From Industrial District to Interface City

Re-imagining the Corrugated Metal Sheds of Taiwan

by
Yu-Chu Su

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Author's Declaration

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

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

Abstract

Manufacturing industries are on the decline in Taiwan, leaving many of the island's corrugated metal warehouses and factories at the risk of being replaced by more profitable high-rise towers. The result is a gentrification of neighbourhoods, the consolidation of capital, and the exacerbation of inequality between working classes. Additionally, in the context of Taiwan's economically sustained status quo, the spaces of production play a critical role in manifesting the autonomy and identity of the island. The corrugated metal shed, as an architectural typology, has not only facilitated Taiwan's economic transformation but, through its widespread construction, it has since become an integral part of the island's urban and rural landscapes. It is in this context that this thesis seeks to re-imagine our current modes of land speculation and asks: how should the redevelopment of corrugated metal sheds in Taiwan respond not only to changing economic conditions but also vernacular-sociocultural practices and sustainable socio-political objectives?

Building on an existing conversation between the global and the local within architectural discourse today, the research references key political and urban theory texts, and use mapping, drawing, modelling, and photographs to investigate the role of architecture as both the agent of a globalized economy and the locus of local identities. In the design work, the thesis focuses on an incremental process of urban redevelopment to propose a new type of industrial district – an *Interface City*. The proposal re-imagines the site of Wenzhai Zun, located on the outskirts of Taipei, into an intersection point between global economic city-regions, between domestic and productive life, between industrial and post-industrial work, and between vernacular built environments and universal building types. The aim of the *Interface City* is to create not only a viable economy but also a more equitable society. Ultimately, the objective of this thesis is to use the context of Taiwan as a testing ground for new design processes and solutions in the face of deindustrializing cities around the world today.

Acknowledgements

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Introduction

As one takes the airport shuttle connecting Taoyuan International Airport to the city of Taipei, the train line passes through the area known as Wenzhai Zun, just before entering the city. At this point, the windows of the train carriages open up to a view of seemingly endless waves of corrugated metal sheds, rolling towards the foothills of the Linkou Plateau on the one side and the high-rises of the city to the other side.

Wenzhai Zun is an industrial district made up of corrugated metal sheds, however these are under threat. A redevelopment plan which sees the complete erasure of its existing industrial fabric had just been approved nine months prior to this writing, in March of 2020.[1] In one part of the district, several existing sheds and their businesses have already been removed and portions of streets have been realigned. As per the plan, high-rise residential towers have been built in their places, but the units are unaffordable to most of those residents that will be displaced.[2] For the existing businesses in the district, the city government has promised relocation, but the newly allocated lands on the city-peripheries disperse local business partnerships and communities and lack the infrastructural connections that Wenzhai Zun offers.[3] Many business owners are also wary of the rent increase associated with their relocation sites. For the small and medium enterprise (SME) manufacturing industries found at Wenzhai Zun, many of which operate on thin margins, the estimated one-fold rent increase could affect the viability of their entire operations.[4]

From the City's point of view, due to the airport shuttle line passing directly through Wenzhai Zun, the unsightly view of factories operating in worn down sheds is considered detrimental to the image of Taipei and Taiwan.[5] And from the market's

Figure I.1. Wenzhai Zun Backdropped by the Linkou Plateau
Figure I.2. New High-rise Developments in Wenzhai Zun

point of view, the warehouses and factories that make up the district are no longer profitable enough to warrant the use of valuable urban lands such as Wenzhai Zun. Indeed, traditional, labor-intensive, manufacturing industries are on the decline in Taiwan. From 1986 to 2016, manufacturing's share of the island's total employment decreased from 34 percent to 27 percent, and its share of the island's total GDP decreased from 39 percent to 31 percent – even while taking into account the growth of high-tech manufacturing sectors such as in semiconductor fabrication.[6] At the same time, the service industry's share of employment increased from 41 percent to 59 percent, and its share of GDP increased from 47 percent to 63 percent.[7] As such, driven by the need for capital accumulation, it comes as no surprise that cities such as Taipei and New Taipei City are increasingly pushing industrial districts out of urban centers and into the peripheries to redevelop industrial lands into more profitable residential neighbourhoods and post-industrial workspaces. But the redevelopments plan which has been proposed is problematic in that it takes a *tabula rasa* approach. When completed, the plan will increase the amount of rentable space but result in the gentrification of neighbourhoods, the exacerbation of inequality between working classes, and the loss of industrial vernacular-built environments manifested in the corrugated metal sheds. Additionally, in the context of the Taiwanese *status quo*, the businesses at Wenzhai Zun represent a lineage of the manufacturing industries that have been the backbone the Taiwanese economy since the 1960s, and manifest in the autonomy and identity of the Taiwanese polity. Therefore, they should not simply be erased.

It is in this context that this thesis builds on the larger discourse around deindustrializing cities and investigates the role of architecture and urbanism as the agent of a globalized economy and the locus of local identities. By using the site of Wenzhai Zun as a testing ground, the research examines alternative ways in which urban design can approach redevelopment and asks: how should the redevelopment of Taiwan's corrugated metal sheds respond not only to changing economic conditions but also equitable development and existing vernacular built environments?

The thesis is structured into three parts. In *Part One – The Corrugated Metal Sheds in and as Context*, the research traces the political-economic context in which Taiwan is situated to reveal the importance of industry and industrial spaces to the Taiwanese polity. It discusses how the corrugated metal shed has responded to the contexts of its times, and in turn, proliferated to become a vernacular of the Taiwanese urban and rural landscape. The section includes a documentation and analysis of the spatial characteristics of Wenzhai Zun to uncover how the typical industrial district, made up of corrugated metal sheds, reflect a set of intricate relationships with local socio-economic practices. By drawing on key urban theory texts, I argue that any redevelopment of Wenzhai Zun must consider the roles in which industry and corrugated metal sheds have played in reflecting and shaping Taiwanese contexts.

In *Part Two – Towards a Design Solution: An Interface City*, I return to the thesis question and begin to formulate a design solution based on a number of key architectural, political, and economic theory texts. By addressing the three layers of the Wenzhai Zun problem – manufacturing decline, land speculation and gentrification, and the loss of vernacular built environments – I build the theoretical framework for a design solution based on integration as opposed to the division and exclusion. Expanding on a term used by Jinn-Yuh Hsu in his essay *The Evolution of Economic Base: From Industrial City, Post-industrial City to Interface City*, where it is used strictly in an economic sense, I also call this integrative urban design solution *the Interface City*.

Lastly, in *Part Three – Design Application: A Counter-Master Plan*, the thesis culminates in the application of the *Interface City* through a counter-master plan proposal for the site of Wenzhai Zun. The proposal takes a portion of Wenzhai Zun as a testing ground to explore alternative design processes and solutions – and it has three parts. Firstly, *the (Lack of a) Plan* outlines the overall site-plan strategy and acts as the foundational framework for the counter-master plan as a whole. Secondly, a set of *Strategies and Tactics* regulate the "rules of engagement" for individual lots within the plan as they densify and introduce mixed-use programs. Lastly, the final component of the thesis includes three speculative building designs on threes lots within the counter-master plan. The objective is to illustrate that architecture and urban design can respond to changing economic paradigms while still facilitating equitable growth and local socio-cultural systems.

Figure I.3. High-rise Residential Towers at Wenzhai Zun

1. History and Context:
The Corrugated Metal Shed

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The Corrugated Metal Shed

Industry and Industrial Spaces in the Taiwanese Context

Like many other countries of East and South-East Asia in the latter half of the twentieth century, Taiwan's rapid industrialization was propelled in large parts by export-led-growths through sub-contact manufacturing industries. Throughout the 1960s and 70s, Taiwanese industries produced various simple goods such as textiles, plastics, and machineries – and from the 1980s onwards, complex electronic products and components grew to become the primary products of export.[8] To give a brief overview, in 1983, Taiwan exported 520 million pairs of plastic shoes, one for every nine persons in the world; 3.16 million sewing machines, accounting for 80 percent of the world's sewing machine exporting market; and 80 million bicycle tires, accounting for 50 percent of the product's world exporting market – just to name a few.[9] Furthermore, throughout various points of the 1990s, Taiwan was the top producer in world for personal computers, keyboard, motherboard, monitors and the like.[10] Anecdotally, in the film Armageddon (1998), Russian cosmonaut Lev Andropov notably said with regards to computer components aboard an American spaceship, "Components. American components, Russian Components, all made in Taiwan!"[11] As such, it would not be an understatement to say the Taiwanese manufacturing industries played not only a pivotal role in the industrialization of the Taiwanese economy but also it held an important place in the world economy.

Moreover, in his book *Taiwan and Chinese Nationalism: National Identity and Status in International Society* Economist Christopher Hughes, describes the Taiwanese

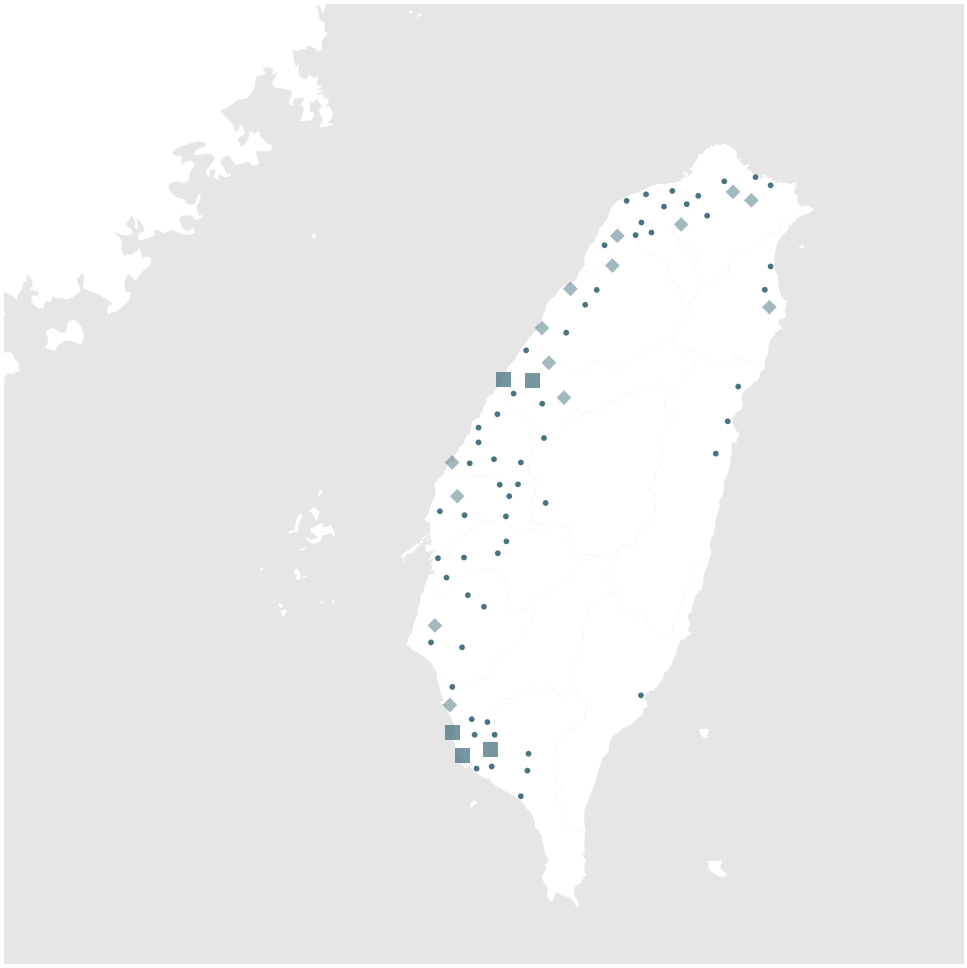

Figure 1.1. Map of Industrial Districts in Taiwan

condition as a "post-nationalist identity in an intermediate state."[12] The term respectively characterizes the internal characteristics of a Taiwanese society and its status in contemporary geopolitics. It is argued that because Taiwan's sovereignty is not in congruence with Chinese nation in which it is located, its identity should be best described as a "post-nationalist" one; and because Taiwan is neither a recognized independent nation-state, nor does it function as a province of a unified China's, its status is best described as an "intermediate state." Most importantly, Hughes highlights that while Taiwan's "post-nationalist identity" has largely been the result of democratization domestically – where the legitimacy of the state moved from one founded in nationalism to one founded in popular sovereignty – its survival in the "intermediate state", however, has only been made possible by its contributions to the world's economy. He writes, "What has made this possible is, above all, the economic muscle that comes from the important role Taiwan plays in world trade. Not only has Taiwan built up foreign exchange reserves that compete with Japan's for the highest level in the world, but it has diversified its markets to become an important trade partner in most regions."[13]

In essence, what Hughes describes is a Taiwanese condition caught between "unification with the PRC (People's Republic of China) on one hand, [and] an independent Taiwan on the other."[14] It brings to light the difficulty that Taiwan faces within an international framework of power politics and nationalism. For an island that is at the same time ethnically and culturally Chinese, but politically divergent from the Chinese nation, Taiwan's sovereignty has not been recognized by the "right to self-determination" but rather, it has only been accommodated by international order because it has made itself an indispensable part of the globalized economy. Thus, in this context, economic output emerges as an integral part of citizenry life in Taiwan – giving new meanings to the value of labour and the spaces of production. And in light of the roles in which manufacturing industries have played in propelling Taiwan's economic growth and integration with the world economy, industrial enterprises and its architecture then, no longer simply mean the places of work but rather, they manifest in the autonomy and identity of Taiwan's political body – and that is the case with corrugated metal sheds.

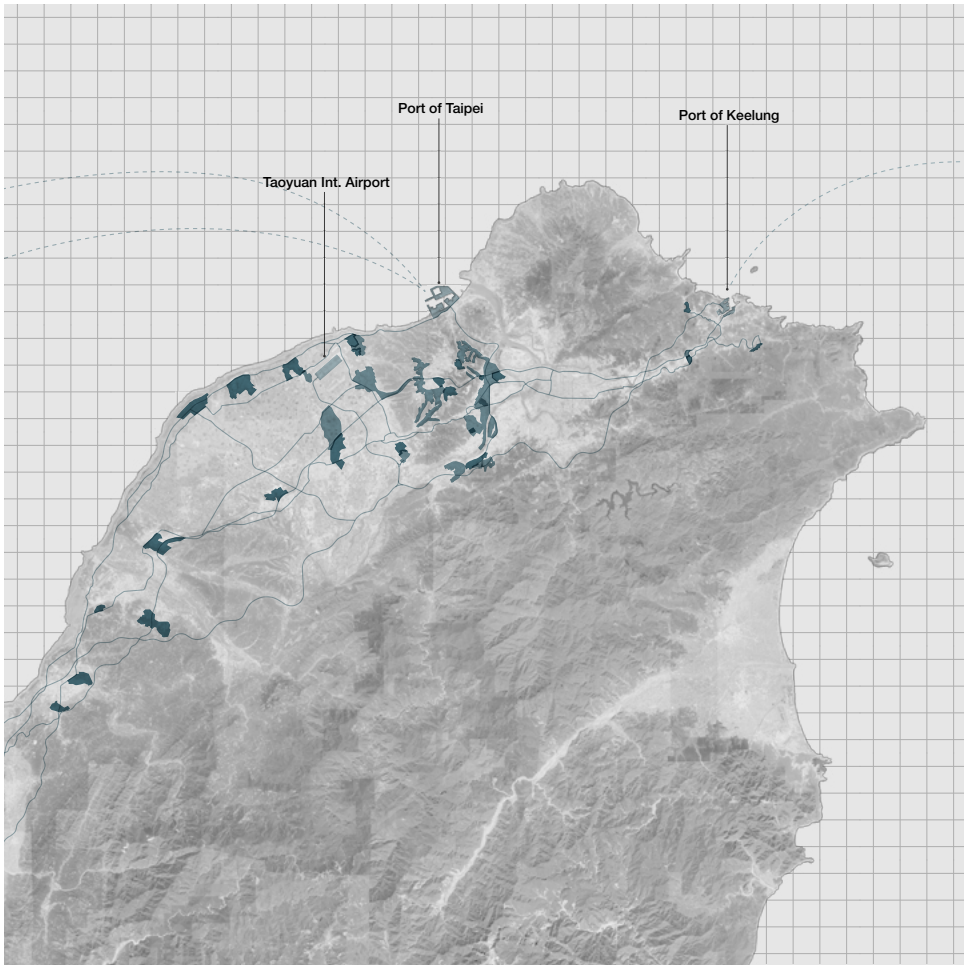

Figure 1.2. Map of Industrial Districts in Northern Taiwan

The Corrugated Metal Sheds of Taiwan

The corrugated metal shed is a building type that, while not unique to Taiwan, is very common across the island. It first emerged as a prevalent industrial architectural typology in the 1980s. Its rise came as the result of a demand for low-cost manufacturing labour from the developed economies of the West, which had begun as early as the 1960s.[15] Driven by cost-saving demands, the sub-contract manufacturing firms of Taiwan found the corrugated metal shed to be an ideal building type by the virtue of its low-cost nature. Thus, along with governmental promotions of "rural industrialization", the corrugated metal shed urbanized large parts of the Taiwanese western plain-regions, and in the process, integrated itself into the Taiwanese landscape.[16]

The specificity of the corrugated metal shed reflects one of the defining characteristics of Taiwanese industries – and that is its scale. In contrast to its neighbours such the *chaebols* of South Korea and the *Keiretsu* of Japan, the driving force of Taiwanese industries has largely been small and medium enterprises (SMEs). In the first three decades of the Kuomintang (KMT) rule in Taiwan, policies which emphasized monetary stability and limited direct credit intentionally limited the potential sizes and political influence of private enterprises. This had been the result of the regime's historic fear of hyperinflation, which it had previously experienced in mainland China and because of the party's own minority status in Taiwan (due to the difference in dialect spoken between party members and local populations).[17] Constrained by political calculations, small and medium enterprises found the modestly sized corrugated metal sheds perfectly suited to their needs.

Today, family owned-and-operated SMEs have become a distinguishing character of the Taiwanese economy, and it has been the corrugated metal shed which has enabled its proliferation. Through its widespread construction, the shed has since become an industrial vernacular and an identifiable part of the Taiwanese urban and rural landscape and – in combination with government projects such as the "One

Town One Product" initiative – each industrialized area grew to define local, as well as island-wide, identities.[18] In light of the role that economic output plays in Taiwan, it can be said that the SMEs are in fact the building blocks of a Taiwanese society, and corrugated metal shed, the *background* of a collective existence in Taiwan. Which in the words of J.B. Jackson, "background [...] means that which underscores not only our identity and presence, but also out history."[19]

Documenting Wenzhai Zun

Wenzhai Zun's industrialization began in the 1980s and peaked in the late 2000s. The site was originally used as agricultural farmland, but as economic demand grew and better infrastructure was provided, manufacturing enterprises began to settle in the area. Through an incremental process of settlement, small family-owned businesses built individual sheds over the existing farm lots and progressively turned the site into what it is today – a dense settlement of corrugated metal sheds that still bears the imprint of an agricultural fabric.

At Wenzhai Zun, building setbacks are roughly the same width of the road, and in accordance with the traditional Taiwanese urban fabric, there are no sidewalks. The building setback and laneway areas are flexible spaces, belonging to both the interior and the exterior. Walking down the typical street in the industrial district one finds a multiplicity of ways in which these in-between spaces are used. Most commonly, car and scooter parking will be lined up beside building entrances and along the laneways. Sometimes they are used as storage spaces protected by the building's overhangs. Seasonally, these are also the spaces for religious rituals. While the typical industrial district can be a harsh urban environment, many businesses also take the care to "beautify" their streetscapes by using potted plants to decorate and demarcate building entrances.

Furthermore, while the typical shed is homogenous and mundane, the variety of ways in which space is appropriated and inhabited is diverse. The simplicity of the shed's interior means that it can be adapted to the various needs of different business types. And some of these include various types of warehouses, nuts and bolts manufacturers, machine shops, mattress factories, and even post-industrial work such as photo studios. Furthermore, these businesses sometimes occupy entire sheds individually, but more frequently, a single shed is shared between multiple tenancies. In one of the sheds documented as part of this research, there is a rice warehouse in the front, a metal workshop that makes ducts, vents, and louvers in the middle, and a wood workshop that make pallets in the back. This has been made possible by the system of laneways which allows for long and narrow sheds to be accessed from its sides. The narrow laneways work in conjunction with the scooter as the island's predominant mode of transportation. One of the effects of this is that micro-communities develop out of the multiple businesses that face onto common laneways.

Moreover, within the typical corrugated metal shed, there are signs of appropriation at work everywhere. Overlaid onto the simple shed typology, there are acts of occupation such as demarcated loading and working zones, acts of modifications such as secondary office or storage structures, and unique elements such as religious altars – all of which reveal a complimentary relationship between the shed and its inhabitants. The corrugated metal shed is both the product of a political and economic rationality but equally serves as an armature to the informality of life. The result is a multi-use urban and architectural environment which responds to the variety of needs of its collective user groups.

In many ways, the balance and tension between the singularity of the built environment (the shed) and the plurality in which spaces are inhabited at Wenzhai Zun are what Maurice Halbwachs calls the collective memory – He writes, "When a group is introduced into a part of space, it transforms it to its image, but at the same time, it yields and adapts itself to certain material things which resist it. It encloses itself in the framework that it has constructed. The image of the exterior environment and

the stable relationships that it maintains with it pass into the realm of the idea that it has of itself."[20]

So, as Aldo Rossi writes in *The Architecture of the City* – "This relationship between the locus and the citizenry then becomes the city's predominant image, both of architecture and of landscape, and as certain artifacts become part of its memory, new ones emerge. In this entirely positive sense great ideas flow through the history of the city and give shape to it" – The question becomes, how should the sheds and its industrial districts evolve then, if its core function, in this case, manufacturing no longer fits the needs of its larger context, namely economic output?[21]

