cantilevered sections; the cuts made in the floor slab should

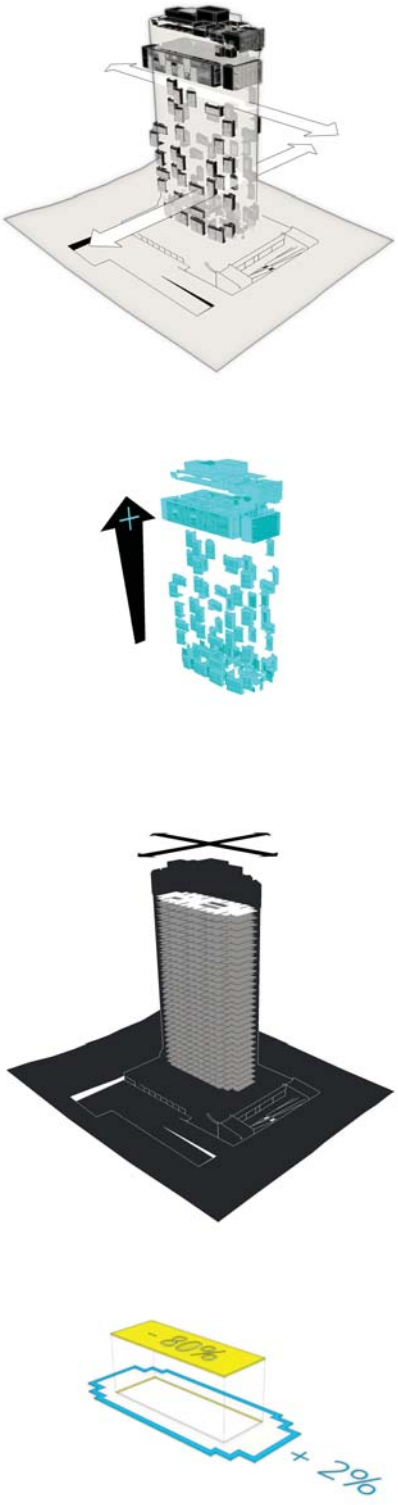


Fig. 146., 147., 148., and 149. Diagrams showing structural limits for new interventions. Top: Synthesis diagram showing that limits produce a shift in orientation and an increase in size as interventions proceed higher up the tower. Bottom: Structural limitations of intervening with existing floor slabs.

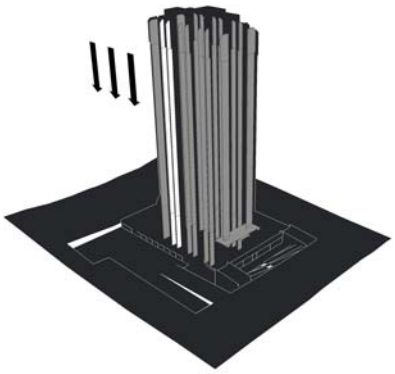
follow the column and beam grid as close as possible. Floor levels can also be increased by up to two percent without considerably changing the engineering performance of the tower. If floor areas were increased by a greater extent, any new inserts would need to be analyzed to ensure they do not produce excessive loads on the existing structure.

Compression

The structural columns working in compression cannot be touched or altered with transfer beams. In addition to the elevator and stairwell cores, this limitation significantly preserves the structural grid within the tower. This structural component also limits the possibility of removing the floor slab on either side of these columns, as this could potentially cause a loss of lateral stability and a risk of column buckling. In modifying the structure, it is therefore necessary to replace any removed resistance. The proposed "clipping" strategy outlined below provides this through the use of steel c-channels that cap the short ends of the exposed column, adding the necessary rigidity.

Shear

The most significant and recognizable characteristic of Fenwick Place is the structural fins that work to resist the shear force along the short axis of the tower. This structural feature is not only visually dominant, but enables the long and narrow profile of the tower. Since shear forces accumulate from



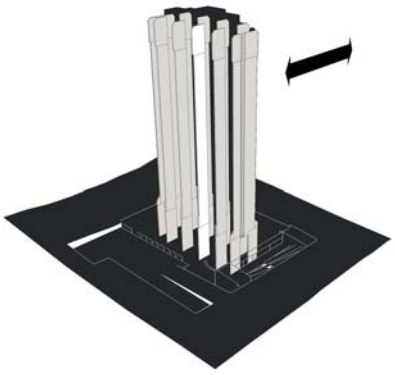


Fig. 150., 151., 152., and 153. Top: Structural limitations of intervening with existing compression members. Bottom: Structural limitations of intervening with existing shear members.

the top to the bottom of the tower, the fine depth required is actually much less the higher the elevation. This allows for lateral cuts of greater dimension as one progresses up the height of the tower. Interventions that occur at lower storeys can thus not be cut laterally into the structure, and must be "clipped" onto the fins in an East-West orientation. Interventions at the higher storeys, on the other hand, can cut into the fins, and can be are larger and oriented North-South.

New Metabolism: New Links

To redesign the tower typology, I propose three new links – clip, hinge, and bracket – which allow for new combinations and orientations of units.

Clip

The clip link is a groupform strategy based on minimal intervention to the existing structure. Fulfilling the need for greater idiosyncrasy or autonomy within the individual unit, and without requiring the expense or disruption of larger interventions, the bracket is the fastest life-cycle link, and is designed to be a spatial extension of the façade, like a generous dormer. Possible in two configurations, the bracket attaches to the existing structure via a steel L angle, and can either connect two adjacent units laterally or vertically. This expansion of the façade allows neighbours to share a common solarium or workspace, for adjacent units to be unified into one, or for a single unit to have an expanded amenity space. In permitting extended

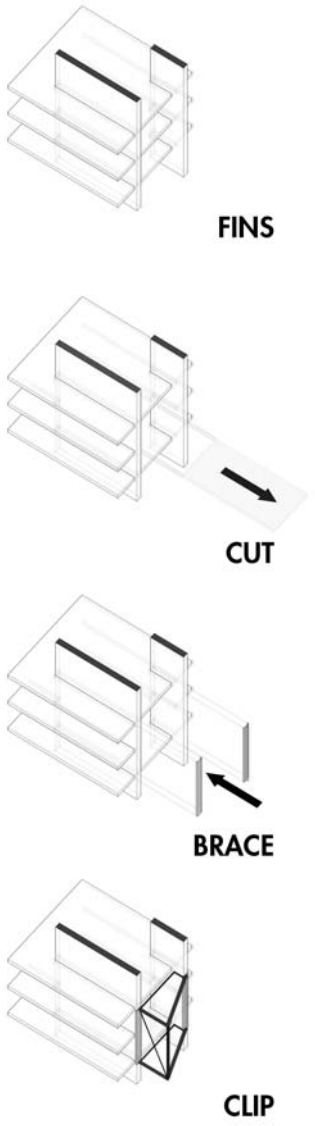


Fig. 154. Axonometric diagram showing the process of 'linking' new structure to Fenwick Place.

Studio

Fig. 155. Axonometric projection of 'clip' intervention. New double-height space allows for a greater range of possible use and introduces variety into the spatial conditions of the existing building, restoring the quality of double-height space found in the protoype, *Unité d'habitation* at Marseille. This link creates new visual and functional connecitons between floors and adds flexibility and variation to the standard living arrangements.

Louvers

Fig. 156. Perspective drawing of 'clip' interior, showing the visual connection between floors and the enhanced spatial and environmental qualities of double-height space. The space is depicted being used by a potter and gardener whose studio is also a private solarium that enhances the interest of the corridor and the building's facade.

