Supermodel Housing:

A Housing typology that is Long , thin and dense to address Sydney's housing affordability crisis, sustainablity and diversity.

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Sophie Solomon was awarded the Byera Hadley Travelling Scholarship in 2016
Cover image: Saigon House by A21 Studio, located in the heart of Ho Chi Minh City.
Photo by Sophie Solomon

Supermodel Housing: Long , Thin and Dense. To address Sydney's housing affordability crisis, sustainability and diversity

..While there are limitations to this form of housing as an adapted typology from another time, geography and climate there may be opportunities to achieve a more affordable, sustainable and cultur-ally diverse housing based on the principles of design excellence that represents the way contemporary Australians want to live.

1

Introduction

This aim of this research and proposal is to understand the evolution of an Urban housing typology within the context of the City , through a theoretical and working method , as an attempt to provide some practical answers to increasing density, sustainability and affordability in a unique and innovative way.

The analysis of the historical evolution of Terrace housing in Sydney is used as a basis for understanding the limitations of the current models of low-rise housing and the controls within which they can be conceived.

By comparison , a study is made of several contemporary exemplar housing projects as infill developments within the context of Ho Chi Minh City . A Housing typology, not unlike the Terrace Housing of Sydney that has evolved over time.

"The City is not planned as a functional city, instead it elvolves to become a complex combination of the existing context, which should be integrated with, and generative of future projects. " Fourtier (1)

These housing projects cannot be examined outside their urban context as it is the very generator of both the form and the function of the house, while the house typology generates new modes of living.

The Concept of the " Supermodel House : Long, thin and dense " will be examined for it's virtues within the City context to see it could provide a solution for a denser , more liveable city.

As Sola Morales describes the three principal operating theories which have multiple modes in combination in time and space that produce the morphological richness in the city. "Division, Urbanisation and Construction" (2)

"These three elements, combined with the geography of the site and the landscape of the public works provide a framework for an operating anaylsis of the city at every scale, including the region, the metropolis and the suburb." (3)

The City of Sydney is growing and will continue to grow. Increasing the population density of housing within existing urban areas is vital for the growth of the city. It limits urban sprawl and the need for new infrastructure, affecting land costs, affordability of new housing, impact on the environment, social connection and interaction.

The "Missing Middle" controls proposed by the NSW State Government offer an alternative housing solution to the Suburban housing model of the past and the High-rise apartment developments of the future.

Terrace housing is an efficient way to provide accommodation with individual ownership under Torrens Tiltle affording a sense of identity and connection to the immediate coummunity and neighbourhood with known health benefits. There may be opportunities to adapt and improve this housing model to represents the way contemporary Australians want to live that benefits the individual as well as the city.

2

Sydney + The Terrace House

The evolution of housing typology relates to the layout of the city, the environment, the subdivision of the allotments following economic influences and the social aspects (local construction knowledge and aesthetic styles from political, philosophical and cultural influences.)

The layout of Sydney, after British colonisation followed the rule of the United Kingdom. The City grew from the landing point at Circular Quay. Major roads followed the ridgelines and paths established by the Indigenous Inhabitants . The sandstone valleys prevented a grid to be laid in a clear and precise manner .

As the population grew by the middle of the 1800's the inner suburbs of Woolloomooloo, Surry Hills, Glebe, Darlinghurst and Paddington were laid out with housing taking on the form of the stone Terrace, an affordable, suitable and familiar solution for the sloping sites of Sydney and the skills of the local tradesmen , following the design of the Terrace House that had evolved in Victorian London.

Larger Estates and Manor Houses of the Colonial and Georgian Period in Sydney were subdivided for this more affordable form of housing that suited the climate of Sydney and the growing population. Development was speculative and the housing modest and affordable

The subdivisions created allotments of approximately 3.5-7m width with depths of approximately 30m and the terraces were built speculatively by local builders and developers to a pattern book of form and style..

The layout of the Inner City Suburbs related directly to the Terrace housing typology, as the common form of construction . Most streets were served by laneways, originally for sewer services and stables, then with the motor car, for rear garages.

Following the Industrial Revolution in London and the resulting Garden City movement at the turn of nineteenth century , the suburb evolved outside of the city with a new form of free standing housing known as the Bungalow.

The inner city suburbs of Sydney become overpopulated with the working class and migrant population . They were seen as undesirable places to reside by the growing Middle Classes who could afford more space in the new suburbs developed outside of the City centre.

Encouraged by the invention of the motor car in America and the growth of the Railway, new patterns for living arose. By the 21st Century however, the reality of living in the suburbs, on a quarter acre block has become skewed. Homes within suburban developments in Sydney grew to become the largest in the world , while the sites become smaller and the gardens non-existant.

Dependence on the car for transport, access to local shops for convenience and pedestrian activity within these suburbs was greatly reduced compared to the Inner City, further isolating the inhabitants of these suburbs.