Figure 1.3. Satellite Views of Industrial Districts around Taipei

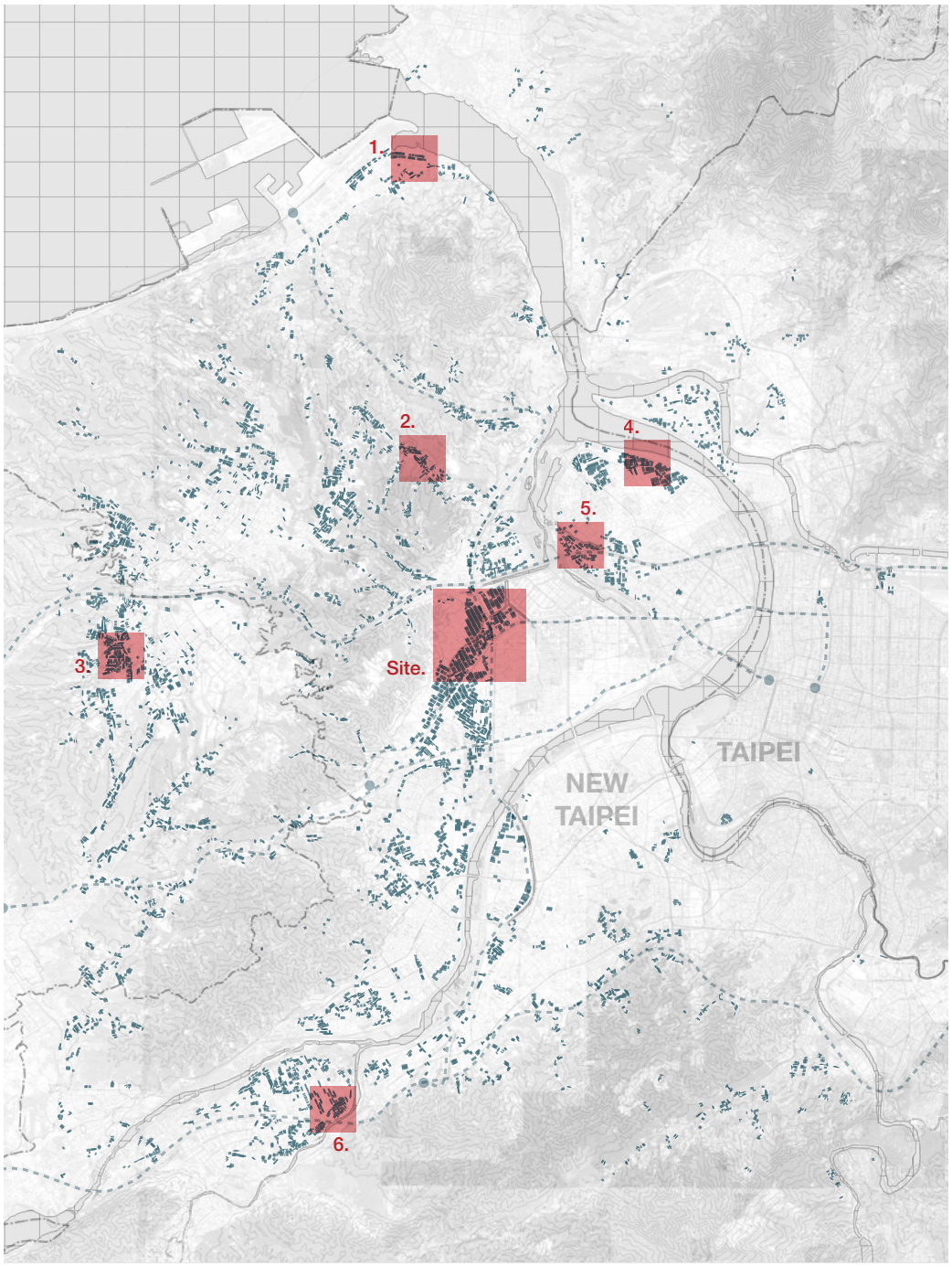

Figure 1.4. Map of Corrugated Metal Sheds around Taipei

Figure 1.5. Satellite View of Wenzhai Zun
Figure 1.6. Aerial View of Wenzhai Zun

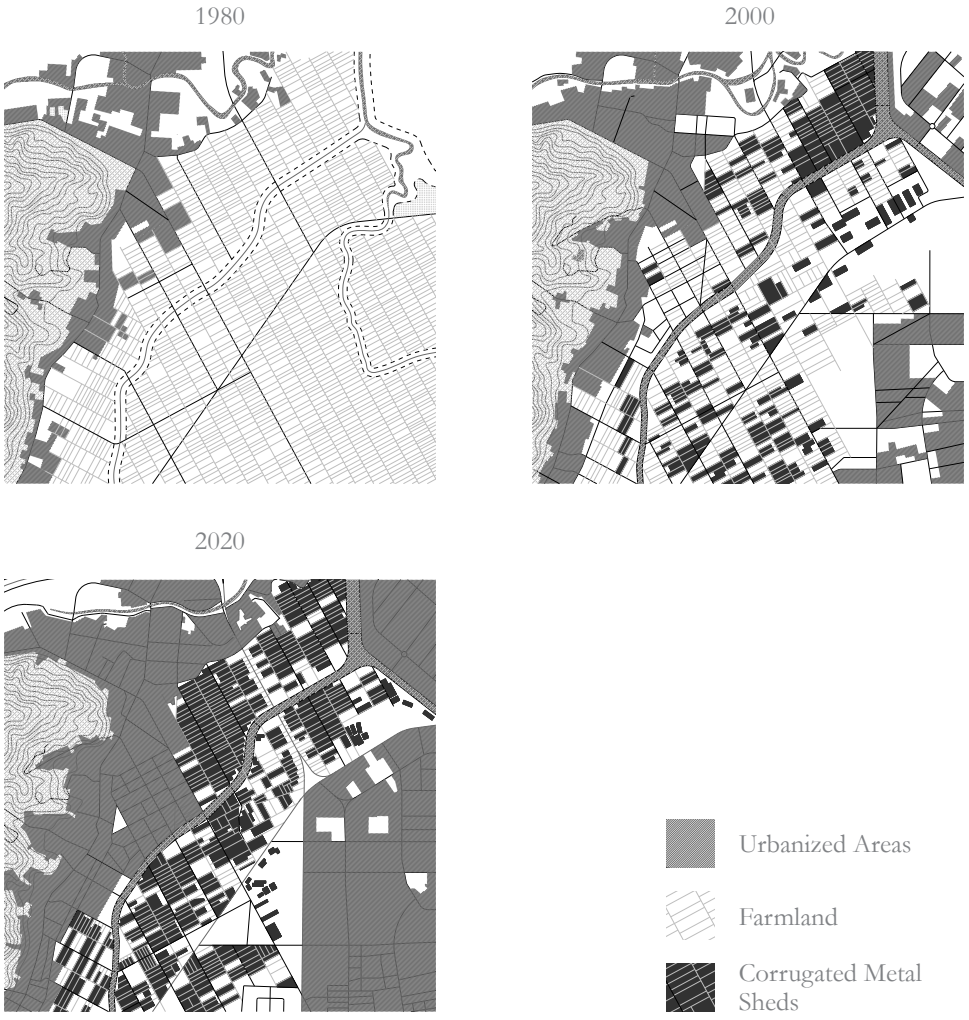

Figure 1.7. Maps of Wenzhai Zun from 1980 to 2020

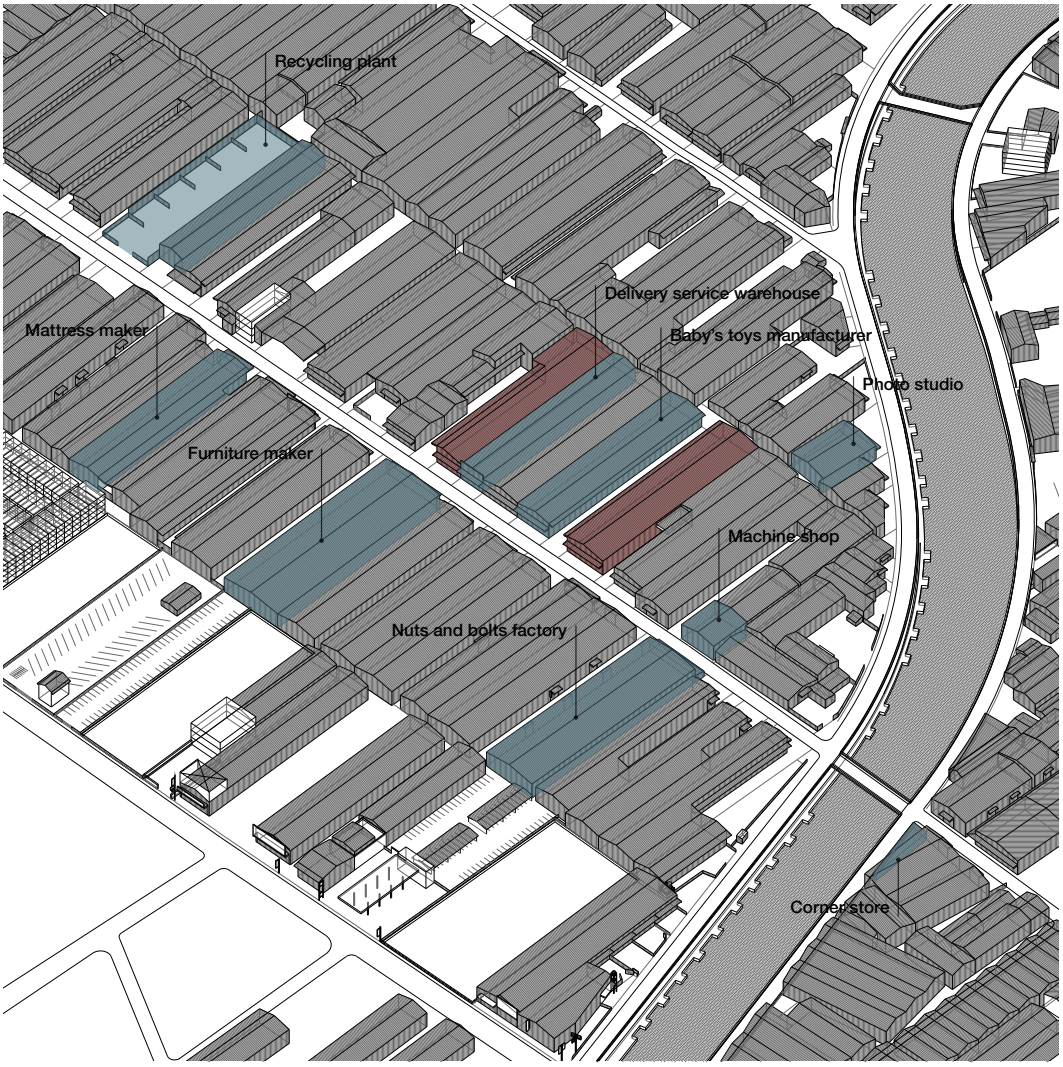

Figure 1.8. Axonometric of an Area of Wenzhai Zun

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Figure 1.10. View of an Alley Way at Wenzhai Zun

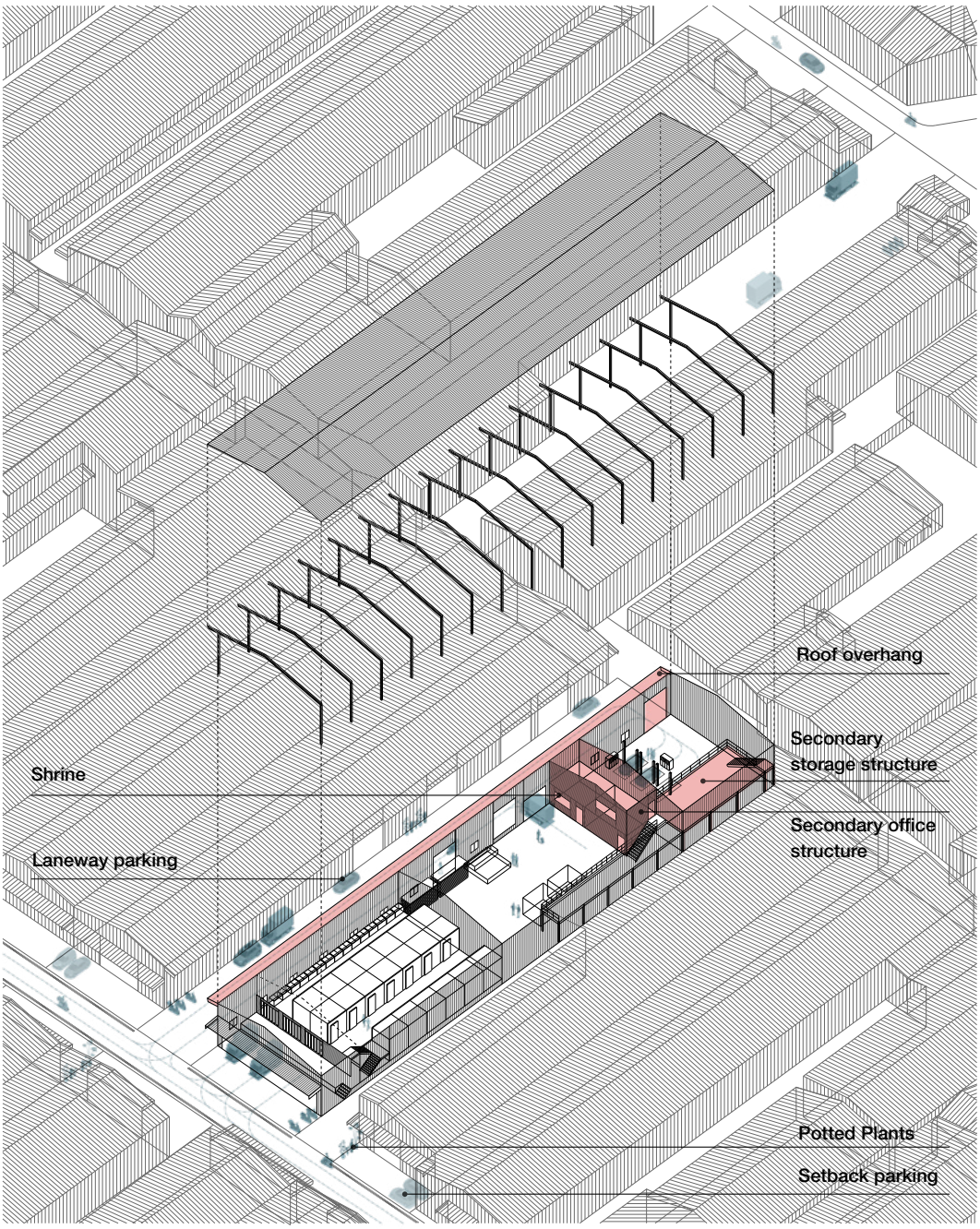


Figure 1.11. Exploded Axonometric of Shed Study One

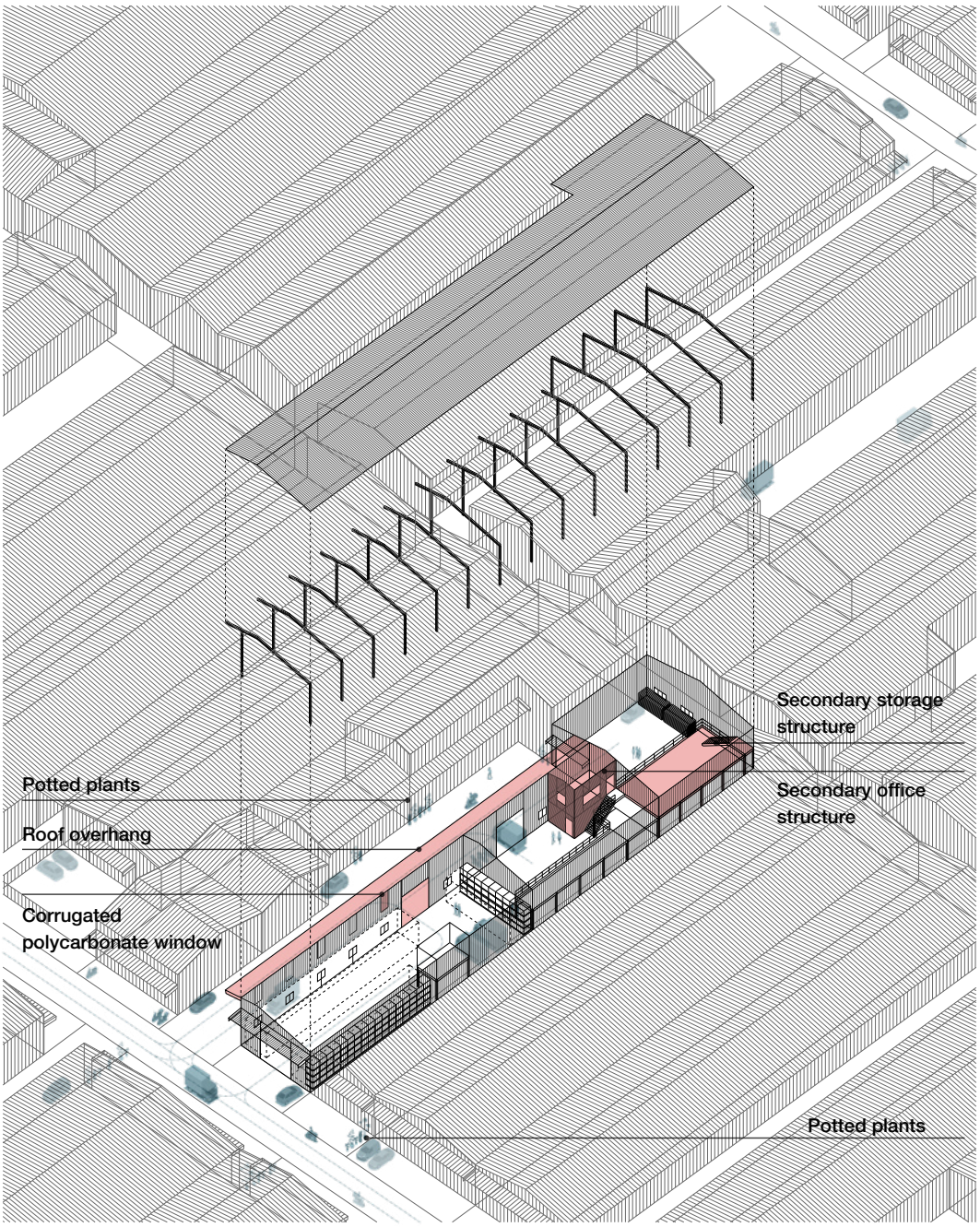


Figure 1.12. Exploded Axonometric of Shed Study Two

TYPICAL URBAN CONDITIONS

Setbacks and laneways

Entrance and laneway overhangs

Figure 1.13. Typical Urban Conditions of Wenzhai Zun

URBAN ACTS OF APPROPRIATION

Street & lane way parking

Potted planting

Community vending machines

Seasonal rituals

Figure 1.14. Typical Acts of Appropriation at Wenzhai Zun

TYPICAL ARCHITECTURAL COMPONENTS

Light weight steel structures

Corrugated sheet metal cladding

Roll-up garage doors

Punch windows and skylights

Figure 1.15. Typical Architectural Components of Corrugated Metal Sheds

ARCHITECTURAL ELEMENTS OF APPROPRIATION

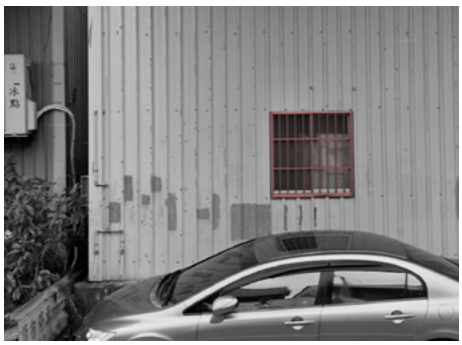
Multi-tenancy

Secondary storage structures

Secondary office structures

Places of worship

Window wall renovations



Window guards

Figure 1.16. Typical Acts of Appropriation at Wenzhai Zun

2. Towards a Design Solution:
An Interface City

2. Towards a Design Solution: An Interface City

On Manufacturing Decline

The need for Taiwan to adapt to the conditions of economic change is clear. From the material necessities of individual citizens to the collective well-being of its body politic, there is no question as to whether Taiwan's declining industrial districts should respond to changing economic conditions. In their seminal work *Empire*, Hardt and Negri point out the end of modernization in our times – a paradigm shift "from the dominance of industry to that of services and information."[22] However, under the current mode of land speculation, sensitive built environments are not only lost, but *real economies* are being replaced by a means of capital accumulation which serves only the selected few. Therefore, in this part of the thesis, the research looks for an alternative vision of the future of Wenzhai Zun, one that not only recognizes the existing systems in place, is economically viable, but also one that serves the interest of the larger collective. The question is: how can it achieve this? And what modes of productivity are suitable for Taiwan? To answer this, the research takes on each of three problems faced by Wenzhai Zun.

First, with regards to manufacturing decline, existing conversations which build on the political and cultural context of Taiwan serve as a reference point. In *Globalizing Taipei: The Political Economy of Spatial Development*, political economist Jinn-Yuh Hsu brings to light the position of Taiwan as an "interface region."[23] In his analysis, Hsu contextualize the Taiwanese economy within the South China Growth Triangle. It is argued that while Taiwan's most immediate competitors are to be found

in its closest neighbours, this is also where its opportunities lie. Through its cultural ties with the Chinese diaspora and its familiar mode of governance with the West, Taiwan can serve as a bridging point between the production centres of East and Southeast Asia and the world's various post-industrial economies. In this way, it acts as "a node in the cross-border flows of capital and people."[24] Examples of this can already be found the computer technology industries. As in the coastal cities of mainland China such as Suzhou and Shenzhen, Taiwan's enterprises such as Foxconn and Pegatron were able to enter the Chinese market early and with relative ease, in part because of its shared cultural affinities with the local context. Likewise, Taiwan has been able to cross-fertilize with technology hubs such as Silicon Valley by virtue of its own dense technical communities, its complimentary industrial structure with Silicon Valley, and a history of partnerships between the two.

In the context of liberal international order, Hsu's analysis builds on a framework of understanding globalization through "global city-regions" – where "city-regions increasingly function as essential spatial nodes of the global economy."[25] Essentially, Hsu outlines that for Taiwan to integrate with the world economy, it requires first and foremost an integration with its neighbours. This analysis echoes Hughes's elaboration on the Taiwanese "intermediate state;" which suggests that "economic interdependence [with China], buys greater political independence for Taipei."[26] Thus, an option for Wenzhai Zun could be to manifest the functions of an "interface region" into an *Interface City*. This means capitalizing on the culture of Original Design Manufacturing which already exist in Taiwan, and focusing on providing the spaces for innovation, small scale production, and communication. In this way, Wenzhai Zun might extend its position as a nodal point within the globalized economy, and in turn, continue to foster real growth through production oriented economies, as opposed to capital accumulation through land speculation.

On Land Speculation and Gentrification

The "interface region" serves only as a starting point. By simply increasing value-added services, an *Interface City* can undoubtedly still result in gentrification and produce inequality in society. Examples of this can already be seen in so many "developed economies" around the world and has been argued in great depth by theorist such as David Harvey in his analysis of the Post-Fordist mode of production. In *the Condition of Postmodernity*, Harvey notably points out that by consolidating the workforce into those who can perform the highest value-added works, mass majorities of the working population are forced out of core labour market. Thus, the result is a general decrease in worker securities, an increase in unemployment, and an exacerbation of the inequality between the so called "service-sector" workers and traditional labour-oriented workers.[27] This thesis therefore expands on the idea of an "interface region" by examining how the *Interface City* can be facilitated to benefit the larger collective. In this regard, I draw on Peter Kropotkin's *Fields, Factories, and Workshops* to imagine the *Interface City* as a place where all types of work are not only welcomed but necessary. In his writing, Kropotkin criticizes the capitalist mode of production, stating: "the division and subdivision […] of functions has been pushed so far as to divide humanity into castes which are almost as firmly established as those of old India."[28] In the place of division, Kropotkin puts forth the integration of labour – through "a society where each individual is a producer of both manual and intellectual work; where each able-bodied human being is a worker, and where each worker works both in the field and the industrial workshop […]"[29] To achieve this, Kropotkin champions the decentralization of economies, where small-scaled industries across towns and villages can be largely self-sustainable, thus bridging the gap between Capital and Labour.

This thesis, however, does not envision the complete revolution of the existing liberal economic framework. Instead, I draw on Kropotkin's proposition simply to suggest a more localized system of mixed-use programs, one that works in conjunction with the capitalist economy of Taiwan, but which stresses the equitable

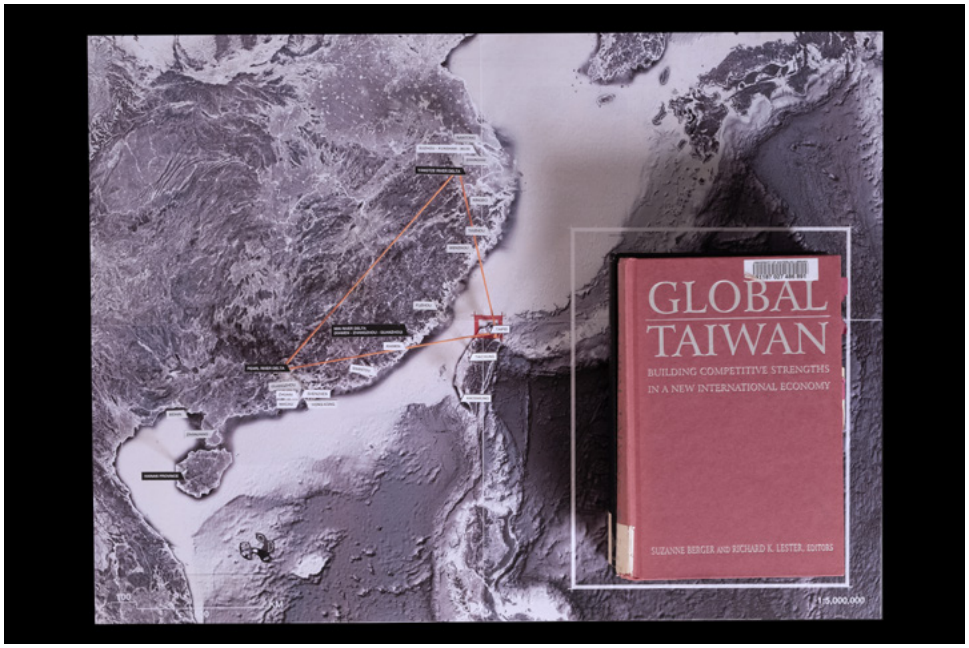


Figure 2.1. 1:5,000,000 Layer from Physical Model "The Corrugated Metal Shed as an Index"

Figure 2.2. Front View of Physical Model "The Corrugated Metal Shed as an Index"

Figure 2.3. Side View of Physical Model "The Corrugated Metal Shed as an Index"

development of all working classes. In line with Kropotkin's critique of capitalist mode of production, this thesis sees the inequality between the urban, sub-urban, and rural populations as a result of the division of labour both between populations and between geographies. By locating traditional industries in proximity with the post-industrial industries, the ideal *Interface City* aims to bridge the gap between the peripheral, working class populations and the urban, creative class populations. Working in conjunction with the necessary functions of the "interface region" – namely innovation and communication – the key here is to focus on the additive growth of Wenzhai Zun's existing industries. By building on the manufacturing skill set and capabilities of existing industries, the goal is to propel them towards the likes of rapid prototyping, experimentation, and research and development by providing the spaces for those activities.

Another purpose of the mix-used system is to foster the innovation required within the "interface economy." As exemplified by the works of Cedric Price, elements of cross-pollination, interaction, and communication are all critical aspects of the innovation economy. In both his *Potteries Thinkbelt* and the *Fun Palace*, Price made a point of going beyond the traditional boundaries of work, to include the spaces which facilitate chance encounters. In *Labor and Architecture: Revisiting Cedric Price's Potteries Thinkbelt*, Pier Vittorio Aureli notes that Price understood the importance of leisure, communication, and interaction in producing culture, knowledge, and innovation. Aureli writes that Price's projects "[serve as] extreme examples of how labour has been 'enabled' by specific architectural spaces that have anticipated our contemporary modes of production, modes in which knowledge, cooperation, and information play a fundamental role in producing economic value."[30] These points have, in fact, also been reflected in existing innovation centres such as Silicon Valley. As such, for the viability of the "interface economy," it is necessary that we provide a framework through which different trades, and different sectors of the economy, can learn from each other, discuss ideas, and cross-fertilize. In the *Interface City*, a single person may not need to produce both manual and intellectual work; however, one *can* find all the necessary faculties for a domestic and productive life, and for material and immaterial

labour, thus bridging the spatial gap between Capital and Labour, between what we may traditionally view as the urban and the rural.

On the Loss of Vernacular Built Environments

Another key question is the loss of existing built environments. In relation to this, the thesis asks: how should redevelopment respond to the existing built vernaculars of Taiwan? What is the spirit of Taiwanese built vernaculars? How has it been manifested in the sheds? And how has it been manifested in other building types?

Through the documentation of Wenzhai Zun earlier in the thesis, it was found that the collective memory of the corrugated metal shed's user groups is reflected in the tension between the singularity of the built environment and the plurality of ways in which spaces are appropriated. The extreme flexibility of the shed affords a multiplicity of ways in which it can and has been utilized. The simplicity of the architectural object belies the complexity of its underlying systems and the exterior of a shed rarely communicates its inner programs and functions. In this regard, the same can be said of other built environments in Taiwan. In his essay *The Cloak of a Nation: Republic of China/Taiwan/Chinese Taipei*, architectural educator Raymond Quek writes, "Any visitor to Taipei would be confounded by the mess of the urban realm, of how sacred spaces can co-exist with shoe retailers, tea merchants and dentists in dense urban juxtaposition, and of how normative existence reverts to the immanence of the interior."[31] Furthermore, Quek questions, "[...] what is the point of external architectural design in Taipei if all surfaces must succumb to advertising? Yet, this is the argument we make: there is a sense that none of this matter, the cloaks of advertising, business or for that matter – the cloak of nation, is of no consequence, as long as the unperturbed communal core is intact, genuine and self-aware."[32]

Indeed, on a typical street in Taipei, the formality of the buildings is juxtaposed against the informality of life. And while the buildings are characterized

by their simplicity, flexibility, and adaptability, the variety of ways in which they are used is rich and diverse. As Quek has stated, programmatic mixtures take place at an extreme level in the typical Taiwanese urban environment. Restaurants and hair salons commonly pop up within residential neighbourhoods; and dentists can be located next to motorcycle shops. Sometimes businesses on the ground floor expand to take over residential units in the building. Or some may even take place within residential units. Furthermore, on the skeleton of the architectural object, elements of appropriation are omnipresent. In addition to the signage that Quek has cited, balconies are often caged in by residents after-the-fact. The interiorized balconies expand the realm of the interior, and these are the spaces for planting, storage, and laundry.

Moreover, Quek notes: "Taipei's urban realm harbours a very strong sense of a *moiré* effect. In this effect one sees a strong appearance of Gesellschaft (society), and then momentary glimpses of Gemeinschaft (community) […]" Gesellschaft and Gemeinschaft, two concepts borrowed from the 19th century sociologist Ferdinand Tönnies respectively mean the mechanical relationship between human beings in the public realm, though actions such as business, and politics – and the organic relationship found within the private realm, where kinship and friendship take place. Tönnies writes, "Human wills stand in manifold relations to one another. […] Every such relationship represents unity in plurality or plurality in unity. It consists of assistance, relief, services, which are transmitted back and forth from one party to another and are to be considered as expressions of wills and their forces. [...] The relationship itself, and also the resulting association, is conceived of either as real and organic life – this is the essential characteristic of the Gemeinschaft (community); or as imaginary and mechanical structure – this is the concept of Gesellschaft (society)."[33]

In conclusion, it is the "unity in plurality and plurality in unity" that is the ambition of *the Interface City*. *The Interface City* is an interface between the public and the private; between the formal and informal; between the productive life and a domestic life; between industrial and post-industrial work; And between the universal and the specific.

Figure 2.4. Typical Commercial Street in Taipei, Taiwan.

Figure 2.5. Typical Commercial Street in Hualian, Taiwan.