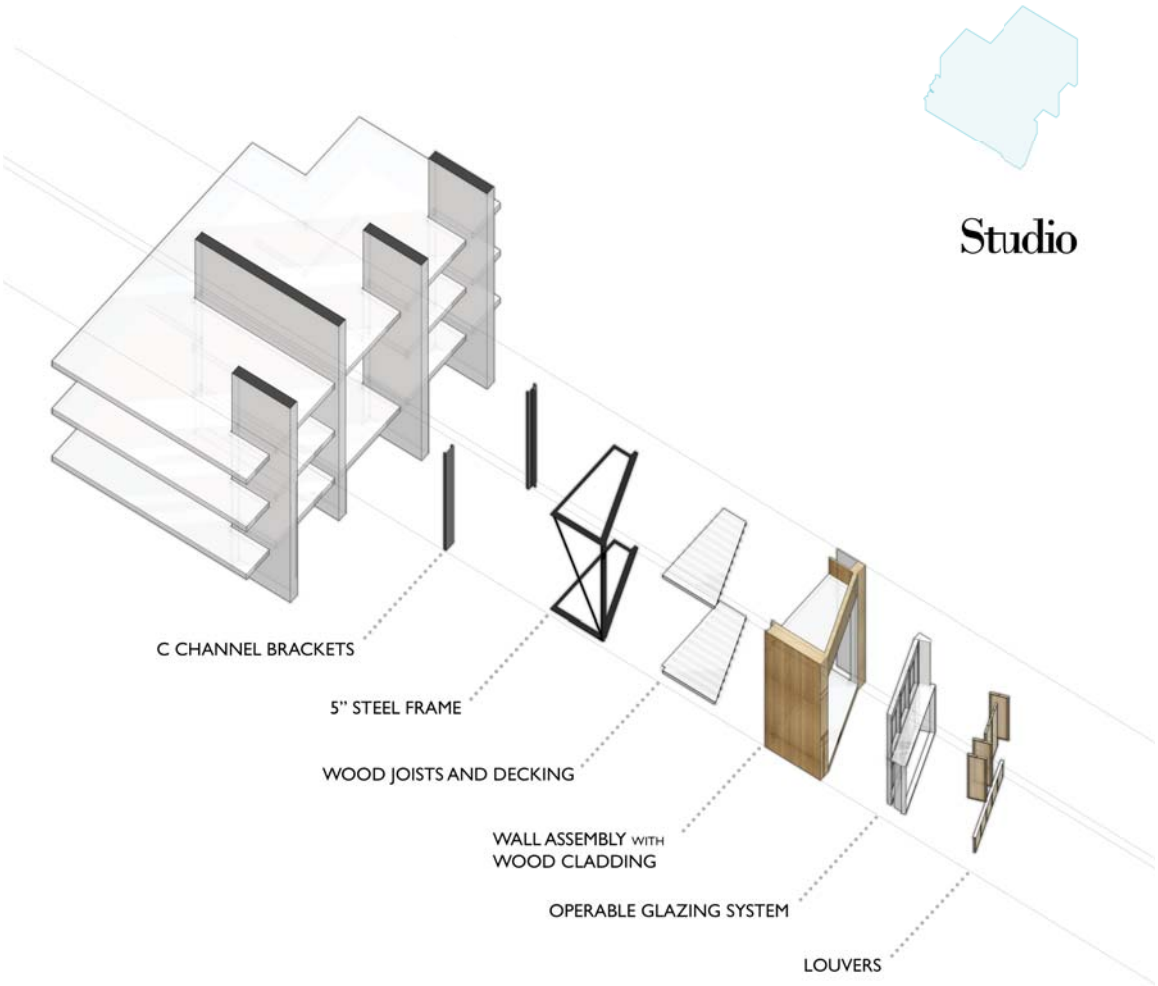
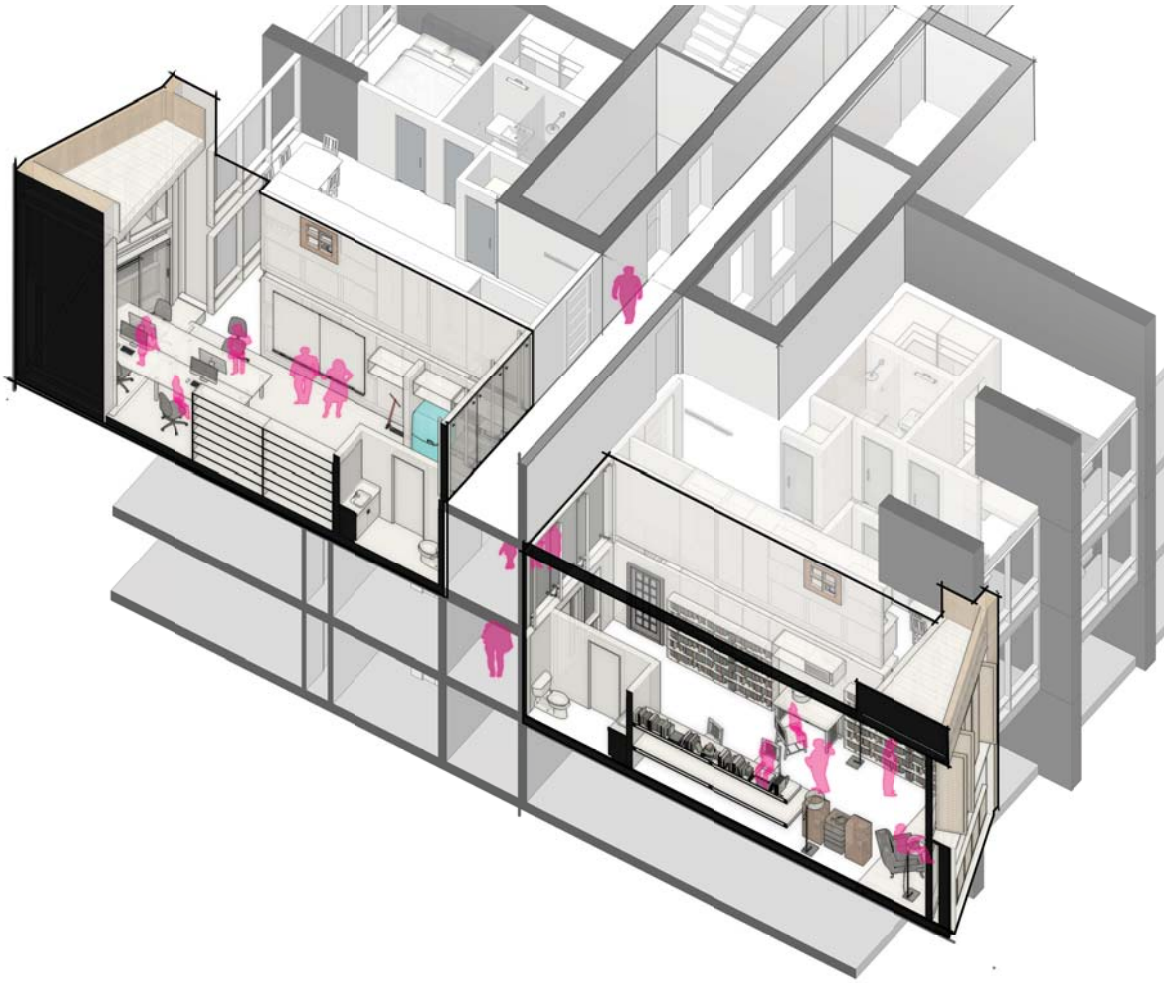


Fig. 157. Exploded axonometric drawing showing how the 'clip' intervention works. The c-channel attachement to the columns also reinforces against buckling where a floor slab has been removed.