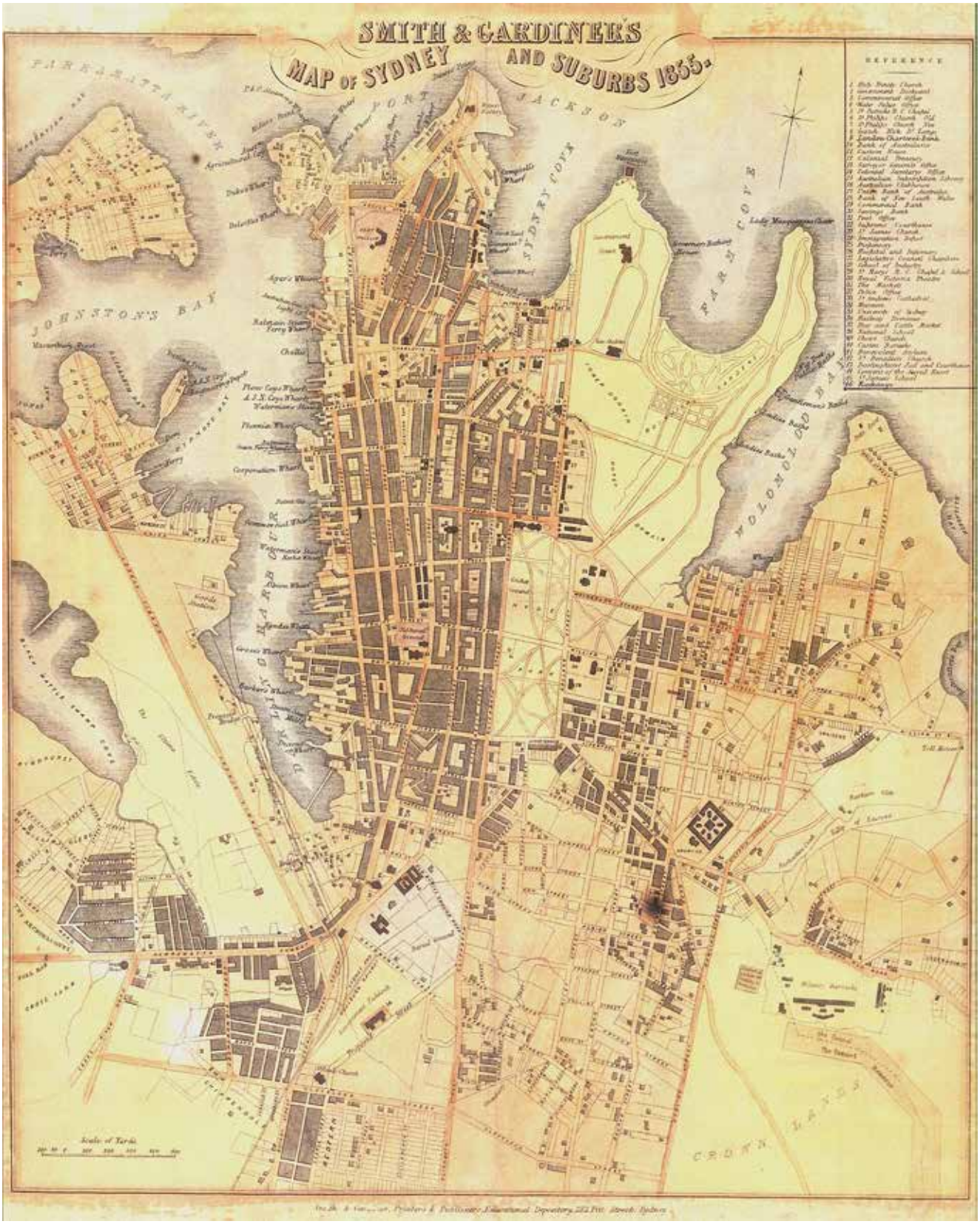


Figure 1. Smith and Gardiners Map of Sydney and Suburbs 1855. Source: atlas.cityofsydney.nsw.gov.au

With a growing population of 5 million people, the current State Government has acknowledged that Urban Sprawl cannot continue. Several studies have shown that this form of development is not only costly to the economy but also costly to the health of the community. Obesity and social disconnect are two negative health outcomes.

On the other hand, a majority of new developments taking shape across Sydney are Medium to High Density Aparmtents. A cost effective, efficient way to house many people that provides benefits for the City yet also poses many issues that are concerning for both the shape and character of the urban environment as well as the health of the inhabitants, as many studies have shown.

Access, privacy, sense of community, connection to green private open space, light and ventilation are all design elements of a low rise dwelling that differ frommedium to high density housing developments.

Economically , individual ownership of a Torrens title home allows for a greater sense of control and opportunity for further enhancements that are not possible under Strata title ownership.

The "Missing Middle " Controls proposed by the State Government encourage Terrace House style development for infill sites in Sydney.

They acknowledge that urban sprawl cannot continue and the benefits of creating denser urban environemnts at a low scale of development are vast.

However, through an analysis of the current and proposed controls both within local Council's LEP and DCP planning documents as well as the "Missing Middle" Complying Development policy this research aims to uncover the limitations to increasing density , amentity, innovation, sustainability and affordablity.

While analysing the initial Complying Development policy document, I became aware of several award winning Terrace house style projects in Ho Chi Minh City, Vietnam.

These contemporary versions of the traditional South-East Asian Shophouse created a unique streetscape and urban scale with interior spaces that were filled with filtered natural light, cross ventilation, connection to nature and spatial dynamics over a multitude of inter-connected levels.

They represented traditional Vietnamese culture with a contemporary ideology in response to overpopulation of the city, loss of green space and homogenisation of the built form. There were parallels with the transformation of Sydney as the population grows bringing challenges .to the way housing development is addressed.

3

Ho Chi Minh City + The Shophouse

Ho Chi Minh City (HCMC), formerly known as Saigon, originally began as a small fishing village , inhabited by the Kmer people. At this time, under Cambodian rule, it was known as Prey Nokor.

Following the transformation of the village that had become a major trading port due to its' location on the River Saigon , it became a fortified town under Imperial Vietnamese rule within the walls of a large defensive citadel. The capture of Saigon by the Franco Spanish army in 1859 followed an unsuccessfull attempt by the French to capture Vietnam in Da Nang, a major trading port to the North of Saigon.

A new city was laid out over the original citadel foundations in true French planning custom with grand tree lined boulevards on regular axis, with public parks and ornate French Colonial civic buildings as the focal points.

The wealthy were housed in French colonial style apartments close to the city or villas further from the centre, while the greater population were housed in Shophouses.

Long, thin houses with a small shop at ground and a central courtyard around which the bedrooms living and sleeping spaces were arranged. Shophouses now account for 95% of the residential urban sturcture typology of HCMC.

Three storey shophouses are most common in central cores of towns and cities with higher levels of prosperity and population density, and pre-war shophouses with up to four storeys existed later in the first half of the 20th century with the advent of modern construction materials like reinforced concrete.

Shophouses have narrow street frontages, ranging from 3-5m, but may extend backwards to great depths, in some cases extending all the way to the rear street.
A number of reasons have been given for the narrow widths of these buildings. One reason relates to taxes, i.e. the idea that buildings were historically taxed according to street frontage rather than total area, thereby creating an economic motivation to build narrow and deeply.

Another reason is building technology: the timber beams that carried the roof and floor loads of these structures were supported by masonry party walls. The extent of frontage was therefore affected by the structural span of the timber used.

While all shophouses appear, visually, to have similarly narrow widths, these are not uniform and minor variations are the rule, especially when comparing buildings built at different times, by different owners and with different materials or technologies.

Image 2. Saigon and it's Environs Map 1897 Source : Google

...the Architecture of the city develops from the constant reinterpretation of archetypes, thus forming agglomeration effects, revealing the fabric-like aspects of a city whose coherence seemed nourished by both a totally fragmentary growth and by many thousand initiatives that did not stem from any planning" (4)

One of the most important features of the Shophouse is the use of a variety of open-to-sky spaces to admit natural daylight as well as natural air. These open-to-sky spaces may be back yards, small airwells and most commonly, internal courtyards. Depending on their size, these courtyards may be landscaped spaces for quiet reflection, places to dry laundry, vents for cooking fumes or toilet odours or spaces for any number of household activities.