3. Design Application:
A Counter-Master Plan

3. Design Application:
A Counter-Master Plan

Objectives

As the final part of this thesis, the *Interface City* is applied to the site of Wenzhai Zun to illustrate an alternative approach to the redevelopment of Taiwan's declining industrial districts. The proposal situates itself conceptually and methodologically as an antithesis of the existing master plan – and thus, it is called a "counter-master plan." The plan is three overall design objectives, which work together to achieve the wider goals of the *Interface City*, and they are:

1) Firstly, to facilitate incremental, lot-by-lot, redevelopment – which builds on the idea of additive growth and responds to the urban fabric of Wenzhai Zun.

2) Secondly, to foster a radical mix-use of programs – which responds to the vernacular building types of Taiwan, the necessary programs for an interface economy, and the equitable growth of different industries and working classes.

3) And lastly, to foster flexibility in both architectural and urban environments – which builds on the characteristics of vernacular Taiwanese buildings and works in conjunction with the nature of mixed-use programs.

Components

Furthermore, to achieve the objectives, the proposal has three components which build on the existing methodologies of zoning. However, in contrast to existing planning practices where the purpose of zoning is to designate, prescribe, and separate uses, in this thesis, zoning is utilized to work towards the enabling and integration of different uses. The three components are:

1) Firstly, *the (Lack of a) Plan* which oversees the larger site plan strategies of the proposal with focuses on programmatic distribution and overall urban density and fabric.

2) Secondly, a set of *Strategies and Tactics* to guide the design and development of individual lots within the site with focuses on building access, programmatic interactions, and spatial requirements.

3) And lastly, three *Speculative Design* exercises on three lots within the counter-master plan to illustrate and visualize the architectural and urban possibilities of the *Interface City*.

1. The (Lack of a) Plan

For the purpose of this design portion, The thesis focuses on a swath of Wenzhai Zun (highlighted in red). In this typical swath of the site, the industrial fabric consists only of north-south running streets with little to no cross-access. The site is bordered by a finer grain, commercial and residential, area of the city to the west, and a more industrial area to the east, serviced by a major road and highway

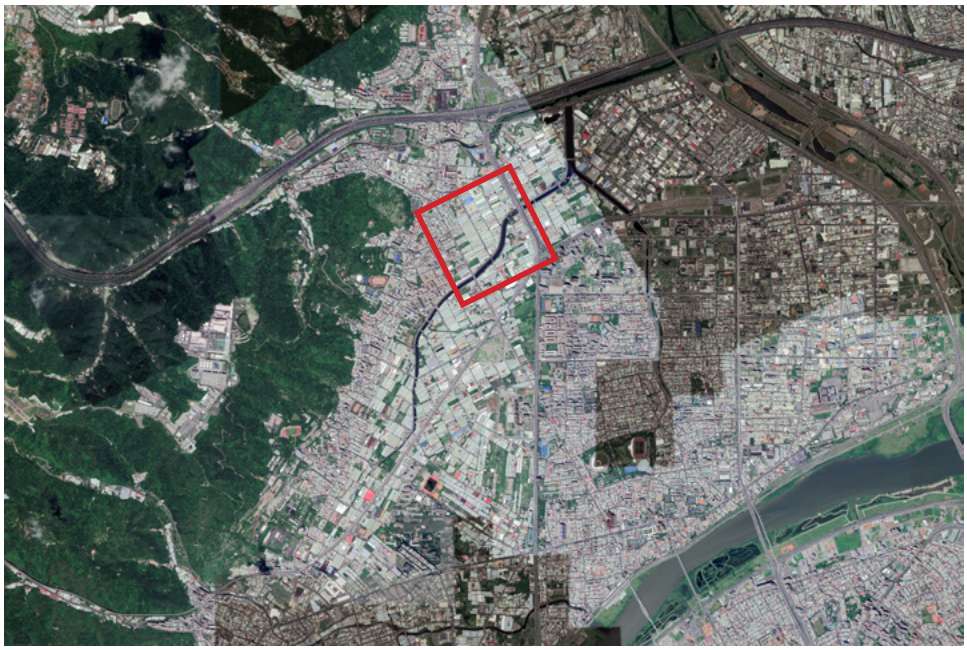


Figure 3.1. Key of Site of Thesis

Figure 3.2. Site of Thesis

Figure 3.3. View of Street West of Thesis Site (Tailin Road Section 2)

Figure 3.4. View of Street East of Thesis Site (Xinwu Road Section 1)

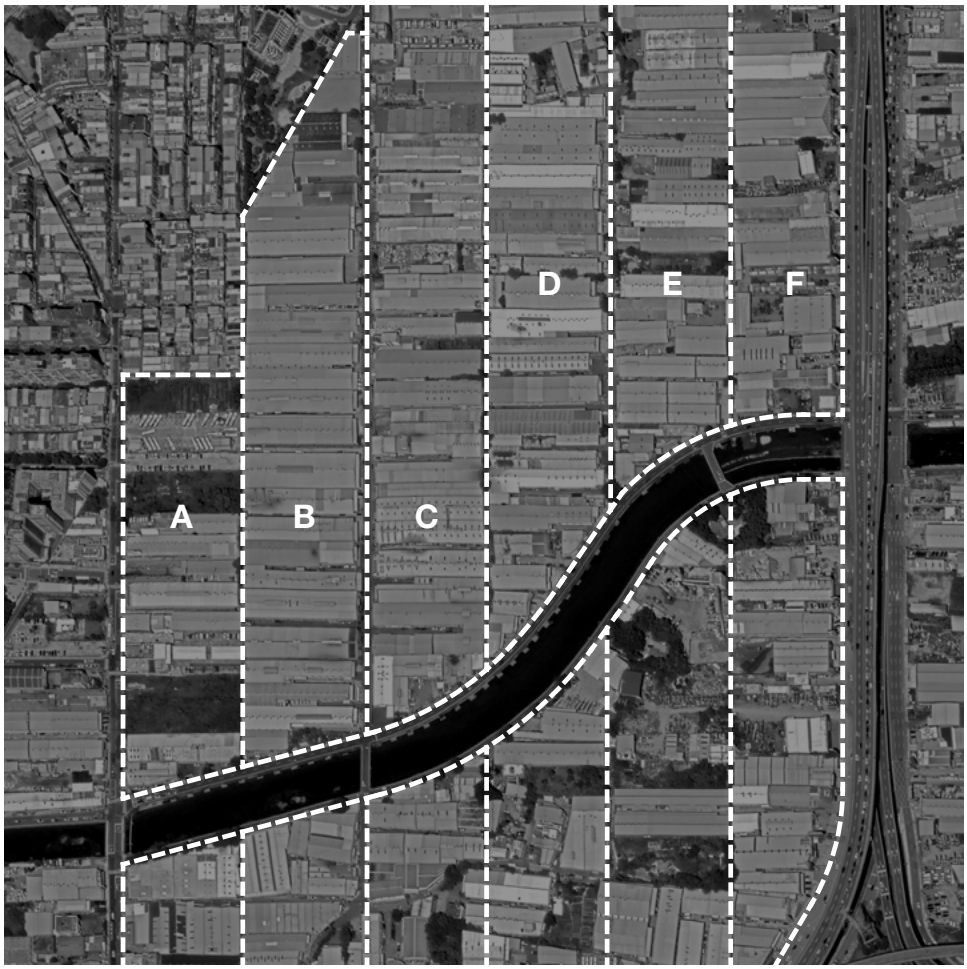
Figure 3.5. Property Lines of Thesis Site

1.1 Maintain Existing Property Lines

In accordance to the overall objective of the proposal, the plan seeks to have minimal impacts on the existing fabric of Wenzhai Zun. The framework of the plan consists of maintaining existing property lines where possible so individual landowners may choose to densify their sites over time to increase rent revenue. In this way, the redevelopment of Wenzhai Zun supports the "granularity" of the current fabric and may take place similar to the way that it has been transformed from farmland to industrial settlement in the past.

1.2 Mixed-use Programmatic Requirements

Additionally, the plan assigns a set of programmatic requirements for individual lots within the site. The requirements range from residential, industrial, to post-industrial/ commercial uses. For the most part, each lot is required to have a mixture of all programmatic uses as a way of fostering a finer-grained mixed-use urban condition. To do this, the site is first divided into strips of zones which reflect the existing fabric of Wenzhai Zun. Then, secondly, the requirements are assigned based on each strip-zone's relation to the larger city context. For example, Zone A requires 50% residential, 25% commercial, and 25% flexible floor areas because it borders a more commercial and residential area of the city; and as the site moves eastwards, the requirements move towards more commercial and industrial uses. As such, the goal is to transform the site into a radically mixed-use area of the city while still ensuring its continuity with the larger city context.



	A	B	C	D	E	F	TOTAL
Residential	50%	30%	30%	25%	25%	-	27%
Commercial	25%	20%	20%	25%	25%	50%	28%
Industrial	-	25%	25%	25%	25%	25%	21%
Flexible	25%	25%	25%	25%	25%	25%	25%

Figure 3.6. Proposed Zones of Thesis Site

2. Strategies and Tactics: Existing Vernaculars

With the overall larger plan in place, next, the proposal includes a set of zoning-like rules which, drawing on Michel De Certeau, the thesis calls *Strategies and Tactics*.[34] By reinterpreting the existing methods of zoning bylaws as practiced in urban planning, the set of "rules of engagement" are developed which, because of its top-down nature, the thesis calls *Strategies*.[35] Correspondingly, each *Strategy* is designed with a number of *Tactics* in mind – the methods of occupation and appropriation by inhabitants.

To arrive at the final set of *Strategies and Tactics*, the method here begins with an analysis of four other vernacular building typologies found in and around Taipei; then next, to develop a set of mixed-use typologies based on the existing vernacular typologies; and lastly, to use the mixed-use typologies to reverse engineer the set of guidelines for building design. The following are the three steps of this design process.

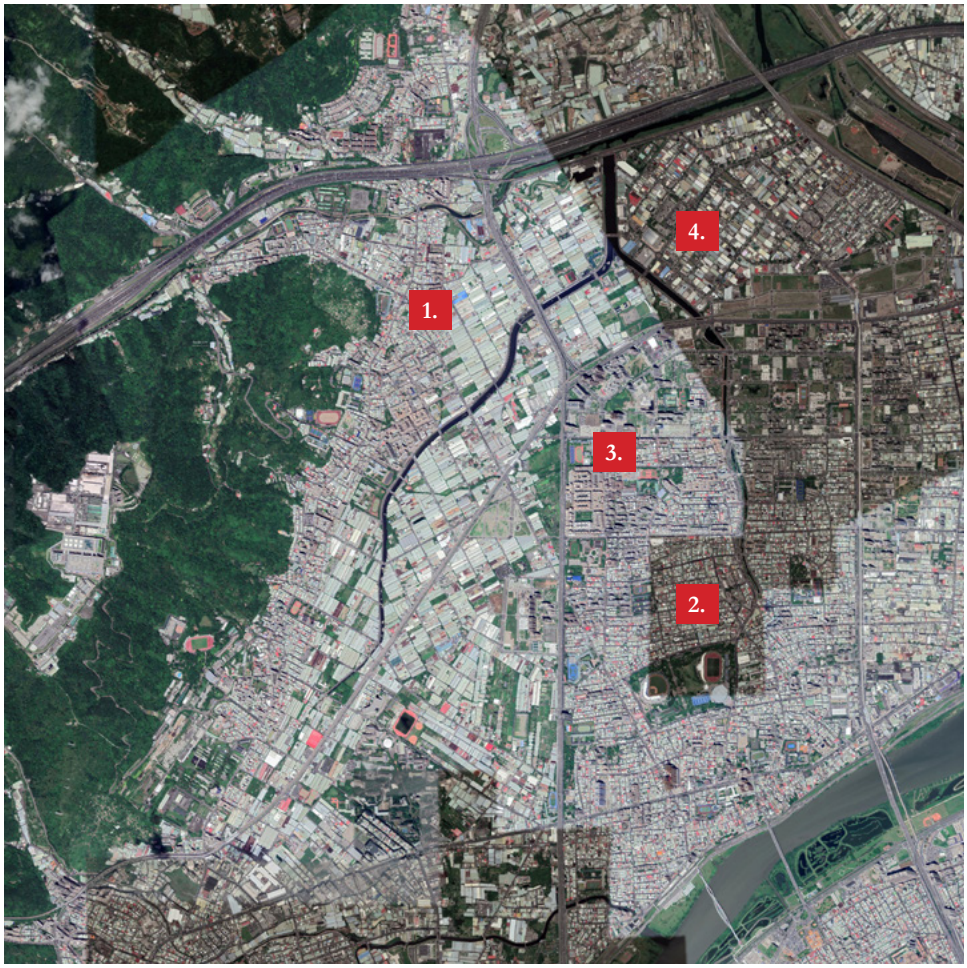


Figure 3.7. Study of Vernacular Building Types - Key Plan

2.1. Existing Vernaculars – Typical Commercial / Residential Rowhouse

The first existing vernacular building type is the typical commercial and residential rowhouse building. This building type is a common mixed-use typology in older Taiwanese neighbourhoods. When the building type face on to a commercial street, it almost always have porticos which connect with one another. From the photographs, one can see that businesses on the ground floor sometimes expand to take over residential units in the building. And rowhouses that do not face commercial streets are built very closely together and are usually multi-generation family homes.

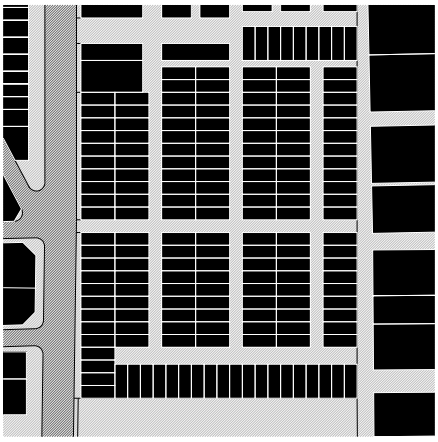
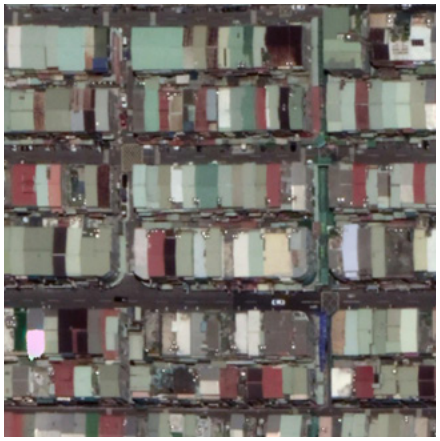


Figure 3.8. Aerial View of Typical Commercial / Residential Rowhouse Building Type
Figure 3.9. Figure Ground of Typical Commercial / Residential Rowhouse Building Type

Figure 3.10. Street View of Typical Commercial Rowhouse in Taipei
Figure 3.11. Street View of Typical Residential Rowhouse in Taipei

2.1. Existing Vernaculars – Typical Low-Rise Apartment

The second existing vernacular building type is the typical low-rise apartment building. Structurally this building type is similar to the low-rise commercial and row house type. In the aerial view, one can see that the roofs almost always covered by corrugated metal sheets. These are the roofs of additional stories that residents often add onto their buildings. Additionally, in the street view, one can see the intensity to which residents use potted plants, and that balconies are almost always caged in to expand the realm of the interior. These are the spaces for planting, storage, or to dry laundry.



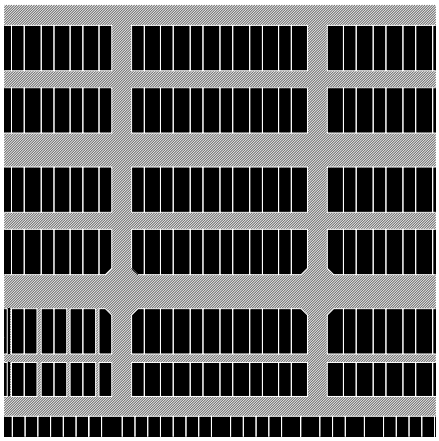


Figure 3.12. Aerial View of Typical Low-rise Apartment Building Type
Figure 3.13. Figure Ground of Typical Low-rise Apartment Building Type

Figure 3.14. Street View of Typical Low-rise Apartments in Taipei

2.1. Existing Vernaculars – Typical Mid-Rise Apartment

The third existing vernacular building type is the typical mid-rise apartment building. It is a common building typology in the more urban areas of Taiwanese cities. While built at a much higher density, one can see that, similar to Wenzhai Zun, street areas that not are used explicitly for driving are occupied by private uses such as parking, planting, and storage.

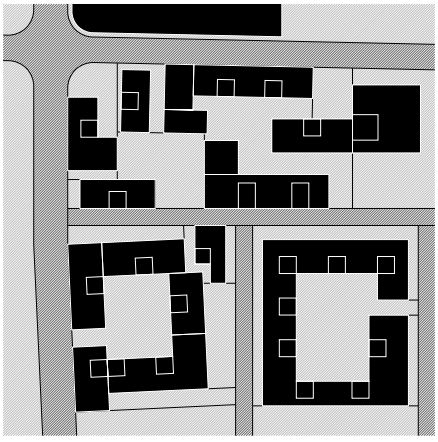


Figure 3.15. Aerial View of Typical Mid-rise Apartment Building Type
Figure 3.16. Figure Ground of Typical Mid-rise Apartment Building Type

Figure 3.17. Street View of Typical Mid-rise Apartments in Taipei

2.1. Existing Vernaculars – Typical Industrial Big-Box Building

The fourth existing vernacular building type is the typical industrial big-box. The building type is common in the more formal (government ordained) industrial districts of Taiwan. It is in fact a direct evolution of the corrugated metal sheds as it is often found in areas that were previously occupied by sheds and share the same basic lot dimension with the sheds. The building itself is usually used for heavier industrial purposes on the ground floor, and lighter industrial purposes and offices on the upper floors.

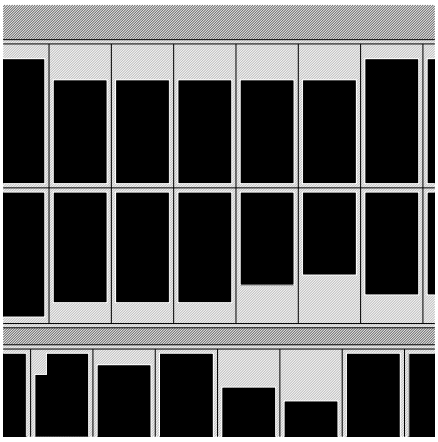
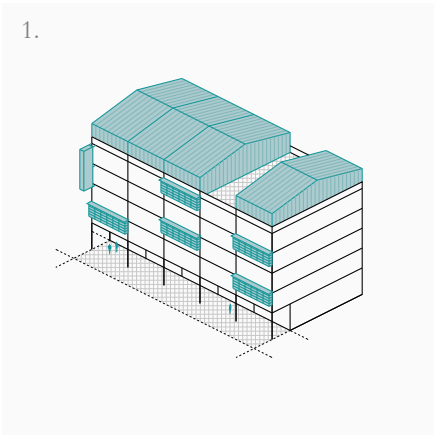


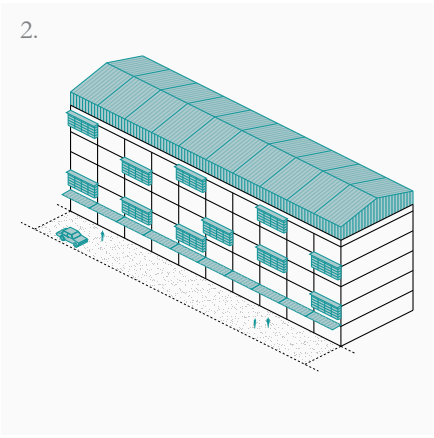
Figure 3.18. Aerial View of Typical Industrial Big-Box Building Type.
Figure 3.19. Figure Ground of Typical Industrial Big-Box Building Type.

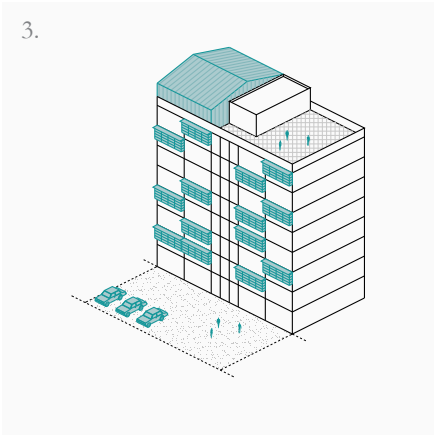
Figure 3.17. Street View of Industrial Big-Box in Taipei.

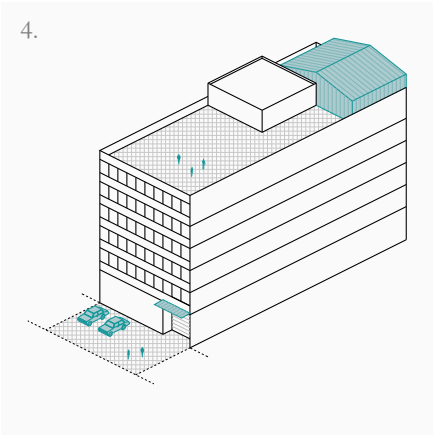
2.2. Developing Mixed-use Typologies

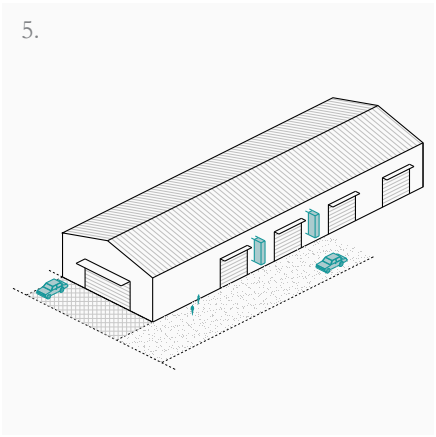
From the four basic vernacular building types that were studied, along with the corrugated metal shed, four basic mixed-use typologies are developed to suit the needs of the different zones of programmatic requirements. The four basic mixed-use typologies are: commercial and residential low-rise, big box and mid-rise apartments, mixed-use on simple box, and mixed-use big bar. These basic typologies are experiments in how individual lots within the site might densify according to the criteria of the counter-master plan. They are simplistic by design as they serve only as the basic framework for each individual lot to approach redevelopment in each its own way.











1. Typical Commercial/Residential Row house.
2. Typical Low-rise Apartments.
3. Typical Mid-rise Apartments.
4. Typical Industrial Big-Box.
5. Typical Corrugated Metal Shed (Simple Box)

Figure 3.18. Axonometric of Typical Vernacular Building Types around Taipei.

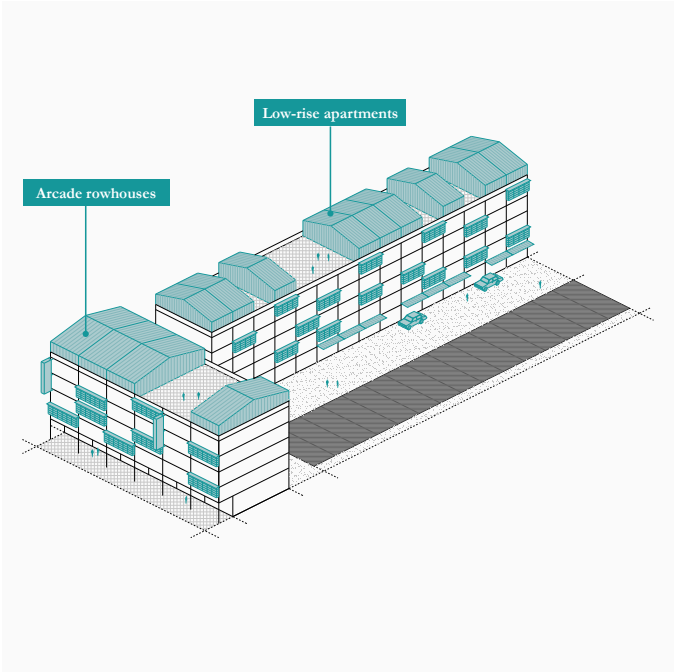


Figure 3.19. Axonometric of Commercial and Residential Low-rise Mixed-use Typology.

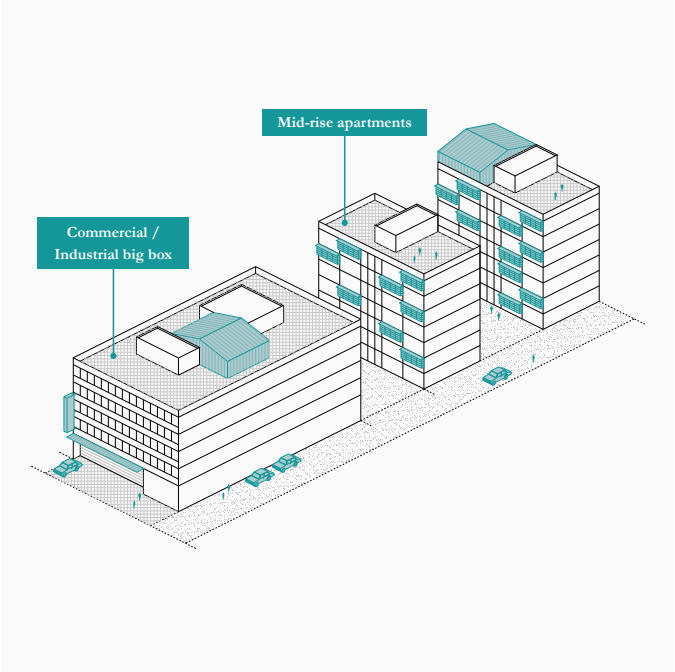


Figure 3.20. Axonometric of Big Box and Mid-rise Apartments Mixed-use Typology.

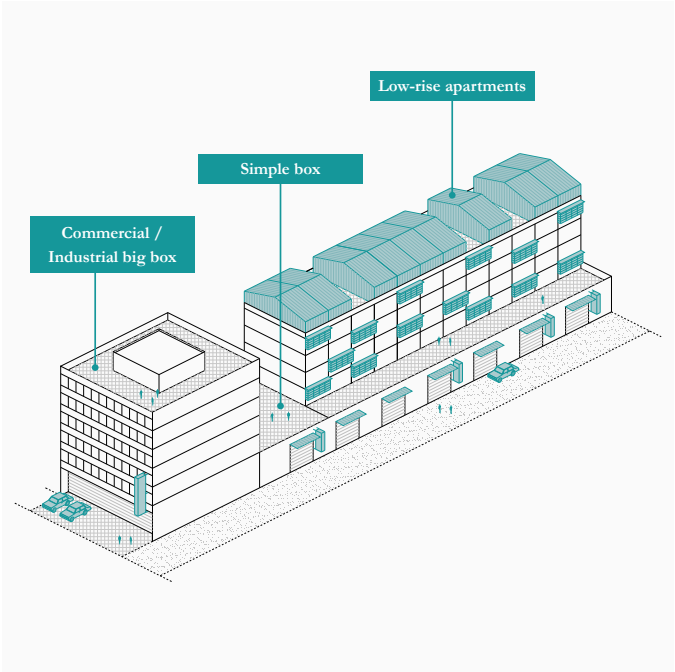


Figure 3.21. Axonometric of Mixed-use on Simple Box Typology.

