

**G
A N
S W**

**TESTING THE MEDIUM
DENSITY DESIGN GUIDE**

**THE MISSING MIDDLE
DESIGN COMPETITION**

2017

MANOR

HOUSES



Planning &
Environment



NSW is booming. We have a robust economy, a healthy jobs market and a capital city whose beauty rivals that of any in the world.

Our state is a highly sought after place to work and live, which means we need more housing for its growing population.

Supply is an important ingredient but not the only one. A greater variety of housing options is required to cater for a diverse range of needs and lifestyles such as an ageing population and growing families.

One of the NSW Government's solutions is to increase low-rise medium density housing, known as the 'Missing Middle'. That is housing somewhere between traditional freestanding homes and apartments.

This provides more affordable housing through smaller homes on smaller lots that still accommodate growing families with backyards and car parking. Such developments can also easily fit into established streetscapes and offers an alternative to apartments.

To help us achieve this, we announced a national Missing Middle Design Competition, an initiative of the Government Architect NSW in collaboration with the NSW Department of Planning and Environment. Its aim was to engage the architectural and design sector in the development and testing of NSW housing policy.

The design competition has encouraged innovative architects, designers and builders to submit their plans for dual occupancies (two properties on one lot), manor homes (two-storey buildings comprising 3-4 properties), and terraces.

The competition sought concept designs that represent excellence in low-rise medium density housing in the middle and outer ring suburbs of Sydney such as Beecroft, Eastwood, La Perouse, Canterbury, Campsie, Granville and Liverpool.

It also includes coastal areas of NSW such as Newcastle, Wollongong and Batemans Bay.

The new design guide promotes the fast-track approval pathway of complying development assessment for medium density housing across NSW, and the competition demonstrated how its use can support design excellence and innovation across a range of design criteria.

The competition has proved to be hugely successful. There were 111 innovative entries that showcased the potential for NSW's future housing landscape.

Better quality design will ensure new low-rise medium density housing is environmentally sustainable and contributes positively to the existing character of an area.

I thank all the competitors for their time, effort, creativity and innovation. It's by working together with the community and experts that we can start to enact the change that will positively shape the future of our growing city.

**The Hon Anthony Roberts MP
Minister for Planning, Minister for Housing,
and Special Minister of State**

In judging this competition it was important to acknowledge the intentions of the Competition as being firstly to engage with the design industry and seek their feedback on the Draft *Medium Density Design Guide* (draft MDDG) and secondly to demonstrate how the use of that Guide can support and encourage design excellence in developing medium density housing. The role of the Jury was primarily to assess the second aim, though considerable discussion took place around the success and appropriateness of many of the specific *Medium Density Design Guide* controls as they were being demonstrated by the proposals and direct feedback was given by the Jurors to the authors of the Guide.

The Jury found a significant correlation between those entries which were highly compliant with the draft MDDG, and those that were considered the most commendable in terms of design. The assumption can thus be made that following the MDDG will deliver reasonable design quality. Fewer proposals combined compliance with the MDDG with design excellence, innovation and strategic thinking, yet those chosen as winners and runners up did.

The Jury were pleased to have a very large number of entries to judge. In choosing the prize winners the Jury were drawn to those which were innovative in their thinking across a range of scales and themes. The prize winning entries used design to challenge a broad range of ideas including the impact of increased medium density housing on the suburb or city, on the construction industry, on sustainability, public space and infrastructure and in the ways that housing of this type might be practically achieved with our current pattern of lot divisions and ownership.



**Peter Poulet, NSW Government
Architect and Jury Chair**



Please note scale of submissions
may have been changed to fit.

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The "Found" Middle

The Missing Middle:

Sydney housing is lacking the much needed low-rise medium density housing, which has been named the 'Missing Middle'. With population growth in Sydney, these forms of low-rise medium density housing are required and will become the popular means of affordable living in such an expensive city.

Housing Type:

This design is based around the Manor style of housing predominately with 3-4 dwellings in each building. However unlike a traditional manor house, the design takes on a hybrid form of the terrace and manor house, which we have dubbed the "Tanor" house. The style of housing sees units interconnect with each other, where the rooftop of one unit becomes the terrace of another. It allows for a variety of dwelling sizes within the one building type.

This new style of housing will fill the missing middle creating a fabulous prototype of innovative, zero-energy, sustainable and affordable inclusionary housing on a multi-unit scale. The design has a strong emphasis on environmental and social sustainability.

Site Selection:

The site is located in Baulkham Hills, 25kms from the Sydney Harbour Bridge as the crow flies. The site is an existing old farm homestead earmarked for development. The large open areas is ideal for a new variety of housing types. The Site has good connections to public transport. It is in close proximity to the M2 Hills Motorway allowing for optimal access into the CBD. With connections to great amenities and transport, the site will quite easily sustain a higher density of living and growth in population.

The current R3 residential zone on the site requires a minimum lot size of 700m². **The proposal looks at combining individual lot sizes for each building to create one big site, using only what is required for private open space and the building footprint and giving the rest back to the public through open courtyards and walkways.** This is a good form of social sustainability.

The site consists of three building types comprised of a mixture of 4 unit types ranging from 1 - 3 bedroom units for singles, elderly, early nesters and growing families. These have been integrated to yield a multi-unit development. The 4 core unit types can be arranged in a number of different ways creating an overall building type. **This allows the design to be flexible and the configuration of the units can be modified to suit different sites and the housing typology required.**

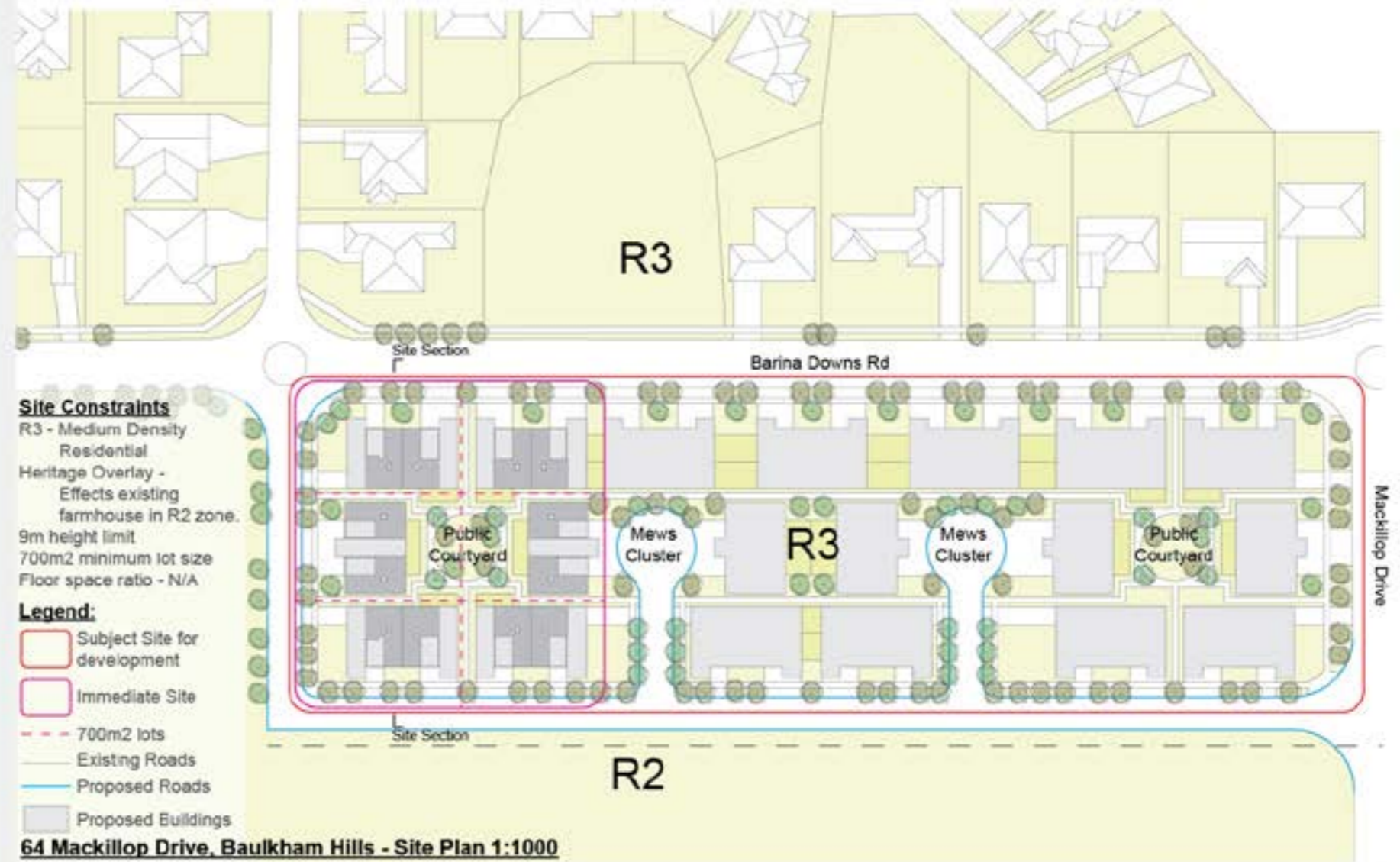
Affordable Housing:

The units will be constructed in light weight timber composite panels which can be fabricated off-site. This is to allow the project to be efficient and predictable, sustainable and cost efficient. It will also help develop local businesses, provide apprenticeship opportunities and reduce the disruption to neighbouring residents as most work will be done offsite.

Neighbourhood characteristics:

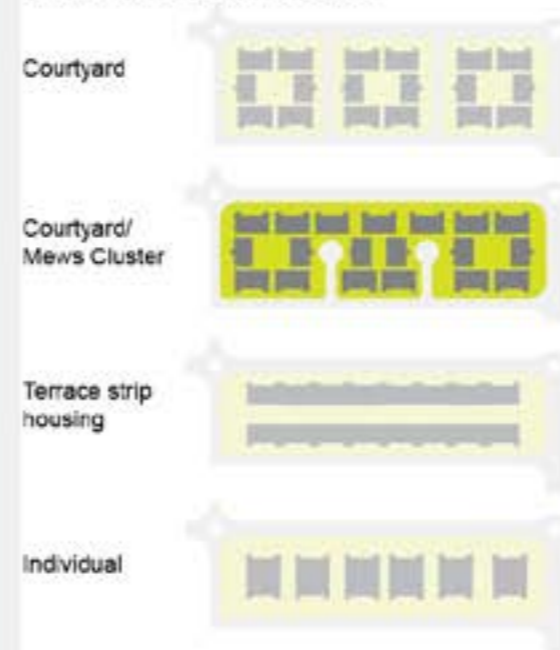
Warm timbers and tones have been selected to reflect the surrounding neighbourhood and match the colours and materials of the old homestead adjacent to the site.

The landscape will respond to the local and indigenous landscape of the area. The use of green roofs and green terraces are not only sustainable but also bring the garden to the upper living spaces providing visual relief and visually allow the development to integrate nicely with the surrounding neighbourhood.



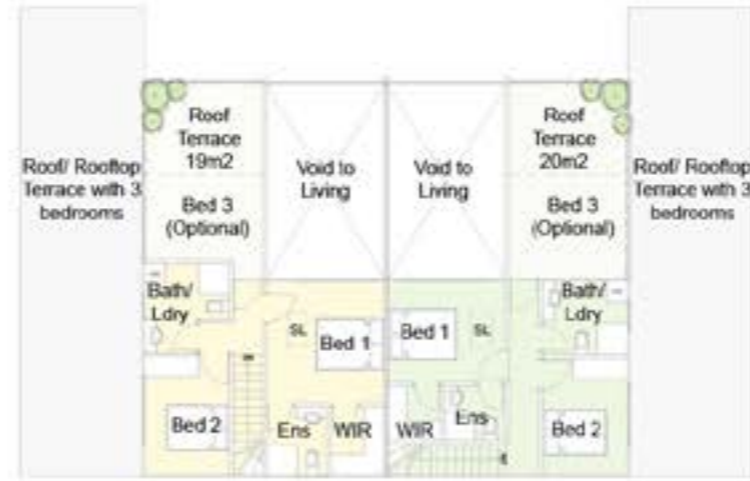
Configuration Diagram

The building types designed to be easily reconfigurable. Individual units are designed to be added, culled or recombined with ease, creating dynamic, site specific neighbourhoods and streetscapes.





Building Type 1 - Ground Floor 1:200



Building Type 1 - First Floor 1:200



Building Type 2 - Ground Floor 1:200

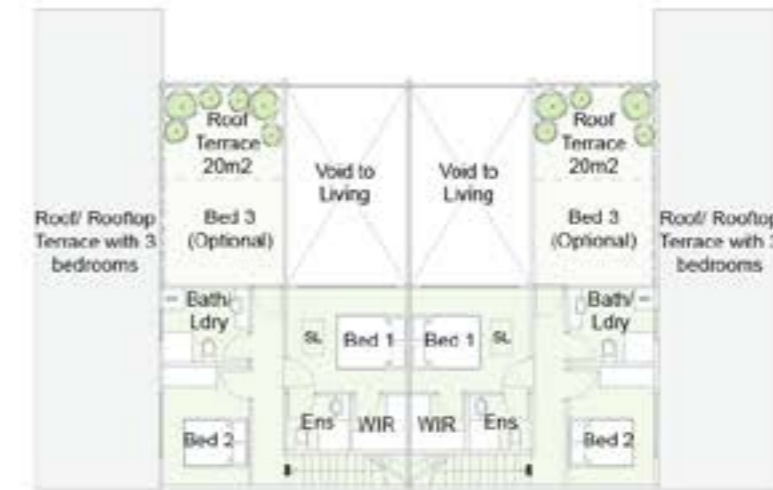




Building Type 2 - First Floor 1:200



Building Type 3 - Ground Floor 1:200



Building Type 3 - First Floor 1:200

Tanor House

This new style of housing typology will create a more diverse 'middle type' of housing. This allows different dwelling types (1, 2 and 3 bedroom units) to connect together like a jigsaw.



Dwelling Configurations

The units have been designed in a way that they can join together to form many building types. They can be adaptable to any site conditions and constraints. 3 building configurations have been selected for the site as they best fit the ideal figuration.

Dwelling configurations



Type 1
Corner configuration - 4 units
GFA = 403m²



Type 2
Small terrace - 3 units
GFA = 353m²



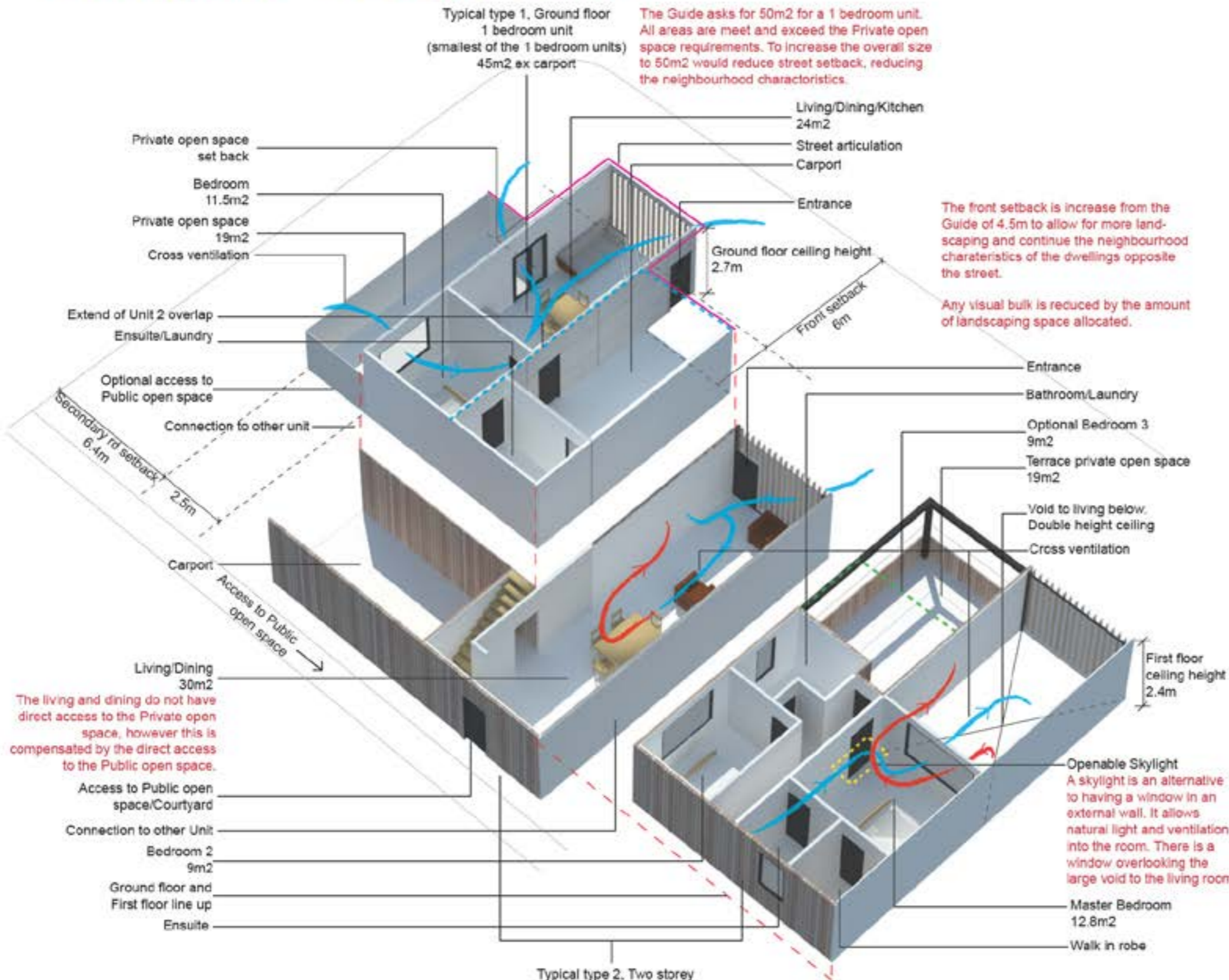
Type 3
Large terrace - 4 units
GFA = 400m²



Site Section 1:200



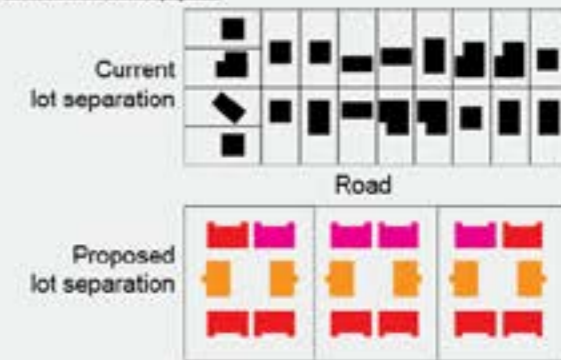
Testing the Design Guide



Typical type 2, Two storey 2-3 bedroom unit 86.5 - 96.3m² ex carport

The Guide asks for 90-115m² for a 2-3 bedroom unit. All areas are meet and exceed the Private open space requirements. Reducing the overall area, reduces the overall cost of the unit, making it more affordable.

Salt and Pepper



The current planning overlay for the site has a minimum subdivision of 700m². The proposed housing scheme aims to combine the lots together and have different housing configurations share the one site. This will provide a larger amount of public and private open space, which will be greater for the community.

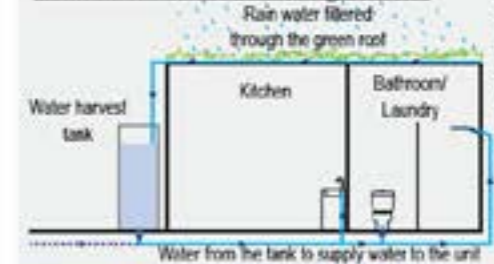
Sustainable Design

Solar Panels



Solar Panels are a great investment in offsetting a household's carbon footprint. The average Australian household uses 5840kWh per year.

Rain Water Harvesting Tanks



Tanks will supply each unit water for toilets, showers and laundries. A tank will reduce the need to tap into the water grid allowing for a cost effective self-reliant apartment.

Green Container Roof



For lower roof spaces over the ground floor.

- Green roofs reduce the heat gain of the unit during the hot summer months.
- Filters the run-off water before storing in tank

INNOWOOD Cladding



One of the best sustainable cladding materials:

- 100% recyclable
- withstands temperatures from -20° to 85°
- contains up to 70% wood waste
- termite, mildew and water resistant
- Fire Retardant

Louvers - North & West facing large windows



- Provide shade during the day
- Reflect up to 97% of harmful UV rays and 80% of the heat from the sun.
- Reduced need to use air-conditioning, resulting in ongoing energy cost savings.

Native Canopy Trees



The height of the trees will shade the units from the high, hot Summer sun. In Winter the angle and height of the sun is much lower allowing the rays to come into the units below the tree's canopy. The sun will heat the floor slab, which will radiate throughout the unit.

manor house

Medium density does not need to be confined to low cost housing. Sydney's upper north shore has large areas of large houses on large sites. In these suburbs, medium and high density dwellings cling to arterial roads, where they are confined by nervous residents who are adverse to change in their own backyards. A new type of dwelling is needed. The manor house typology can be utilized to build beautiful buildings that can comfortably sit side by side with gracious homes on large lots.

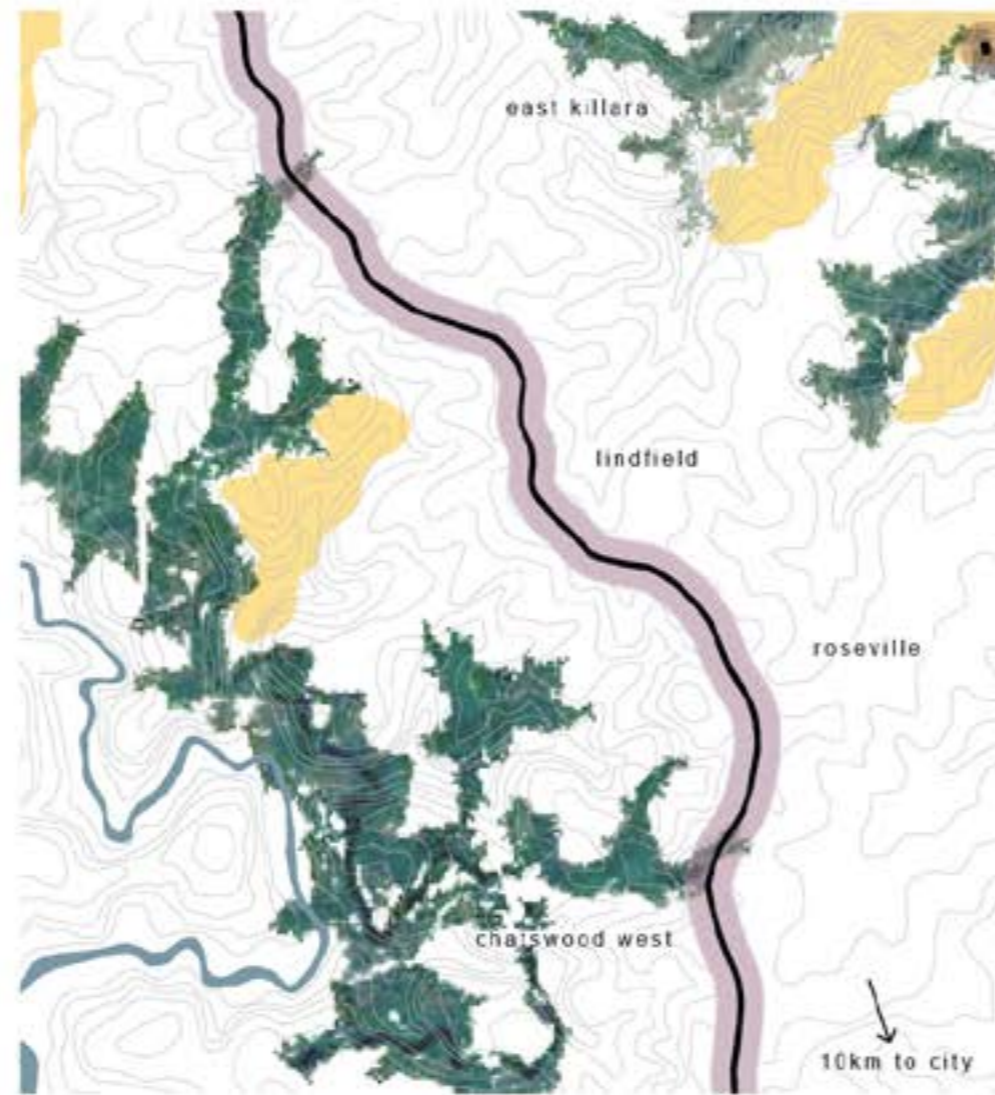
This proposal explores the potential of frequently under-developed steeply sloping sites. Less popular with home owners, sloping sites provide great opportunities for Manor homes that can provide 3 or 4 dwellings, each occupying a single level as the building form steps down the site. Occupants can enjoy living on a single level with large private open space occupying the roofs of the dwelling below.

Each dwelling is contained in a separate single-level box. This approach provides excellent solar access and cross ventilation, and the option for skylights. Thick walls provide thermal mass and contain private courtyard spaces. The massive external wall to each dwelling box contains a lightweight flexible and functional layout.

This type of medium density housing is an example of high quality design that relates in scale to the context of large single houses on large lots. The building reads as a singular sculptural object, with garden spaces that wrap around, under and through the middle of the building. Circulation to each dwelling is provided through a shared garden which integrates the private and public domain. The form responds to the complexity of steep sloping sites with a very simple strategy.

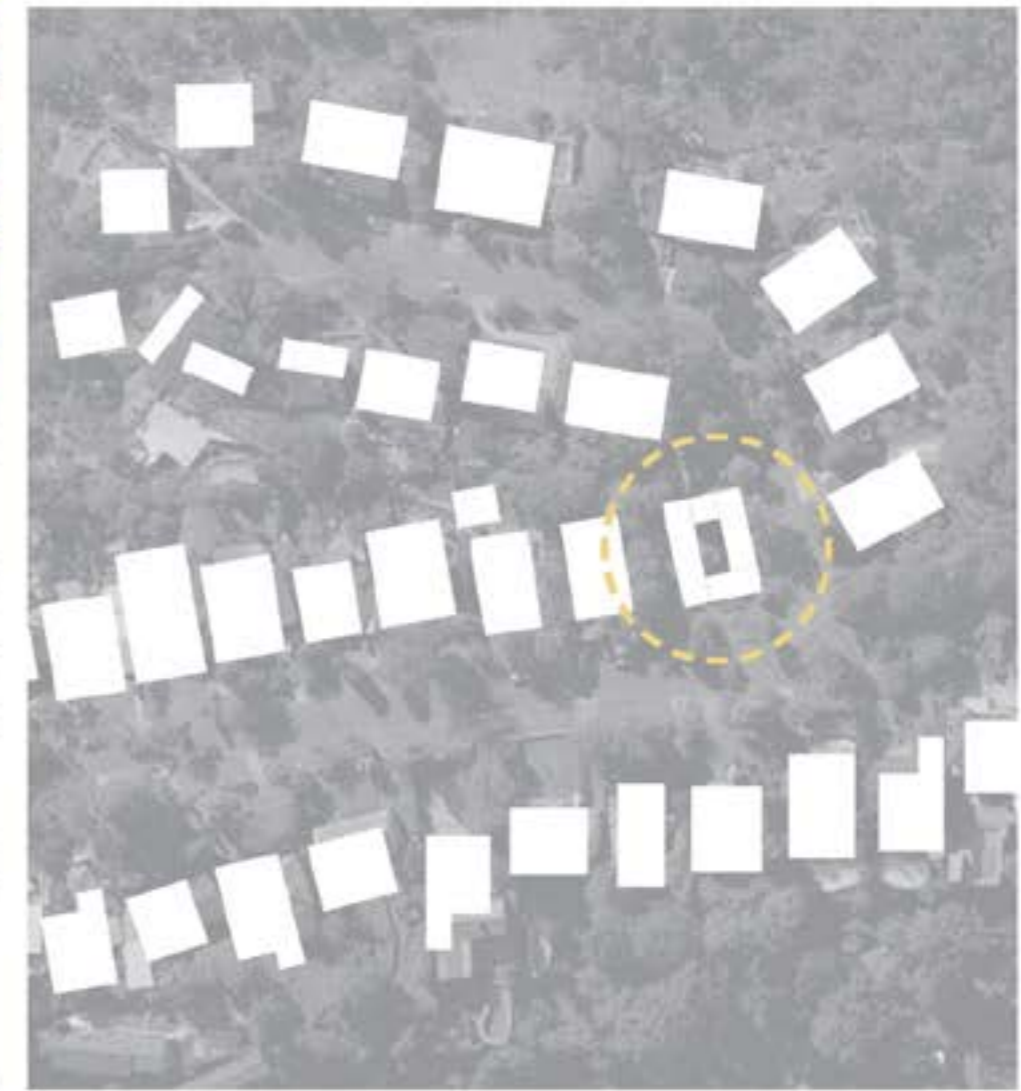
Manor house provides an appealing alternative for the growing number of people looking to downsize without having to leave their community for an apartment or townhouse on an arterial road. Newly vacant family houses can then be taken up by the next generation of families who will better utilize the available space.

This strategy demonstrates how population density can sensitively be increased in suburbs that have long resisted change.



context map

- low density on steep sites - suitable for manor houses
- medium density along highway



immediate context map



sectional diagram



courtyard interior



street elevation
scale 1 : 250



street perspective



view from north-east

key elements of the design

Singular sculptural form

The building sits comfortably in the context of large single houses, stepping down the site in a sculptural manner that creates framed views and links to the garden.

Circulation through the garden

The central common garden intertwines through and under the building linking public and private spaces.

Single level box for each dwelling

Three boxes, each containing a three bedroom dwelling, make up the composition of the sculpture. A fourth dwelling is tucked under the top box and can be adapted to link to another dwelling if multi generation occupancy is desired.

Access to all window orientations

The box to each dwelling has windows on all four sides to maximise the potential for passive solar gains, natural light and cross ventilation.

Variety of external spaces

Each dwelling has a walled courtyard and an external terrace, with provision for deep-soil planting.



typical floor plan
scale 1 : 250



- 1 kitchen
- 2 living
- 3 dining
- 4 private outdoor space
- 5 master bedroom
- 6 bedroom
- 7 walk in robe
- 8 ensuite
- 9 bathroom
- 10 entry
- 11 car parking
- 12 store / laundry
- 13 common garden
- 14 planting

	Beds	Floor space	private open space
1	3	127 sqm	28 terrace + 18 court
2	3	127 sqm	46 terrace + 18 court
3	3	127 sqm	46 terrace + 18 court
4	2 + loft	97 sqm	42 terrace



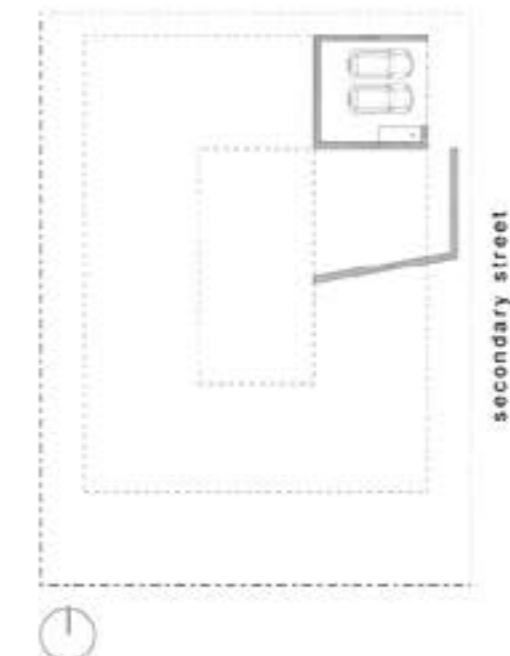
second floor plan
scale 1 : 500



first floor plan
scale 1 : 500



ground floor plan
scale 1 : 500



lower ground floor plan
scale 1 : 500

testing the design guide

Natural ground level

The 'touch earth lightly' approach to minimise cut-and-fill restricts the potential of steep sites. Yet too many buildings on steep sites are solid squat stepped forms slavishly following the natural ground level. The amenity of occupants is compromised by internal split level floors. It is difficult to provide lifts and access for people with limited mobility.

Our proposal takes a different approach to the natural ground level. Sydney sandstone is a beautiful, strong, thermally efficient building resource that is overlooked in medium-scale development. Our colonial heritage includes fantastic cuts into sandstone, yet we have lost this early confidence. Many medieval cities feature terracing of the ground plane that results in integrated and coherent relationship between buildings and external spaces.

Dramatic terracing brings opportunities for great beauty. Outdoor terraces cooled by shaded rock or warmed by the thermal mass and the delight of natural vertical gardens that trace water paths in the rock.

Terracing the ground plane in more dramatic ways can improve the amenity of sloping sites. It creates the opportunity to utilize undercroft spaces. Three storey elements can be housed within the overall height envelope of sites without being left half-buried in the ground.

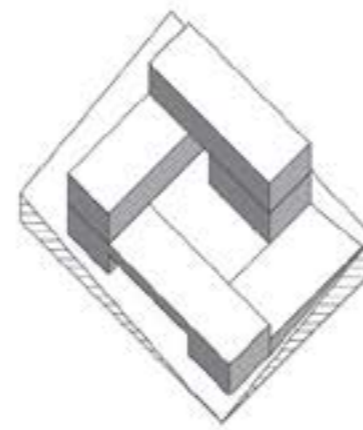
Manor houses to be located on sites with rear lanes or corner blocks

This proposal demonstrates the suitability of the Manor house typology to increase the density in Sydney's conservative upper North Shore, as it can be designed to fit sensitively within the context of large single dwellings on large blocks.

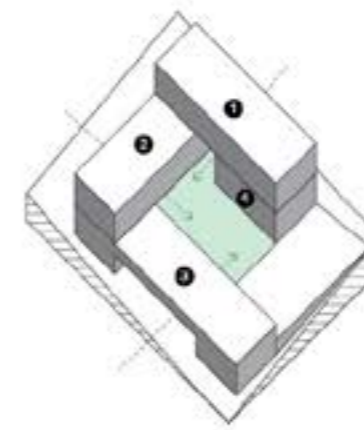
The number of eligible sites for this type development would be greatly increased if the requirement for rear lane or corner access was removed for sites that were large enough (1200sqm plus) and having wide street frontage (30sqm plus).



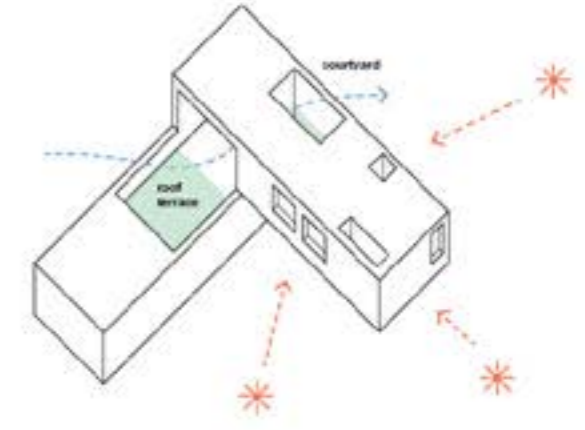
typical response



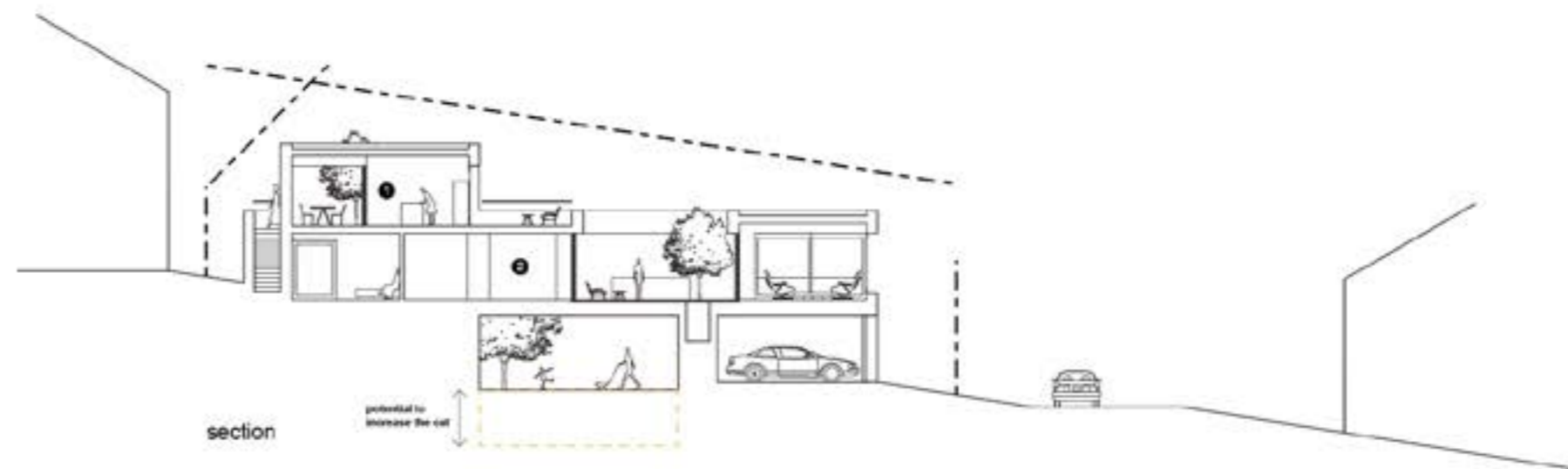
proposed response
singular sculptural form



central courtyard
circulation through central courtyard



single box for each dwelling
windows on all sides for solar access and cross ventilation
variety of external spaces



section

potential to increase the cut

reference images



undercroft



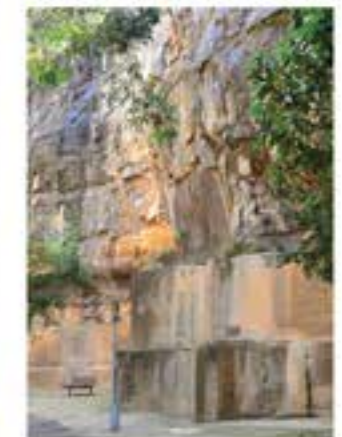
courtyard



garden links

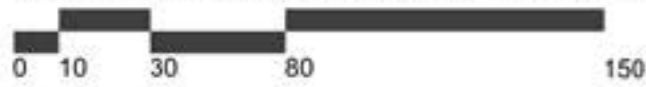


terracing



cut stone

CORNER BENSLEY & OXFORD ROAD INGLEBURN



1:1500 @A3

SEMI	X 88
MANOR HOUSE	X 33 (132 DWELLINGS)
TERRACE HOUSE	X 50
SINGLE HOUSE LOT X 4	
TOTAL DWELLINGS	274
SITE AREA	11.2 Ha
DENSITY	24.5 Du/Ha



HYBRID DA/CDC PATHWAY



CAN A MEDIUM DENSITY PRECINCT BE ACHIEVED WITH CDC?
WHAT CDC TYPOLOGIES CAN BE CREATED TO INFORM AND IMPROVE THE URBAN DESIGN SOLUTION?

PURPOSE OF ENTRY

This competition entry envisions a 'Hybrid DA/CDC Consent Pathway' as an efficient planning model for use by integrated developers. The entry tests the results of this pathway using the Medium Density Design Guide in a real world precinct wide site that currently has Gateway Determination* for rezoning to R2 land. The Campbelltown LEP R2 zone allows for multi-dwelling, semi-detached, and attached housing.

What are the advantages of the 'Hybrid' DA/CDC Consent Pathway on greenfield sites?

- i. The Council remains responsible for the primary use and structure of the land.
- ii. The Developer can obtain approvals more efficiently, and with greater efficiency by using this hybrid model.
- iii. The community benefits from the Medium Density Design Guide directing quality outcomes, much like the success of the SEPP 65 Apartment Design Guide.
- iv. End users benefit from an integrated approach to land use, i.e. smaller lot sizes still achieve quality public and private space.

MANOR HOUSE AS KEY

This entry shows that the Manor House as a new typology can improve the Public Domain on Integrated Developments, (and other locations) and provide another housing choice for NSW. This entry explores the use of the Manor House in 2 key ways:
1/ As a book-end to a row of terrace houses where a rear lane is available - that avoids the side wall of a terrace facing the cross street which has several negative outcomes.
2/ On corner lots adjacent to Semi-attached, or detached housing to create positively engaged public spaces to primary and secondary streets.



MANOR HOUSE TERRACE END



MANOR HOUSE SEMI-CORNER

INTEGRATED DESIGN FOR INTEGRATED DEVELOPMENT

By integrating the detailed design of Semi's, Terraces, Manor Houses and detached dwellings with the Urban Design on greenfield sites, an excellent public domain can be achieved with high level amenity for all residents in a medium density solution.

This entry has designed the structure of streets with the dwellings according to the Medium Density Design Guide.

It shows a density of over 24 Du/Ha, yet the scale of the building envelope, the quality of the public domain, and the amenity and inclusive choice of housing is an improvement on many contemporary suburban environments of a typical density of 15 Du/Ha.

TERRACE END MANOR HOUSE

The Manor House has been designed as a 'book-end' to a run of Terraces.

It avoids exposing a side wall of a Terrace to a cross street. This avoids the typical situation of Terraces on street corners that have poor surveillance, poor interface between public and private domain, and converts this to an opportunity with the new Manor House typology that has apartments with excellent amenity, continuous street surveillance and a clear interface between public and private domain.



A - MANOR HOUSE ENTRY



B - TERRACE / MANOR HOUSE GARDENS



C - MANOR HOUSE CORNER & TERRACES

**MANOR HOUSE
A FLEXIBLE TYPOLOGY**

The Manor House is an optimal typology for corner lots. The advantages can be shown in both versions that have been designed in this entry.

Secondary streets do not have secondary amenity, all frontages maintain an engaged interface with the public domain.

The ground floor apartments have a choice of private open space, facing the street, or behind the building as a normal backyard. The upper floor apartments maintain cross ventilation and flexible solar access, but the private open space predominantly overlooks the street to avoid privacy clashes.

The fundamentals of this design create a flexible typology that may be used in any street orientation that will maintain solar access to internal and external living areas of each apartment.

EACH APARTMENT IS CROSS VENTILATED



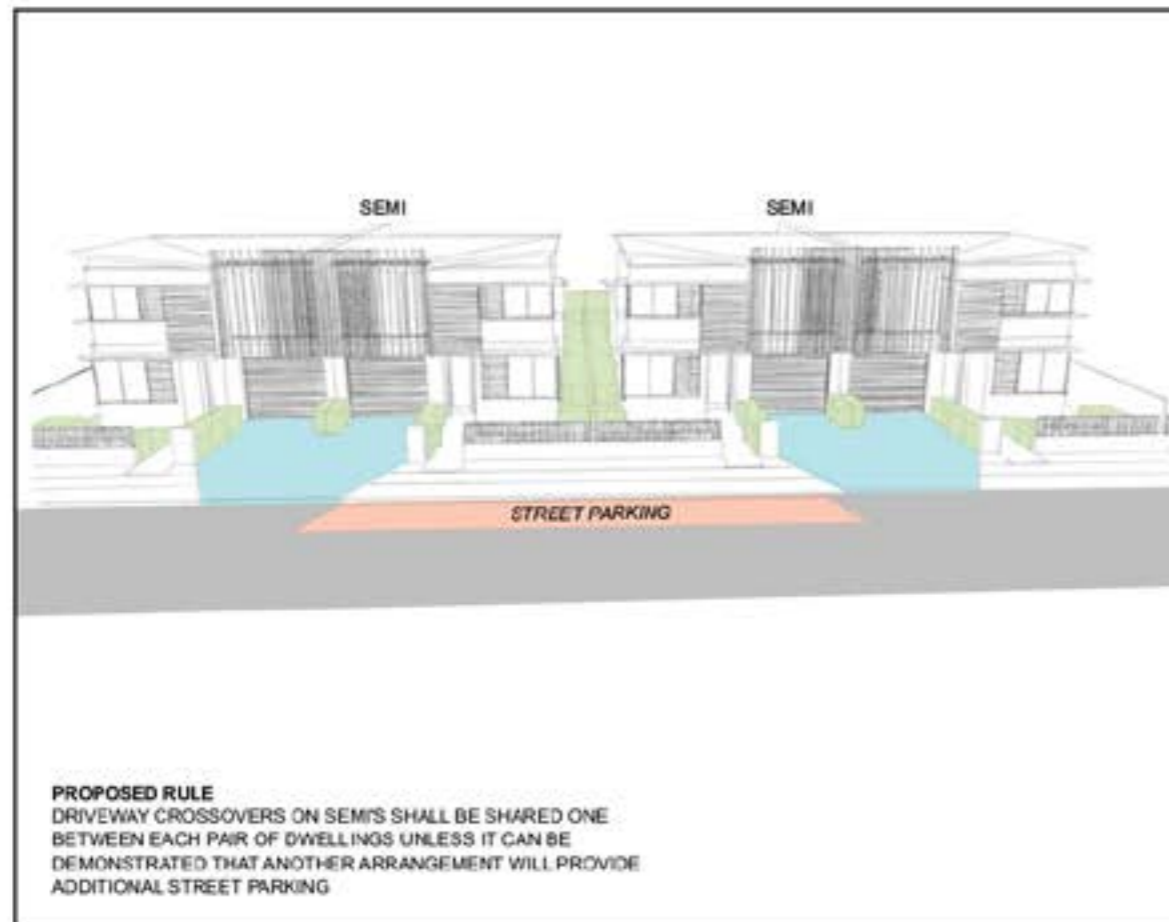
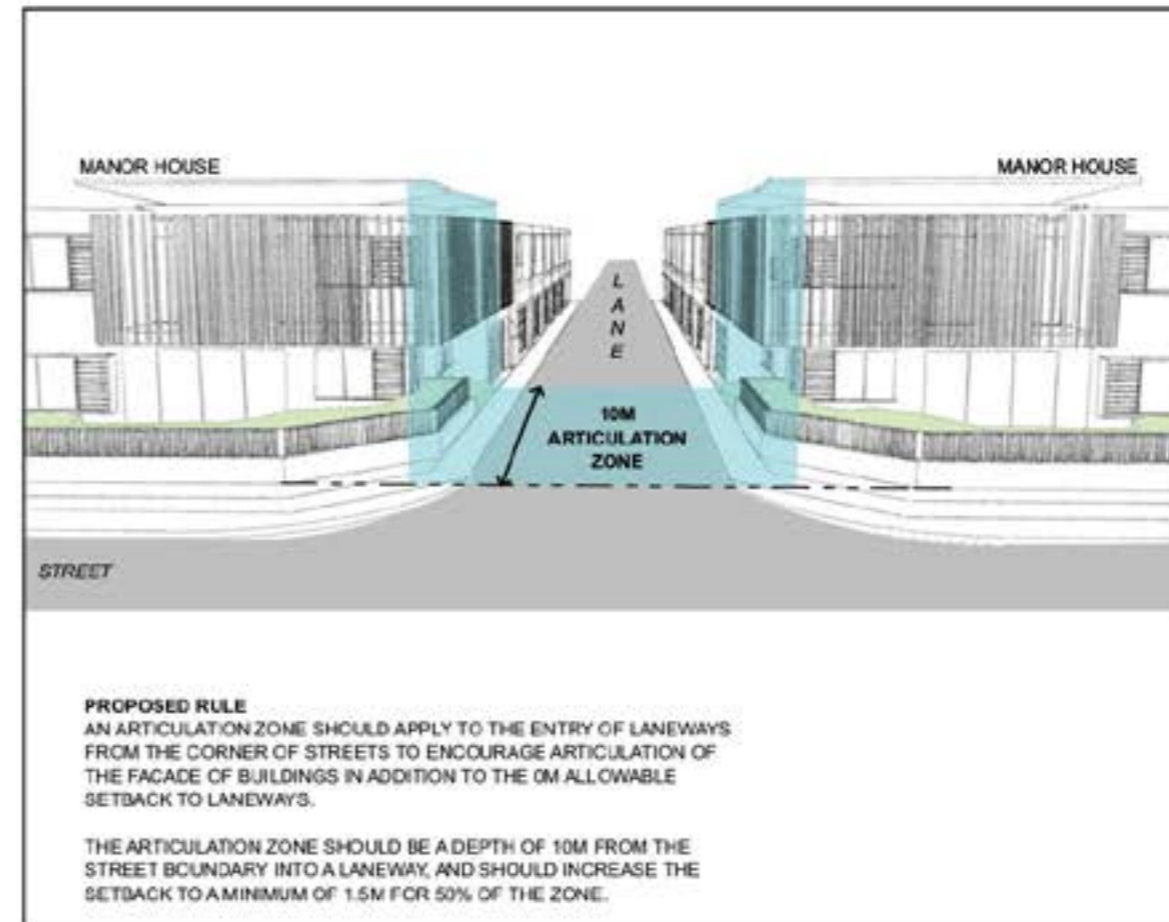
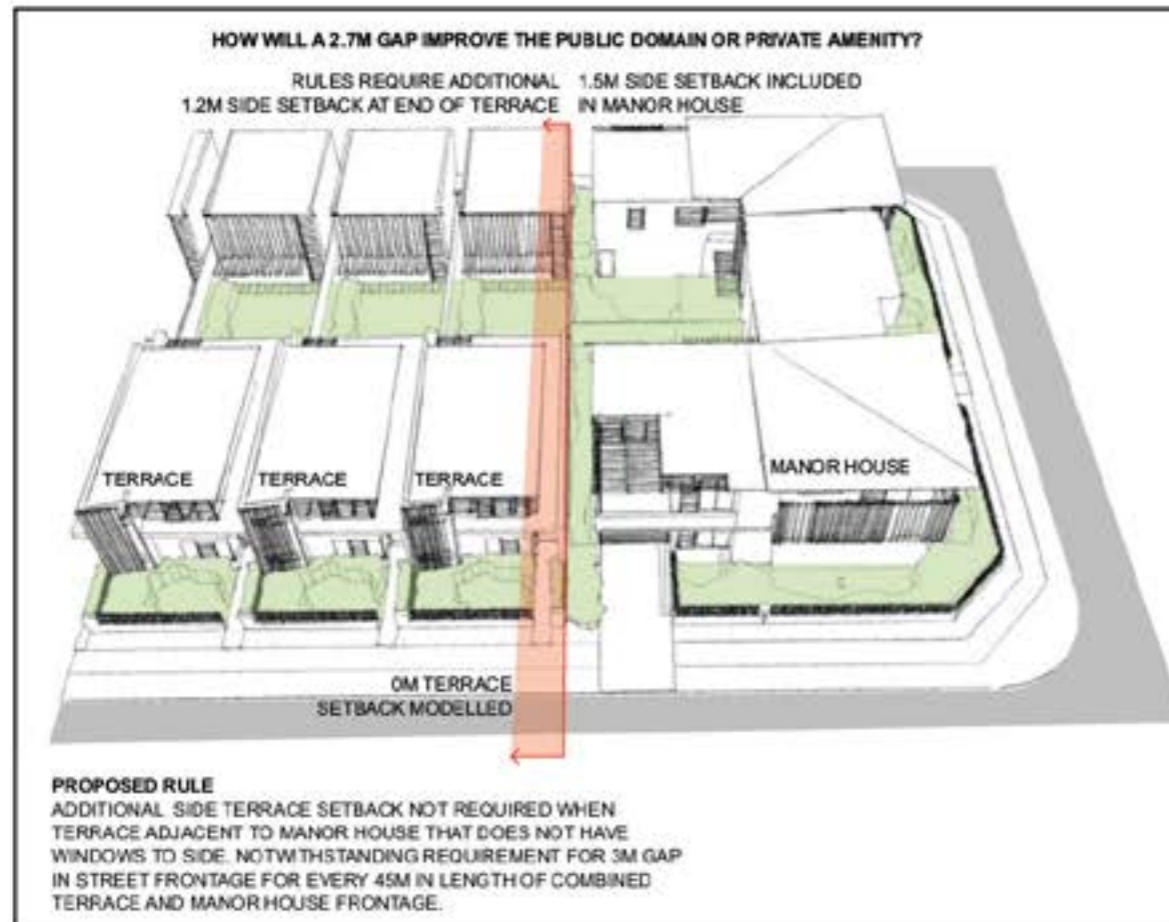
D - MANOR HOUSE TERRACE END



E - TERRACES - VIEW OF PEDESTRIAN PATHWAY



F - LANE VIEW TO SEMI'S - MANOR HOUSE CNRS



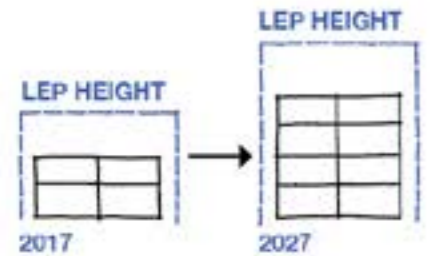
TESTING THE CONTROLS



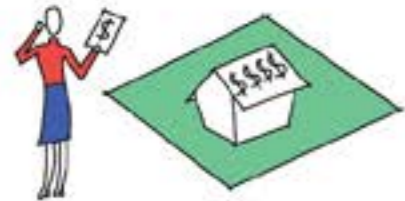
The great Australian dream of owning the quarter acre block close to the city is no longer affordable.



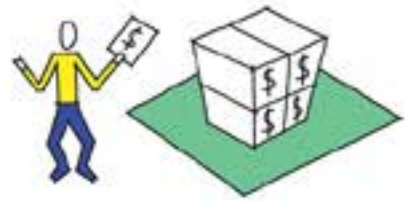
Terraces, dual occupancies and manor houses provide a short term solution to Sydney's population growth. What will these typologies mean for Australian housing in the next 50 years?



As our city develops, height and FSR controls will become higher and denser in order to accommodate population growth.



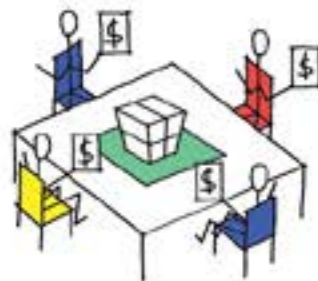
Incremental construction is a long term solution for Sydney's population growth. The system literally builds on the Missing Middle urban growth strategy



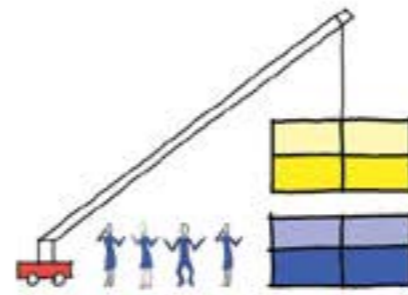
How does the incremental system work?
A single block is consolidated into smaller lots. People who can't afford a Sydney home on a single block can now afford a home on a smaller lot.



Over time the value of the home will increase – gaining equity, improving the owners' financial situation



Owners from the entire lot agree to develop the site further using the equity gained on their homes.



The existing building is developed vertically by owners of the existing building.



The homes on this floor are purchased by the next generation of people looking for an affordable home.

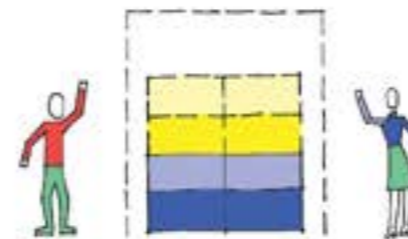


The **Incremental Construction System** does not rely on bleeding heart philosophy to deliver affordable housing. It is built on the existing capitalist principles inherent to Australia's property market today.



People are looking for an alternative to developer and bureaucratic driven delivery of housing that is needed for Sydney's future.

The **Incremental Construction System** empowers people in delivering the affordable housing through the Missing Middle Complying Development System.



The **Incremental Construction System** creates a steady stream of affordable housing that has the flexibility to grow along with the city.



The flow on effects mean less reliance on the state by creating more self funded retirees, providing housing to low income individuals and helping to sustain a healthy construction industry.



Many developing countries that do not have the benefit of robust government institutions leave the delivery of housing to the people.



Rebar Sticking Out of the Roof is a common sight in many developing countries from Vietnam to Guatemala, Bangladesh to Albania. This allows families to extend their homes vertically when the family gets too large for the house or when grandparents move in. Additional rooms can be rented out for additional income.



This organic system of housing has many problems, but what we can learn from these developments is how people take it upon themselves to improve their urban and economic situation when given the opportunity.



The **Incremental Construction System** intends to recapture the ethos of having citizens being actively involved in the delivery of medium density housing.



Chilean architecture office 'Elemental' under the guidance of Pritzker Laureate Alejandro Aravena utilizes an incremental construction system to deliver social housing in the cities of Iquique and Constitution in Chile.



These housing projects deliver 'half a good house' with the future residents going on to complete additions if they need to.

The **Incremental Construction System** engages a process which ensures that the owners of these properties become invested in both their home and their future community.