All Shophouses were required to be setback on the Ground floor by 1.5m. The covered walkway along the road is within the shophouse property line but is for public use, providing pedestrians shade from sun and rain. This practice can be traced to antecedents in South China, but also to the Royal Ordinances by Phillip II of 1573. In early Manila two-storey houses were built in rows with arcades on the ground floor.

A key development was the Raffles Ordinances (1822) for Singapore which stipulated that "all houses constructed of brick or tiles have a common type of front each having an arcade of a certain depth, open to all sides as a continuous and open passage on each side of the street". This practice spread to other States in British Malaya and by-laws with requirements for "verandah-ways of...at least 2m measuring from the boundary of the road .....and the footway within any verandah-way must be at least 1.5m in the clear."

The by-laws were an important element in the evolution of the shophouse building form. They were not easy to implement: builders naturally wanted to build on and use as much of their land as possible. Even to this day municipal authorities have to occasionally make sure that the arcades are kept free from shopkeepers blocking the path with their goods.

The evolution of this housing typology, aside from technical capability, relates to Vietnamese culture, geography and climate as urbanisation occured within rural areas. Ownership of small lots of rice paddies by individual families, served by small pathways structured the land and evolved to form the structure of the city with it's European overlay.

The early, original Shophouses researched in Hoi An Old Town do not have the verandah-way, as they were constructed before the Raffles Ordinances , however this rule was strictly applied to the Shophouses of HCMC, built in the 19th Century as well as the contemporary versions constructed today.

Image 3. Map of Ho Chi Minh City Source: Google

4

Hoi An + the evolution of a housing typology

The Unesco World Heritage listed Old Town of Hoi An. was controlled by the Cham people between the 7th and 10th Centuries, with reign over the spice trade. The estuary of the Thu Bon river was settled by the Chinese, Portugese, Japanese, Dutch and Indians. In the 18th Century Hoi An was considered by Chinese and Japanese merchants to be the best destination for trading in all of South East Asia.

The predominant housing constructed in the 1600's were Chinese Shophouse. They were wider than the Shophouses found in the Cities of South East Asia and predominantly two stories around a courtyard and built form that extends the length of the block, yet they offer an insight into this housing typology upon which this research is based.

The Tan Ky House (Images 3,5,7) and the Duc An House (Images 4,6) offer insight into the evolution of this Housing Typology. Constructed around the 16th and 17th Century the houses display elements of Vietnamese , Chinese and Japanese influence when Hoi An was a major trading port with Asia and the Continent.

The Tan Ky House or "Progress Shop" has been preserved through seven generations, with the back of the home being used either for visiting families or was rented out to Foreign Merchants.

The Duc An House was rebuilt in 1850 and houses a shop at the front selling Chinese Medicine, with rooms ordered around a central courtyard for light , ventilation and collection of roof drainage.

The evolution of this Housing Typology is evident in the Shophouses of Ho Chi Minh City as well as the examplar projects, analysed for this research. They have adapted to allow for carparking to be accommodated where retail was previously located at the streetfront.

The three concepts from which the Shophouse has evolved can be defined as followed and depicted in Image (8).

1. The house has a very public face with a private interior. The shop to the streetfront enlivens the facade and interaction of the pedestrian with the house.

The courytard brings light and breezes to the centre of the house, while ordering and orienting the rooms around it. Greenery punctates the interior and within a tropical climate the rooms can be void of walls, rather employing screens for weather protection.

2. The public, living spaces of the house are located at Ground facing onto a courtyard, with the private bedrooms located on the First Floor, overlooking both the street and the courtyard . This evolves to having the Living space elevated to the first floor with multiple outdoor areas

3. The third characteristc of this house that is essential to this typology and not found in the Australian Terrace house typology is the notion of Mult-Generational Housing. The house is designed to accommodate two families, with the courtyard providing the separation for two individual stairs to the private first floor sleeping areas . Added height and separation aids this model.

Image 3 Tan Ky House , Hoi An. Photograph by Sophie Solomon

Image 4. Duc An House , Hoi An. Photograph by Sophie Solomon

Image 5. Tan Ky House , Hoi An. Photograph by Sophie Solomon

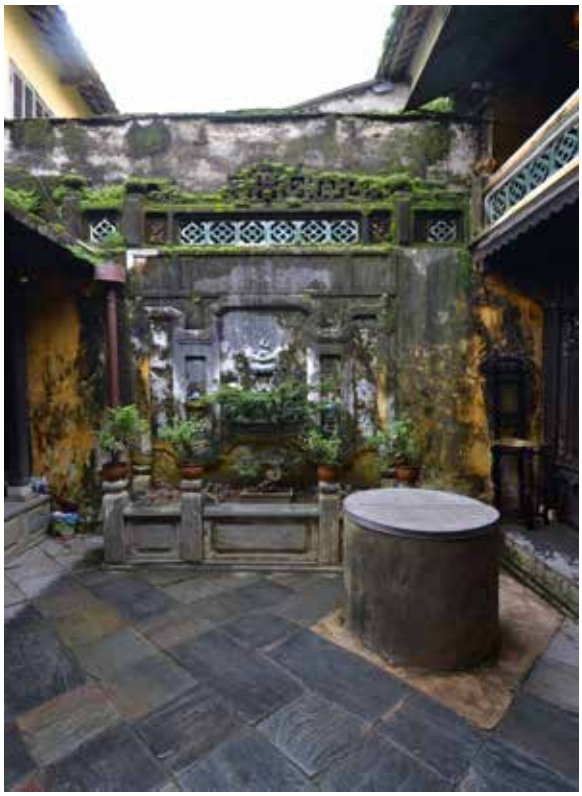
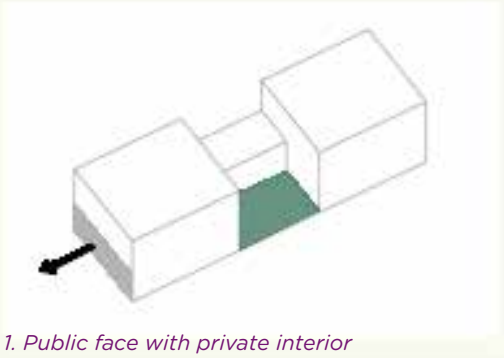
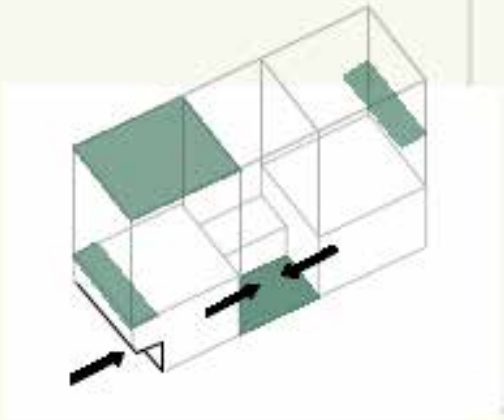