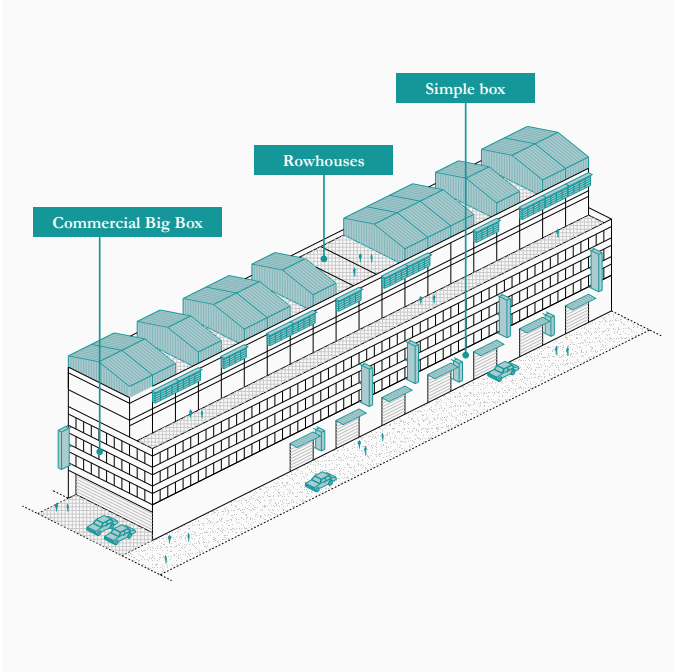
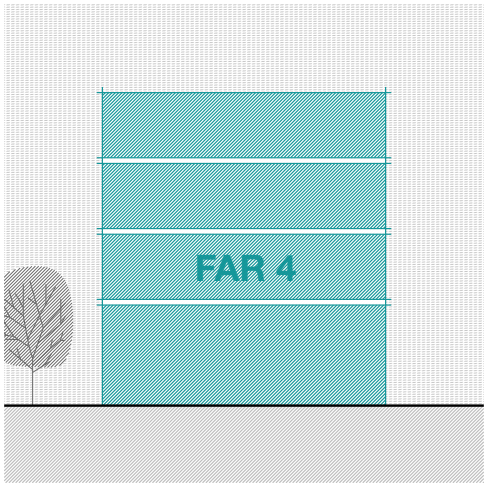


Figure 3.22. Axonometric of Mixed-use Big Bar Typology.

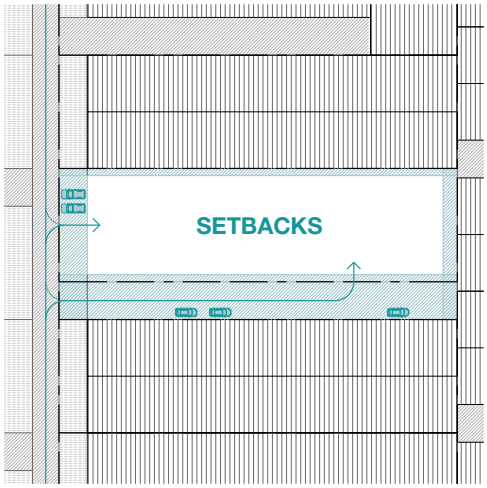
2.3. The Strategies and Tactics

By using the four basic mixed-use typologies as experiment, different combinations of programs and spaces are tested to anticipate the different possible points of conflict and opportunities. These are then the points of intervention in which the *Strategies and Tactics* take place. The purpose of these "rules of engagement" is to guide the design of individual buildings within the site – answering questions such as: how different programs might interact with one another? How will the building and its different programs be accessed? And how buildings might be designed in response to the local practices using space. Distilled from the study of existing built vernacular of Taiwan, the *Tactics* aspect of this component is a key part of the counter-master plan which represents a shift in the focus of the plan from a prescriptive one to a responsive one.



1) If/when redeveloping a lot, the building may densify to **FAR 4** but must:

a) abide by the **programmatic zoning requirement**.



2) If/when redeveloping a lot, the building must:

a) at minimum, maintain existing laneways and front setbacks; and

b) at minimum, setback 3 metres from the back of the site; and

c) at minimum, setback 1.5 metres from the sides of the site.

And these spaces may be used for:

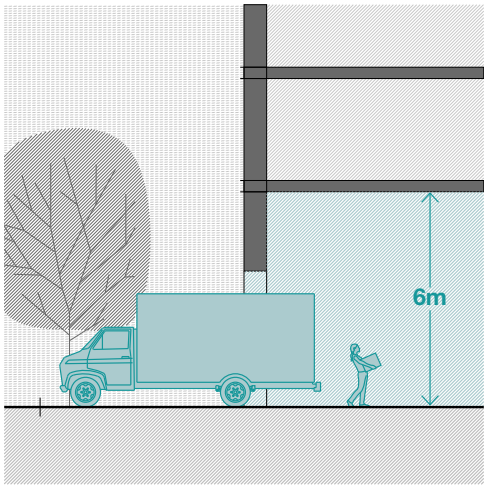
d) access; and

e) parking and loading; and

f) rituals or celebrations.

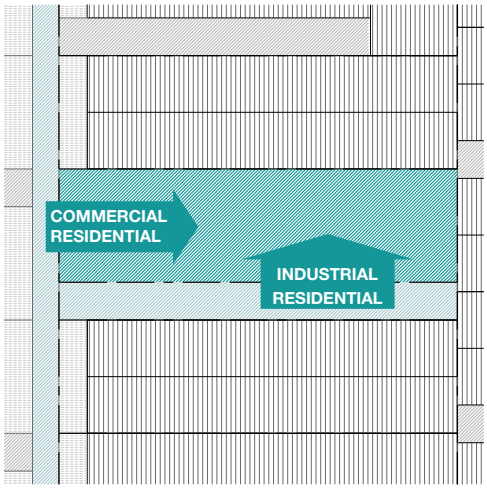
g) [...]

Figure 3.23. Strategies and Tactics Diagrams 1-2.



3) For any new buildings, unless solely for residential use, the ground floor level must be at minimum 6 metres in height. This allows for:

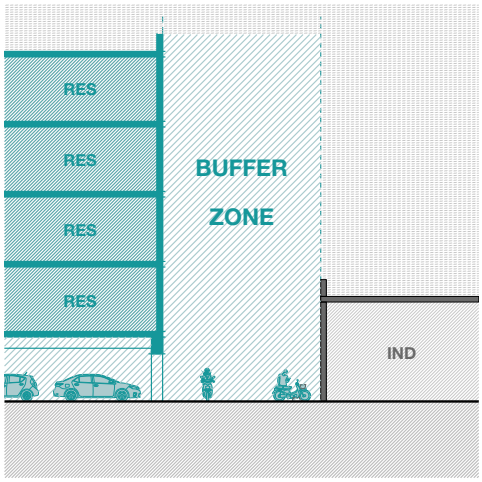
- **a)** flexible occupation by industrial or commercial uses; and
- **b)** secondary structures to be built within the existing structure; and
- **c)** commercial and industrial loading and storage.
- **d)** [...]



4) For access to any new developments:

- **a)** at minimum, maintain existing laneways and front setbacks; and
- **b)** street frontage must be prioritized for commercial uses; and
- **c)** laneway frontage must be prioritized for industrial uses; and
- **d)** residential access may be from the street or from laneways or both.
- **e)** [...]

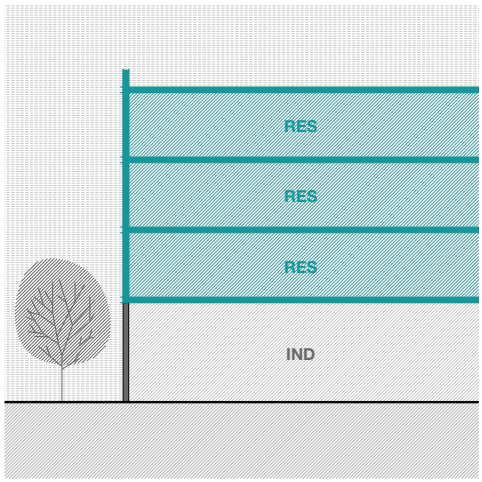
Figure 3.24. Strategies and Tactics Diagrams 3-4.



5) If/when residential and industrial uses are adjacent to each other:

a) a buffer zone (e.g. laneways) is required between residential and industrial uses;

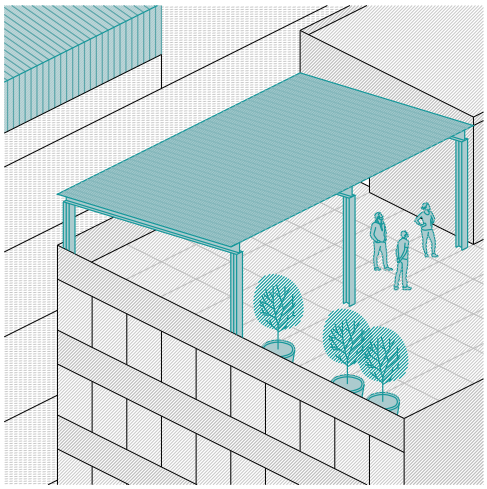
b) residential units shall not occupy ground floors if facing industrial uses.



6) If/when residential and industrial occupy the same building

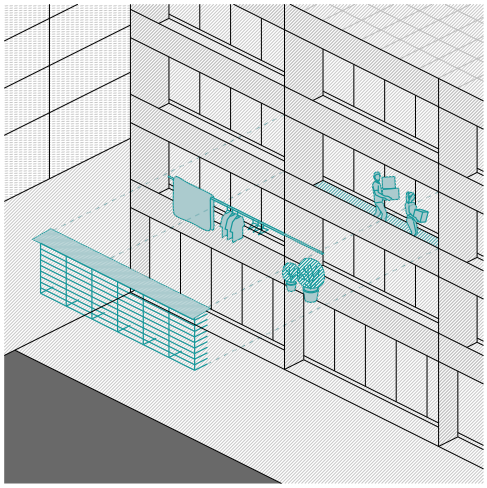
a) residential units shall not occupy floors below industrial uses.

Figure 3.25. Strategies and Tactics Diagrams 5-6.



7) On any new buildings, the rooftops must be accessible and programmable, and these spaces may be used for:

- **a)** additional structures;
- **b)** public uses such as recreation;
- **c)** private uses such as hobby planting.
- **d)** [...]



8) Every residential unit must have a balcony, and these spaces may:

- **a)** later be enclosed by the individual residents;
- **b)** be used for storage, planting, laundry, or more.

Figure 3.26. Strategies and Tactics Diagrams 7-8.

3. Speculative Design

With the overall *(Lack of a) Plan* and *Strategies and Tactics* in place, the thesis culminates in speculating on how the site might evolve over time and the design of three buildings within the site. The objective of the design exercise is to illustrate how the various aspects of the *Interface City* come together to manifest in the physical spaces of Wenzhai Zun.

In the following pages, site plan drawings illustrate the site of the thesis site at 30 percent redevelopment and at 60 percent redevelopement. In the two projection, the redevelopment begins firstly with most commercially viable area of the site then moves inward towards the center of the site.

Furthermore, taking the site at 60 percent redeveloped to illustrate the different layers of the *Interface City,* in a typical plan across the site, buildings can be accessed through a network of laneways and setbacks and can co-exist with any remaining sheds. The aggregate of these laneways gives the site a porosity and connection with the rest of the city which it did not exist before. A single person might live in one end of the Interface City, and work in another. A single vertically integrated business might occupy an entire building. Or a network of partnerships might take place across multiple buildings as it already does at Wenzhai Zun.

Figure 3.2. Site of Thesis

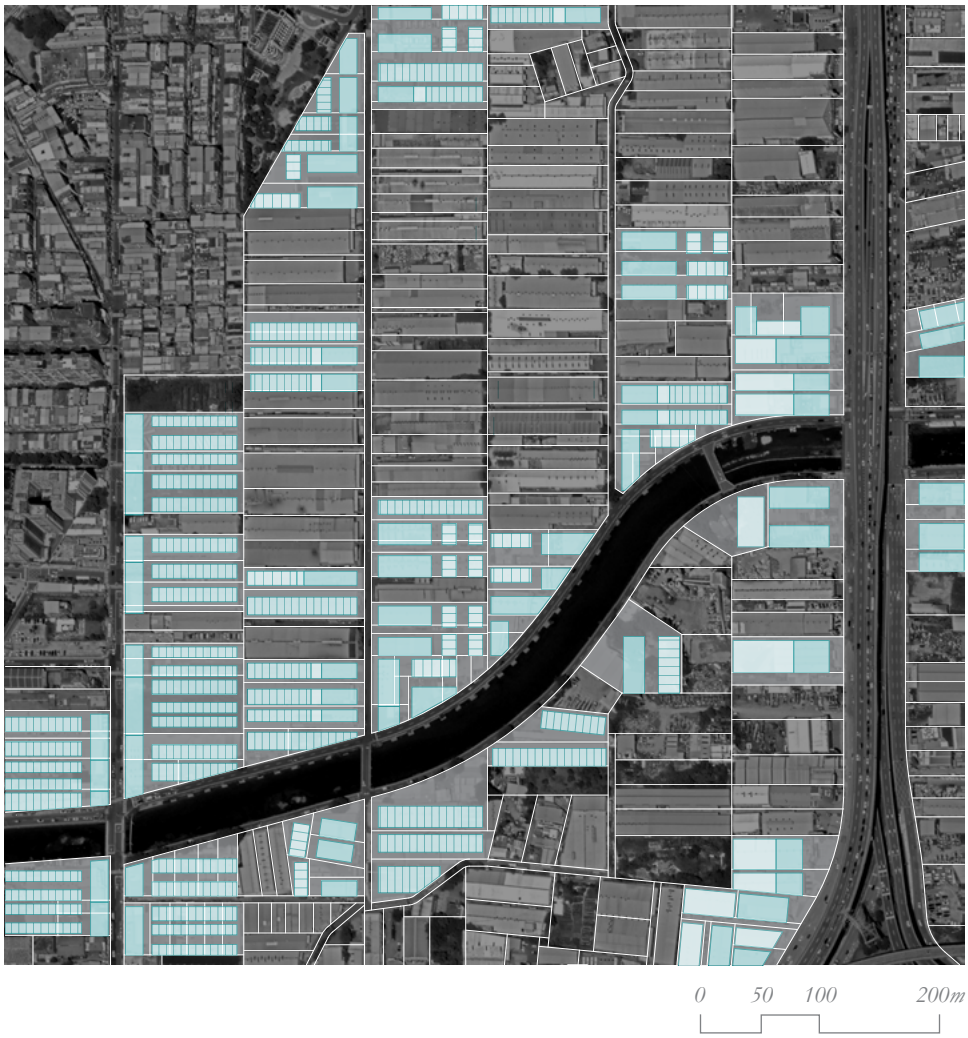


Figure 3.27. Redevelopment at 30%.

This drawing projects that redevelopment of the site will begin with the most commercially viable areas of the plan, which are concentrated around the major arterial roads on western edges of the site and along the canal, as those area of the city either already have high-rise development taking place or can easily be accessed from the rest of the city.

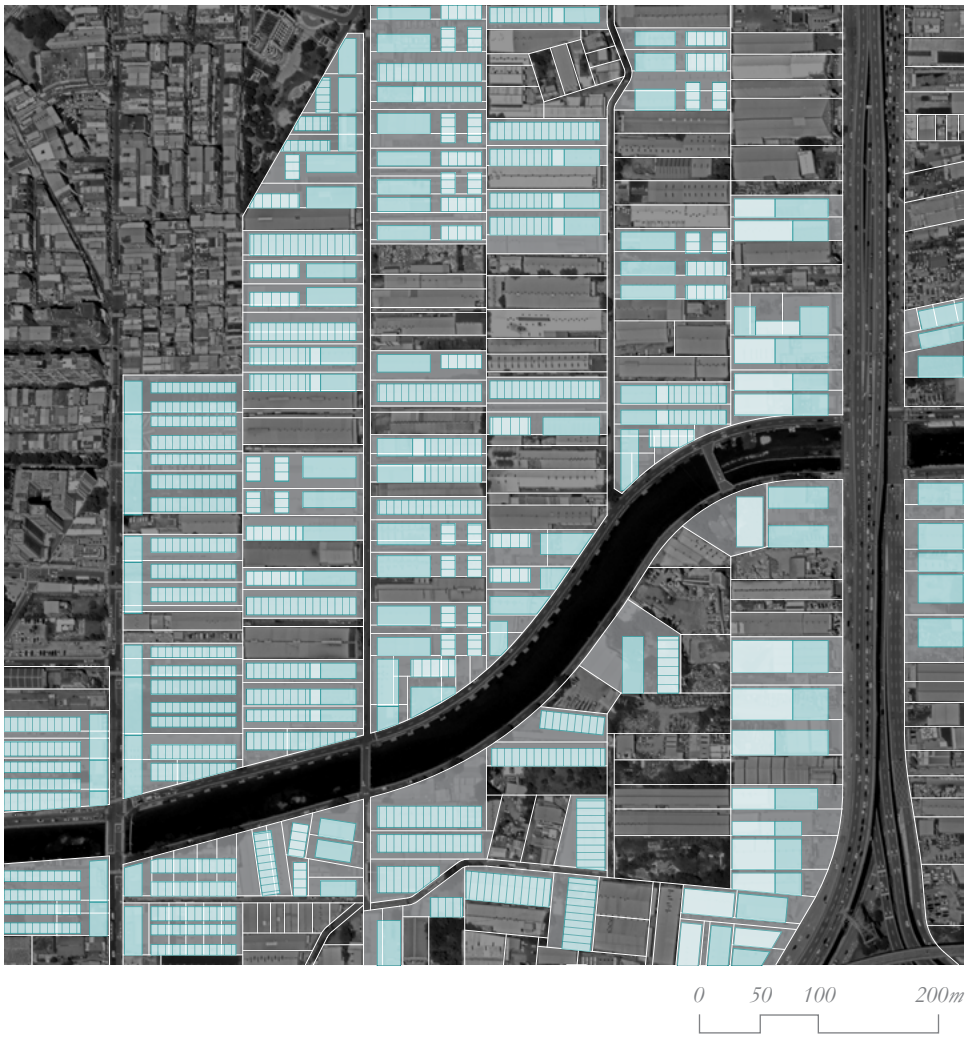


Figure 3.28. Redevelopment at 60%.

At 60% of the lots within the site redeveloped, densification begins to extend into the inner parts of the site. Still, this study projects that the western parts of the site will develop faster than the eastern parts as it has a better connection with the rest of the city.

Figure 3.29. Typical Strip of Plan Across Wenzhai Zun as per the Counter-Master Plan

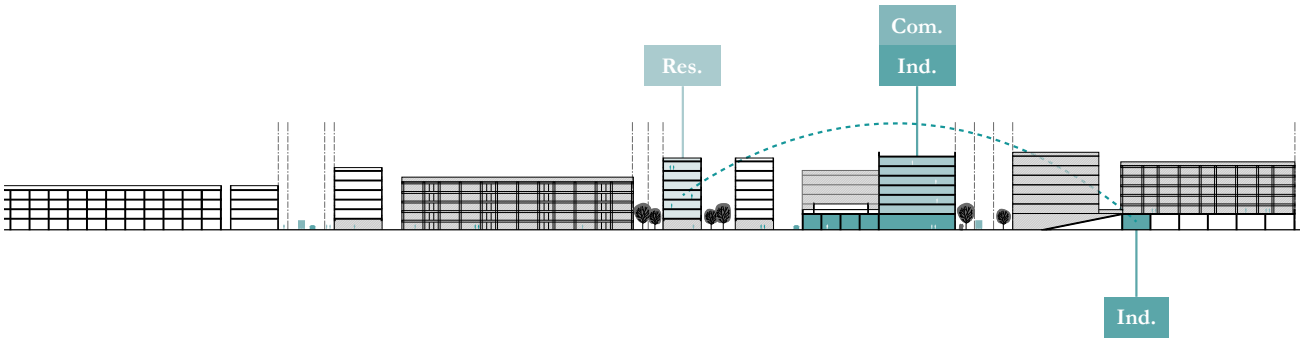
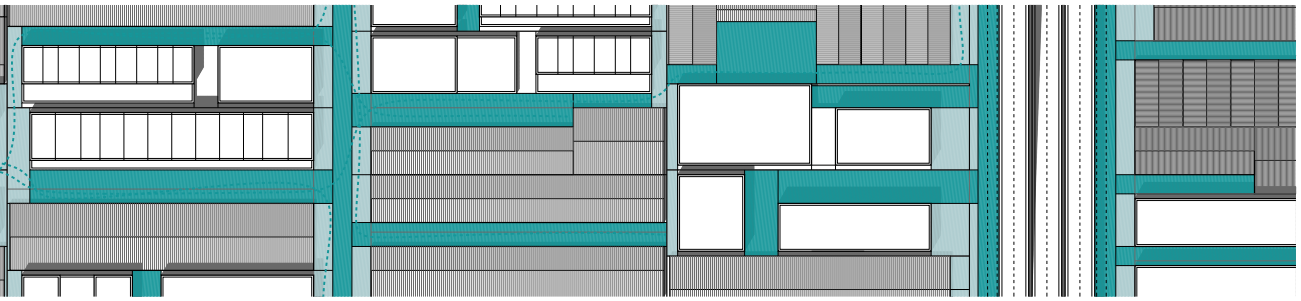
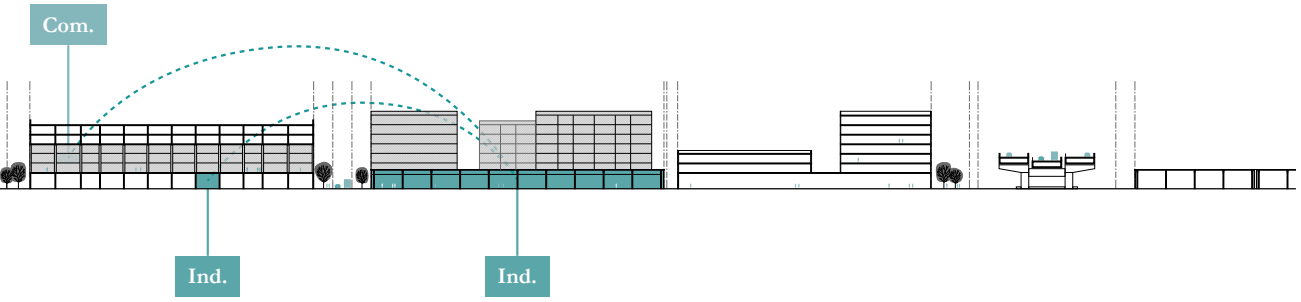


Figure 3.30. Typical Section Across Wenzhai Zun as per the Counter-Master Plan



0 10 50 100 200m



0 10 50 100 200m

3.1. Building One – Big Box and Mid-rise Building Type

For the first design within the site, this exercise takes a lot within Zone B of the counter-master plan and builds on the big box and mid-rise building type. In this building type, commercial stories above are accessed from the street, and industrial bays and residential units are accessed through a laneway. On the roof, the residential portion may be used for daily activities such as hanging laundry and drying fruits or vegetables And the industrial portion may be used as a public space such as a basketball court.

Furthermore, in a sectional view of the building, light industrial spaces such as a mechanics co-exist with residential spaces such as apartments, and factories can co-exist with greenery. The 6-meter industrial bays allows for mezzanine structures, and their industrial activities might spill out onto the laneway. Residential balconies can be closed in as it is commonly done in Taiwan, and there can be plantings on the roofs and additional stories built out of sheds.

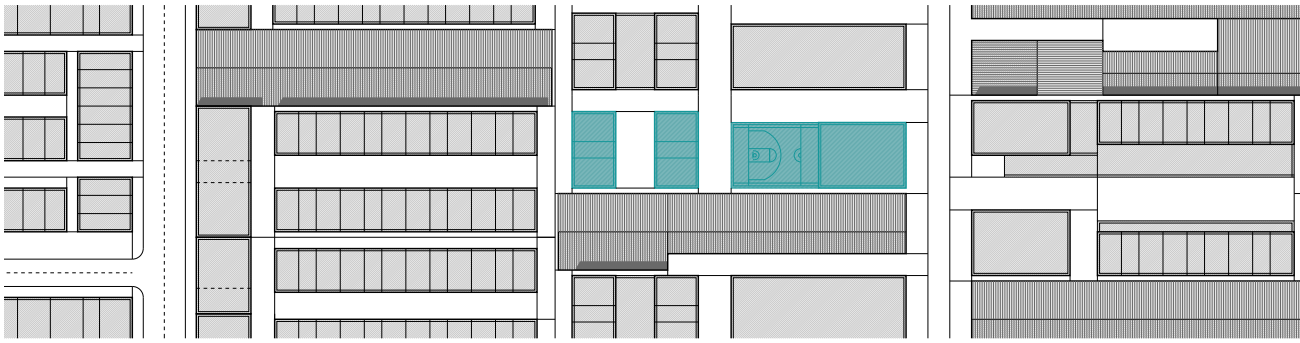


Figure 3.31. Building One Key Plan.

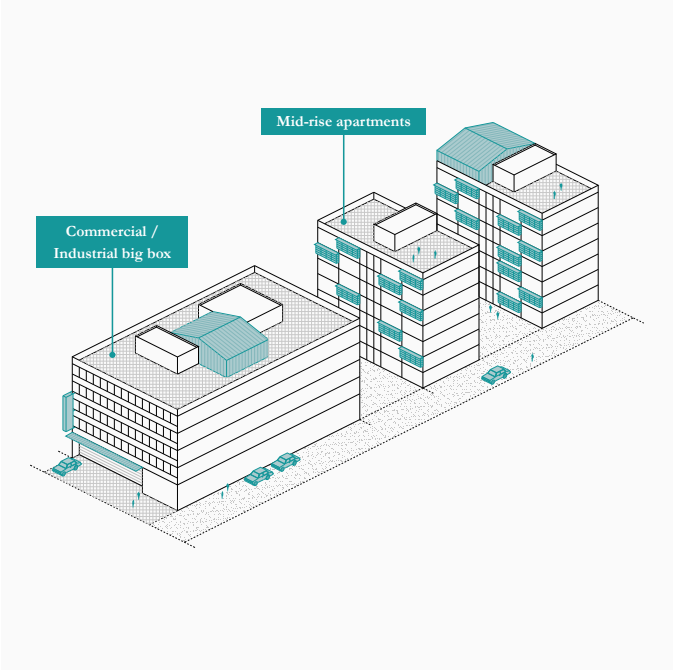
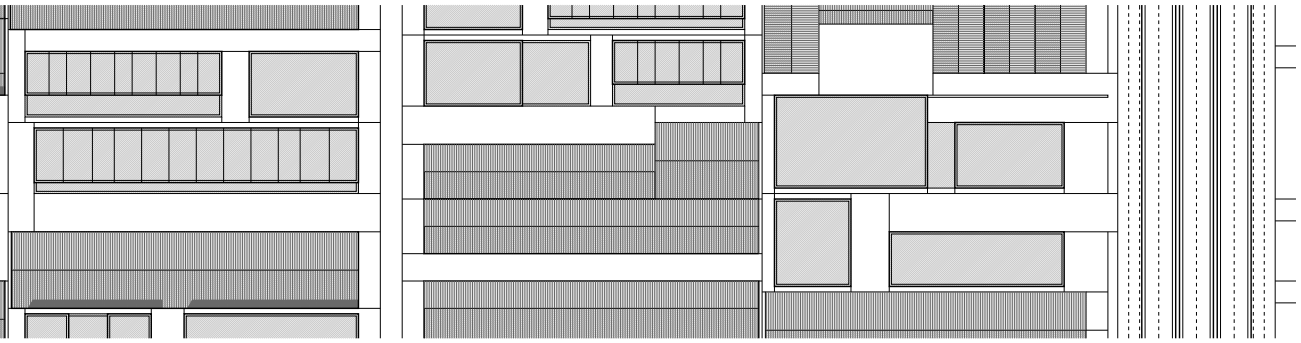


Figure 3.20. Axonometric of Big Box and Mid-rise Apartments Mixed-use Typology.