City Plan



Location Plan



Site Plan 1:1000

3 BED
132m²
cross ventilation
dual aspect
sunlight access
2 storeys

Installation of lift is optional. If lift not installed, lift shaft to be used as resident storage

1 BED
95m²
cross ventilation
dual aspect
sunlight access

2 BED
68m²
cross ventilation
dual aspect
sunlight access



First Floor Plan 1:200

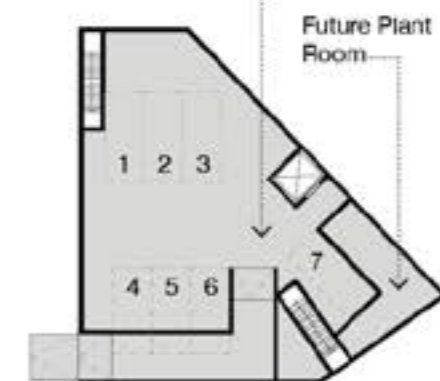


Ground Floor Plan 1:200

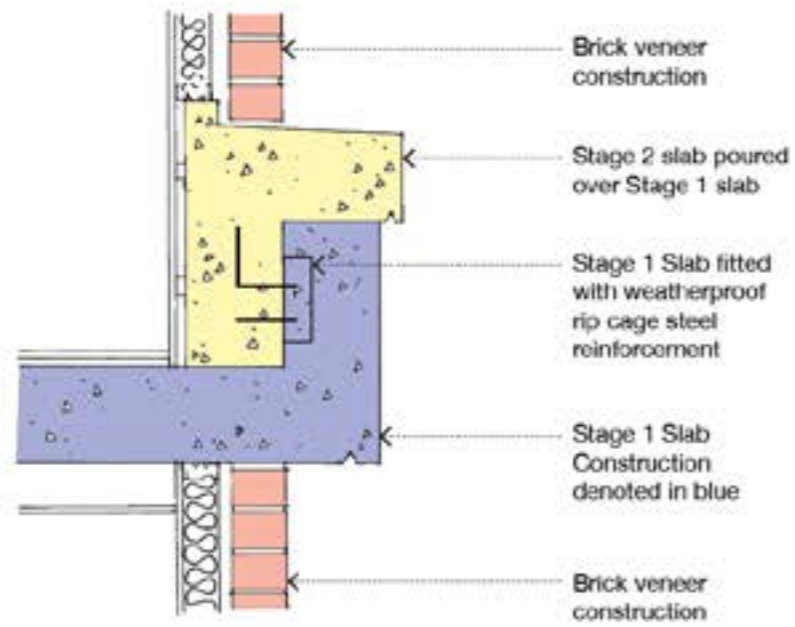
Main entry from Montgomery Avenue to common lobby

2 BED
95m²
cross ventilation
dual aspect
sunlight access

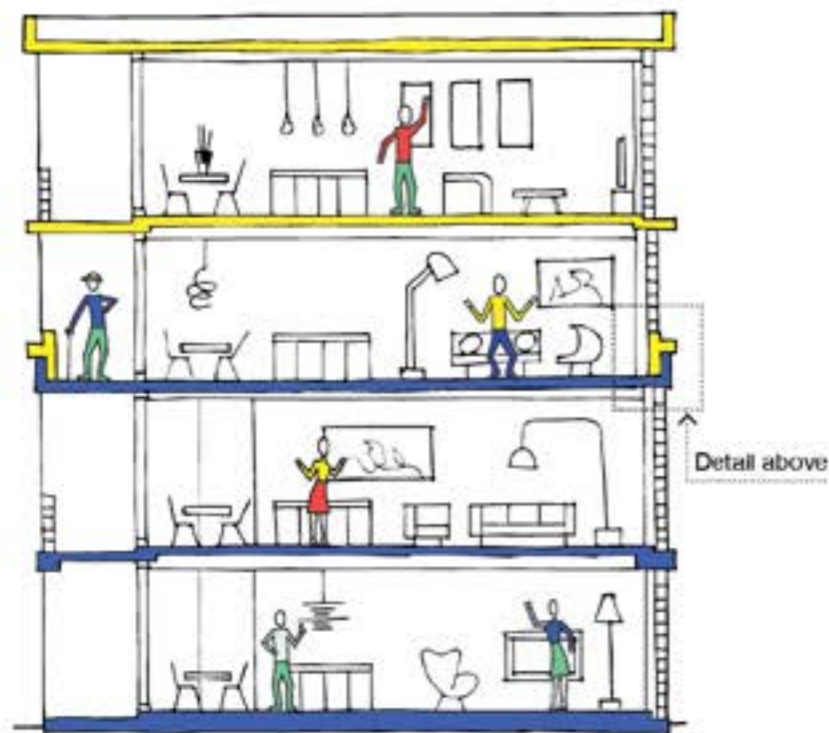
Provision of basement carparking is optional to ensure affordability



Optional Basement Plan 1:500

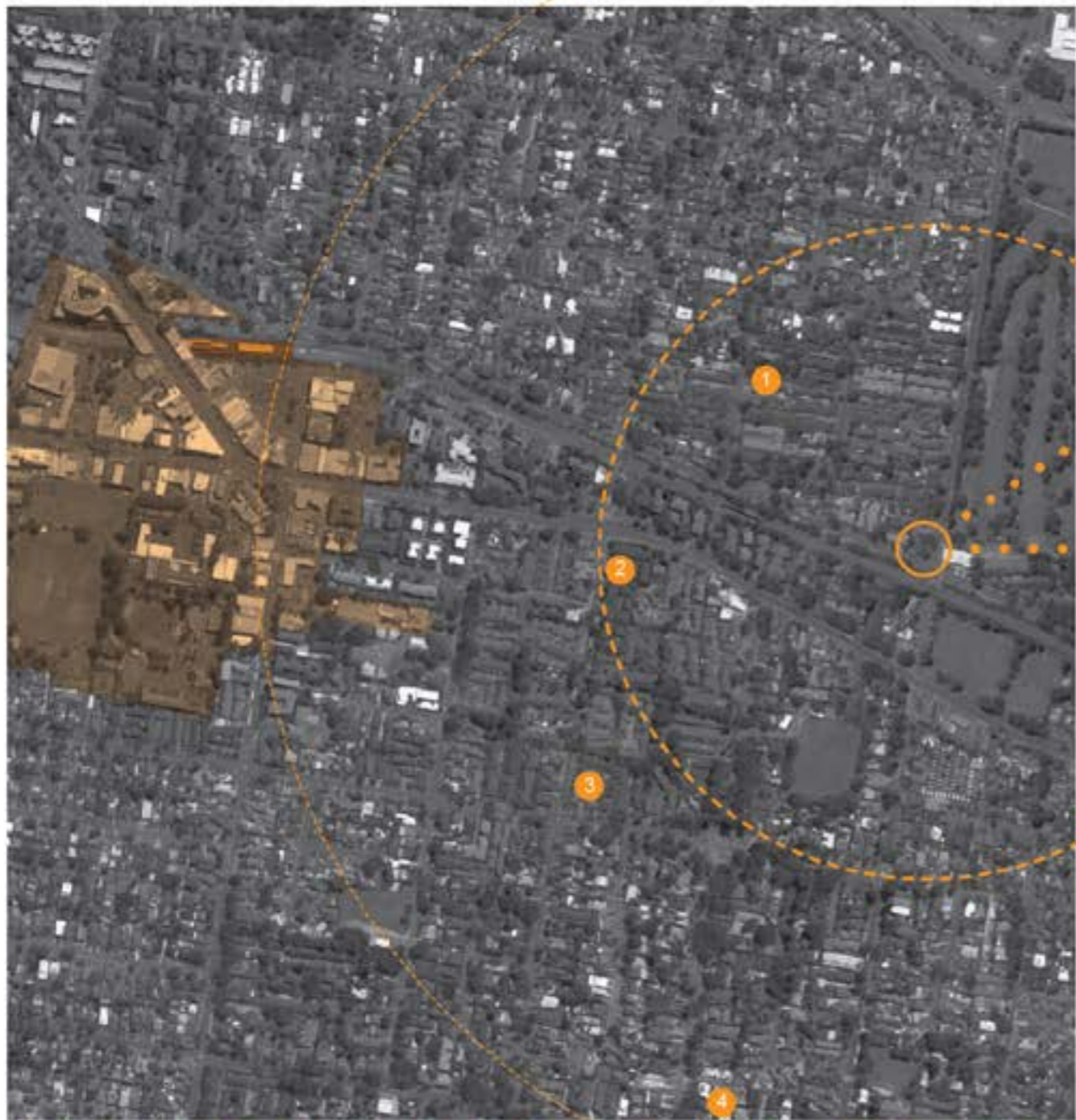


Detail Section



Building Section

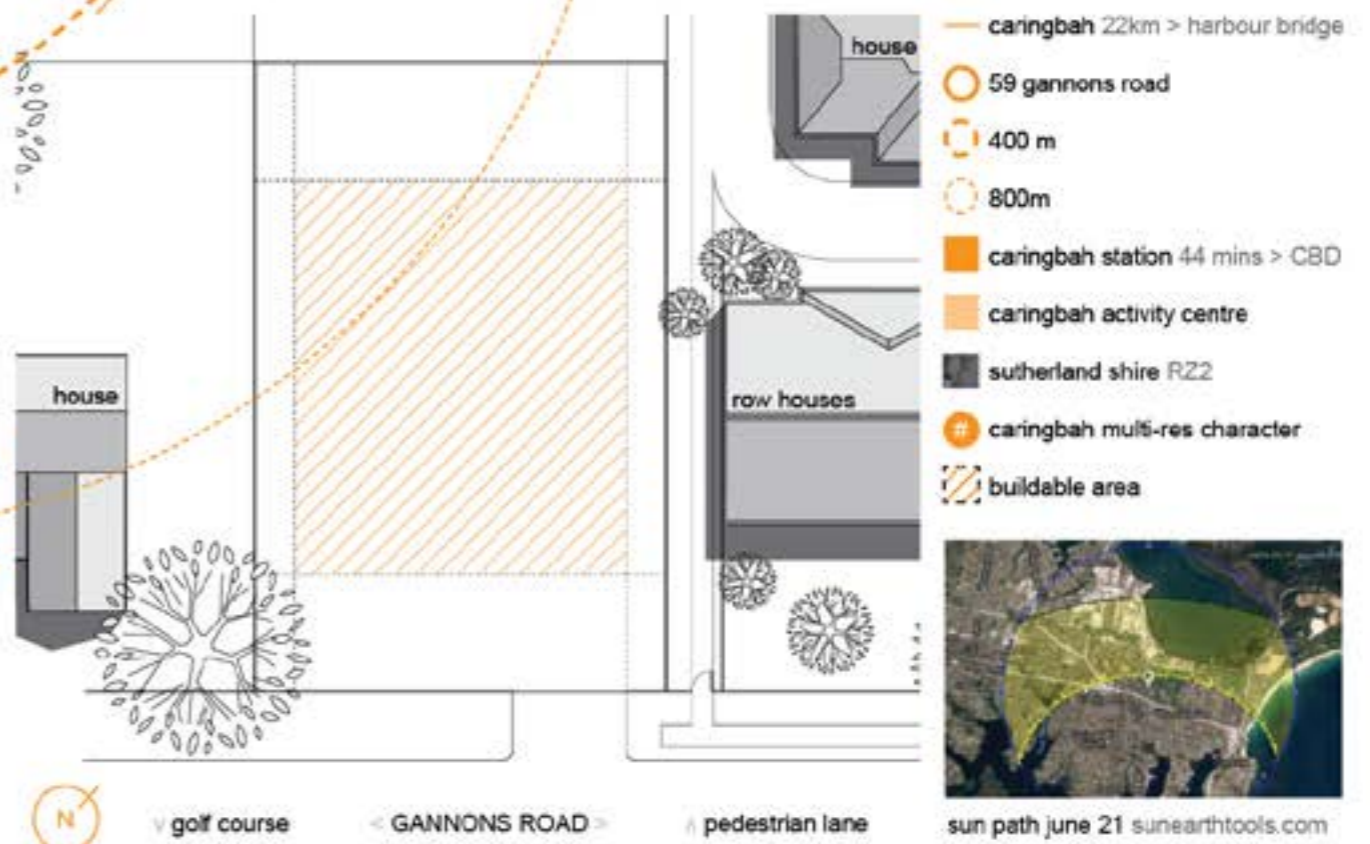




MAN(NE)RIST HOUSE

Caringbah, a suburb in Sydney's Sutherland Shire, is a community of approximately 11,000 residents, many of whom commute to the Sydney CBD each day. Located on the inner edge of this community, within walking distance of both the train stations and activity centre, 59 Gannon's Road is an ideal site for creating a walkable medium density development.

The aerial view of the suburb indicates that significant apartment densification has occurred within the proximity of the train station, which appears akin to 3-5 storey walk up unit blocks located in Inner Sydney suburbs (such as North Bondi). However, the experience on the street reveals a prevalent low rise character, with single storey buildings the dominant typology. As a result, the increased building footprint creates a tension between the distribution of open spaces and car access, which ultimately reduces the quality of both private and communal outdoor areas. Man(ne)rist House seeks to increase residential density, remedy the lack of quality outdoor space and retain the low rise character of the neighbourhood.





Poor quality apartment development has led to a preference for single household detached dwellings. While adopting new legislation can facilitate development, the perceived distinction between a house and an apartment may limit its widespread uptake. By extension, housing in Australia is a financial asset whose value influenced by the perceived quality of the suburb, including the assumed adverse effects typically associated with apartments (noise, congestion, lack of privacy, etc). Thus the introduction of apartment development to a suburb may be seen as a threat not only to the lifestyle of the community but also housing values, which could lead to a NIMBY revolt against the missing middle.

The introduction of medium density to Caringbah has been discreet, with manor houses typically adopting a suburban aesthetic used for single, detached dwellings. Man(ne)rist House adopts and extends this contextual trend by deliberately manipulating the composition of the four separate dwellings, akin to 16th century Mannerist's manipulation of facades, to reduce the bulk and perceived density of the manor. The gabled roof form is actually a grill-like screen, that appears solid at street level, allowing for winter light, summer shade, ventilation, privacy and external views. Further, human scaled elements such as doorways and typical windows are absent from the street facade to further disrupt the legibility of the scale of the overall dwell and presence of independent individual apartments. The overall effect of the manipulation is the illusion of replacing a non-threatening, one storey, single detached dwelling with newer model.

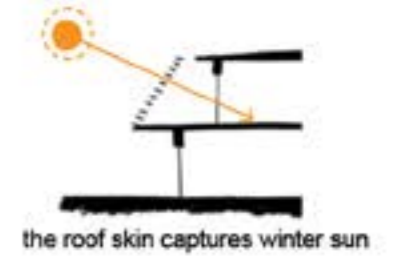




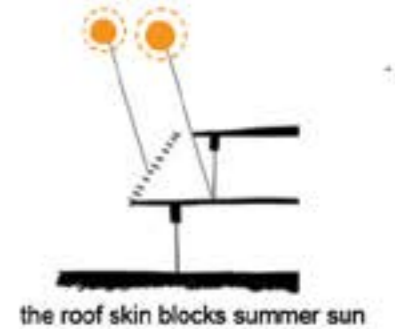
GROUND FLOOR 1:200



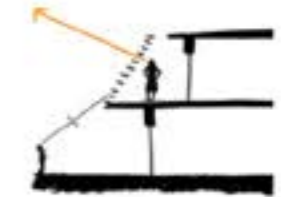
FIRST FLOOR 1:200



the roof skin captures winter sun



the roof skin blocks summer sun



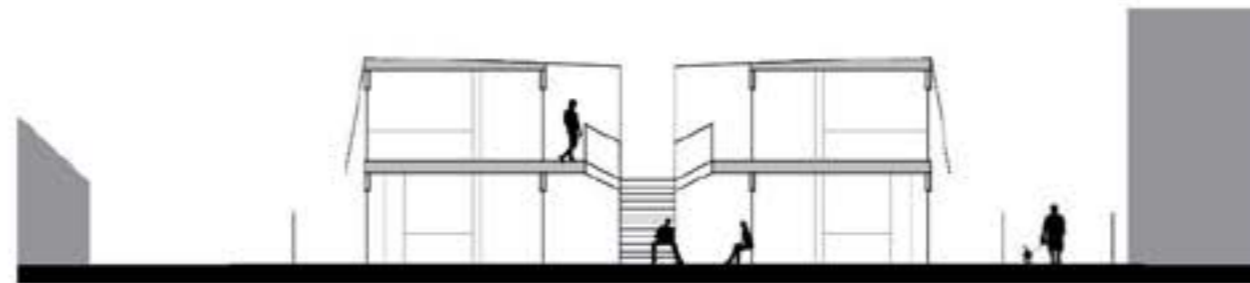
the roof skin is porous but private

COMPLIANT DESIGN

Shifting the perception of medium density living is not enough. For medium density development to be a truly viable alternative to single household detached dwellings, it needs to be not only environmentally and economically but also culturally and socially more sustainable.

The design guide includes criteria to increase the quality of dwellings by creating a new hybrid; the amenity and lifestyle provided by a detached dwelling with the energy and land use efficiency, and affordability, of apartment living.

Man(ne)rist House pushes the agenda further by maximising opportunities for social interaction beyond activation of the street to interaction between the residents themselves. This is facilitated by a generous leafy, sunny and sheltered 1920's Beverly Hill's styled circulation courtyard. The space connects with entrances and kitchens to encourage passive interaction between neighbours whilst protecting the privacy of bedrooms, bathrooms and other living spaces.



SECTION 1:200



DESIGN GUIDE AMENDMENTS

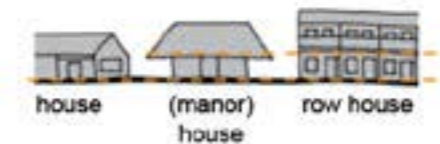
- allow for small scale mixed use
- no minimum carpark requirement within 800m of trainstations and activity centres
- allow manor developments to consist of more than 4 apartments
- amend minimum landscape to 1.5m
- allow minimum living/dining area to include the kitchen
- amend minimum rear setback to 5m
- amend front setback to 4.5m or streetscape average if less than 4.5m
- amend requirement for all dwellings to have frontage to a road

TESTING THE BRIEF

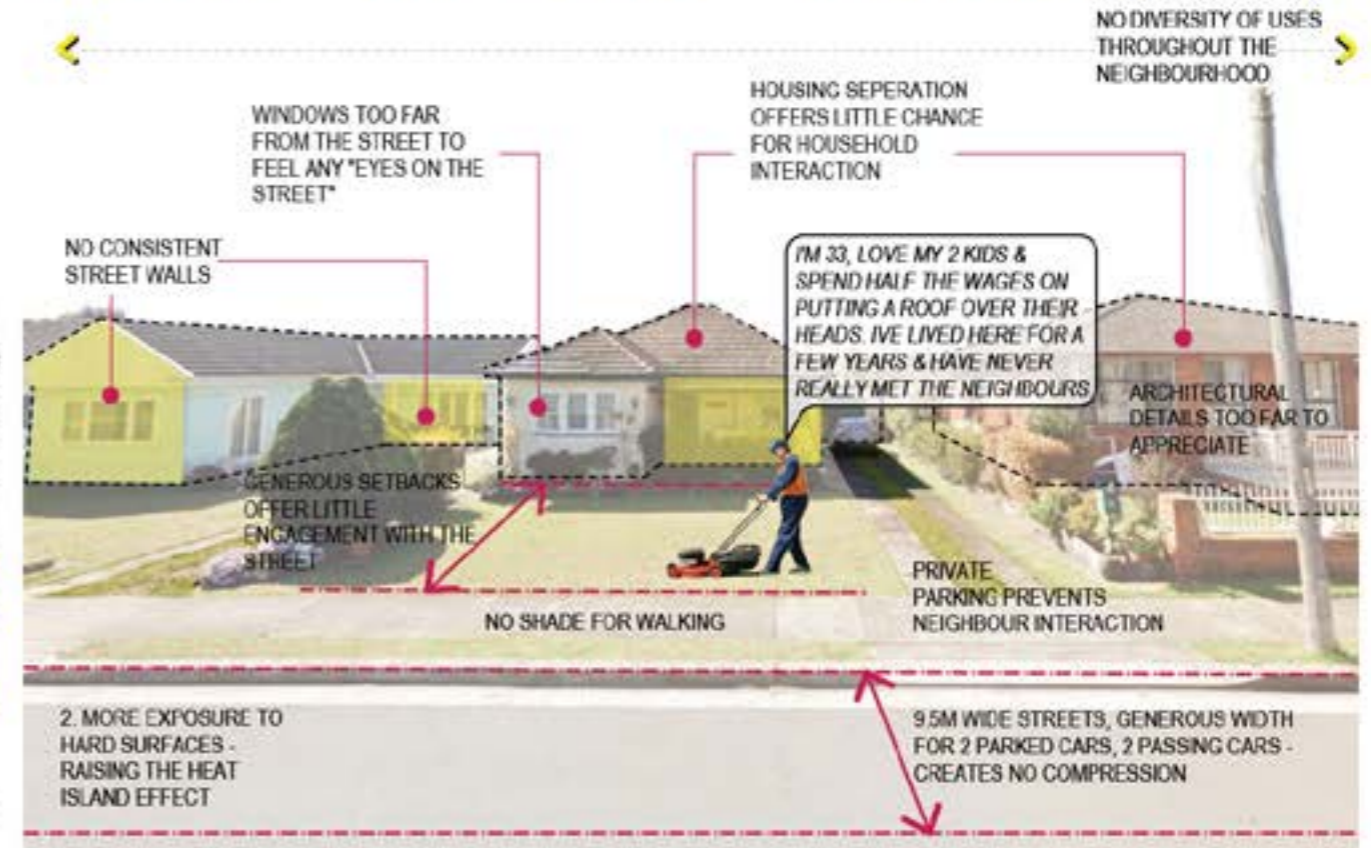
While the design demonstrates that the Draft Medium Density Design Guide can support appropriately scaled, high quality manor style development in low rise suburbs, minor alterations could enable further opportunities for the densification and diversification of the suburbs.

Although the average Australian dwelling size has significantly increased since the post war suburban housing boom, households themselves are shrinking with single and two person households now more prevalent than nuclear families. Consequently, more affordable, small 1-2 bedroom dwellings would ease cost of living and housing shortage pressures for Sydney.

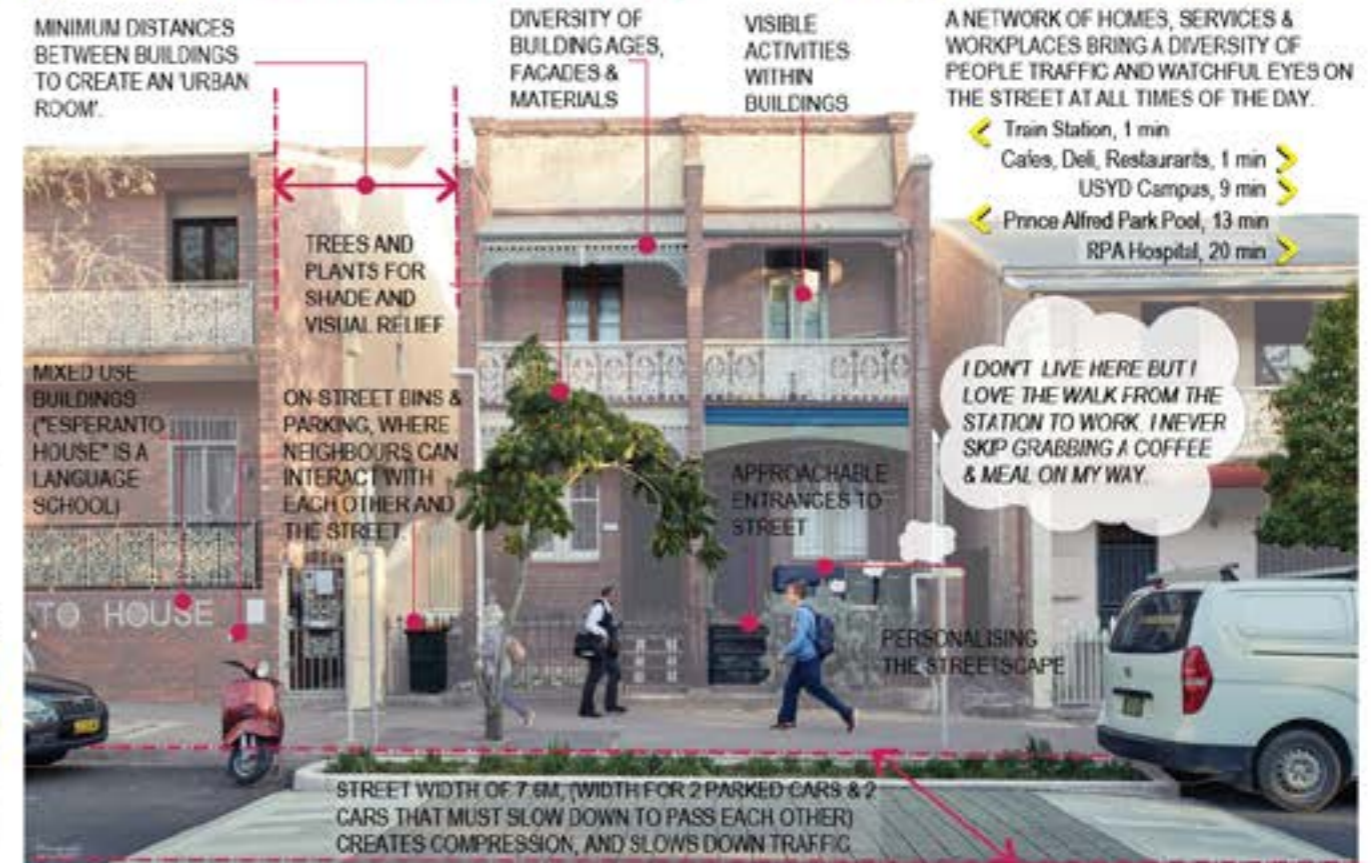
Increasing dwelling density alone will not foster walkable communities, particularly if densification occurs beyond activity centre walk sheds. Adjusting the guidelines to include opportunities for small scale mixed use activities could provide more amenities for residents and promote safe walk routes through street activation.



who are the missing middle?



is it 'density' or urbanity they need?



the common misconceptions

1. density ≠ urbanity



HAVING A GREATER NUMBER OF PEOPLE IN AN AREA DOES NOT MEAN GREAT OR DIVERSE PLACES. HAVING EXCELLENT BUILDINGS DO NOT MEAN GOOD CITIES. WE MUST SEE THE VALUE OF STREET LIFE IN GREAT CITIES.



2. density ≠ affordable

1 OR 2 BEDDERS IN LIVERPOOL CAN COST BETWEEN 325 - 410K IN OLD STOCK OR SMALL APARTMENTS AS MORE PEOPLE SPEND MORE THAN 30% OF THEIR STAGNANT WAGES IN GROWING HOUSING COSTS, THERE NEEDS TO BE BETTER OPTIONS FOR PEOPLE TO ENTER HOME OWNERSHIP WITHOUT UNSUSTAINABLE DEBT.



PEOPLE FEAR CHANGE. IT IS IMPORTANT TO CREATE HOMES THAT PEOPLE SEE AS 'NORMAL'. THE MOST PROLIFIC TYPE OF FORM IN LIVERPOOL IS THE LARGE MANSION HOUSE - BUT WHAT IF IN THAT SAME FORM IT WAS POSSIBLE TO REDUCE COSTS BY HOUSING NOT 1 FAMILY - BUT 3?



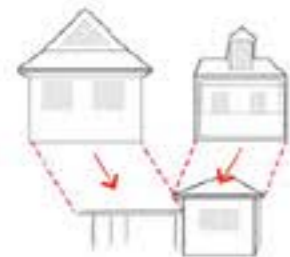
how to change perceptions

3. growth = diversity

HAVING A ONE SIZE FITS ALL MODEL DOES NOT ALLOW FOR GROWTH OR DIVERSITY - PEOPLE HAVE DIFFERENT NEEDS AT DIFFERENT STAGES OF THEIR LIVES. A MODEL THAT WORKS ALREADY EXISTS. HOMES WE PURCHASE AT ONE STAGE OF OUR LIVES & RENOVATE & ADAPT WHEN WE NEED TOO.



4. the equation



1. ADD THE FLEXIBLE FEATURES OF EXISTING HOUSES - THE GARAGE & THE ATTIC



2. EQUALS THREE DWELLINGS INSTEAD OF ONE



3. EQUALS DWELLINGS WITH POTENTIAL TO GROW, FOR A MUCH LOWER PRICE.



4. EQUALS BUILDING ONLY WHEN YOU CAN, TO YOUR PREFERENCES & NOT PURCHASING BEYOND YOUR MEANS.

5. putting it into practice

STREET LIFE: CREATE A STREET TO BREAK UP THE EXISTING LARGE STREET BLOCKS AND CONNECT TO THE GREATER STREET NETWORK. AS WELL, CREATE FEATURES FOR NEIGHBOURS TO ENJOY THAT STREET. PASSIVE SURVEILLANCE AND INCREASED FOOT TRAFFIC WILL CREATE A SAFER NEIGHBOURHOOD



DIVERSITY & FUTURE PROOFING: ALLOWING FOR MIXED USES (NOW OR IN THE FUTURE) BY INCLUDING A FLEXIBLE SPACE WITHIN THE DESIGN OF THE BUILDINGS



STREETS FIRST! - 12M DISTANCES BALCONY TO BALCONY ALLOWS 2 WAY VEHICLE TRAFFIC, FOOTPATHS AND LANDSCAPING



COMBINE LOTS: WHOLISTIC APPROACH TO MINIMUM LOT SIZES TO CREATE OPPORTUNITY FOR MORE DWELLINGS.

SHARED SERVICES = SHARED COSTS DWELLINGS CAN BE SOLD AT LOWER ENTRY POINTS WHEN EFFICIENCIES IN SERVICES & BUILDING ARE COMBINED.

COMMUNITY! NOT ISLAND HOMES - ENCOURAGING SHARED AMENITY AND NOT CONTINUING THE INDEPENDENT ISOLATIONISM OF THE SUBURBS.

JUST LIKE ANY OTHER HOME: HOMES THAT RESEMBLE THE ALREADY EXISTING BUILDING TYPOLOGIES - BUT ALLOW FOR A DIVERSITY OF HOUSING FORMATIONS.





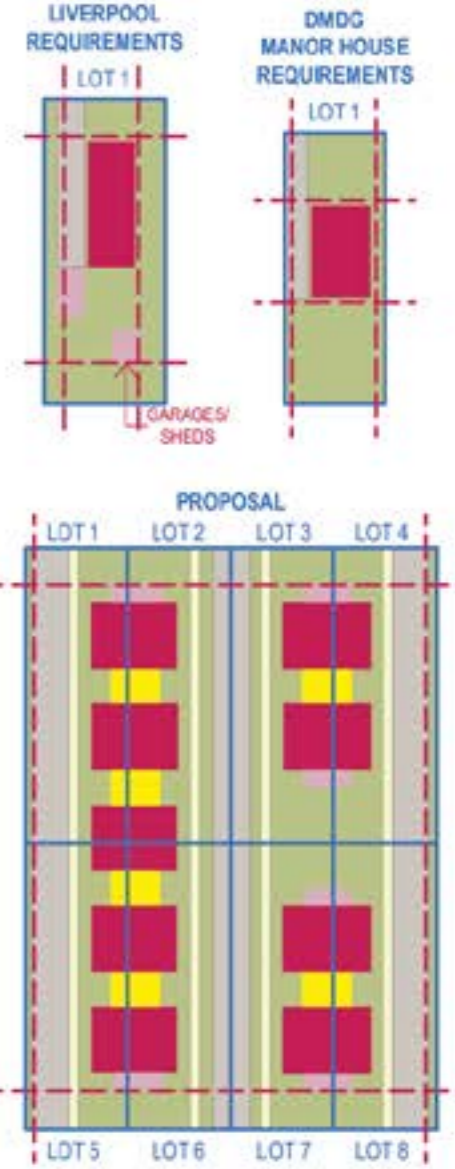
TOTAL LANDSCAPING
= 940 SQM
MINIMUM REQUIRED:
45% OF SITE AREA
= 2360 SQM
THIS REQUIREMENT IS MUCH TOO GENEROUS AND WOULD CONTINUE THE SPARSE BUILT FORM OF THE SUBURBS. IT DOES NOT TAKE INTO ACCOUNT PROVISIONS FOR THE STREET & BASKETBALL/PLAY AREA

STREETS & MIXED USE: DESIGN GUIDE SHOULD ENSURE PROJECTS OVER CERTAIN DENSITIES INCLUDE STREETS/LANES AND MIXED USE SPACES INTO THE DESIGN. MIXED USE SPACES COULD BEGIN AS STUDIOS OR SUBSIDISED BY LOCAL COUNCILS INITIALLY TO CREATE CHEAPER RETAIL OPTIONS.

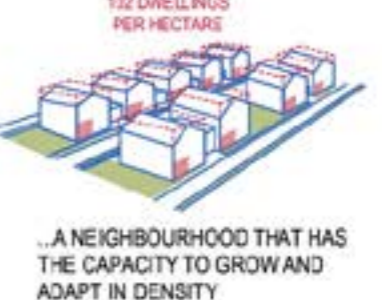
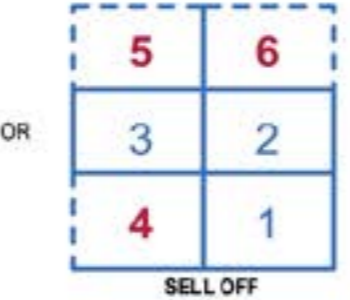
TOTAL FSR
= 0.43:1
CALCULATIONS INCLUDE RETAIL SPACES. DENSITY GUIDE SHOULD EXPLORE EXCLUDING SUCH SPACES OUT OF FSR CALCULATIONS TO ENCOURAGE THEIR DEVELOPMENT.



NOT ALL DENSITY IS EQUAL: THE DESIGN CRITERIA FOR MANOR HOUSES IN THE LIVERPOOL DCP AND DRAFT MEDIUM DENSITY GUIDE PRODUCE SIMILAR BUILT FORM RESULTS IN THE SAME LOT SIZE AS A TYPICAL STAND ALONE HOUSE - I.E. MORE PEOPLE IN A LANDLOCKED PLOT. WE MUST BE FLEXIBLE WITH OUR LAND USAGE AND ENACT THAT DENSITY CANNOT BE DONE WITHOUT URBAN AMENITY.



SUBDIVISION: BEYOND TESTING DESIGN STANDARDS & TYPOLOGIES, DRAFT MEDIUM DESIGN GUIDE SHOULD QUESTION SUBDIVISION LAWS AND DUAL OCCUPANCY POSSIBILITIES WITHIN STRATA TITLES.



DENSITY: THE PROJECT STANDS AT 51 DWELLINGS PER HECTARE. WITH THE FLEXIBILITY OF REMOVING OR ADDING AS MANY HOUSING UNITS NEEDED TO MEET VARYING DENSITY TARGETS.



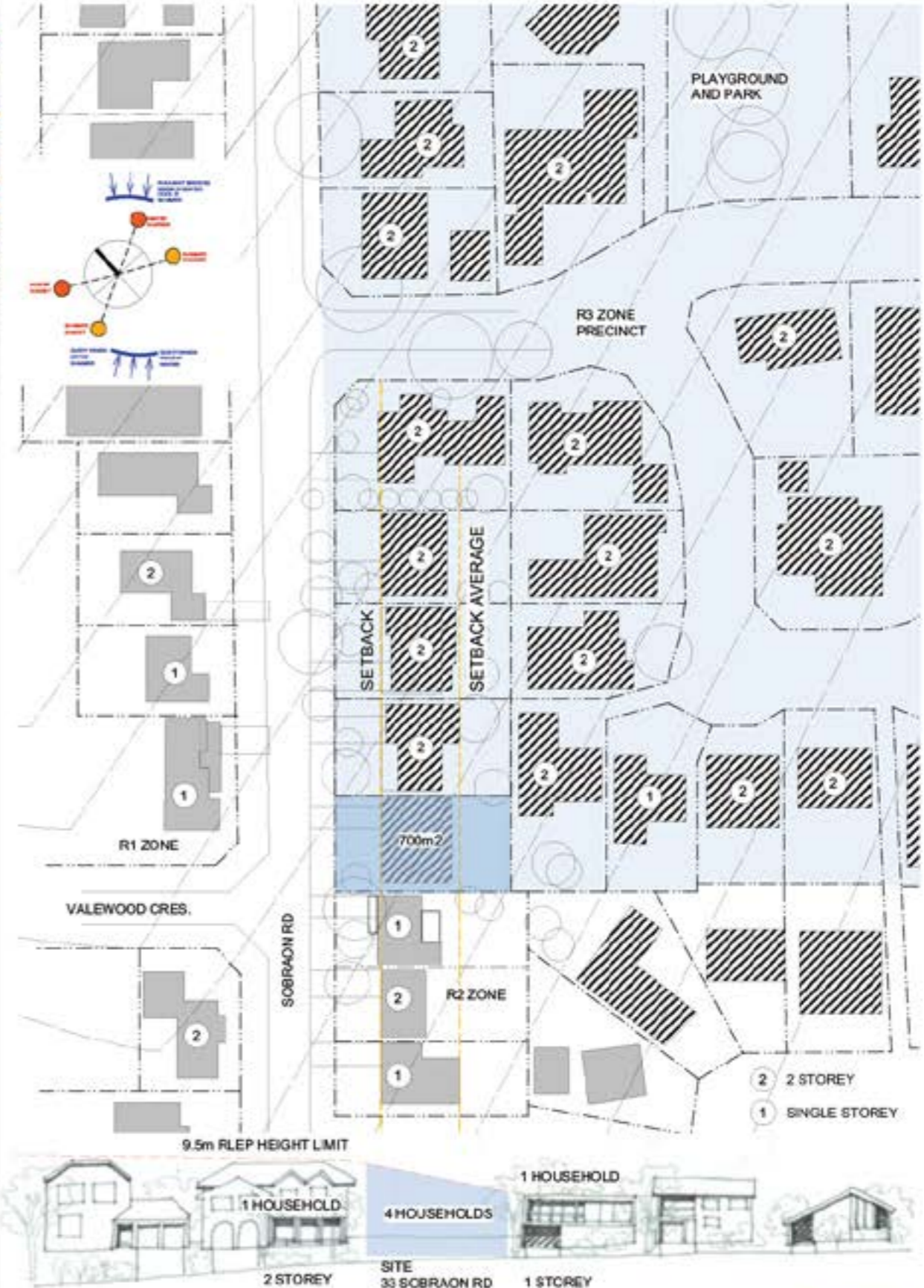
- KEY:
- MEDICAL CENTRE
 - RETAIL CENTRE
 - SCHOOL/UNIVERSITY
 - TRAIN STATION
 - ACTIVE RECREATION CENTRE
 - PASSIVE RECREATION
 - BUS ROUTE
 - ▨ SITE
 - PEDESTRIAN LINKS



TRAIN LINKS



SITE PEDESTRIAN LINKS



1:1000 SITE PLAN

SITE CONTEXT
A1

MISSING MIDDLE COMPETITION



SITE SELECTION & CONTEXT

The Site is located at 33 Sobraon Road, Marsfield, adjacent to Macquarie park, in the middle ring zone, 14km from the Sydney CBD.

STRATEGIC SELECTION

The site was chosen for its strategic location in an area of rapid growth and housing demand.

The site is within 1km walking distance of the commercial centre of Macquarie Park, Macquarie University and train station and is well serviced by public transport services and the future Sydney Metro Northwest. Macquarie Park is a major commercial centre, and is estimated to grow further as a premier business and technology park, retail location, University and Hospital. Macquarie Park is a large employer of people across a spectrum of services such as academic, medical, retail, service, administration and technology, therefore uptake of housing within this area is guaranteed. An increase in density for the subject site will allow residents to live, work and study in the area, reducing reliance on cars.

Higher residential development in strategic locations around and within Macquarie Park is key to enhancing the amenity and growth potential of the area. This chosen site is strategically located to provide higher density living, providing affordable housing and diversity of housing for people working in and around Macquarie park. The area will go through a rapid rate of change as Macquarie park grows further and demand for housing the diverse population becomes more urgent.

The site has ready access to schools, community facilities and extensive open spaces for passive and active recreation. There is existing pedestrian and cycle access to employment, schools, retail and entertainment venues such as Macquarie centre shopping centre, movies, ice-rink, recreational parks. The shopping centre provides a hub of recreation facilities for families and youth.

The site is Zoned R3 under the 2014 Ryde LEP and is a typical suburban pattern with bulky 'McMansions' housing single families, and adjoins a low rise R2 zone characterised by older style low scale residential buildings of 1 - 2 storeys with large gardens, to the North is the Macquarie park corridor. The site is opposite Dunbar park, and Sobraon Road is bounded by Agincourt Rd with several shops and Epping road and the University to the North.

THE BRIEF:

We have chosen to design a Manor house for this site as it allows a diversity of living arrangements that would be suitable for the demographics of the area and allows a greater number of family units to be accommodated. The potential residents could be office workers, hospital employees, university students, families, intergenerational families, the design should allow for flexible household groupings. The R3 zoning could potentially allow multiple manor houses to be built within the greater site. This site allows for testing against a traditional suburban pattern of low scale houses with large gardens.

Our understanding of the brief is to design a manor house in response to the uniqueness of the site, fully compliant with the principals of the MDDG. The design should explore opportunities for design excellence and innovation, affordability, and provide high amenity for the occupants. The design needs to respond to the existing context providing opportunities for improved urban design and urban pattern and excellence in environmental sustainability.





GROUND LEVEL PLAN

SITE AREA 700m²
 GFA 370m²
 FSR 0.5:1

GROUND FLOOR
 1 x Accessible Unit 90m²
 1 x 2/3 Bed unit 117m²
 Communal Room 24m²
 Courtyard 42m²
 Landscaped space 260m²
 37% of site

LEVEL 1
 1 /2 Bed Unit 70m²
 1 x 2 Bed unit 90m²



LEVEL 1 PLAN

PRECINCT PLAN

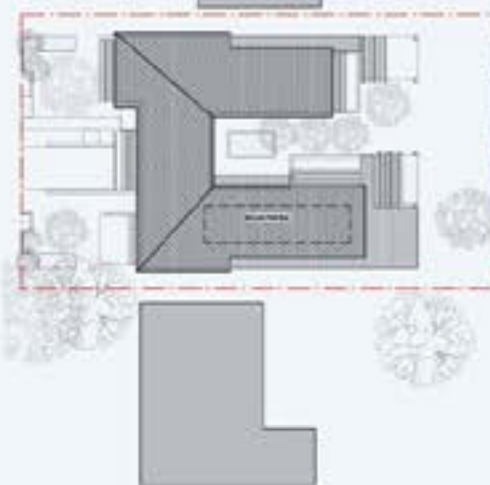


BASEMENT PLAN

BASEMENT 144m²
 (excluded from GFA)
 4 x Car spaces
 1 as allocated car share
 Water tank
 Power Wall Battery storage
 4 x Personal Storage lockers
 14m²

DESIGN
 The Manor house is designed to provide dwellings for 4 households joined by a communal courtyard providing privacy whilst allowing for communal interaction. The design is flexible to allow for multi generational living as units can be linked if required, or as a co-housing model.

The massing of the building takes its cues from the adjoining property which has a low scale horizontal presence and provides views through to the rear garden. The 20m width of the site is punctuated by the landscaped courtyard space and overhanging verandah, allowing for a pattern of solid to void and providing shadow modulation across the facade.



ROOF PLAN

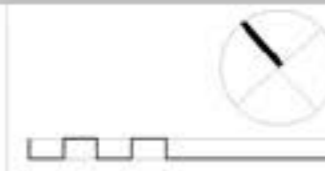
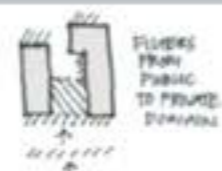
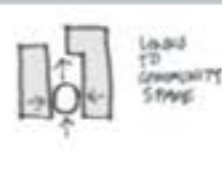
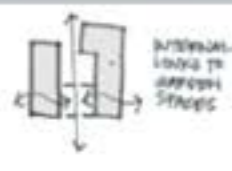


STREET VIEW SOBRAON RD



R3 ZONE PRECINCT

SITE No. 33



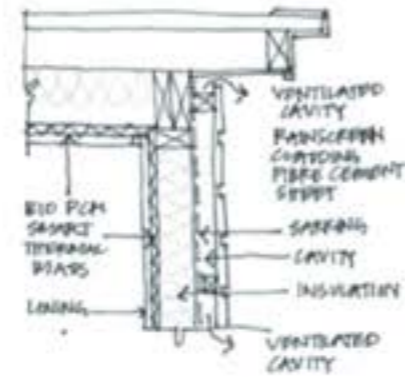
CONCEPT DRAWINGS
 A2

MISSING MIDDLE COMPETITION



STREET ELEVATION

SECTION EAST WEST

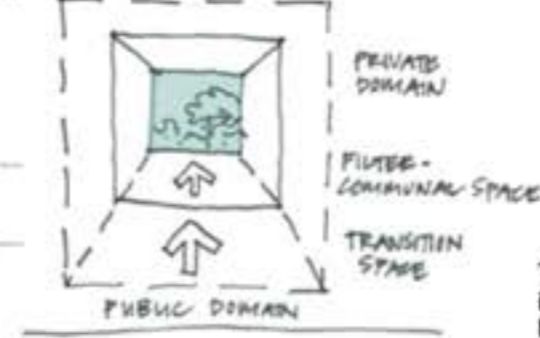


ESD:

- Timber framed lightweight construction to allow future flexibility and pre-fabrication of units. Standardisation of structure and orthogonal planning suitable for pre fabrication such as stacking of wet areas.
- Rainscreen cladding to separate external cladding and structure, reducing expansion and contraction of materials and increasing durability over the lifetime of the structure.
- Utilise smart thermal mass to reduce internal temperature swings with Biodegradable PCM. Bio PCM is 40 times more efficient than concrete and has a neutral carbon footprint, reducing heating and cooling by 40-80%. The thermal mass consists of a 15mm thick PCM matt fitted to walls and ceilings.
- Cross flow ventilation is achievable with the courtyard arrangement and narrow building footprint. Allowing cooling breezes from courtyard pool and landscaped area.
- Adequate building separation to allow winter sunlight access to spaces.
- Allowance for integrated roof solar collectors and battery storage.
- Integrating landscape within the building footprint to take advantage of trees as a moisture and cooling source. A tree can transpire approximately 380L of water a day which can result in a cooling effect similar to running 5 average air-conditioners for 20 hrs.
- The building footprint is efficient, reducing material and resource use and providing affordable accommodation.

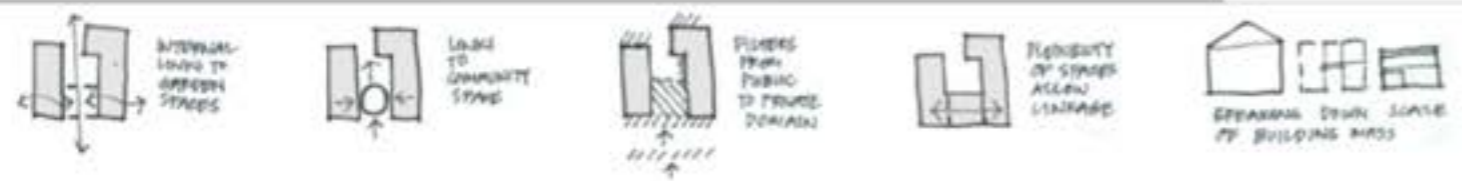


SECTION NORTH SOUTH

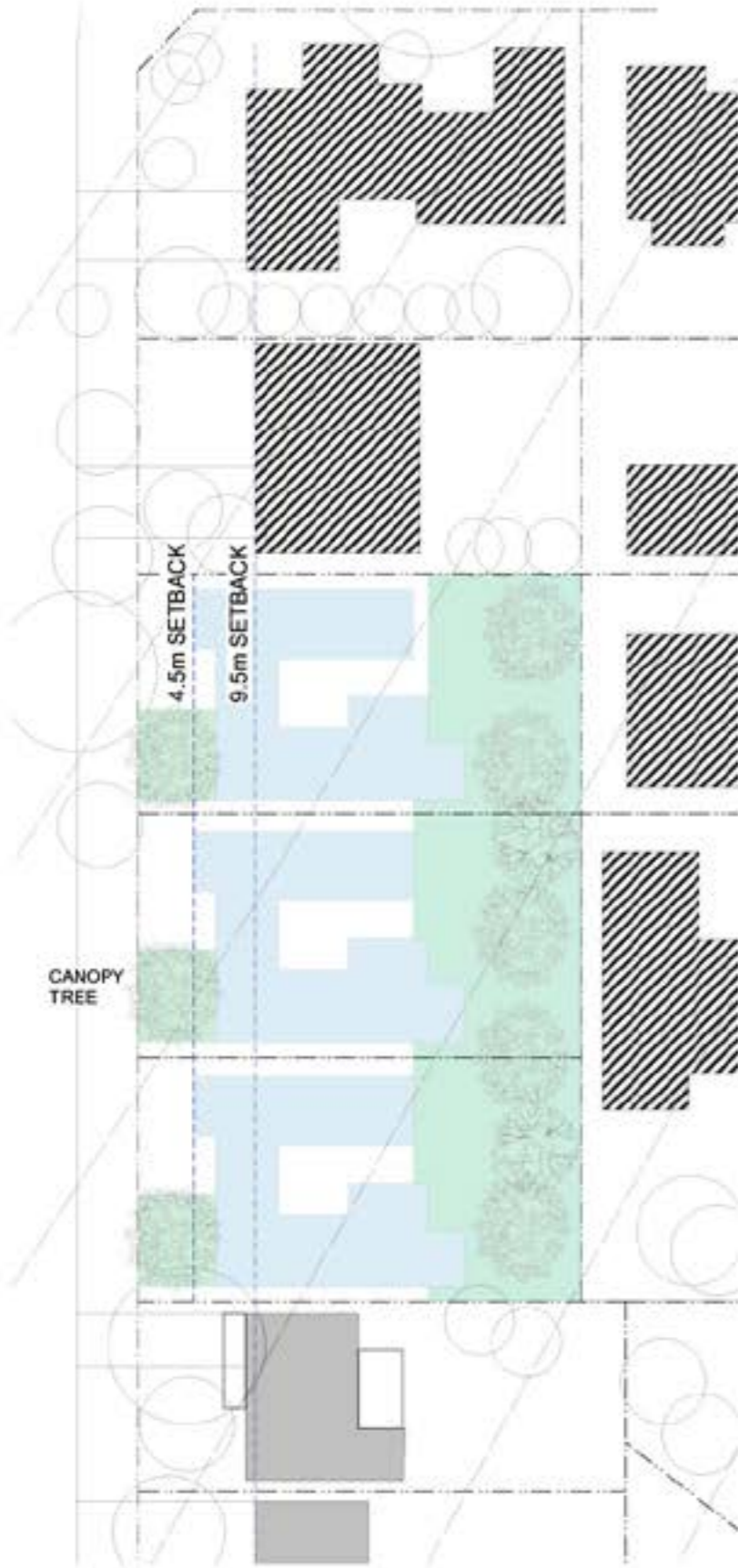


The Manor house is designed to provide a landscaped interface between the public and private realms of the 4 households, with a filtered progression from public space to private domain. The Courtyard allows a 'breathing space' between the dwellings

The inner courtyard and rear landscaped open space can be glimpsed from the public domain, contributing to the suburban experience rather than creating a solid wall to the street. Opportunities are created for passive surveillance and interaction between the neighbourhood and site residents.



CONCEPT DESIGN	MISSING MIDDLE COMPETITION
A3	



CHALLENGING THE MDDG SETBACK REQUIREMENTS

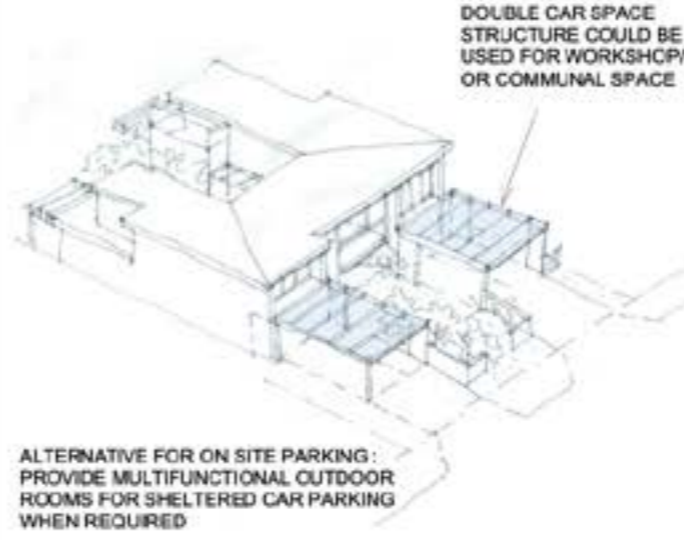
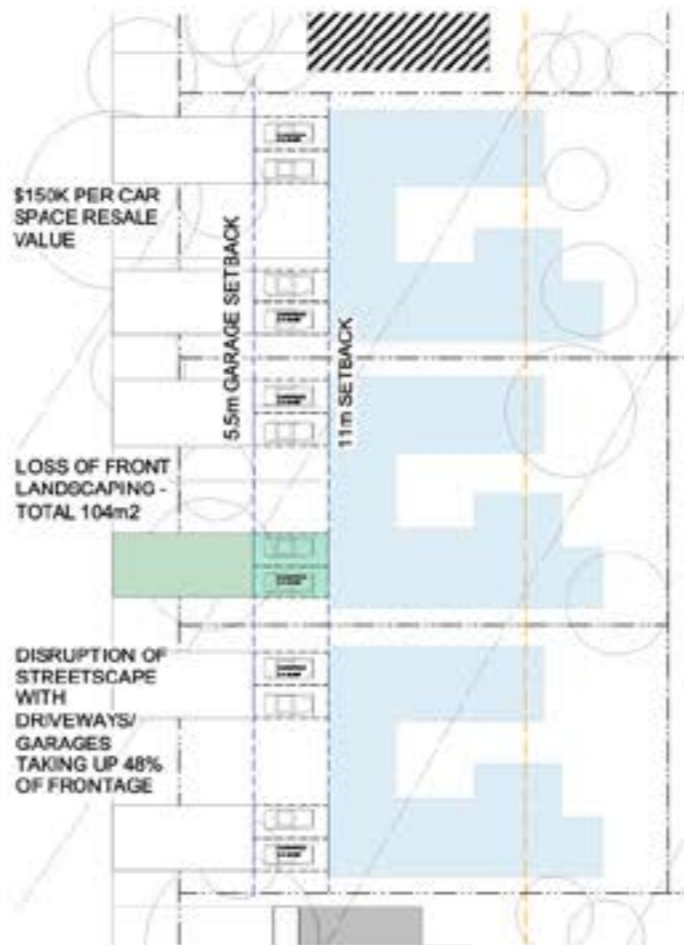
MDDG Manor House App. P. 196 of the Draft Medium density Housing Code has some inconsistencies with setbacks in Section 3.4 Manor Houses, such as:
 Side setback Front 15m: 1.2m at front

3.4 Manor Houses

Front setback:
 Average of closest 2 dwellings or if no dwellings within 40m, then 4.5m
 Rear setback 16m / 10m for level 1
 Side setback Front 15m: 1.5m

Many old neighbourhoods in suburban precincts have generous front setbacks, for example the site selected in this competition has a 11-8m setback. This space becomes a no mans land of decorative landscaping that is not used for passive recreation nor planted with canopy trees. A generous front setback does not necessarily create a optimum streetscape but provides unobstructed views of the dominant 9.5m high dwellings.

A setback of 4.5m is adequate to allow safe vehicle crossing, establish privacy zones and filters between dwelling and street and allow for passive surveillance. However the Draft MDDG requires a average of the neighbourhood which equates to a 9.5m setback, this has implications on the building footprint due to the rear setbacks of 6m and 10m. The rear setback is useful in allowing for deep soil and canopy trees as well as useable private open space.



CHALLENGING THE MDDG PARKING REQUIREMENTS

Principal Control 3.40 -1 6 Car parking is to be provided at the rate required for a dual occupancy within a DCP that applies to the land. If there is no rate in the DCP - 1 space is to be provided.

The Manor house can accomodate up to 4 dwellings and should not be compared to rates for a dual occupancy which has a lower density. The manor house is similar to a Residential Flat building 'residential flat building means a building containing 3 or more dwellings, but does not include an attached dwelling or multi dwelling housing' RLEP 2014, however there is a range of planning control requirements for 4 proposed dwellings below.

**RDCP Parking Development Control Plan 2014
 2.0 Parking Required in Respect of Specific Uses**

Residential Development - High Density (Residential Flat Buildings)
 0.6 to 1 space / one bedroom dwelling
 0.9 to 1.2 spaces / two bedroom dwelling
 1.4 to 1.6 spaces / three bedroom dwelling
 visitor space / 5 dwellings
RDCP Required parking for 4 dwellings 1x 1 Bed, 2 x 2 bed, 1 x 3 bed = minimum 4.7 spaces

Residential Development - Medium Density (Multi Dwelling Housing)
 1 space / one bedroom or two bedroom dwelling
 2 spaces / three or more bedroom dwelling
 1 visitor space / four dwellings
RDCP Required parking for 4 dwellings 1x 1 Bed, 2 x 2 bed, 1 x 3 bed = minimum 6 spaces

Residential Development - Low Density
 Dual Occupancy 1 space / dwelling
RDCP Required parking for 4 dwellings 1x 1 Bed, 2 x 2 bed, 1 x 3 bed = minimum 4 spaces

MDDG Manor House App. Page 196 of the Draft Medium density Housing Code, parking rate of 0.5 - 1 space per dwelling =
MDDG Required parking for 4 dwellings 1x 1 Bed, 2 x 2 bed, 1 x 3 bed = minimum 2 spaces
MDDG Principal Control 3.40 Required parking for dual Occupancy 1 per dwelling or as per DCP requirements = minimum 4 spaces

These generous parking requirements of up to 6 car spaces for 4 dwellings tend to reduce housing affordability. The resale value of a parking space is approx \$150K so 4 car spaces add \$600K to the value of the property and reduce affordability. If a developer were to conform to the 4 spaces minimum requirement this would increase the property value significantly. Car parking carries significant environmental costs such as the consumed energy in construction, long term maintenance, lighting, increase in impermeable area and stormwater load, heat island effect and aesthetic degradation of the streetscape. If the development is to be low cost and provide affordable housing, the parking restrictions should be reviewed so that it is 0.5 per dwelling. On this site with a frontage of 20m, there are 4 potential car spaces on the street, and the introduction of multiple driveways reduces on street car parking capacity.

For this specific site, a basement carpark is possible due to the site topography, but if 4 car spaces were required on grade this would take up half the frontage and adversely affect the streetscape and availability of landscaped area and deep soil zones.

TESTING THE GUIDE

A4

MISSING MIDDLE COMPETITION

Australia has one of the most unaffordable housing markets in the world, and yet, we continue to build the biggest houses in the world. Changing household demographics means larger numbers of small households live in family sized homes. This housing stock of family homes on suburban streets is not suitable for their needs, and not designed to support social connection; rather housing can exacerbate the issue by isolating smaller households in large spaces, with little connection to those around them.

The premise of this proposal is that it is possible to take much of this existing housing stock, and through additions and alterations, provide opportunities for multiple parties to live together in what was previously a single dwelling. The redesign will allow each party to live independently, but with some communal facilities. Not only does this create opportunities for greater affordability, but the occupiers of these adapted dwellings also have the opportunity to create a vibrant and supportive community within their homes.

Furthermore, this proposal re-imagines a street where the social value created in a dwelling 'collectivized' in this manner radiates outward to the surrounding neighbourhood. The proposal imagines firstly that the communal spaces in the adapted house face and are open to the street, inviting interaction and participation among neighbours. Secondly, the proposal posits a scenario where multiple houses of this kind are located in the same vicinity, and where a network of households develop who share their different communal spaces with each other. These communal spaces may vary from one house to the next, due to the differing interests and needs of each household, creating a diversity of spaces that can be offered to the surrounding neighbourhood.



The proposal for 2 Tramway St, Denistone West, the subject site, has a communal kitchen/ dining 'front room' that opens onto a street facing deck, with bbq facilities. A communal vegetable garden is located in the front yard adjacent to this deck. It also has a large rear workshop that opens onto the secondary street. The variety of spaces that could be accommodated is limited only by the interests of the households; play rooms that face onto playgrounds in the front yard, a shared pool in the front yard, artist's studios or shared workspaces, carports and driveways that can double as outdoor cinemas, craft or sewing rooms, libraries or reading rooms, and so on. **The result is a connected network, enlivened by a diversity of uses and users.**

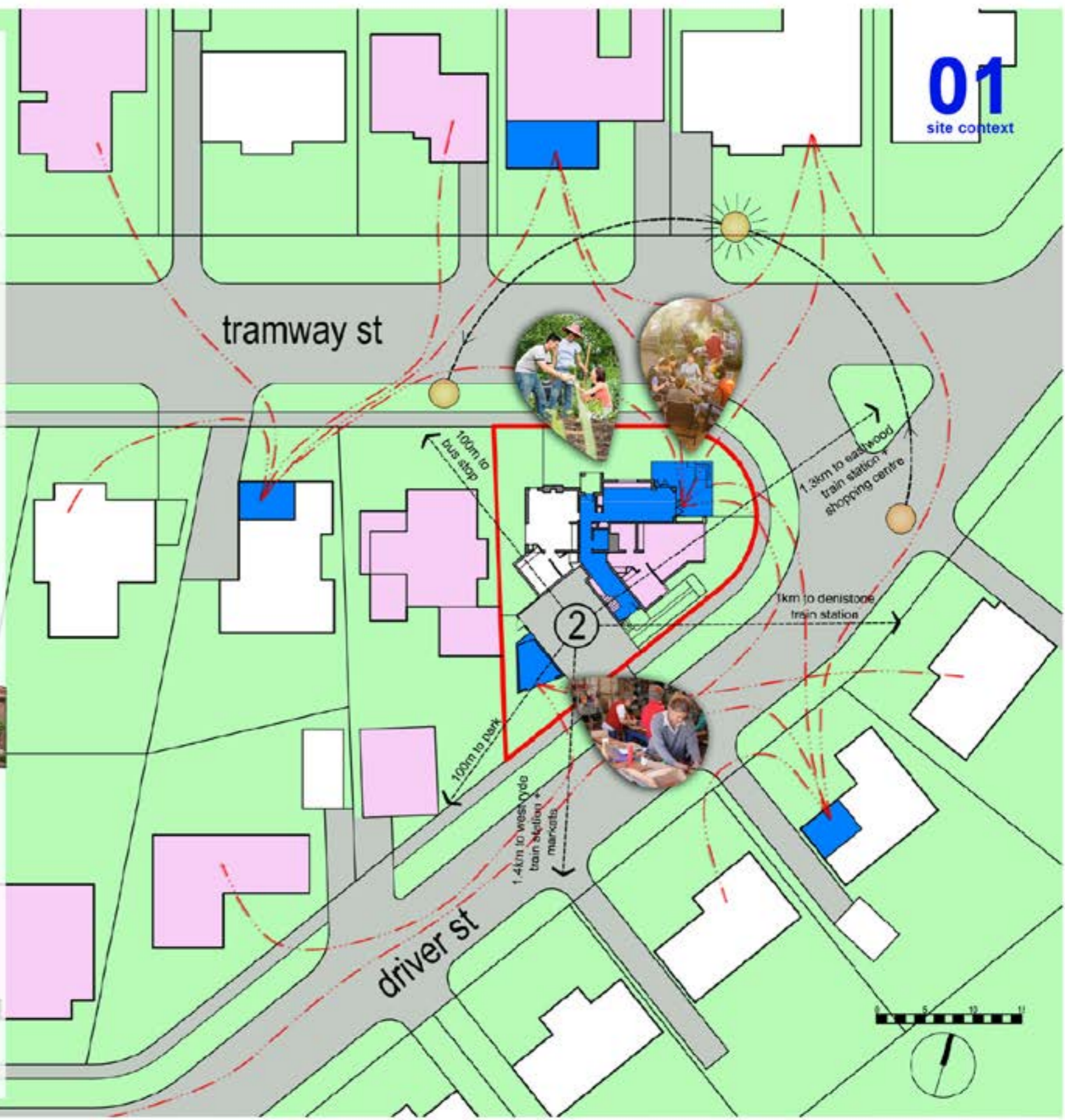


SITE SELECTION: WHY THIS SITE

The City of Ryde has one of the lower density levels in Sydney (2895 persons/km as opposed to highest density of Waverley at 7865 persons/km), whilst being only 13km from the CBD. In addition to this, within the city, there are 3500 lone households living in separate dwellings with three or more bedrooms, as well as 3350 couple households living in separate dwellings with four or more bedrooms. (ABS) There is great potential for re-imagining this underutilised housing stock.

The specific property was chosen not because it was exceptional, but the contrary. The proposal seeks to demonstrate that a 'middle house', without exceptional features, could be adapted for this purpose. A corner site was selected to meet the requirements of the brief, but at 633m² it is not exceptionally large for the area. It has favourable north orientation, and is close to amenities and transport infrastructure.

-  pink fill indicates two storey residence (single storey shown white)
-  blue fill indicates communal areas within private dwellings, with red lines indicating paths of travel between neighbours



02

concept plans
compliant design

areas

total site area 632m²
ground floor area 196m²
first floor area 119m²

notes

1. all communal areas face onto the street, and can be accessed directly from the street, providing opportunities for interaction with neighbours
2. a communal vegetable garden is also located in a position easily accessible from both the street and the common areas
3. whilst a full kitchen is provided in the common areas, each unit also has its own kitchenette/ kitchen; this is to ensure that each occupier can live independently, and that interaction happens out of choice, not necessity
4. existing structures retained shown hatched; as much of the existing building as possible has been reused, with the proposed powder room in the same location as existing, and the bathroom to unit 2 retained in same location as existing; the kitchenette in unit 1 is in the approximate location of the existing kitchen; extent of existing building shown dashed
- 5.
- 6.



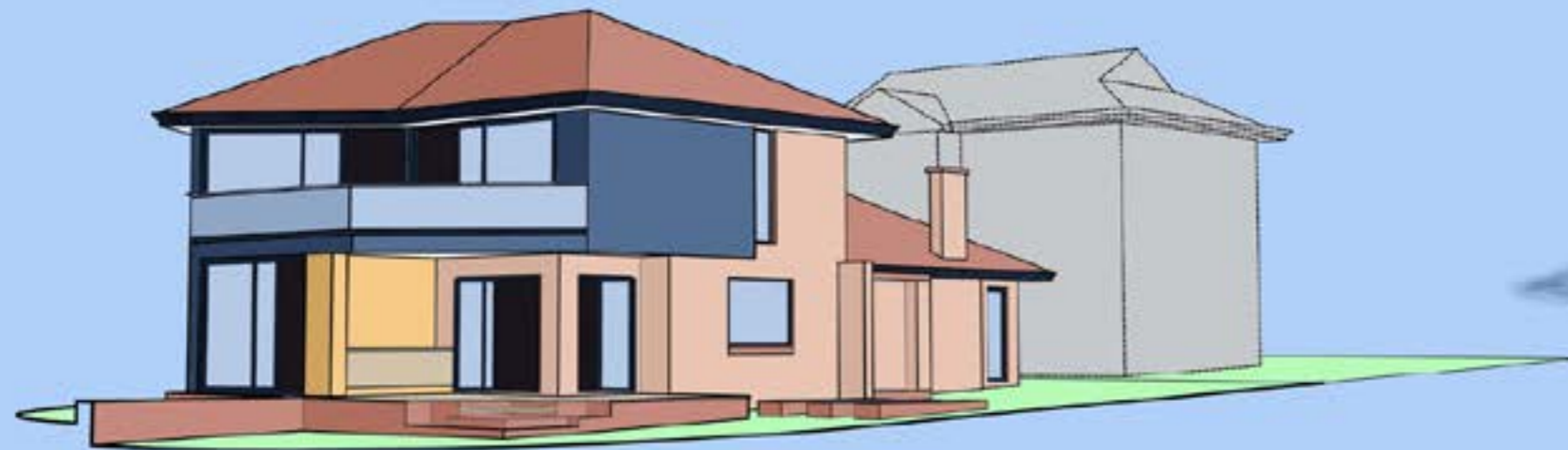
first floor plan | 1:100



ground floor plan | 1:100



site plan | 1:200



view from corner looking up tramway st
adjoining dwelling shown hatched and shaded grey



existing view from corner looking up tramway st

The proposal responds to the domestic vernacular of the existing brick and tile dwelling by partially adopting a similar form and material palette in the addition. Where the addition abuts the existing, brick is used, with glazing and changes in wall planes used to provide a transition to new materials. A hipped tile roof fronting the street is adopted as a sympathetic response to the surrounding context.