Image 6. Duc An House , Hoi An. Photograph by Sophie Solomon

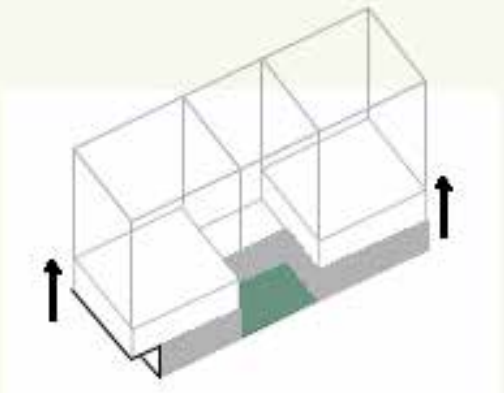
Image 7. Tan Ky House , Hoi An. Photograph by Sophie Solomon



1. Public face with private interior



2. Living spaces at ground move to the upper levels



3. Multi-generational housing over several levels

Image 8. Shophouse evolution concepts

5.01

Exemplar:
Saigon House

Saigon House - Studio 8 , HCMC 2015

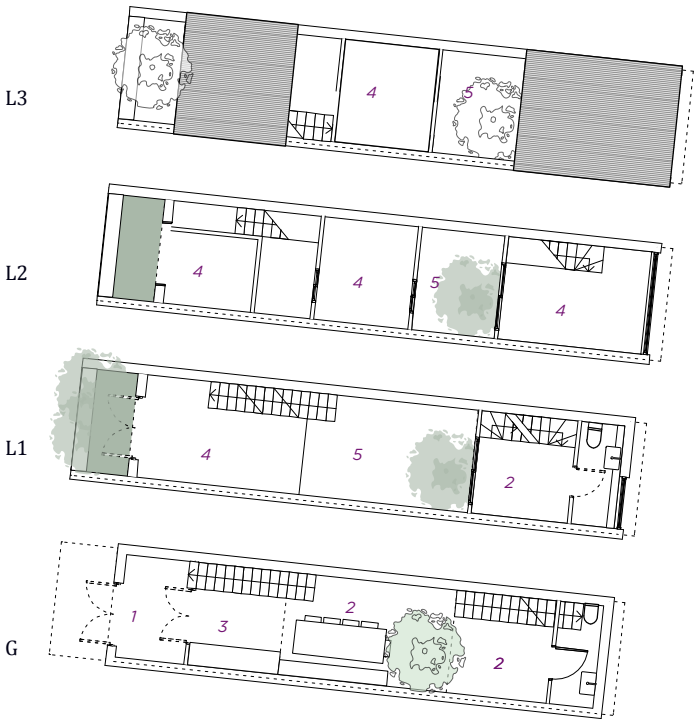
The Saigon House in Ho Chi Minh City sits on a tiny allotment of 3m x 15m .

Designed by young Vietnamese Architects, Studio 8 the house design has been recognised as the best in the world for it's unique yet authentic design as a " Vertical Village ".

Multi-generational housing around a central , open courtyard with tree , decorated for Christmas , the home interprets traditional Vietnamese Design in a spatially complex way.

Privacy and tranquility are created through the layout and screening , without compromising natural light and ventilation and there is a strong connection to nature within the house.

SITE AREA	45m2
GFA	92m2
SITE DIMENSIONS	15 X 3m , 4 Storeys
SITE COVER	98%
FSR	2:1
PARKING	Motorbike and Bike only



Plans 1:200

0 2 4 8 m

Legend :

1	*Parking / Entry*
2	*Living / Dining*
3	*Kitchen*
4	*Bedroom*
5	*Void*

Image 9. Saigon House, HCMC Photograph by Sophie Solomon

Image 10. Saigon House, HCMC Drawing courtesy of A21 Studio Website

Image 11.. Saigon House, HCMC *Photograph by Sophie Solomon*

5.02

Exemplar: Thong House

My ultimate objective is not expression , but instead simply the creation of symbolic spaces founded on substantiality. “ (8)

Thong House - Nishizawa Architects , HCMC 2013

The Thong House , designed by young Vietnamese Practice , Nishizawa Architects, for a family in a new residential district in Ho Chi Minh City.

On a tiny , yet beautifully sited allotment , adjacent to a lush tropical public park , the house cleverly combines contrasting spatial experiences with traditional and contemporary materials.

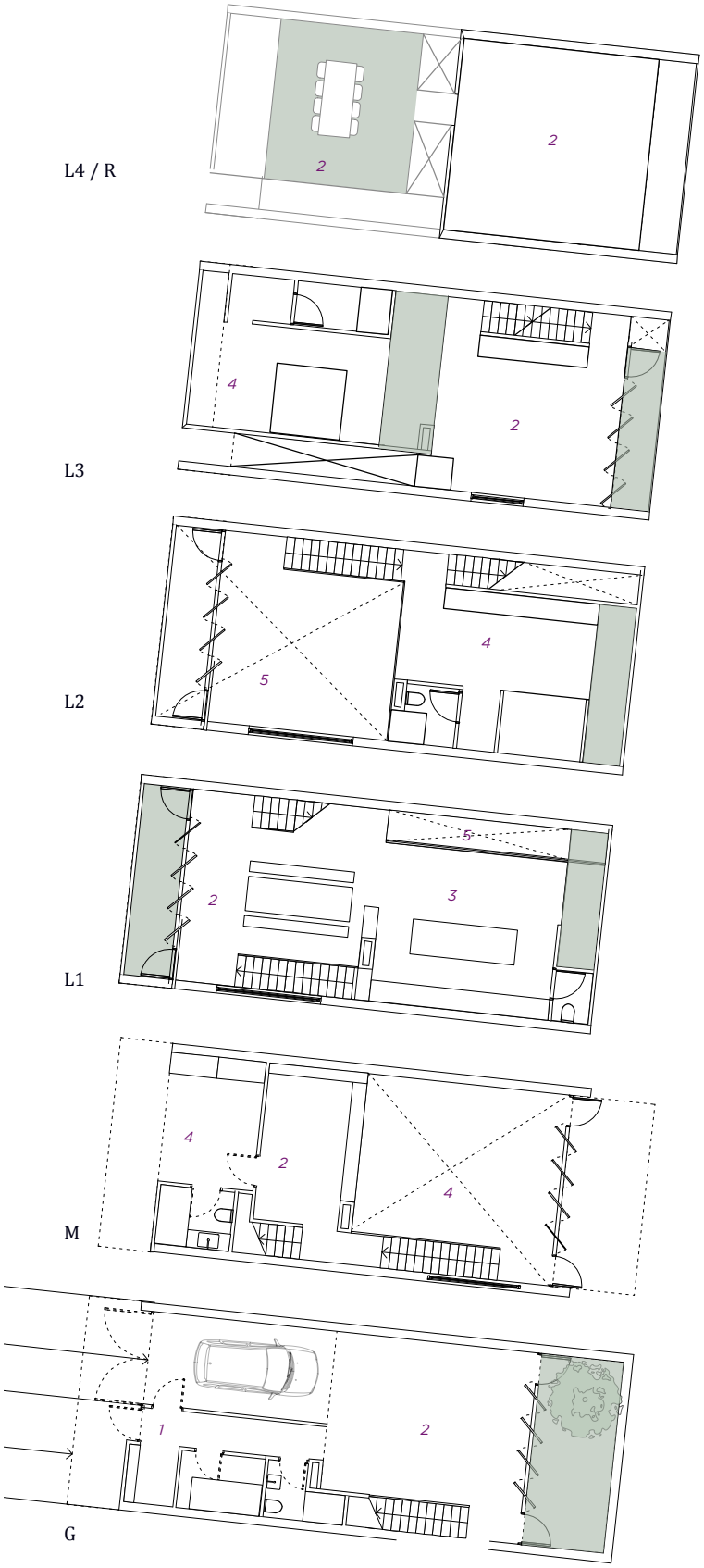
Opportunities for Multi-Generational Living over four levels including roof top worship space the home is an oasis of calm and beauty in the City.