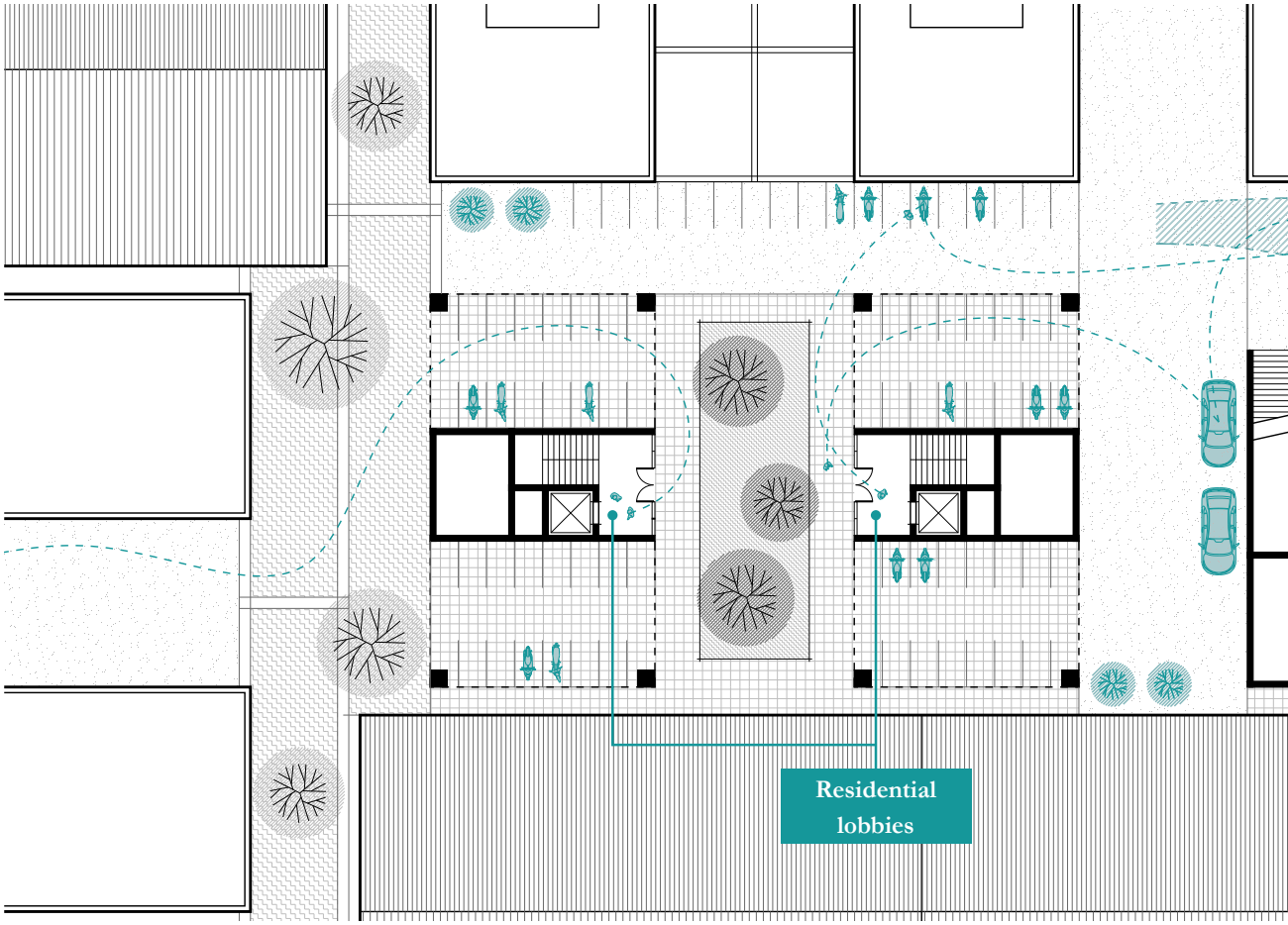
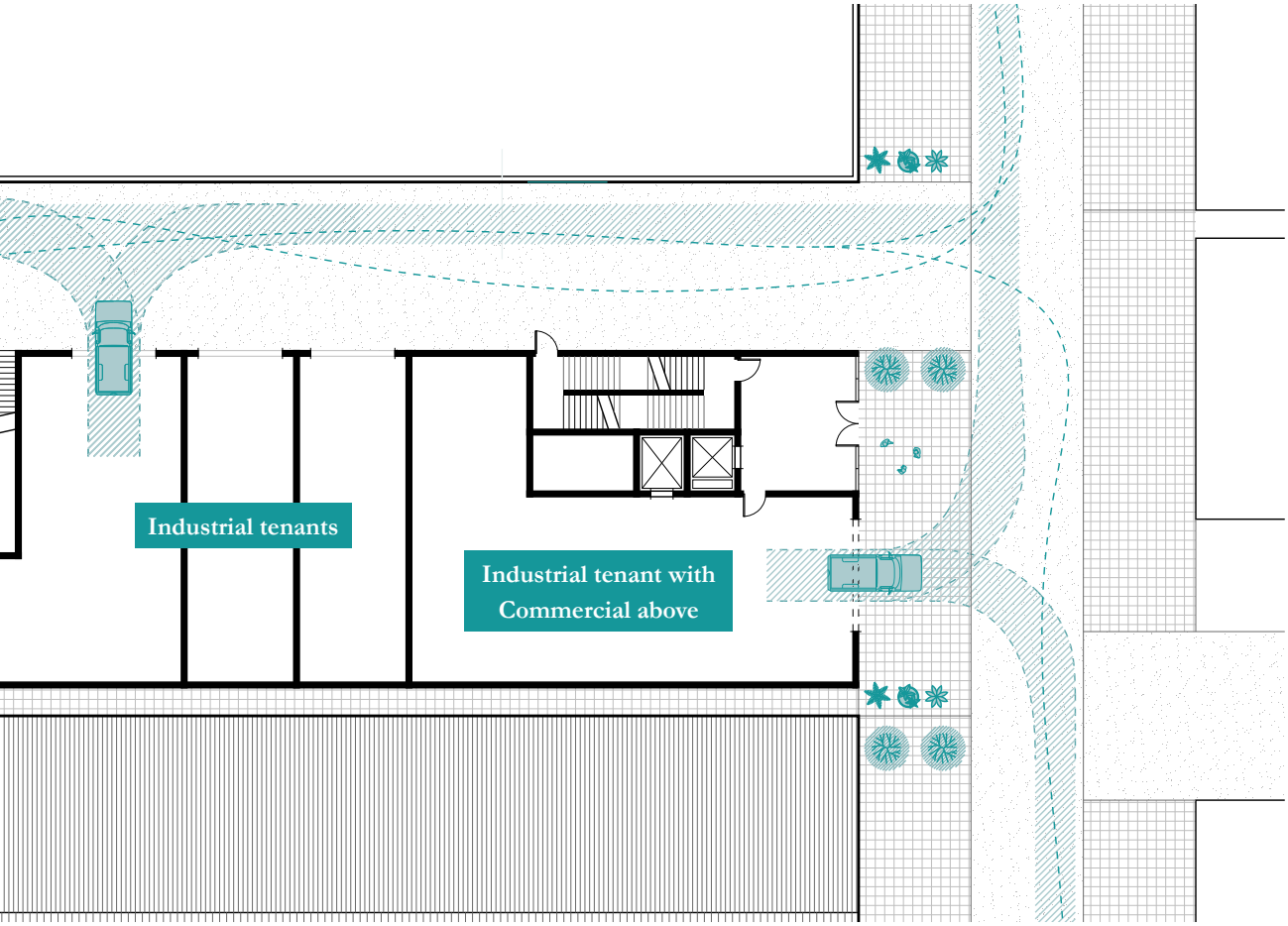


Figure 3.32. Building One Ground Floor Plan.

In this building type, the commercial stories above are accessed from the street, and the industrial bays from the laneways, and residential is in the back, also accessed through a laneway.


Industrial tenants
Industrial tenant with
Commercial above

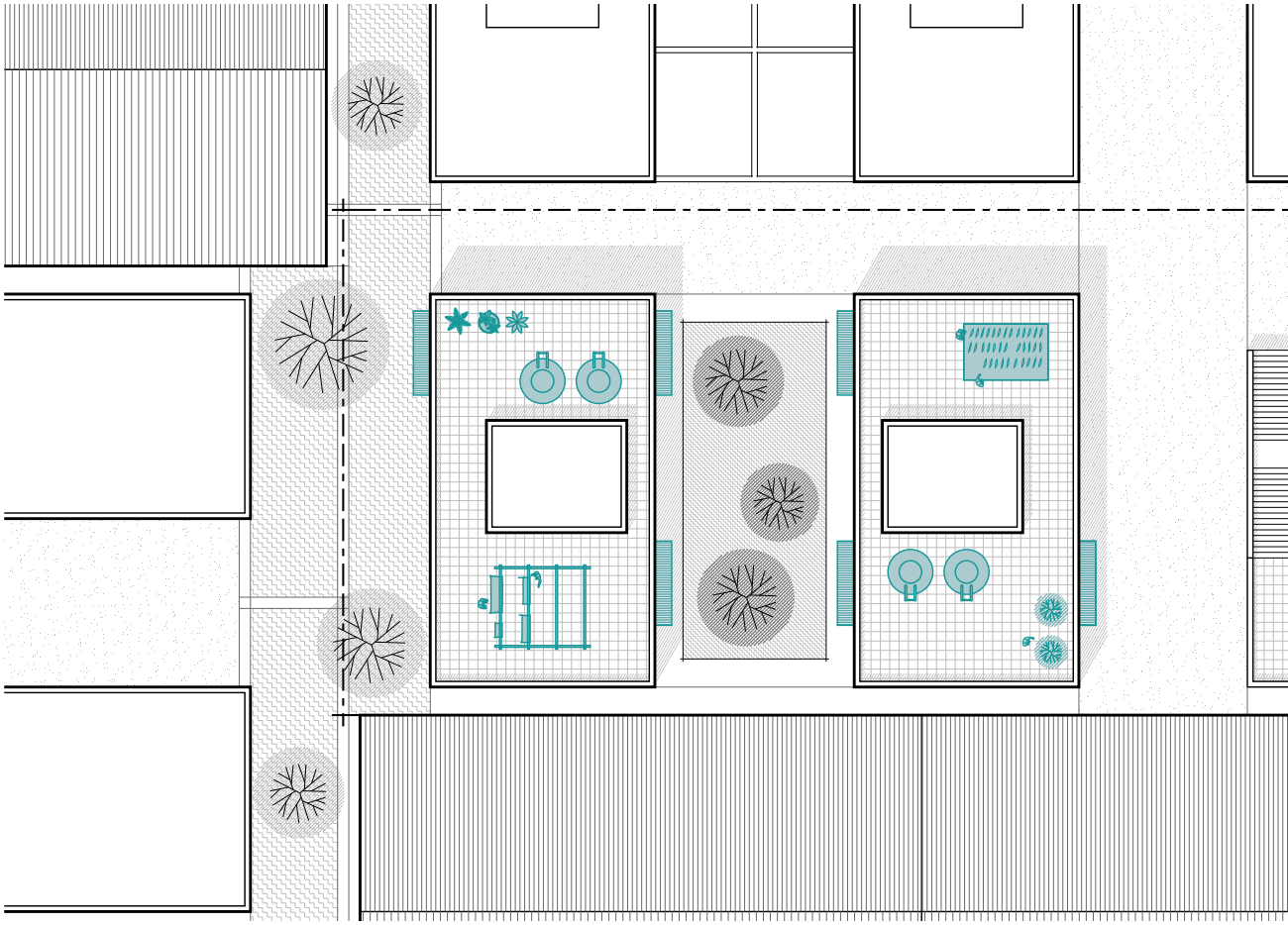
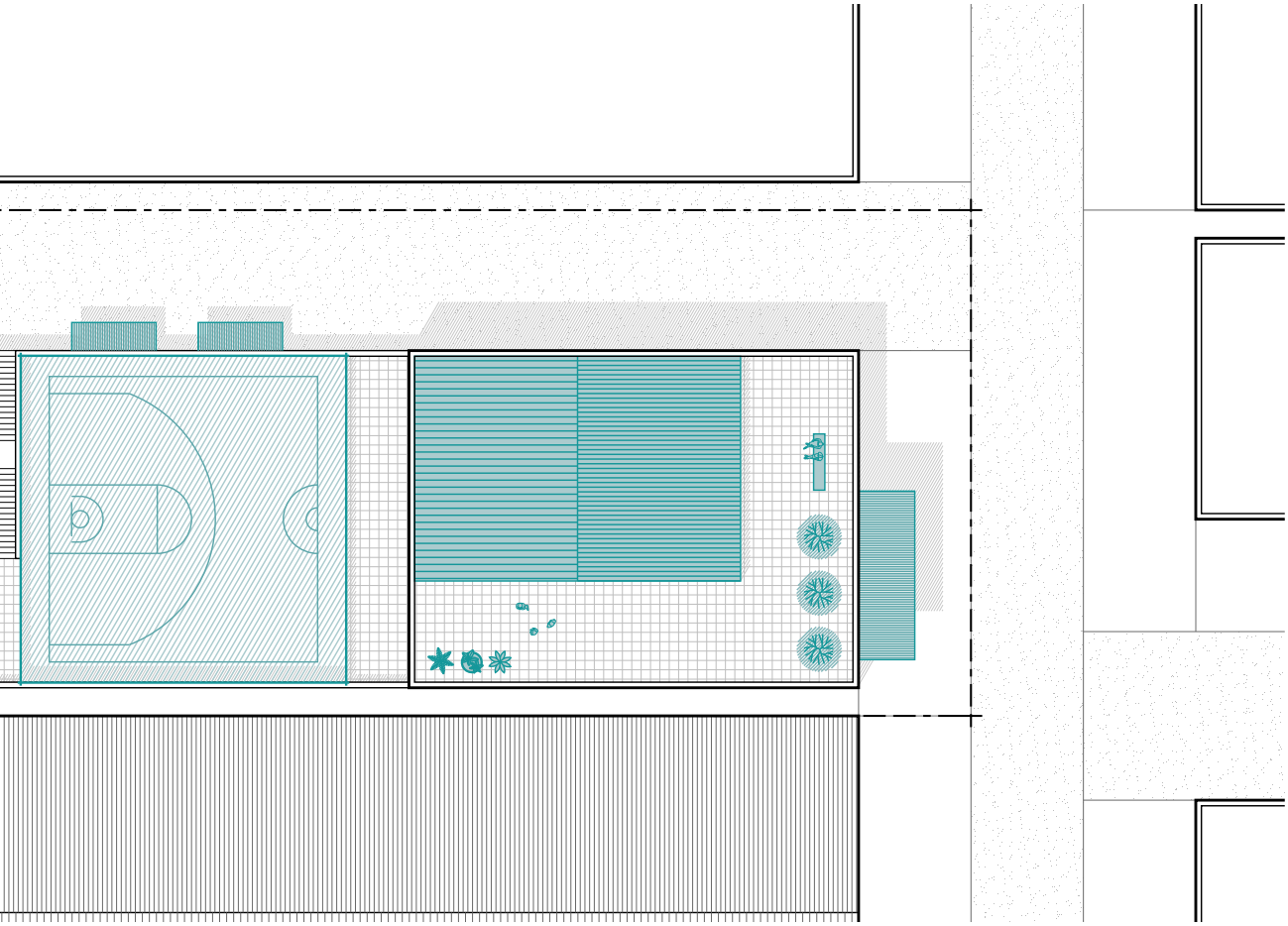


Figure 3.33. Building One Roof Plan.

On the roofs, the residential portion may be used to things like hanging laundry and drying fruits or vegetables. And on the industrial portion, a large open space may be used a public space such as basketball court.



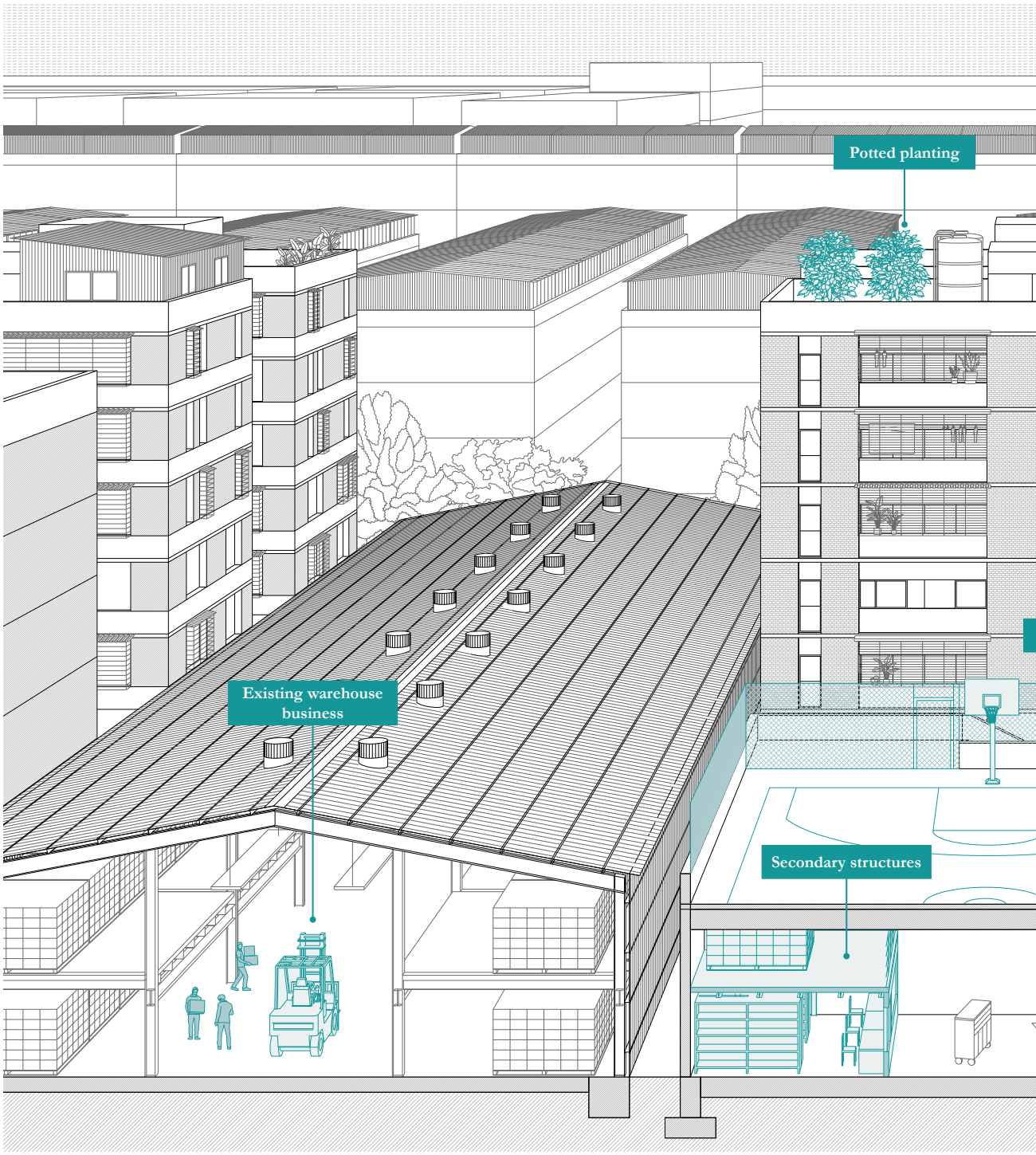
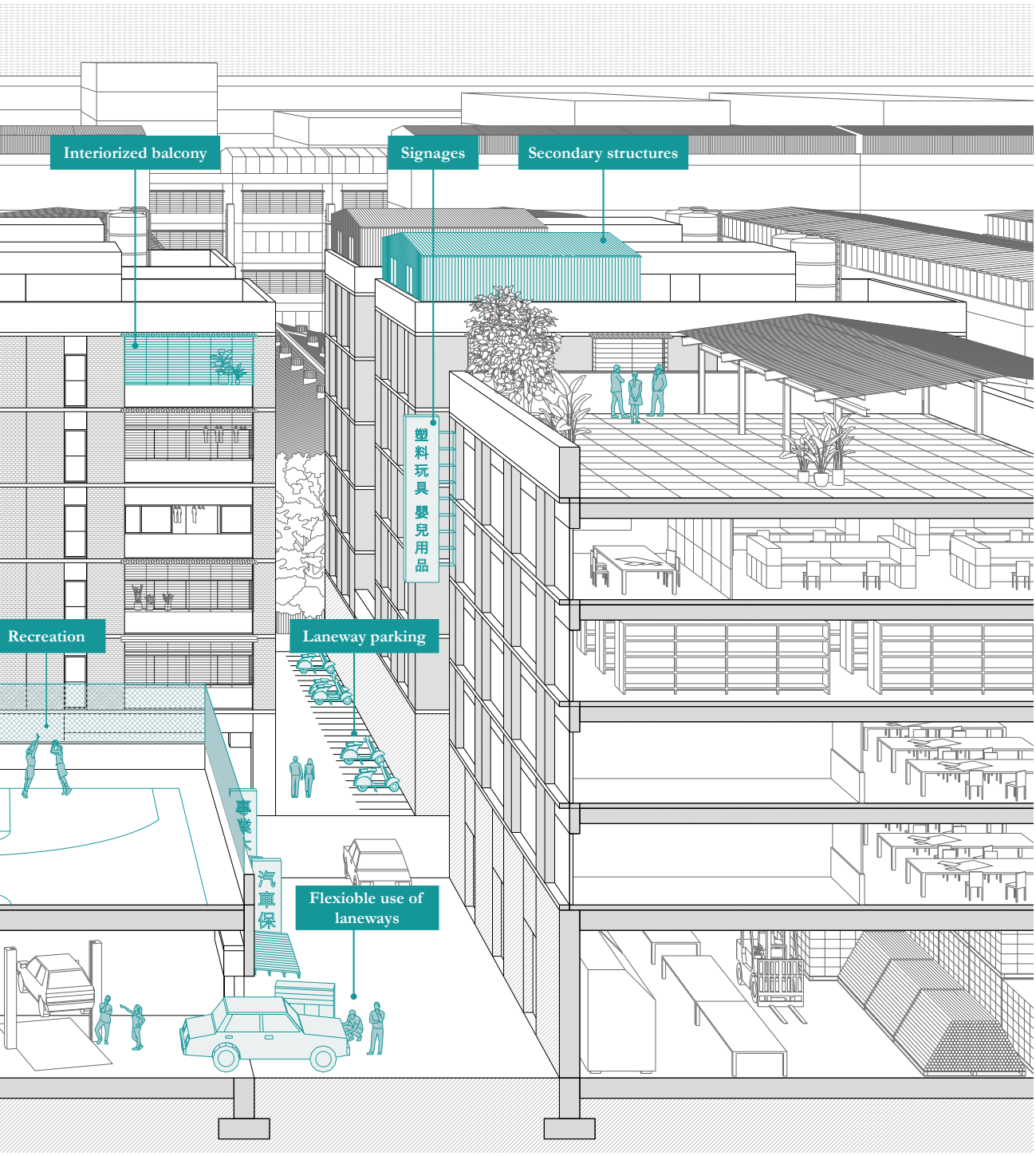


Figure 3.33. Building One Sectional Perspective.


Interiorized balcony
Signages
Secondary structures
塑料玩具 嬰兒用品
Recreation
Laneway parking
汽車保
Flexioble use of laneways

3.1. Building Two – Mixed-use on Simple Box Building Type

For the second building design within the site, this exercise takes a lot within Zone C of the counter-master plan and builds on the mixed-use on simple box building type. In this building, residential units are accessed from the second floor through a ramp and stairs, and the podium can be used for residential parking, similar to a laneway.

While the flexibility of the industrial and commercial spaces are found in their simplicity and open plans, in a typical residential plan, one can see that the same can be achieved for residential uses. Bathrooms and kitchens can be organized into standard modules to allow the rest of the floor plate to be occupied and partitioned freely. And units can expand if there is ever a need, for example, as a family grows.

In the sectional view, it is shown that two buildings might share laneways, as the existing sheds do, and that the industrial simple boxes on the ground floor create a datum and buffer between the more public ground and the more private residences.

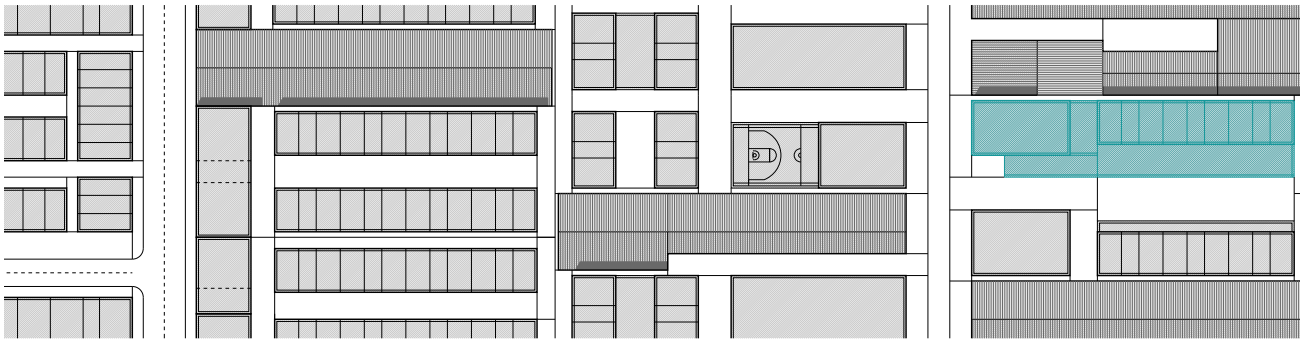


Figure 3.34. Building Two Key Plan.