Section A shows the relationship the Common Room has with the street, with an easy transparency adopted to facilitate interaction. The first floor unit, and balcony in particular, will also have good visual contact with the street.

Section B through the rear Gallery shows how the two storey volume can be used to assist with capturing north-east breezes and providing natural ventilation to the common areas in particular, and the dwellings more



section a | 1:200

existing structure related shown hatched grey



section b | 1:200

existing structure related shown hatched grey



existing view from corner looking up driver st



view from corner looking up driver st
adjoining dwelling shown hatched and shaded grey



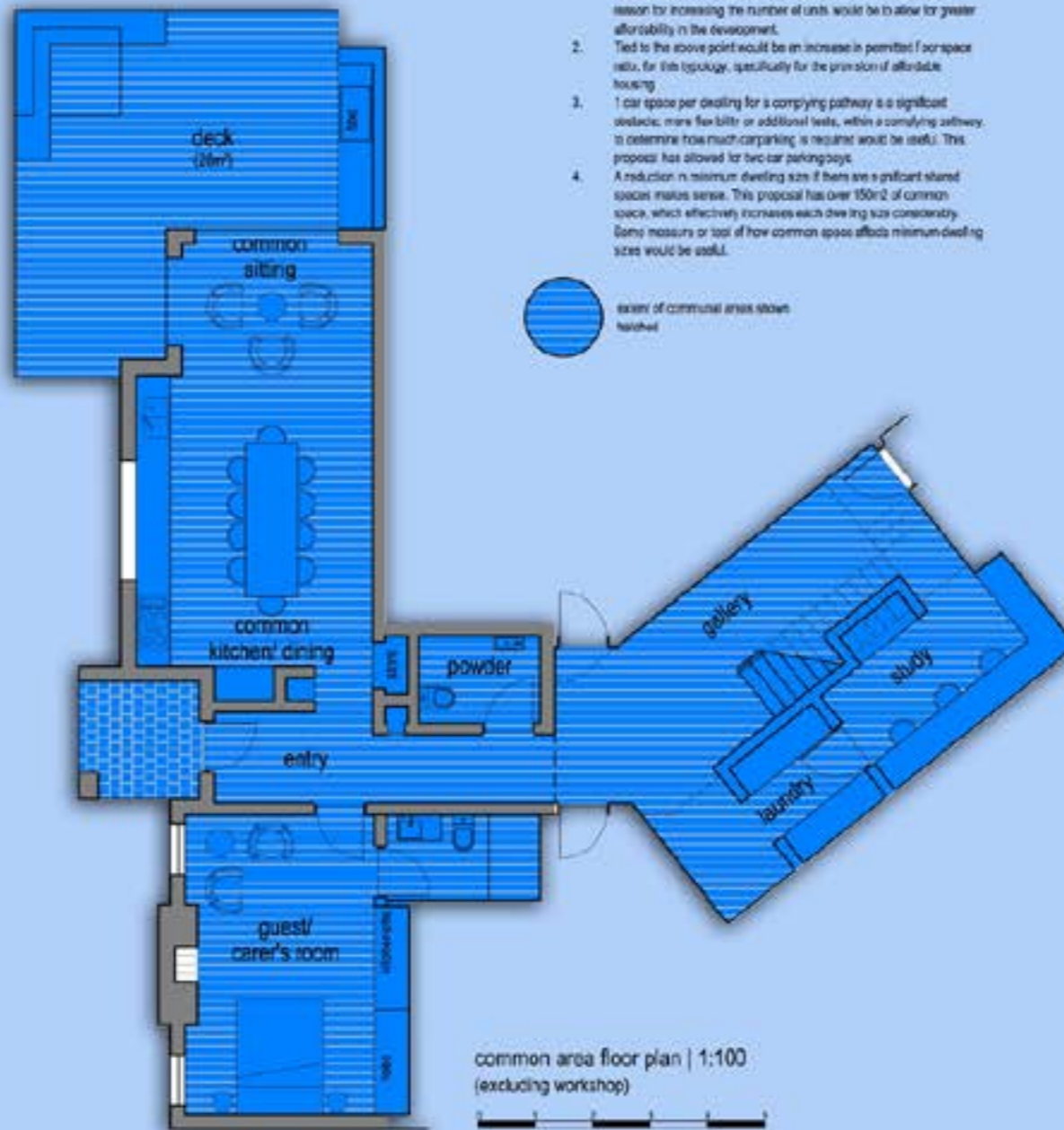
03

concept diagrams
compliant design

challenges to the medium density design guide

1. It is understood that the definition for a 'manor house' is a single lot with three to four dwellings. It is suggested that the number of individual dwellings could be increased. This proposal shows four one-bedroom units, and a studio apartment. There is also provision within the common areas for a self-contained guest room, which could also be used as room for a live-in carer, should needs arise. The principal reason for increasing the number of units would be to allow for greater affordability in the development.
2. Tied to the above point would be an increase in permitted floor space ratio, for this topology, specifically for the provision of affordable housing.
3. 1 car space per dwelling for a complying pathway is a significant obstacle, more flexibility or additional tests, within a complying pathway to determine how much car parking is required would be useful. This proposal has allowed for two car parking spaces.
4. A reduction in minimum dwelling size if there are significant shared spaces makes sense. This proposal has over 150m² of common space, which effectively increases each dwelling size considerably. Some measures or tool of how common space affects minimum dwelling sizes would be useful.

 extent of communal areas shown hatched



areas

total site area	409m ²
ground floor area	221m ²
first floor area	261m ²

+ one house

MISSING MIDDLE DESIGN COMPETITION - SITE SELECTION

The + one house introduces an affordable and flexible style of medium density residential housing. Designed as an alternative shared ownership model it can adapt to the owners ever changing lifestyle.

Regional Scale

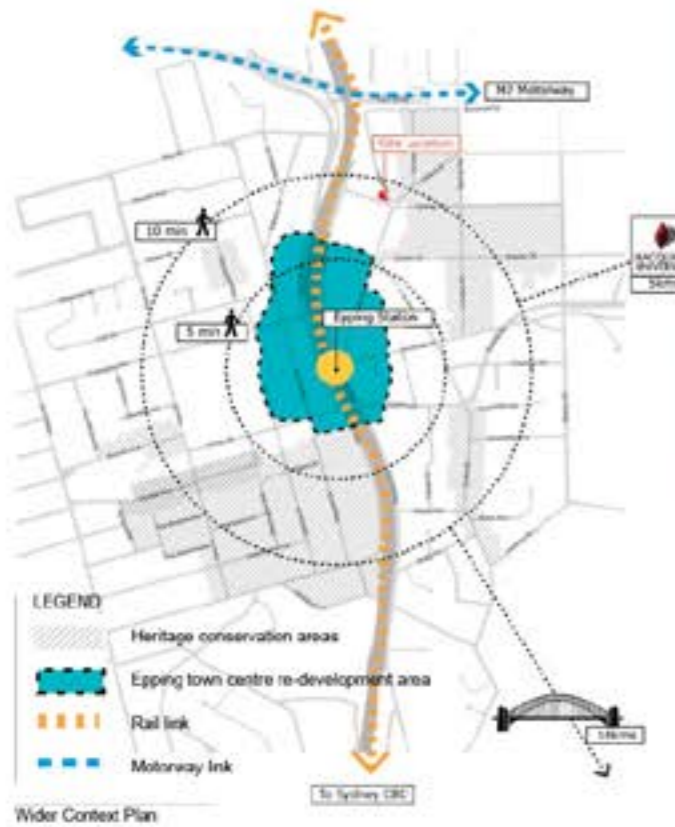
Located in NSW within the middle ring of Sydney, Epping sits in the Shire of Hornsby. The chosen site is within 10 minutes walk to the local train station with rail links to Sydney in the south, Cheltenham to the north, Macquarie University and North Ryde to the east. Emerging plans for the Epping Town Centre Development (ETCD) include a large provision of high density apartments and commercial offerings. Further afield the North Ryde and Macquarie Park developments will act as catalysts for the development of the greater area.

Street Character

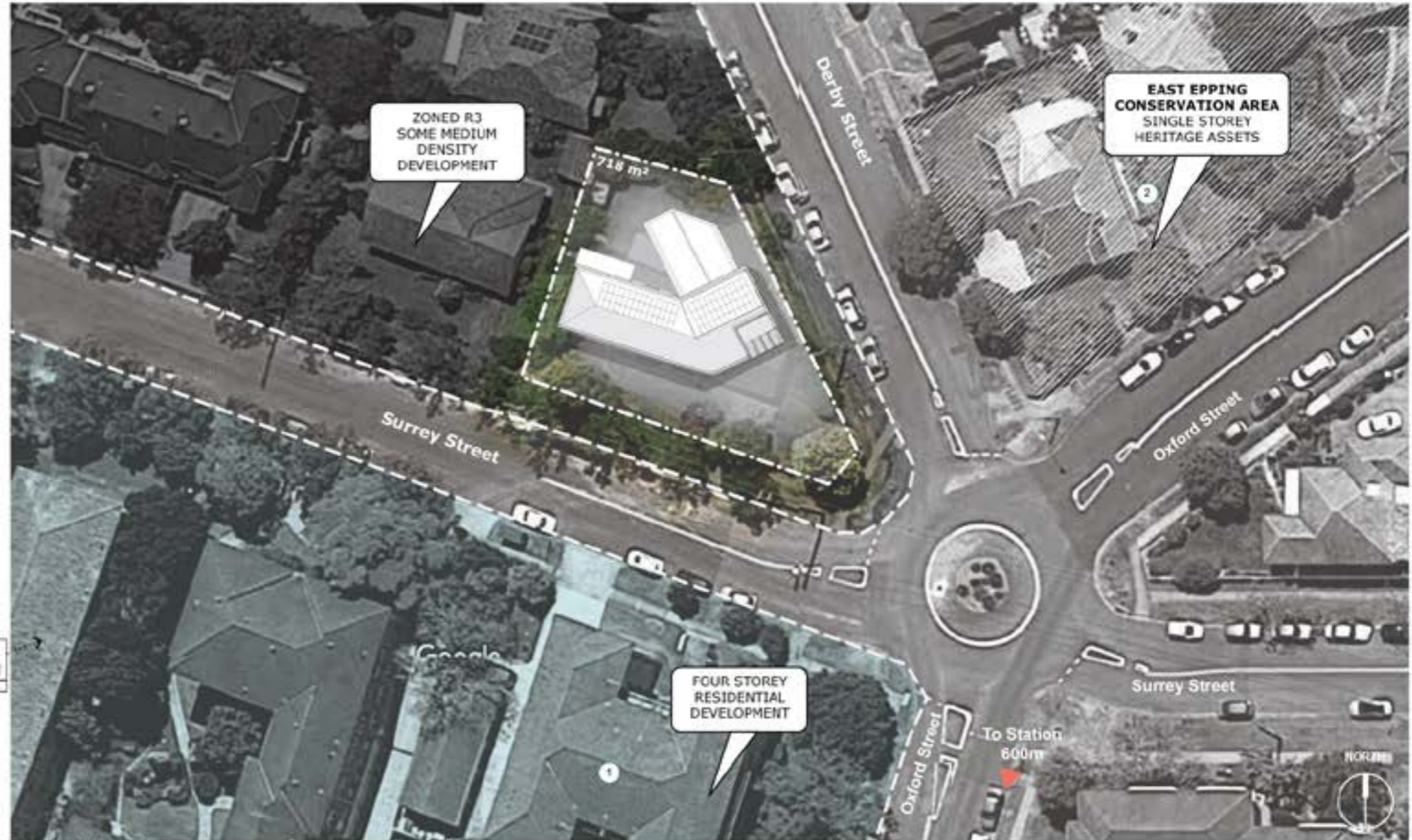
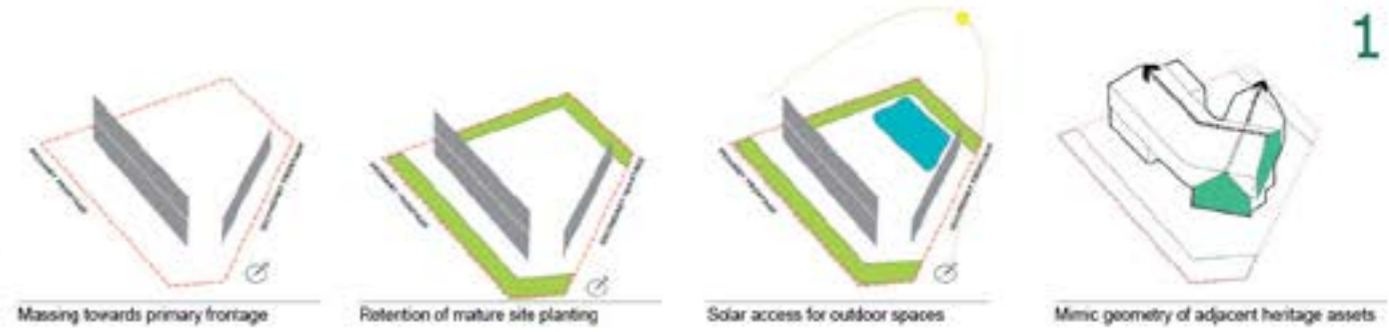
A mixture of single storey and double storey dwellings stretch north towards the M2 motorway. To the west of the site the East Epping Conservation Area has large landscaped setbacks, generous lot sizes and high quality heritage character. The higher density four storey residential apartment blocks to the south of the site form part of the ETCD area and the emerging context.

Site

Located at five Surrey Street, the site is 718 m² and zoned R3. It sits on the corner of a five-way junction which gives it two prominent frontages. The primary frontage on Surrey Street has large setbacks and mature street trees. The lot has a northern aspect to the rear and large planting providing privacy from the adjacent lot. Located at an intersection between an established and an emerging context, the angular site presents an opportunity for a design that can contribute to the existing character of the area.



Design principles used to develop a contextual and environmental response



Site Plan 1-500

4 Storey residential opposite on Surrey Street. Opportunity area for further expansion of the Epping town centre



Cabled extruded frontages, large setbacks are typical to the character of the adjacent conservation area. Typical material include red brick, corrugated iron and weatherboard cladding



+ one house

MISSING MIDDLE DESIGN COMPETITION - CONCEPT DESIGN 1.2

Social Innovation

The + one house is a response to the growing need for diversity and adaptability in housing typologies. The design breaks away from the traditional stacked approach of the manor house offering an aggregated arrangement and diverse unit mix. Designed to adapt to changing family dynamics, using a strata system, the design offers a variety of ownership configurations aimed at increasing the affordability and adaptability of suburban housing stock.

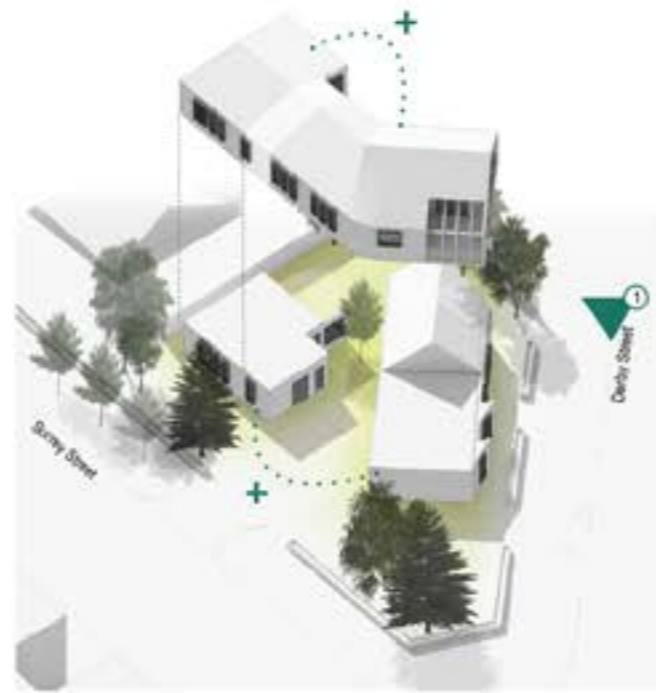
On both the ground and first floor, the two-bed + studio configuration can be owned separately or by the same person. The owner may choose to use the studio to generate income by renting it to a student or a visitor through companies like Air BnB, use it as a home office, or even sell it.

Massing

The massing of the building addresses each street frontage in a different way. The bulk of the building addresses Surrey Street where it faces a four-storey apartment block. Towards Derby Street it reduces in scale where it addresses the heritage listed property opposite. Articulation in the facade and the introduction of outdoor spaces add interest and activity to the streetscape.

Materiality

The design makes reference to the red brick of the 1920-30 homes of the neighbouring East Epping Heritage Conservation Area. The roof and upper floors are more lightweight construction clad in corrugated metal, another reference to the nearby heritage character of the federation style housing.



Spatial Arrangement



0-5 YEARS

Cost of the development can be split up to four times between different owner groups in a strata arrangement. The total capacity is 12 adults with two, two bed apartments and two studios allowing for family growth or changing circumstance.

5-15 YEARS

The initial owners can decide to purchase the adjoining studio flat for a multitude of reasons. They may have growing teenagers, be expecting another child, or need to accommodate ageing parents. Alternatively, the studio lends itself to a home office or artist space.

ONWARDS

Circumstances change and with time the studio could be sublet to a student from the nearby university, rented short term on Air BnB, or occupied by adult children.

Potential Ownership Configurations Over Time.



View 1: Down Derby Street towards Surrey Street

+ one house

MISSING MIDDLE DESIGN COMPETITION - CONCEPT DESIGN 20

Ground Level

The scheme deviates from the traditional 'front yard' / 'back yard' approach. Instead, the building form is used to sculpt the space into public, semi-public (communal) and private outdoor areas. A series of inter-connected outdoor spaces join the two dwellings. Each apartment has a generous, north facing private outdoor amenity area overlooking a landscaped communal garden. The unusual shape of the site creates moments of un-expected interstitial space that offers soft landscaping and let's in north light. Glimpses of the mature landscaping to the rear of the site can be seen from the street.

Accessibility

All dwellings are compliant to the guides space standards and the ground floor dwellings can be adapted or built to comply to wheelchair design guide requirements.

Landscape

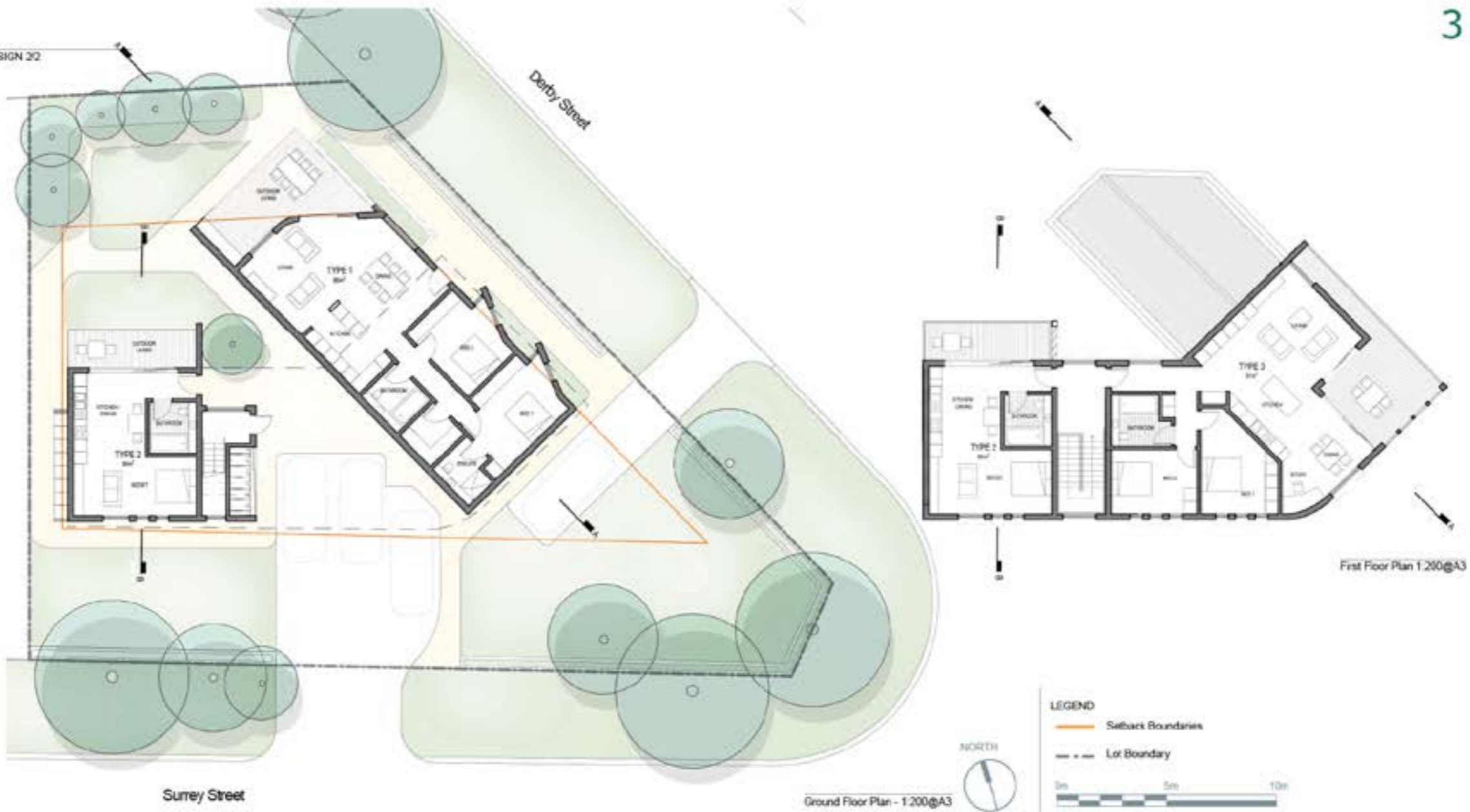
The scheme proposes the retention of the existing mature trees maintaining the natural character of the street. Low maintenance native plant varieties are used in all planters watered by harvested rainwater

Privacy, Light and Sustainability

All habitable rooms face onto a street frontage contributing to passive surveillance. Along Derby Street the articulates add interest to the secondary frontage and to invite north light in. The open plan living areas open on to screened private outdoor amenity areas and have louvres at high level to allow for cross ventilation. Solar panels cover the northern surface of the upper level providing power for the development.

Upper Level

Extending over the ground floor dwelling, it creates a sheltered area which can be used for parking or adapted later for cycle storage or communal activities as shared car ownership becomes a reality. Dwelling Type Three has an outdoor area facing Derby Street, activating the street and allowing for passive surveillance. All habitable rooms have windows facing the street and all living areas have a dual aspect and access to northern light.



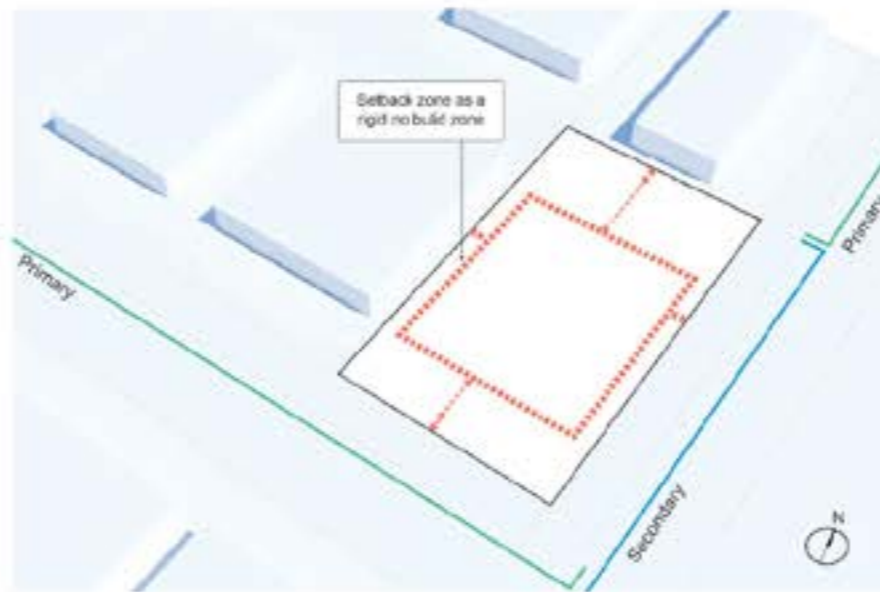
Challenging the Guide

MISSING MIDDLE DESIGN COMPETITION

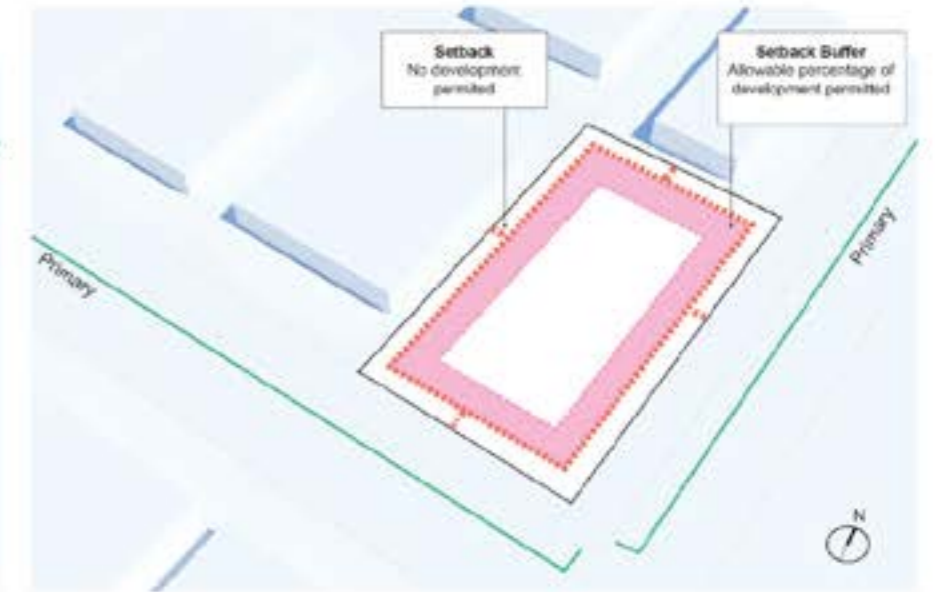
Re-Thinking the Setback

The draft guide specifies different values for primary, secondary and side setbacks regardless of site location and orientation. This control works in the case where a single dwelling or multiple attached dwellings have a single frontage. When siting a multiple dwelling building on a corner site this is limiting in realising a design that addresses and contributes to both frontages. Usually, this also limits the design to a 'front yard' house 'back yard' approach.

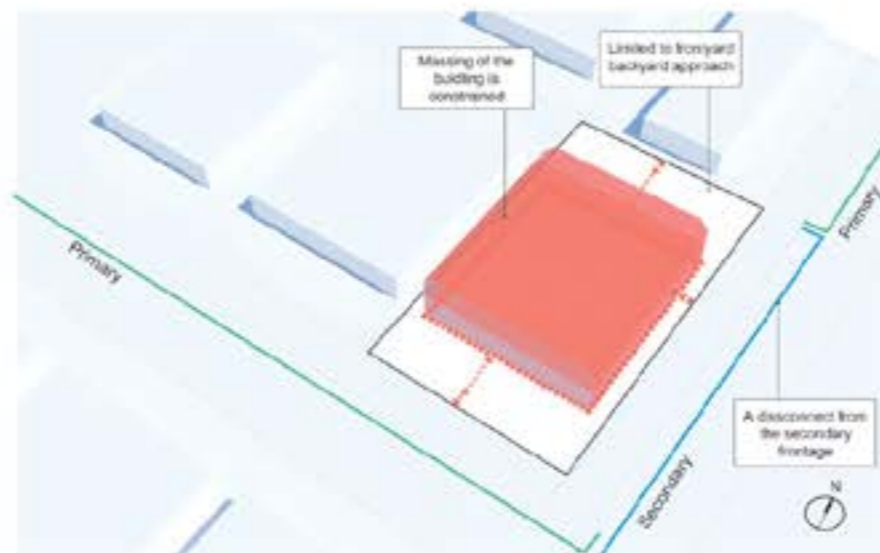
Releasing this control on corner blocks in areas where large verges already exist allows freedom in how the building can contribute to each street scape. It also provides greater flexibility when siting living areas where the rear of the block faces north improving environmental performance and liveability.



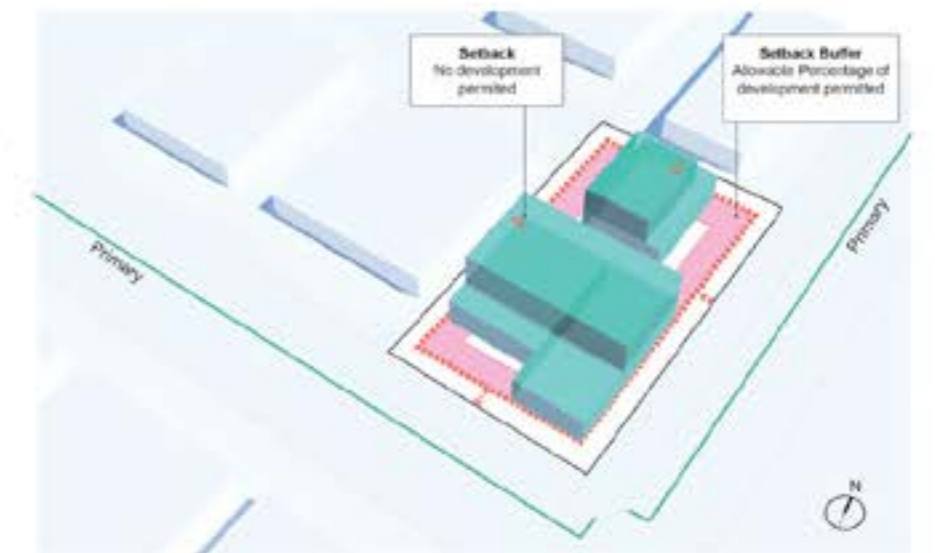
Current Control
Setbacks are characterised as primary, secondary and side. This means corner blocks prioritise one street but face two.



Proposed Control
Introduce a setback buffer zone for corner blocks to allow usable area to protrude to a percentage of the zone. This would promote flexibility and originality when maximising developable area.



Current Control
While provision is made in the guide for articulation of the facade and outdoor areas, ultimately the building forms are heavily constrained by the setbacks limiting the possible permutations.



Proposed Control
The opportunity for volumes to be pulled, pushed and aggregated using the mass to delineate private and public areas and contribute to the streetscape on both frontages. Landscaped areas are improved and interest is added to the streetscape

SITE ANALYSIS

Prevailing Winds



Views from neighbouring properties



Solar Path



Water Views



1 Site Plan and Context Analysis
1:500

Project
Missing Middle Competition
Maroubra
Drawing
Site Plan

Scale 1:500 Date Dec 2016 Drawing 01
Scale 0m 10 20 30 40 50m



BRIEF

Our assessment tests the complying development for a dual occupancy development of one dwelling located above the other. Due to the demand of a growing population and desire to live within close proximity to the coast line a fast tracked complying development will improve the housing needs of the 'missing middle' gap of housing and increase the supply of well designed homes.

The complying development proposes two dwellings located above the other with off street car parking, private open space and separate entries while utilising the north facing aspect and views to the ocean that the site offers.

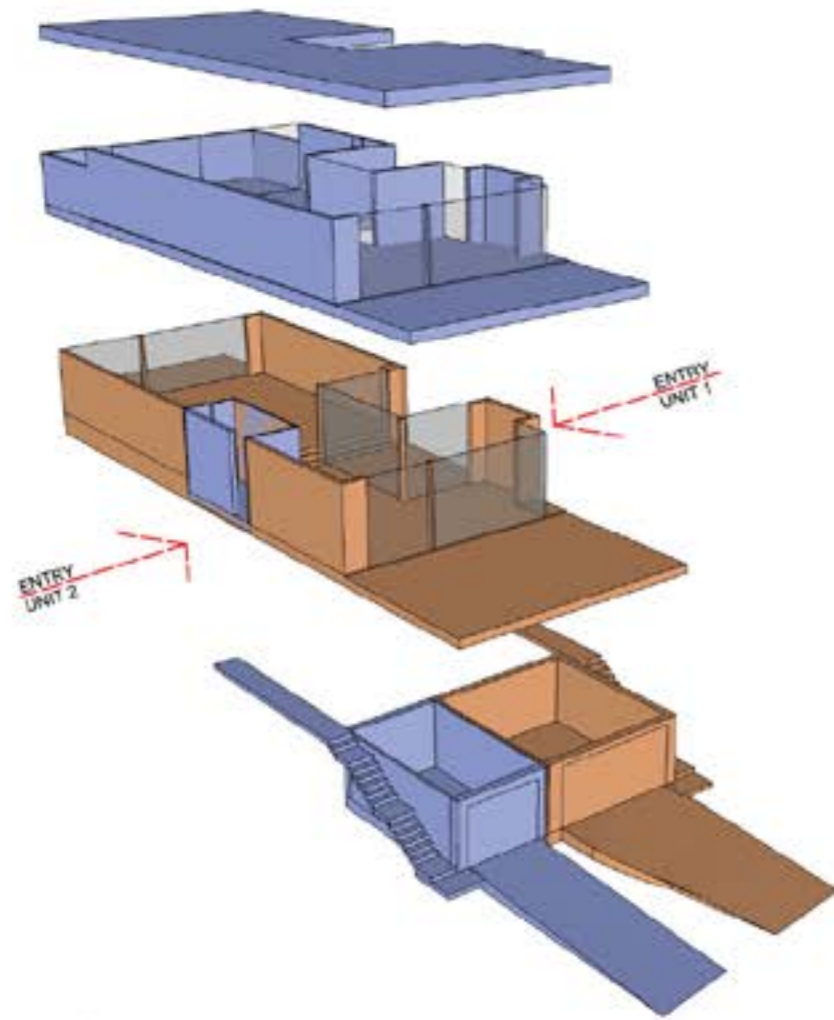
SITE LOCATION & DESCRIPTION

The subject site chosen for the proposed dual occupancy development is located at 14 Gregory Street, South Coogee. The site fronts Gregory street to the east and is bounded by residential properties to the north, south and west.

The site is zoned R2 Low Density Residential under Randwick Local Environmental Plan 2012 and is not a heritage item or within a heritage conservation area. The site is rectangular in shape and has an area of approx. 750m². It has a frontage to Gregory Street of 15.8m and has a depth of approximately 46m. The site slopes down to Gregory Street with a fall across the site of approximately 5m with views to the ocean and to Popplewell Park.

The site is on the higher portion of Gregory Street with Phillip Street as a cross street. The surrounding streets are undulating and comprises a mixture of single dwellings & dual occupancies and are in close proximity to the social housing located further south on Gregory Street. Popplewell Park is directly opposite and the subject site and Maroubra and Coogee beach are within 1.2km.





4 Axonometric - Unit Break up

Unit 1
Unit 2

Project
Missing Middle Competition
Maroubra
Drawing
Floor Plans

Scale 1:200 Date Dec 2016 Drawing 02

Scale 0mm 10 20 30 40 50mm



3 Level 1 Plan
SCALE: 1:200



2 Ground Plan
SCALE: 1:200



1 Basement Plan
SCALE: 1:200



Project
Missing Middle Competition
Maroubra
Drawing
3D IMAGES
Scale NTS Date Dec 2016 Drawing 03
Scale
0mm 10 20 30 40 50mm

TESTING THE DESIGN GUIDE

Side Setbacks Standard:

Front half of the lot up to 15m from front boundary – 1.5m

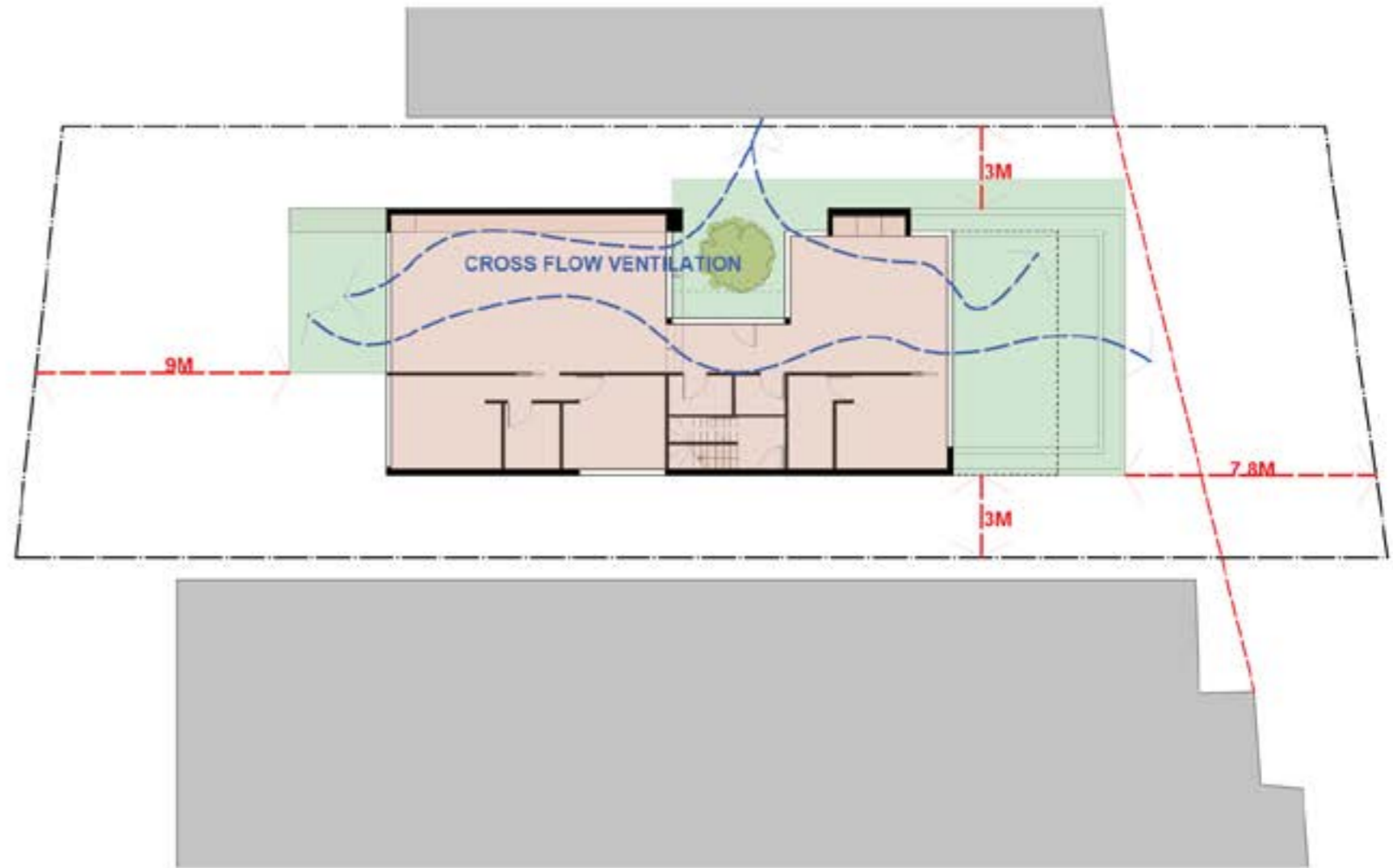
Rear half of the lot, or distance >15m from front boundary,

- Building envelope defined by 450 plane projected from a height 3.6m above the boundary.

Rather than having the above noted numerical controls which creates the following.

- Hard to build and difficult to waterproof the roof over the ground floor roof that is exposed by setting in the first floor level,
- The increased setback at the higher level does not benefit an increase of landscaping on natural ground,
- Dictates the overall building form and does not acknowledge the Australian climate or requirement for overhangs,
- Not suited to the Australian Vernacular.

We believe an increased overall setback would also increase the natural landscaping on the ground floor. Eaves and shading should be excluded from the setback zone. An average side setback of 2m min, should be allowed.



2 Ground Plan
SCALE: 1:200



1 Longitudinal Section
SCALE: 1:200

Project
Missing Middle Competition
Maroubra
Drawing
Design Guide Study
Scale 1:200 Date Dec 2016 Drawing 04
Scale 0mm 10 20 30 40 50mm



SITE SELECTION

SITE SELECTION : KEY POINTS

- Oran Park Land Release Area represents readily available development land
- Sites selected are identified by Landcom as "Builder House and Land Packages" (refer brochure above) anticipating construction and individual dwelling sale by Developer / Project Home Builder.
- The sites were selected for their suitability for denser housing with park frontage/proximity and urban design potential.

OPPORTUNITIES

- Facilitate construction of greater density on available land release area site (without consolidation)
- Provide an Urban Frontage and greater density around the Park.
- Provide a greater density that would otherwise be permitted under current CDC housing provisions currently applicable to the land.

CONSTRAINTS

- Sites typically offered in residential land release estates are shallow.
- Design should facilitate south or north facing site orientation to address the site selection.

STRATEGIC APPROACH

MANOR HOUSE OPPORTUNITIES

- Draft Medium Density Design Guide proposes "three or four dwellings where one or more dwelling is over another", but there is an opportunity to locate dwellings beside another to provide as many dwellings with gardens; front and rear - maximising utility and amenity.
- One of the key challenges of the 'Manor House' type is addressing carparking satisfactorily - from an urban design perspective as well as from a site planning/landscape amenity perspective.
- With specific reference to the selected sites, the plan is developed to achieve solar access in either the north side of the park or the south side of the park by having a reversible ground floor plan (for the crossover units) to facilitate solar access in alternate orientations either side of the park.

OTHER STRATEGIES

- Construction anticipated by project home builder.
- Design for economy and affordability in Land Release Areas.
- Parking should be provided on grade (to avoid expense of excavation and basement construction).

RELEVANT HISTORIC PRECEDENTS

- Daceyville (1912), NSW : NSW Housing Board
- Walker Street Housing Waterloo (1986) : Peter Myers
- High Street Terrace, Millers Point NSW (1906) : Sydney Harbour Trust

DESIGN STATEMENT

DESIGN STATEMENT SUMMARY

The Manor House Case Study seeks to provide 4 dwellings of high amenity prioritising:

- Urban Design response to the Park
- A front and rear garden to 3 (of the 4 units) - via crossover layout.
- Northerly Aspect
- Maximising landscape area
- Suppressing Vehicular circulation and parking
- Maximising services rooms to the exterior wall for light and ventilation
- Studio unit as independent or dual key (internal access) permitting flexibility of occupation.

4 units are provided:

- 2 x 115 sqm 3 Bedroom crossover unit (nett; excludes stair)
- 1 x 122 sqm 3 Bedroom Platinum Standard Access unit (nett; excludes stair)
- 1 x 37 sqm Studio

MANOR HOUSE : CASE STUDY

#1



FIRST FLOOR PLAN 1:200



GROUND FLOOR PLAN 1:200

MANOR HOUSE : CASE STUDY

#2



PERSPECTIVE



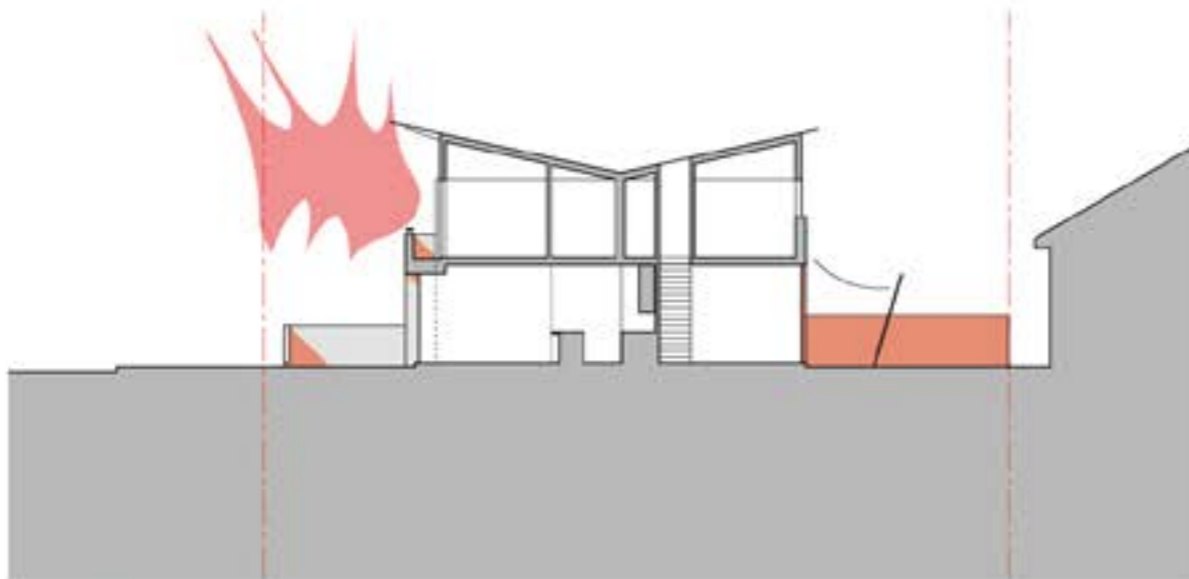
NORTHERN ELEVATION 1:200

MANOR HOUSE : CASE STUDY

#3



CHALLENGING THE REQUIREMENTS



SECTION 1:200

COMPLIANCE ISSUES

The Medium Density Design Guide requirements should be developed to address the shallow lots available in residential land release areas.

Several of the issues identified here (1,2 and 3) are critical to the application of the Design Guide in these areas.

4 particular non-compliances are identified:

- 1 Rear Setbacks**
The Draft Medium Density Design Guide requires a 10 metre setback from the rear boundary to a second storey (height over 4.5 metres).

This requirement substantially constrains development of the site.

The resulting constrains would reduce the site yield to a total of 3 units 2 x 2 bedroom units and 1 x 3 bedroom unit, well below the permissible 390sqm permitted.
- 2 Side Setbacks**
The Draft Medium Density Design Guide effectively limits 2nd storeys to 15 metres from the front boundary (effectively limiting the depth of the elevated storey to 11.5 metres) which is very restrictive.

It is our understanding that this control serves to limit impact on adjoining neighbours. However, if impacts can be controlled such as in the proposed Case Study where the adjoining site replicates (or exceeds this condition) then this limit could justifiably be exceeded.
- 3 3.40-3 Criteria 63 requires:**
Ongrade car parking to be setback from the boundary to a secondary road by 5.5 metres.

The proposal provides a setback of 1m beyond the secondary building line.

Complying with the stipulated requirement would result in reduction of soft landscaping where it is most valued (in the centre of the block) without significant urban design benefit.
- 4 3.40-3 Criteria 67 requires:**
Car spaces to be separated by not less than 3m from windows or doors to habitable rooms of dwellings that are not associated with the parking space.

The proposal complies with the intent of this criteria by orienting a window away from the carpark. However, this requirement limits the window location of the Main bedroom. A second elevated window could be permitted.

MANOR HOUSE : CASE STUDY

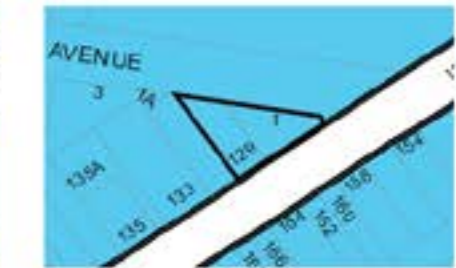
#4



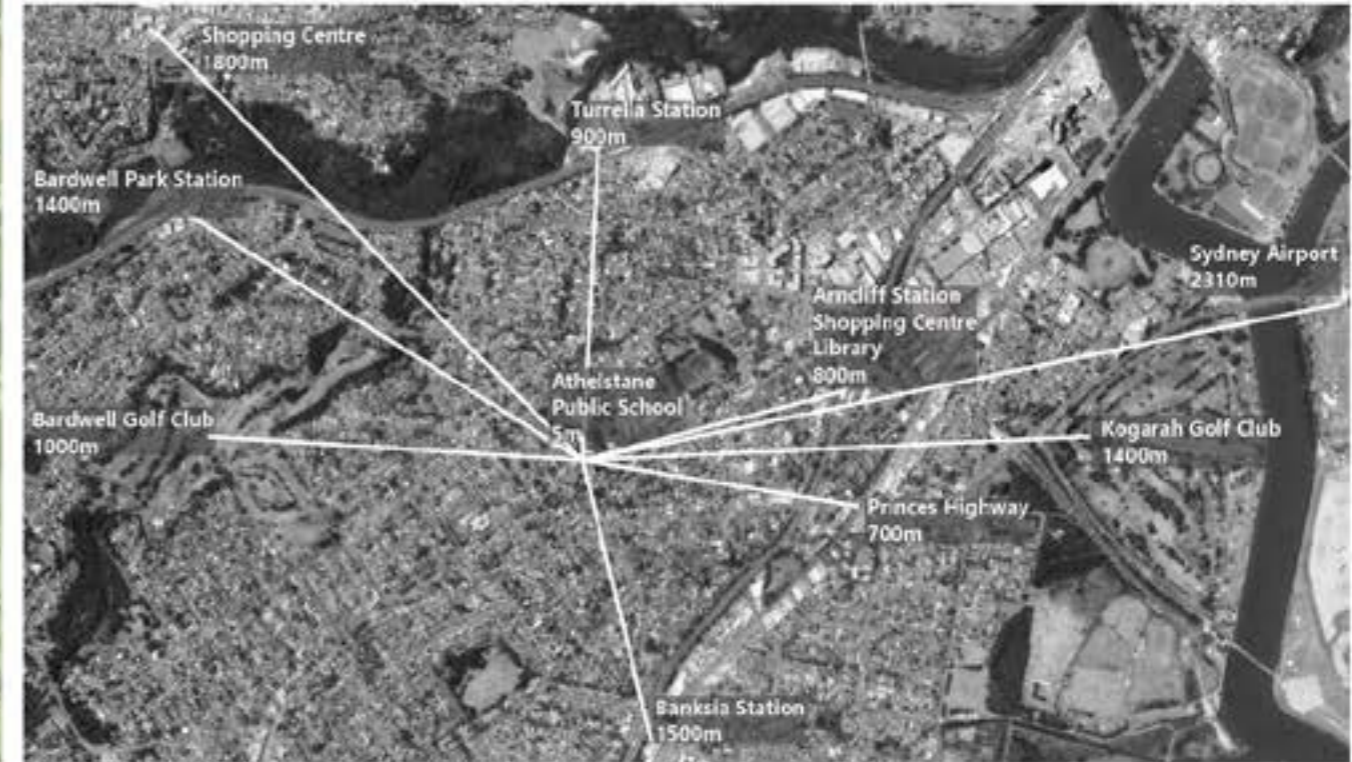
zoning - R2



building heights - 8.5m



floor space ratio - 0.5:1



The design proposal presented throughout this package is aimed at testing the Medium Density Design Guide in response to the policy gap which exists in the provision of low-rise medium density housing types. This design particularly addresses the exciting new Manor House opportunities presented through the Complying Development Pathway. The design is located on a non-standard site, 1 Athelstane Avenue Arncliffe, where challenging geometry presents itself within the Middle Ring of the competition zone. The site is strategically located in an R2 – Low Density Residential Zone with a varied scale of neighbouring development comprising of R3 – Medium Density and R4 – High Density Developments.

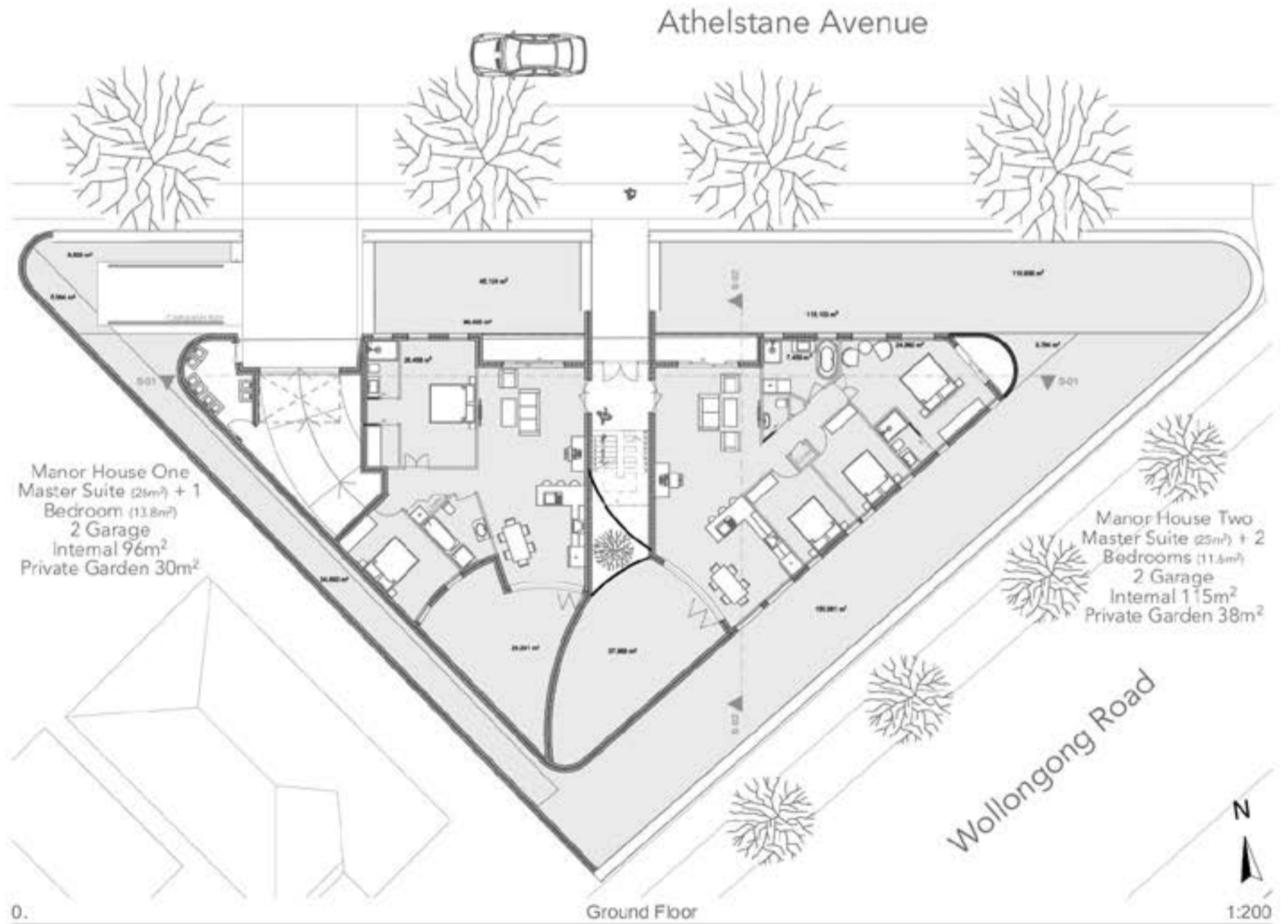
The proposed site, 1 Athelstane Avenue involves the amalgamation of two lots, 2/DP322476 and 3/DP322476 giving a total site area of ~846m². Additionally, the site is located within walking distance (800m) from the local train station and shopping complexes making it an attractive location due to its proximity and ease of access to Sydney's CBD. Furthermore, located across the road from the site is the local primary school making it an extremely exciting choice for the introduction of Manor Housing into the area as it will also appeal to budget conscious young families with the close proximity to Sydney CBD making it an attractive choice.

missing
middle

1 Athelstane Avenue, Arncliffe
Site Context

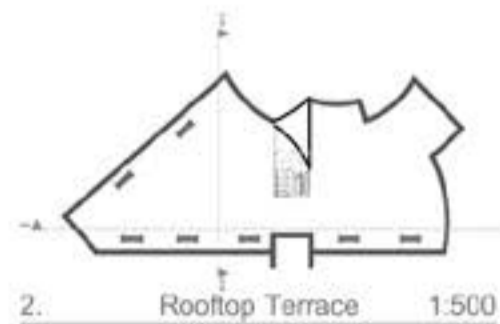
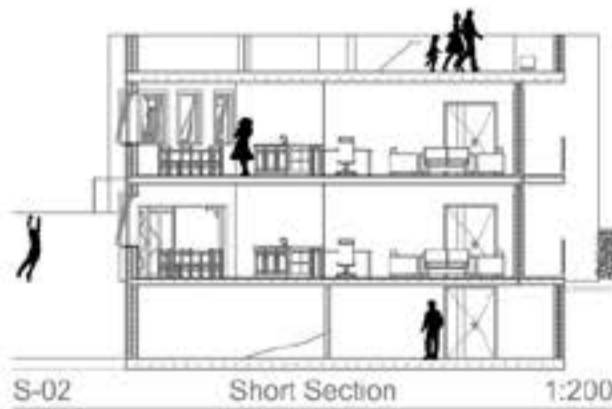
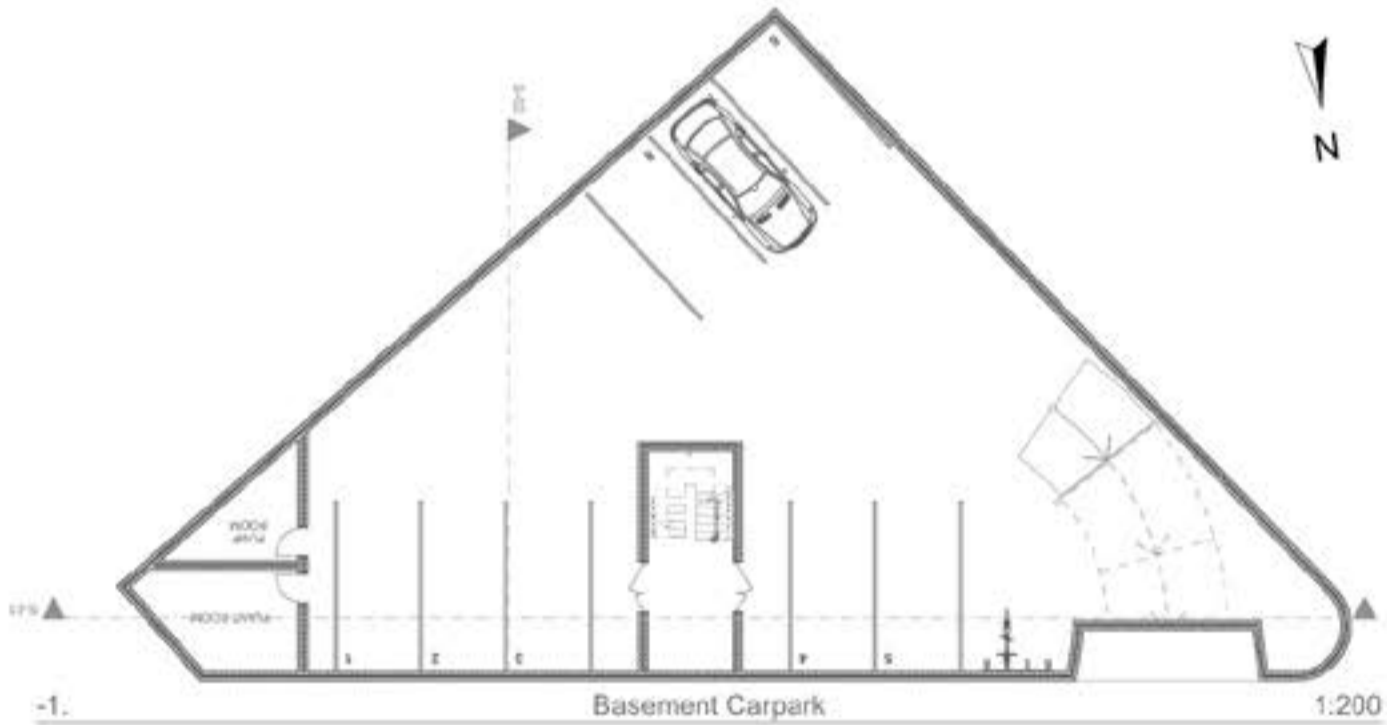


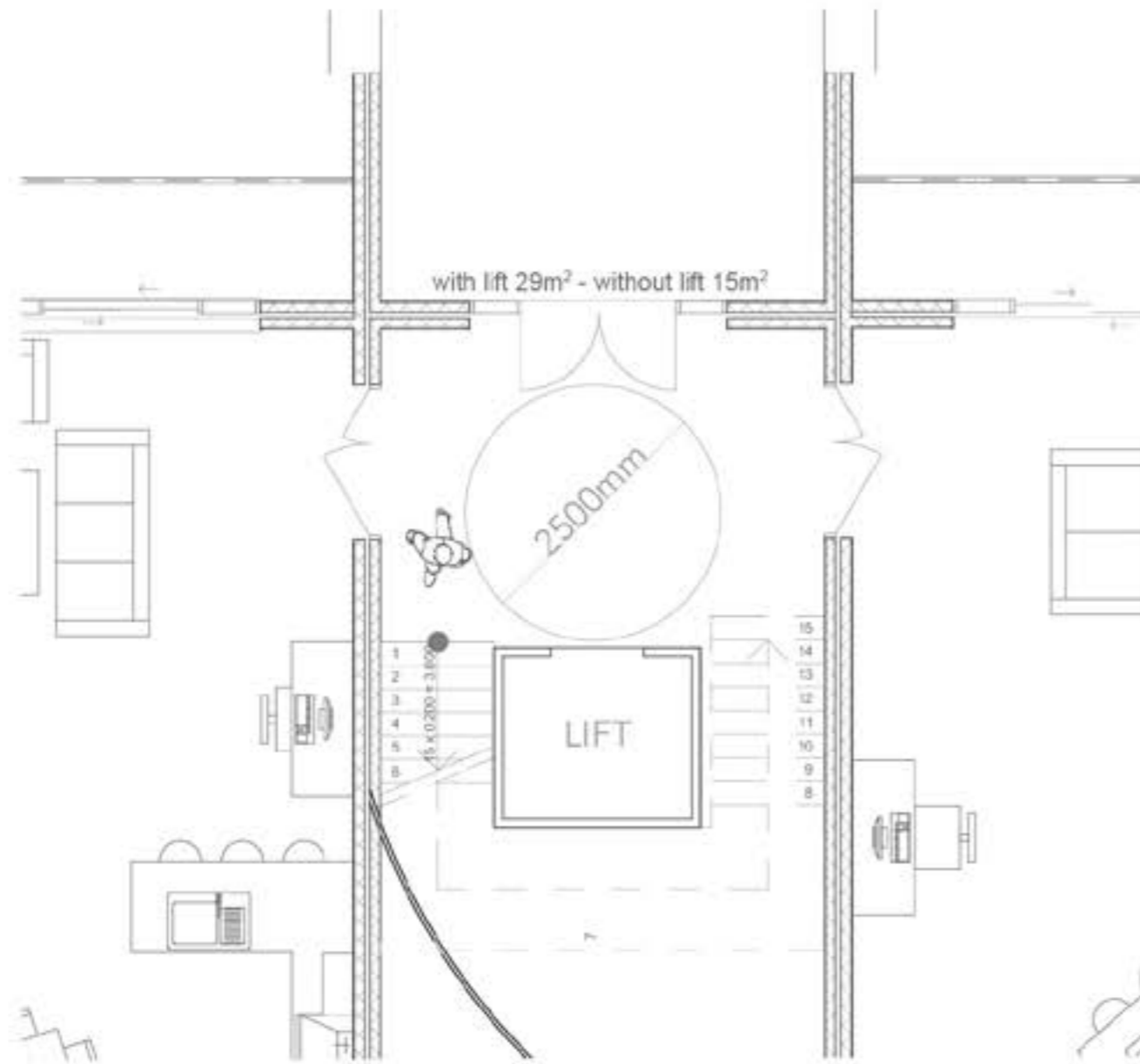
Front Facade Visualisation



missing
middle

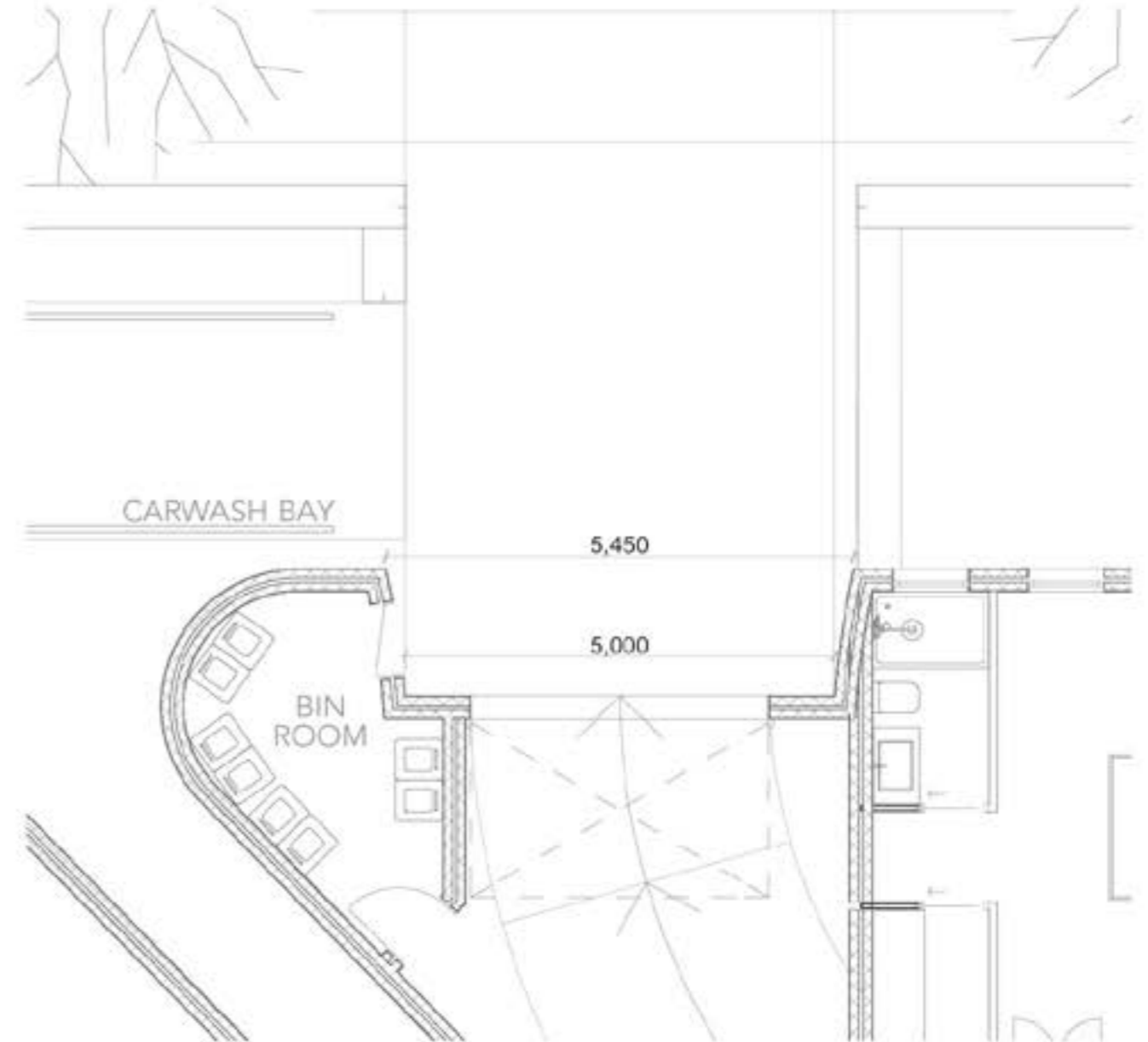
1 Athelstane Avenue, Arncliffe
Manor House Concept Design





3.4B Floor Space Ratio

As Manor Houses share a common area for the entry and exit of each dwelling and the building itself, a considerable amount of floor space is required for this area. If accessible lifts are incorporated into the design, the elderly and disabled will have an increased number of options on the market. An FSR increase allowance should be considered within the Medium Density Design Guide to allow for additional space which is required to achieve design excellence in regards to manoeuvrability and lift operation noise isolation in the common area between the adjoining dwellings.