Nishizawa studied with Vo Trong Nghia in Tokyo and worked under Tadao Ando for 5 years before joining Nghia in Vietnam and then starting his own practice.

The influence of Ando and the Japanese culture are evident in this house yet it clearly captures “ The essential Spirit of the Vietnamese “ (6)

“ A place is not the absolute space of Newtonian physics, that is, a universal space, but a space with meaningfull directionality and a heterogenous density that is born of a relationship to what I choose to call shintai. (Shintai is ordinarily translated as “body” , but in my use of the word I do not intend to make a clear distinction between mind and body: by Shintai, I mean a union of spirit and the flesh. It takes cognisance of the world and at the same time takes cognisance of the self) (7)

SITE AREA	**109m2**
GFA	**261m2**
SITE DIMENSIONS	**6m x 18m**
SITE COVER	**72%**
FSR	**2.4:1**
CARPARKING	**Yes**
DENSITY	**92 dw / ha**



Legend :

1	Parking / Entry
2	Living / Dining/ Outdoor room / Worship
3	Kitchen
4	Bedroom
5	Void

Plans 1:200

0 2 4 8 m

Image 12. Thong House, HCMC *Photograph by Sophie Solomon*

Image 13. Thong House, HCMC Photograph by Sophie Solomon

5.03

Exemplar: Binh Tahn House

All the doors to the front and rear balconies open entirely to create living spaces as Outdoor Rooms, suited to the Tropical climate of Ho Chi Minh City. Much lighter and brighter than Tokyo , planting is used for climatic control , to create rooms of different brightness and shadow , important to the depth of the experience of the space.

Binh Tahn House - Nishizawa Architects and
Vo Trong Nghia, HCMC, 2013

The Binh Than House was the first project for Japanese Architect , Shunri Nishizawa when he established his practice in Vietnam , in collaboration with the renowned Vietnamese Architect , Vo Trong Nghia.

Described by Nishizawa as an experimental house , conceived to house two families over separate levels and now home to the Architectural Practice of Nishizawa on the lower ground space , his family on the upper floors and another family on the levels between.

With references to the work of Le Corbusier , Geoffrey Bawa, traditional Japanese and Vietnamese Architecture, the house is enveloped in tropical greenery for screening and cooling of the simply planned, yet beautifully sculptured spaces.

Nishizawa is interested in how the house can harmonize with it's surroundings.

"Gardens must have shade, shadows and transparency.. My ultimate objective is not expression , but instead simply the creation of symbolic spaces founded on substantiality. " (8)

SITE AREA	**144m2**
GFA	**402m2**
SITE DIMENSIONS	**8 x 18m2**
SITE COVER	**92 %**
FSR	**2.8:1**
CARPARKING	**Yes , now used as Office, Hard Stand Area at front**
DENSITY	**138 dw / ha**

Legend :