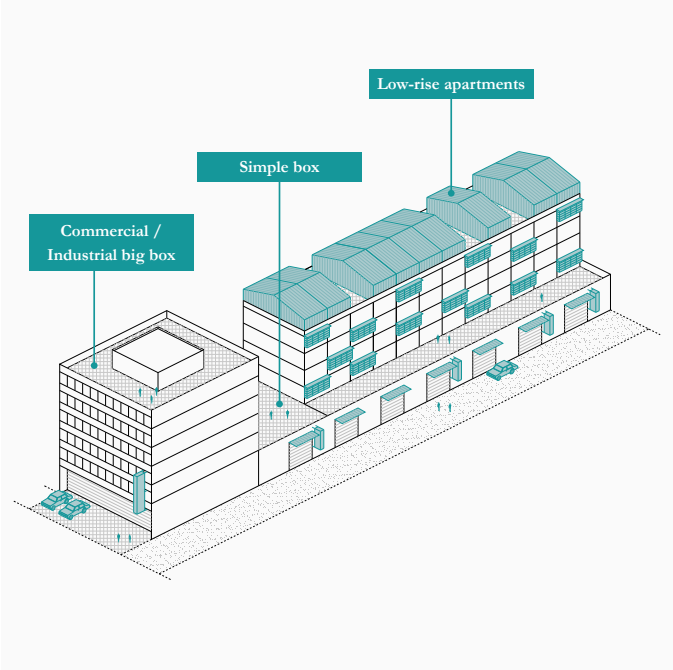
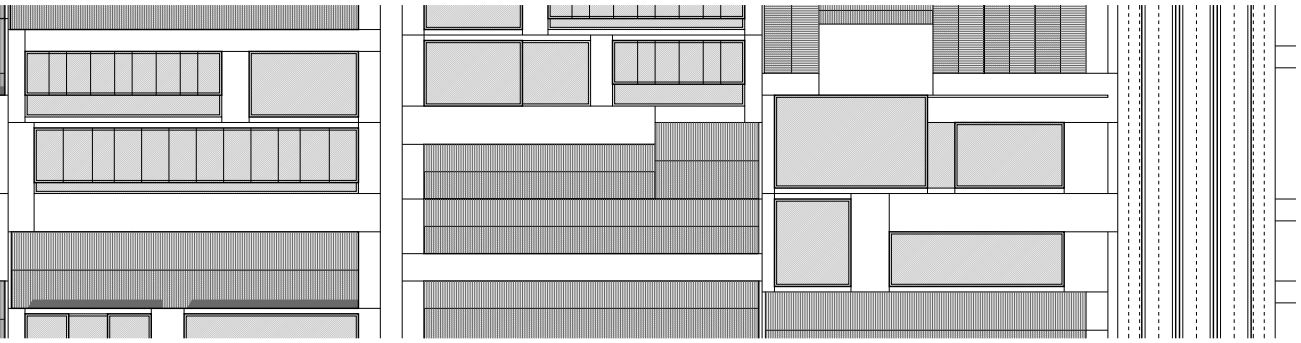


Figure 3.21. Axonometric of Mixed-use on Simple Box Typology.



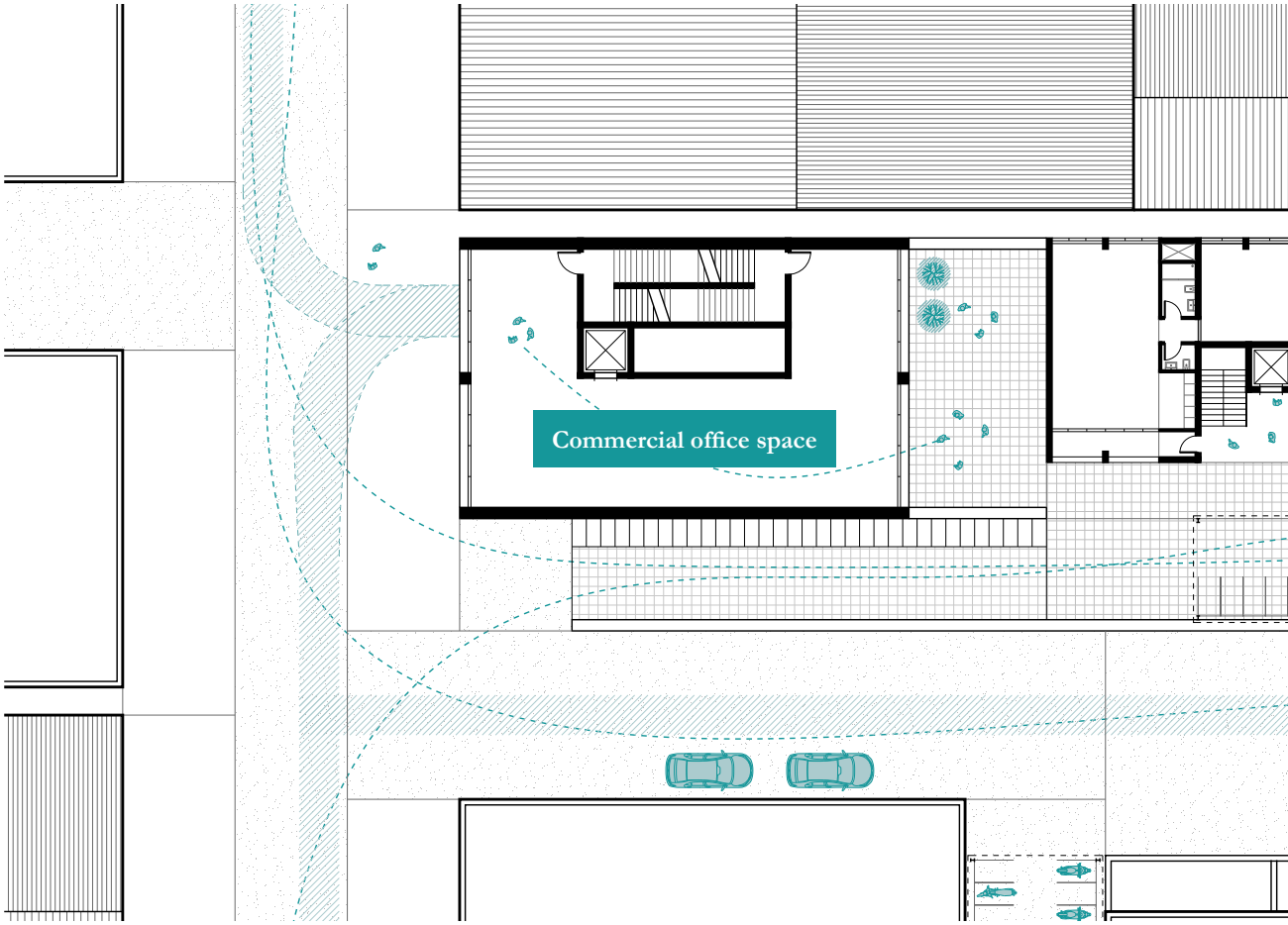
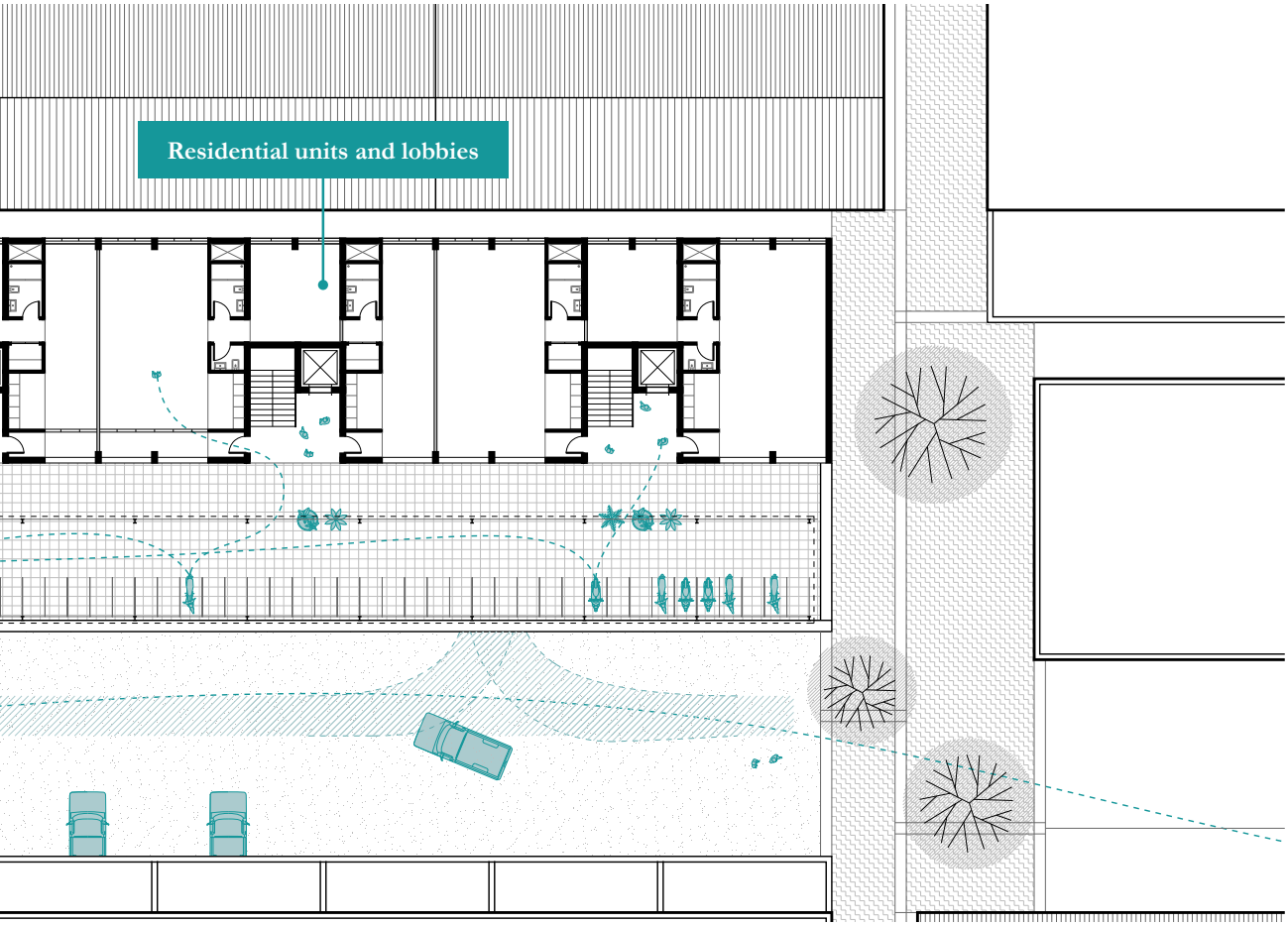


Figure 3.35. Building Two Second Floor Plan.

In this building type, residential units are accessed from the second floor through a ramp and stairs. And the podium can be used for residential parking, similar to a laneway.


Residential units and lobbies

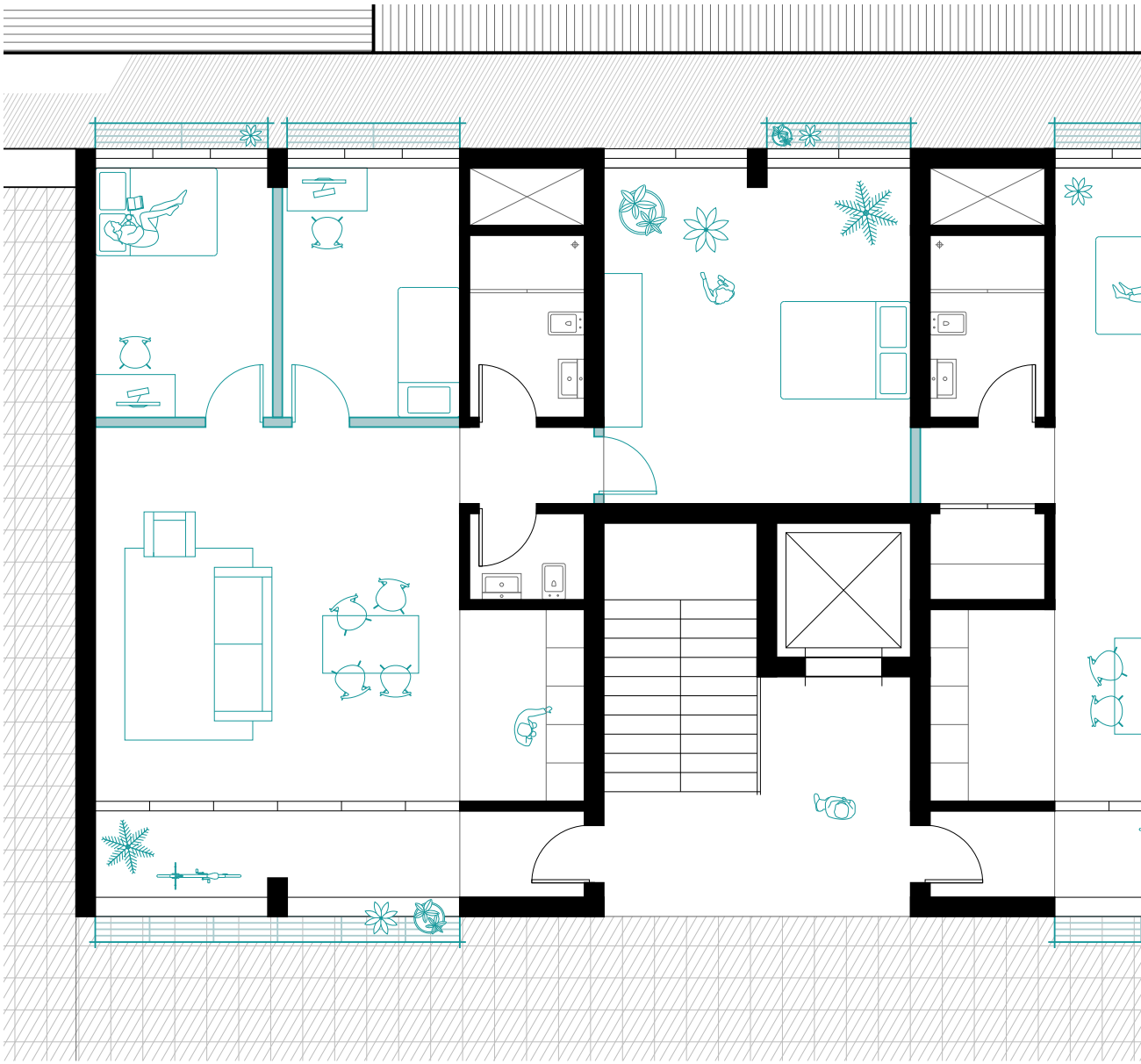
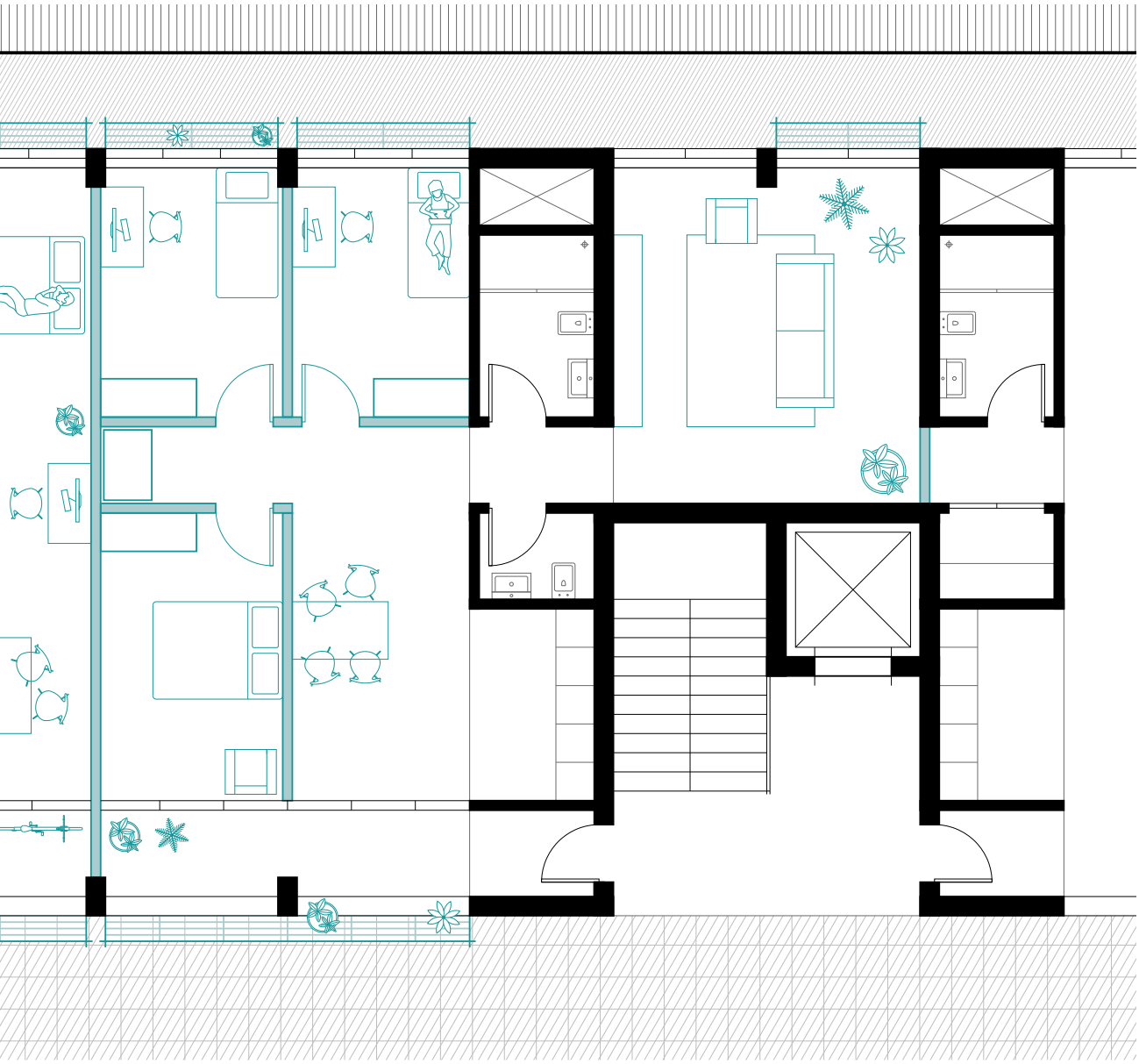


Figure 3.36. Building Two Typical Residential Plan.

Similar to the open plans of industrial and commercial spaces, residential floor plans can also be flexible. In this typical residential plan of the mixed-use on simple box building type, service spaces are grouped into standard modules, thus allowing for different combination of unit sizes and layouts within the typical floor plate.



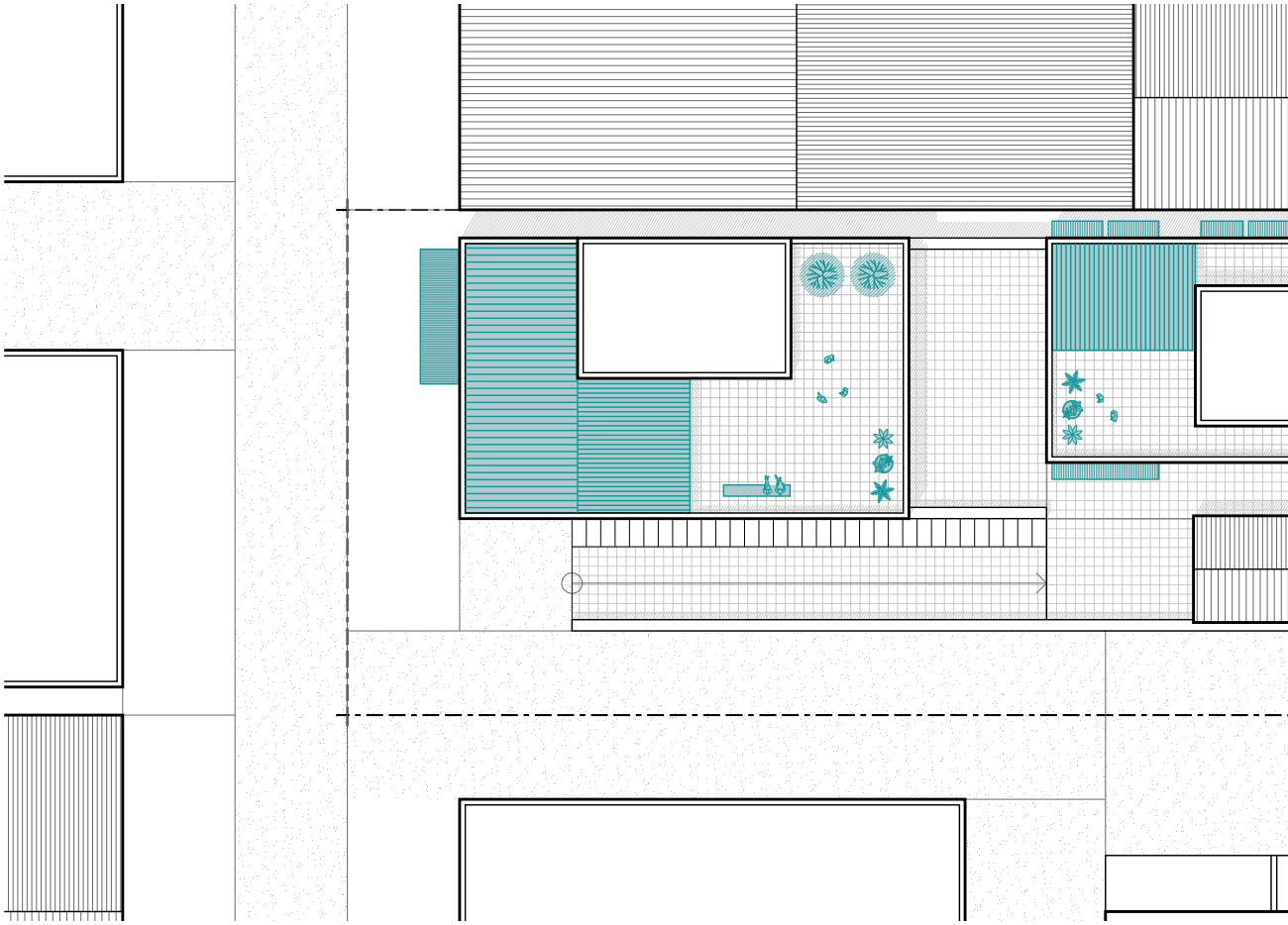
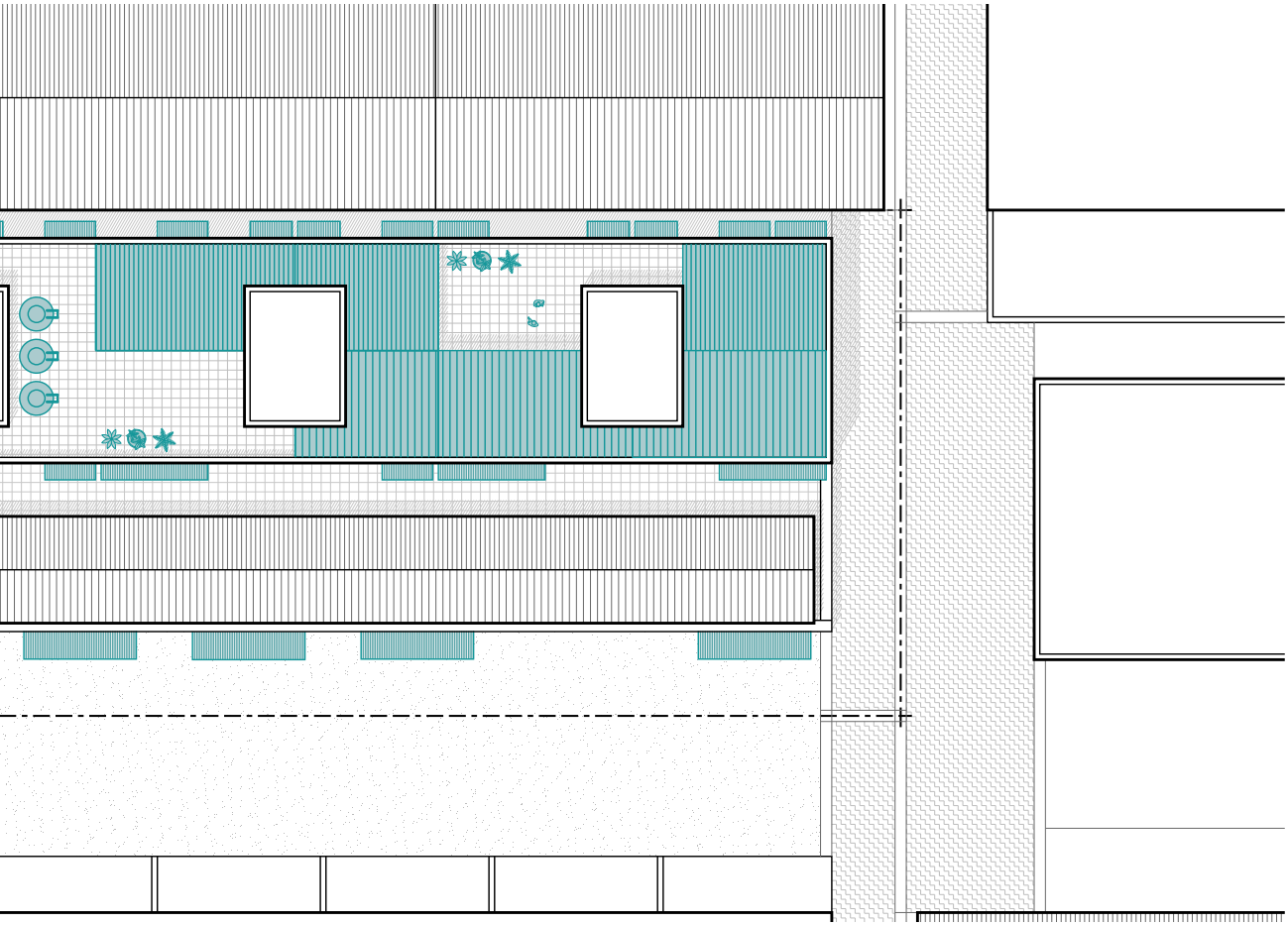


Figure 3.37. Building Two Roof Plan.

on the roof, similar to existing low-rise apartments, tenants will likely build additional stories on top for uses such as additional units, rooms, and storage spaces.