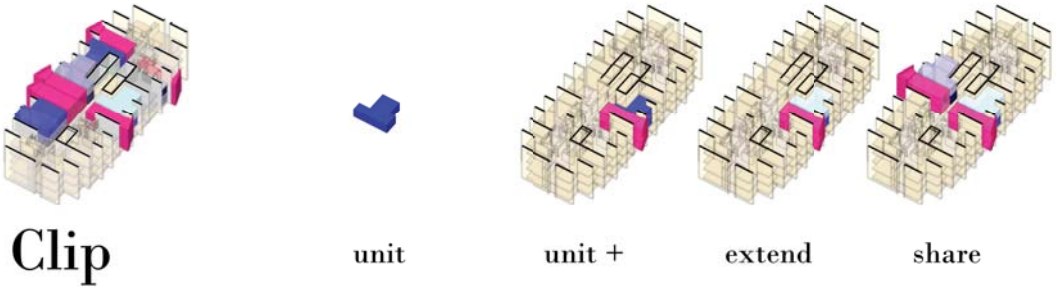
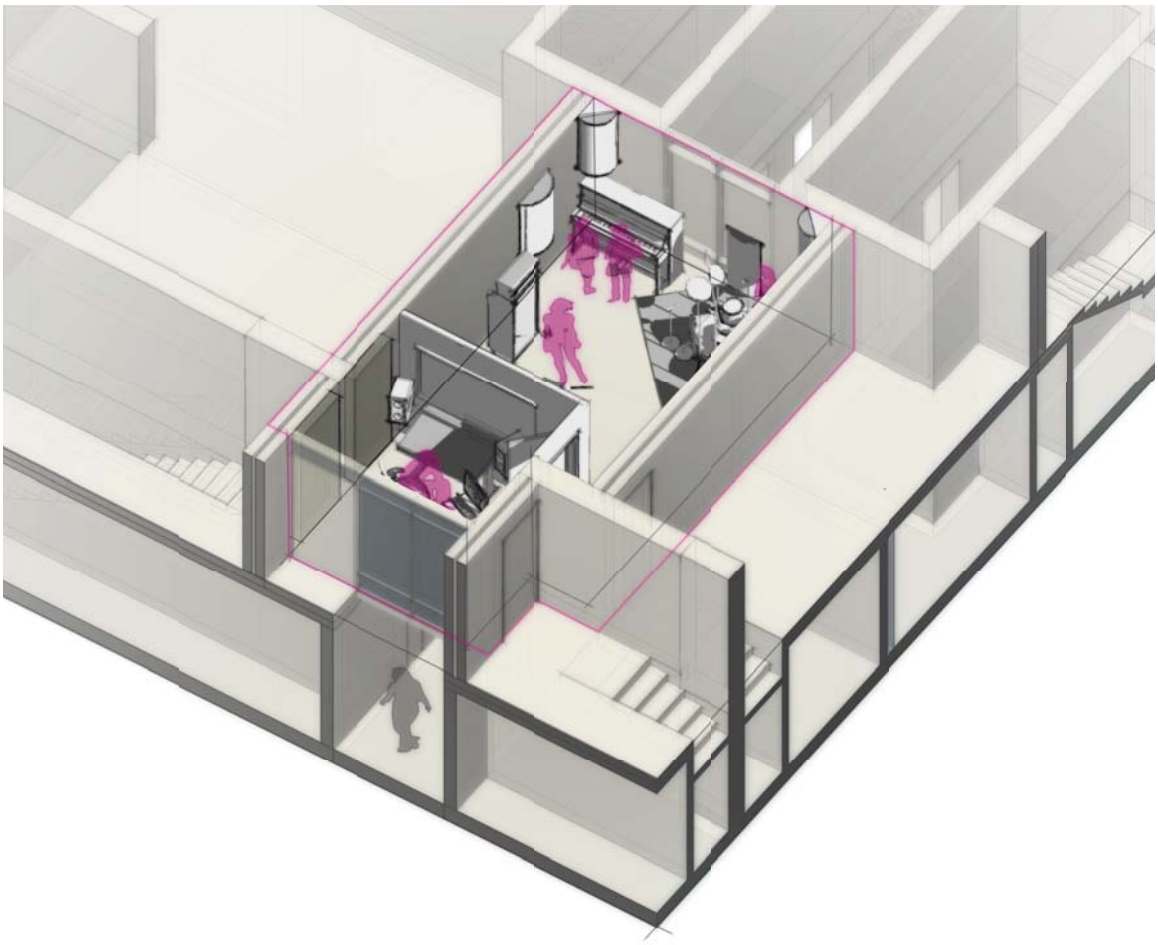


Fig. 158. Axonometric section of 'clip' intervention, showing how it can be linked together to create new social and spatial dynamics within Fenwick Place and become a groupform element within the building. Connecting units vertically, the 'clip' can become a new link in the building, allowing for units to expand, contract, and accommodate more complex social interactions.

family groups and relatives to create more meaningful and useful connections within the tower, this link possesses a social advantage, and also improves environmental conditions within respective units. It further allows for independent integration of contemporary technologies, such as modern air conditioning or energy collection, producing greater interactions between tenants and their environment.

Hinge

The hinge link employs a groupform strategy in which a whole floor-level corridor is sacrificed, and the related units are turned into maisonettes. In this strategy, the generic interior corridor becomes a double-height space punctuated by rooms that connect units across the corridor in various ways. These rooms, can be used as recreation rooms for larger families or workspaces for entrepreneurs and hobbyists. They can be shared by neighbours, or used to create larger configurations from two one-bedroom units, or they may simply be an additional utility space for a single unit. This link must be able to open and close to adjacent units depending on the needs of the tenants, ensuring that the open condition is made clear to those using it, and the closed condition is clear to those that are not. Acoustic separation is a critical factor in ensuring the success of this link. The party walls between link and unit are thus acoustically separated, whereas the new private amenity space within the link is situated above and below corri-



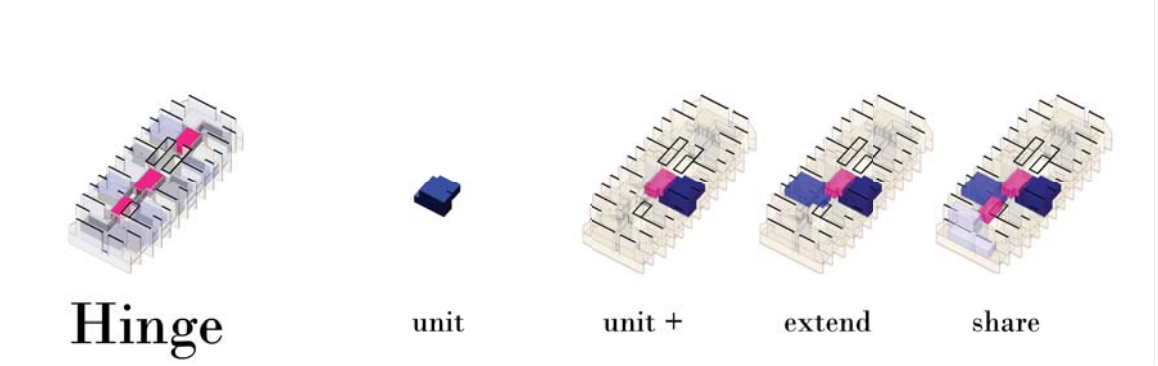


Fig. 159. Axonometric section of 'hinge' intervention, showing how it can be linked together to create new social and spatial dynamics within Fenwick Place and become a groupform element within the building. Connecting units across the corridor, the 'hinge' can become a new link in the building allowing for units to expand, contract, and accommodate more complex social interactions. The 'hinge' has the potential to restore dual-aspect unit arrangements to the building, one of the desirable characteristics of *Unité d'habitation* at Marseille.