1	Parking / Entry
2	Living / Dining
3	Kitchen
4	Bedroom
5	Void
6	Office

Plans 1:200

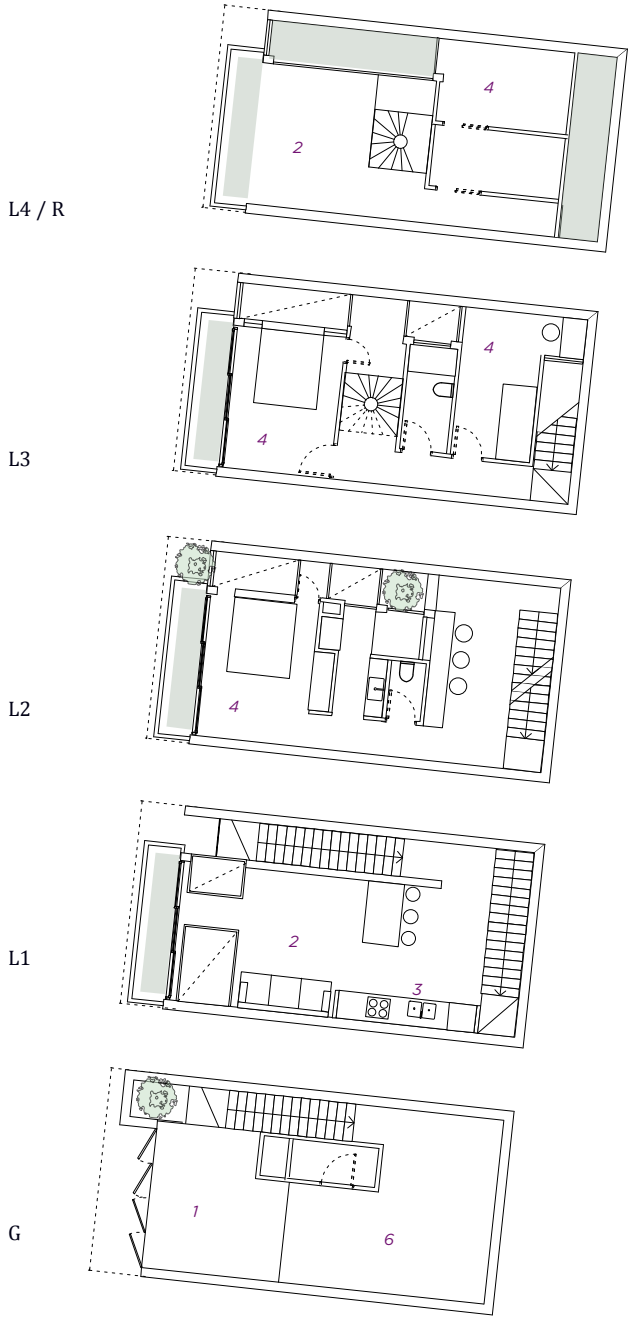
0 2 4 8 m

Image 14. Binh Tahn House, HCMC Photograph by Sophie Solomon

Image 15. Binh Tahn House, HCMC Photograph by Sophie Solomon

5.04

Exemplar: Q10 House



Q10 House - Studio 8, HCMC, 2015

The Q10 House was the first completed project for young Architect Pham Xuan Nghia, one of the Co-Founders of Hanoi based Architecture and Urban Design Practice Studio 8 . With an incredible list of projects completed and under construction in just three years of practice and offices in Ho Chi Minh City and Sydney the passion and commitment of this practice is outstanding.

While the facade of the Q10 house is remarkable aesthetically , the simplicity hides a rigour and attention to detail that highlights the uncompromising approach that was taken to design this house for three generations of a family from the North of Vietnam on an incredibly tight budget . The house was designed for half the cost of a similar sized house in the area .

The layout is driven by the program, environmental and cost factors . Circulation is located to separate the private areas of the client's family and those of his parents, while they all share the open plan living and dining room with kitchen .

The site is tiny, yet the house feels incredibly spacious, with voids bringing in light and ventilation to every room, further reducing cost.

Greenery punctuates the voids and balconies, viewed from every room, with the rooftop designed as a quiet oasis for the house close to the heart of the city.

SITE AREA	**58m2**
GFA	**184m2**
SITE DIMENSIONS	**5.4 x 11m**
SITE COVER	**85 %**
FSR	**3:1**
PARKING	**Motorbike / Bike**

Image 16. Q10 House, HCMC Photograph by Sophie Solomon

6

The “Missing Middle” Controls - A Design Proposal

A site at 83 -85 Flowerdale Road, Liverpool, currently housing two lots of single fre-standing dwellings, being sold as one, has been selected to test the Missing Middle Controls. It presents a unique opportunity to analyse an existing development opportunity within the fastest growing district in Sydney.

The 1145m2 site, with a frontage of 36m is positioned within proximity of the Strategic Centre of Liverpool, Urban Parkland and the Emerging Western City alongside the proposed Western Sydney Airport.

The local context and site conditions present several constraints as well as opportunitites to be explored. To increase density on the site, with a complying development, a Terrace House model is proposed, this type of development provides a housing typology that is more affordable to build than a free standing house, uses less land , provides good thermal efficiency and cross ventilation , yet retains an individual character, sense of identity, ownership and sanctuary that people associate with a house.

The Sydney Terrace House Typology is elongated and crafted to reflect contemporary cultural diversity, address housing affordability and excellence in design.

Through a series of inserted indoor-outdoor spaces the house is reconnected to the natural environment in multiple ways , highlighting and celebrating identity, ownership , flexibility and sense of place.

Rooms of dual purpose are ordered around an internal garden , giving a flexibility of function ,while the house embraces mult-generational / shared living and improved environmental control . Daylight , breezes and greenery are bought into the centre of the home.

Panelised perforated and solid brick screening for acoustic and visual privacy is introduced to the facade, a singular building material is used in a multitude of ways.

Street address is created by a modulated , articulated Facade, with the garages and entries setback behind the front building line and the Second Floor set well back from front, creating consistent datum levels that relates to the immediate context. The scheme acknowledges the need to create a scale of housing that can be a transition between the 1 -2 Storey Bungalow Houses and the 3-5 Storey Apartment Developments that are typical in the middle ring of Sydney.

Under the controls currently, the third storey needs to be contained within an attic . This scheme suggests an alternative to that third storey that maintains the same bulk and scale yet .

The courtyard and rear garden enables the double fronted living space to receive daylight and cross ventilation at any orientation. The E-W site orientation is ideal for daylight access. Private open space and Green space is provided at every opportunity to bring the outdoors nto every room of the house.

“The house does not have to tell anything to the exterior, instead, all it’s richness must be manifest in the Interior “ (10)

Image 17. Location Plan - Greater Sydney NTS.

Image 18. 83-85 Flowerdale Road Context Plan NTS

..The research of the Housing Typologies in HCMC has demonstrated a taller (Vertically longer) form of housing , which can enable a higher FSR on a smaller block. For the purposes of the proposal , the design complied with the height controls for both schemes, although the attic level is opened up to create a more useable and connected outdoor terrace.