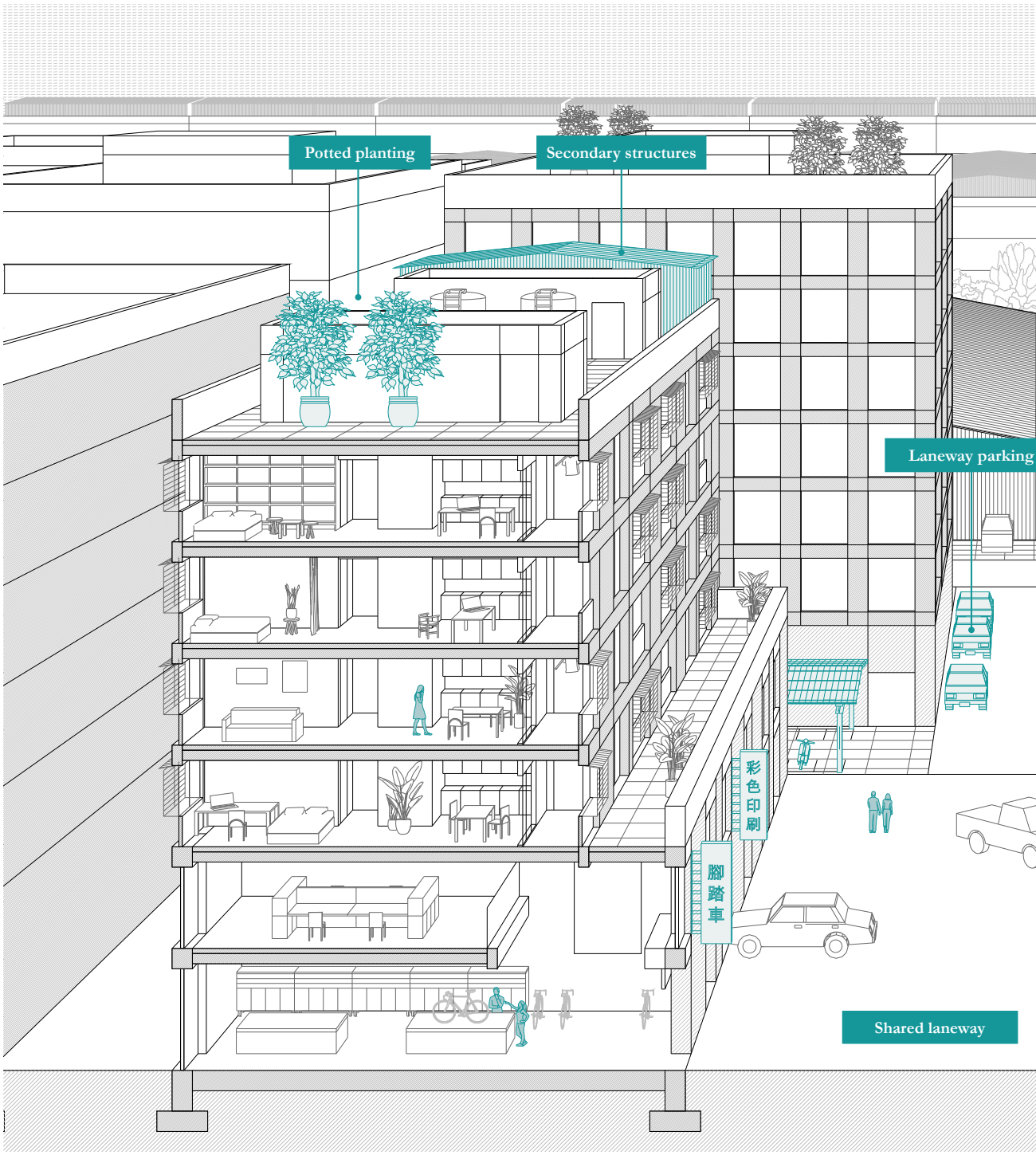
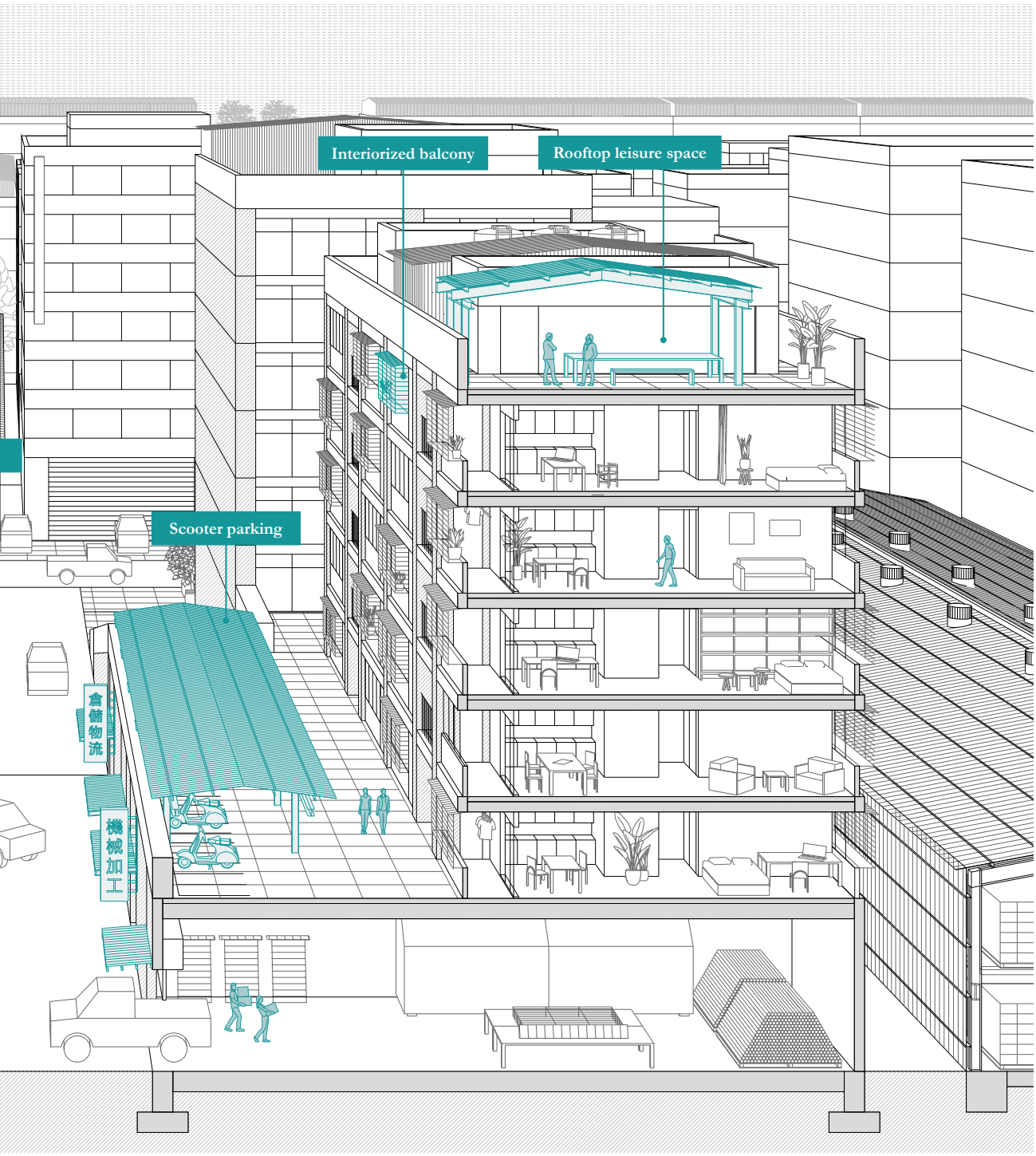


Figure 3.38. Building Two Sectional Perspective.


Interiorized balcony
Rooftop leisure space
Scooter parking
倉儲物流
機械加工

3.1. Building Three – Mixed-use Big Bar Building Type

Finally, for the third building design, this exercise takes a lot within Zone D of the counter-master plan and builds on the mixed-use big bar building type. This is a building type that is the most similar to existing sheds. On the ground floor, industrial bays are organized and accessed along a laneway. On the upper floors, a similar idea carries through. A shared gallery services many commercial tenants that can range from accountants, to dentist, or graphic designers just to name a few. In this way, the building begins to form its own internal communities and economies while also taking part in larger regional or global systems.

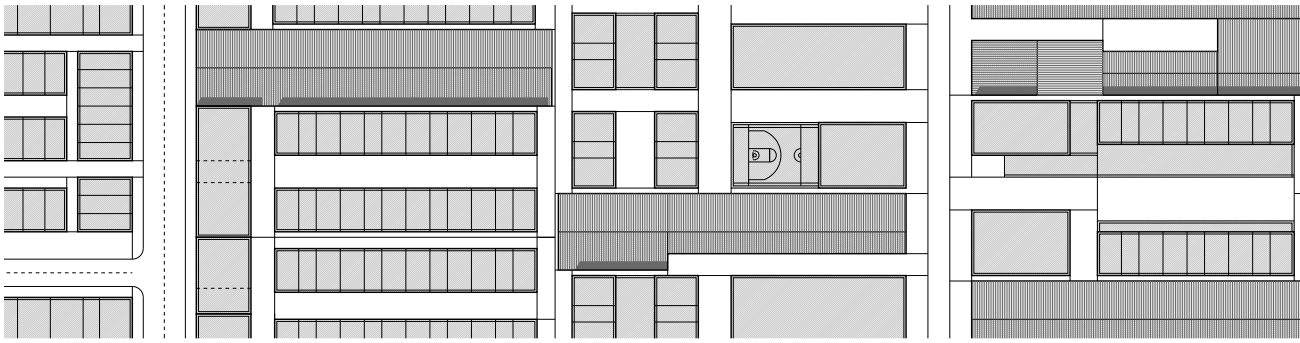


Figure 3.39. Building Three Key Plan.

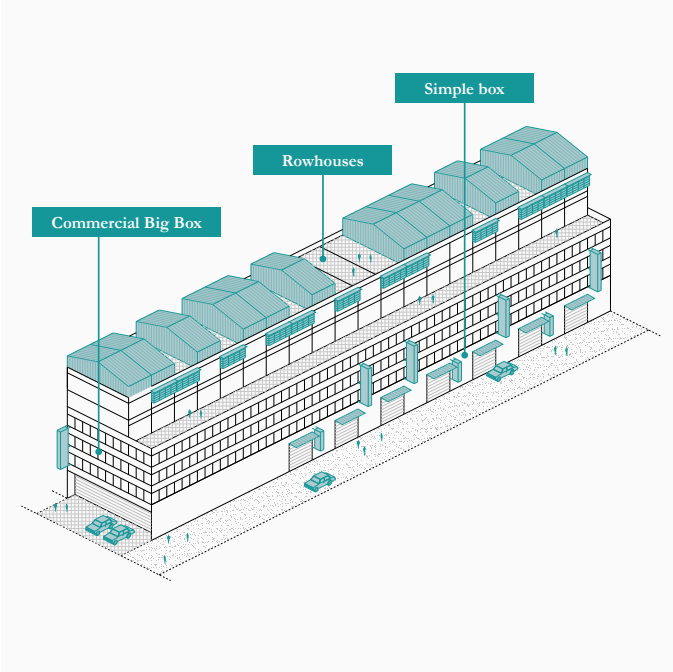
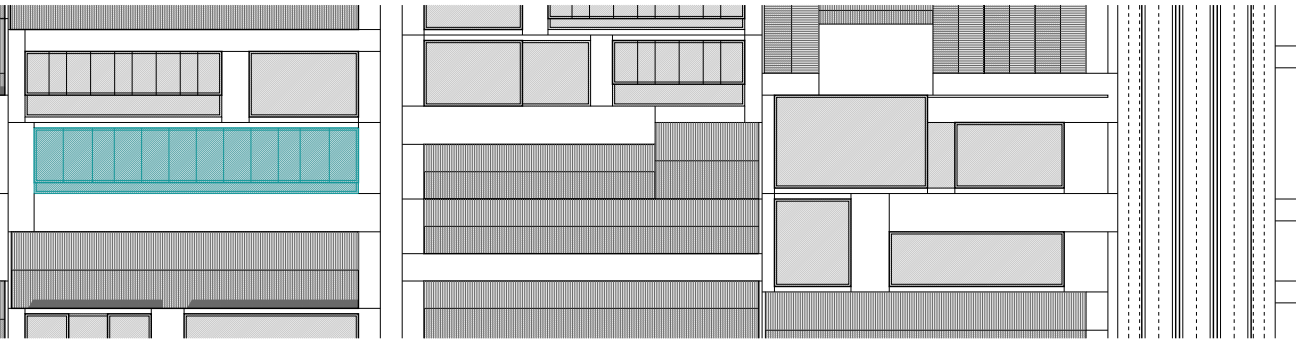


Figure 3.22. Axonometric of Mixed-use Big Bar Typology.



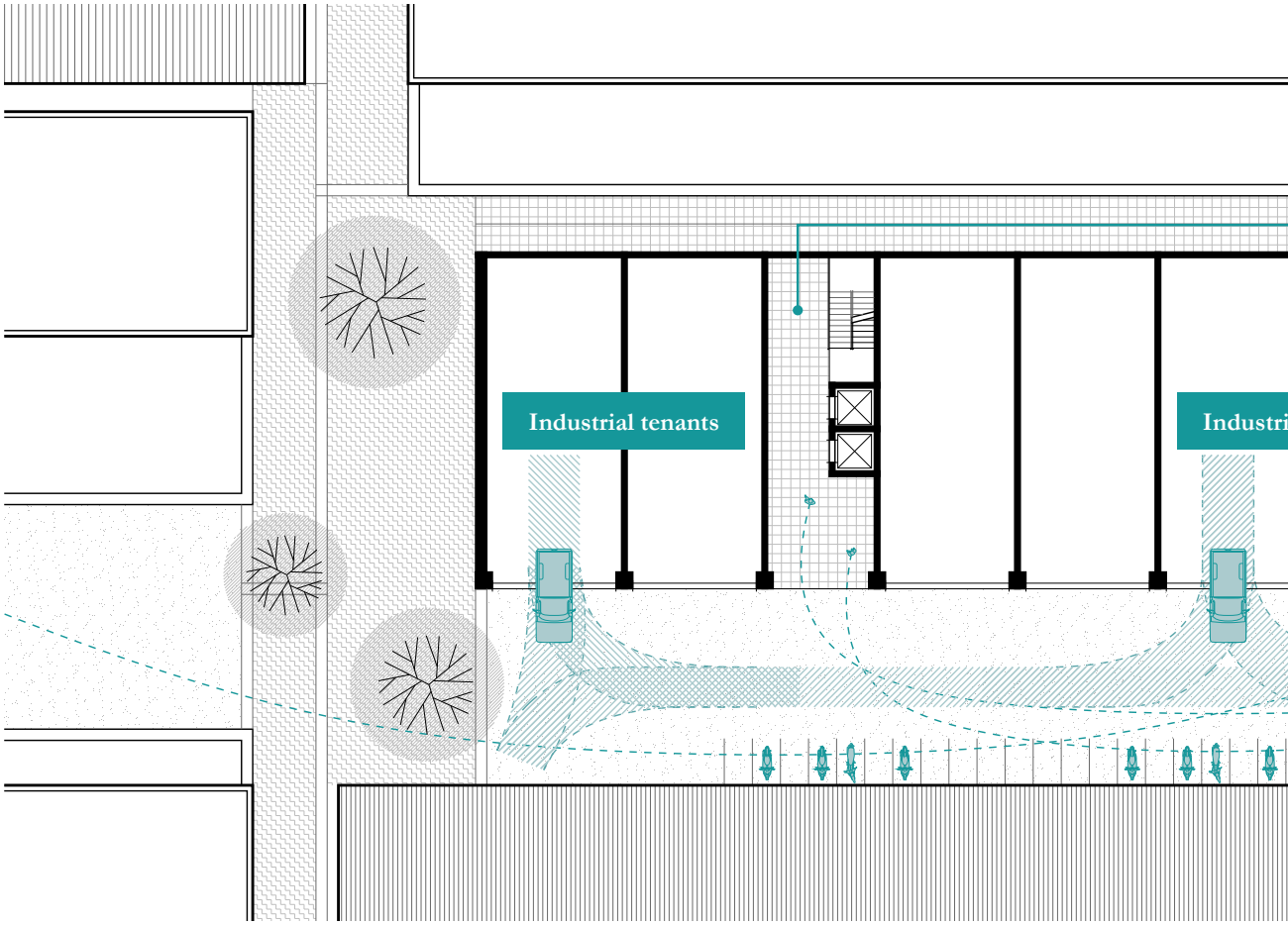
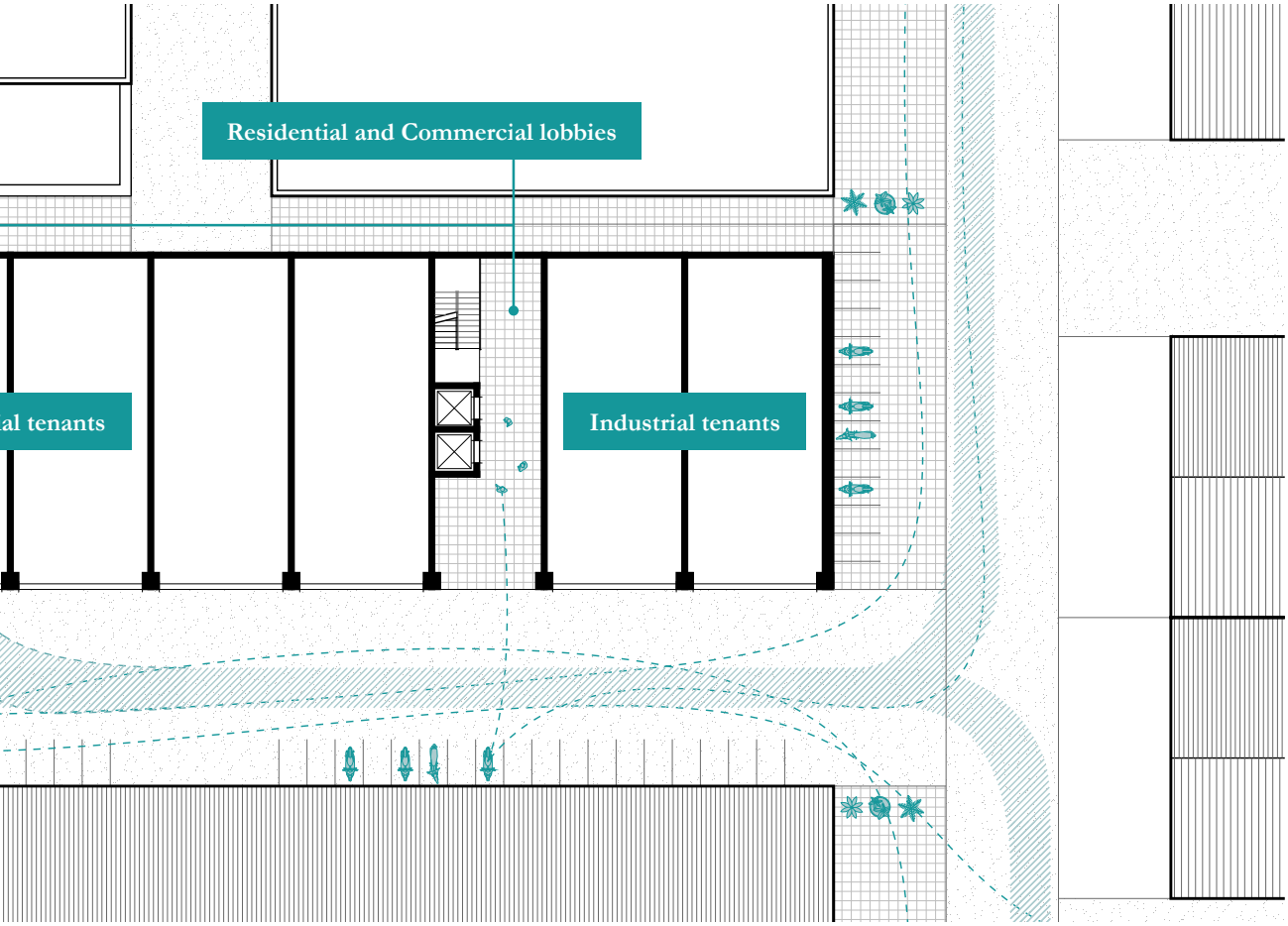


Figure 3.40. Building Two Ground Floor Plan.

On the ground floor, this is a building type that is the most similar to existing sheds. Industrial bays are organized and access along a laneway, thus allowing for a multitude of tenants to occupy a single building.


Residential and Commercial lobbies
al tenants
Industrial tenants

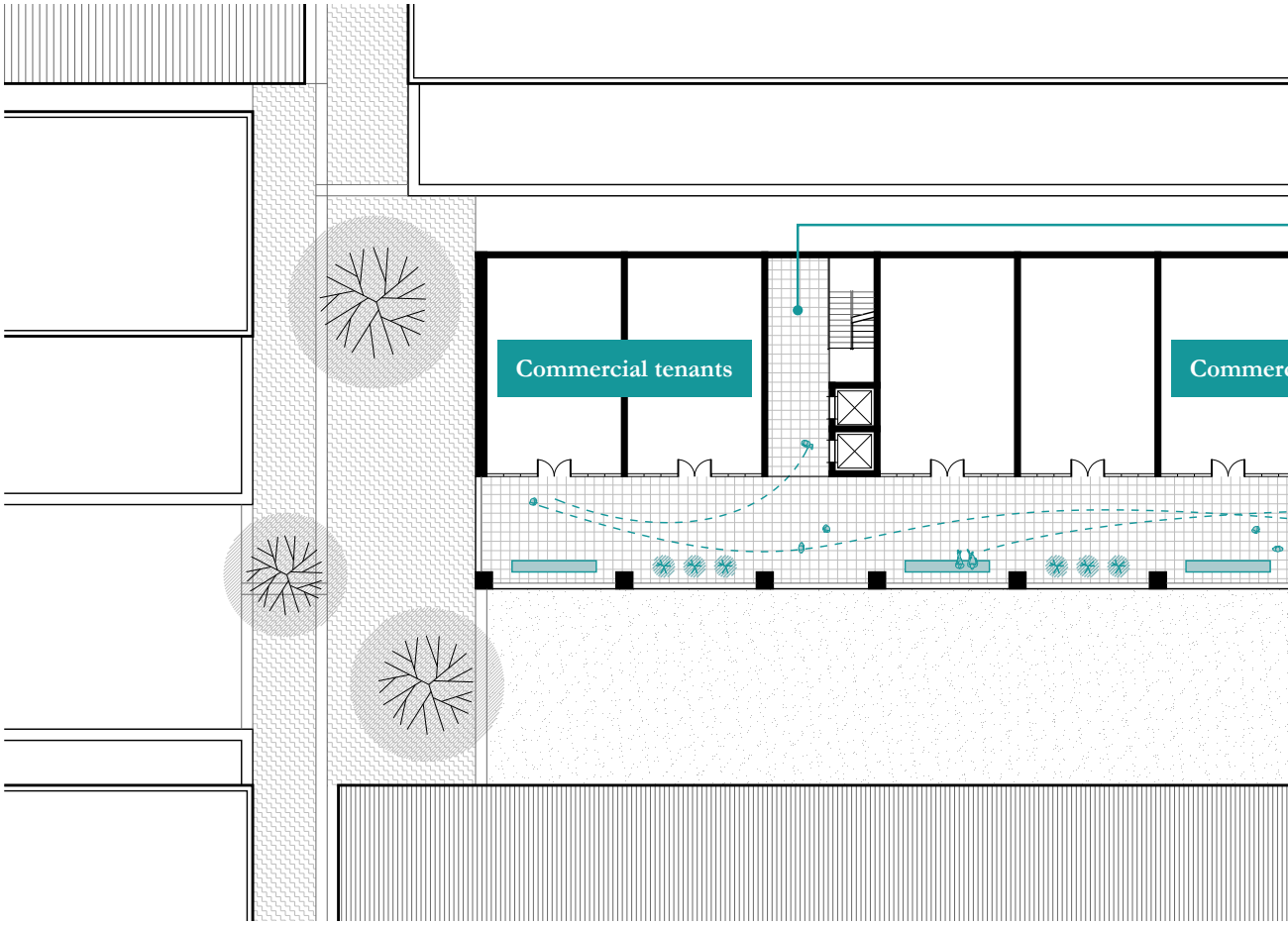
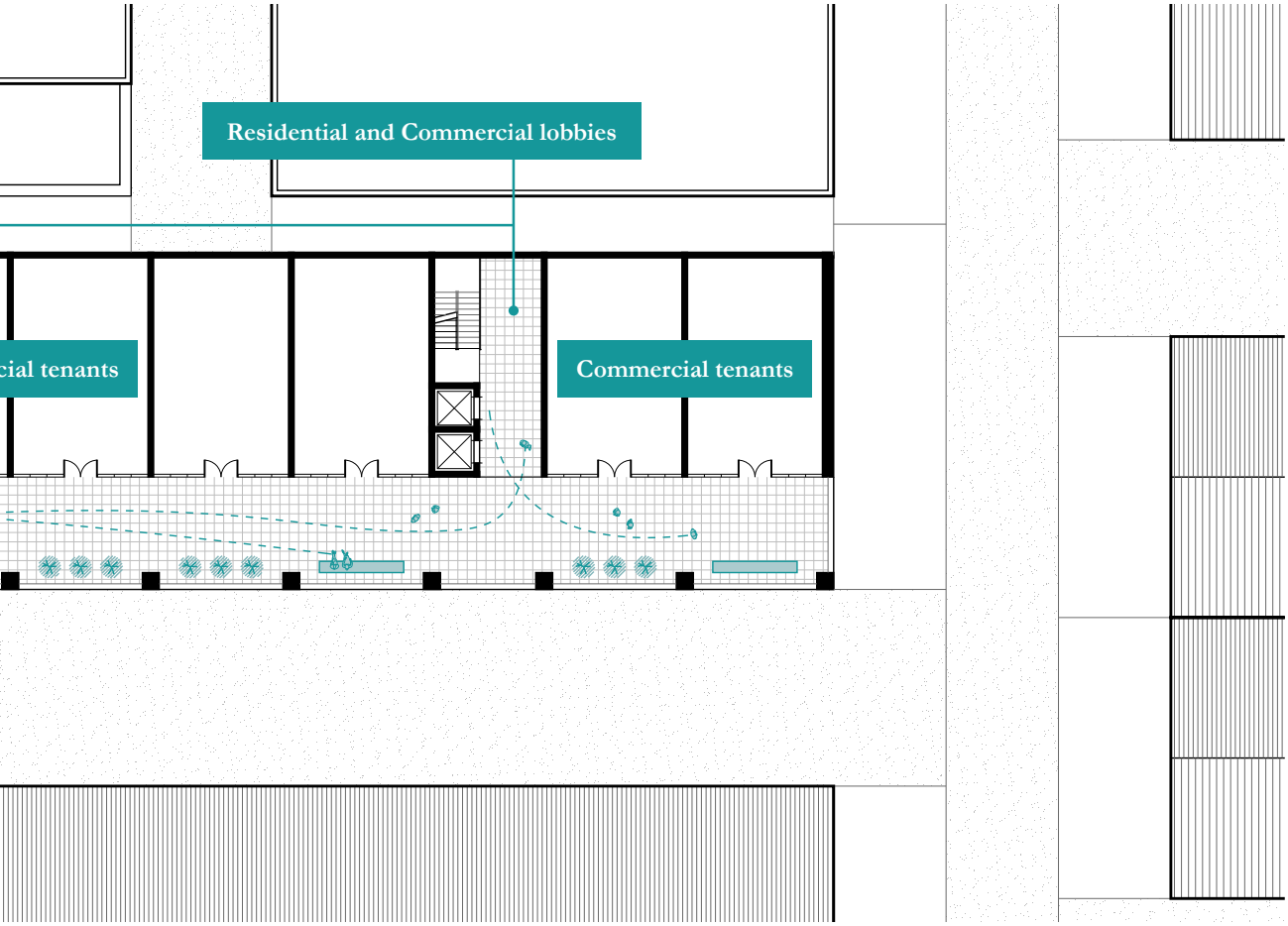


Figure 3.41. Building Three Second Floor Plan.

Similarly, the same idea can be applied to commercial uses. In this instance, the basic simple box typology is stacked into multiple stories. A single building may be divided between many industrial and commercial tenants.