3.4F Internal Streets – Vehicle and Pedestrian Access

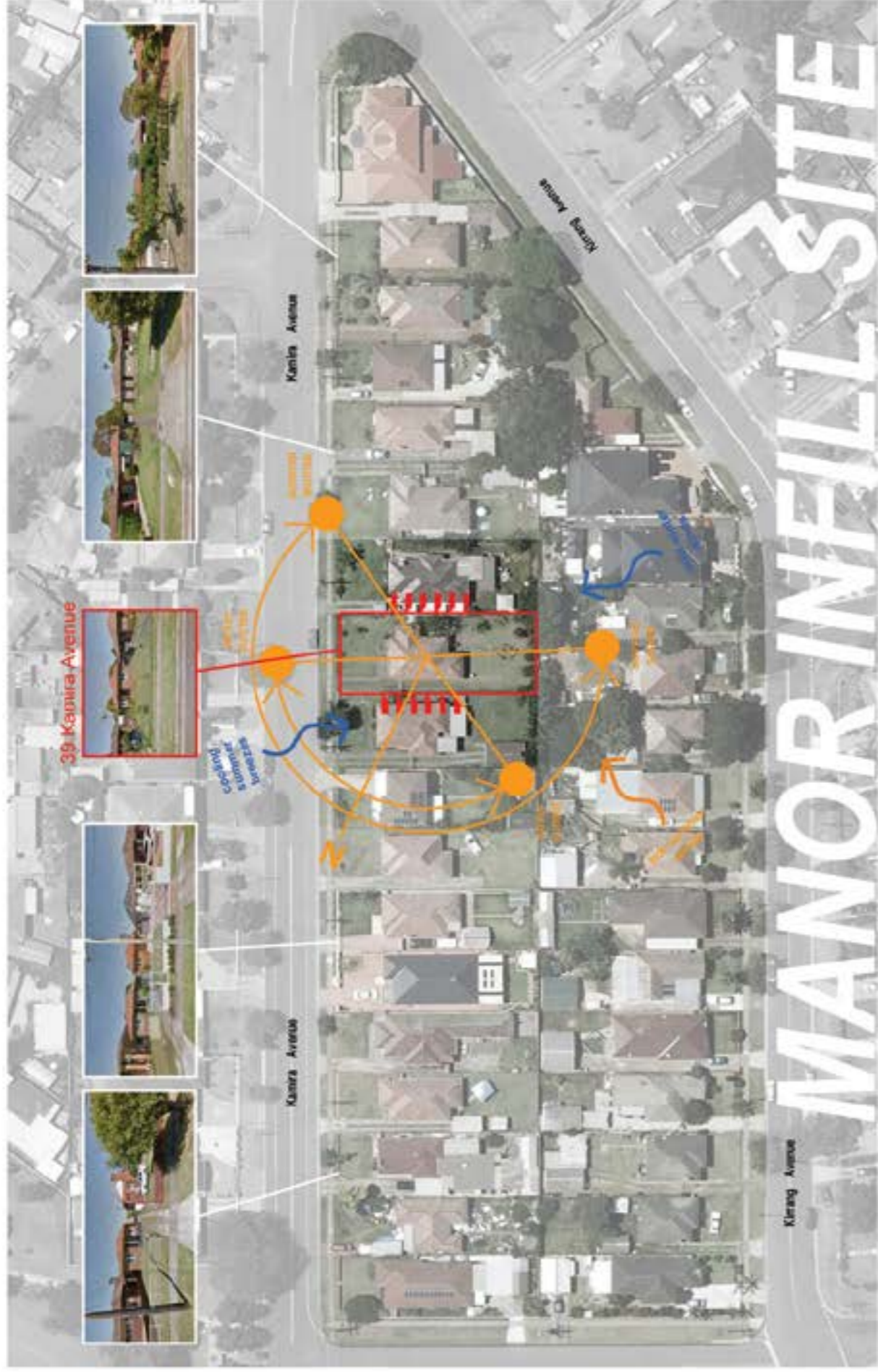
20. Basement car park entrances to have a maximum width of 3.5m where there are less than 10 dwellings being serviced by the car park.

Consideration of increasing this maximum to 4.5-5.5m depending on the width of the lot will promote incorporation of bin rooms with ground level access into the design. This increase in width would also allow for safe and comfortable pedestrian access to and from the entrance while manoeuvring bins.

The design guidelines and criteria presented within the Draft Medium Density Guide provide well rounded guidelines and regulations which will ultimately promote design excellence in the low-rise medium density field.

missing
middle

1 Athelstane Avenue, Arncliffe
Testing the Design Guide



Site Plan 1:500

Strategic Rationale for Site Selection

Villawood is a middle ring suburb approximately 22 km from the Sydney Harbour Bridge. The suburb is located within the City of Fairfield LGA and partly in Canterbury Bankstown LGA. The suburb experienced rapid residential growth in the post war years. The construction of public housing and the establishment of a hostel to resettle migrants assisted this. Historically, the suburb has had and is now strongly multi-cultural and has a mixed population that includes Lebanese, Vietnamese and Chinese residents. A third of households do not speak English at home.



The suburb is known as a Village within Fairfield Council centres hierarchy. A village is defined as having a catchment with a 600mm radius. The Villawood catchment was identified as underdeveloped in Council's residential strategy and currently has a total of 350 dwellings. This is significantly lower than the Council's identified 2,100 - 5,500 dwellings per catchment required by 2031. Currently 75% of housing stock is detached and 19% flats, therefore the medium density stock is missing. Villawood centre and surrounds were rezoned this year to increase density. The local centre requires increased density to provide for facilities to support the increased population surrounding it. The residential areas surrounding the centre provide for the increase in dwellings to support the centre and increase public transport patronage.

Context

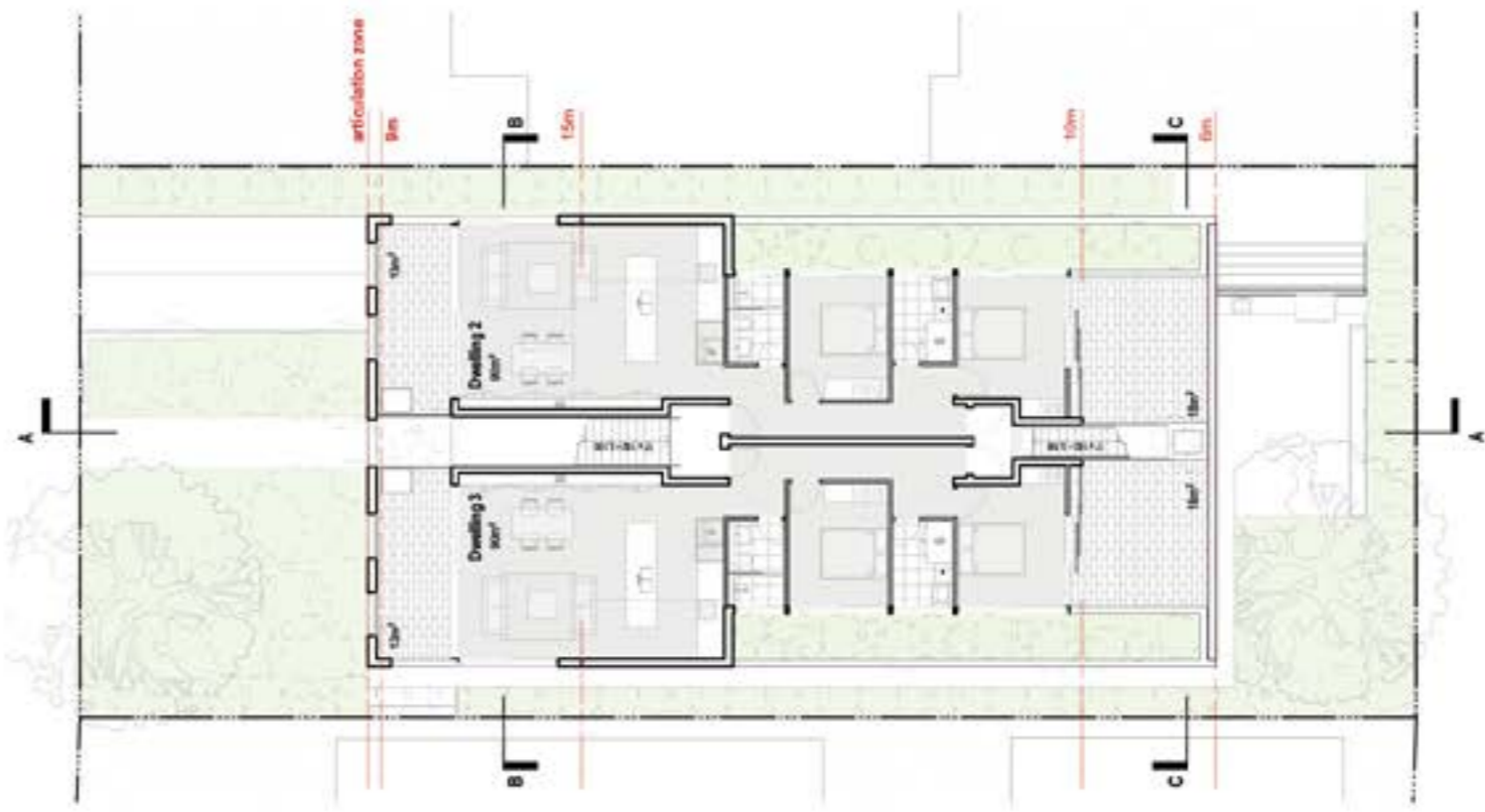
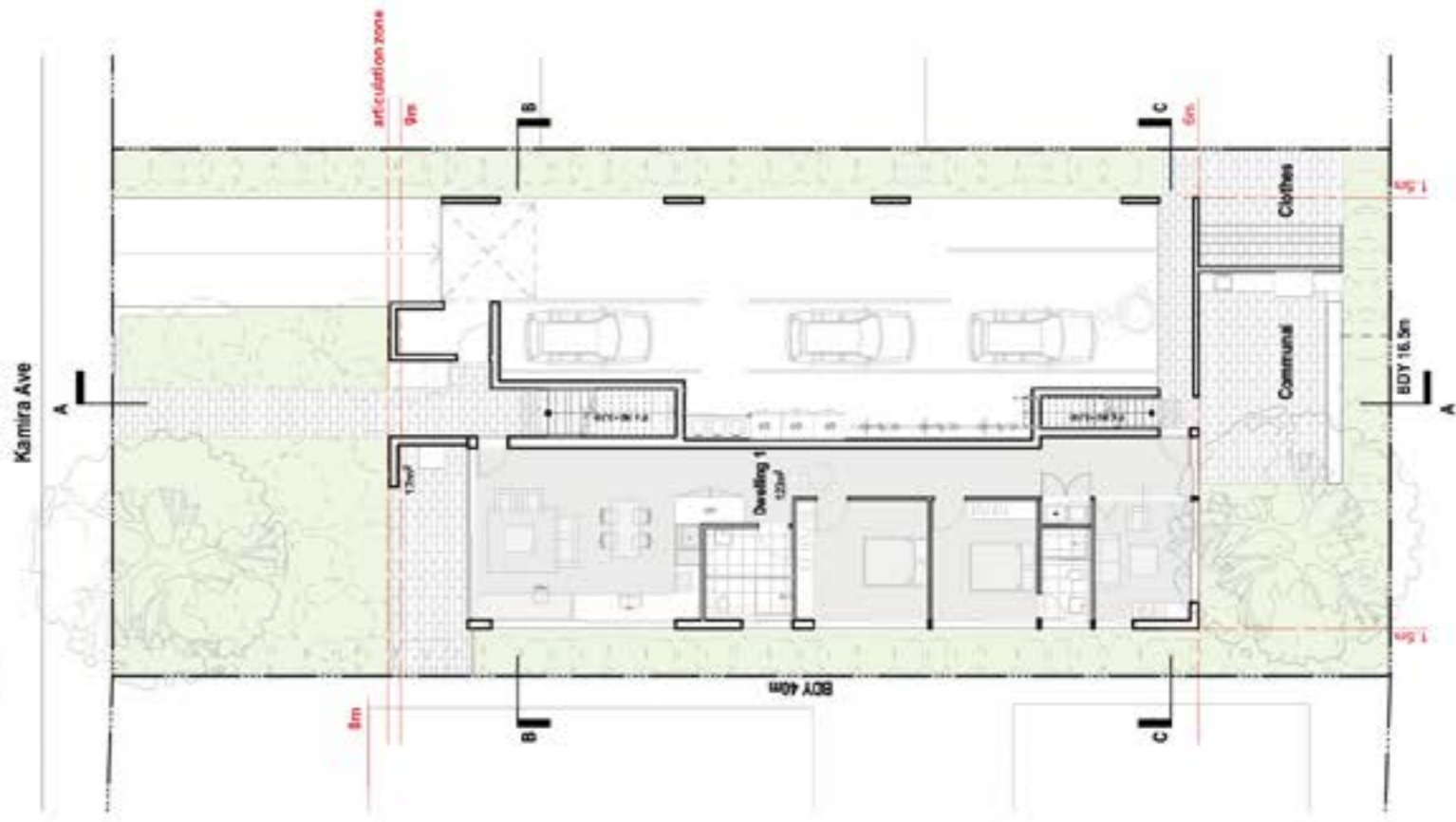
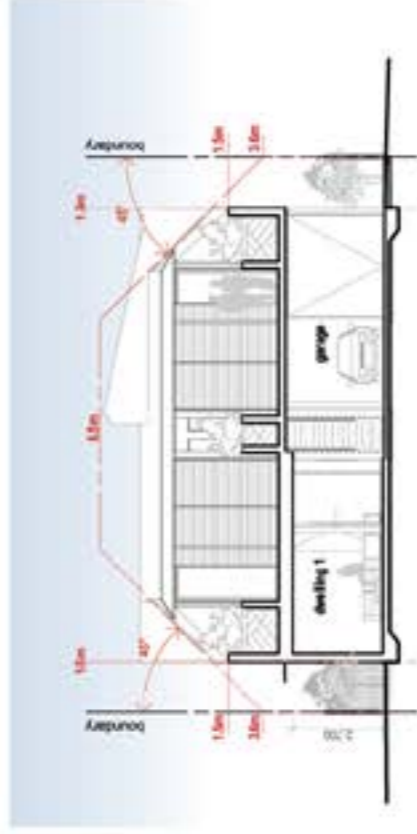
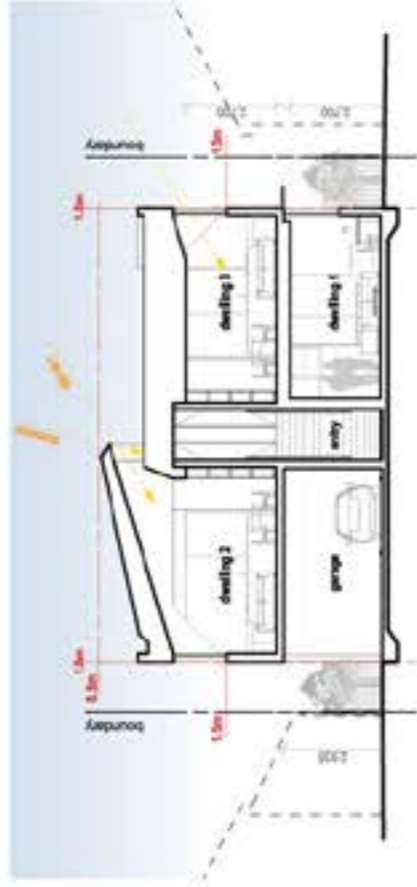
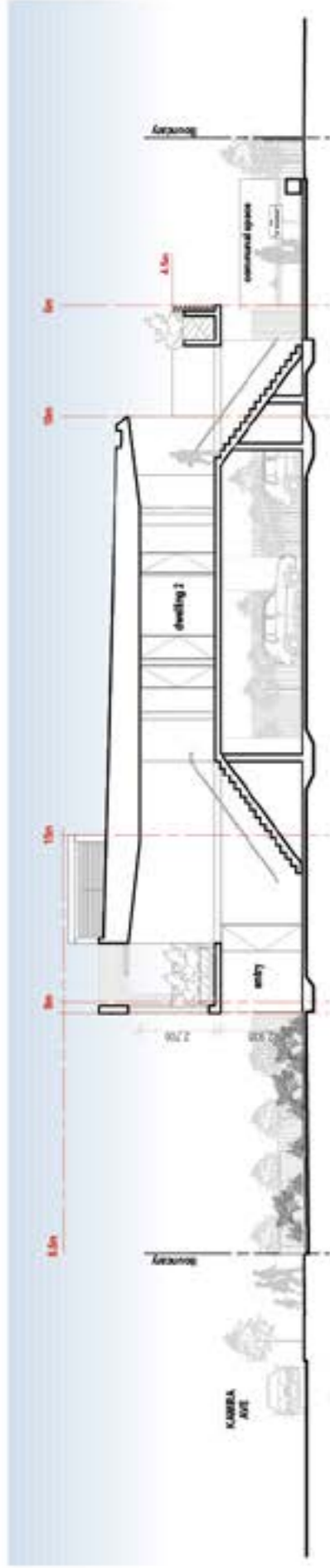
The site's immediate area is contained by the railway line and Woodville Road. This area forms a segment of the 600 metre catchment identified above. The site is south of Villawood railway line. The site is representative of a typical mid-block lot and is located within a 5 minute walk of Villawood town centre and the railway station. The site has a 16.5m frontage and a 40m depth, a total area of 660m². Lot configuration is consistent throughout the local area. The area is undeveloped and comprised of single detached one and two storey dwellings, some fibro clad. The character within Kamira Avenue is generally single detached homes with large green front setbacks, some without fences.



villawood manor house

a new Australian dream...

context



villawood manor house *a new australian dream...*



concept



Design Quality Principles

Context and Neighbourhood Character

Existing housing is generally 1940s and 50s single storey pressed face brick dwellings with tiled, pitched and hipped roofs. Entry porticos are visible from the street and vertical openings are common with large wall to window ratios. Generous 8-10m building setbacks with minimal front fencing characterise the street. Building depths vary from 17-20m. The proposal addresses context through its use of pressed face brickwork to the upper level and large vertical openings. The front fence height allows maximum engagement with the public realm, with a clearly identifiable front entry to the building.

Built Form and Scale

The proposal fully complies with all heights, setbacks, and floor space. The proposed building incorporates the upper level roof profile into the form of the building. A clerestory roof is provided to allow winter sun into the southern upper level dwelling and is seen from the street.

Density

The proposal contains 3 x 2 bedroom dwellings between 90-120m² in area. Each dwelling contains living areas 28m² in size exceeding the min. requirements and at least one bedroom greater than 10m². The Manor house typology provides the highest density outcome for the site.

Sustainability

Passive design principles are used as the basis for the design. All dwellings are naturally cross-ventilated, being open on three facades. Winter sun to living/dining and private open spaces is achieved by favourable site orientation and the manipulation of the roof form to the south facing dwelling. Westerly orientated windows are protected with operable screens and northern windows are protected with eaves. Significant roof depth allows air space and insulation to further mitigate temperature differentials between inside and outside.

Landscape

33% (221m²) of the site area is landscaped area. 44% (99m²) is in the front setback far exceeding Control 3.4C.

A north facing communal open space is provided to the rear of the proposal with rear access from all three dwellings. This is considered an important element for residents who are likely to have large extended families. Space for an 8x6m mature tree has been accommodated in the front and rear setback in a min. area of 6x6m.

Amenity

The proposal has a high level of amenity and is fully compliant with Control 3.4L, J, K, L, M, N, O, P, Q and R. Refer to plans and sections.

Safety

The proposal locates all private open spaces and living areas facing the street. Upper level decks and habitable space to the rear overlook the communal space through privacy screens, mitigating overlooking.

Housing Diversity and social interaction

The manor house typology is suitable to groups with large extended families. The demographics for the area show that the greatest ethnic groups in Villawood are Lebanese and Vietnamese and these groups are known for large extended families. The layout and design has been configured to suit such a group. The ground floor dwelling has been universally designed to provide for accessible accommodation suitable for aged persons or parents, with a second living space to the rear that could become a third bedroom for a carer. Upper level dwellings would suit adult children. Staircases at either end of the building make access to all parts of the site freely accessible. The rear staircase directly accesses the useable communal space and screens clothes lines promoting social interaction while respecting privacy. The generous front setback area is given over to the public realm with a rounded landscape element providing a balance of privacy and engagement with the street to the ground floor dwelling. The upper level dwellings private open space is characterised by large vertical openings that provide privacy and a sense of security.

Visual Appearance

The proposal has been designed to be recognisable as a single dwelling house when viewed from the street. The skillion roof form rising to the north maximises north sun and responds to surrounding context in the street. The delineation between ground, first floor and roof gives the building a horizontal relationship to the ground plane. The front section of the building is highest, appropriately giving presence to the street with the rear section much lower with a roof level commensurate with adjoining properties.

villawood manor house *a new australian dream...*

concept



Feedback On The Guide

It is inferred in the draft guide that the Manor house typology, although providing the highest density outcome for a site with a frontage of 15 metres and an area of 600m², is to be used on corner sites or a site with rear access. These sites are atypical, as are site amalgamations.

If there is to be subtle but significant increase in density, this typology must be applied to infill sites. The proposal illustrates this can be achieved by a compliant high quality design. The scheme provides three quality dwellings integrated with north facing communal space with car parking, for possibly a multi-generational family, as affordable housing or accessible housing. The scheme could be applied to any typical infill site throughout Sydney. This could be further extended to a street or a precinct.

Limiting this typology to a single dwelling house envelope will stifle design innovation and the application of the model at varying scales.

The pragmatic 'reality' of the concept provides great incentive to prospective developers to take up the infill Manor house typology, while satisfying the great need for affordable housing supply in Sydney.

This scheme is clearly appropriate to the City of Fairfield's objectives and controls to redevelop the Villawood local centre and to the multi-cultural heritage and demographics of the suburb. This model is the new Australia dream.

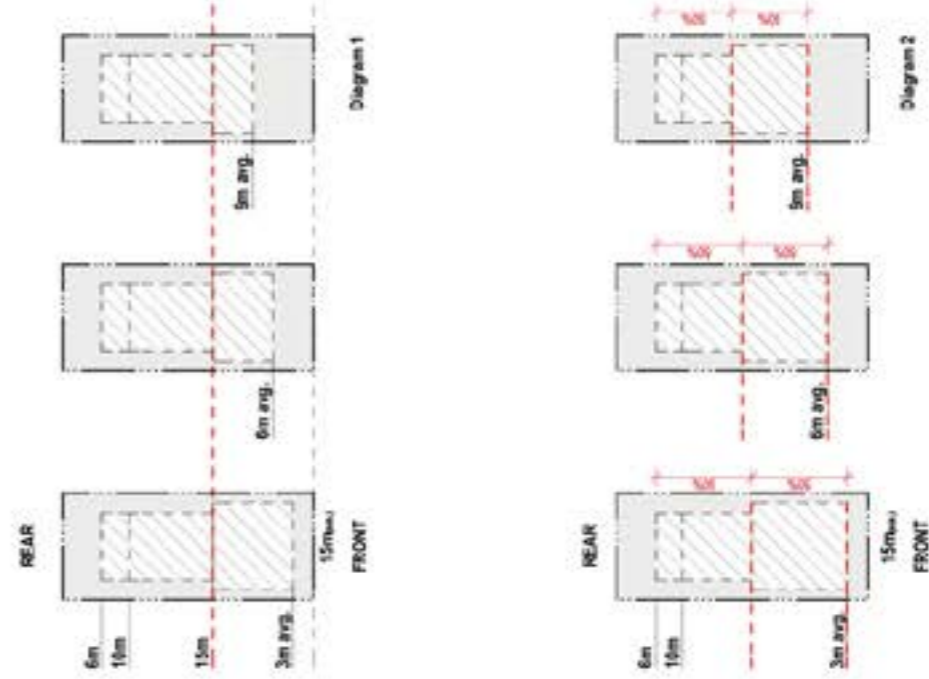
For reference the guide states:

- Best when on corner blocks or blocks with rear lane access to accommodate garages and car parking
- Development is Strata titled, with a common entry and internal hallway.
- Site width of 15m is typically required to achieve setbacks and sufficient space for parking.

Key considerations for developing controls

- Special attention needs to be given to the design of manor houses to address privacy issues for neighbouring properties and for adequate private open space.
- Allow for the use of communal open space
- Allow on land zoned for low and medium density residential development
- Controls for setback, bulk, scale, FSR, building height, landscape and private open space should be kept the same as what is prescribed for a single dwelling house
- Locate all driveway access to rear lane or side street

Side Setback Control



2A Building Envelopes - Heights and Setbacks

Building envelopes set the appropriate scale of future development in terms of bulk and height relative to the streetscape, public and private open spaces, block and lot sizes in a particular location. Envelopes are especially appropriate when determining and controlling the desired urban form in town centres, brownfield sites, precinct plan sites and special sites such as those with heritage significance, views or steep and varied topography.

Building envelopes help to:

Provide appropriate building sizes in relation to internal habitable spaces and configured to take advantage of solar access, daylight and natural ventilation requirements;

Control 3.4A Building Envelopes - Side Setbacks

After determining the front setback control as the average of the two side properties the side set back control Principle 3.4A revealed the following.

The 15m zone in which the 8.5m high 1.5m side setback could be placed was heavily penalised by the front setback control (diagram 1)

1) The permissible depth allowed after applying the controls was 5.8m, therefore, with a min. 2m deep balcony and 4m (min.) widths for living/dining areas meant that the roof line had to be altered (attic style) to accommodate usable habitable space.

We believe that if the fixed 15m line (from the front setback) was changed to be proportional to the overall building depth the bulk and scale of the building would better fit the character of the neighbourhood and provide practical usable space with consistent 2.7m high ceiling heights. (see diagram 2)

This is particularly applicable to infill sites.

I

CONTEXT

MISSING MIDDLE



The mismatch between current housing stock and shifting demographics, combined with the growing demand for walkable urban living and the need to limit urban sprawl, has initiated a paradigm shift in the way we need to design, locate, regulate and develop housing. The 'Medium Density Housing Code' aims to change the impediments for small multiple occupancy dwellings on low density sites in the form of planning regulations which perpetuate the monopoly of the large single family home. By providing clear benchmarks for designing and assessing high-quality low-rise medium density housing to encourage the creation of a diverse mix of housing types providing affordable housing solutions for families within the existing metropolitan areas.

The project re-uses the typical suburban corner allotment, which impacts the streetscape on two frontages. The spatial relationships, dwelling configurations and siting considerations related to high density housing are considered specifically for residential parcels in middle suburban locations. The design-led research identifies the existing planning controls and industry trends incongruous with achieving better redevelopment outcomes.

The selection of lot was based on common lot sizes in the middle suburbs ranging from 15-16m in width and 38-43m in depth, with the concept to test prefabricated

modular dwelling volumes with design strategies that are transferable to other locations and appropriate for expansion onto adjacent lots over time.

- The following criteria formed the basis of our site selection:
- Located 10km – 30km from the CBD,
 - Proximity to transport networks
 - Located within the 400m to 800m to a local train station, increasing walkability as well as maximising opportunities for integrated and sustainable design.
 - Proximity to Community Facilities including local schools, shops, open space and public amenities
 - Areas with the opportunity for housing growth and employment areas

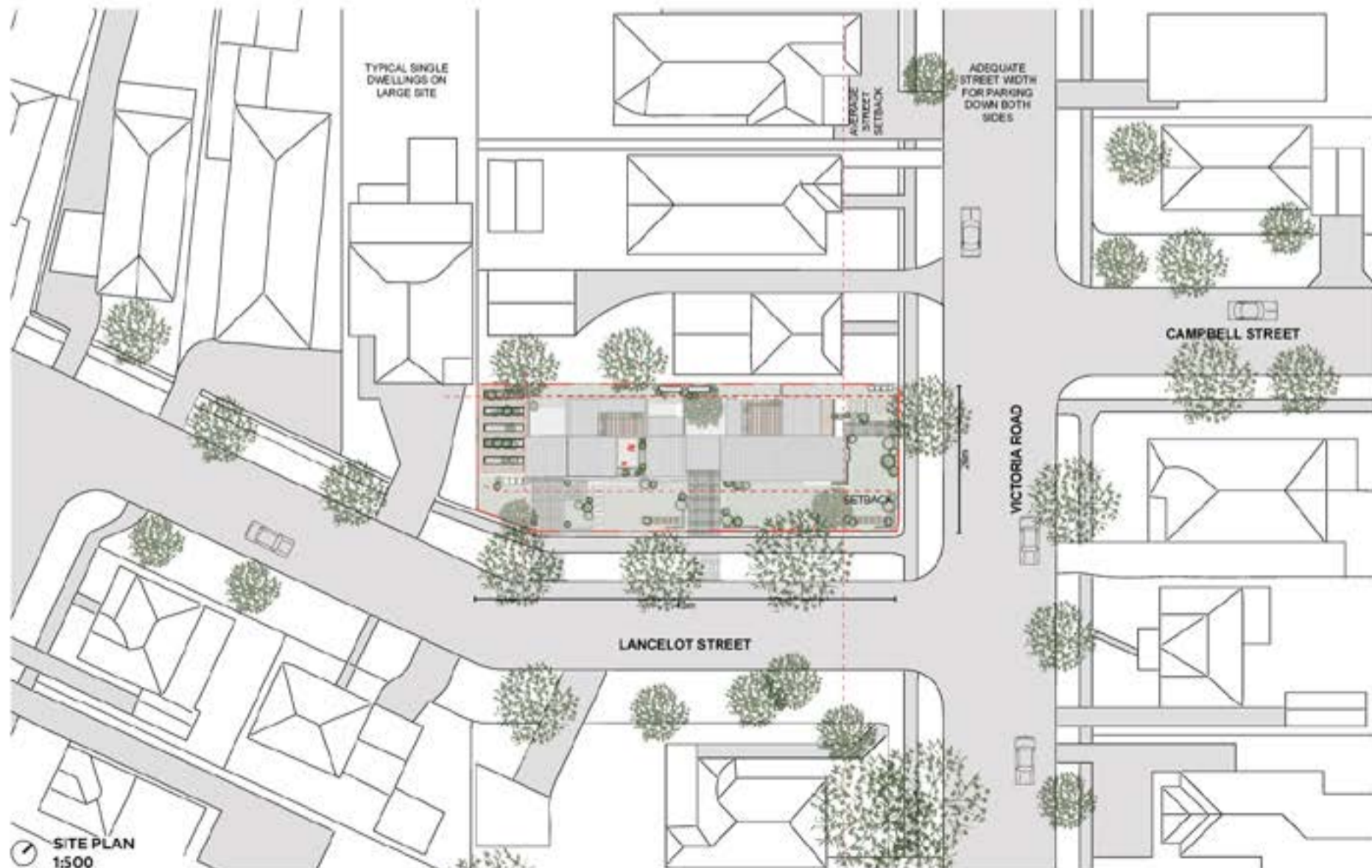
Further to this Corner Sites were favoured as two street frontages, improve the public and private relationship allowing for multiple discrete entrances to each dwelling across two streets. This not only creates a sense of identity to each individual dwelling but also disguises the level of density.

The Sydenham to Bankstown Urban Renewal Corridor Strategy for 2036, published by the NSW Government of Planning & Environment in 2015 has identified the demand for new housing and aims to accelerate urban

renewal in this transport corridor and areas. Punchbowl, sandwiched between the gentrified inner suburbs and the homogenous outer suburbs, is the perfect site for incremental densification through adaption of existing lots to accommodate multiple households, with a demand for doubling the existing dwellings to accommodate the population as it heads towards 2036, as well as a 25% increase in jobs.

The Punchbowl Precinct is located approximately 16.5km from the Sydney CBD, on an existing train line, and the proposed Sydney Metro line. The area has a traditional, fine grain built form with 1-2 storey high street buildings, characterised by single dwelling houses on larger blocks, with a limited number of older-style 3 storey walk up residential flats. Surrounding local streets are generally arranged in a modified grid form and provide good connectivity within the surrounding locality.

The site, is surrounded by a consistent form created by building heights, setbacks and street width proportions, with future renewal it will be retaining the low-rise zoning though sit on the boundary of medium-high rise developments. The site also sits on the corner of a proposed recommended cycle routes.

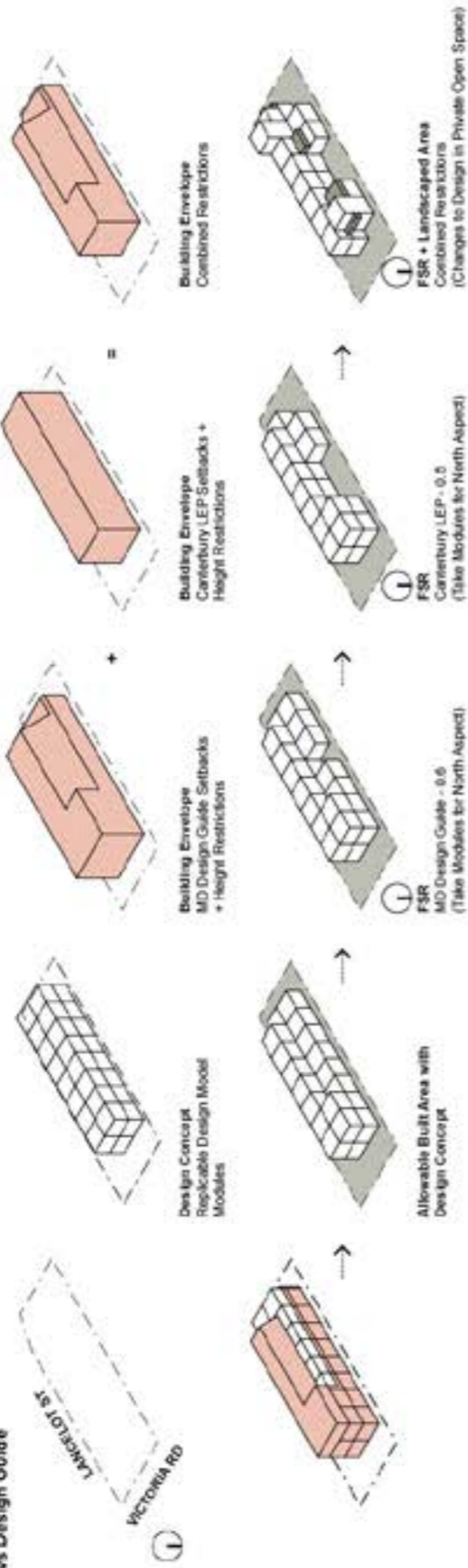


II

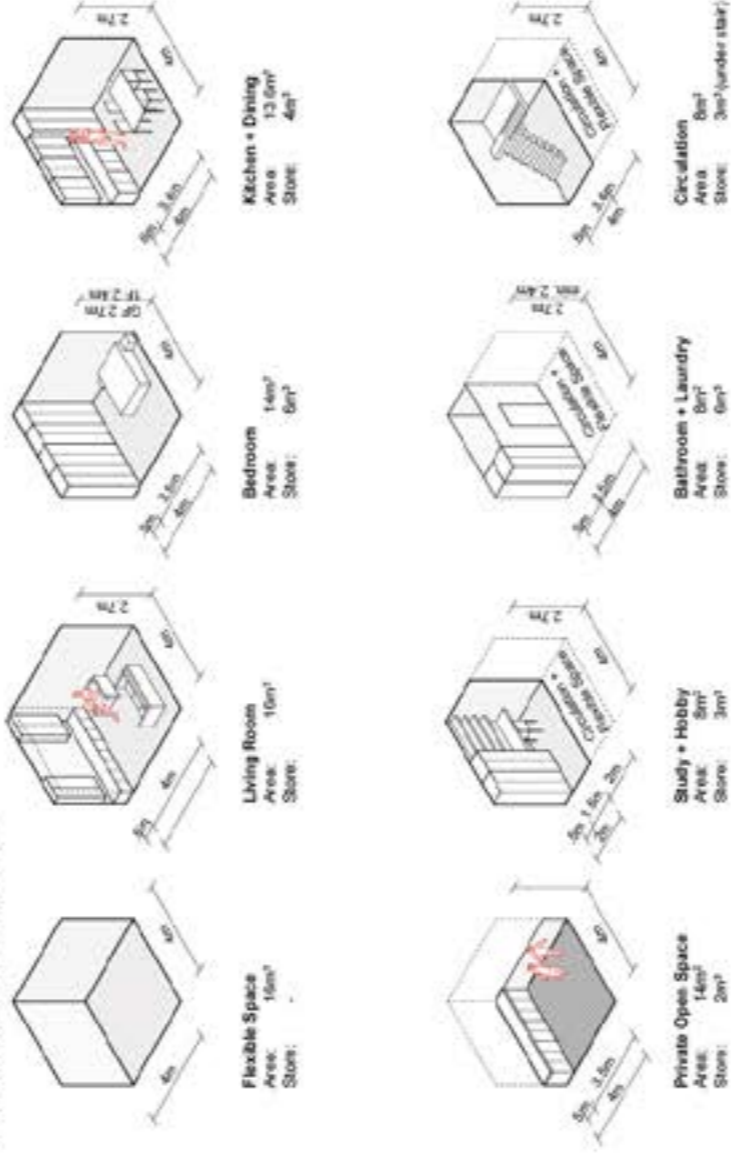
TESTING THE DESIGN GUIDE

MISSING MIDDLE

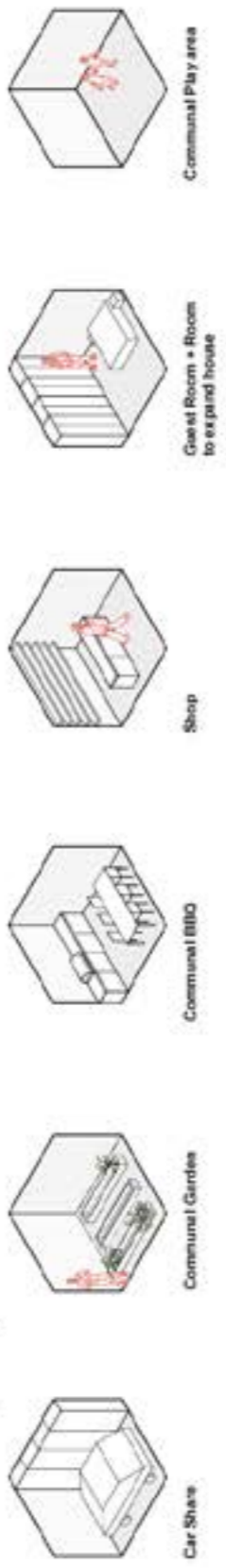
PRINCIPAL CONTROLS
LEP vs Design Guide



DESIGN GUIDE PROTOTYPE MODULES
With Storage + Technical Stripe



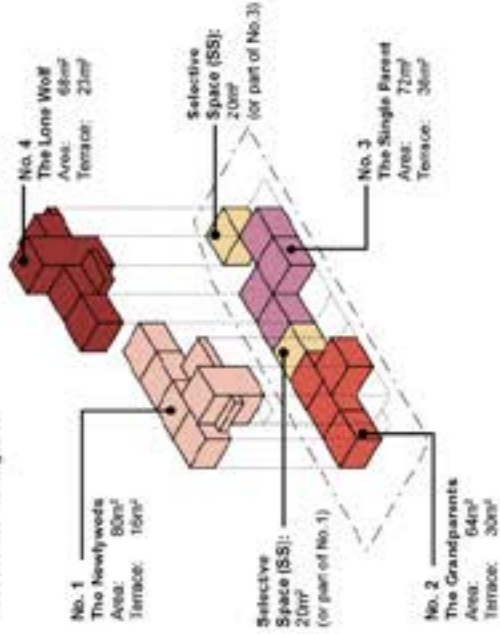
SELECTIVE SPACE OPTIONS
Collaborative Consumption Space



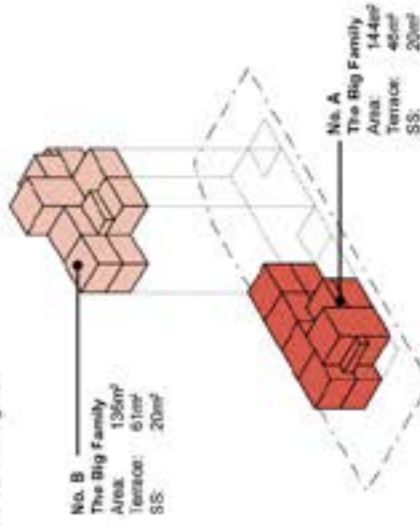
DWELLING CONFIGURATIONS

Project Data	650m ²
Site Area	1
Number of Lots	2-4
Dwellings	0-2
Car Parking	150m ²
Building Footprint	324m ²
Floor Area	255m ²
Landscaped Area	8.5m
Height	

Project Data
4-for-1 Dwelling Replacement
Possible Car Parking: 0.5:1



Project Data
2-for-1 Dwelling Replacement
Possible Car Parking: 1:1



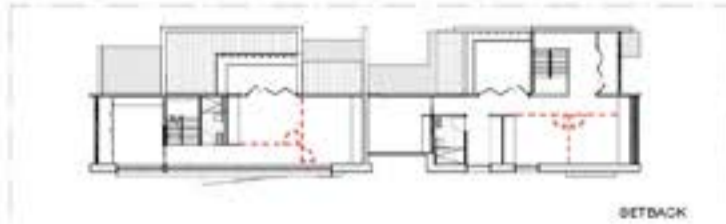
This scheme exposes some barriers in the path to improved housing design, particularly with a comparison of principal controls between the local LEP and the Medium Density Design Guideline. By using the combined (or tighter) of the two restrictions we found difficulties with:

- Regulated Building Setbacks + Building Envelope**
The current approach to street frontages, setbacks, height and street character are limiting the potential and restricting optimum use of typical suburban sites. The building is pushed into the rear South-West corner of the site towards adjoining sites, where building separation could be increased to provide more proficient privacy and solar access. Especially where areas are being rezoned for higher densities and the streets are wide, reducing street setbacks does not impact on amenity of neighbouring properties and could increase the possibility of activating a streetscape, facilitating higher levels of community engagement.
- Excessive Overlooking Requirements**
Overlooking within a site should be controlled, but not eliminated. Excessive screening for absolute privacy reduces the ability to optimise solar orientation, site permeability, the potential for passive surveillance and positive interaction between residents.
- Car Parking Requirements**
With close proximity to primary public transport routes, the necessity for increased density shouldn't compromise the quality and amenity of the streetscape to allow for one car space per dwelling. Above ground car-parking can create poor interaction with the street or neighbourhood and limit natural surveillance that promotes community safety. The parking strategies have been developed to enable potential car-sharing arrangements or future adaptation.

III

CONCEPT DESIGN

MISSING MIDDLE

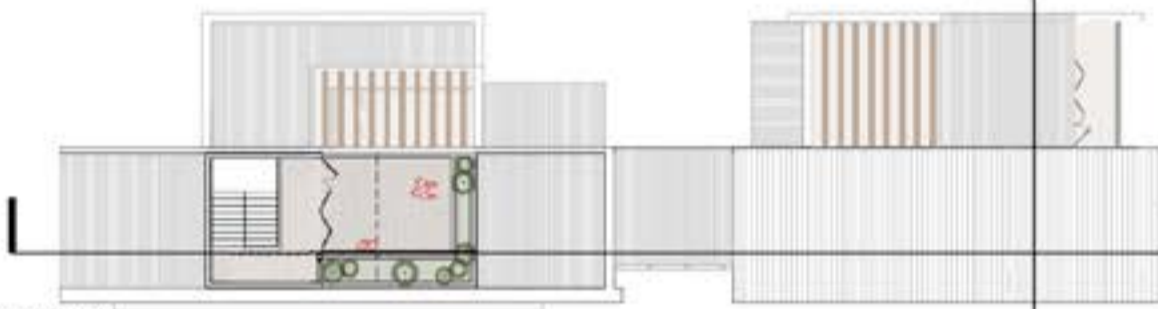


- ▲ Entry - 4 Dwelling
- ▲ Entry - 2 Dwelling
- ◁▷ New Connection
- Walls to create bedrooms

ADAPTABILITY + FLEXIBILITY

The scheme bridges the gap between the conventional freestanding house and formulaic multi-residential apartment blocks. By splitting the differences of these stereotypes, such a typology fosters both a deeper comfort with increased density, especially with those accustomed to urban sprawl, and also nourishes the public realm and associated lifestyle factors. In response to Punchbowl's projected demographic changes, including new employment opportunities and population fluctuations, the manor home has been designed to anticipate the evolving demands on a residential over its lifetime.

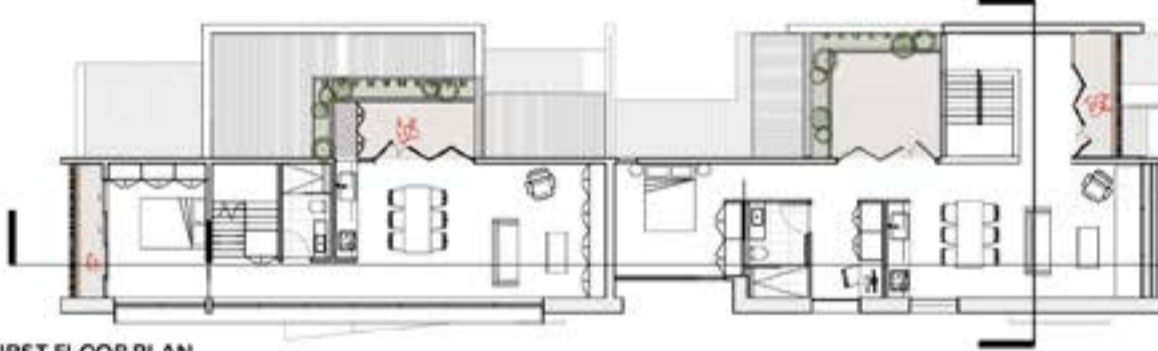
Flexibility has been programmed into the architecture so as to facilitate future expansion and reconfiguration. This allows the homes evolving families to accommodate, with measures as simple as the combination of dwelling entries. The properties are proposed to be strata titled, allowing them to be independently owned, sold, reconciled in the future.



ROOF PLAN 1:200

Designed with the flexibility to combine or separate the upper levels of the dwellings as separate houses, a diversity of dwellings types, sizes and occupation are provided, which shift with the occupants needs. The apartments vary in plan but each is between 64- 80 m² equipped with individual kitchen, dining and living room, bathroom/laundry, bedroom, access to outdoor space and ground floor access. The lower apartments are universally designed, able to made suitable for people with disabilities.

The dimensions and arrangement of volumes, services and vertical circulation systems also accommodate prefabricated methods. The generous 4m x 4m module can accommodate a 'loose fit' approach for ease of adaption of spaces and affords compatibility with the guidelines. Embedded into each module is a window and a 'technical storage strip' ensuring generous ancillary spaces, as well as outlook, natural ventilation and access to sunlight.



FIRST FLOOR PLAN 1:200

Arranged as interlocking units, the layout provides each unit with natural northern light penetration and cross ventilation. The overall appearance is that of a single residential home, so as to relate sympathetically to the existing single-family home context, with building alignments and proportions that relate to its immediate context as well as future re-zoning.



GROUND FLOOR PLAN 1:200

IV

CONCEPT DESIGN

MISSING MIDDLE



SUSTAINABLE DESIGN STRATEGIES

- Northern Sunlight
- Passive Surveillance / Outlook
- Natural Ventilation

The proposed design modules can be constructed using conventional domestic building techniques, avoiding unnecessary complications in delivery.

The 'house' is also designed to engage with the street by eliminating tall extensive fences, especially along one side of the corner block. Instead, brick planter boxes wrap around the edge of the site interspersed with built in seating and planting, separating both dwelling entrances and the site boundary

Multiple sustainability initiatives have been applied, including the use of lightweight building materials, solar passive design along with shared rainwater facilities, solar electricity and a battery storage system. Constructed from a simple timber frame and clad in robust and low maintenance materials such as profile metal sheet and recycled brick.

Furthermore, the proposed design models allow for one on-site carpark per dwelling. This allowance is considered a necessary provision for adequate mobility and access to amenity in current suburban contexts. The parking strategies have been developed to enable future adaptation upon the arrival of improved public transport connections or potential car-sharing arrangements.

The trend away from the suburbs also represents is greater acceptance of a denser, more public lifestyle amongst the general population, one which foregoes the luxury of private lawns and backyard pools, in exchange for public or 'shared' amenity. Not only does this measure contribute positively to the housing stock of the city, but the scheme reintroduces a social, egalitarian focus to our shared public realm.



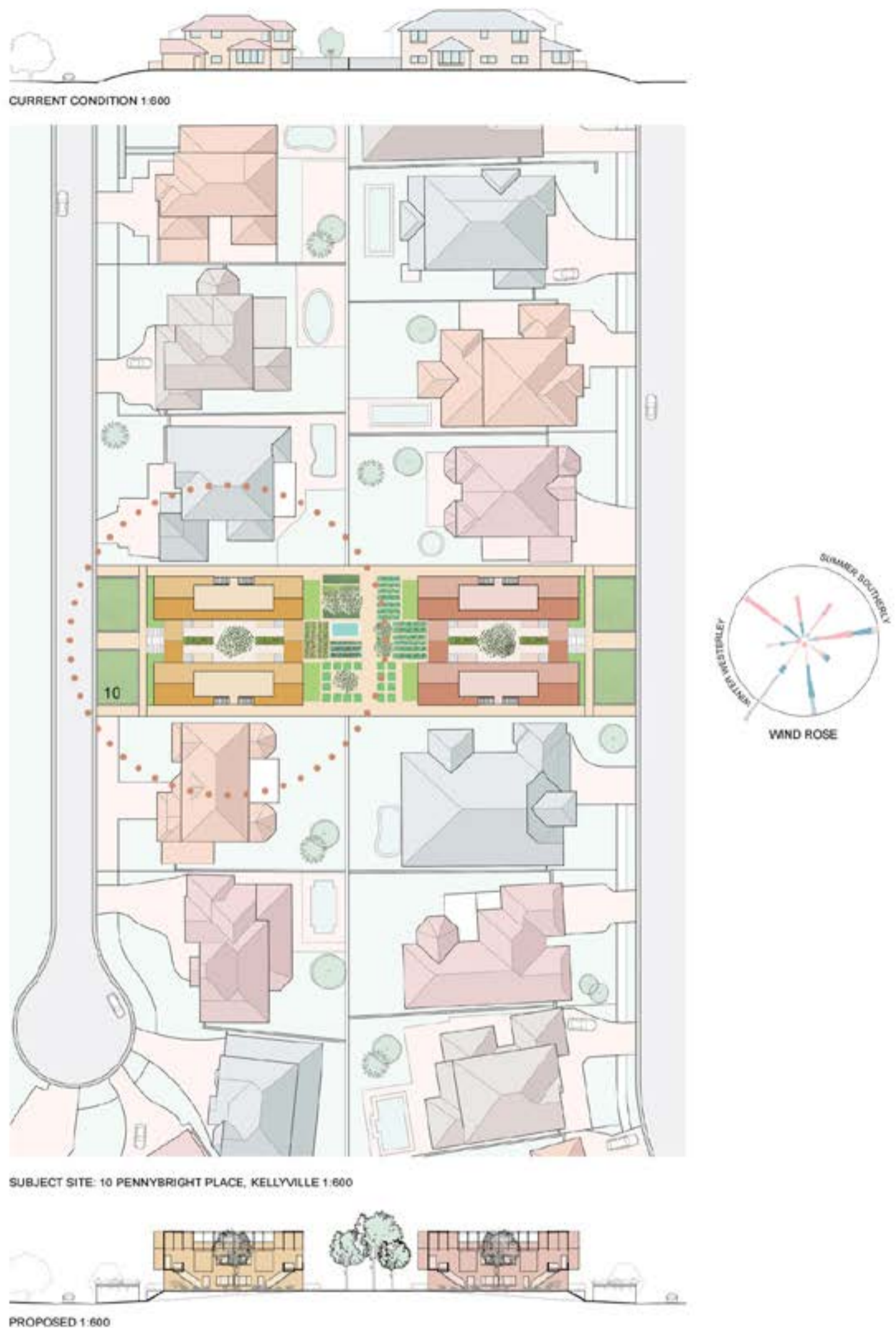
SHORT SECTION
1:200



LONG SECTION
1:200



CORNER VICTORIA RD
& LANCELOT STREET



Our project is located in the suburb of Kellyville, within the Hills Shire local government area. Kellyville is approximately 30 kilometres north-west of the city centre, straddling suburban Sydney's middle and outer rings. More important than the proposal's location in space, however, is its placement in time. Over the next twenty years Sydney is due to gain 2.1 million residents, requiring construction of 725,000 new homes. Low-rise suburbs such as Kellyville have been earmarked for significant population growth and urban development. The draft Medium Density Design Guide is intended to spur this development, accelerating the approval process for multi-dwelling residences in place of single homes.

By 2019, the new Kellyville Station will form a critical node on the Sydney Metro Northwest rail line, delivering thousands of commuters to and from the CBD. In the meantime, we might contemplate two alternative futures for Kellyville. In the first scenario, the suburb is razed and built anew. Residential properties are purchased en masse by developers and consolidated into districts of cheek-by-jowl terrace houses. Residents are displaced, communities fragmented, street trees uprooted and gardens decimated. It is easy to imagine an unrecognisable and generic future Kellyville, a place without memories or locals.

Our proposal explores an alternative scenario in which Kellyville's transformation takes place gradually and incrementally, with redevelopment occurring at the scale of the individual suburban lot. Such development could unfold quickly and organically, unburdened by the lengthy and expensive acquisition of multiple properties. Similar in scale and form to neighbouring homes, new multi-resident Manor Houses would be erected without altering street patterns, open space, neighbourhood character or surrounding gardens.

The site chosen for the exploration of this scenario is 10 Pennybright Place, an unassuming lot on a nondescript cul-de-sac street in an area zoned R2 for low density residential development. We have selected a site measuring 21.5 by 32 metres and totaling 690 square metres - typical dimensions for Hills District properties - to demonstrate how a multi-residential Manor House development could be built in place of a single suburban home. The site's street frontage is to the north, necessitating careful consideration of solar opportunities and encouraging street-facing living spaces. Finally, the site is elevated more than 1.7m above street level, making universal accessibility a key design challenge.

HOUSE IN THE MISSING MIDDLE

CONTEXT

01



- KEY
- 1. Living / Dining
 - 2. Kitchen
 - 3. Bathroom
 - 4. Bedroom
 - 5. Garage
 - 6. Private Open Space
 - 7. Shared Terrace
- | | |
|---|--|
| 1 Bedroom, ground floor | 1 Bedroom, first floor |
| 3 Bedroom townhouse | Studio apartment |
| 2 Bedroom, 2 Bathroom | 2 Bedroom |



Kellyville is infamous within the architectural community as the place where "McMansion" houses are marketed and sold. These maximised houses - Australia having the largest average new homes of anywhere in the world - are generally squeezed onto minimum sites, leaving little room for overhanging eaves, outdoor living space or gardens.

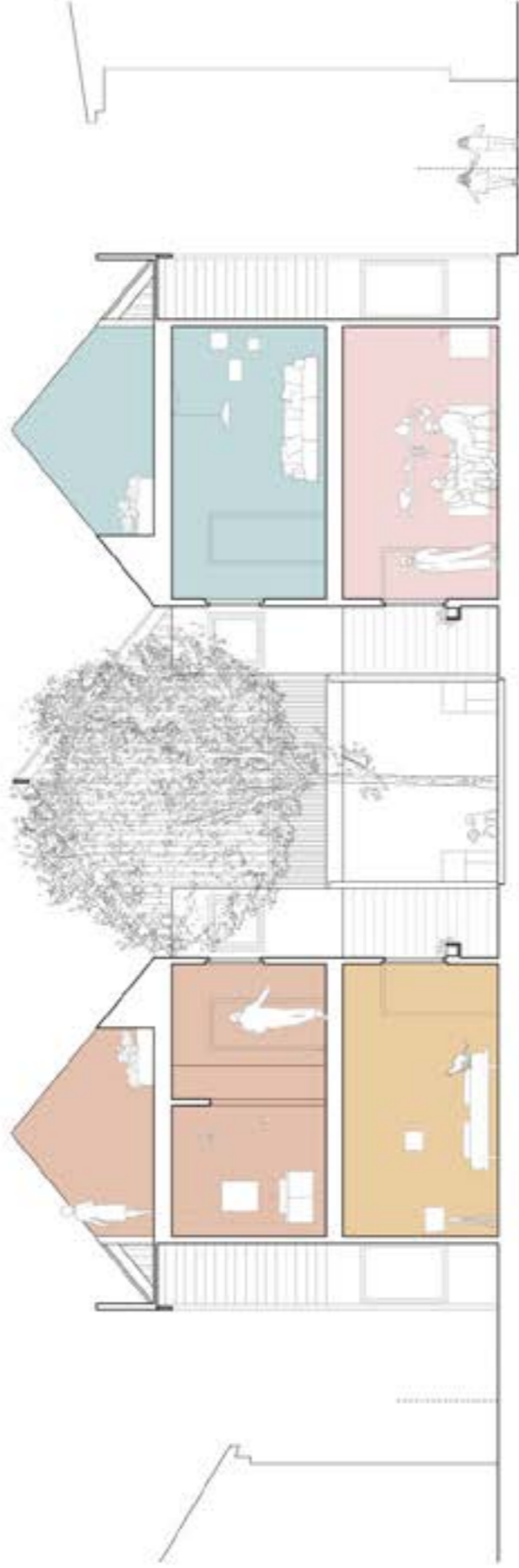
Most McMansions have just 2 or 3 occupants. But while they're unnecessarily large as single homes, they happen to be an ideal size for a multi-unit manor house! Our proposal is to simply replace one with the other, gradually densifying the neighbourhood by stealth. No bigger than a typical McMansion, the House with a Missing Middle can accommodate four two-storey, three bedroom townhouses or as many as eight one bedroom units. But whereas McMansions are built almost to their site boundaries and bulked out by multi-car garages, serpentine corridors, oversized atria and windowless media rooms, our proposal has no such redundant spaces.