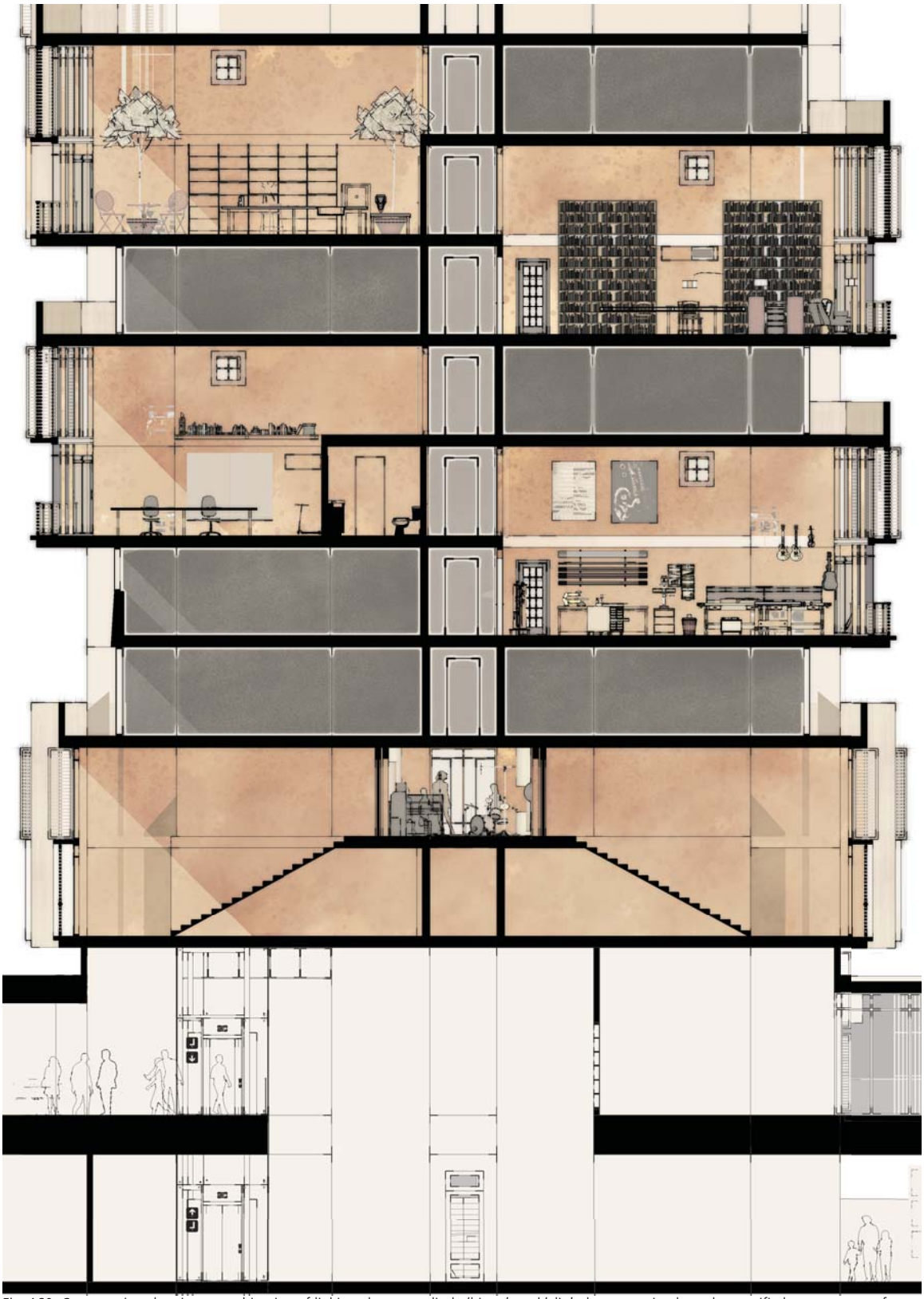


Fig. 160. Cross section showing a combination of linking elements, plinth, 'hinge', and 'clip', demonstrating how the stratified arrangement of space and use within a standard residential tower structure can be interupted by new linking elements. Such combinations demonstrate the possibility for physcial and social vatiation. In this drawing, a potter, writer, small technology firm, luthier, and local band, (from top to bottom) are all depicted finding suitable accommodation within Fenwick Place.

dor space, where acoustics are less likely to affect adjacent units.

Grafts

The graft is a groupform strategy based on a more permanent intervention within the structure. By cutting away portions of the existing structure to create larger spaces and alternative orientations, the graft creates physical openings and gaps in the existing framework. These openings, at the scale of the individual unit, express the multi-level dimensionality of the existing structure. Cut into the building according to a pattern of ruin and following the vacancy rates of units, graft spaces convert areas that are least desirable into new expressions of tower life. Viewed from the corridor, the graft creates the potential to look up at a two-storey courtyard, where a neighbour is busy potting tomato plants, and to look down onto a similar two-storey opening, this one used by a neighbour who keeps bees. Distributed in a shifting pattern throughout the building, these gaps allow for new

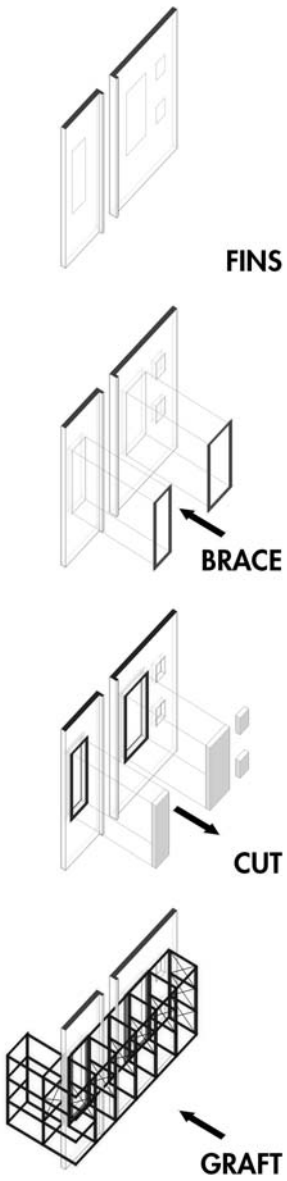


Fig. 161. Axonometric diagram showing the process of 'grafting' new structure to Fenwick Place.

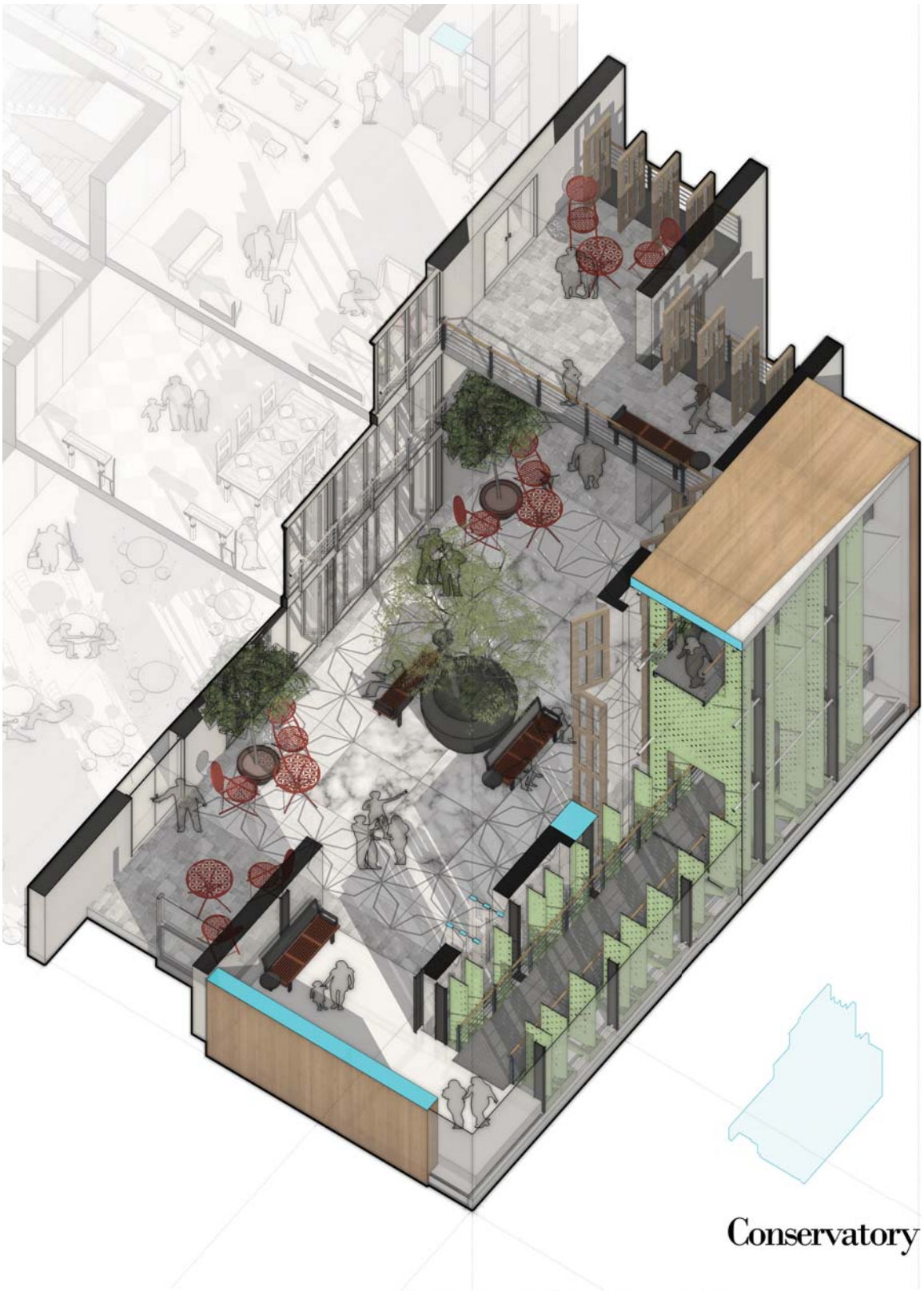


Fig. 162. Axonometric projection of 'graft' intervention. Higher up the tower, this intervention takes advantage of the possibility of cutting into the existing shear walls. Creating larger spaces, this intervention accommodates change not through variation but through atmosphere and an enhaced social environment. Aggregating the activity from the three adjacent floors, and capable of drawing public interest from the plinth, the 'graft' link creates a greater density of social interaction.