Residential and Commercial lobbies
cial tenants
Commercial tenants

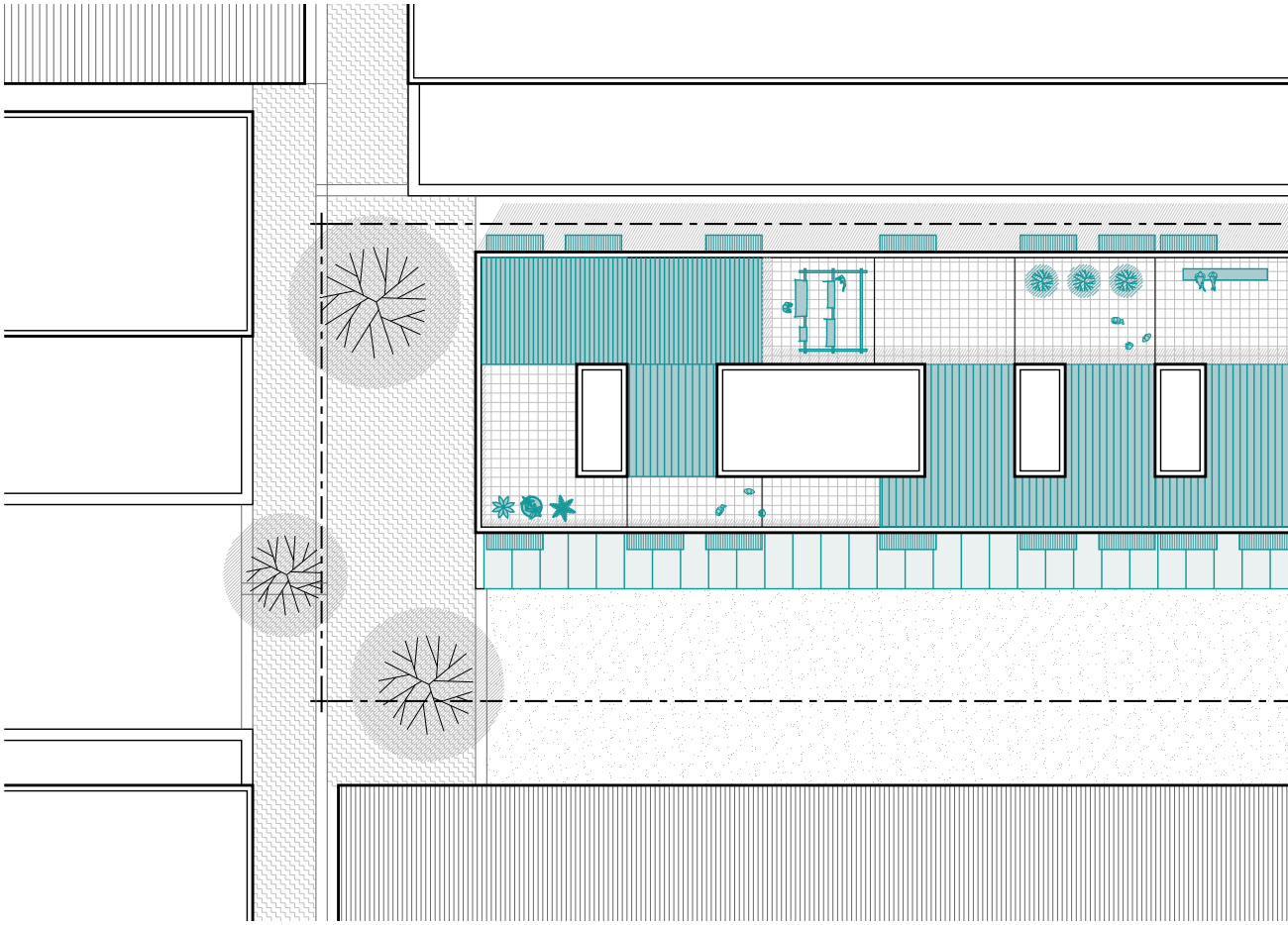
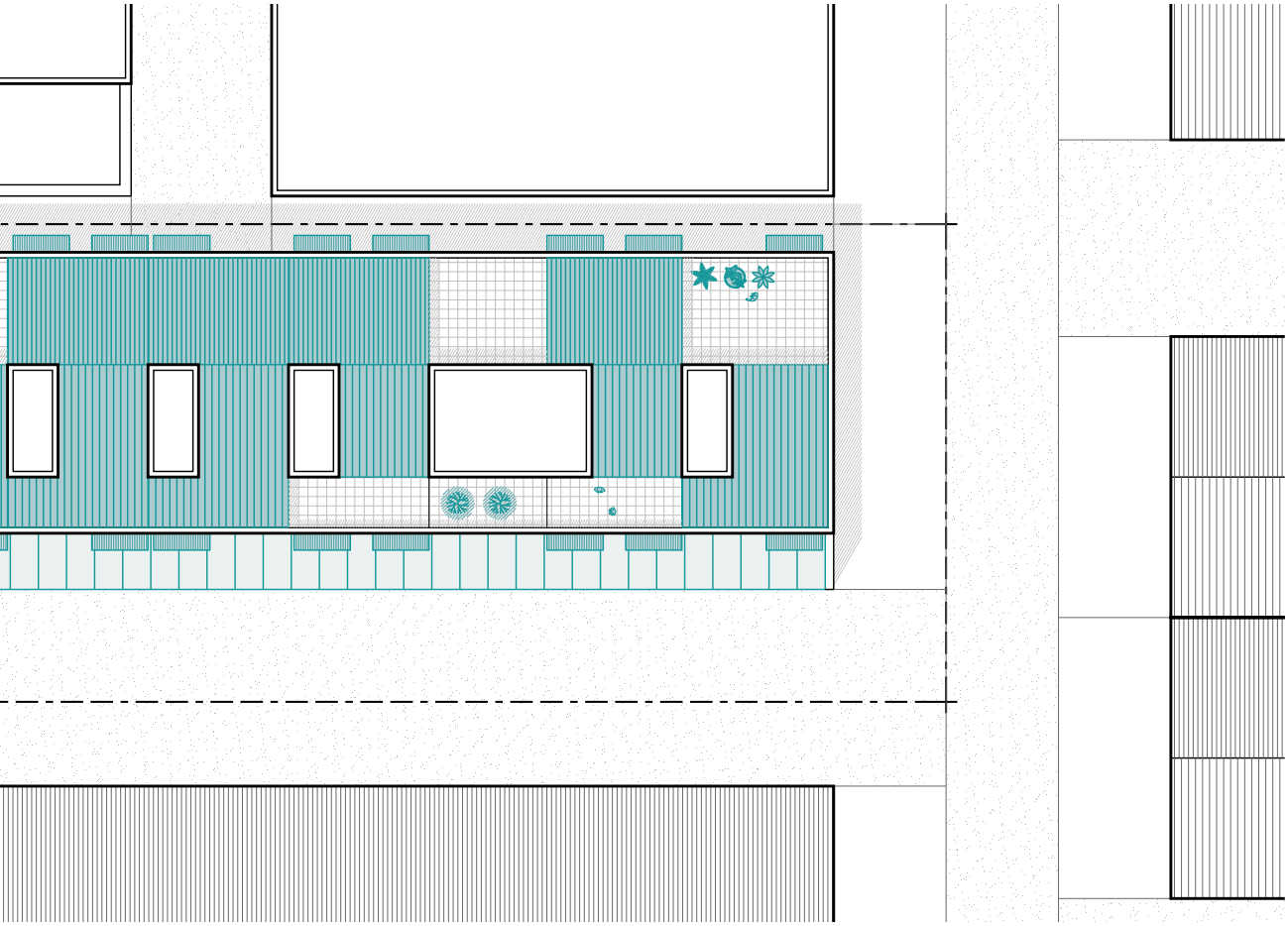


Figure 3.43. Building Three Roof Plan.

Similar to the second building typology, the roofs serves as a "second ground." As such, it is likely the residences will build additional stories on top built out of corrugated metal sheets.



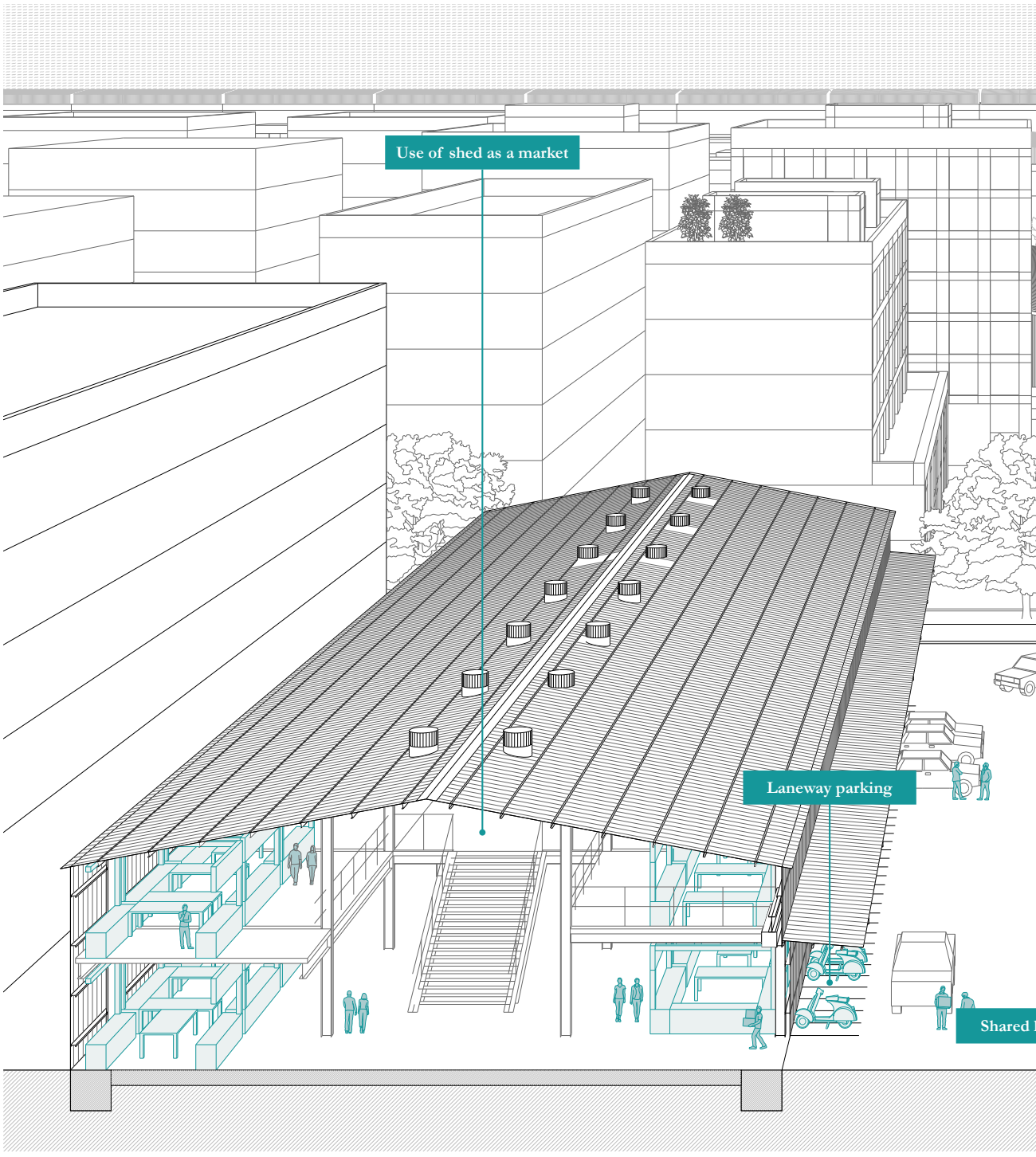
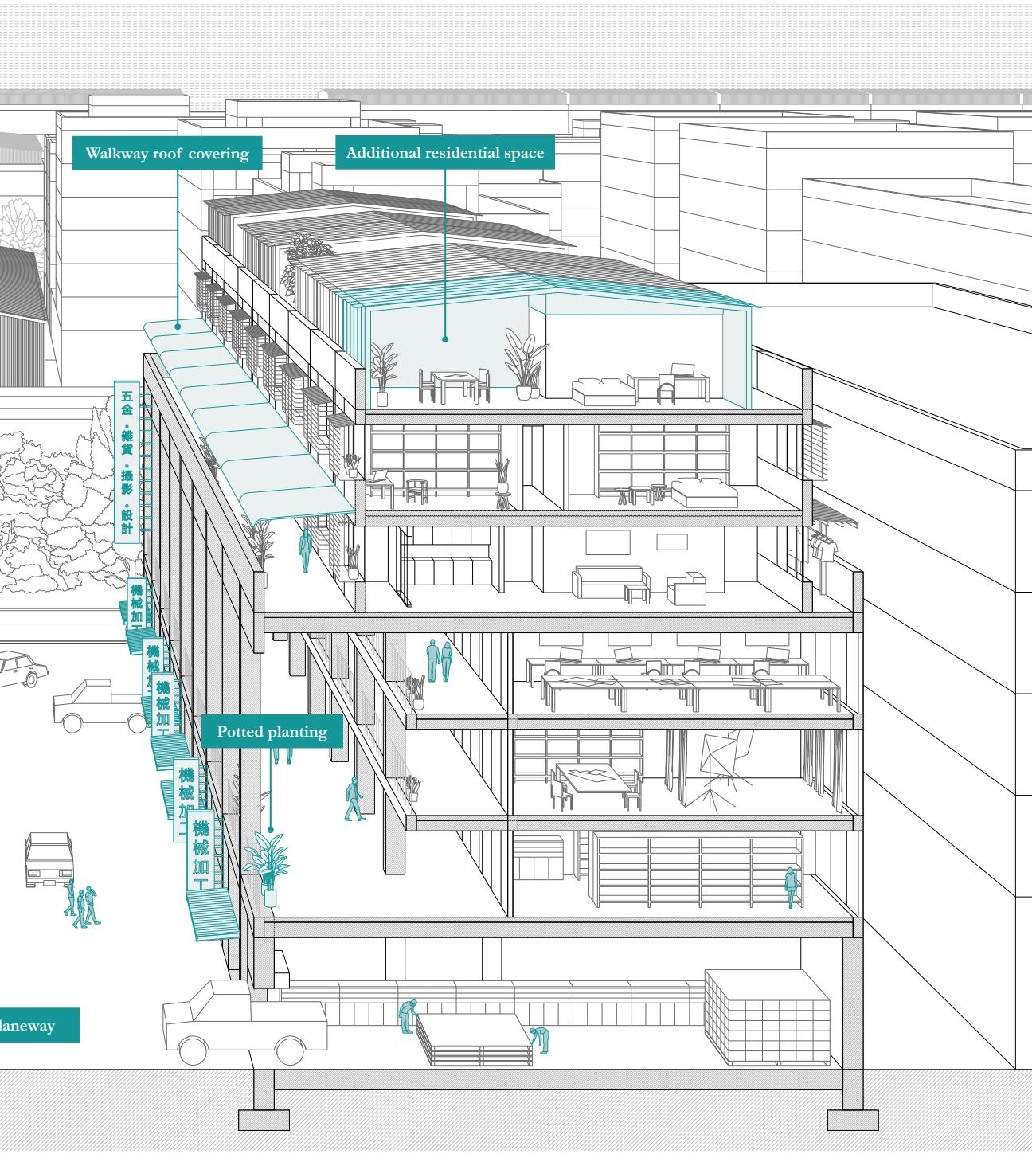


Figure 3.44. Building Three Sectional Perspective.


Walkway roof covering
Additional residential space
Potted planting
laneway

Conclusion

The objective of this thesis has been to re-examine the role architecture in Taiwan's deindustrializing cities. In addition of the gentrifying effects of deindustrialization, it has been argued that because of the critical role that industry and industrial spaces play in maintaining the Taiwanese status quo, declining industrial districts in Taiwan should not be simply erased. As such, this thesis has proposed for an alternative approach to urban redevelopment – one that responds to both changing economic conditions and local sociocultural systems. As opposed to the existing master plan proposal which has been put forth by the City, the *Interface City* stresses the integration of different uses, demographics, and types of spaces. In contrast to the tabula rasa approach to redevelopment which the current master plan proposal takes, the thesis applies the *Interface City* solution through a counter-master plan which focuses on the incremental redevelopment of the site of Wenzhai Zun and builds on a foundation of existing vernacular building types in Taiwan. In the counter-master plan, the role of architectural design is to create the armature through which the practice of everyday life may graft onto. The goal is not to design the definitive "vernacular building type" of Taiwan but rather, it is to create the condition through which the vernacular can flourish and evolve. Through this methodology, the thesis questions how we think about urban planning, design, and zoning and how multiple uses can co-habit within denser urban zones.

While this thesis is situated in the context of Taiwan, the lessons learned here, and its underlying principles, can also be applied broadly. From the economies of East Asia to Western Europe and North America, many regions around the world are

faced with the problematic implications of deindustrialization. The case of this thesis therefore serves as a testing ground for an architectural response to deindustrialization. Additionally, while many world cities are deindustrializing, there are also cases of the return of industry. As exemplified by cities such a Brooklyn and regions such as northern Italy, many communities have discovered newfound opportunities in localized manufacturing economies. It has been shown that economies of scope (as opposed to scale), and a focus on craft, as well as reflecting local identities, have a place in the globalized economy.[36] This thesis therefore is part of the larger discussion on how we should envision the future of our industries in light of the unsustainable effects of globalized mass production and consumption. These are the questions that need further investigation.

In Taiwan however, it would seem that some form of industry that is integrated with the world will have to remain. For as long as the current geopolitical context and world order holds true, Taiwan will have to find its own way to justify its existence to the world. While it has not been the position of this thesis to evaluate the varying systems of the world's political enterprises, it has however been built on the understanding that Taiwan's autonomy is critical to the well-being of its citizens. In this context, the irony in Taiwan's existential reality is that for it to be politically autonomous in the world, it must be economically integrated with it. Therefore, the approach of this thesis has been to find a mode of operation in which architecture can serve localized collectives, while still responding to global circumstances.

Ultimately, the ambition of this thesis has been to find a middle ground between the global and the local, between industry and "post-industry," and between progress and preservation. The thesis acknowledges the globalized society that we live in and the local communities that make up of it. It recognizes the universal knowledge base and benefits of a globalization and responds the history and culture of localized communities. By using Taiwan as the site of experimentation, this thesis has stressed the importance of architecture as cultural artifacts and its role in managing labor power. It is proposed that by learning from existing built conditions, and by re-calibrating our means of capital accumulation, the building of our cities can result in both sensitive built environments and equitable opportunities for all citizens.

Endnotes

Introduction

1 Land Administration Department, "新, 泰塭仔圳市地重劃區 [Xinzuang, Taishan Wenzhai Zun Redevelopment Plan]," March 10, 2020, https://www.land.ntpc.gov.tw/cp.aspx?n=8825.

2 Taiwan Public Television Service Foundation, "迫遷塭仔圳 [The Forced Relocation of Wenzhai Zun]," in 我們的島 *[Our Island]*, May 9, 2016, documentary series, 24:35, https://www.youtube.com/watch?v=nHJJ1puacQc&t=848s.

3 Ibid.

4 Ibid.

5 Jiang, Wan-Yi, "塭仔圳都計通過 將設3產業園區 侯友宜：消除鐵皮屋印象 [Wenzhai Zun Redevelopment Plan Passed. City to Provide 3 Industrial Parks. Hou You-Yi: We are Removing the Image of Corrugated Metal Sheds]," *United Daily News*, March 10, 2020, https://udn.com/news/story/7323/4404437.

6 Council for Economic Planning and Development, Taiwan Statistical Data Book, 2002, Council for Economic Planning and Development, Taipei, Taiwan, Republic of China; Council for Economic Planning and Development, Taiwan Statistical Data Book, 2019, National Development Council, R.O.C. (Taiwan).

7 Ibid.

Part One - History and Context: The Corrugated Metal Shed

8 Frank S. T. Hsiao and Mei-Chu Hsiao, "Taiwan in the Global Economy: Past, Present, and Future," in *Taiwan in the Global Economy*, ed. Peter C. Y. Chow (Westport, Conn. [u.a.]: Praeger, 2002), 166.

9 Ibid.

10 Ibid.

11 *Armageddon,* directed by Michael Bay (Touchstone Pictures, 1988).

12 Christopher Hughes, *Taiwan and Chinese Nationalism: National Identity and Status in International Society* (Abingdon, Oxon: Routledge, 1997), 162.

13 Ibid, 131.

14 Ibid, 129.

15 Berger, ed., Global Taiwan: Building Competitive Strengths in a New International Economy, 4.

17 Sabrina Puddu and Francesco Zuddas, Made in Taiwan (Trento: LISt Lab, 2012), 30.

18 "Taiwan: One Town One Product," accessed April 26, 2020, https://www.otop.tw/en/.

19 John Brinckerhoff Jackson, Discovering the Vernacular Landscape (Yale UP, 1984), 8.

Part Two - Towards a Design Solution: An Interface City

20 Maurice Halwachs, *The Collective Memory* (Harper & Row, 1980), 132.

21 Aldo Rossi and Peter Eisenman, *The Architecture of the City*, rev. for the American ed. by Aldo Rossi and Peter Eisenman ed. (Cambridge, Mass. [u.a.]: MIT Press, 1982), 132.

22 Michael Hardt and Antonio Negri, *Empire* (Cambridge, Massachusetts: Harvard University Press, 2000), 280.

23 Jinn-Yuh Hsu, "The Evolution of Economic Base: From Industrial City, Post-Industrial City to Interface City," in *Globalizing Taipei: The Political Economy of Spatial Development*, ed. Reginald Yin-Wang Kwok (Milton: Taylor & Francis Group, 2005)24-30.: The Political Economy of Spatial Development (Milton: Taylor & Francis Group, 2005), 24-30

24 Ibid, 29.

25 Allen John Scott, *Global City-Regions: Trends, Theory, Policy* (Oxford; New York: Oxford; New York: Oxford University Press, 2001), 11.

26 Hughes, *Taiwan and Chinese Nationalism: National Identity and Status in International Society*, 127.

27 David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Oxford: Basil Blackwell, 1990), 151.

28 Petr Alekseevich Kropotkin, *Fields, Factories and Workshops* (London: Allen & Unwin, 1974), 18.

29 Ibid, 23.

30 Pier Vittorio Aureli, "Labor and Architecture: Revisiting Cedric Price's Potteries Thinkbelt," *Log*, no. 23 (2011), 99.

31 Raymond Quek, "The Cloak of a Nation: Republic of China/Taiwan/Chinese Taipei: Questions for the Pursuit of Nationalism in Architecture," in *Nationalism and Architecture*, eds. Darren Deane, Sarah Butler and Raymond Quek (Taylor and Francis, 2016), 289.

32 Ibid, 289.

33 Ferdinand Tönnies, *Community and Society = Gemeinschaft Und Gesellschaft* (Mineola: Dover Publications, 2002), 33.

Part Three - Design Application: A Counter-Master Plan

34 Michel De Certeau, *The Practice of Everyday Life* (Minneapolis: University of Minnesota Press, 1998), xix.

35 Ibid.

Conclusion

36 Erik Ghenoiu, "Post-Industrial Spaces of Production: The New Brooklyn Economy and the Deutsche Werkbund," in The Architecture of Industry, ed. Mathew Aitchison (Farnham: Routledge, 2014).

Bibliography

Armageddon. Directed by Bay, Michael. Touchstone Pictures, 1988.

Aureli, Pier Vittorio. "Labor and Architecture: Revisiting Cedric Price's Potteries Thinkbelt." *Log* no. 23 (2011): 97-118. http://search.proquest.com.proxy.lib.uwaterloo.ca/docview/921290548?accountid=14906.

Berger, Suzanne and Richard K. Lester, eds. *Global Taiwan: Building Competitive Strengths in a New International Economy. Armonk*, NY: M.E. Sharpe, 2005.

Council for Economic Planning and Development. *Taiwan Statistical Data Book, 2002*: Council for Economic Planning and Development, Taipei, Taiwan, Republic of China.

Council for Economic Planning and Development. *Taiwan Statistical Data Book, 2019*: National Development Council, R.O.C. (Taiwan).

De Certeau, Michel, Luce Giard, Pierre Mayol, and Timothy J. Tomasik. *The Practice of Everyday Life*. Minneapolis: University of Minnesota Press, 1998.

Ghenoiu, Erik. "Post-Industrial Spaces of Production: The New Brooklyn Economy and the Deutsche Werkbund." In *The Architecture of Industry,* edited by Aitchison, Mathew. Farnham: Routledge, 2014.

Hardt, Michael and Antonio Negri. *Empire*. Cambridge, Massachusetts: Harvard University Press, 2000.

Harvey, David. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford: Basil Blackwell, 1990.

Hsiao, Frank S. T. and Mei-Chu Hsiao. "Taiwan in the Global Economy: Past, Present, and Future." *In Taiwan in the Global Economy*, edited by Chow, Peter C. Y., 161-222. Westport, Conn. [u.a.]: Praeger, 2002.

Hsu, Jinn-Yuh. "The Evolution of Economic Base: From Industrial City, Post-Industrial City to Interface City." *In Globalizing Taipei: The Political Economy of Spatial Development*, edited by Reginald Yin-Wang Kwok. Milton: Taylor & Francis Group, 2005.

Hughes, Christopher. *Taiwan and Chinese Nationalism: National Identity and Status in International Society*. Abingdon, Oxon: Routledge, 1997.

Jackson, John Brinckerhoff. *Discovering the Vernacular Landscape*. Yale UP, 1984. http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2003&xri:pqil:res_ver=0.2&res_id=xri:ilcs-us&rft_id=xri:ilcs:rec:abell:R02594097.

Jiang, Wan-Yi. "塭仔圳都計通過 將設3產業園區 侯友宜：消除鐵皮屋印象 [Wenzhai Zun Redevelopment Plan Passed. City to Provide 3 Industrial Parks. Hou You-Yi: We are Removing the Image of Corrugated Metal Sheds]," *United Daily News*. March 10, 2020. https://udn.com/news/story/7323/4404437.

Kropotkin, Petr Alekseevich. *Fields, Factories and Workshops*. London: Allen & Unwin, 1974.

Land Administration Department. "新, 泰塭仔圳市地重劃區 [Xinzuang, Taishan Wenzhai Zun Redevelopment Plan]." March 10, 2020. https://www.land.ntpc.gov.tw/cp.aspx?n=8825.

Maurice Halwachs. *The Collective Memory*. Harper Colophon Books. Harper & Row, 1980.

Ministry of Economic Affairs. "Taiwan: One Town One Product." Accessed April 26, 2020. https://www.otop.tw/en/.

Raymond Quek. "The Cloak of a Nation: Republic of China/Taiwan/Chinese Taipei: Questions for the Pursuit of Nationalism in Architecture." In *Nationalism and Architecture*, edited by Deane, Darren, Sarah Butler and Raymond Quek: Taylor and Francis, 2016.

Puddu, Sabrina and Francesco Zuddas. *Made in Taiwan*. Trento: LISt Lab, 2012.

Rossi, Aldo and Peter Eisenman. *The Architecture of the City*. rev. for the American ed. by Aldo Rossi and Peter Eisenman ed. Cambridge, Mass. [u.a.]: MIT Press, 1982.

Scott, Allen John. *Global City-Regions: Trends, Theory, Policy*. Oxford; New York: Oxford; New York: Oxford University Press, 2001.

Taiwan Public Television Service Foundation. "迫遷塭仔圳 [The Forced Relocation of Wenzhai Zun]." In 我們的島 *[Our Island]*. Documentary Series, 24:35. May 9, 2016. https://www.youtube.com/watch?v=nHJJ1puacQc&t=848s.

Tönnies, Ferdinand. *Community and Society = Gemeinschaft Und Gesellschaft*. Mineola: Dover Publications, 2002.