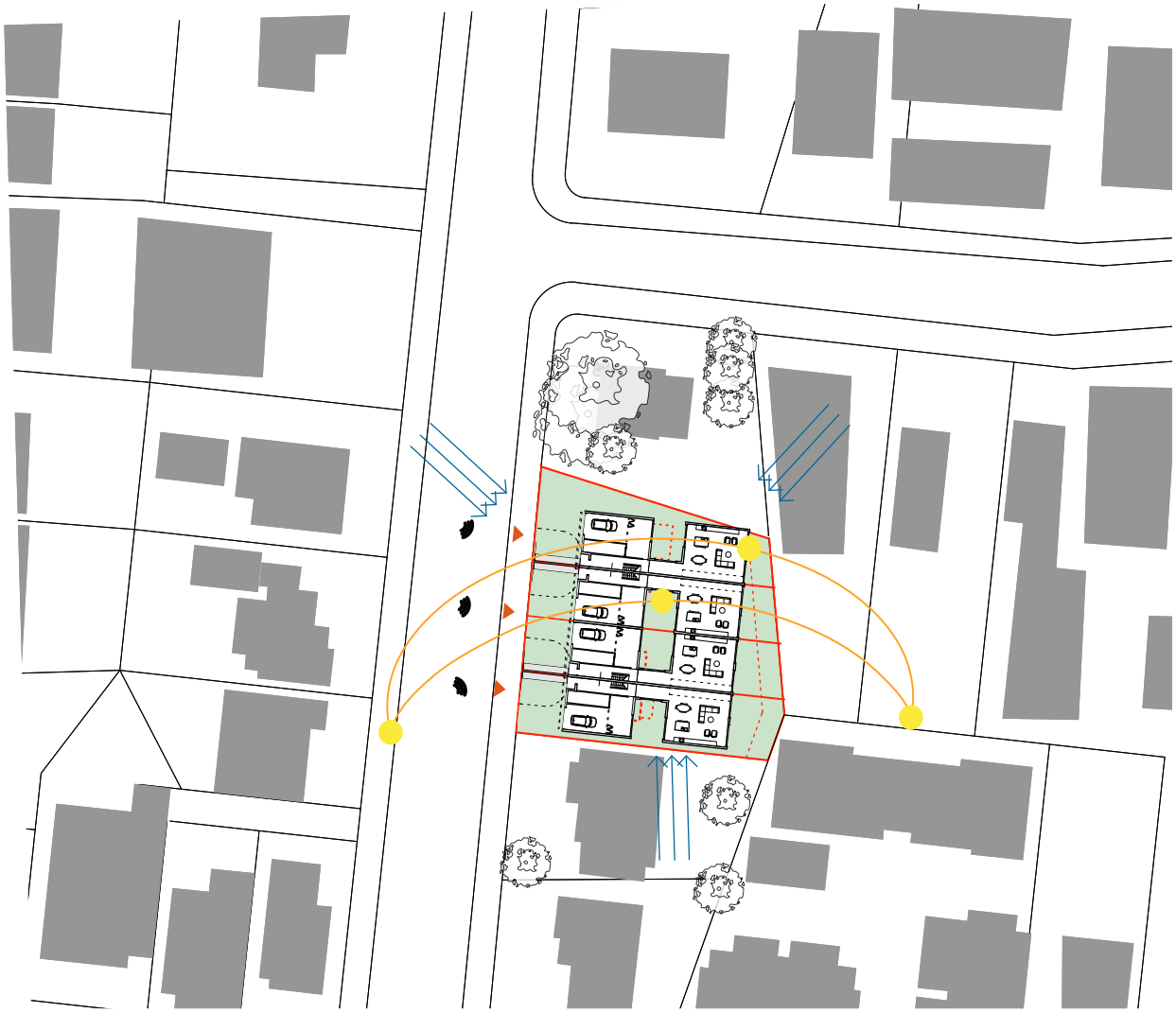


Image 19. 83-85 Flowerdale Road Site Analysis 1:1000

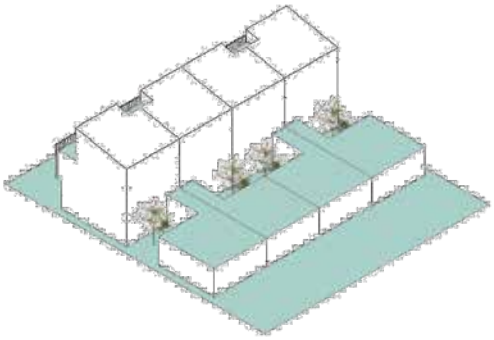

2
1
30
Elevation + Plans 1:200
0
2
4
8 m

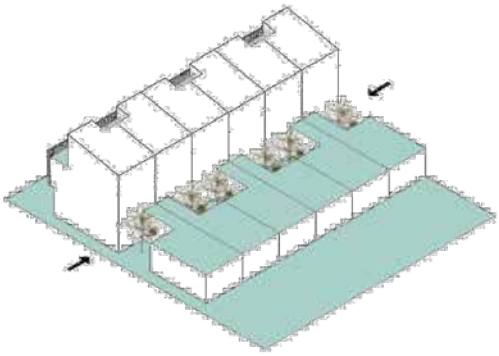
Image 20. Sectional Perspective View

7

Testing the controls

To test the controls, by simply changing a single element, the design returns to the more typical Terrace House width of 5.2m , while retaining carparking to the street-front. Without any impact to the design principles established in the Complying Scheme, the density is increased.





COMPLYING

SITE AREA	310m2 / lot
GFA	247m2
SITE DIMENSIONS	7.5 x 33m2
SITE COVER	55% (80% Code max)
FSR	0.8:1
CARPARKING	Yes
DENSITY	35 dw / ha

NON - COMPLYING

SITE AREA	120-230m2 / lot
GFA	168m2
SITE DIMENSIONS	5.2 x 33m2
SITE COVER	60% (80% Code Max)
FSR	0.8:1
CARPARKING	Yes
DENSITY	52 dw / ha

Image 21. Testing the controls diagrams


2
1
33
G
Elevation + Plans 1:200
0
2
4
8 m

8

A Supermodel for Sydney

"The different morphological patterns of the alleyways answered the variety of local situations: like a palimpsest, their spatial organisation often reveals the ancient frame of rural paths, paddy fields or embankment systems, that structured the territory many decades ago. As a result, HCMC's urban structure is notably based on the juxtaposition of different composite urban fabrics." (9)

Following the Neo-Rationalist theory of type that emerged in the late 1960's, this research emphasises the natural process of the growth of cities, and the unbreakable chain of continuity from the house, to the street, to the districts and to the city itself .

Along with Sola Morales, Moneo defines typologyical analysis and evolution as impetus to understanding architecture and the city. For Sydney with a growing population of 5 million to Ho Chi Minh City with 10 million , evolution has and will continue to occur.

The greater metropolitan area of HCMC has an average population density of 4000 people/km2 , while Sydney has 400 people/ km2 .

This incredible contrast is evident on the streets of HCMC, yet while they are indeed busy with people and traffic , their scale and structure enables a high level of amenity, accesss and connectivity for the pedestrian, with a consistent cover of mature trees , active street frontages and fine grain. Streets and laneways form an intricate web of connectivity across the city as they become public rooms for daily life and interaction.

The built form is predominantly 4 to 5 stories , with high rise becoming a popular form of development as HCMC seeks to compete with it's Asian neighbours on a global scale. However, there is considerable recognition of the importance of the medium-rise Shop house and the liveability, affordabiity and flexibility this typology affords.

The Shophouses continue to provide a tranquil retreat from the busy activity of the city and address the streets or laneways. There is no heirarchy of order to the urban pattern, in terms of "front and back" or "served and servicing". The rear service laneways typical to the Victorian suburbs of Sydney are always subordinate to the street adress. In HCMC the laneways serve a more public role as they frame a diversity of activity and provide connectivity at the pedestrian scale.

Instead of a single backyard, typical to the Australian terrace house, courtyards and rooftop gardens enliven each living space within the Shophouse , providing well needed greenery , light and breezes to the interior while extending the rooms beyond the exterior walls. Spaces can adapt to suit the the temporal and the diurnal changes throughout the day and the year. The houses are designed to accommodate multi-generational living, culturally accepted and expected in Vietnam.

Carparking is not seen as a constraint or blight on the streetscape, it is seen as a transitory, multi-use space that has evolved from a retail or commercial shopfront to activate the street or laneway and provides screening for privacy and noise control , always elevating the primary living areas above ground in the manner of the Italian "Piano Nobile. " Contemporary examples have office space or second living space co-existing at the ground floor with the carparking. that has replaced the shop.