Fig. 163. Perspective drawing of 'graft' interior, showing the visual connection between floors and the enhanced spatial and environmental qualities of a triple-height space. The space is depicted being used as a conservatory for plants, an amenity for the residents of the adjacent assisted -living apartments, which extend the summer garden and restore an enjoyment of nature which may be lost due to poor mobility. This amenity will also enhance more general amenities and business, creating the potential for a more natural and dynamic inter-generational melting pot.

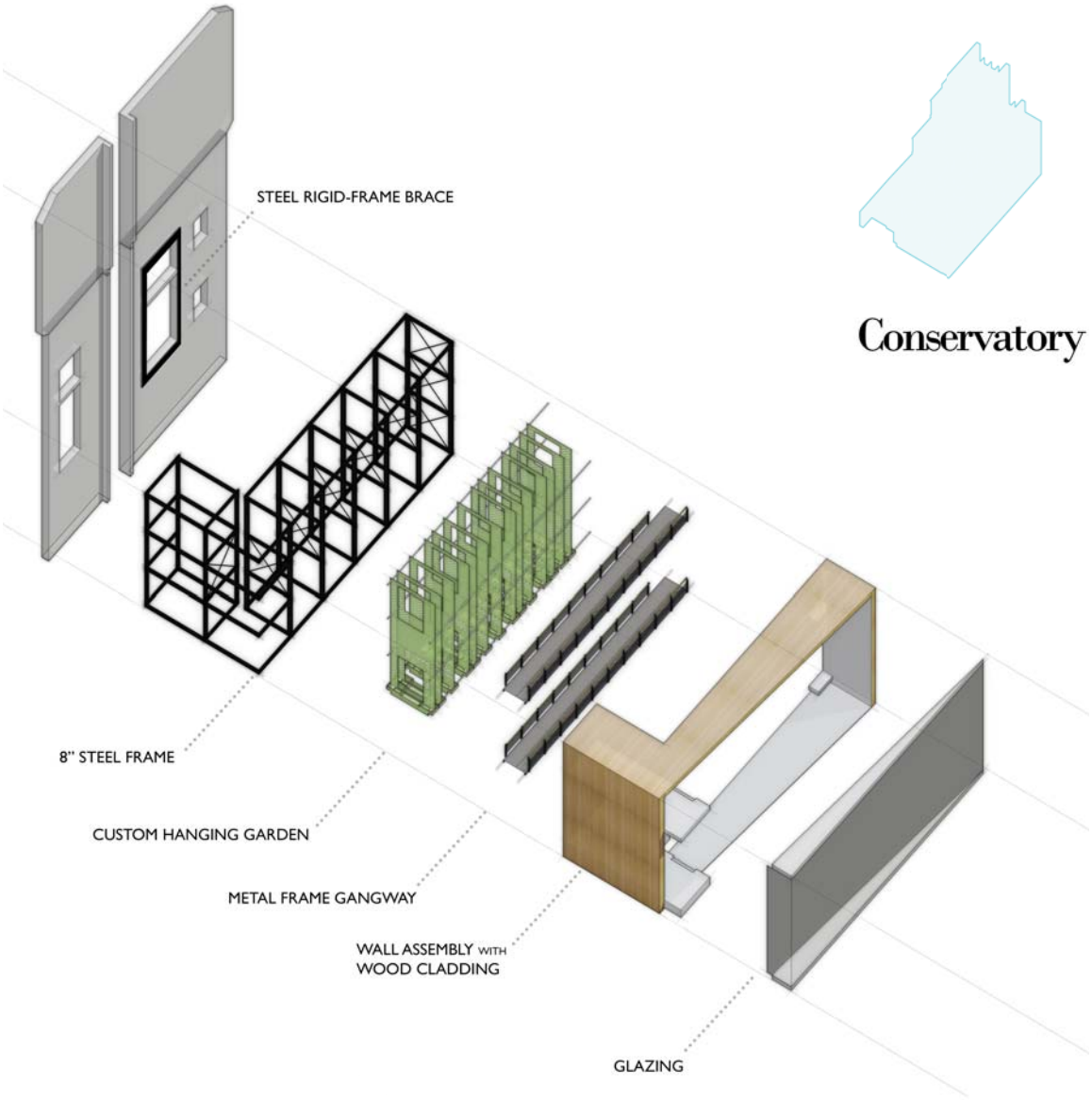


Fig. 164. Exploded axonometric drawing showing how the 'graft' intervention works. A rigid steel frame is bolted to the existing shear wall, then the area of concrete within the frame is removed and the new structural steel frame is attached.

Section C

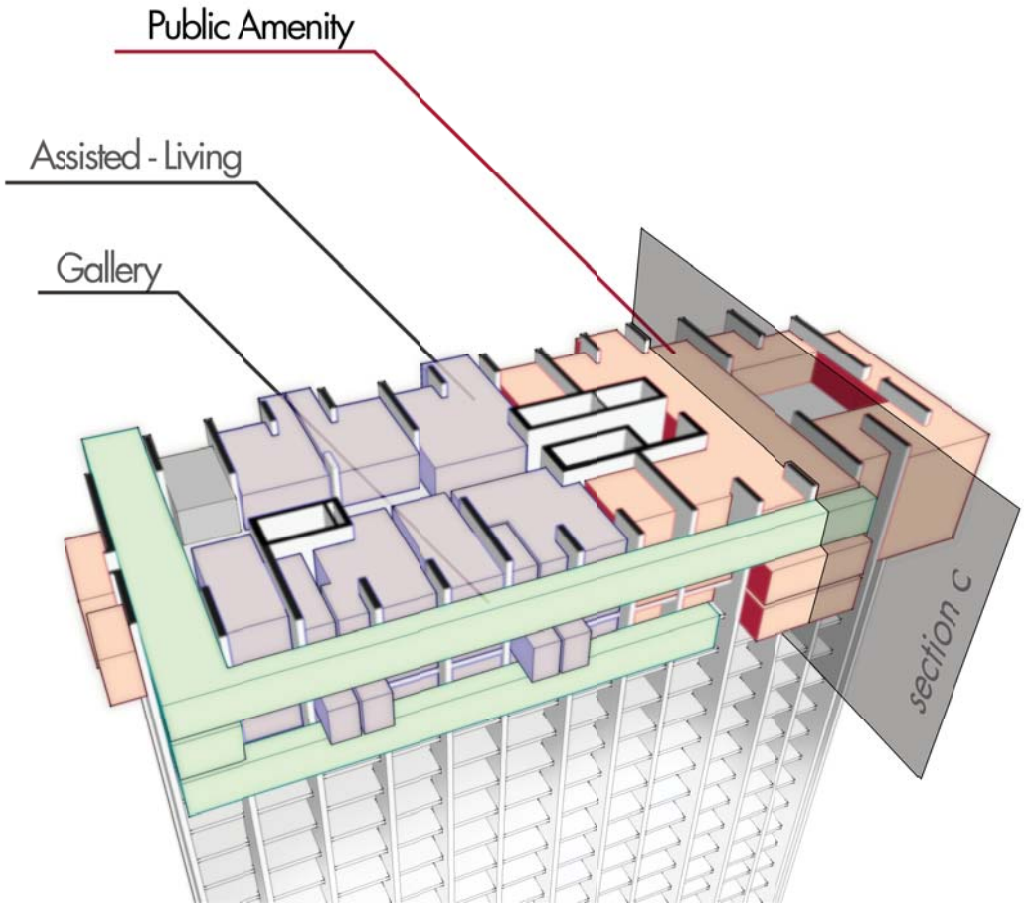
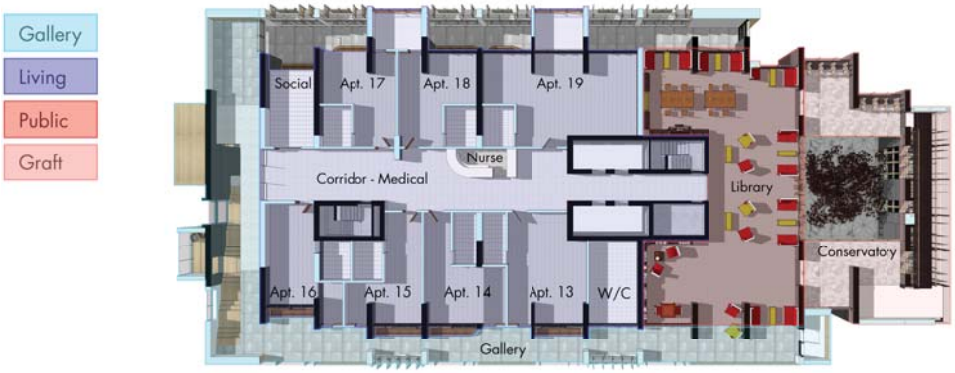
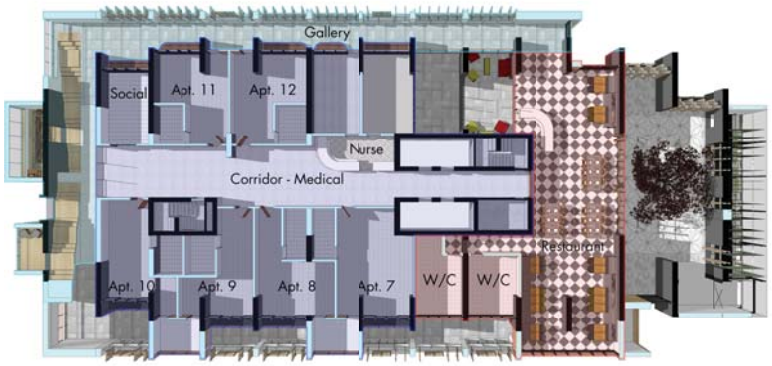