In fact, the house has no middle at all: two 4.8m wide volumes, inset from the side boundaries to allow greater privacy, bracket a 6m wide, double-height courtyard. The courtyard provides communal open space for arrival, socialising and relaxation. The house's 'missing middle' optimises ventilation and sunlight to the adjoining rooms, while maintaining visual and acoustic privacy between separate tenancies. The courtyard allows continuous passage from street to backyard, with screened verandah spaces obviating the need for fences. In time, as fences come down, several manor houses could be linked by a neighbourhood commons spanning multiple backyards, creating shared space for gardening, recreation and play.

Conceived as a prototype suitable for suburban areas throughout Sydney and Australia, our proposal does not rely on expensive basement excavation, air-conditioning or costly systems and technologies. Instead the design employs lightweight construction methods, passive environmental principles, and simple and robust materials and components.

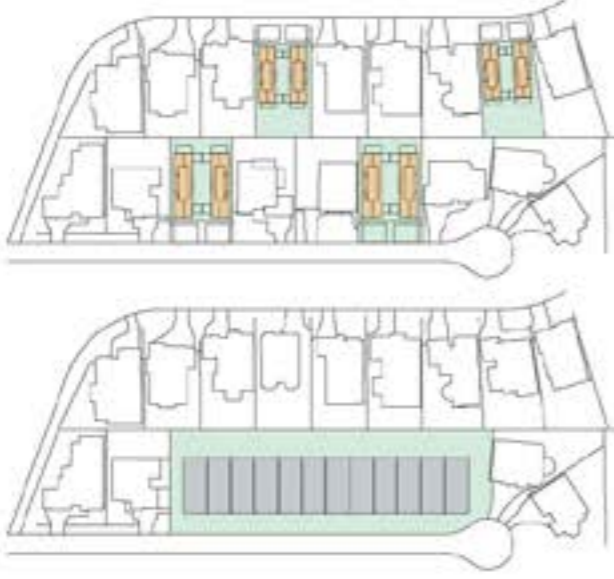


HOUSE WITH A MISSING MIDDLE
CONCEPT
02



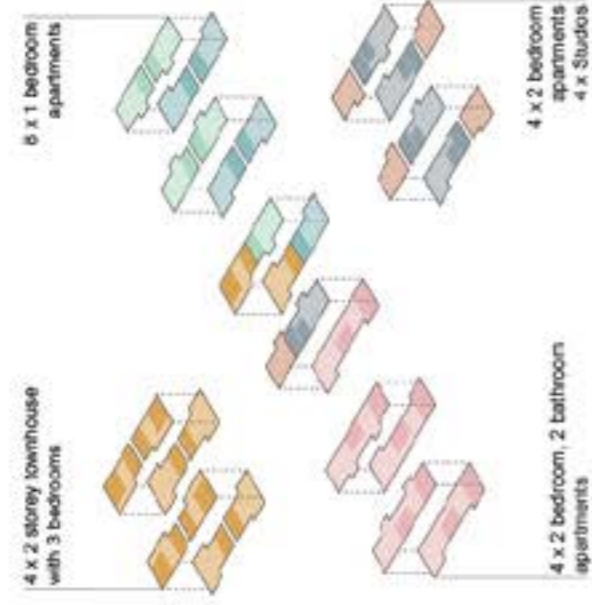
HOUSE WITH A MISSING MIDDLE
CONCEPT
03

1. INCREMENTAL DENSITY



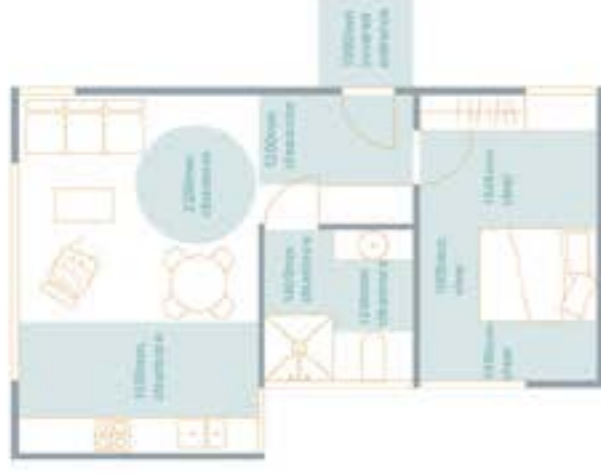
Medium-density suburban development often requires the acquisition and consolidation of multiple lots, a process which is slow to implement, can be carried out only by large operators, and which inevitably alters neighbourhood character. Much easier to action and feasible for small-scale developers, our proposal maintains the existing subdivision pattern, with single homes gradually replaced by higher-density manor houses.

2. UNIT MIX



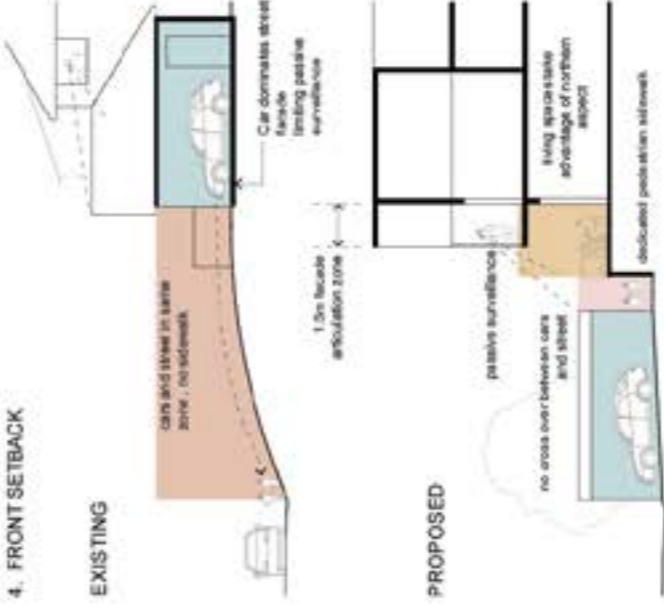
The House with a Missing Middle is equally suited to families, young professionals or elderly occupants. While the design can be configured as a standard manor house with four units, its flexible floor plan is capable of accommodating 12 different unit mixes based on studio, one bedroom, two bedroom, two bedroom/two bathroom and three bedroom modules, each of which can be implemented with no modification to the building's external envelope and minimal internal variation.

3. ACCESSIBLE UNIT DESIGN



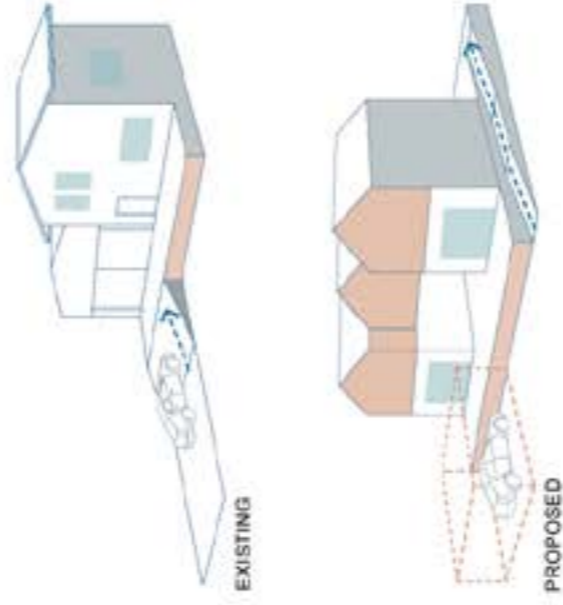
All modules have been designed to both minimum floorspace requirements and platinum grade accessibility. Whatever the size of dwelling, its residents can comfortably age in place.

4. FRONT SETBACK



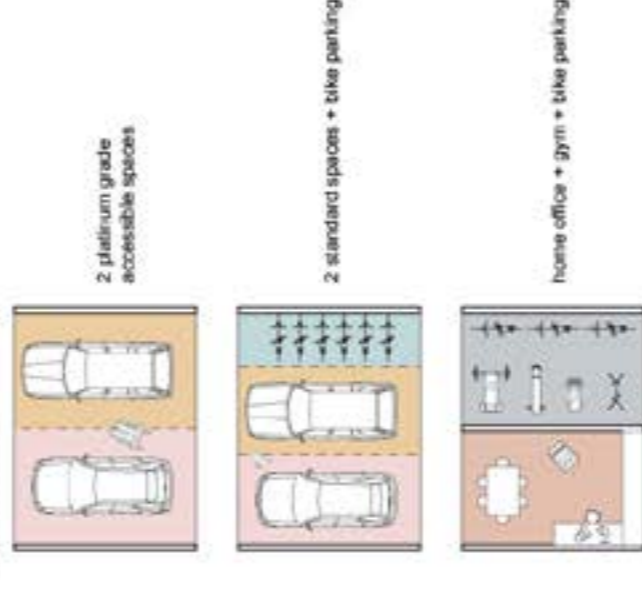
Kellyville streets often have no sidewalks. Multi-car garages occupy nearly half of each house's street frontage. Driveways stretch between street and house, creating a danger zone where cars and pedestrians overlap. By placing carports on the street edge and providing a dedicated sidewalk beyond, we can ensure that there is no crossover between pedestrians and cars. Garages do not occupy valuable frontage, enabling more porosity for light and ventilation.

5. ACCESS TO DWELLING



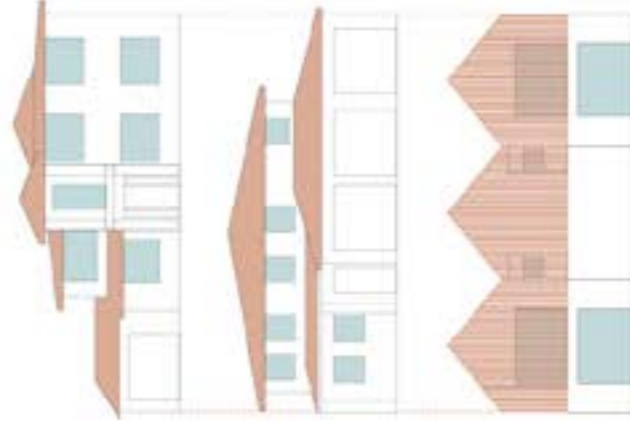
Most elevated suburban sites feature steep driveways, with entry by car the only truly accessible option. Our design places the parking on grade, with universal access via generous stairs and fully-compliant ramps.

6. CAR PARKING



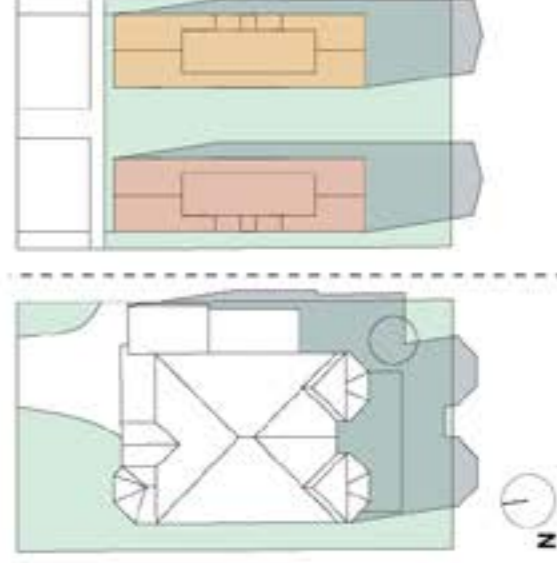
Our design provides space for four platinum-size covered parking spots, or four standard parking spots with additional space for bicycle storage. With the completion of the train station in 2019, Kellyville will be far less car reliant. As needs change, these street-side carports could be converted into home businesses, exercise spaces or daycare facilities.

7. RESPONSE TO FORM



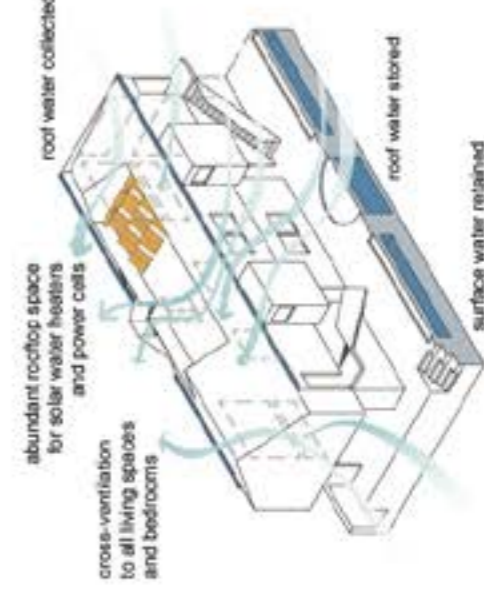
The proposal blends in with the scale, form and appearance of surrounding houses, emulating traditional pitched roof profiles while uniting multiple tenancies behind a single facade.

8. SOLAR CORRIDOR



Rather than overshadow its own backyard, the proposed design incorporates a solar corridor that provides daylight to private and collective open spaces and living areas throughout the day.

9. ENVIRONMENTAL DESIGN



Our design employs passive heating and cooling, with abundant shading and cross-ventilation. Provision has been made in the design for water collection, storage and reuse, and efficiently-orientated solar cells.

[THE CHALLENGE]

Australia is experiencing high housing demand with NSW alone expected to grow by 2.1 million residents over the next 20 years. The housing challenge is compounded by demands of a growing elderly population, steadily increasing sole and dual home occupancy. Add to that the unprecedented high cost of owning a home, and the housing challenge is clear.

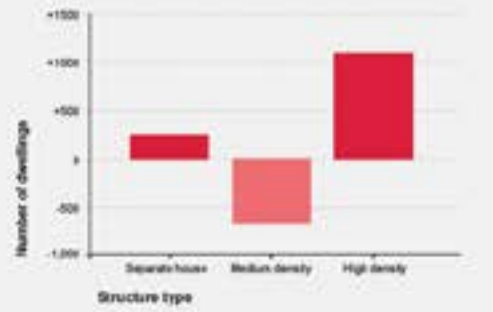
Our inherited residential areas are low density and private cars dominate the public domain. While there is potential to retrofit our existing housing stock to meet the above demands, this project looks to the role new housing can play.

New housing in NSW falls largely into 2 categories: traditional free-standing homes or high density stratified apartments. There is great potential and opportunity in the scale in between - the missing middle - to increase residential density and create vibrant and sustainable residential communities.

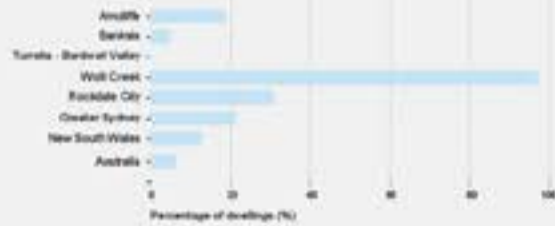
To counter the 'missing middle' the NSW State government plans to fast-track complying medium density development with the aim to:

1. increase housing supply
2. increase residential density
3. deliver a range of well designed medium-density housing.

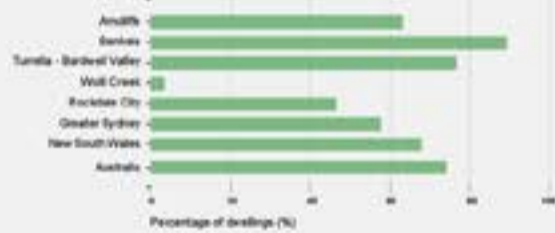
The Draft Medium Density Design Guide contains design guidelines and controls to guide this development statewide. How does a 'blanket' approach translate across our states diverse natural landform & built environment? We have taken a design approach to actively test the controls and the complying development pathway in a real world context.



Rockdale City Changes In Dwelling Structure 2006 to 2011



Rockdale City High density Housing Supply Comparison, 2011



Rockdale City Separate Housing Figures, 2011

We sought a locality currently experiencing development pressure and activity that merited greater density

[LOCALITY SELECTION]

The selected locality is approx 2 sq km area located between Arncliffe, Banksia and Turrella Train Stations. The site is located:

- Just over 10km from the CBD providing good access to employment and economic activity.
- Adjacent to a local green network that links to the Woll Creek Conservation Area and the Cooks River Greenway
- Between 2 train lines which locates the majority of the study area within 800m of a train station



MAKING THE MIDDLE COUNT

testing the draft medium density design guide



[LOCALITY SNAPSHOT]

- Varying and steep topography which has historically influenced the pattern of subdivision. This has created distinct neighbourhood areas further defined by green belts, road and rail routes.
- a density of approx 14 dwellings per hectare with a predominance of freestanding houses.
- Examples of typical Australian suburban building types from federation style to current contemporary
- Small scale local parks and shop precincts.

[RECENT DEVELOPMENT]

- Has a mix of R2, R3 and R4 zoning which has resulted in a jarring contrast in the scale of urban form between single residential and high rise developments.
- High Density Housing is concentrated in new apartment developments at Woll Creek & Arncliffe whilst surrounding areas are almost entirely freestanding houses

[FORECAST FUTURE DEVELOPMENT]

- Has been identified as a priority growth area and recently re-zoned to increase residential density by increasing the amount of R4 area



[TESTING MANOR HOUSING AT A PRECINCT SCALE]

Multi-dwelling housing is permitted only in Zone R3 in Rockdale Council (Bayside).

We selected the precinct in the north-west of the locality for our study site as it is the only R3 area with lots aligned north-south, east-west - the lot orientation best-suited to Manor housing.

The plan on the right shows development on complying sites where development could, and would likely take place. In addition to complying with the Principal Code requirements, individual and amalgamated lots comply with the criteria:

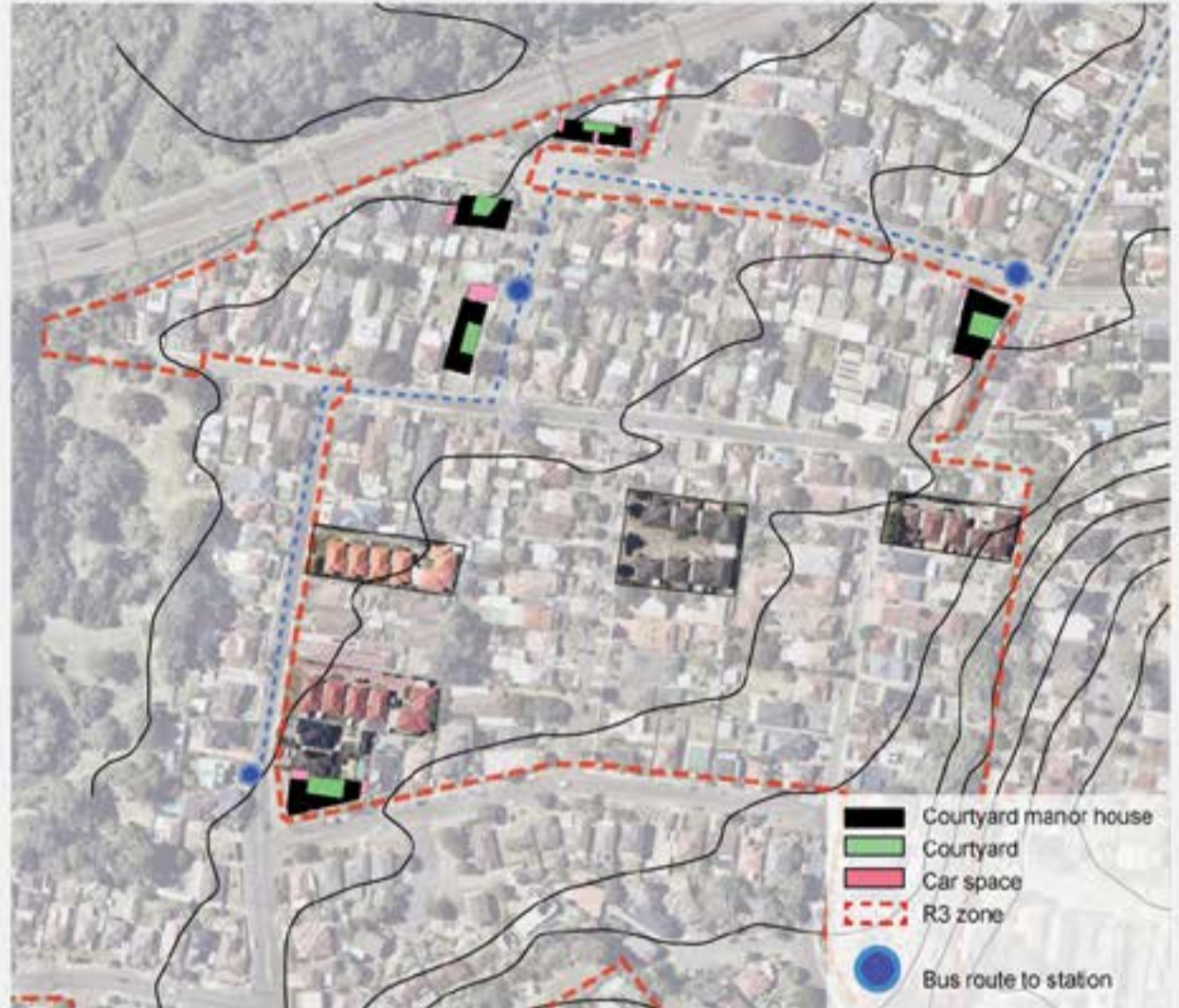
- the existing building stock is of a size or condition that it is likely to be replaced.
- the development is efficient as we assume developers seek efficient returns.

This testing process confirmed manor house suitability for corner sites or sites with a rear lane or parallel street.

The standard manor house model is a building centrally located on a block, which does not utilise its corner site location, both for the dwelling occupants or the public domain.

There is an opportunity for a model that optimised the potential of the manor house model to appeal as senior housing, for couples down sizing from a family home, or occupants interested in community focussed living.

We propose a courtyard manor house type that optimises - facilitates cross generational and



- Courtyard manor house
- Courtyard
- Car space
- - - R3 zone
- Bus route to station



East-west corner lot

- Court-yard orientated north
- First floors set back from southern neighbours



North-south corner lot

- Court-yard orientated towards "secondary" street
- First floors set back from southern neighbours and edge of courtyard

[THE COURTYARD MANOR HOUSE CHARACTERISTICS]

- 4 x 2/3 bedroom dwellings arranged around shared courtyard space located on a corner lot or sites with public parallel street or lane
- Building envelope determined by a combination of lot orientation and public street locations.
- Narrow width buildings with multiple orientations to maximise natural lighting and ventilation.
- Size and position of central communal open space maximises open space amenity, community living opportunities and activates the public domain.
- The private space of each dwelling is adjacent to the living room and for at least 2 dwellings is located on the first floor.
- Each dwelling has an individual entry at ground level to a primary or secondary street (to differentiate them from the 2 & 3 storey 'walk ups' of the 70's and 80's).
- Each entrance has its own defined landscape area and semi-recessed outdoor area with raised outlook to street.

[EXISTING ZONING]

In the 200 hectare locality area only 11 sites are eligible for this type of development. Of these we assessed the viability of 6 manor homes for CDC development. This would result in an additional 6 additional dwellings in the area over the next 5-10 years. This increase is insufficient to meet the desired density target or to significantly impact the urban character of the area as the disparity in volume of high and low density housing is too great.



[PROPOSED ZONING]

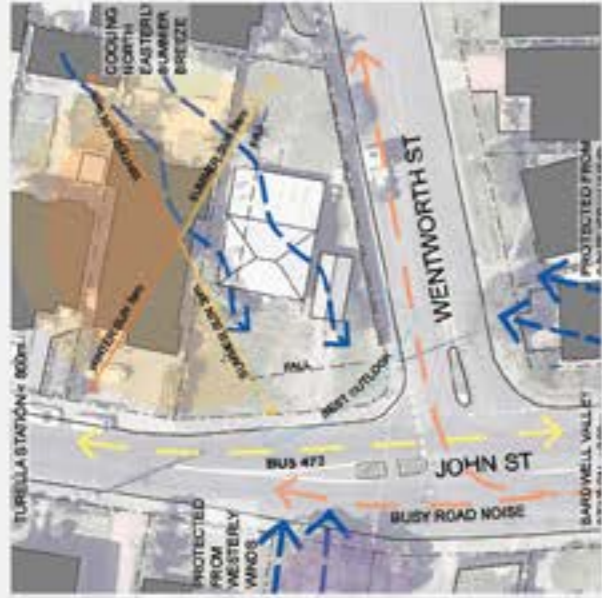
Additional 'possible future' R3 zones have recently been announced as the locality is in a priority growth area. When this rezoning takes place additional sites are eligible for this type of development. However this increase is insufficient to meet the desired density target.



[IDEAL ZONING & AMENDMENTS TO CONDITIONS OF COMPLYING CONSENT]

If the manor house typology were deemed compliant in the whole area (either by rezoning or by allowing manor house where dual occupancy is allowed) then a significant number of development opportunities become possible and real gains can be made towards the density target.

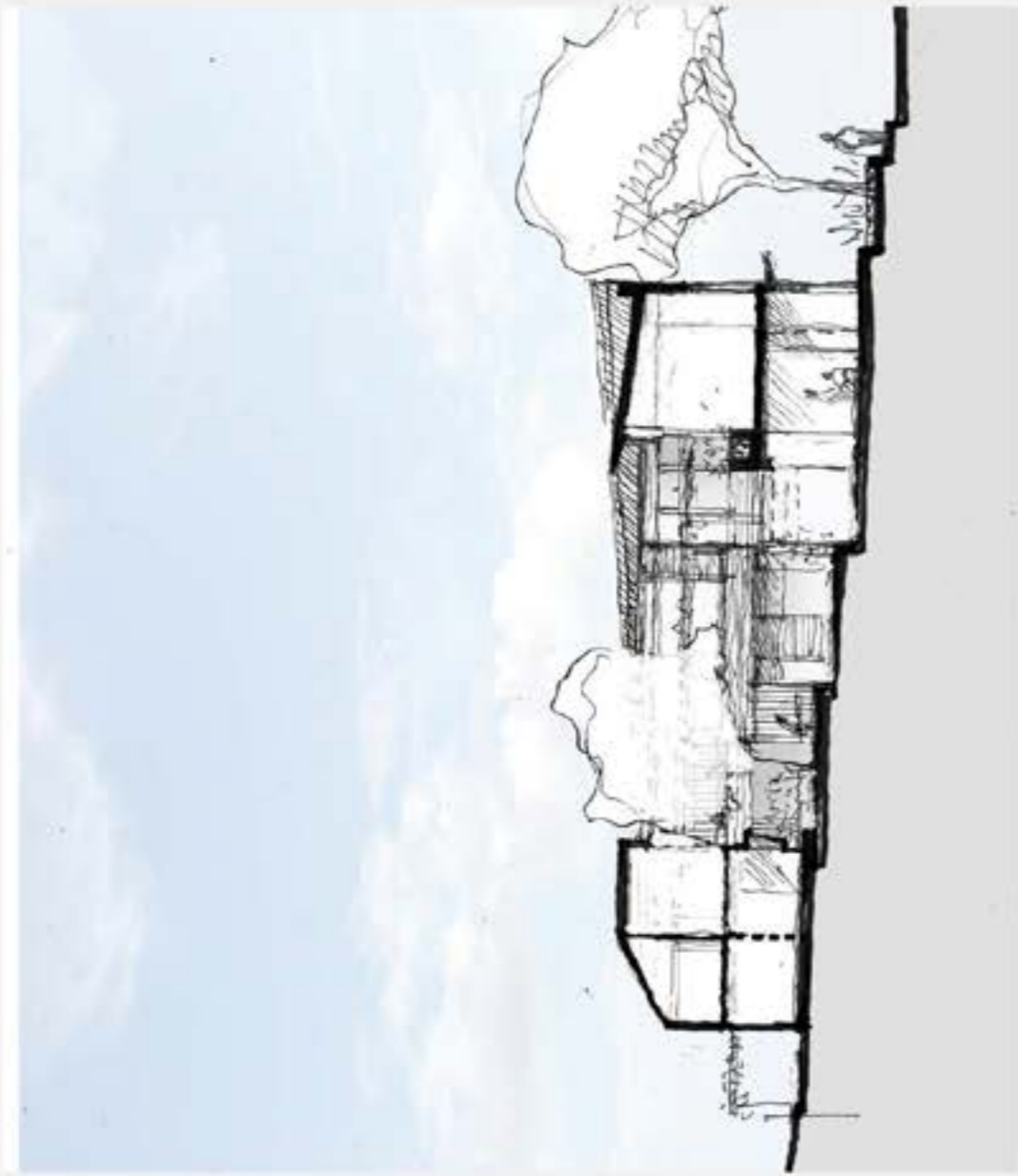




Site Analysis Diagram

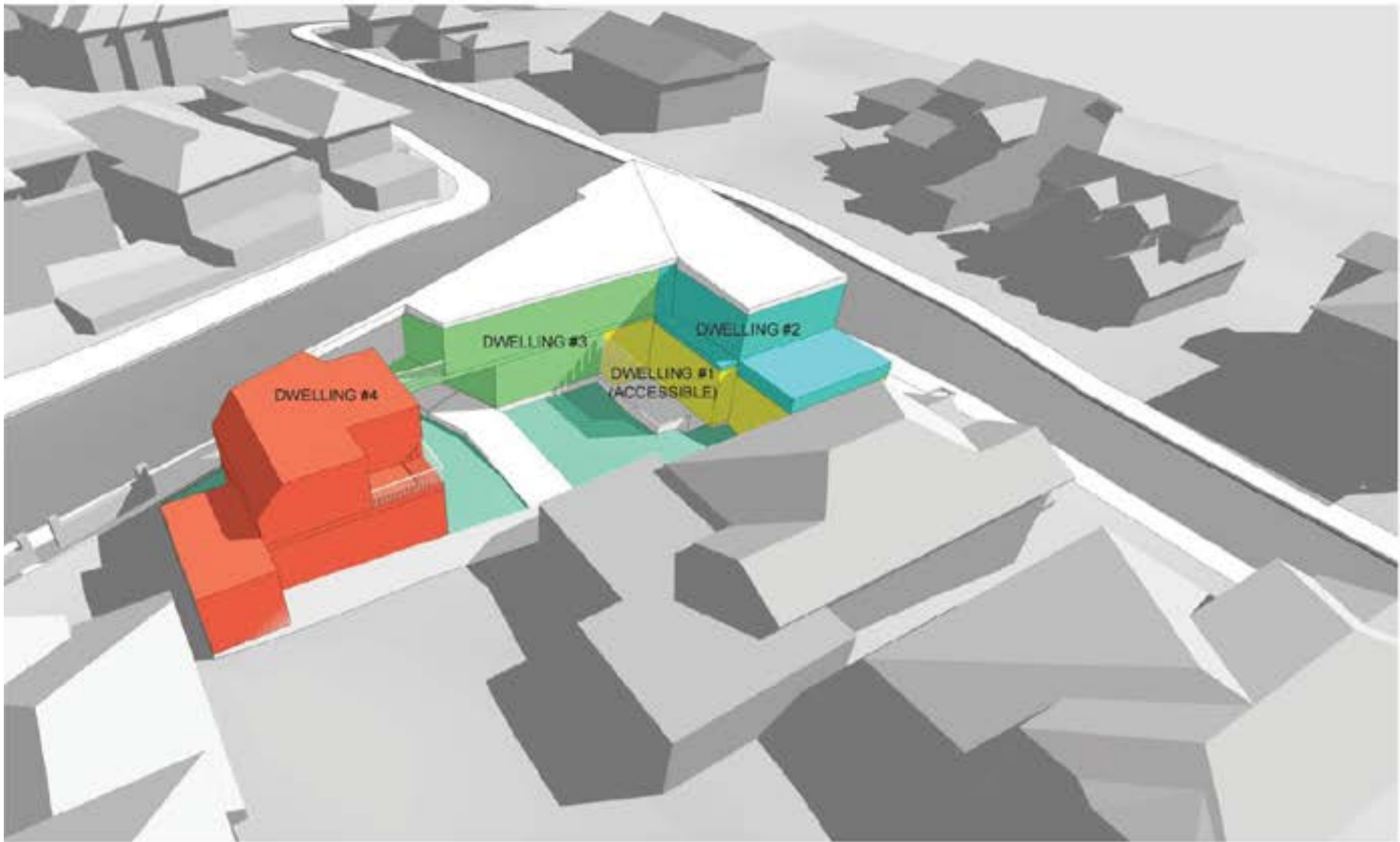


Existing Wentworth Street Elevation



GROUND PLAN: 1:200

FIRST PLAN: 1:200



[SUMMARY]

While this study has shown that the controls described in the Draft Medium Density Design Guide can lead to satisfactory outcomes, there are areas in both the guide and local government controls that can significantly improve the quality of the built form and the urban character more broadly.

These are summarised against the 3 main aims of the guide:

1. increase housing supply
2. increase residential density
3. deliver a range of well designed medium-density housing.

1. INCREASE HOUSING SUPPLY

The main barrier to achieving the desired levels of density is the lack of sites where this type of development is permitted. This lack is caused by the restrictions in land zoning and the controls over minimum lot sizes and dimensions as described in the diagrams on page 2.

2. INCREASE RESIDENTIAL DENSITY

In the site study area, sites over 700sqm are restricted to a FSR 0.5:1 however in land zoned R3 developers get 0.6:1

Will developers forego around 60sqm floor area in order to fast track development process? If not the fast-tracking initiative is ineffective. If so - the end result will be lower built volume, resulting in lower densities.

To rectify this problem the following controls would need to be adopted:

- Permit Manor Houses to be built on 550sq m area lots
- Amend the FSR for sites between 600-850 sqm 0.6:1 and introduce site coverage control

3. WELL DESIGNED HOUSING

From a design perspective, our studies have found that a courtyard design is the best solution for the manor house typology as the access to site amenity and privacy can be maximised.

The courtyard manor house reaches its full potential when it can be located on a corner block as it ensures that all 4 dwellings can have an entry from the street. The urban realm is in turn enhanced through an activation of multiple street frontages.

The existing setback controls do not allow the development of the courtyard typology. These controls force the building form into a 'dumb volume' occupying the centre of a site at the expense of the building amenity and usable, consolidated landscape spaces

To rectify this the setback control should be based on type of lot boundary, ie: boundary to primary street, boundary to secondary street, boundary with adjoining property.

GENERAL FINDINGS

- The principle development controls in the Draft Medium Density Design Guide are overly prescriptive. Controls such as the minimum lot areas and site widths actively inhibit the development of the manor house type and undermine the ability of this typology to increase housing supply and density.
- The design guidelines are overly conservative and general and are likely to inhibit good design.

ASHFIELD ARCHIPELAGO CONTEXT

ASHFIELD ARCHIPELAGO

A manor house with a platform, varying levels of public and private space, 'eyes on the street' and connection to the outdoors.



74 Park Avenue, Ashfield



Palace Lane, Ashfield

UNDERSTANDING OF THE BRIEF

The scheme seeks to re-interpret the typology of the manor house. The goals of the re-interpretation of the manor house are as follows:

1. To provide varying levels of public and private space achieved through the use of the platform.
2. To encourage people to use the back lane, by creating seating overlooking the back lane. This creates a safe, public space and an additional entrance to the property, again generating varying levels of privacy. This focus was influenced by Jane Jacobs' concept of 'eyes on the street' explored in her book 'The Rise and Fall of Great American Cities.'
3. To encourage inhabitants to use communal facilities.
4. To encourage inhabitants to use outdoor areas.
5. To encourage inhabitants to ride bicycles to their destination or a public transport link.

STRATEGIC RATIONALE FOR SITE SELECTION

The site selected was 74 Park Avenue, Ashfield. The site was selected for the reasons that follow:

1. The site is north-facing
2. The block backs onto Palace Lane. Increased use of the lane as a safe place to congregate was encouraged in the design.
3. The site is located between Ashfield Train Station to the north, Lewisham West and Waratah Mills Light Rail Station to the east. It is also connected to the local 'Street Bike Route Network,' which links up to The Bay Run as well as cycling routes in the city.

CONTEXT DESCRIPTION

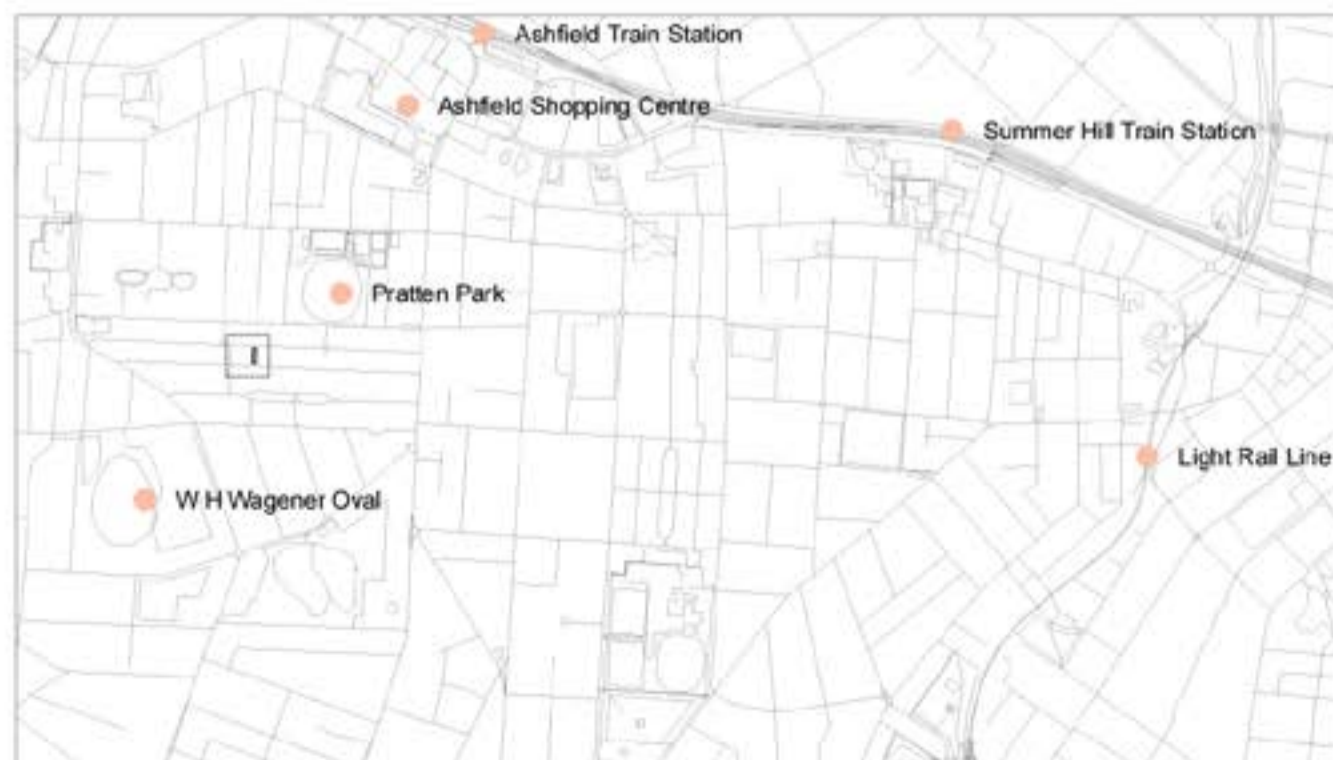
Ashfield is 9km south-west of the CBD, and our site in particular is just over 10km from the Sydney Harbour Bridge.

The area is very suburban and is characterised by modest red brick bungalows, as well as low-rise apartment buildings in some areas.

The feeling of the suburb is extremely Australian.

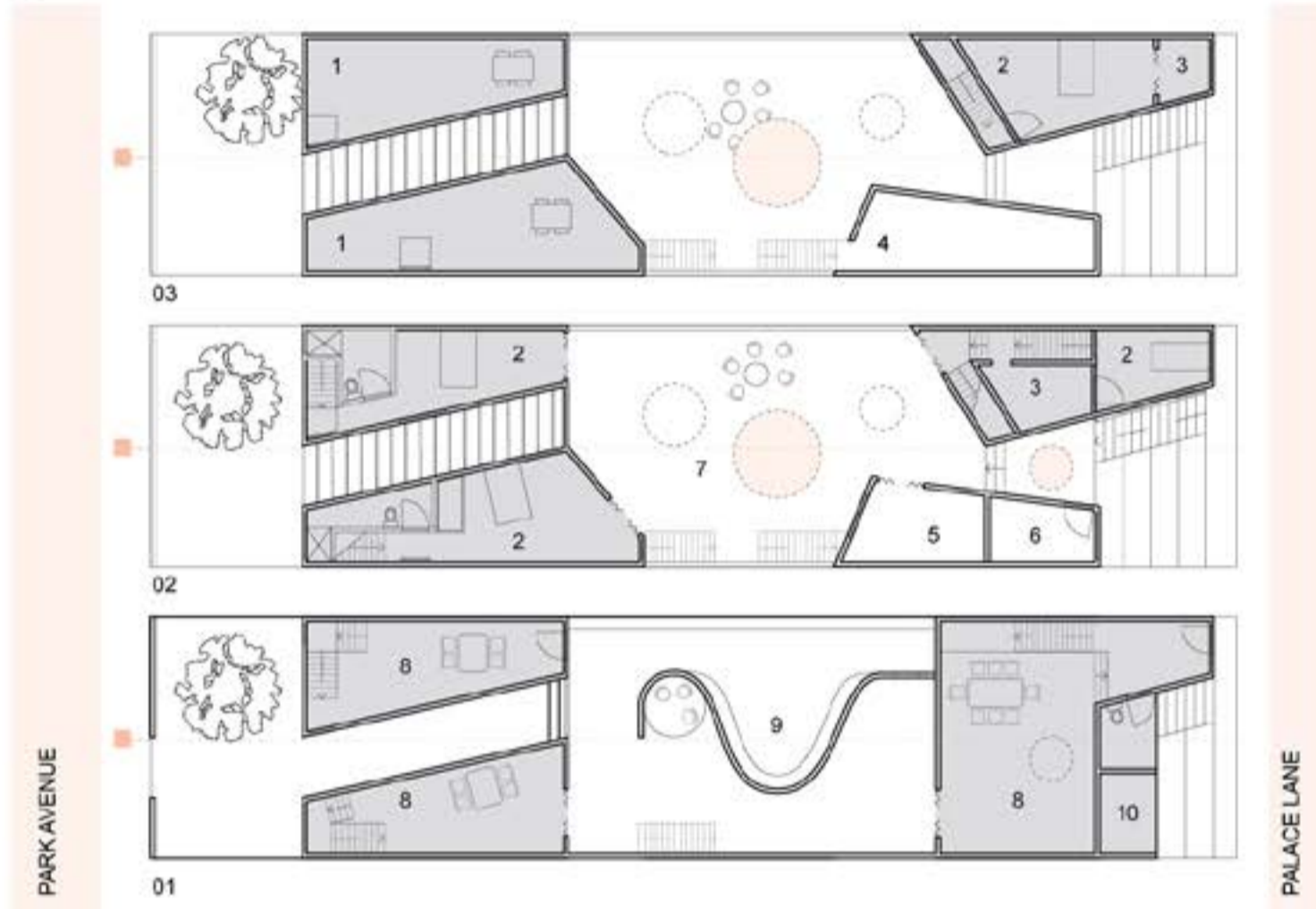
The site at 74 Park Avenue is surrounded by public transport, parks and schools.

To the east of the suburb is the neighbouring suburbs of Marrickville, Summer Hill and Dulwich Hill - all of which are extremely fast-growing. The lively village of Leichardt is nearby, as is all the amenities of Burwood.



ASHFIELD ARCHIPELAGO
CONCEPT DESIGN

PLANS 1:200



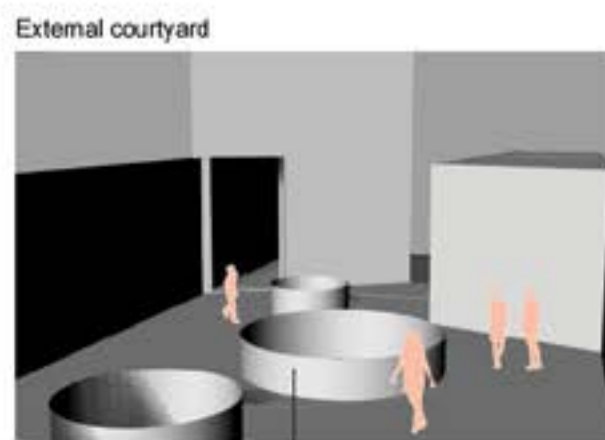
- 1. Rooftop garden
- 2. Bedroom
- 3. Balcony
- 4. Communal vegetable garden
- 5. Communal laundry + storage
- 6. Communal bicycle storage
- 7. Communal courtyard
- 8. Living room
- 9. Kitchen
- 10. Storage

NB. The areas shaded grey indicate wholly private areas.

SECTION 1:200



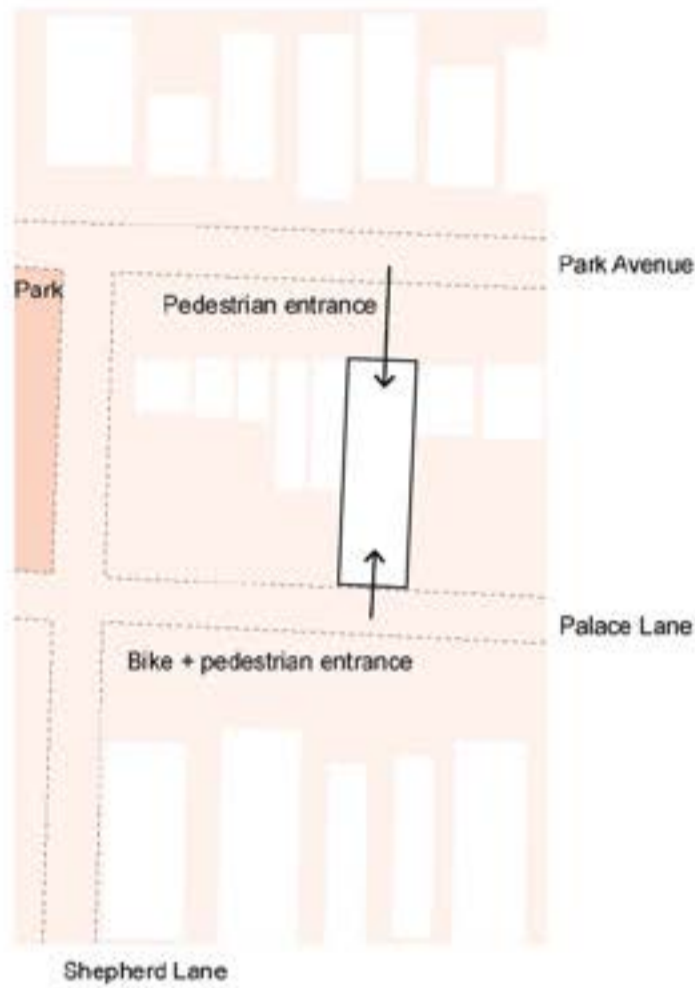
PERSPECTIVES



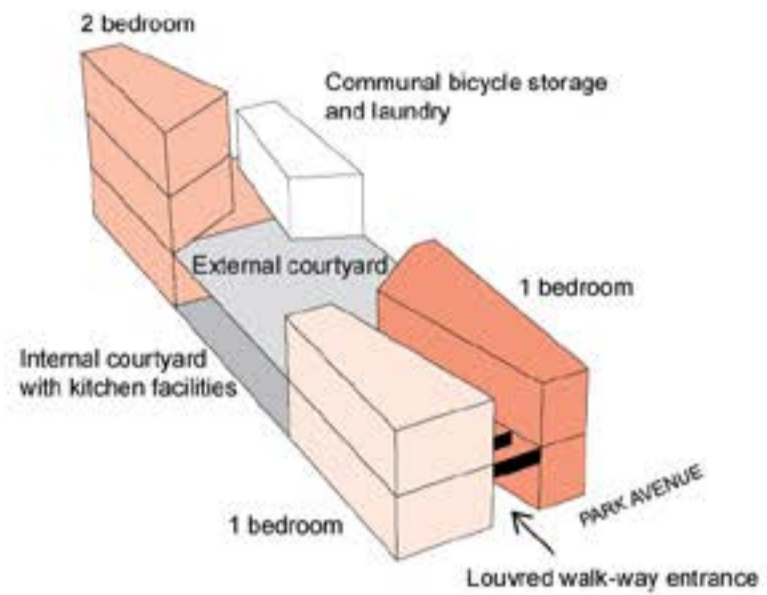
Central void is covered by polypropylene, whilst others are open air.

ASHFIELD ARCHIPELAGO CONCEPT DESIGN

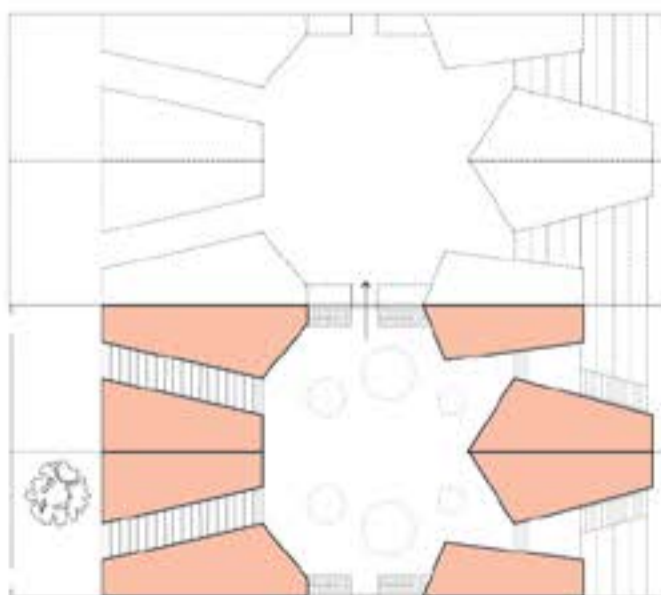
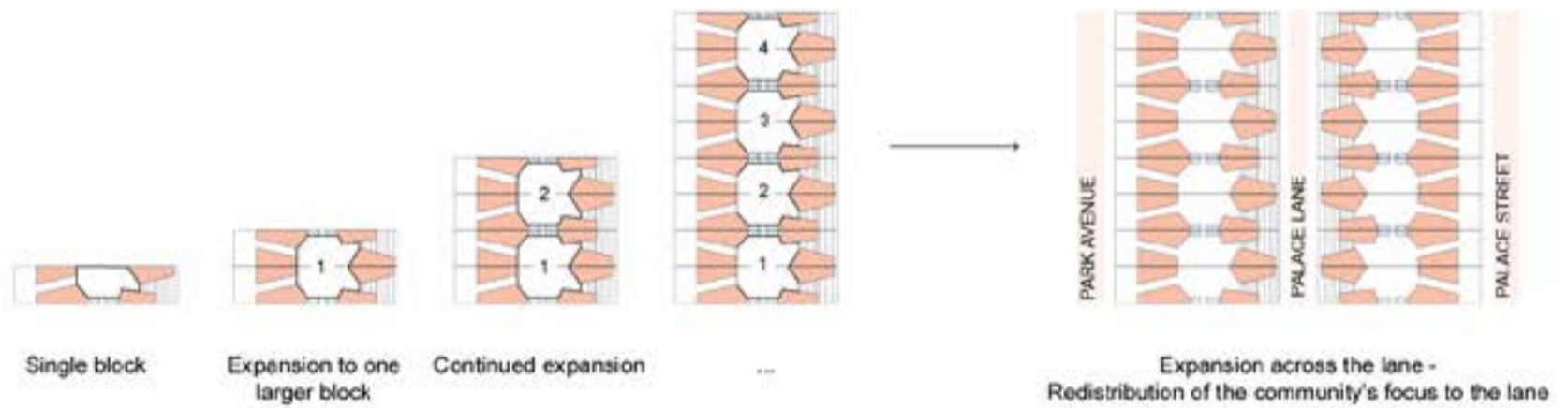
LOGISTICS OF SITE



DIVISION OF PROGRAM



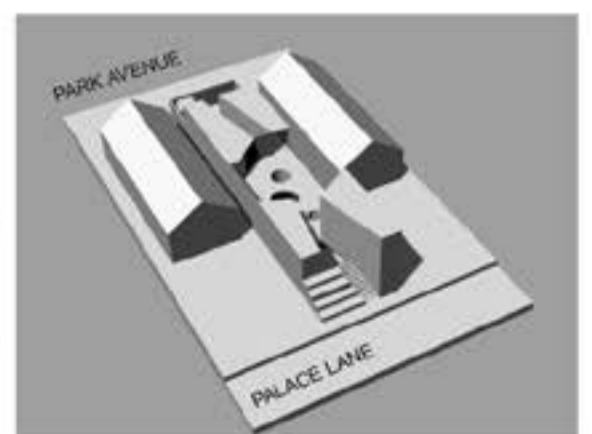
POTENTIAL FOR EXPANSION



The updated typology of the manor house can be expanded by mirroring the original scheme, creating a larger courtyard on level '02.' The communal kitchen on level '01' remains shared between only the inhabitants of the original scheme.

In the event of further expansion, the neighbouring courtyard can be accessed through an arch. This further develops the varying levels of public and private space generated in the design.

NB. This is a basic guide, it is preferable that the design and organisation of the 'islands' is adjusted based on the needs of the inhabitants and site conditions.



The site in context

NB. The materiality of the scheme is brick to compliment the existing aesthetic of Australian suburbia

ASHFIELD ARCHIPELAGO TESTING THE DESIGN GUIDE

DESIGN CRITERIA (MINIMUM WIDTH MANOR HOUSE - PG 138 OF DESIGN GUIDELINES)

The criteria outlined in the Medium Density Design Guidelines that states manor houses should be at least 10 metres severely impacts their potential to improve urban life. As can be seen in Ashfield Archipelago a manor house for three groups of occupants has been provide on a site that is less than 8 metres wide.

DESIGN CRITERIA 31 (BUILDING SEPARATION)

The design criteria that states that any two buildings should be at least 3 metres apart was challenged as a means of creating a open air courtyard for all the occupants of the manor house to share with a degree of privacy from the primary street. This would not have been possible if design criteria 31 were to not have been challenged.

DESIGN CRITERIA 47 (WINDOW VISIBILITY)

As seen in Ashfield Archipelago, windows have been created that provide light for the interior than are not visible from any point in a room yet these windows and the light that they provide are beneficial for any potential occupants.

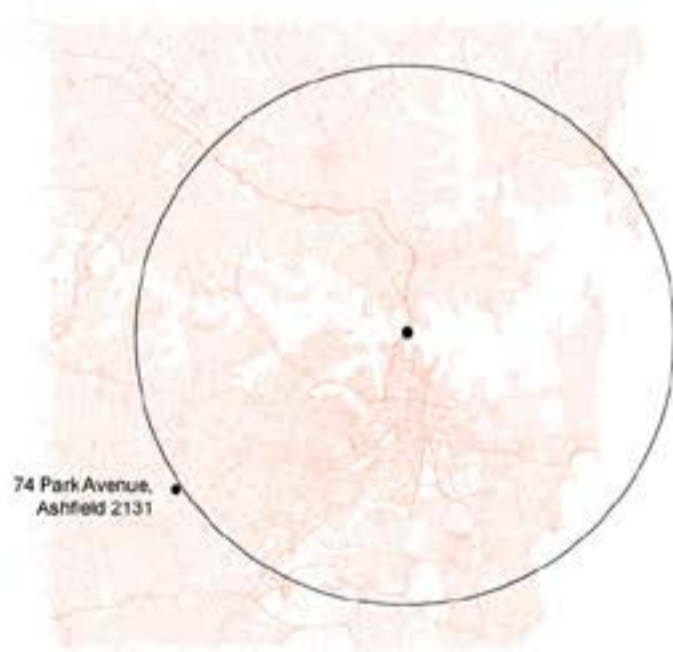
DESIGN CRITERIA 4 (TREE AT REAR)

Depending on the orientation of the site this criteria could reduce the environmental efficiency of the building. For instance the amount of desirable sunlight throughout winter could be reduced leading to an increase non-sustainable heating sources. Furthermore, one of the primary conceptual motivations for the project was to cultivate a sense of community by utilising Jane Jacob's 'eyes on the street' idea. This would also activate a larger extent of the site and the criteria demanded by the guidelines would undermine its effect.

DESIGN CRITERIA 82 (PUBLIC OPEN SPACE STREET CONNECTION)

As seen by the communal outdoor courtyard in Ashfield Archipelago, an outdoor public space has been provided for the occupants of the manor house that is not connected to a public street along one edge.

ASHFIELD ARCHIPELAGO PROJECT DETAILS



PRINCIPLE STANDARDS - MANOR HOUSES

MINIMUM LOT SIZE FOR EACH DWELLING: 8m x 35m = 280m².
DOES NOT COMPLY, UNDER 600m²

HEIGHT OF BUILDING: 7.5m
DOES NOT COMPLY, UNDER 8m

MAXIMUM GROSS FLOOR AREA FOR EACH LOT: 255m² gross internal floor area
DOES COMPLY

MINIMUM LANDSCAPED AREA FOR EACH LOT: 156m² landscaped area
DOES COMPLY

PROPORTION OF AREA FORWARD OF BUILDING LINE THAT CONTAINS LANDSCAPED AREA: 38m²
DOES COMPLY

PRIMARY ROAD SETBACK: 4.8m
DOES COMPLY (COMMUNITY AVERAGE)

SECONDARY ROAD SETBACK: 0m to Palace Lane
DOES NOT COMPLY

SIDE SETBACK: 0m
DOES NOT COMPLY

REAR SETBACK: 0m
DOES NOT COMPLY

LOVE THY NEIGHBOURS // MISSING MIDDLE

Ownership model

In suburban neighbourhoods with high levels of owner-occupancy and older buildings (built between 1950-80s), often is the case that large backyards remain relatively underused; on average, such generous property lots have a FSR of around 0.2:1.

An alternative strategy for creating more housing stock and higher density is under a **shared ownership** model, where neighbouring landowners engage in a **joint venture in building new infill housing** over their property allotments. By developing and investing in their own land, the neighbourhood can maintain its existing level of owner-occupancy while adding diversity in housing tenure types.

The central idea behind this ownership model and design proposal is to build new infill housing in the immediate time frame while conserving the existing housing stock. Any renovation works the landowners may want to undertake at a later stage are therefore independent from the infill project.

Economic viability

Unlike other densification strategies (eg. subdivision, which often results in poorly designed exterior spaces and tight circulation; larger property development projects, which tend not to consider communal amenities and usually require the displacement of existing homeowners), the shared ownership strategy **does not require the demolition of the existing house/s** on the land, thereby preserving the character of the neighbourhood. It also allows the residents to remain at their abode during construction, and after completion, earn a return on investment through short or long-term property rental.

Housing typology

This particular design would be classified as a Manor House for the purposes of this competition, as the design introduces a 2-storey building containing 3 households to the properties. This implies that there is also an option for a project with such ownership model to function as a Dual Occupancy if it includes only 2 additional households in the new building.

Suitable land parcels

This type of building project is suitable for adjacent land parcels (either side-by-side or back-to-back, refer to diagram) that have sufficient combined width and depth, and whose existing houses are modest in size and located towards the front or rear of the lot.

The site chosen for the purposes of this ideas competition is in the coastal area of Wollongong, and was selected for its generic qualities (size, dimensions, existing housing types on the allotment) that are found in many other parts of the state and country. As such, **this hybrid typology would also be feasible for other suburbs** in the middle and outer ring of Sydney.

Amenity for residents

The proposed design strategy and ownership model enhances the effective use of the site by creating a common entry and communal open outdoor space, in addition to the private open spaces for individual dwellings. The new addition to the site is designed to **accommodate for diversity**, allowing residents of different tenures, family structures and age groups to live in proximity.



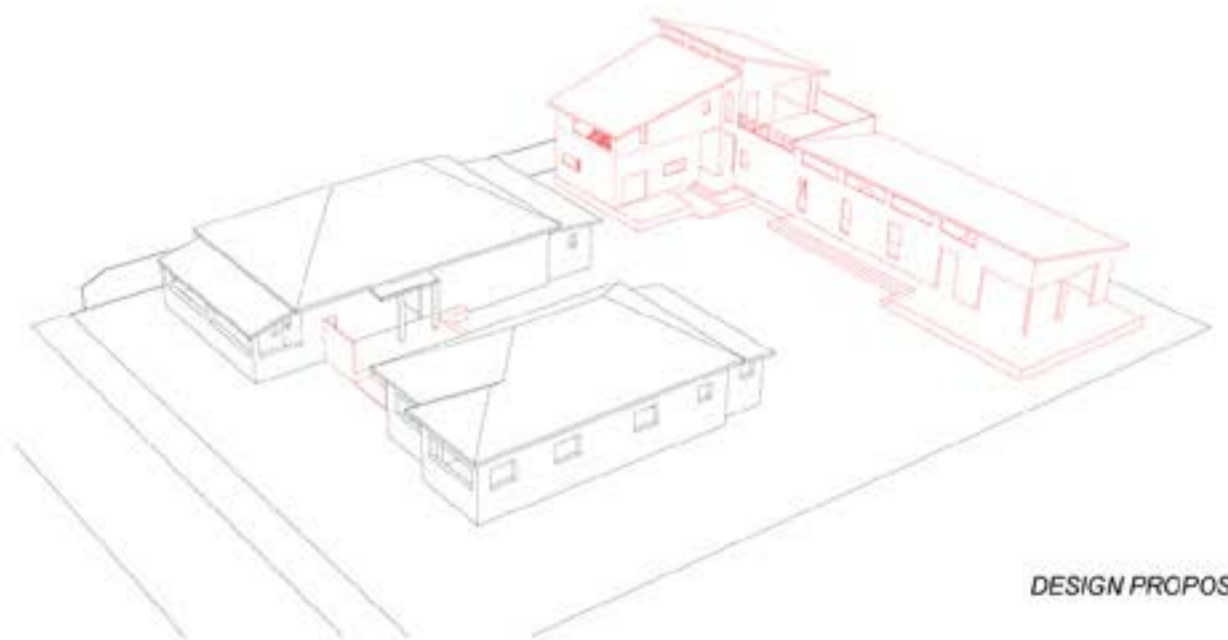
TYPES OF SUITABLE LAND PARCELS



STREETScape
Wollongong, NSW



SITE PLAN



DESIGN PROPOSAL

DESIGN PROPOSAL // 1

Unit 1

Studio with bedroom mezzanine and north-facing outdoor deck; simple kitchen attached to a double height living area with raked ceilings. Suitable for short-term guests.