1. Complying Terrace House Development

2.Non-Complying Terrace House Development

3. Non-Complying Shophouse Development, with laneway introduced

Image 21. Figure Ground studies

With the ground floor recessed 1.5 -2m behind the front setback and the 3 - 4 stories extending forward above, there is both a sense of consistent urban form to the new residential developments and a human scale to the building envelopes. The streetscape is not dominated by garage doors, instead enlivened by the balconies of the upper the floors.

The Shophouse typology and the urban structure of streets and laneways of HCMC, as evolved over time, can be seen as a Supermodel for housing, to adress the demands of a growing population, affordablity crisis and environmental concerns in Sydney.

The Figure Ground Studies show how the proposed complying development scheme for terrace husing on an existing site in the middle ring of Sydney can be transformed: (Image 21)

1. 4 Terrace houses replace 2 Freestanding houses to create a density of 35 dwellings/ hectare.Parking is to the street frontage as a rear laneway is not feasible to achieve the minimum required allotment size, determining a mimimum frontage of 7.5m.

2. To test this desig , with two non-compliances to the controls, the allotments frontage and site area are reduced, achieving 52 dwellings/ hectare density with no loss to amenity.

3. Finally, to appropriate the Shophouse model into the Urban Structure of Sydney, the exemplar housing model, based on the Q10 project by Studio 8 Architects is considered: A laneway is introduced and the individual allotments are halved in size. The height and the FSR are increased , to achieve a density of 87 Dwellings / hectare.

Supermodel Housing : Long, thin and dense, can provide a solution outside of current planning policy. A housing typology for improved affordablity, cultural diversity, environmental sensitivity and sense of ownership to embrace and celebrate design excellence.

To provide the opportunity to design a city that favours people over cars, community and diversity over social and physical isolation that is sustainable and affordable.

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Lessons to be learnt

STRUCTURAL ANALYSIS AT THE LOCAL SCALE

The network of streets and lanes in Ho Chi Minh City create a structure that enables both a dense, medium-rise housing as well as a fine-grain sense of place and local community.

For Sydney this means analysis of each potential infill site, to determine existing and required street and laneway network to break down the larger blocks and enable street address for each dwelling

Context analysis to develope a greater depth of understanding of the suburb beyond the typical zoning and envelope controls that extends to the immediate neighbourhood and defines each areas unique character.

SITE AREA / MINIMUM FRONTAGE CONTROLS

Sites in HCMC ranged from 45m2 to 150m2, considerably smaller than the mimimum required site of 200m2 in Sydney (under the proposed Complying Development. Frontages of 3-5m are typical in HCMC, compared to the 7.5m required with parking to the Streetfront.

GFA + FSR CONTOLS

Gross Floor Areas and Floor Space Ratios are relatively flexible in HCMC. Carefull inclusion of areas for Greenery, through couryards, voids and terraces enable good connection to the outdoors and better opportunity for sustainably designed dwellings.

SITE COVER

Site cover is large in HCMC. Courtyards and voids were designed traditionially to take roof stormwater.

CARPARKING

Car ownership is not high in HCMC, yet the majority of the population own a Motorbike. The Carparking, always to the Streetfront of the dwelling can house a car or a motorbike. It does not dominate the Streetscape as the setback creates a subservant, yet active and flexible Ground floor.

SETBACK CONTROLS

The dwellings in HCMC typically provide a small front setback to the upper levels, with a larger setback to ground. The small rear setback acts as a void for light and ventilation.

HEIGHT

The 3-4 storey height of the HCMC Shophouses has evolved from the narrow width and afford double height spaces and voids enabling spatial complexity on small sites.

PRIVACY + OVERSHADOWING

Privacy to outdoor areas is maintained through internal courtyards and the use of front, rear and rooftop terraces. Shadows are welcome in this hot tropical climate, there are no overshadowing controls.

COST OF LAND + COST OF CONSTRUCTION

it is relatively affordable to build in HCMC. The construction industry is run by local builders with access to very cheap labour. Materials are sourced locally and builiding methodology is traditional and standardised.

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About the author Sophie Solomon

Sophie is principal of ssd_studio, a Sydney based design practice, specialising in Urban Design, Architecture, Interior Design and Photography.

Sophie has 20 years experience in Architectural practice, specialising in Urban and Residential Design with a focus on sustainability, after working for a number of respected and progressive practices in Sydney and London.

Sophie has contributed to a number of award winning projects , recognized for their positive enhancement of the built environment through innovation and design excellence.

Sophie completed her Architecture degree at UTS Sydney with First Class Honours , is a Registered Architect and a member of the Australian Institute of Architects.

Within the Institute Sophie actively promote excellence in Urban Design through her ongoing engagement and contribution to the Built Environment Committee., attending workshops and seminars as a representative of the Institute.

Sophie has been involved in tutoring both Design and Professional Practice to Architecture students at the University of Sydney and UTS Sydney.

Sophie is currently judging the International Green Interior Design Awards, a platform that recognises the importance of Sustainability in the Built Environment, an acknowledgement of her commitment to pursuing excellence in Envronmentally Sustainable Design.

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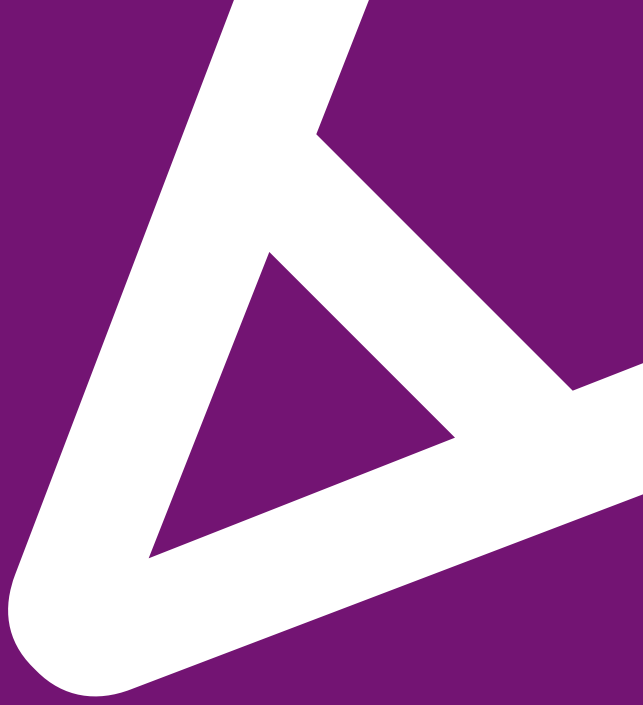

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