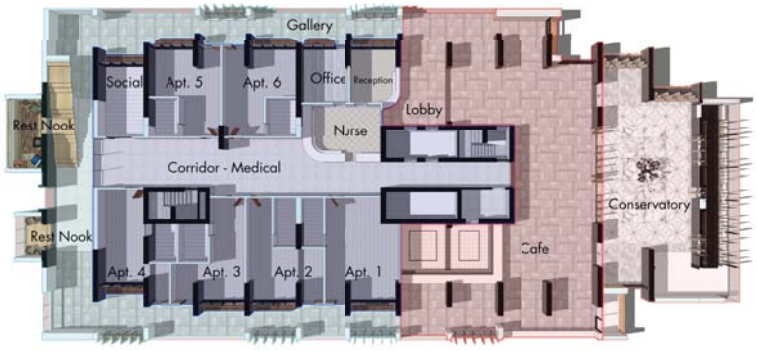
Fig. 165. Gallery level section, showing the public amenity space adjacent to the grafted conservatory space.



GALLERY LEVEL 3



GALLERY LEVEL 2



GALLERY LEVEL 1

Fig. 166. Sectional plans of the 'graft' level. The conservatory (on the right) is connected to three different public amenities, a cafe, a restaurant, and a library (from bottom to top), which are adjacent to the assisted-living appartments. A long gallery connects all these areas, external to the existing structure, creating a 'street in the sky' condition and restoring a desirable condition of the prototype *Unité d'habitation* at Marseille. This new pedestrian circulation gives tenants a street front to meet vistors and neighbours, preserving their dignity while the existing corridor is used primarily for nursing needs, which benefit from its compact effeciency.

configurations of units, as well as greater experiences and interactions, emphasizing the multi-dimensionality of the new residential tower.

New Metabolism: Environmental and Material Considerations

Environment

The current orientation of Fenwick Place was the result of planning directives that required the building footprint to be orthogonal to the street. The architect explains that no consideration was made for daylighting or solar orientation, and that the East-West aspect of the building was unintended. Relying on passive ventilation and with little environmental control within the units, this East-West orientation means that those that face West suffer from solar gain and overheating, despite the structural fins that reduce the amount of light entering each unit by casting vertical shadows. A sun-hours analysis of the façade further demonstrates that it is the South aspect of the building which gets the majority of the light; yet this is not exploited, and the South face features a blank wall.

The interventions and insertions of a new Metabolist approach can remedy these conditions. By incorporating elements such as louvers and brise-soleil, and by making double-height cuts into the building, light can be drawn further into the units, and shade can be provided as required. These new spaces, used as solariums, nurseries, and green-

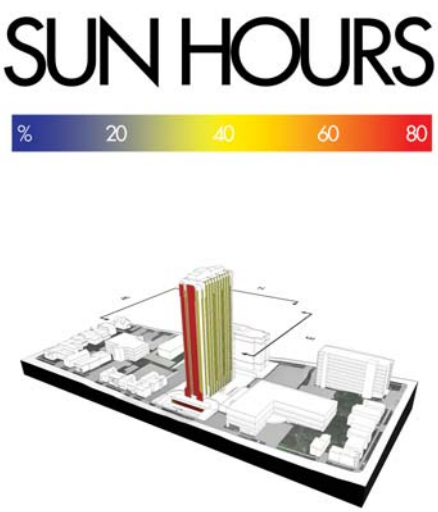


Fig. 166. Diagramatic key to sun hours study below.

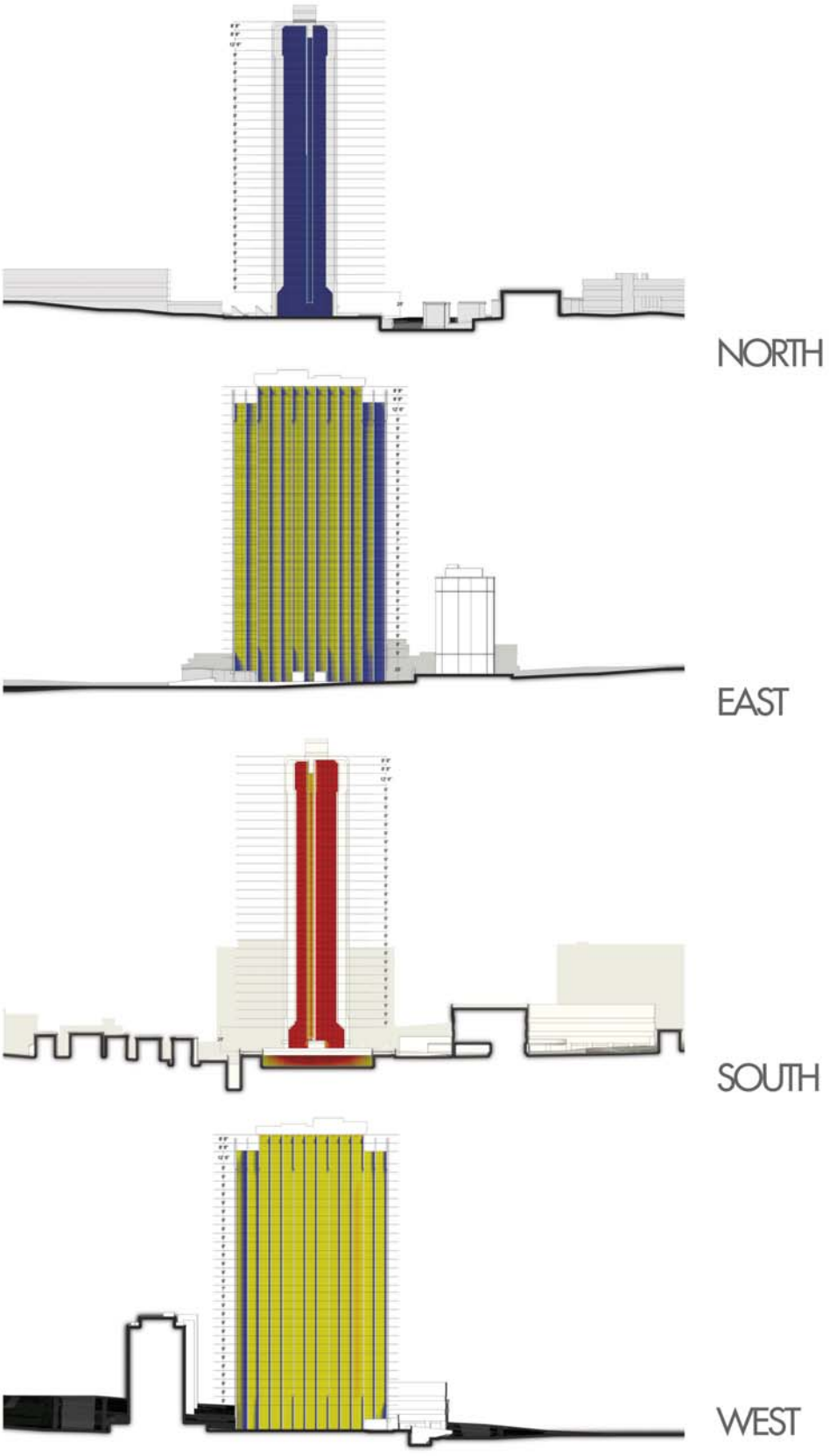


Fig. 168. Sequence of elevations showing the percentage of sun hours over the course of a year. Notably, the blank facade facing south gets the most sunlight, while the structural fins cast shadows onto residential units, which enjoy either morning or evening sun exposure.