Total floor area : 45m²
Private outdoor area : 6m²

Unit 2

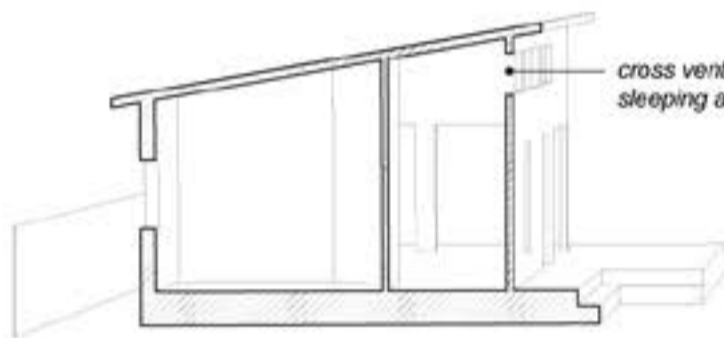
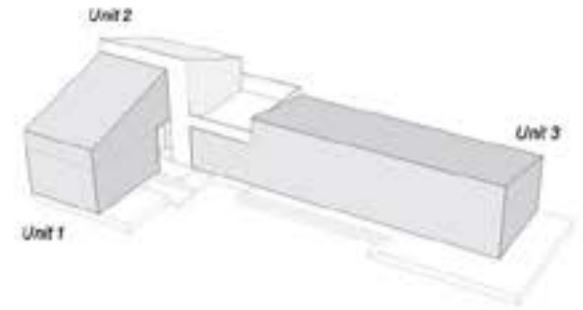
Studio bedroom and bathroom on the lower level, and the living and kitchen with raked ceiling on mezzanine. Generous roof terrace faces north and east and looks over the shared outdoor area.

Total floor area : 66m²
Private outdoor area : 20m²

Unit 3

2 bedroom apartment with all rooms situated on one level. Living area continues to a north and east-facing deck. Second bedroom is optional if more outdoor space is desired.

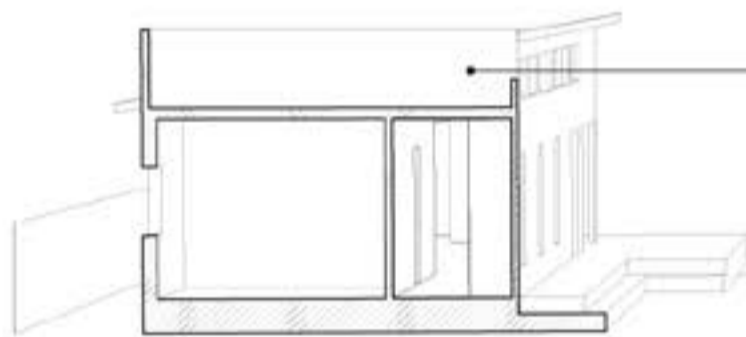
Total floor area : 91m²
Private outdoor area : 27m²



cross ventilation for all living and sleeping areas

large central outdoor space for exercise, gardening, hosting guests

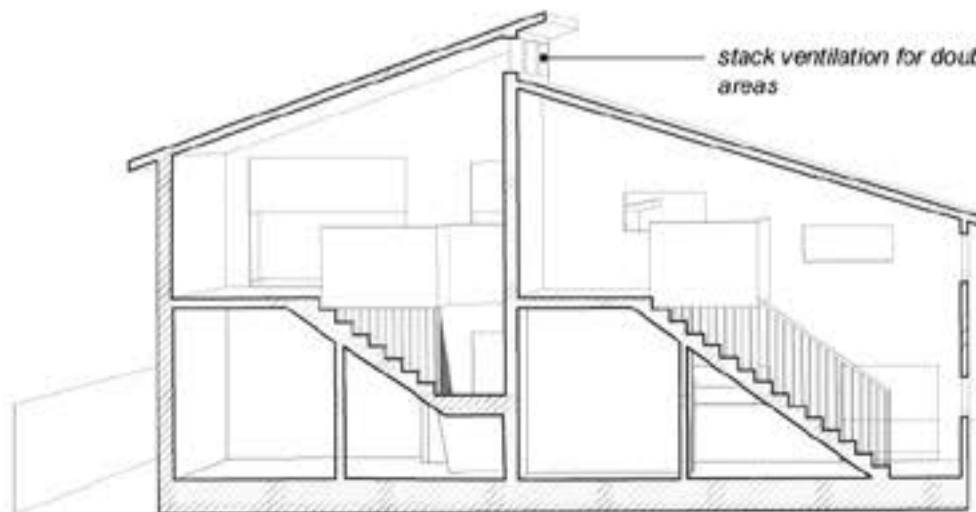
SECTION A



private terrace that maintains connection with shared common space

potential for extension of existing house

SECTION B



stack ventilation for double height areas

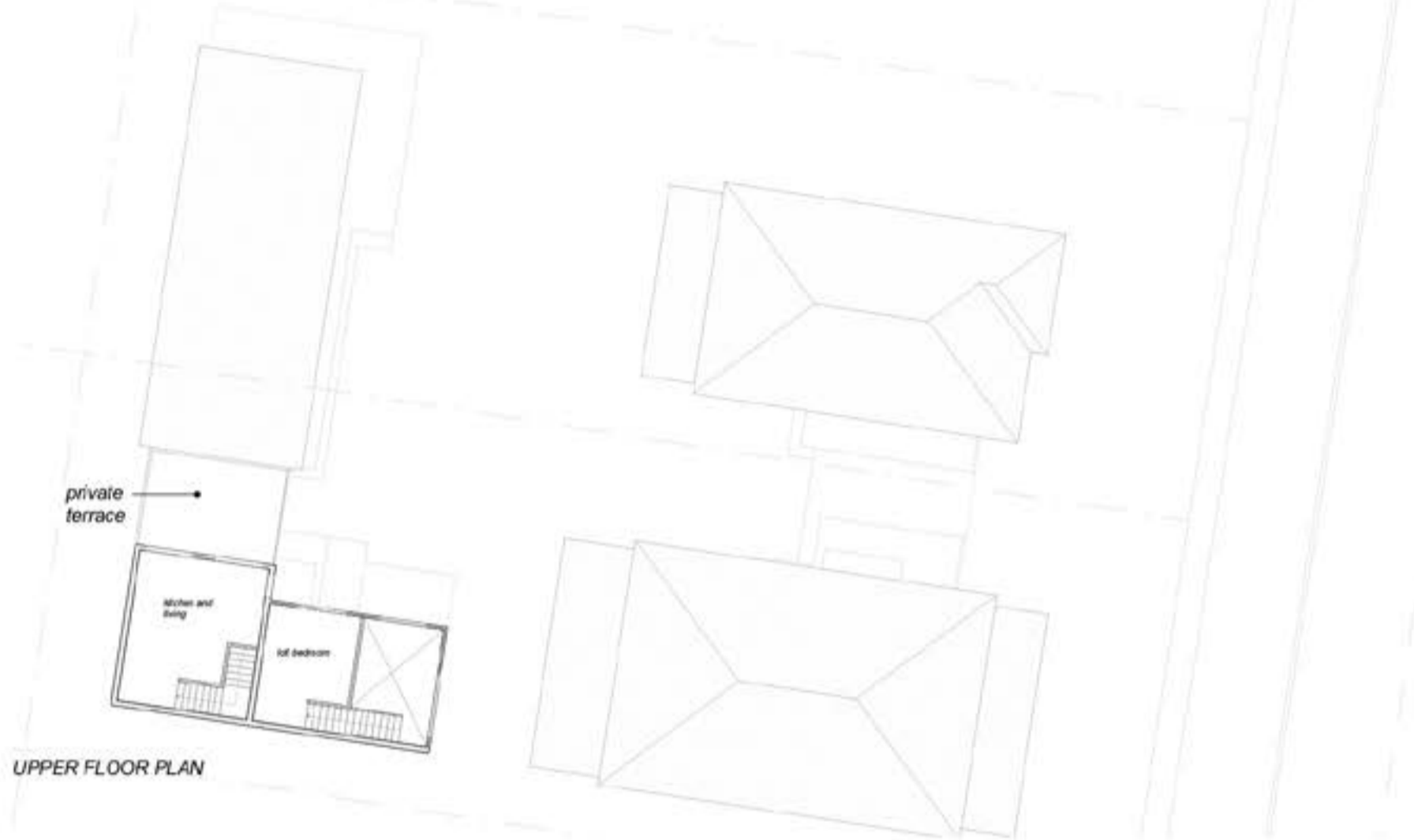
SECTION C

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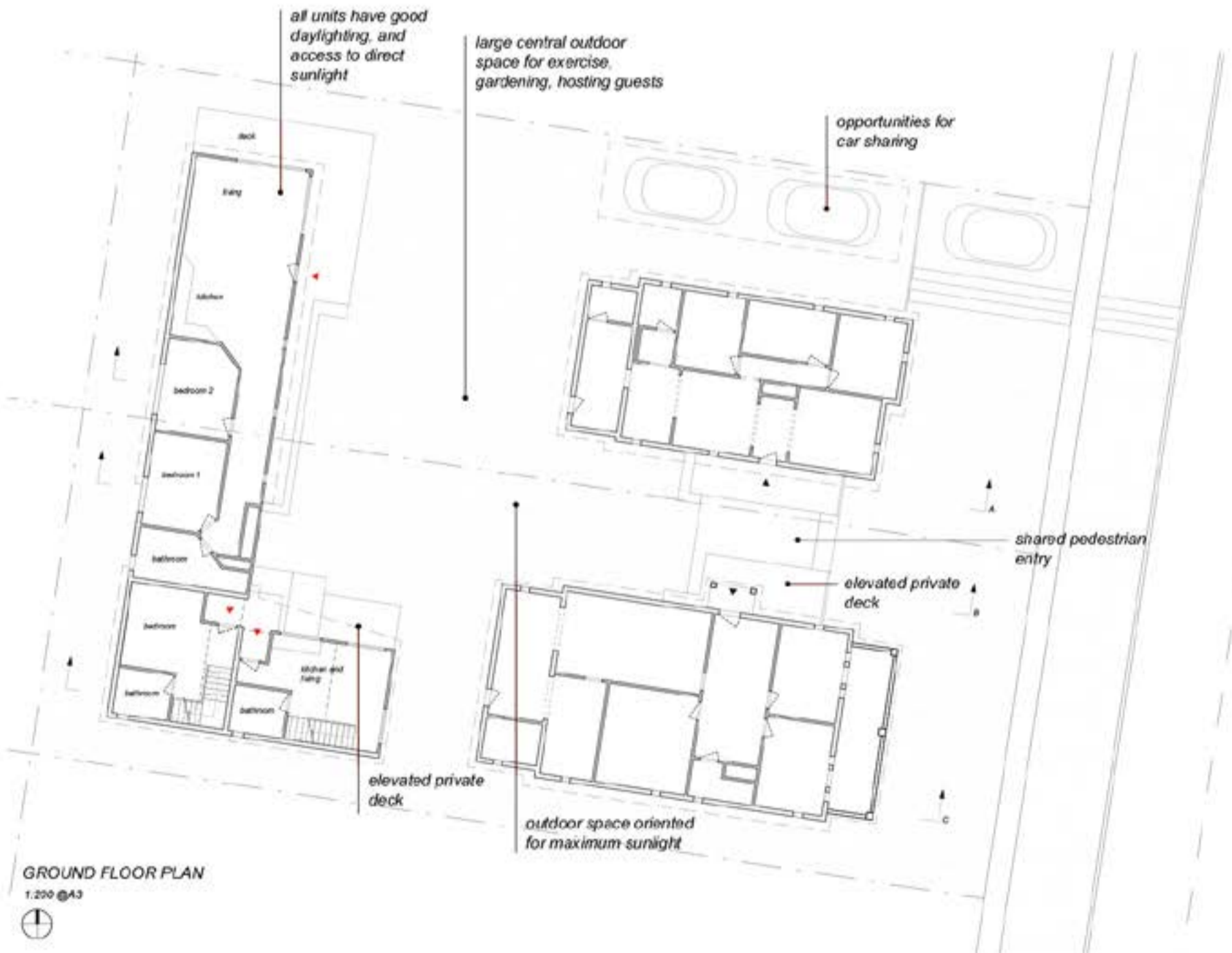


LOVE THY NEIGHBOURS // MISSING MIDDLE

DESIGN PROPOSAL // 2



UPPER FLOOR PLAN



GROUND FLOOR PLAN
1:200 @A3

Established Manors

Missing Middle Open Ideas Competition
testing New South Wales' Draft Medium Density Design Guide
in the form of a Manor House at 9-11 Frederick Street, Canterbury

Our suburbs accept all manner of change. The traditional four-roomed cottage, described by Robin Boyd as the 'bungalow' and represented throughout the country in subtle variations, supports a variety of what might be described as suburban anomalies. Living spaces are moved to new rear extensions, cars find homes in garage additions and bathrooms are added in side pods. Sheds and outbuildings dot backyards, filling the suburbs with activity. Fencing is raised as living spaces are oriented to backyards and front gardens become decorative thresholds. These observations are not value judgements, but merely a description of what is.

What if we leverage off these conditions to provide the additional housing we need? Perhaps much of our suburbs can continue to adapt over time in both an ad hoc manner, and significantly, in an exercise of strategic suburban infill: perhaps our homes can continue to evolve organically while new housing models find a place within that established grain.

Across New South Wales, nearly \$8.5bn will be spent on housing renovations across 2016-17, rising to almost \$9.5bn by 2020.¹ If Sydney could marshal a fraction of that investment, it could make a dramatic contribution to housing targets.

More compelling, however, is the fact that the mannerisms of suburban alterations and additions that drive this economy, once acknowledged, can be deployed as a set of suburban infill tactics to create housing that is similar, but subtly different.

If we can accept a garage between houses, for example, what about a kitchen and dining space that triggers an additional dwelling? Such a proposition can hold in the absence of any statutory obligation to retain an existing house. Whilst many houses in established suburbs are protected by local or state heritage listings (and this extends to entire precincts that receive protection as Conservation Zones) there is an evending logic to why we might keep such houses in the absence of these protections. What happens if we retain these houses not because we must, but because it makes sense?

Bungalows are robust. Formed of masonry, they resist wholesale deterioration and demolition. Space can be transformed, connected and extended through deploying simple inlets, as has been done for generations. Conventionally framed roofs provide occupiable space not afforded by contemporary trusses. The four-roomed structure continues to adapt to contemporary life internally whilst accepting new additions.

And bungalows provide cultural memory. They establish a necessary continuum that speaks of a suburb's life over time.

Established Manors is a design speculation that creates a compelling Manor development utilising what already exists both physically, in terms of the base buildings of a suburb, and conceptually, where the mannerisms of our suburban adaptations have already been set. It asks what might be achieved if much of what we need is already here.

¹ HIA New Housing Outlook, Housing Renovation Forecast, August 2016

photomontage base image source: Google Earth Street view (modified)



Established Manors: Missing Middle Open Ideas Competition



suburban anomalies

Located within the middle suburbs of Sydney just outside the 10km ring from the city's centre, Canterbury presents a consistent pattern of development. The projected bay bungalows are a repeated typology for areas such as Earlwood and Campsie, and are also seen closer to the CBD in areas such as Dulwich Hill and Marrickville. As in these areas, in Frederick Street, Canterbury, the bungalows' siting offers a predictable rhythm and a scaffold for the infill building elements around them.

At 25 dwellings per hectare, the street already presents density figures substantially higher than most suburbs in other parts of the country. At 50 dwellings per hectare, the Manor House scheme of this speculative proposal suggests that these bungalows can continue to meet the needs of its custodians, even in the face of housing intensification. With this in mind, it becomes possible for low-rise medium density housing to be borne of the established character of our older suburbs.



aerial image source: Google Earth (modified)

Frederick Street, Canterbury

Established Manors: Missing Middle Open Ideas Competition

1. Permitted Overlooking

Balconies and upper storey windows that are screened to prevent overlooking assume that overlooking itself is a bad thing. Balconies with planter beds distribute landscape across space more broadly and their need for maintenance gives people another reason to go outside, thereby encouraging incidental interaction.



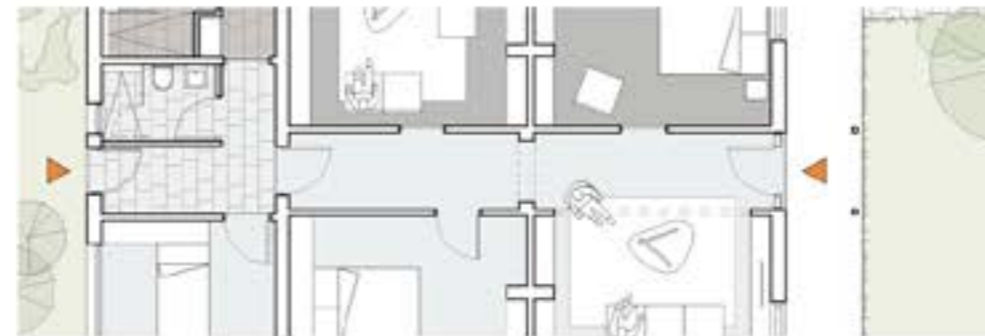
2. Shared Yards

Sometimes high quality shared space is better than low quality private space. Whilst not for everyone, many occupants would prefer to share a larger space with their neighbours. True housing diversity requires us to not just reconfigure the size and form of dwellings and yards, but the manner in which they are organised and enjoyed.



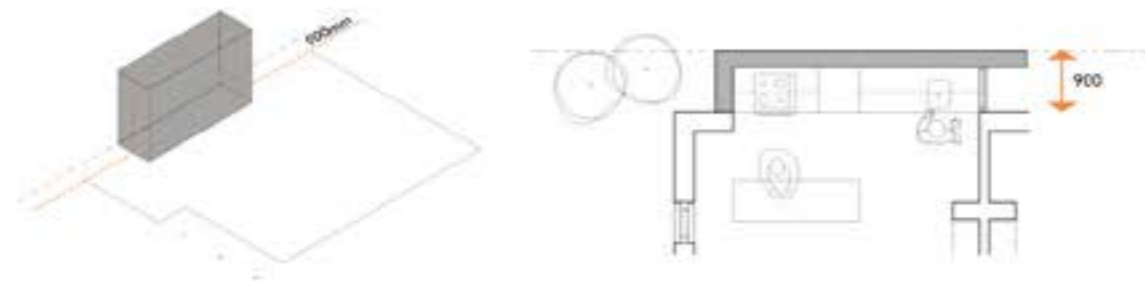
3. 'Informal' Party Walls

Whilst existing doorways in bungalow hallways can be blocked to permanently separate tenancies, retaining them as operable doors gives the choice of segregation or connectedness over to the users as they deem appropriate.



4. Boundary Construction

Even a walkway width of 900mm can accommodate a kitchen when opened to an existing room via a lintel in an external wall. Resulting in minimal impact on neighbours, this small gesture triggers an additional dwelling by converting a front bedroom to a living space. It requires that consideration be given to allowing living areas at the front of the dwelling and for the front yard to become an active space.



By nature, the rules that define any form of complying development face a dilemma: how do we provide measures that allow designers to proceed with clarity and confidence without limiting opportunities for innovation?

At the same time, we understand more than ever that as our household structures change and we work to accommodate more diverse occupants, innovation in our housing is needed more than ever before.

The *Established Manors* design speculation offers a mix of small housing choices that provide individualised space and privacy where practicable. Windows are either oriented away from others' private space or shrouded to limit over- and inter-looking between dwellings. But what if individual privacy is not a trump card that beats other aspects of such new housing? How might we accommodate scenarios where individualised space is important, but not more so than the capacity for residents to share aspects of their homes and lives if they wish?

The four dwellings of this speculative scheme are particularly suited to those seeking a form of shared living and whilst extended families are an obvious audience, so too are house owners who might team with their friends or neighbours when the house next door comes on the market and provides a group of people the opportunity to downsize, upsize or simply live differently.

Four challenges to the proposed controls of the *Medium Density Design Guide* would significantly increase amenity and neighbourliness within this speculative Manor. Each points to a more communal way of living and a more diverse way of supporting contemporary household structures.



REGION & SUBURB

Our proposal is located 31 kilometres south-west of the Sydney CBD in the suburb of Holsworthy, in the City of Liverpool, an established suburban area within Sydney's fastest growing district. Our proposal focuses on affordability and diversity, in keeping with the district's stated housing priority¹, and examines the potential for established (and new) middle ring suburbs to integrate sensitively scaled manor housing on smaller 600-700 metre blocks.

While Sydney's growth will require large amounts of greenfields development this project tests the scope for medium density *infill* housing to also play a significant role. Thus while the selection of south-west Sydney is targeted it is also a proxy for any number of established suburbs with smaller sized medium-density residential lots.

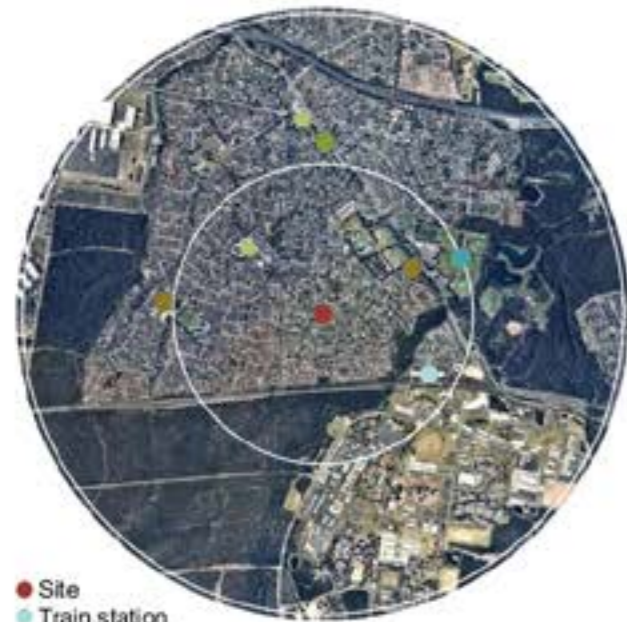
¹ Draft South West District Plan, Greater Sydney Commission, 2016.

STREET & SITE

Situated on a quiet street of mostly weatherboard houses, our proposed site, on the corner of Buna Street and Mubo Crescent, is well serviced by public transport, local employment and shopping, and schools and parks.

Houses in the area are typically simple forms built from light framed construction, often painted in light tones with highlight colours on their facades and fences. Houses are set well back from the street boundary but feature low fencing and good street engagement. These precedents form the basis for our proposed architectural language.

The below context analysis diagram illustrates the potential for dozens of similar manor house corner sites in just the immediate area.



- Site
- Train station
- Shopping Centre
- Recreation
- Schools
- Medical Centre

SUBURB ANALYSIS
1km/2km radius



CONTEXT ANALYSIS DIAGRAM
400 metre radius
1:10000



SITE SCALE DETAILED ANALYSIS
1:500

- A Vehicular entry
- B Bus Stop
- C Prevailing breezes
- D Sun path
- E Local Park
- F Front setback

1-2-3 MANOR HOUSE CONTEXT



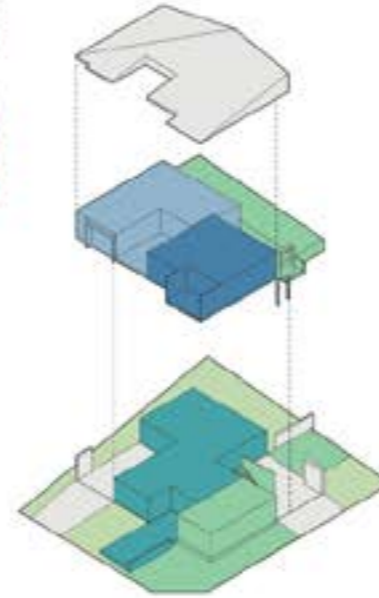
SOCIAL & OWNERSHIP

We propose a manor house of one, two and three bedroom apartments that are augmented by a series of internal and external communal areas. These shared spaces, which include a laundry and a 'slack space' that can be used as home office or spare bedroom for a visiting guest, provide additional flexibility for each dwelling. The traditional 'limitation' of strata ownership, in which residents share ownership of property, is tweaked so that its potential for community interaction and common ownership are fully realised.

The mix of dwelling sizes recognises the need for a diverse housing supply that accommodates both families and, importantly, the growing number of single person households. The design includes the provision for future connection of the one and two bedroom apartments, facilitating intergenerational or assisted living arrangements.

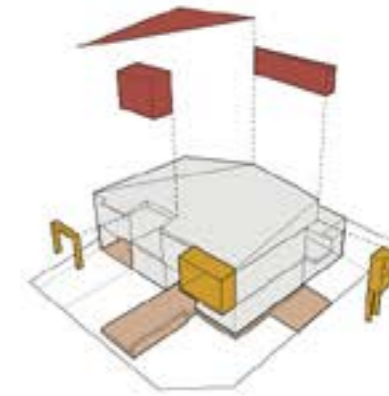
PLANNING DIAGRAM
1:500

- Common area ●
- Apartment - 1 bedroom ●
- Apartment - 2 bedroom ●
- Apartment - 3 bedroom ●



FORMAL DIAGRAM
1:500

A simple form is extruded within the prescribed setbacks and then volumes are carved from the mass to break up the street elevation into smaller volumes and respond to the increased setbacks at the upper floor. Window reveals and balconies are added within the articulation zone, providing shade to north facing windows while also marking the entry to upper floor apartments. The articulated volumes are then coloured internally, in a nod to the local vernacular.



PLAN - GROUND FLOOR
1:200

- A Common 'slack space'
- B Common laundry room
- C 3-Bedroom apartment
- D Private open space
- E Car parking / bin storage (garage or open carport)
- F Water storage
- G New tree
- H Secure and screened drying court
- I Common productive garden



PLAN - FIRST FLOOR
1:200

- A 1-Bedroom apartment
- B Private open space (Balcony)
- C 2-Bedroom apartment
- D Private open space (Deck)
- E Future door provision for intergenerational living
- F Common deck and apartment access
- G Planted roof

1-2-3 MANOR HOUSE
CONCEPT DESIGN

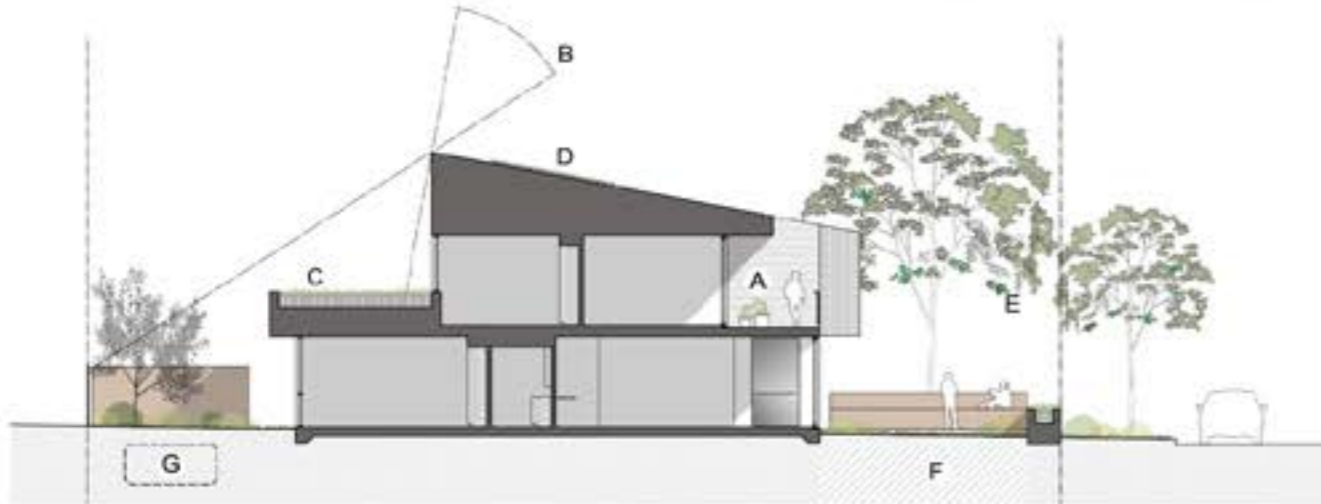


CONSTRUCTION & SUSTAINABILITY

The house is built with an 'updated' version of the same system of construction that defines much of the local vernacular architecture in the immediate area - in this case, a recycled masonry plinth and eco-concrete slabs provide thermal mass upon which prefabricated timber wall panels are sealed with high performance airtight building wrap, insulation and double glazing.

The building uses standard passive sustainability principles as well as rainwater capture and PV panels. Provision is made for future battery storage. Smart wiring and energy monitoring is also recommended.

EXTERNAL PERSPECTIVE
Corner of Buna Street and Mubo Crescent



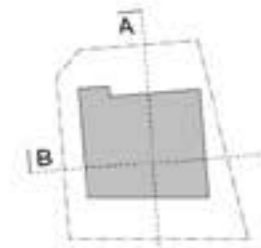
SECTION AA
1:200

- A Private Deck
- B Summer and winter sun angle
- C Planted roof
- D PV panels
- E Existing mature trees retained
- F Deep planting zone
- G In-ground water tank (rain water harvesting)



SECTION BB
1:200

- A Common covered deck/access
- B Elevation articulation



1-2-3 MANOR HOUSE
CONCEPT DESIGN II

MEDIUM DENSITY AND PARKING

As noted in the Draft Medium Density Design Guide (MDDG), "car parking and garaging is particularly challenging in medium density housing, as it often requires a large proportion of the building footprint." We propose a change to the 3.40 Car and Bicycle Parking Design Criteria for Manor Houses and Dual Occupancies that we believe strengthens the guide's objectives. We also suggest a significant change that warrants further exploration.

DUAL CROSSOVERS

The Draft MDDG encourages parking from a side street or rear laneway, with a single driveway crossover leading to a dedicated parking structure away from the manor house. While this limits the number of crossovers it adds significantly more driveway and parking infrastructure to the site, thus increasing its visibility, reducing functionality (as parking is not directly adjacent to houses), and increasing the cost of construction. We suggest that the MDDG might instead encourage manor houses on corner sites to make use of a dual driveway and garage/carport configuration, which mimics standard detached housing visually and, critically, has a reduced spatial footprint.

PARKING BAY NUMBERS

The Draft MDDG requires at least one parking bay per dwelling. This means that smaller lots (600-700 metres) are difficult to develop despite their relative frequency. We suggest that when Manor Houses are proposed within 400m of high frequency public transport a limited reduction in parking be permitted as a complying development.

We propose a maximum of one single-bedroom apartment in any manor house be allowed without a dedicated car parking bay where the above public transport distances apply and a dedicated scooter bay is supplied instead.



1-2-3 MANOR HOUSE PARKING
NTS

DRAFT MDDG PARKING
NTS

- A Increased width of parking structure and driveway
- B Larger lots typically required to achieve compliance
- C Limited area for back garden

1-2-3 MANOR HOUSE TESTING THE DESIGN GUIDE



Missing Middle



Manor House

CUL-DE-SACS

Sydney's suburban cul-de-sacs are great creators of community. They are infrequently used by cars, and offer multiple opportunities for passive surveillance. Their urban configuration is, by nature, neighbourly. Arrayed around a dead-end street, houses face one another and front yards and roads are shared. In many suburbs, cul-de-sacs are also places for handball courts, street parties and play.

The unique, wedge-shaped lots of cul-de-sacs do, however, create awkward planning conditions. The wedge - narrow at the front and broad at the back - creates cramped street frontages that are inevitably dominated by garage doors, and underutilised side boundaries.

As a consequence, a typical project home on a cul-de-sac site reads like a square peg in a round hole.

Further issues arise with setbacks. Typically, cul-de-sac houses require large (10m+) setbacks in order to reach a point on the site wide enough to accommodate a suburban building.

The Manor House typology presents an opportunity to give more families access to the communal benefits of cul-de-sac living. It is also an opportunity to create an architectural response that is tailored to the unique, skewed boundaries of these lots.

SITE SELECTION

10 Curtis Close, Cherrybrook

Sitting at the beginning of the new North West Metro line, Cherrybrook is a suburb set to increase in density. It is currently a haven for tight-knit, family-focused neighbourhoods. The Department of Planning has already proposed medium density zoning (A) within walking distance of this new station (B). The suburb is characterised by large dwellings, established vegetation and a lot of cul-de-sacs.

10 Curtis Close (C) is located within the nearest cul-de-sac to Cherrybrook station. The site is within 10 minutes' walk of the new public transport hub, as well as schools and other facilities. It is an ideal location for increased density,

but currently enjoys a context of single-storey, low-density houses amongst gardens and established trees. Any increase in density must fit within this context, disguise additional dwellings, and contribute to the suburban character.

The Curtis Close community is a typical example of the benefits and disadvantages of the cul-de-sac. All of the neighbours face the road, providing good street observation (1). They all have a large 10m setback, which places the buildings far enough back to achieve a 15m wide building frontage (2).

The site condition of each dwelling is typically compromised by tapering site geometry, with pinch-points along the frontage (3). Backyards are sprawling and irregular as a result of the wedge condition (4), and many dwellings have minimal side and rear setbacks (5).

10 Curtis Close has been chosen to become a Manor House for a number of unique reasons. In addition to the typical frontage condition, it is adjacent to a small road corridor (6), which is public land to access a piece of infrastructure behind. The Draft Guide identifies side access conditions as favourable to Manor House sites for the required vehicle access. The lot's rear faces north, and backs onto an established set of trees (7). It also has a particularly acute wedge shape (8), and so will present a rigorous test of the cul-de-sac wedge type.

MAPS OF CHERRYBROOK SHOWING PROXIMITY TO STATION AND CUL-DE-SAC SITES ACROSS THE SUBURB



THE MANOR HOUSE

The proposal is a single storey Manor House, which arranges a cluster of small houses around a shared courtyard. Each building acts as a single apartment within a Manor House, and has access to both shared and private garden spaces. In this way, the design looks to fill the Missing Middle not only in terms of density, but by bridging the gap between apartments with balconies, and houses with backyards.

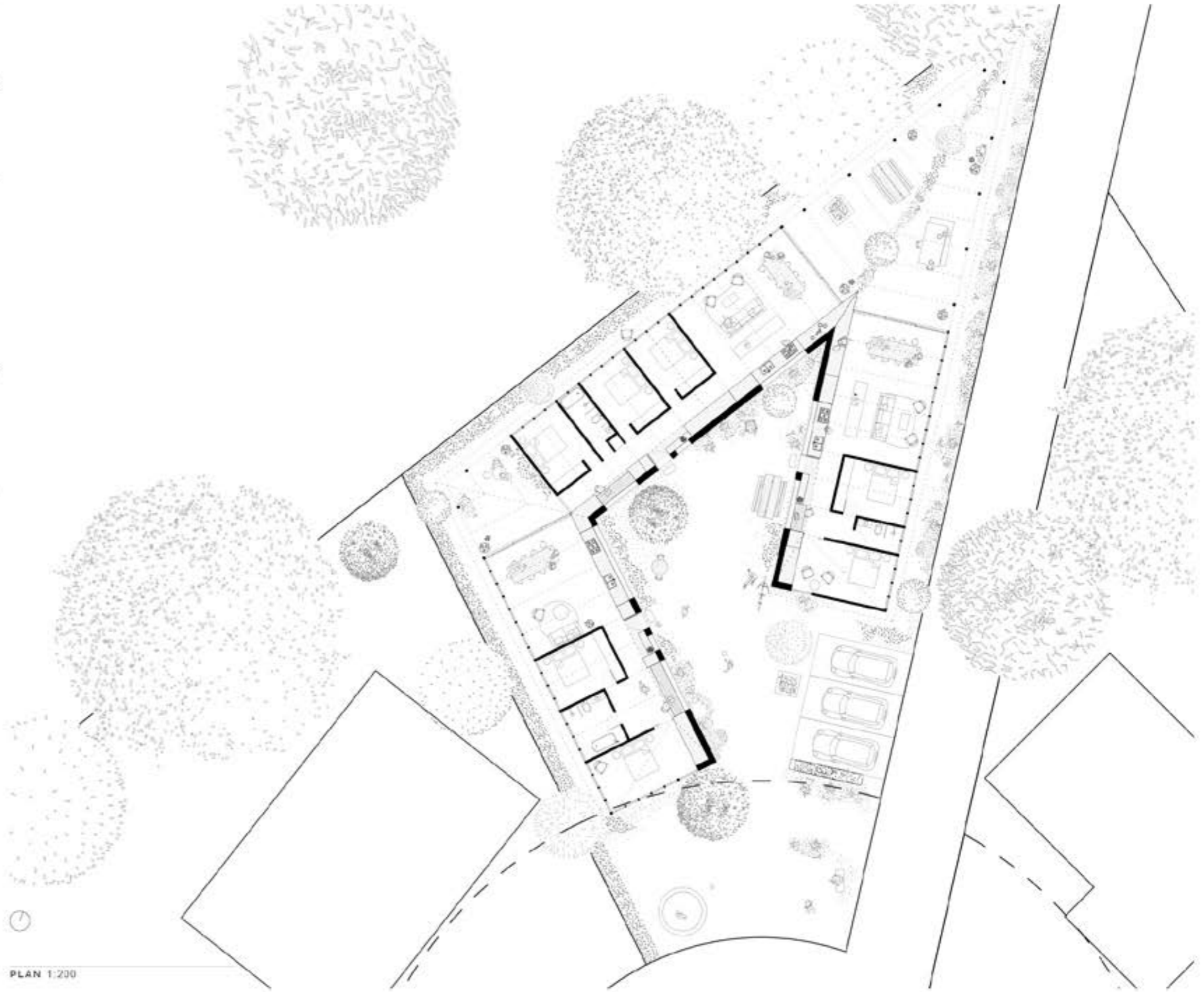
Each house aligns with a skewed boundary and creates a long, linear garden edge. Rooms look onto this space, receiving private outlook and ventilation. Each house opens to a private open space in the uniquely shaped corners of the site. The houses are simple, modular and flexible to fit the awkward cul-de-sac wedges.

The houses share a continuous services wall, containing kitchens, studies, storage and entries. Through this wall, they open onto the central courtyard - a communal space, much like a Dutch Hofje, where families can meet, play and talk through windows. The courtyard holds play equipment, bikes, gym equipment and whatever is needed by the locals.

The ends of the Manor House face the street, and can either be pushed forward for street presence, or set back to accommodate parking. The courtyard is an extension of the cul-de-sac community, open at one end to the street, and becoming more private as it moves towards the rear boundary.



OCCUPATION DIAGRAM



PLAN 1:200

THE MANOR HOUSE

The design is single storey, and has a narrow section to promote amenity. High ceilings and skylights allow the rotating plan to still provide good solar access when facing away from north. The pitched roof and continuous eave allows the house to blend into the context of brick and hipped roof dwellings, whilst

exposed rafters and full height glazing are reminiscent of the great homes of Pettit and Sevitt and other mid-century home builders. The design is flexible to accommodate a range of dwelling types, site conditions and occupant requirements. Some examples of alternate layouts:



An extended family has built a Manor House that contains a 3 bedroom house for the parents and 2 youngest kids, and two 1 bedroom dwellings - one for the grandparents, the other for the eldest daughter studying at Lini.



Four retired single women live in a small collective of 1 bedroom dwellings. Similar to the Dutch Hofje, they share their meals in the courtyard, and remain in touch with the community. A fifth dwelling is available for their families to stay in when visiting.



A large family with 6 children have built an oversized house in this diagram. They plan to divide the houses into three once the kids move out, retaining the central walled courtyard and roofing.



SECTION 1:200



TESTING THE DESIGN GUIDE

The Clustered Manor House tests several principles of the Medium Density Design Guide. It does this by exploring the potential of grouping, instead of stacking, multiple dwellings onto a suburban block.

A SINGLE STOREY MANOR HOUSE

This design challenges the assumption that a Manor House must be two storeys. Instead, it suggests that smaller houses, set within a communal geometry, are better suited to the Manor House typology.

In order to compliment suburban contexts, Manor Houses should be able to be single-storey buildings. To demonstrate this, the unrolled streetscape elevation below shows the proposal within its single storey context. The permissible two storey massing has been dotted to show its inappropriate bulk and scale.

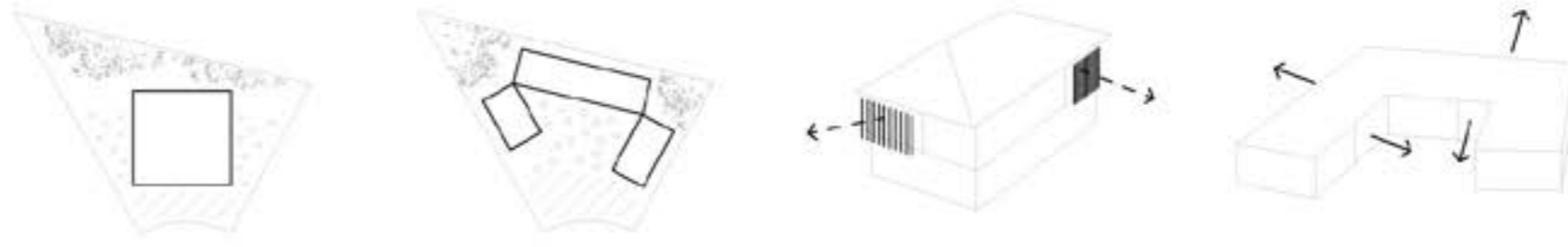
Manor Houses benefit from exploring a courtyard typology, as these are well suited to communal settings. In the case of awkwardly shaped sites, courtyard buildings also create a more attuned contextual response.

REAR SETBACKS ON WEDGE LOTS

The proposal also challenges rear setback controls. Rear setbacks are normally established on the assumption that sites are deeper than they are wide. However, on wedge-shaped sites, these controls are problematic.

An alternative on sites that are wedge shaped, or as wide as they are deep, is to treat the rear boundary as if it is a side boundary, and impose a setback from the rear corners. This would create a consolidated building area, and remove awkward tapering shapes.

This change to the setback needs to be considered as exclusive to wedge-shaped lots. Upper level setbacks should also be maintained to ensure that neighbouring dwellings are not overshadowed.

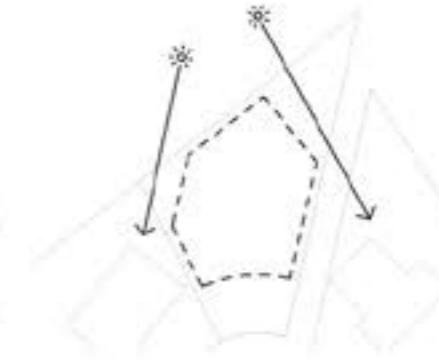
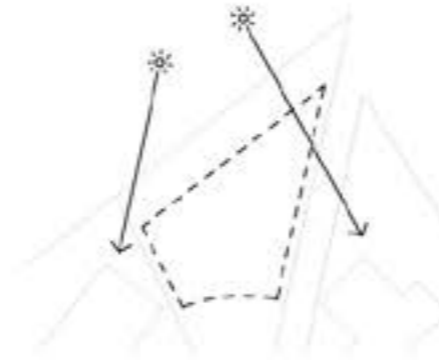
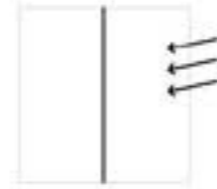


1. *The conventional Manor House model creates awkward, leftover parcels of open space on a cul-de-sac site. Side boundary conditions are unused, rear gardens are not effective spaces, and both are detached from the front garden.*

The courtyard proposal makes use of the site edges as private gardens and opens the front setback to be used as an extension of the street and courtyard.

2. *A two storey Manor House creates overlooking issues, as private open space on the upper floor can look downwards. To counter this, the design guide requires screening, which further reduces amenity.*

Courtyard-type massing controls privacy at ground level by offsetting windows, and using boundary fences to shield views. Private open spaces use vegetation as screening.



3. *The tightly packed apartment type restricts cross ventilation and solar access, and creates deep floor plates.*

In contrast, the courtyard type promotes cross flow ventilation and allows multiple orientations for sun.

4. *Design Guide Rear Setback Controls are intended to create amenity for neighbouring sites, based on a diagonal solar access across the rear garden.*

Diagonal aspect can be achieved on wedge site with the corners cut off.

UNROLLED STREET ELEVATION



Courtyard House - Ken Woolley



Hofje Guurte De Waal



Hofje In Der Groenen



Kinge Housing - Jørn Utzon



Fredensborg Housing - Jørn Utzon



Which McMansion is a Manor Home? Any or all of them could be. This proposal reconfigures the 'McMansion' as 6 small flats in a 'Manor Home', or more appropriately called 'Mansion Apartments' (as in the UK). This will harness the affordable value inherent in the way project homes are economically built in Australia. But offering more diversity: more dwelling types for a greater range of residents, with greater Sustainability, Affordability and Diversity. That's what density in the Missing Middle should deliver.

*Images of Rosewood, McDonald Jones, Metricon and Masterlon houses used with grateful thanks

manor ^s
~~PROJECT HOME~~ - CONTEXT

-  5 bedrooms
-  4 bathrooms
-  2 cars
-  \$450,000 / dwelling (ex-land)



-  6 apartments
-  6 bathrooms
-  2 share cars + bicycles
-  \$150,000 / dwelling (ex-land)



AFFORDABILITY

'McMansion' project homes like this one are the most affordable dwelling type in Australia, being built using well tried and relatively low cost systems, part factory made, part site assembled. But the designs are conforming and uniform, in both plan and the family types that they appeal to and can afford them. On the other hand, whilst apartments offer greater diversity they are often much more expensive to build.

SUSTAINABILITY

The home will take advantage of all the great sustainable aspects of suburbia: large roof areas for PV panels; plenty of water collection in tanks; large gardens for food; and great atmosphere for health. But it will also raise the sustainability that comes with increased density: more patrons for public transport; share cars; more customers for local, walkable shops and services etc.

DIVERSITY

We propose to take project homes like this one, and reconfigure them internally as Manor Homes, each with 6 studio and 1 bed apartments (or similar). It has the same form, plan shape and area the project home, so it appears as a large house in the street, and matches the same parameters used under CDC for project houses. It fits into, but densifies and diversifies, the existing community.

manor s
PROJECT HOME - PLAN



HIGH QUALITY PROJECT HOME

Brickwork is taken from external to internal, as acoustic walls between apartments.

Ornamental gardens are replaced with vegetable gardens and fruit trees.

External brickwork is replaced with a rendered insulation panel like Exsulite-Kooltherm to improve the 'esky-like' thermal performance.

Roof is covered with PV cells that provide all the common area power, with excess to the grid to offset costs.

Increased reflective and convective thermal insulation in the roof, ceiling and walls.

Instead of a swimming pool, a bigger tank beyond Basix provides more water for the garden.



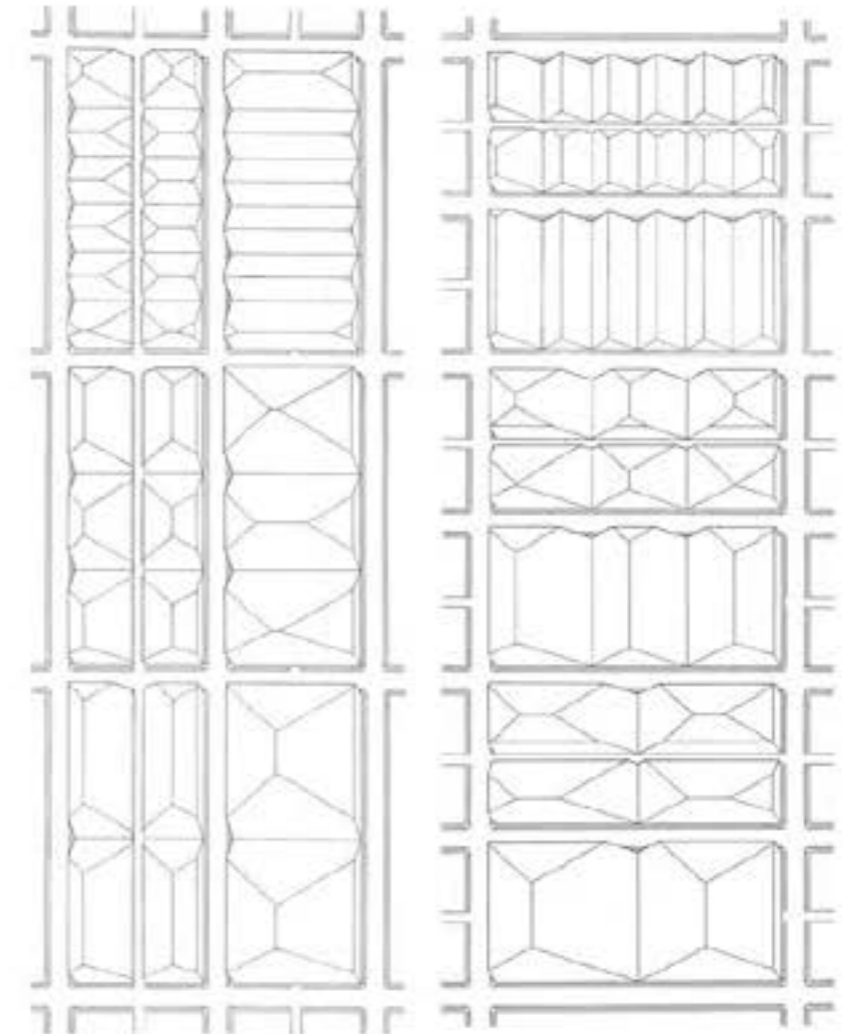
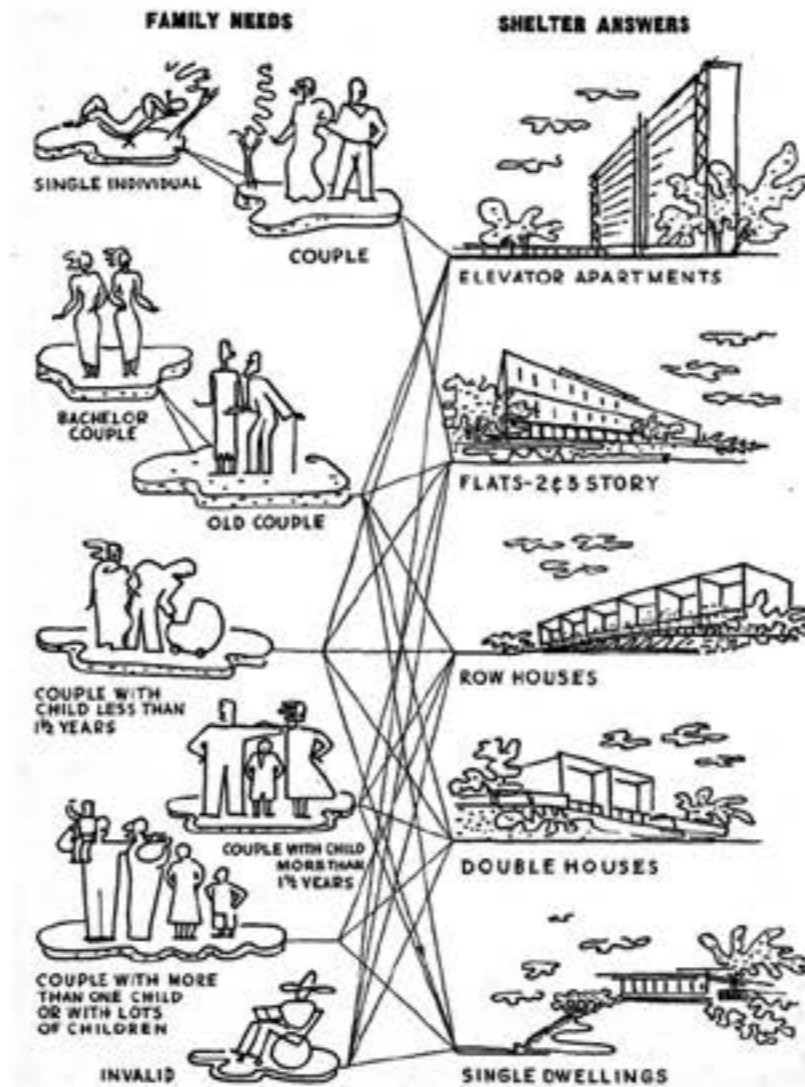
RECONFIGURED MANOR HOME

Some subtle changes have been made in the structure and finishes improve the sustainability of the Manor Home over the Project Home.

manor s
~~PROJECT HOME~~ - ELEVATION

If Manor Homes can have the same plan shape and area as a 'McMansion', then the code for large houses and Manor Homes should align. But they differ in some subtle, but significant ways, such as the setbacks being increased on the sides beyond 15 metres, and at the rear. A home is a home is a home: we should NOT discriminate if they are a Manor Home. And we suggest deleting the FSR controls - use envelope controls to control bulk. If increased density is desired, meaning more floorspace, then it is the aspects of amenity, sunlight, shade, and privacy that should control form, not an arbitrary number.

“... if we were to abandon our pathetic nationalism, and see the existing bungalows of suburban Australia for what they are, redundant, we would be well placed to solve our dilemma. All that would then be required is to gradually replace them with a slender four storey housing type, set along exactly the same alignment as the original houses; and so, not only could the population density of Australia’s wonderful grid-suburbs be increased six times, *not one tree would need to be removed to do so.*”



Peter Myers, "Australia's Grid-Suburbs: Temporary Housing in a Permanent Landscape," B Architectural Magazine, Denmark, 1996.

Diagram of 'Forms of Shelter': house types matched to occupants, p46, "Homes in the Sun" by Walter Bunning, W J Nesbit, Sydney 1945

'Assemblage of site envelopes based on sun access', p108-109 in 'Sun Rhythm Form', MIT Press, 1961.

To elaborate we offer 3 pieces from history that support this approach to Manor Homes. The first is a quote from the renowned Sydney architect Peter Myers, on redeveloping the suburbs. The second is a diagram from the 1945 book 'Homes in the Sun' by Sydney architect Walter Bunning. So insightful from 70 years ago. And thirdly, a proposal for envelope controls by US architect Ralph Knowles in his book 'Sun Rhythm Form' of 1961.

manor s PROJECT HOME - TESTING THE CODE

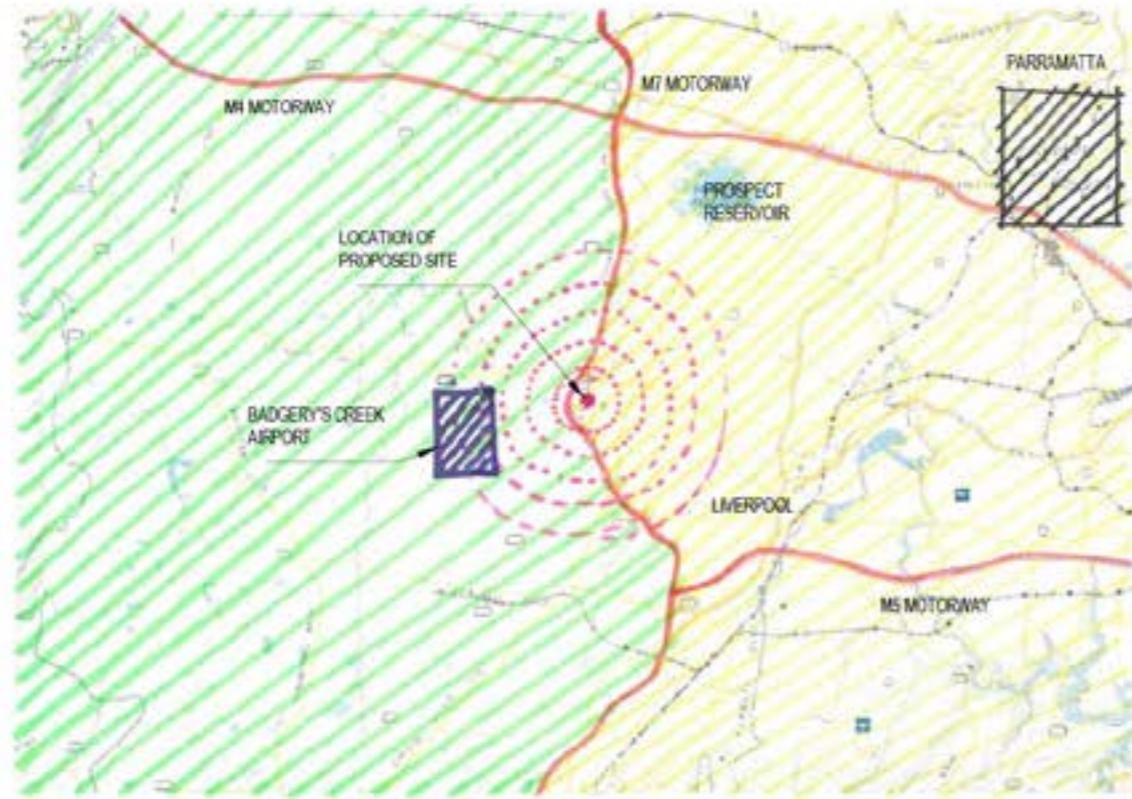
MODERN MANOR

The Middle Missing Competition has prompted an interesting response to a critical challenge facing the future of NSW. Having chosen a site on the brink of expansion along the Western corridor near the M7 and the new proposed Badgerys Creek Airport, there felt a need to revisit the concept of the Manor and bring it into the 20th Century. 18 Battenberg Close, Cecil Hills will be the location of the proposed Modern Manor. It seeks to bring a new way of thinking, living and prospering in this booming climate. My proposal addresses the issues relating to a Modern Family who can work, live and invest from home. The combination of a 3 Bed, 2 Bed and 1 Bed studio style apartment living arranged to give preference to larger families on the ground floor, and single more younger generation on the first floor with option of 2 Bed or 1 Bed. The Modern Manor also has 2 relatively large Commercial and Retail spaces that can be rented out to create a more vibrant lot and exposure to community needs. Parking will be located at the rear of the site away from street view. The arrangements of units can be altered in the future to address growth and change of lifestyle.

18 Battenberg Close, is located approximately 5 mins from the M7 Motorway. The Suburb has quite large lot sizes and the architecture resembles larger homes, specific for large families. Many of the issues facing residents is amenity and work for the younger generations growing up in the Suburbs. Modern Manor seeks to Address this with promoting small business. This will reduce the need for travel and provide families with more quality time. A few sporadic Modern Manor placed within close proximity will be the basis for a new city sprawl rather than one large collection of business hubs where everyone will converge.

One of the main factors for choosing this site was the proposed new Badgerys Creek airport which will play a vital role in reducing congestion at Sydney's main airport. The expected job growth alone from the airport is very positive. The Modern Manor can adapt to incorporate single traveller or families looking to start a new life in a bustling city. This in turn will give incentive for more investment and interest in Greater Western Sydney. Cecil Hills is also very close to Parramatta which is expected to be the new CBD. Moving away from Apartment and dual occupancy, the Modern Manor incorporates elements of the two and brings a breath of fresh air to living. The family can start to surround their children with a backyard and pets to revisit the Australian Dream.

The Modern Manor has been thought with promoting the family to once again connect in a new way, to bring a sense of community to a rapid changing society engrossed in technology but disconnected from reality. 'Create the space humanity will come to play'. In the process this will spur the mind into innovation and a new way of thinking pushing Our Country in the 20th Century.



PROJECT: CECIL HILLS 18 BATTERBERG CLOSE CECIL HILLS	DRAWING TITLE: Context Sheet	NORTH: 	PROJECT NO	DATE	DRAWING No.	REV.
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PROJECT:
CECIL HILLS
 18 BATTERBERG CLOSE
 , CECIL HILLS

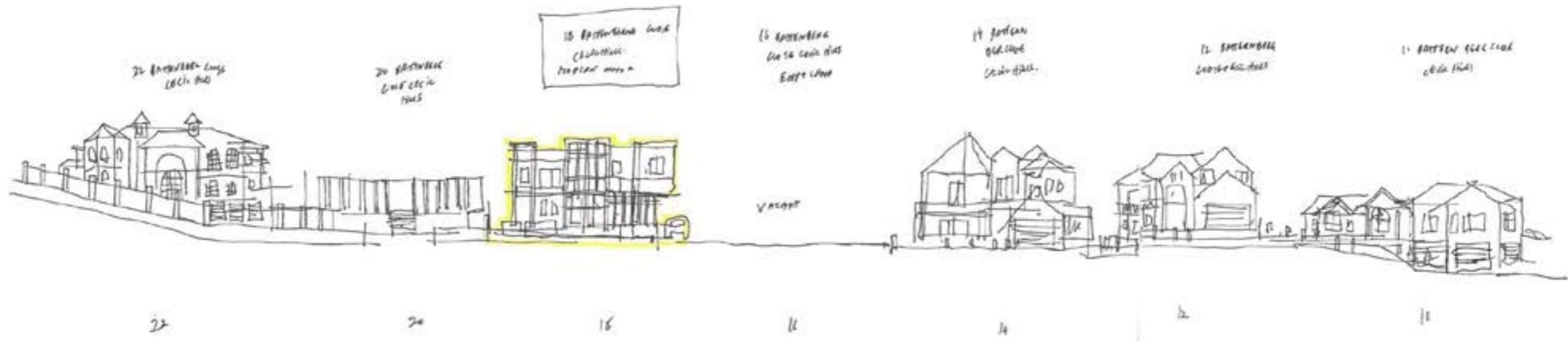
DRAWING TITLE:
Concept Design



PROJECT NO: 1	DATE: DEC 2016	DRAWING No: 2	REV:
DRAWN BY: Author	SCALE: 1 : 200		

Local Character & Context

The application breaks free from the conventional hip roof to implement a more modern take on Residential Architecture through a range of soft natural materials, contrasted with aluminium glass windows and door glazing.



Public domain Interface

The interesting dilemma brought upon by such a proposal prompts the concern of the relationship between private and public space. This has been achieved through a series of retaining walls at different height which serve to blur and expose the realms of separation. This may encourage a conversation to be had between neighbours to encourage communication and interaction.

Internal streets

Reducing the impact on street and giving the residents some sort of security like apartments dwelling where they know the car is safe. This will increase interaction between neighbours create a bond of trust and ownership.