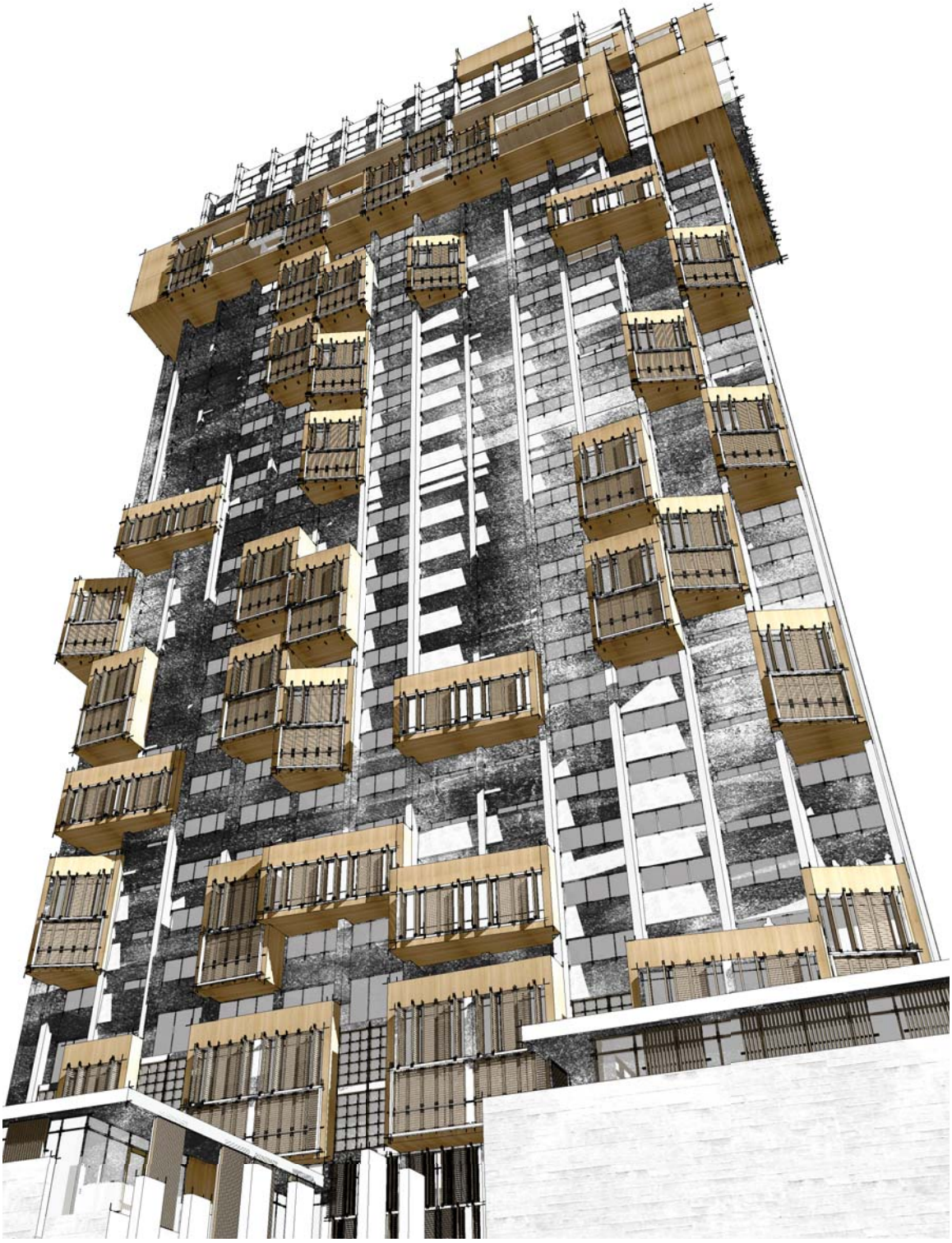


Fig. 169. Perspective drawing showing material and texture of existing structure and new groupform intervention. The 'permanent' and monolithic quality of the baton brut is constrasted by the organic quality and aggregate form of the wood-clad inserts.

Fig. 170. Model of fabric sails used as a trellis in the conservatory. Emphasizing a counterpoint to the monolithic cast-concrete fins of Fenwick Place, this trellis design is intented to create a dynamic matrix for growing climbing and creeping plants. This photographic study shows the variation of atmosphere and shadows that such a system could produce.

houses, take advantage of this solar exposure. Furthermore, by linking smaller units together across the building via the hinge, residents will be able to enjoy dual aspect light exposure, and gain greater control and room for variation within the tower.

Material

Whereas the existing structure of Fenwick employs un-faced concrete as part of a brutalist aesthetic, intended to assert the specificity of its location and the monolithic integrity of industrial forces, the new Metabolist inserts both acknowledge and contrast with this base structure. New interventions employ organic materials that are assembled, show processes of ageing, and can be easily maintained and replaced. Principally made of steel as it can be reclaimed and repurposed, the inserts will also feature wood panel cladding and metal flashing, elements that can be integrated into the existing façade at the joins between asbestos panels.

New Metabolism: A Future for Fenwick?

While the new Metabolist approach outlined here hopes to fulfill the ideals of organic growth that Fumihiko Maki and the Metabolists theorized in the 1960s, it also restores many of the socially-oriented amenities that Le Corbusier included in his prototypical *Unité d'habitation*, amenities which have been discarded in the generations of towers that followed due to forces of mass-production

and marketing. The attention to light in *Unité*, and the use of brise-soleil, double-height social spaces, and dual-aspect units, for example, are key features of the new Metabolist links proposed above. Le Corbusier's attention to the acoustic separation of units through the use of lead dampening pads that connect the steel-framed units to the concrete-slab framework, also provides inspiration for new insertions, particularly in the hinge link. Even the consideration for variation in *Unité's* design, while based on a standardized ideal of living, acknowledges an idea that life is various and requires a variety of spaces, a notion central to the new Metabolist approach. By utilizing Metabolist principles which suggested that human interactions could perfect the machine, new Metabolisms seek to reverse the progress of the machine-for-living concept, winnowed from Le Corbusier's ideal to a streamlined structural framework that resists variety, idiosyncrasy, and sociability.

For Fenwick and other residential tower structures of its kind, designing for change around spatial and social links, including the growing demand for live/work space, allows for greater idiosyncrasy and diversity at the scale of the individual unit, and provides a means for individuals to adjust their living space in ways unique to their culture or lifestyle. At a collective scale, individual elements can aggregate into multi-generational melting pots through communal spaces including long sky galleries, assisted living accommodations, community gardens, cafes, and public spas. Ultimately, these

responsive elements will generate new adaptive urban forms, grafted to and springing from the declining megastructure, capable of expressing the potential for renewed growth and utopian ideas based on cycles of change. However, even as these utopias are inaugurated, they do not preclude the needs and desires of the future city, and new responses and subsequent overgrowth remain latently possible.

The new Metabolist building will live, like a vein of adaptability, within the framework of the existing structure. Over time, it will grow in response to new demands and take advantage of new areas of ruin and dilapidation, in a gradual process of creating and seeding gaps and openings within the structure. Introducing groupform elements into residential towers therefore allows the overall image and form of the building to adapt to larger cultural evolutions, all while maintaining its symbolic and functional meaning within the context of the city.

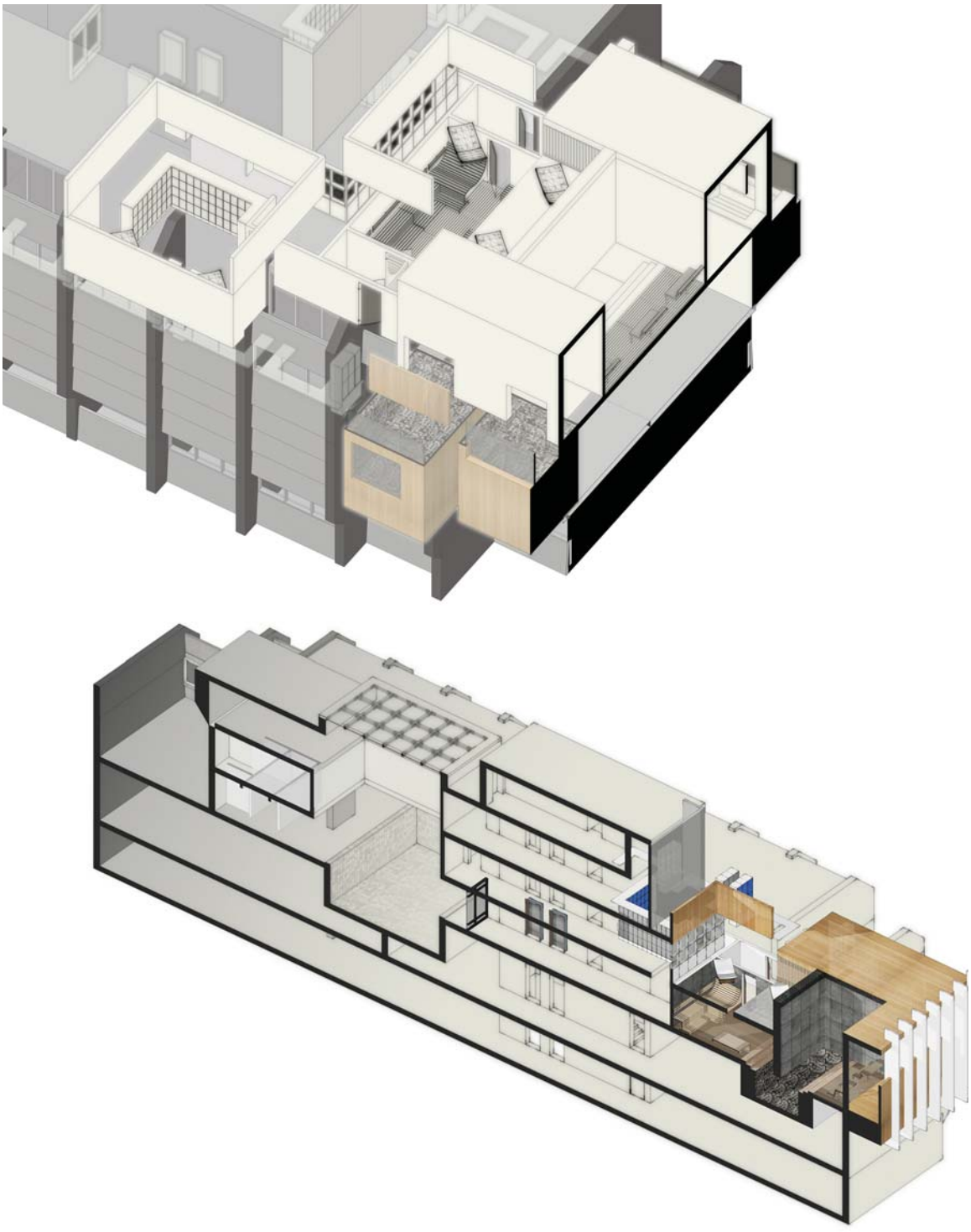


Fig. 171. Axonometric drawing showing pool level and additional fog spa. Emphasizing the dissolution between object and atmosphere, inside and outside, this amenity space is meant to catyllize the social and generational range of people living within Fenwick Place.

CHAPTER 5: CONCLUSION: THE PROBLEM WITH UTOPIA

In his historical survey of the concept of utopia in western culture, Franco Borsi observes how utopian communities are paradoxically doomed to fail. Time and again, utopias exist in either one of two possible states: as hopelessly unfeasible fantasies, the effects of which are indirect at best, or, in the rare instances when utopian ideals are realized, in circumstances where the best intentions are contradicted by their outcomes and prove to be ineffectual or even dystopian in practice. Thus, argues Borsi, "the history of utopia is the history of constantly disappointed yet ever-tenacious hope."[40]

Borsi's account suggests that utopia is an either/or proposition: either history ends with the realization of a world perfected for human society, or it persists in perpetual disillusionment and moral entropy. Either utopia is possible or it is not, what value is there in half measures? As he states, the issue is "the gap between words and actions, between historical expectations and historical possibilities."[41] Indeed, Borsi suggests that the majority of utopian efforts are predicated on cultural values that are so specific to a time and place that they reveal almost no universal value to humanity as a whole. However, to condemn utopia because of the contradiction between its aspira-

40 Franco Borsi, *Architecture and Utopia* (Paris: Hazan, 1997), 41.

41 Ibid., 20.

tion and its realization, I suggest, is to misunderstand the value of its inherent paradox.

Borsi's understanding of utopia preferences the outcome over the process, and consequently wants a verifiable result rather than a persistent possibility. However, if Borsi's assumptions were reversed and utopia was conceived instead as a process and not a result, then the historical evidence that confirms his disillusionment, from the failings of Plato's republic to those of the twentieth century, could instead be regarded as evidence of a continual process of finding gaps in the established order of things to make way for the next generation and a newer world.

The distinction between utopia as a solution or a process is a key distinction in modernist and Metabolist ideas about perfecting society. Le Corbusier's suggestion that platonic forms of architecture and social organization are latent in the forces of the machine, and can be brought about through the mass production of residential towers, is predicated upon the belief that utopia is attainable. In contrast, Metabolist ideas emphasize growth and destruction as continual processes, and suggest that each generation must leave room for the participation of the next. These ideals are predicated on the notion that utopia is a process, not a place, but a gap that ensures a continuation of society and culture. Yet both Modernist and Metabolist ideas are examples of new ideas that arose from the dramatic historical and social gaps left by in-

dustrialization and World War II.

Understanding these utopian impulses allows for a better understanding of the cultural lifespan of the residential tower, and more specifically, illuminates how a building such as Fenwick Place can go from being a forceful expression of brutalist ideals to one characterized as an architectural crime against humanity. If we judge Fenwick Place as the ideal solution to society's problems, because its efficient arrangement of private lives and communal activity are deftly given the dignified and honest expression of brutalist styling, it is easy to despise it for attempting to submit today's culture to parameters set in the past. However, if we instead judge Fenwick Place as a monument to the ideal urban life of the 1960s, which now presents an opening for reinterpretation and modification, it is not only possible that future generations can create their own meaningful spaces within this ruin, but that in doing so they will find new relationships to previous cultural ideas and revitalize past meanings, even those as imperfect as Fenwick's brutalist styling.

Both Le Corbusier's aspirations for the Unité d'habitation, and the Metabolist Movement's desire to integrate organic processes into urban design, are understood and dismissed as utopian episodes in architectural history. In their own way, each advocated for an ideal society, and had the confidence in the power of design to effect meaningful social change. While neither succeed in ful-

filling their agendas in their own time, I do not subscribe to Franco Borsi's view that this proves the ineffectiveness of their ideas, and thereby the impotence of architectural utopianism. Rather, the reverse is true. Modernist and Metabolist ideas, even in their ruined or abandoned state, leave a framework that enriches the potential and possibility for future utopias, if only we continue the process and find the gaps in our own time.

Utopia is primarily a cultural space, it is the necessary blank in our history that allows for the participation of new generations and alternative ideas. However, considering its role in inspiring new architecture, as for Le Corbusier at a time of physical and cultural upheaval, it must also be valued and protected as a physical blank space in our built environment. Such an acknowledgment would diffuse the desire to achieve completeness in architectural forms, and limit the influence of hubristic ideas, as each utopian effort would have to acknowledge its potential to become dystopian, and thereby leave space for its own subversion and regeneration. The Metabolists, in drawing upon Shinto traditions and the example of the Ise Shrine, asserted the vitality of leaving space as an invitation to future generations. This attitude towards change allows us not only to redeem the declining urban towers we have inherited, but to provide a better future for those that we make today.

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