Orientation and siting

Each dwelling on the site including the commercial properties have north facing living rooms and aspects which increase the liveliness of the occupants. This in turn promotes a healthier workspace and increase interaction with other occupants



ORIENTATION & SITING



Public domain Interface

PROJECT:
CECIL HILLS
18 BATTERBERG CLOSE
, CECIL HILLS

DRAWING TITLE:
**Testing the Design
Guide**



PROJECT NO:
1
DRAWN BY:
Author

DATE:
DEC 2016
SCALE:

DRAWING NO:
3

REV:

Towards Medium Density Master Plans

Introduction

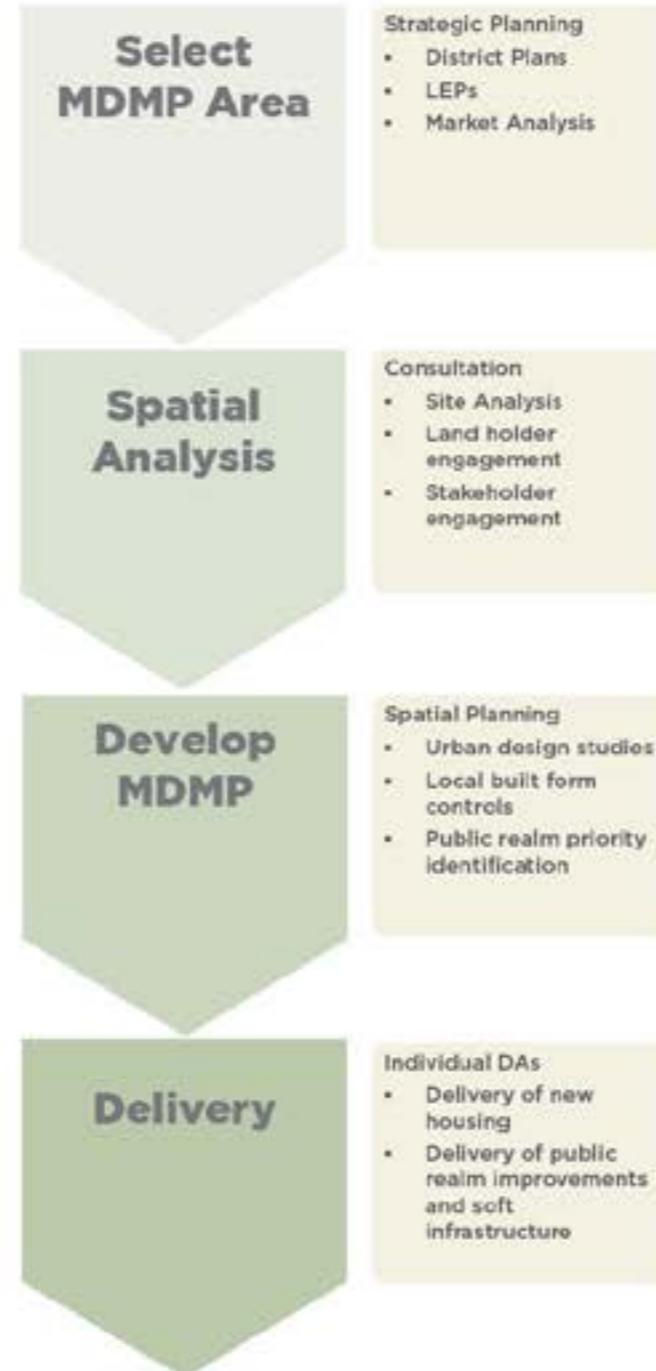
This study is based on the premise that the architectural community in Sydney can create quality designs for new Dual Occupancy, Terrace and Manor House developments that are innovative and well designed.

We believe a more fundamental issue is the creation of a robust planning framework that safe-guards zones from Medium Density Typologies around developing Strategic Centres. Our proposition is the creation of Medium Density Master Plans for specific areas that will create new contemporary inner suburbs for Sydney's Strategic Centres such as Parramatta, Liverpool and Chatswood.

RATIONALE AND STRATEGIC DRIVERS:

- That currently the mix of Medium Density housing is way below the potential market capacity for this product
- That the allocation of a R3 zoning for Medium Density products will mean a highest and best use redevelopment scenario will also lead to higher yielding Residential Flat Buildings
- That the Standard Template LEP should be modified to accommodate Medium Density in R2 Low Density Residential Zones
- That State and Local Government will have to develop a plan to accommodate Medium Density Housing and allocate areas for priority delivery of this product
- That delivery of Medium Density product should be strategically integrated into the existing urban structure to enhance connectivity, amenity and vitality with specific typologies targeted at areas to deliver new links or frame existing public spaces
- That development levys and taxes should be waived for delivery of Medium Density in the Priority Medium Density Zones to encourage small scale development and the amalgamation of lots required
- That localised public domain improvements should be undertaken as part of the delivery of fine grain Medium Density development to create a 'hard-working' urban public realm
- That opportunities for fine grain local services such as cafes/shops/small scale employment should be incorporated into Medium Density area to provide amenity
- That more compact housing forms on resultant Torrens Title lots smaller than 120 sqm should be considered
- That Zero-lot line (to existing detached dwelling lots) of up to 2 storeys/8 metres, should be permitted in Medium Density Areas

IMPLEMENTATION OF THE MDMP CONCEPT



Indicative Medium Density Master Plan - Urban Form Outcome

Medium Density Master Plan Design Drivers

Medium Density Master Plan - Spatial and Statutory Design Drivers

A MDMP will allow Local Government Areas to direct change in a controlled and sustainable manner. Most importantly the insertion of new typologies and denser housing forms can be used to instigate new public realm links and focus new services into existing neighbourhoods.

The MDMP for the Westmead Study Area has excluded areas suitable for high density and Residential Flat buildings, Strata Title properties and Heritage Items. Small lot properties with short frontages or less than 600 sqm have also been excluded as potential sites for Medium Density typologies. The analysis has focused on how connectivity and permeability along with access to key features such as open space and transport can be improved through the insertion of new fine grain development.

MAPPING AND EXPLANATION OF THE DESIGN DRIVERS

 Study Area Boundary  Focus Area Boundary

Study Area and Focus Area

The study Area is a 120 hectare zone south of Westmead and Wentworthville Stations. Comprising mostly single dwelling houses the area presents an excellent opportunity for change, and is currently zoned R9 Low Density Residential, which has prevented the proliferation of three storey walk-up development seen elsewhere in the locality.

The Focus Area has been used in this study to illustrate the potential outcomes.

 High Density Residential  Medium Density Residential

LEP Residential Zoning

The existing R3 and R4 High and Medium Density areas in close proximity to public transport and existing commercial and retail areas have been excluded - and could be expanded as required.

 Public Open Space  Access to public open space

Open Space and Access

The existing open space network has few access points, and in some cases have rear gardens backing on to them.

 Long Blocks > 300m  Cul-de-sac Blocks

Block Form Constraints

Long blocks and cul-de-sacs restrict walkability within the local area and reduce opportunities for social interactions

 Strata Titled Lots  LEP Heritage Protected Lot  Small Lots (< 600 sqm)

Constrained Lots

Heritage Items, Strata Title Lots and smaller lots less than 600 sqm have a low chance of redevelopment and could also be unsuitable for certain forms of Medium Density Development.

 Train Line and Station  Local Bus Route and Stop  Metro Bus Route and Stop  Existing Cycle Path

Transportation network

Understanding connectivity to public transport and active transport networks is a key driver.

0 200 N



Key Considerations in the Development of Medium Density Master Plans

The Medium Density Master Plan

A Framework For Change And Diversity

The MDMP would set out a long term framework for the diversification of the Westmead South Area. The MDMP would provide flexibility to allow for organic development while also controlling the built form typologies in certain instances to ensure that the wider benefits such as improved connectivity or activation can be achieved.

The MDMP would specifically require Terrace or Manor House Forms with minimum lot amalgamations where new connections were required, Dual Occupancy product would be discouraged in these locations.

The MDMP would also identify locations for retail or small scale employment uses, and public realm and active transport upgrades.

STUDY AREA METRICS

Total study area:	115,799 ha
Total lot area:	58,063 ha (excl. open space lots)
Number of total lots:	9397 (excl. open space lots)
Total constrained lots area in proposed Masterplan:	33,434 ha
Number of constrained lots in proposed Masterplan:	445
Total potential lots area:	58,063 ha - 33,434 ha = 24,629 ha
Number of potential lots:	9397 - 445 = 8952
In proposed Masterplan Design	
Total recommended medium density lots area:	14,939 ha
Number of recommended medium density lots:	900 (upto 1,000 new dwellings could be provided)

MDMP FEATURES AND CONTROLS

- High Density Residential
- Medium Density Residential

LEP Residential Zoning

These are areas where the existing R3 and R4 zones should be expanded to reduce pressure on the allocated MDMP area.

- New Cycle Link
- New Access Lane/Street

Enhanced Connectivity

These are new connections to break down block lengths or permeate cul-de-sacs. The built form would be controlled for these lots.

- Constrained Lots

Lots with Low Change Potential

These are the constrained lots mapped through the spatial analysis, where change to Medium Density is unlikely or undesirable.

- Terrace House Only
- Manor House Only
- Any MD Form

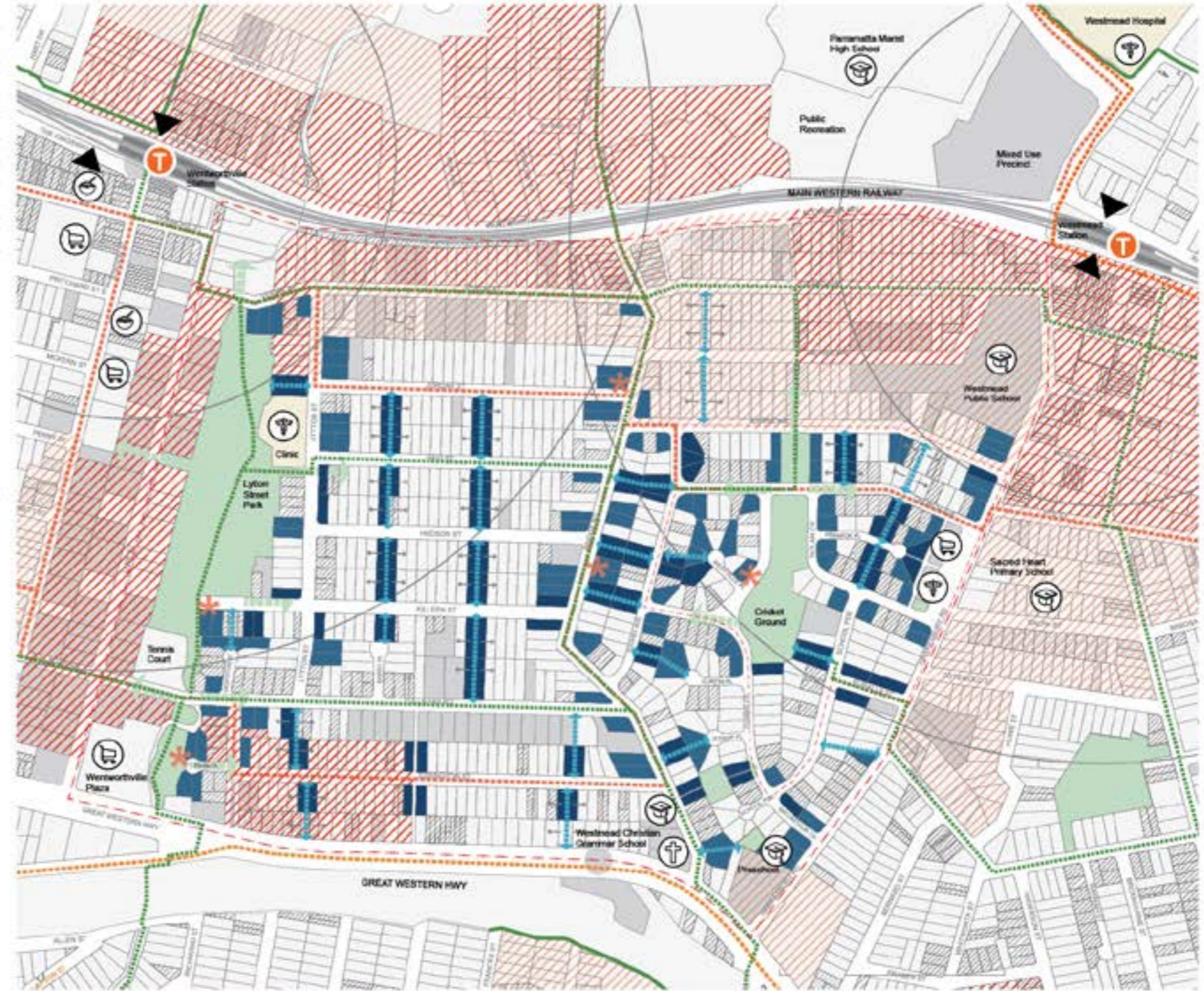
Typology Requirements

Within the MDMP there will be lots where Dual Occupancy forms should be discouraged. These are generally places where new links are required, non-standard form lots and opportunities for activation.

- Activation Opportunity

Place Activation

With increased density comes the ability to sustain local retail and services that become walkable local features and destinations. These can be identified and new fine grain development designed to include shops, cafes or small scale local work hubs.



The Medium Density Master Plan for Westmead



Manor House Typology

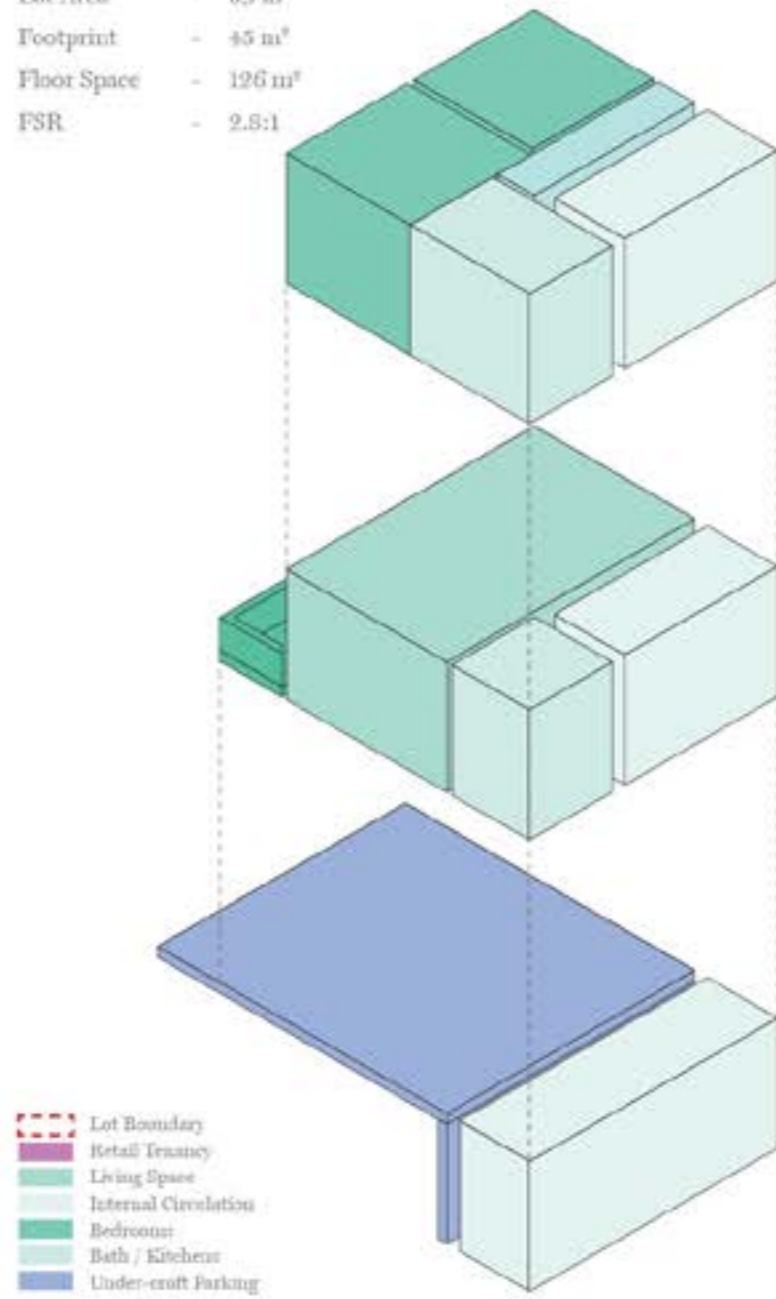
Compact Multi-Unit Housing with Under-Croft Parking and Opportunities for Corner Activation

The Manor House typology proposed would also deliver new precinct connectivity. This form includes an under-croft parking area access via a driveway from the main street frontage. This extensive under-croft parking area delivers one parking space per unit, however requires a taller building form.

Importantly this form of development could provide for street activation on corners or close to open space with a flexible ground floor corner unit provided. This form of development would require a partial zero lot frontage and overlooking from first floor terraces would need to be controlled at the DA stage.

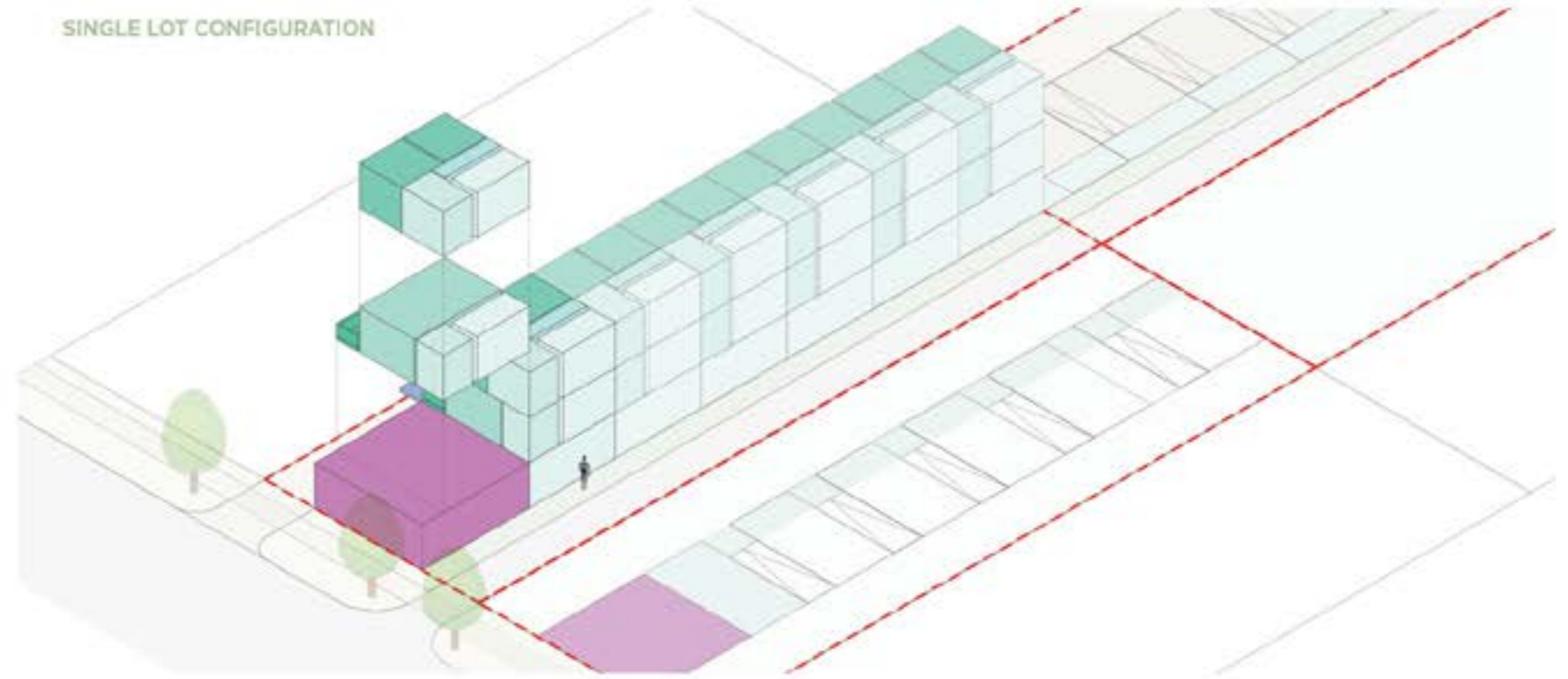
EXAMPLE TYPOLOGY 1

- Lot Size - 6 x 11m
- Lot Area - 69 m²
- Footprint - 45 m²
- Floor Space - 126 m²
- FSR - 2.8:1



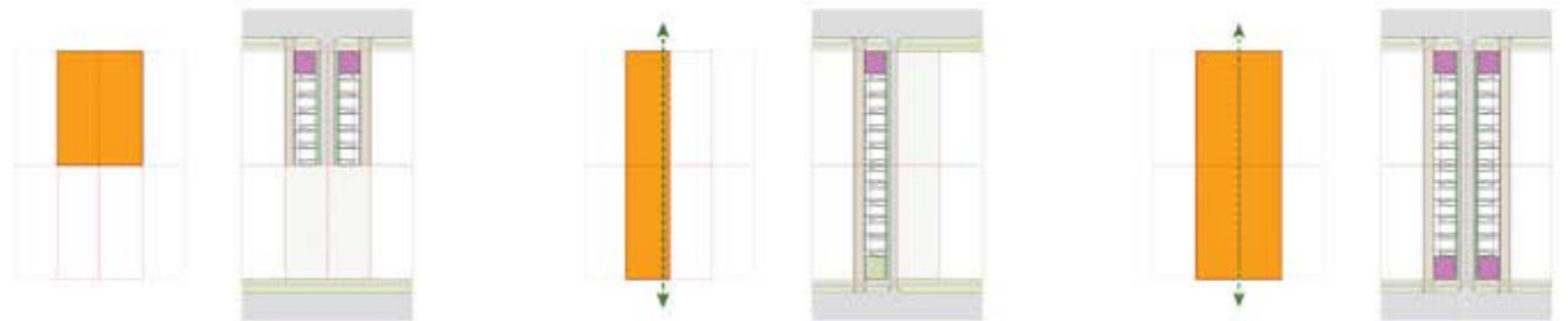
Exploded axonometric of example Manor House product

SINGLE LOT CONFIGURATION



MULTIPLE LOT DELIVERY

This manor house form could also deliver new street/lane connections and would also be suitable for corner lots and non-standard lots with curved frontages. The delivery concept is similar to the compact terrace previously discussed.



Lot Consolidation Option

SITE CONTEXT & SITE ANALYSIS

Located approximately 47km south of Sydney and 500m from the beach (as the crow flies), the selected site lies just beyond the boundaries of greater Sydney and satisfies the criteria for a medium-density proposal in a 'Coastal' region.

Site and context analysis undertaken at a neighbourhood scale illustrates that the suburb is nestled in a natural amphitheatre at the foot of the Illawarra escarpment. The selected site is located in close proximity to a national park, public recreational areas, and historic landmarks. Local amenities include a primary school, community hall, a small commercial area, aged care facilities and a train station.

The neighbourhood has a distinctive seaside village atmosphere, with single-residential dwellings forming the predominant building typology. These dwellings mostly consist of pole homes and 'coastal-themed' cottages. Medium-density development is limited to one two-storey apartment unit and a handful of dual-occupancies.

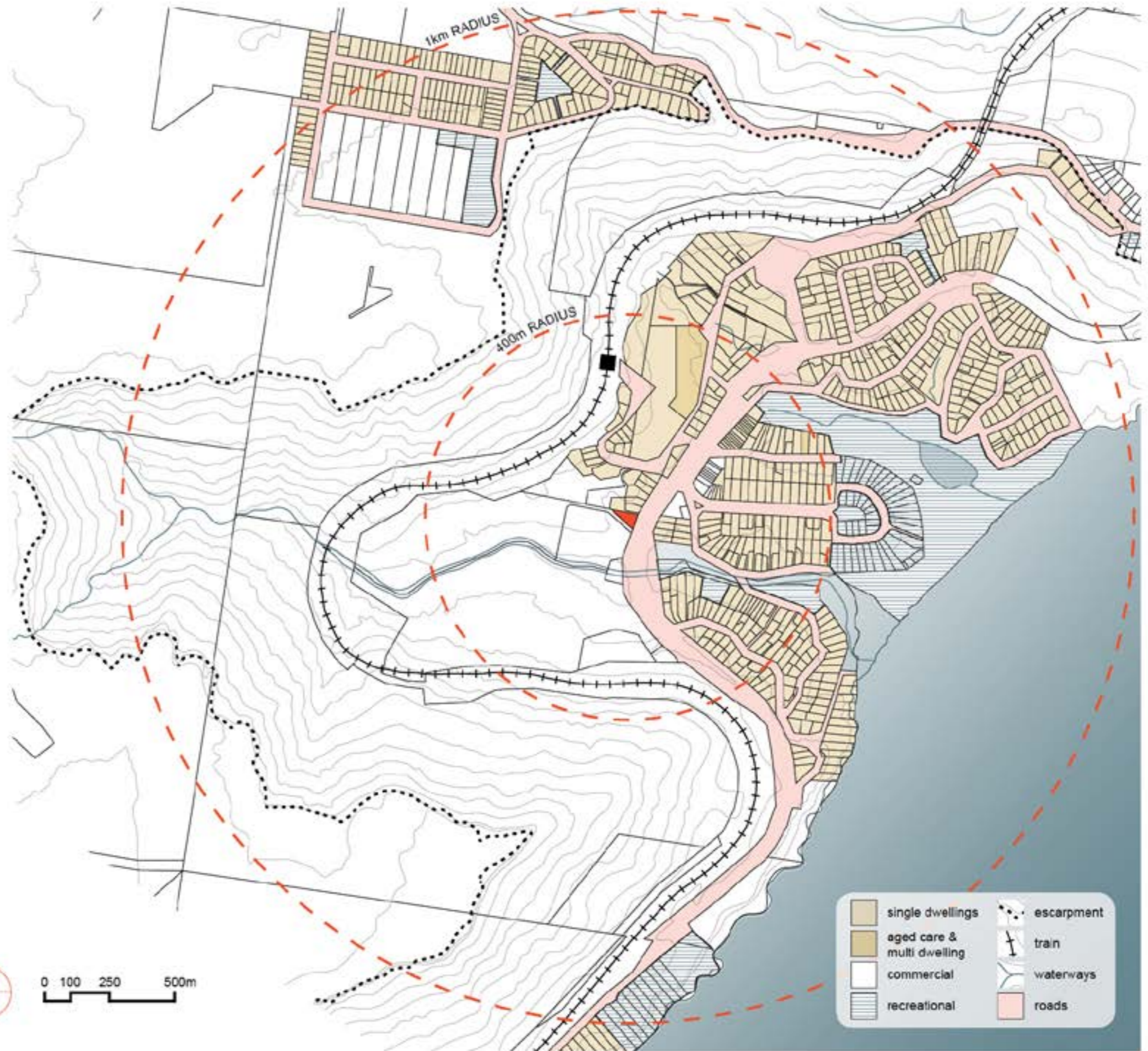
The selected site is one of the few remaining allotments suitable for medium-density development. Allotments immediately south of the selected site are zoned E3 - Environmental Management, while majority of the R2-zoned allotments have undergone extensive subdivision.

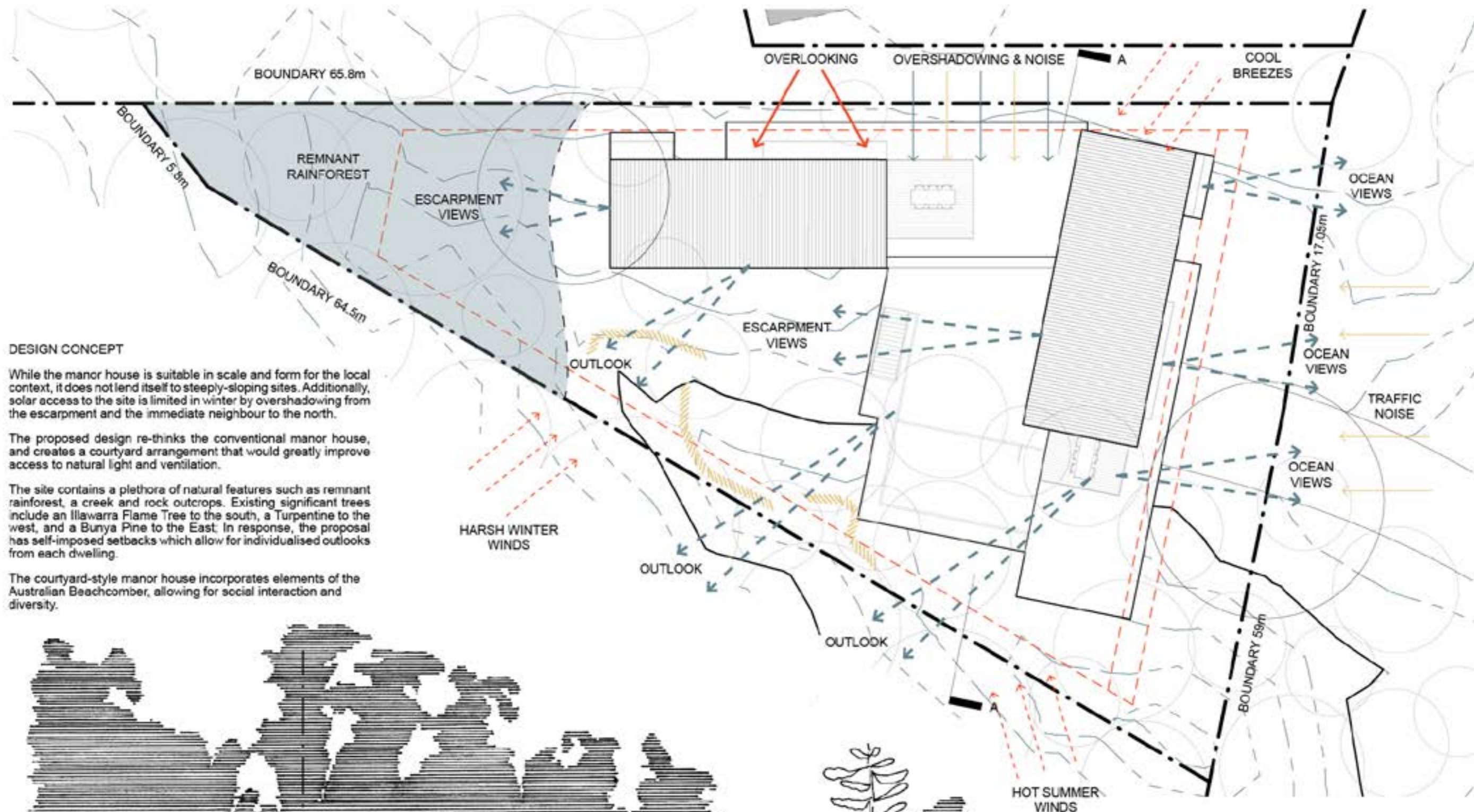
Despite its many advantages, the selected site:

- Slopes steeply toward the south;
- Contains remnant rainforest
- Forms part of the Illawarra Escarpment Conservation Area;
- Is subject to Class 5 Acid Sulfate Soils (limiting excavation);
- Has a flood plane of RL +29.00;
- Is subject to a Bushfire Attack Level (BAL) of 29.

The combination of these factors creates a unique and challenging opportunity to explore the site's potential for medium-density development, particularly the Manor House, which is appropriate for areas characterised by low-density single-residential dwellings and suits the local council's future desired character for the area.

LOCALITY PLAN





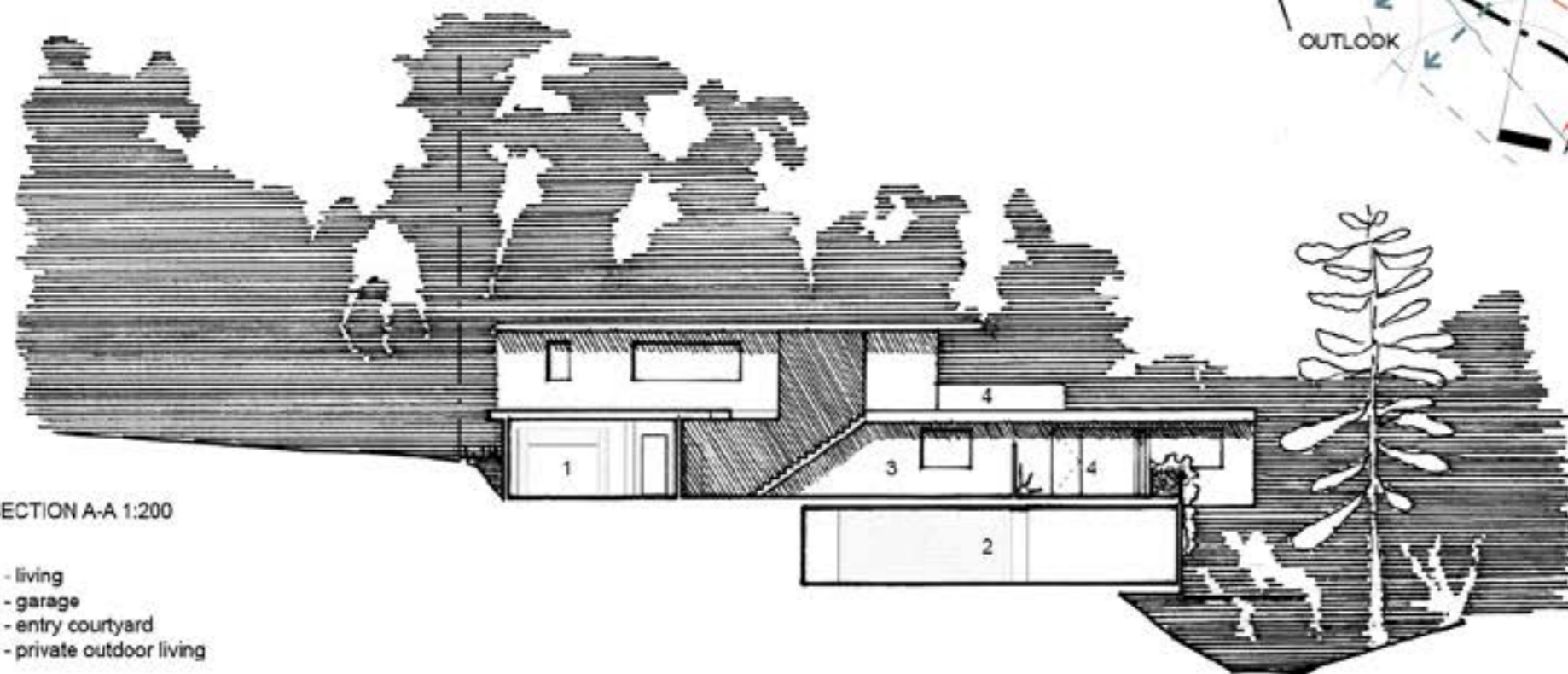
DESIGN CONCEPT

While the manor house is suitable in scale and form for the local context, it does not lend itself to steeply-sloping sites. Additionally, solar access to the site is limited in winter by overshadowing from the escarpment and the immediate neighbour to the north.

The proposed design re-thinks the conventional manor house, and creates a courtyard arrangement that would greatly improve access to natural light and ventilation.

The site contains a plethora of natural features such as remnant rainforest, a creek and rock outcrops. Existing significant trees include an Illawarra Flame Tree to the south, a Turpentine to the west, and a Bunya Pine to the East; in response, the proposal has self-imposed setbacks which allow for individualised outlooks from each dwelling.

The courtyard-style manor house incorporates elements of the Australian Beachcomber, allowing for social interaction and diversity.



SECTION A-A 1:200

- 1 - living
- 2 - garage
- 3 - entry courtyard
- 4 - private outdoor living

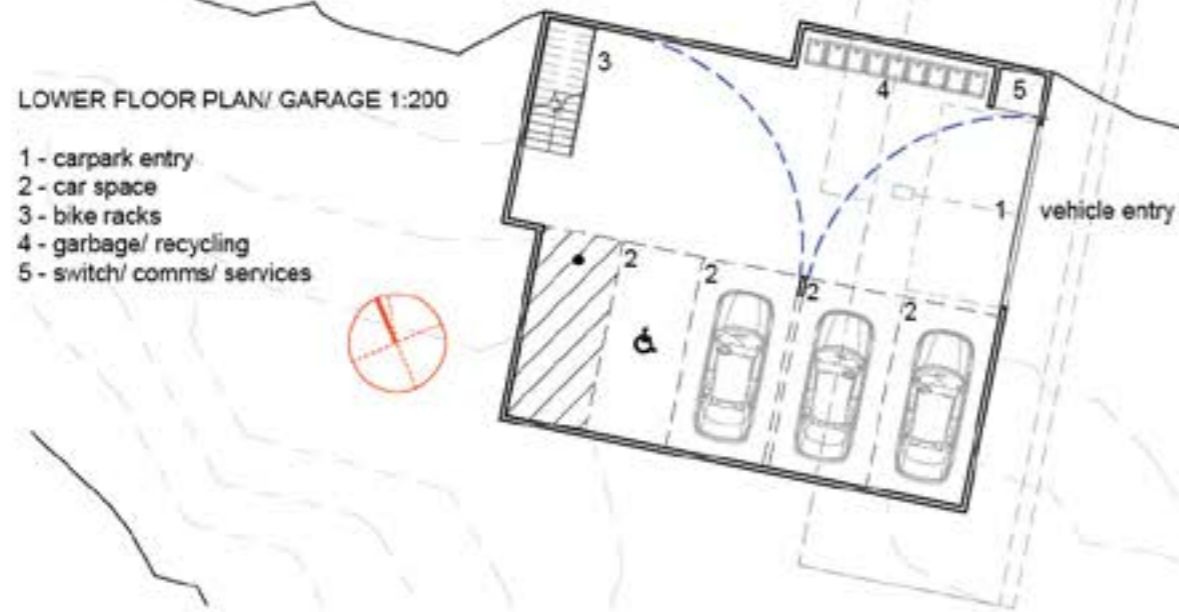
SITE PLAN 1:500

- | | | | |
|--|---------------|--|---------|
| | OVERSHADOWING | | VIEWS |
| | OVERLOOKING | | BREEZES |
| | NOISE | | |



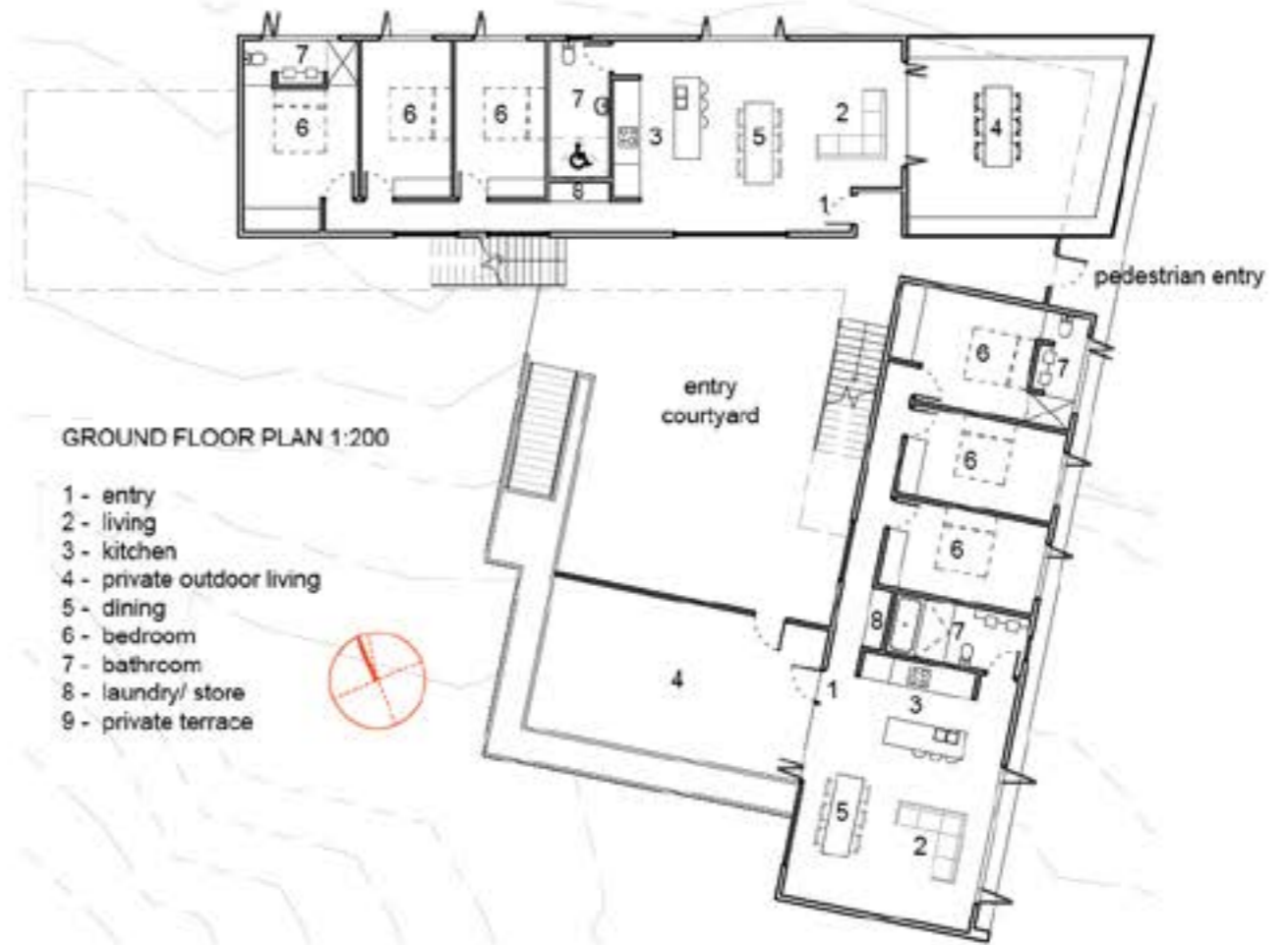
FIRST FLOOR PLAN 1:200

- 1 - entry
- 2 - living
- 3 - kitchen
- 4 - private outdoor living
- 5 - dining
- 6 - bedroom
- 7 - bathroom
- 8 - laundry/ store
- 9 - private terrace



LOWER FLOOR PLAN/ GARAGE 1:200

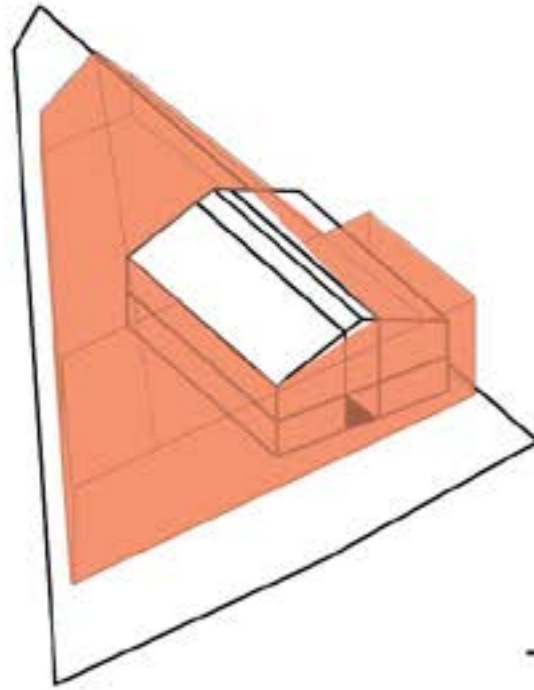
- 1 - carpark entry
- 2 - car space
- 3 - bike racks
- 4 - garbage/ recycling
- 5 - switch/ comms/ services



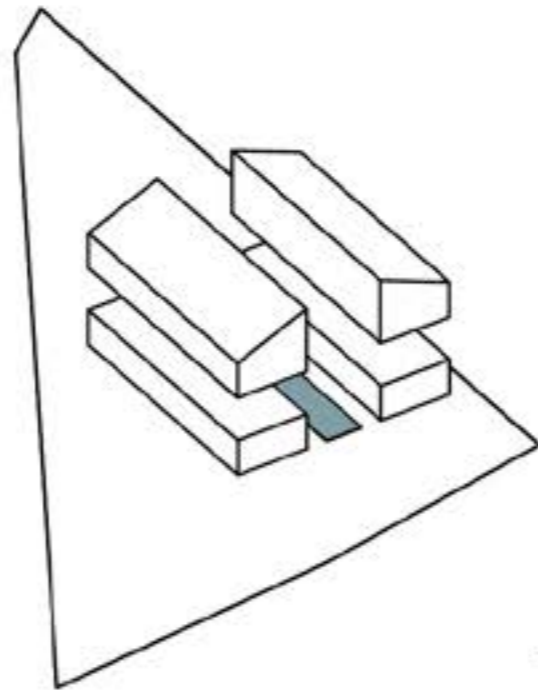
GROUND FLOOR PLAN 1:200

- 1 - entry
- 2 - living
- 3 - kitchen
- 4 - private outdoor living
- 5 - dining
- 6 - bedroom
- 7 - bathroom
- 8 - laundry/ store
- 9 - private terrace

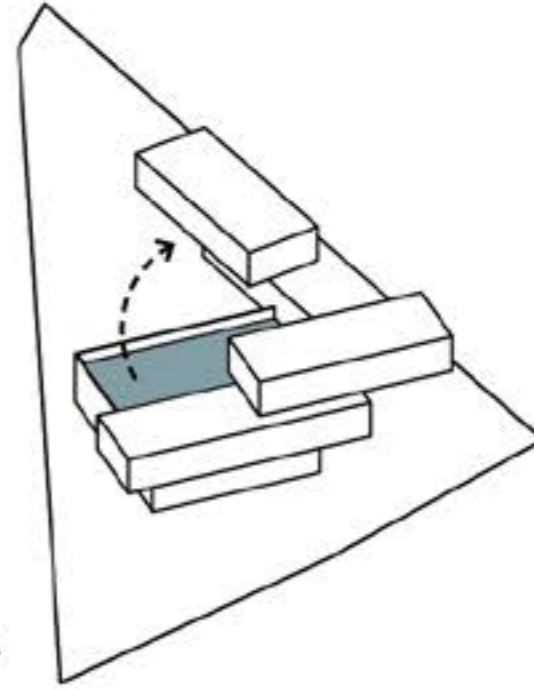
TESTING THE MANOR HOUSE



manor house - basic form

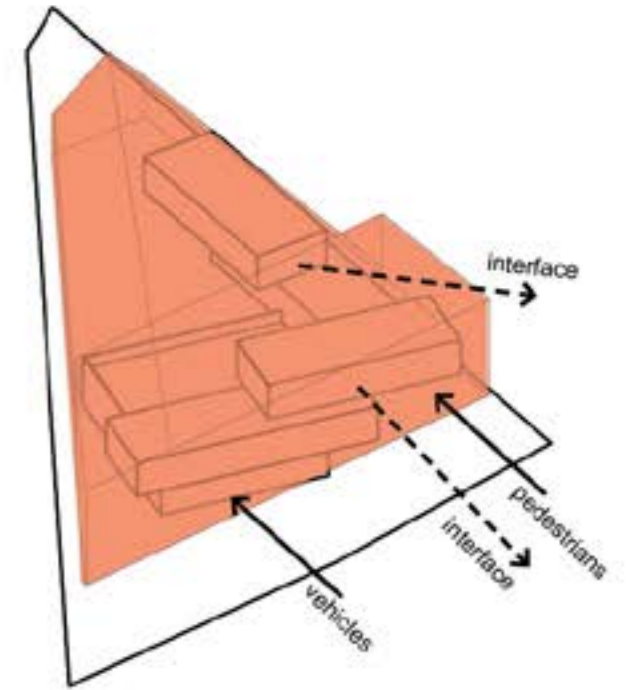


manor house - tested

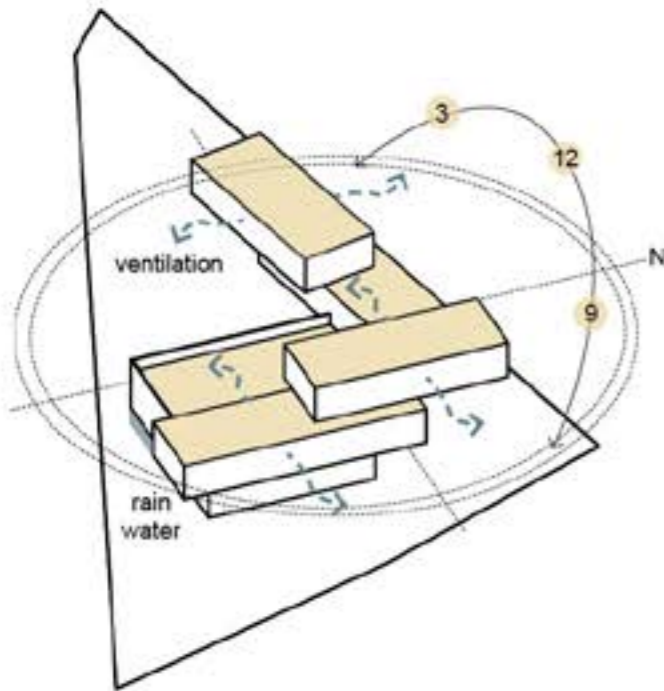


manor house - courtyard form

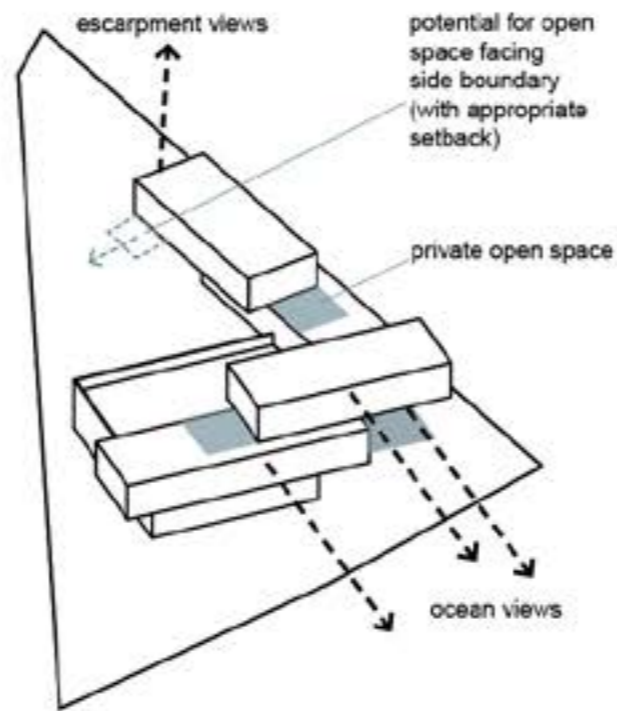
BUILT FORM & SCALE



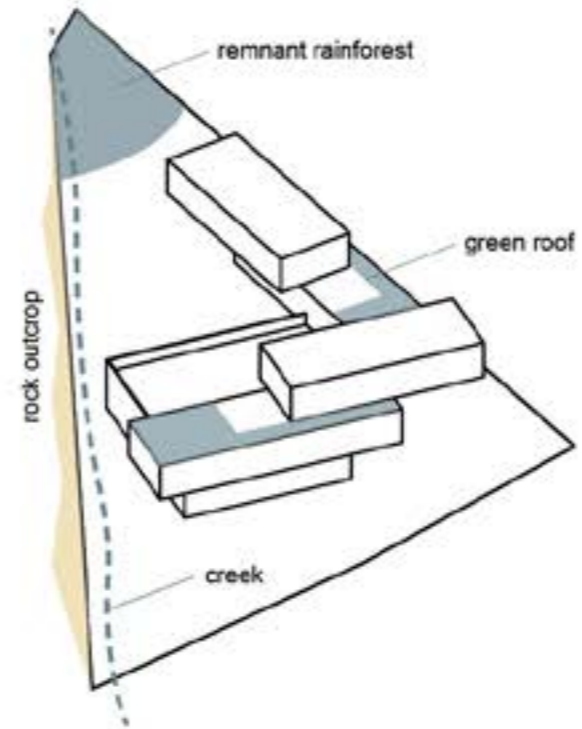
SUSTAINABILITY



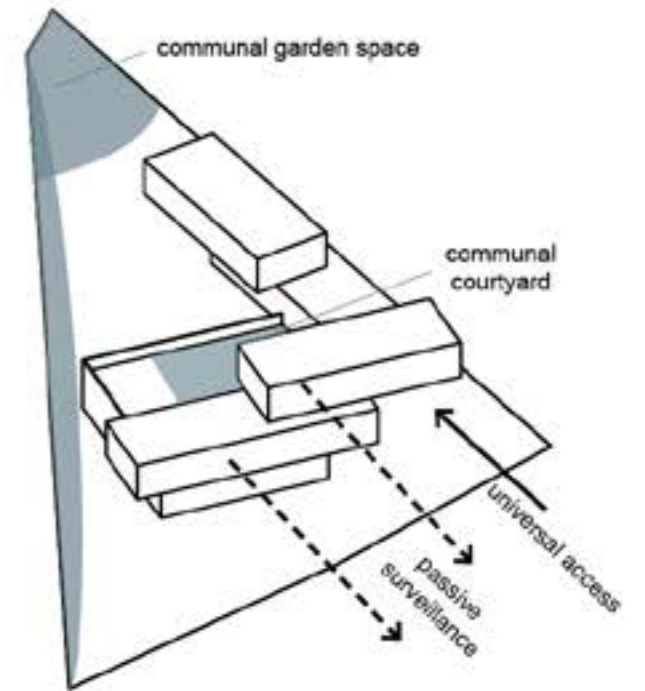
AMENITY



LANDSCAPE



DIVERSITY, SOCIAL INTERACTION & SAFETY



LEGEND

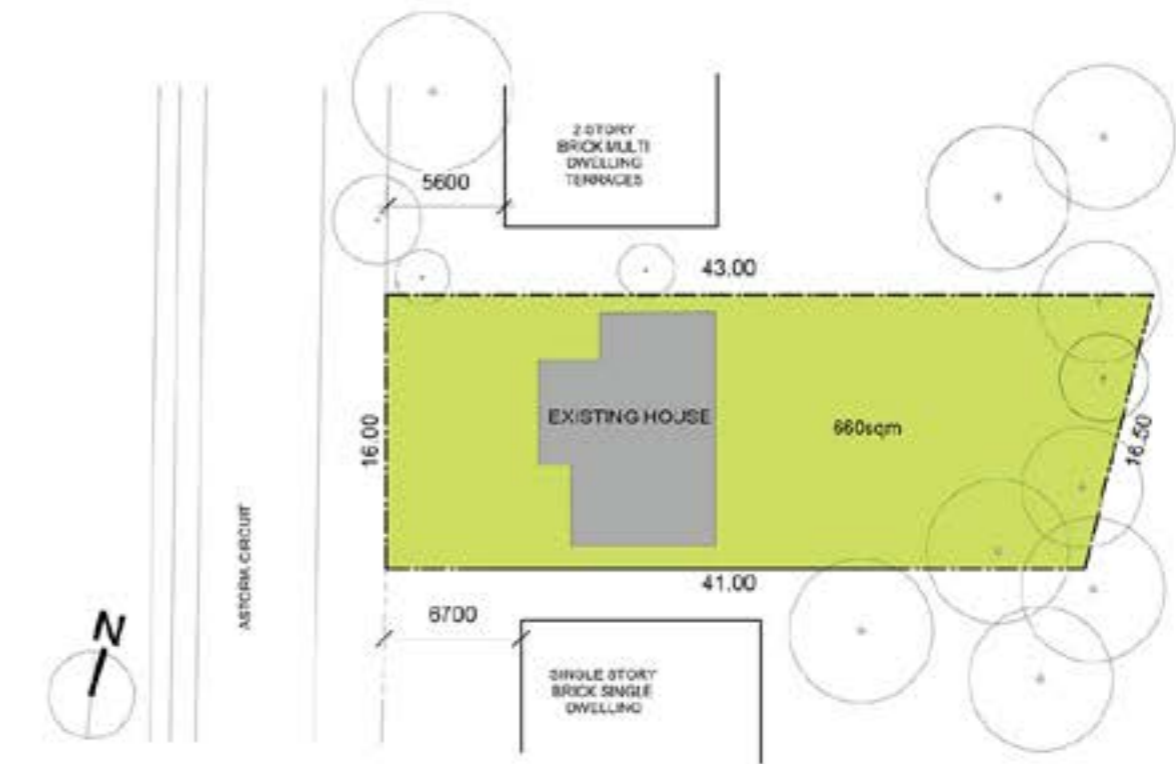
- WALK UP UNITS (SOCIAL HOUSING)
- TOWN HOUSES
- SINGLE DWELLING
- DUAL OCCUPANCY
- PROPOSED SITE

EXISTING SOCIAL/PUBLIC HOUSING

ANZAC PARADE, MAIN ROAD AND MAJOR PUBLIC TRANSPORT ROUTE TO CITY

SPORTING FIELD AND PLAY AREA

PREDOMINANT SINGLE DWELLING HOUSES, MIX OF STYLES FROM 70'S TO CURRENT



CONTEXT and STRATEGIC RATIONALE FOR SITE SELECTION

The site that has been selected is fairly typical and representative of similar sites that can be found in many parts of Sydney. It is located in Maroubra amongst a variety of housing types ranging from; 1970's 3 storey walk up units, to more recent townhouse and dual occupancy development and single and double storey houses both old and new. Single house lot sizes are typically 600m² and above with 15m or greater frontages. Such areas have fairly established street trees and planting and are relatively flat topographically which is conducive to good sightlines and surveillance. It generally makes for pleasant neighbourhoods which can be attractive for families and older people.

It was also important to look at areas that have certain features including proximity to public transport as well as open space and recreational facilities nearby. In this specific instance the site is one street away from Anzac parade and close to Coral Sea park that has sporting facilities and play areas. Additionally, the area is socially and demographically diverse with both private housing and public housing in the vicinity.

Sites of this nature will be ideal candidates for the new Medium Density Code and provide much opportunity for densification at a low rise level, which ultimately is much more conducive to forming strong community based living than high rise development.

SITE ANALYSIS

The site is deemed flat with a total area of approximately 660sqm. It has a frontage of around 16m. On the north is a non-descript red and yellow brick townhouse development of two storeys built in the late 80's or early 90's to the south is a single storey red brick house on a site of similar dimensions. At the end of Astoria Place is the classic social housing units, 3 storey brick walk ups arranged around open space. These connect through to Anzac parade.

The site was selected due to its north orientation being on the long boundary. It also qualifies in relation to site width and area.

TESTING THE DESIGN GUIDE

It is felt that the Draft code in relation to the Manor House misses an opportunity in realising the full potential of what this type can offer. The Draft code seems to mainly consider Manor houses viable on sites with rear access and corner sites that have both a primary and secondary road frontage, or a rear lane. It does not seem to account for a manor house with only one road frontage and three or more units. The Code describes a manor house as 3 or more dwellings while the diagrams (p.137) seem to only show 2 dwellings with regard to how living rooms are located. As such the code appears contradictory and somewhat vague which perhaps highlights the inherent difficulty of moving from 2 dwellings to 3/4.

Arguably in reality the more typical scenario would be sites with a single fronted aspect to a primary road with a lot owner or developer wanting three units, two on the lower floors and one larger unit on the upper level.

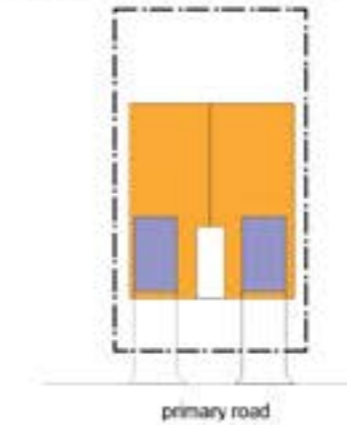
the challenge then would be how to design high amenity dwellings and how the Code needs to adapt to ensure that can occur.

As such the Draft Code was interrogated with regards to how it would deal with the following scenario:
 - single road frontage
 - north on a long boundary
 - minimum 3 dwellings
 - associated parking off a primary road only.

PRINCIPLE DRAFT MANOR HOUSE CODE CONDITIONS HIGHLIGHTING INTRINSIC LIMITATIONS FOR A NON STANDARD CONDITION, ie. SINGLE ACCESS TO PRIMARY ROAD



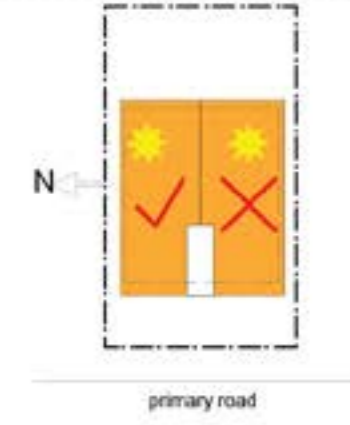
draft code generally prescribes manor house as side by side format with ground floor units and parking on grade



In side by side format parking takes up front area also may require 2 x crossovers or 1 x large crossover. front facade becomes dominated by garage doors

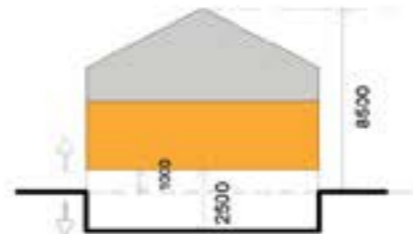


on sites with north on short boundary each unit can receive adequate north sun



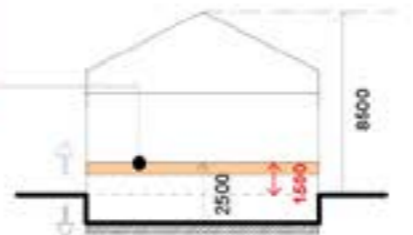
on sites with north on long boundary one unit becomes south orientated and receives no sunlight

combine complying code allowance of 1m basement out of ground with manor house



CODE CHALLENGE NO.1

allow additional height up to maximum 1500mm basement out of ground ie from 1m to max 1.5m without any change to maximum height

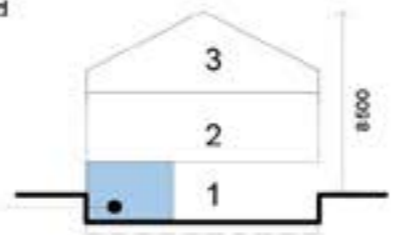


RESULT BENEFIT:
 reduced excavation cost and environmental impact.
 raised ground level allows for additional space under the building eg. second living, storage, studio etc. privacy is enhanced by lower level being raised above natural ground

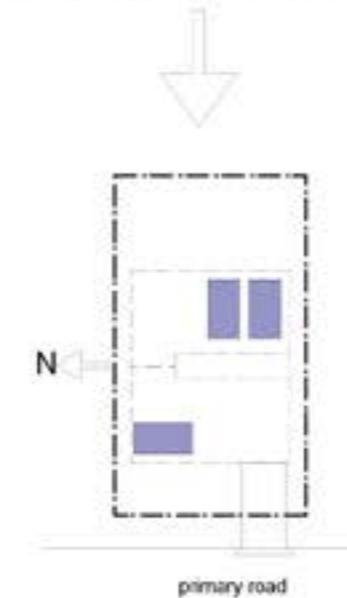
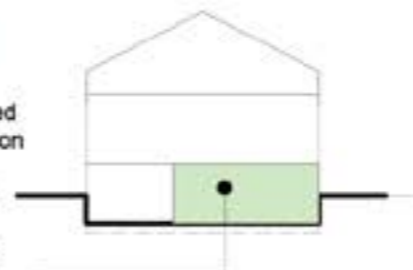
8.5m height limit maintained

CODE CHALLENGE NO.2

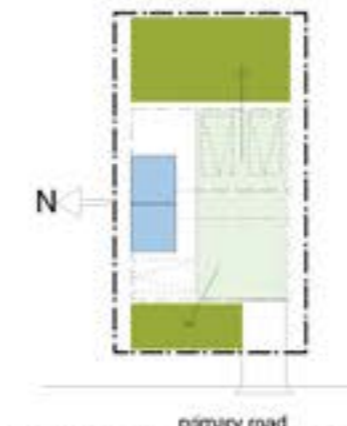
allow manor houses classification as 2-3 storeys, without any change to maximum height



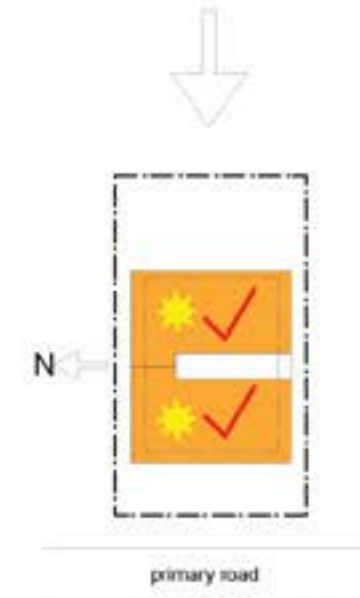
RESULTING BENEFIT:
 a second living space can be achieved under the lower level units. the common space of the undercroft area allows parking space but is also like a large outdoor room fully covered, but connected to front and rear gardens available for the use of all residents



carparking under the building in a semi basement allows for more efficient use of space, street front not dominated by cars



second living spaces connected to undercroft area in turn all connected to gardens. space is fluid and not enclosed



rotating units 90deg allows both to obtain good solar access however one unit cannot be orientated to primary road

CODE CHALLENGE NO.3

permit manor houses to have at least 1 unit not requiring a street frontage if north is on a long boundary (can specify degree off north eg 10deg, verified by survey etc)

RESULTING BENEFIT:
 both lower units receive equitable solar access. planning and construction can be cost efficient and rationalised as both plans can be identical rather than having quite different plan types in order to capture sun

CONCEPT DESIGN

The primary objective of the design was to provide the manor house with a higher level of amenity than would be typically encountered for such a building typology. It is envisaged that this type may be popular for families both as market and affordable housing and as such can be more flexible and unconventional in its intent and outcome than a typical terrace or townhouse.

The main design and programmatic criteria created are as follows:

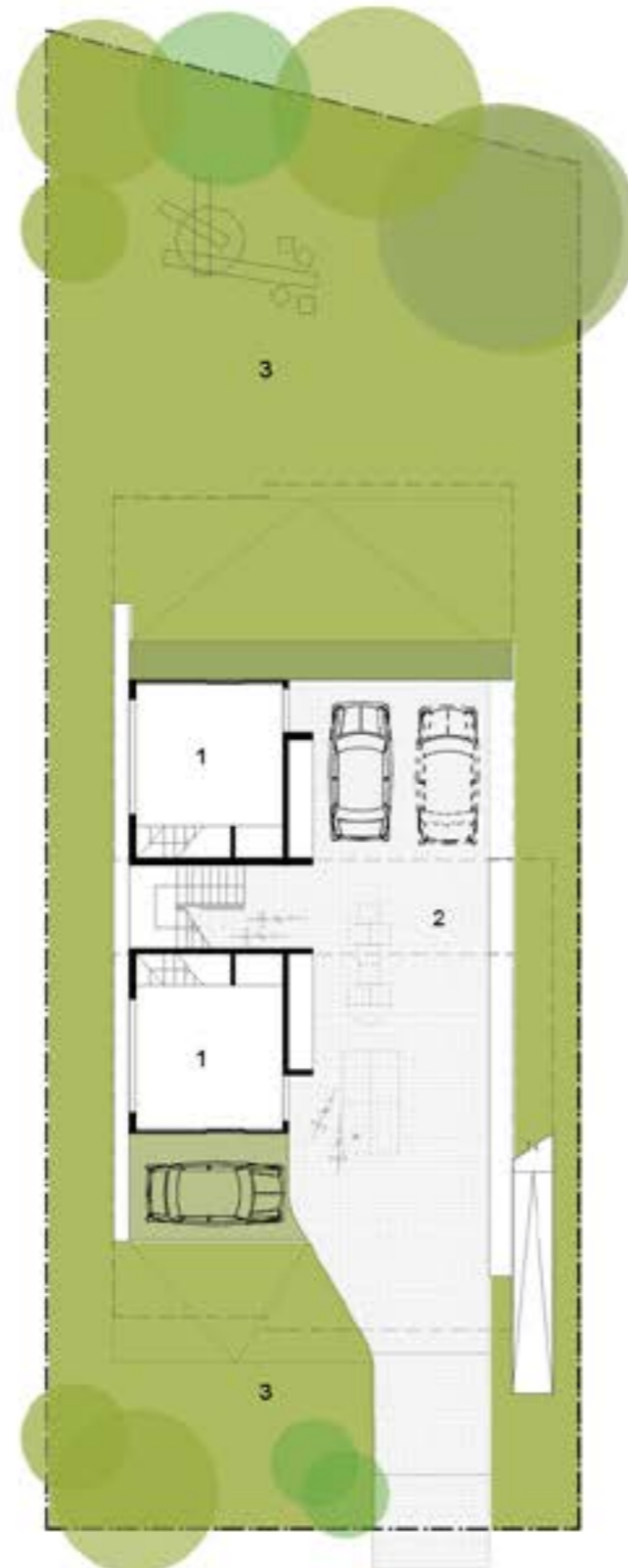
- each dwelling is to have a main living space and a second "living" space that can have a multipurpose use
- spaces within the dwelling are to have good level of visual and acoustic separation between living and bedroom areas
- each dwelling is to achieve a high level of solar access
- each dwelling is to have good privacy both visual and acoustic
- the site is to have a communal feel and not have defined private outdoor garden spaces

OUTCOMES

Using the three proposed modifications to the Draft Code arguably achieves a superior outcome in the following ways:

- provision of two distinct living spaces for all dwellings
- excellent solar access
- very equitable planning outcomes and efficient construction
- the elevated form allows for good privacy from communal open areas and garden and creates a very defensible space
- the elevated form creates an additional undercroft area that doubles as a parking space but also as a large undercover area for gathering or play space
- the elevated form allows the site to be very permeable from front to back
- the elevated form creates a very strong architectural expression in the streetscape while remaining contextual

The resulting building challenges the way we would think about housing and how in reality we interact with each other. Privacy is important for all but there is always the desire to feel part of a community. Housing needs to afford people the ability to choose when they want to retreat and when they want to interact. Letting go of preconceived notions of how spaces should be gives us a much better opportunity to design much more responsive housing.



LOWER GROUND

1. RUMPUS
2. CARSPACE/UNDERCOVER PLAY AREA
3. COMMUNAL GARDEN



GROUND FLOOR

1. KITCHEN
2. LIVING/DINING
3. KIDS BED
4. STUDY/MEDIA
5. BEDROOM

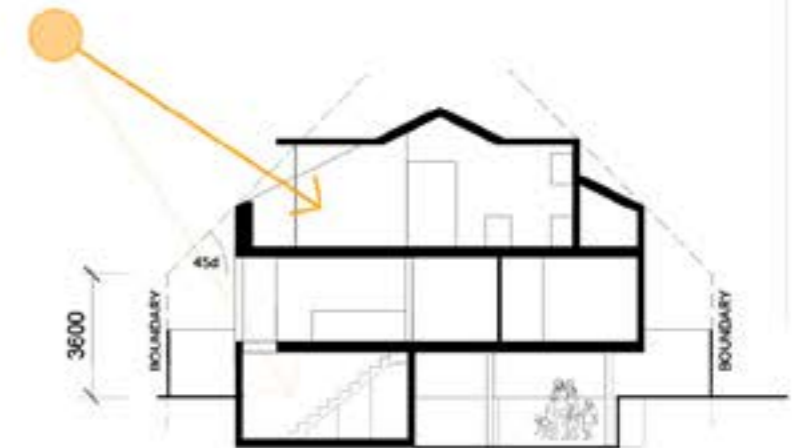


UPPER FLOOR

1. KITCHEN
2. LIVING/DINING
3. KIDS BED
4. RUMPUS
5. BEDROOM



1:200 SECTION FACING NORTH



1:200 SECTION FACING EAST



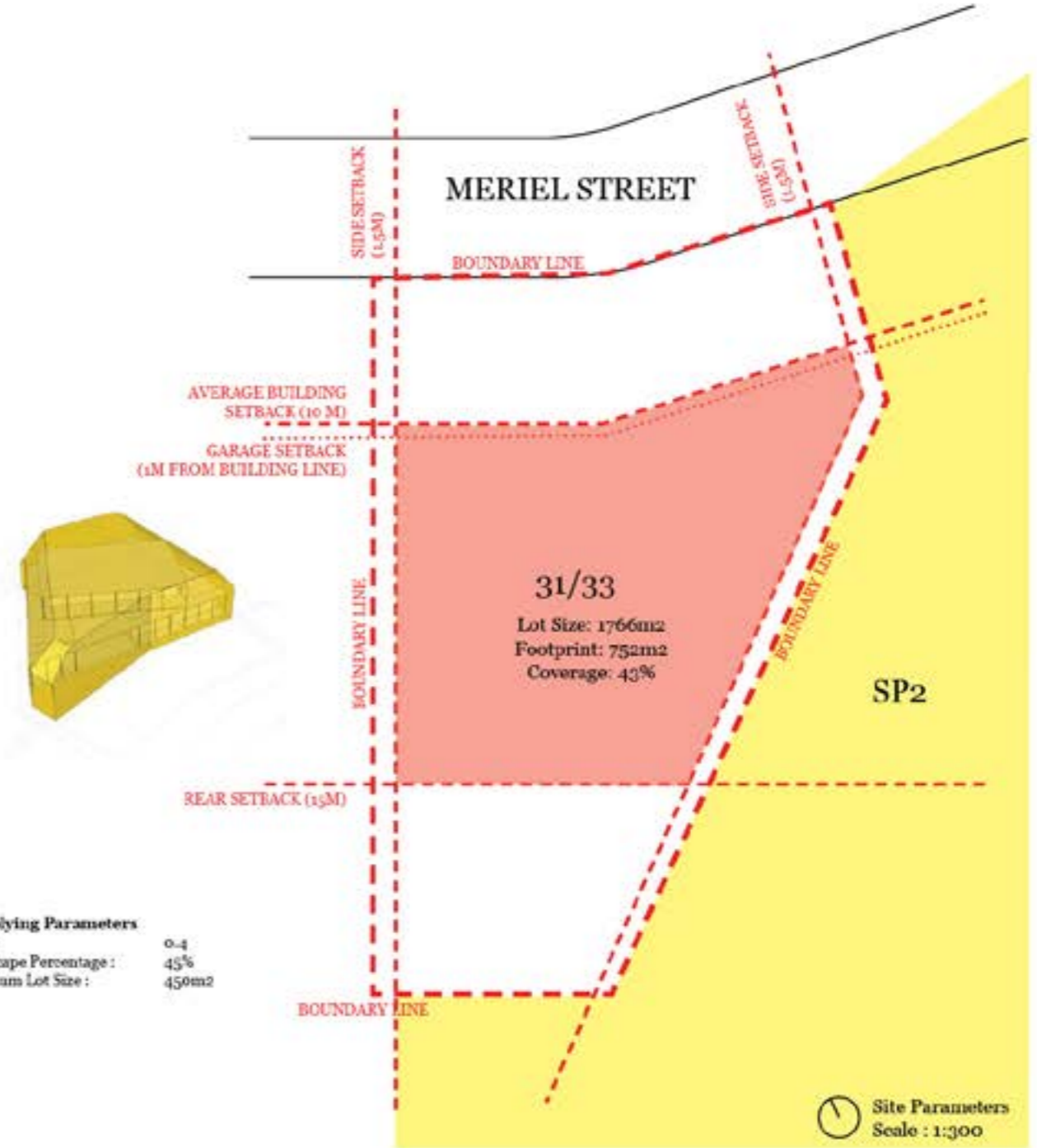
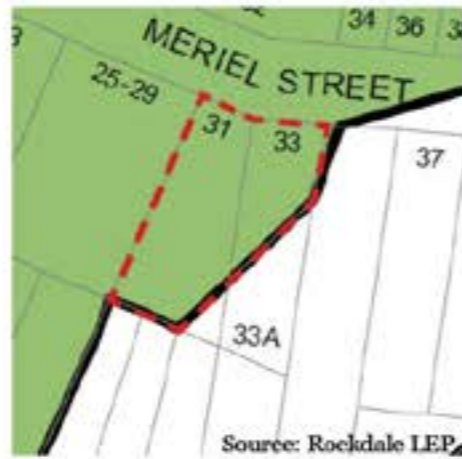
1:200 STREET ELEVATION

Veranda Houses (Manor)

The proposed site is situated on lots 31,33 Meriel Street, in the city of Rockdale.

The area is developing rapidly with much of the neighbourhood designated as R3 zones.

Also notable from the LEP are the reserved areas adjacent to the site designated for a future infrastructure project. We can assume that this project is potentially a large freeway.



Planning



Privacy Screen

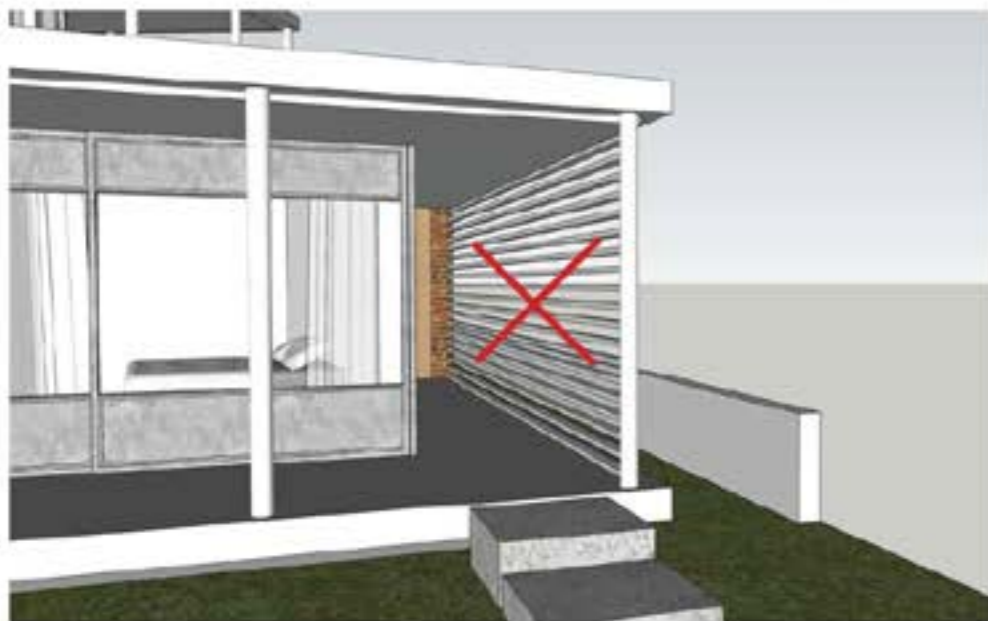
The proposed veranda situation with regards to guidelines 2P, where the FFL of the ground floor is <math>< 1.0\text{m}</math> and the distance from the building line to the boundary is >math>> 1.5\text{m}</math> is assumed to be acceptable.

This issue is raised here to further clarify the provisions outlined in the guidelines



Tall and dense bushes are proposed in lieu of a privacy screen, should the necessity arise.

Alternatively, a lightweight visual screen may be proposed on the affected boundary wall to satisfaction.



A privacy screen, or a wall will be detrimental to the aesthetic coherence of the building form.

Garage vs. Security

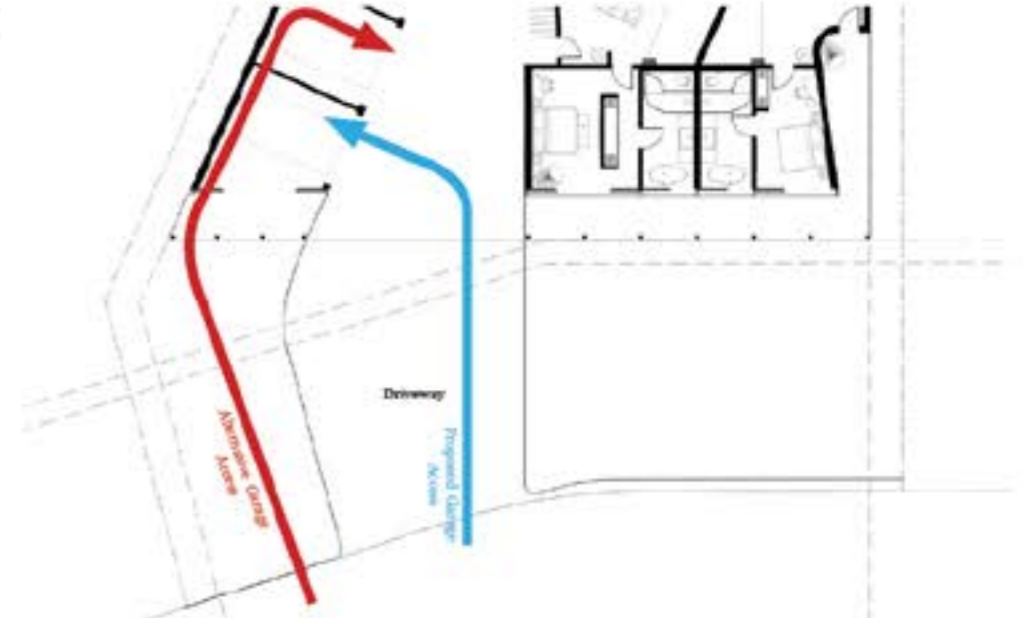
The proposed layout aims to reduce the visual impact of 3 garages fronting the street.

Garages are oriented in a way that reduces security risks by not hiding them behind or along the side of the building

This layout also reduces wasted area dedicated to the driveway within the building setback lines

However, the alternative layout where the garages are arranged facing a side boundary in an acute situation such as this corner here will run counter to the security guidelines.

We propose that the security requirement be relaxed in such a situation.



Garage vs. Security

Living areas with 'windows' or openings to single level courtyards are proposed to create interesting volumes in the building form and space.

We suggest that the requirement to restrict areas adjacent to courtyards to non-habitable areas is unnecessary and rigid.

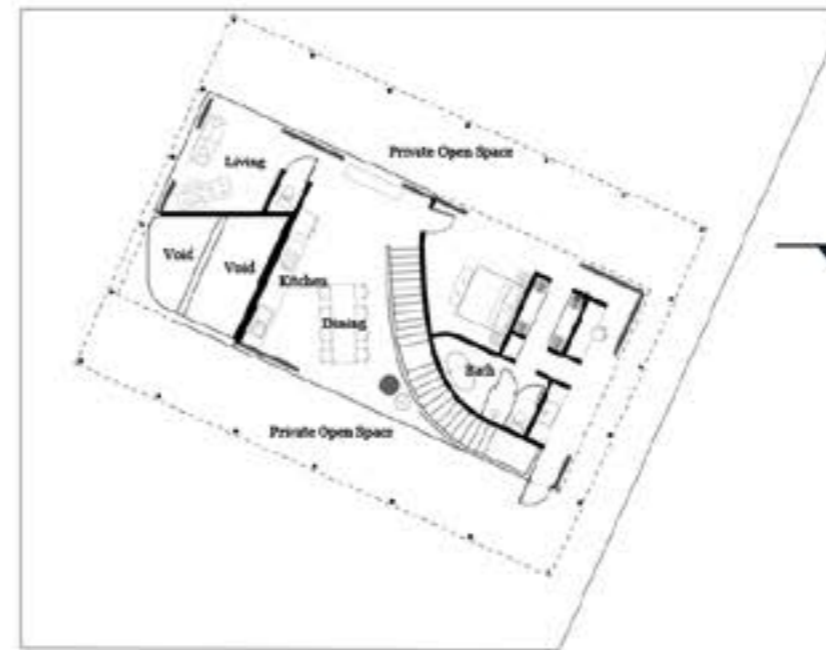




Street View



Ground Floor
Scale : 1:200



1st Floor
Scale : 1:200

Concept

Veranda

The design is a return to the well-acclimatised vernacular veranda building typology. This ancillary space brings multiple benefits to the residents such as summer shading, semi-outdoor activity areas and functioning as a viewing deck on lazy days.

Facing

Living areas such as the dining rooms and bedrooms are oriented to the front and rear of the site, where there is a significant amount of landscape amenity.

Upper floor unit is oriented away from neighbouring buildings.

Garage

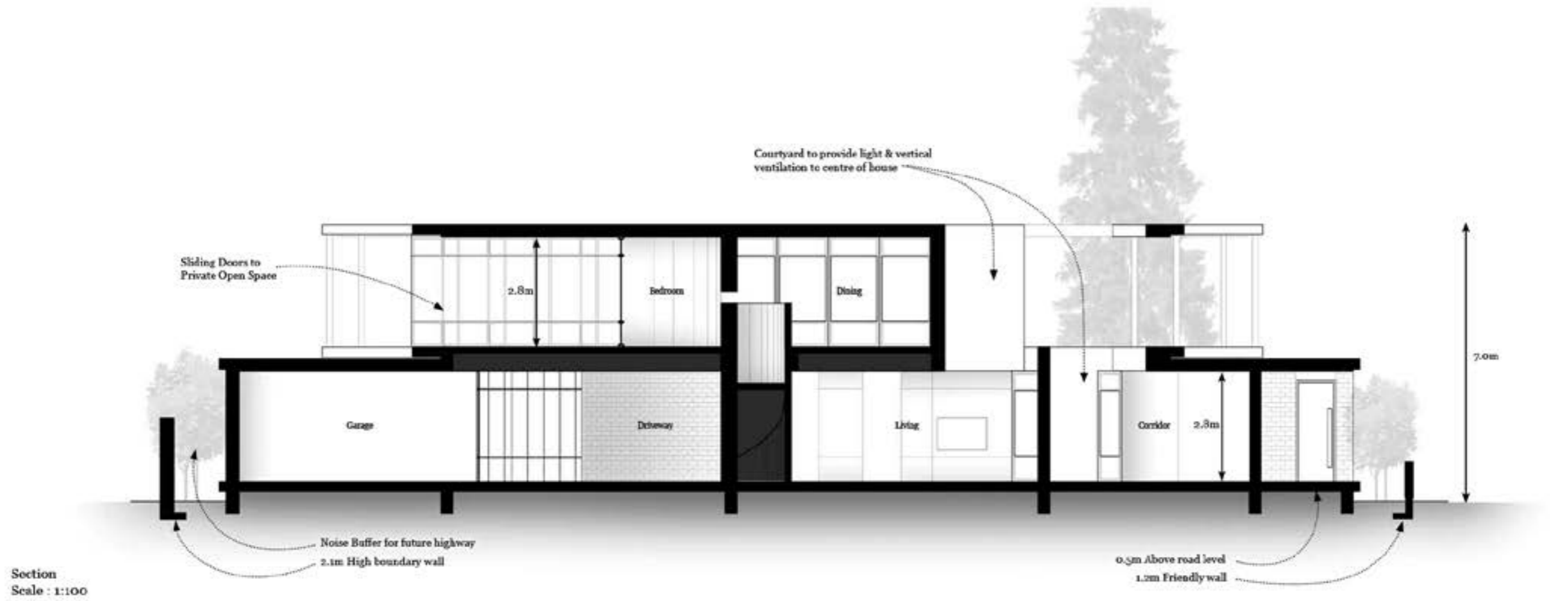
As a large number of garages is required, the design aimed to mitigate visual impact by using articulated garage doors, and presenting the driveway as a courtyard/ shared space.

Flooring of the driveway is done in red brick in response to the neighbourhood material palette.

Sliding Doors

Sliding doors convert rooms adjacent to the veranda into semi-outdoor spaces, useful during parties. The open nature of the rooms suggest a sharing of the private realm with the community.

Doors are panelled in a way reminiscent of traditional panelled doors, in an attempt to assimilate to the surrounding architecture.



Living & Dining Area with view to back yard.



Living Area with openable doors to a courtyard.

The Missing Middle: Context



Guildford is approximately 25km from the Harbour Bridge in Western Sydney, a middle ring suburb on the Cumberland Plan. The topography is reasonably flat, with low density housing typologies of one and two storey dwellings.



Nature Network : Green Grid

Duck Creek ends within Guildford (West) - Yennora and connects to Parramatta River which serves a role in GAO's Green Grid Strategy for Sydney. Prospect Creek also runs along the south, assisting the Sydney Water storage network.

Transport : Trains and Buses

Guildford (West) - Yennora is serviced by the buses 820 and 821 and Guildford and Yennora train stations on the T2 South and T5 Cumberland train line. The bus lines demarcate the residential area to the north from the industrial, Yennora Distribution Area to the south.

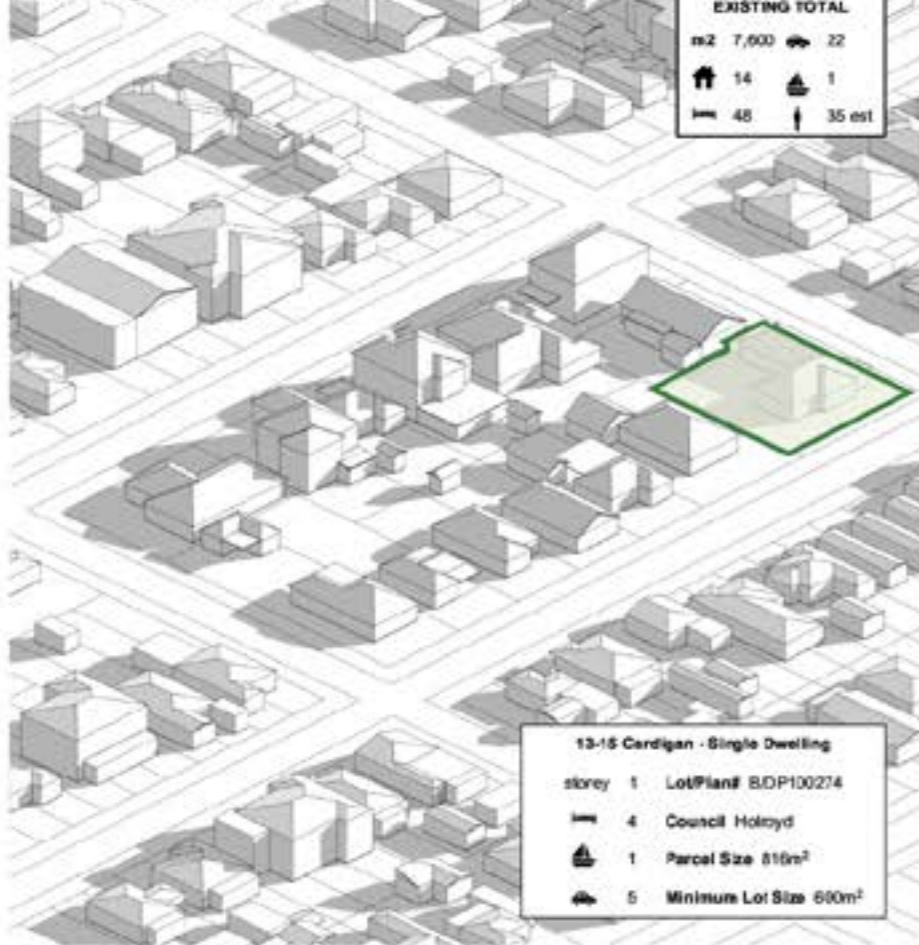
Neighbourhood : Street Pattern

The Holroyd LGA has a neatly gridded neighbourhood bound by a Hawksview Street and Ducks Creek, the neighbourhood is zoned R3 for Medium Density Housing. The minimum lot size in this area is 200m².

Block : Sub Division

Our chosen block is part of a network of 16 lots with various shapes and lot sizes. The properties with average lot sizes of 400-600m² have not yet utilised smaller lot sub-divisions.

Existing Condition



Strategic Overview : Why here?

Our approach was to seek a real world subdivision arrangement in a generic street grid, that will likely be the focus of the Medium Density Design Guide & associated legislation. We took a strategic position to select a site which is:

- Located within 2km from a rail station
- Located within 0.5km of a bus stop
- Located in close proximity to schools, hospitals, shops, parks & government utilities for greater amenity & inclusion.

The strategy is to increase walkability, whilst increasing density.

Strategy : Site selection

The chosen block was considered a typical suburban subdivision. The existing housing stock is a mix of single storey 50's & 60's dwellings and some larger two storey 90's homes. It provided us with a typical context from which we could more fully test the Design Guide; from varying solar orientations, contexts, lot sizes, and adjacent conditions. This would allow us to test all 3 housing types [Terrace Houses, Manor Houses, and Dual-Occupancies] to see what type best fit where. This would give us greater scope to test the Design Guide and challenge the Controls.

Potential Future Condition



The proposal looks beyond the immediate site to reinterpret the history of suburban living into a more dense state, under the working title of (Sub) Urban Dreaming we sort to understand the existing suburban condition and sow some common elements into the future urban block response.

We have carved out space to create two commons at the ends of the block. One for a productive garden, the other for the suburban pool. These offer different types of social connection and interaction that would offer the possibility of greater understanding and social cohesion within the local community

We have proposed roof terrace gardens to maintain a green band, limiting impact to the heat island effect that comes with increased site coverage. This configuration shows Manor Houses and Dual occupancy on the corner sites and terraces in between.

The Missing Middle: Concept Design - Manor House

Design Excellence:

We believe design excellence for Manor House is to provide efficient planning that will allow greater surface area to the facade to maximise amenity. North facing living rooms are prioritised over other solar orientations where possible.

Locating the public rooms and balconies to the front activates the street and provides passive surveillance. This also allows the front garden to feel like an outdoor room.

Facade articulation window usable elements like balconies, window boxes and seats and entry areas allow a large wall areas to be broken up.

A roof terrace allows for an active roof plane that better utilises the small parcel of land. Laundry facilities, productive gardens, solar panels and BBQ & social areas provide a great lifestyle. Shared roof areas play a greater role in the understanding that this building is shared by many which helps build social cohesion and interaction.

Opportunities for Social & Cultural Sustainability, Diversity & Inclusiveness:

Greater density living with a strategic focus of locating this type of development within walkable distance to transport options, schools, hospitals, shops, government utilities and parks provide greater opportunity for social connection, cultural understanding & development. We applaud the Guide's agenda of greater multigenerational housing options which assist in creating diversity and inclusiveness.

Scale: Street, Precinct, Suburb.

Our strategic vision was to design these housing types at scale. These were never considered as individual elements but repeatable elements or pieces in a broader subdivision block & pattern.

The Commons:

The (Sub)Urban Dreaming approach with 2 common areas we believe add another layer of social & cultural sustainability, which we hope will also promote diversity and inclusiveness.

The Car & other individual transport solutions:

The car is a reality and can not be ignored. It would be silly & unrealistic to do so. However, nor should it be the focus or the overriding control for planning more liveable, more dense and more walkable suburbs. It is in fact usually counter to these desirable values.

Our planning controls have decades of car based planning sown into the strategic thinking. The Medium Density Design Guide has an opportunity to unwind these to promote a more socially, culturally and inclusive community. Instead, the Guide should have a Walkable streets, precincts, suburbs and cities at its heart.

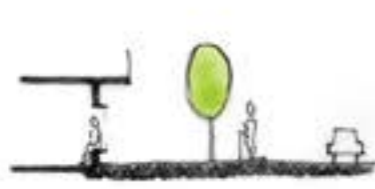
Master Plan:

By designing all 3 house types within a block we were able to develop row house at scale, but also house variety that provides for a varied and interesting streetscape. Key to this were strategic approach, lot size, possible subdivision potential, street pattern, Blue, Green and Black Grid intersection, location of commons and solar orientation.

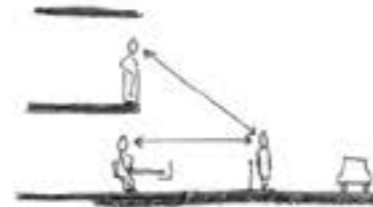


Manor House: Ground Floor Plan
1:200

Design Principles: Ideas that underpin design quality and good urban responses.



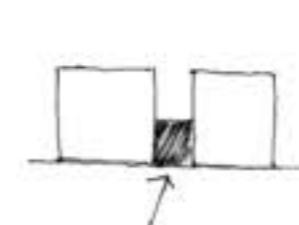
Street Activation & Connection to Landscape



Passive Surveillance



Active Roof Plane



Manor House Entry



Front Door



Rainwater Harvesting & Reuse



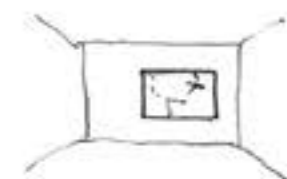
Shutters for Privacy



Cross Ventilation

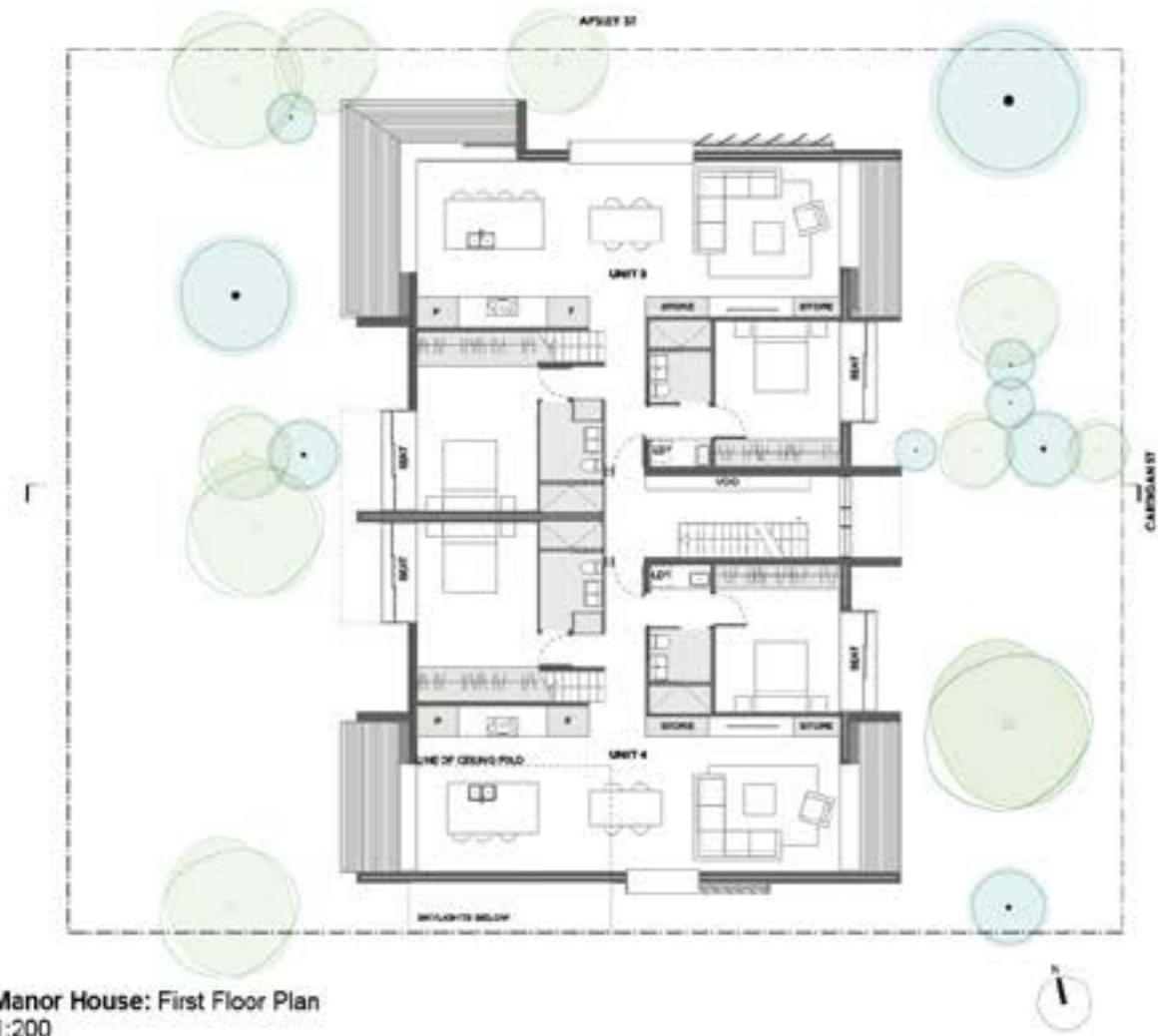


Inside Outside

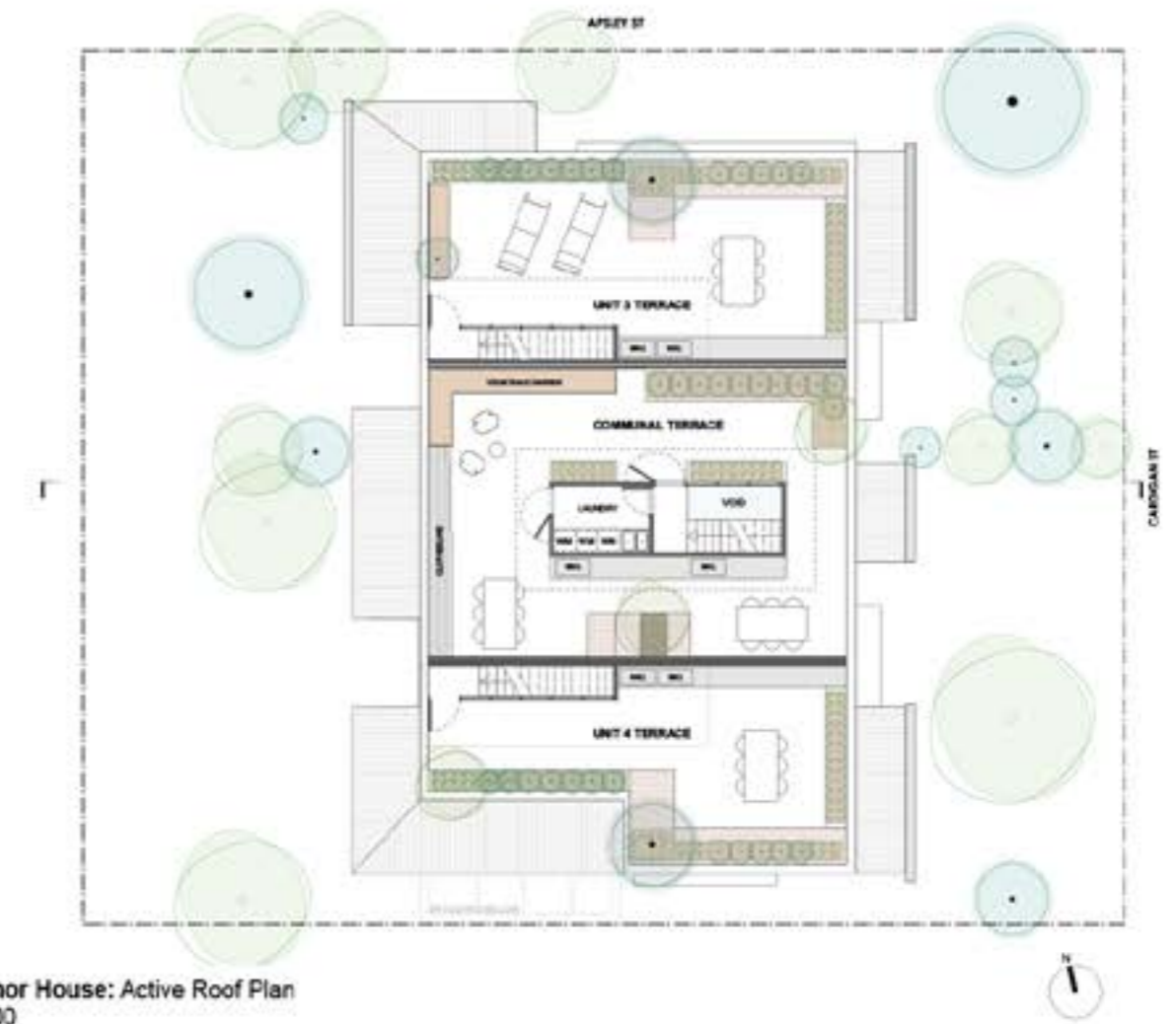


Windows Frame Views

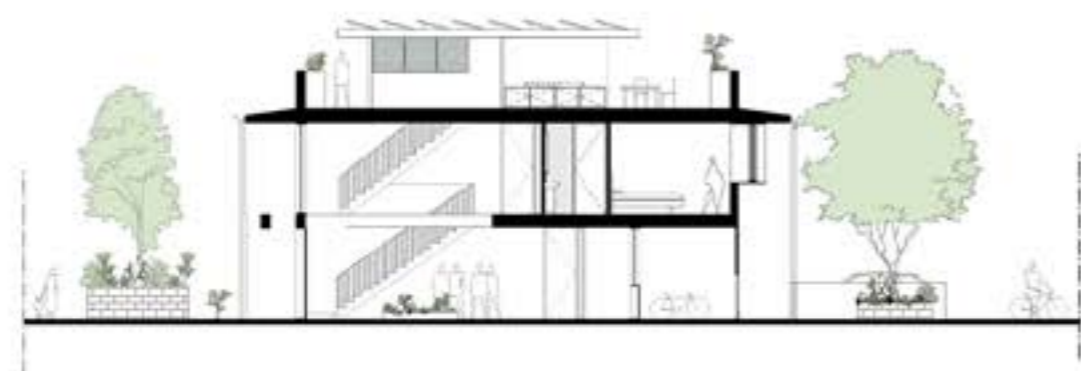
The Missing Middle: Concept Design - Manor House



Manor House: First Floor Plan
1:200



Manor House: Active Roof Plan
1:200



Manor House: Section
1:200



Manor House: View From Street

The Missing Middle: Testing The Design Guide

MISSING MIDDLE : Manor

1. Context and Neighbourhood Character	<ul style="list-style-type: none"> - Prevailing setbacks don't allow the building to hold the street & address it. - Manor Houses should use the setbacks provided in the Design Guide (where there are no dwellings within 40m). Smaller, minimal setbacks to the street, increase private open space to the rear. - Car parking & Garaging controls create long driveways dominate frontages which provide a poor urban response and limit potential for Private outdoor space to the rear of the property. - Where subdivision depth doesn't provide rear lane parking/ garaging, Manor Houses should preference on street car parking or parking in the front setback.
2. Built Form + Scale	<ul style="list-style-type: none"> - Manor Houses should be permitted to ignore the prevailing setback to be closer to the street. - Pitched side setbacks past 15m un-necessarily limit efficient planning & built form.
3. Density	<ul style="list-style-type: none"> - Minimum lot sizes could be reduced to 450m² for Manor Houses will improve density while maintaining good outdoor space.
4. Sustainability	<ul style="list-style-type: none"> - Car parking requirement affects building size & urban response. This has an affect on all forms of sustainability. This control should be relaxed with the site's proximity to other forms of transport like, public transport, car sharing, cycling, walking.
5. Landscape	<ul style="list-style-type: none"> - Prevailing setbacks can un-necessarily affect the size of private open space.
6. Amenity	<ul style="list-style-type: none"> - This Guide strikes a good balance between density & privacy, with more density, we should expect a more urban & realistic privacy constraints. - The carparking / garaging controls affect the ability for better amenity to rooms adjacent to the garage/ carport, and impact on cross ventilation and natural daylight.
7. Safety	<ul style="list-style-type: none"> - Maintaining the prevailing setback from street frontages lessens the passive surveillance effect. - Street parking or allowing parking within the front setback will improve passive surveillance and illuminate long dead end driveways.
8. Housing Diversity	<ul style="list-style-type: none"> - The Medium Density Design Guide helps to add to the numbers of these housing types that already exist. - Mix of accessibility options helps to add to diversity & age in place ideas for multi-generational housing.
9. Social Interaction	<ul style="list-style-type: none"> - Manor Houses that address the street provide for better social interaction. - The Garage/ Car port provisions puts the parking out the back and effects the ability for social interactions. - Entry doors, windows, doors, balconies and Manor Houses to the street will add to the social sustainability. - The Strip shopping potential to include corner shops hard to the street will increase the desire for people to engage with their local community & streets.
10. Visual Appearance	<ul style="list-style-type: none"> - Much like SEPP65 good design can not be code directed. This Design Guide can contain the rules, but it is not an architecture pattern language guide. SEPP65 mandates a suitably qualified designer is an architect. This is NOT a requirement of this code. - The greatest risk for this Design Guide is poor design outcomes. With no design review process, no Council oversight, or no requirement for an Architect, we expect the design quality to be poor and consistent with project home outcomes. - The majority of these houses will be in areas where cost will be the major driver for this type of development. With no mandated design standard/ professional we doubt good design will be a priority & expect poor design outcomes. - Currently less than 8% of all private residences outside SEPP65 required apartment buildings are designed by architects. This Design Guide does nothing to alter this statistic. - We feel this Design Guide will have a positive affect on amenity, but a limited affect on Design Quality. - We would recommend some or all of the following changes to the intent of the Medium Density Code: <ul style="list-style-type: none"> • Not permitting this Code to be Exempt & Complying Legislation. • Requiring a design review function within Council. Council's with a City Architect[s] like Blacktown, Parramatta, Liverpool, The City of Sydney have design review functions that drive high quality design outcomes. All LGA's should have a City Architect that can work with the Office of Government Architect [OGA -State] to drive a high quality designed built environment. • Requiring Council's to prepare a strategic approach to this Code, in accordance with State & GSC objectives. i.e. Located close to transport, schools, shopping, public utilities, hospitals etc. • Requiring Councils to assess DAs that comply with the Missing Middle Code within 40 working days. If they don't, it should be a Deemed Approval.

Challenging the Controls



Provide some onsite parking within the front setback

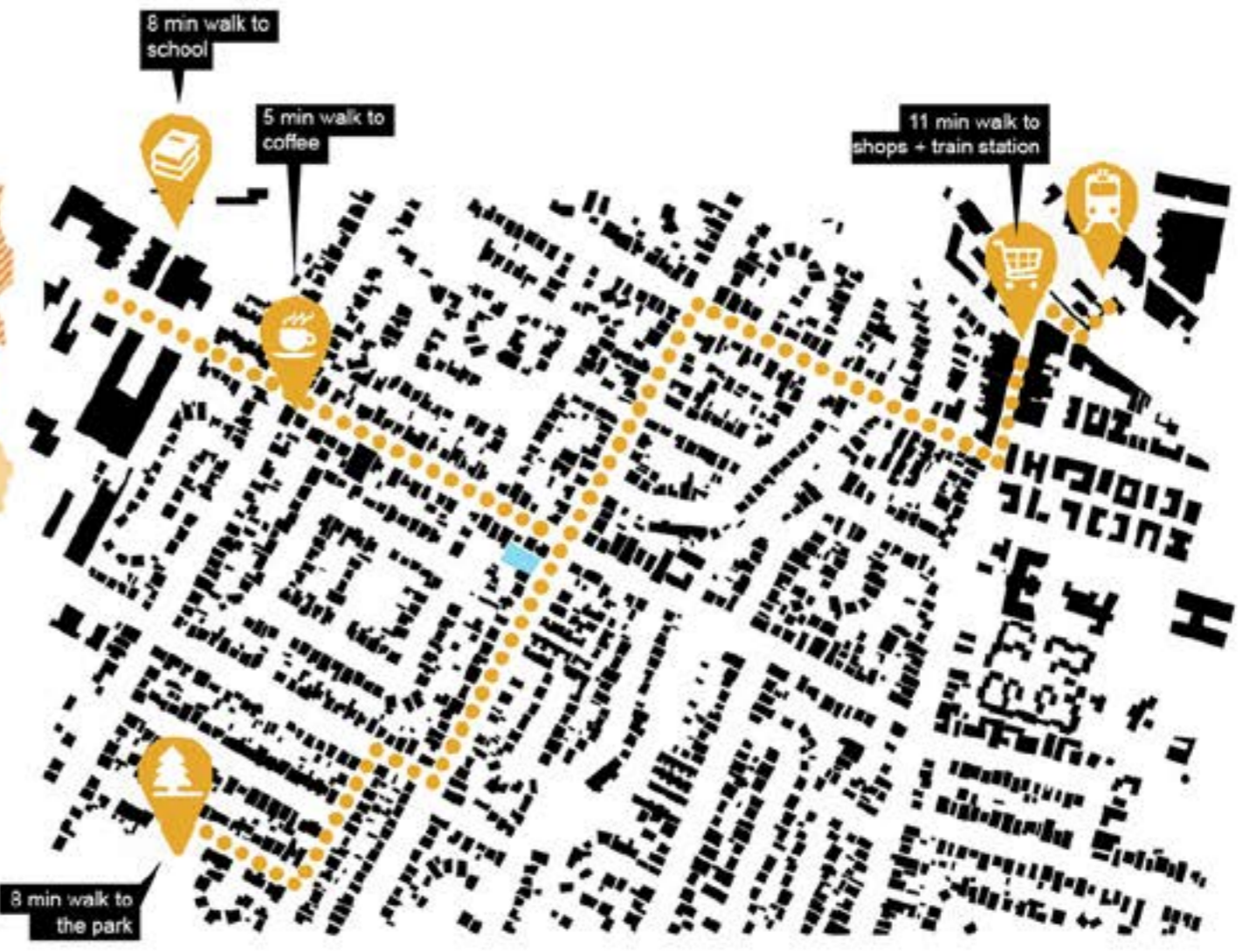
Ignore prevailing front setback and 10m rear setback controls to rotate the building in order to maximise ground level private open space and ground level common open space.

Ignore prevailing front setback and 10m rear setback controls to rotate the building in order to increase amenity by providing north facing rooms to all dwellings

Utilise on street parking to give back permeable landscaping and private open space

Areas To Challenge Manor House Controls
1:400

the herd



We took this competition as an opportunity to explore how a typical low-density residential area could make the transition to a more sustainable and vibrant medium density neighbourhood. Rather than wipe out an existing neighbourhood to begin with a clean slate

we felt it was best to work with existing subdivision patterns and gradually move an area into the 'future desired character'. Enter the manor house. While the low-density suburb lends itself well to typical family units in a 1 block : 1 family ratio, a manor house allowed us to look at incorporating a 3 bedroom

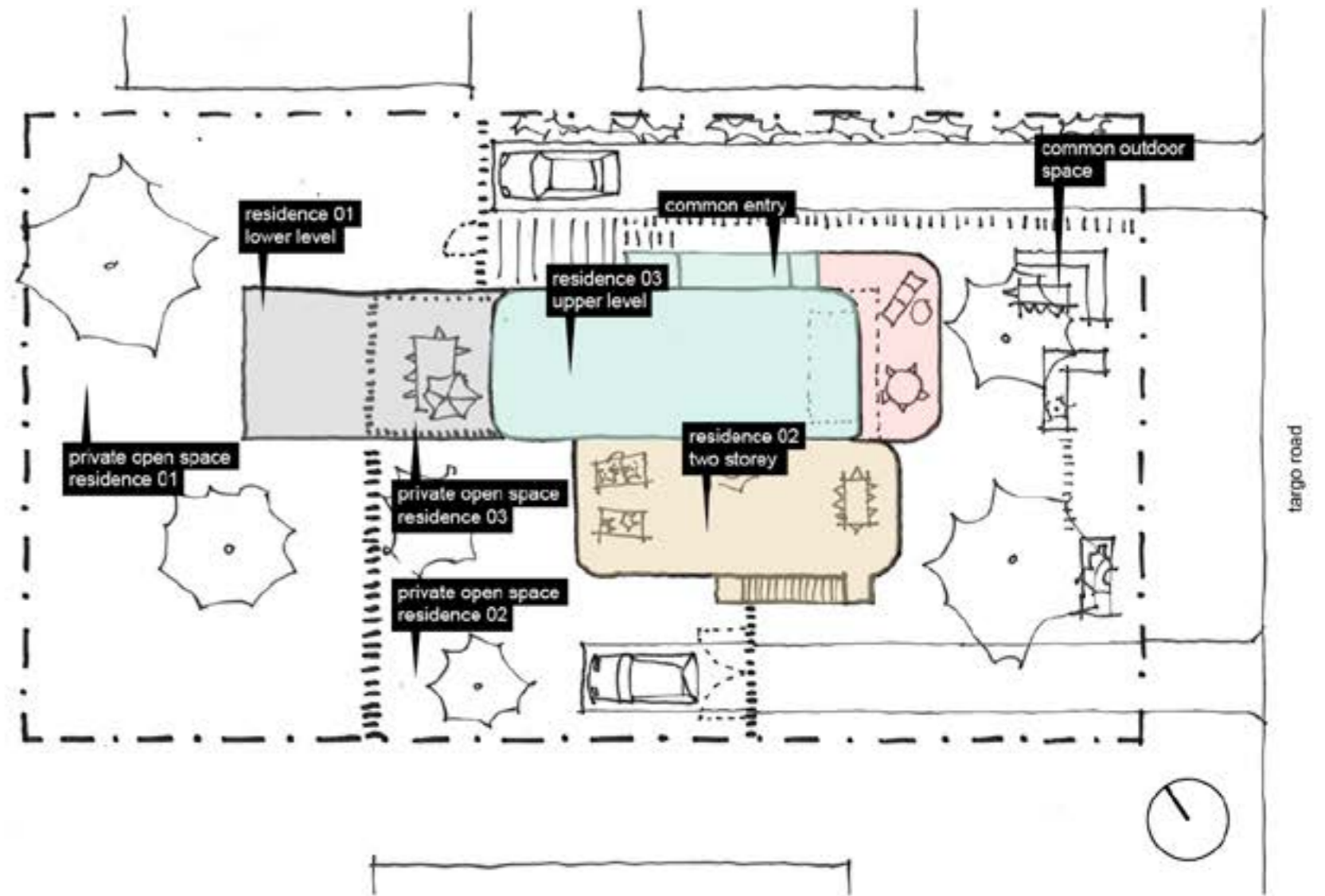
house, a two bedroom house and a one bedroom house all on a single block. A diversity of house types will encourage a diversity of demographics, and will allow a person to live in the same area throughout different stages of life: Childhood, student life, young adulthood, family life and twilight years.

We chose a site in Western Sydney almost at random. Situated within walking distance of a shopping centre, a café, a high school and public parks we saw this as a potentially attractive location for any demographic. This also meant we could challenge the need to mandate a car space for every

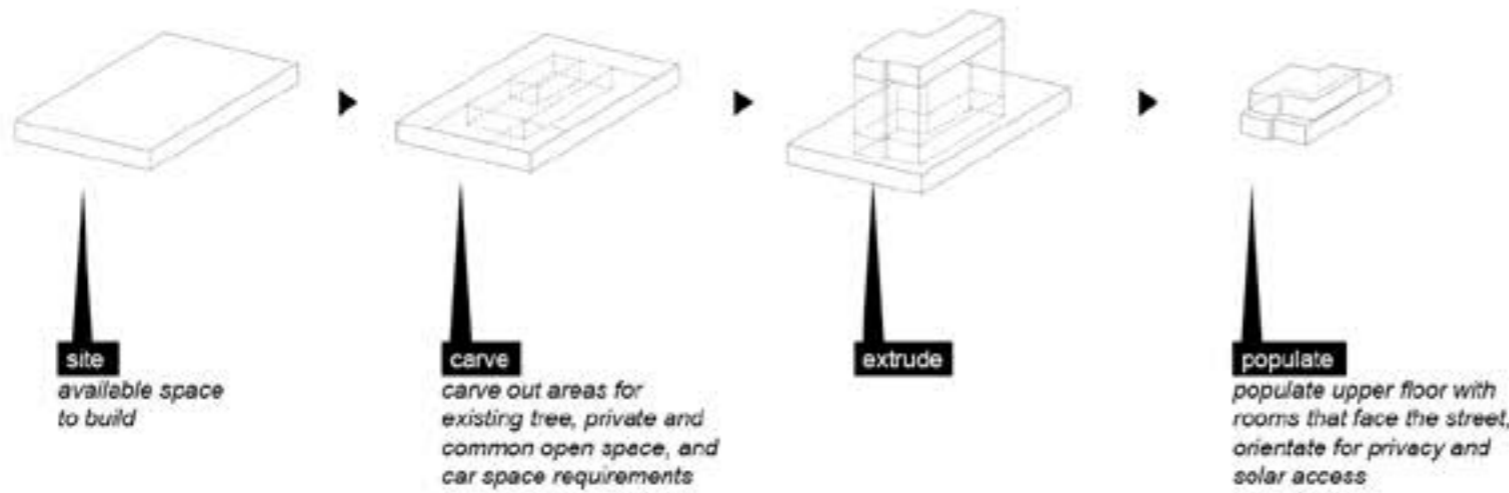
dwelling. However we also chose the site to challenge us in 3 ways: Firstly, the area contains little variety of housing types, making the manor house a novel typology for the neighbourhood. Secondly, while the Draft Medium Density Design Guide suggests that manor houses are best suited to corner

blocks, we set the challenge of designing the house on a block with only one street frontage. Finally, we chose a block where north is to the side; an orientation with potentially tricky solar access.

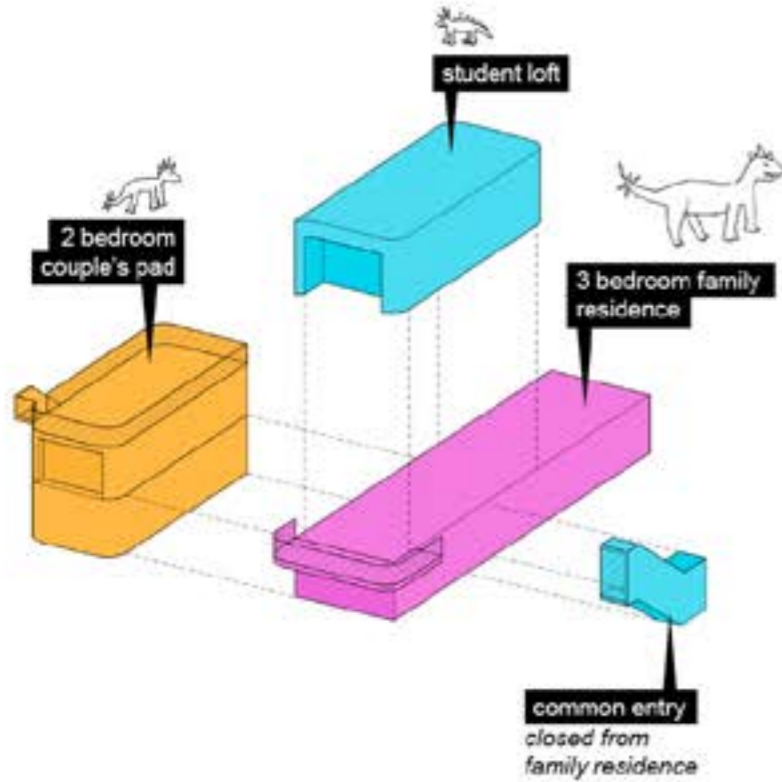




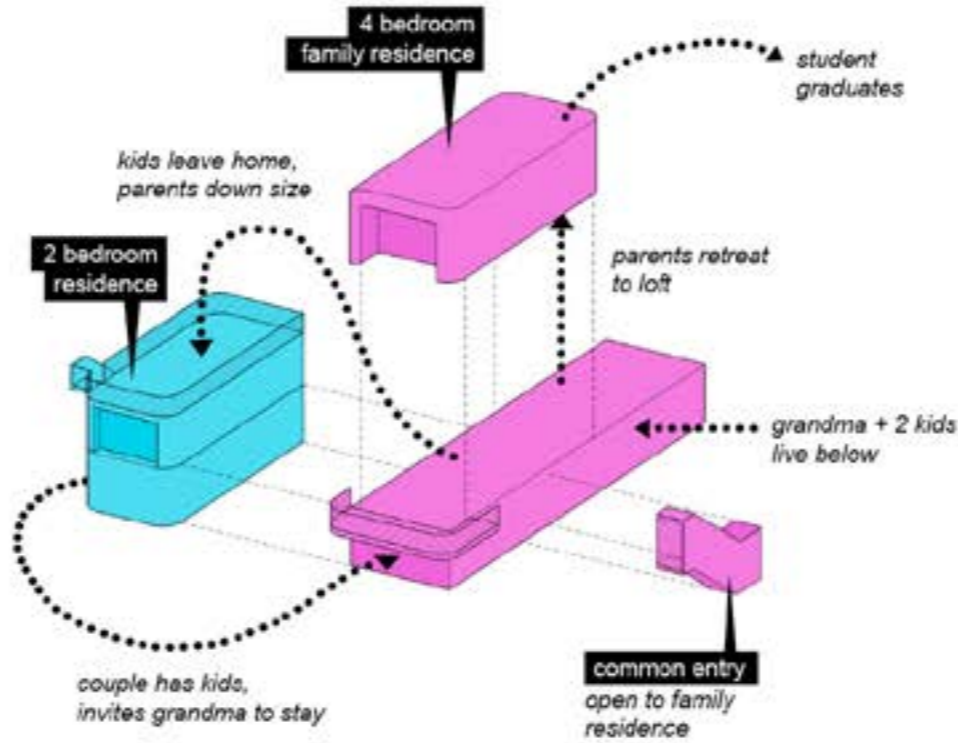
informed by site



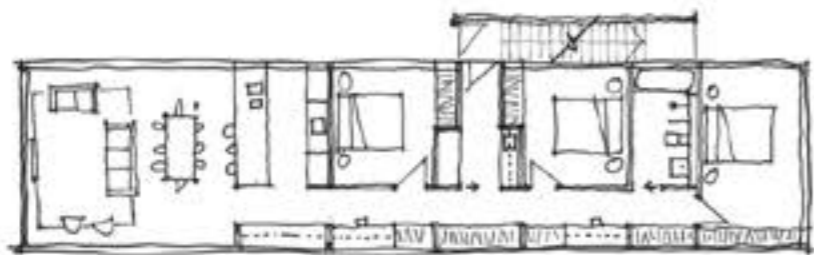
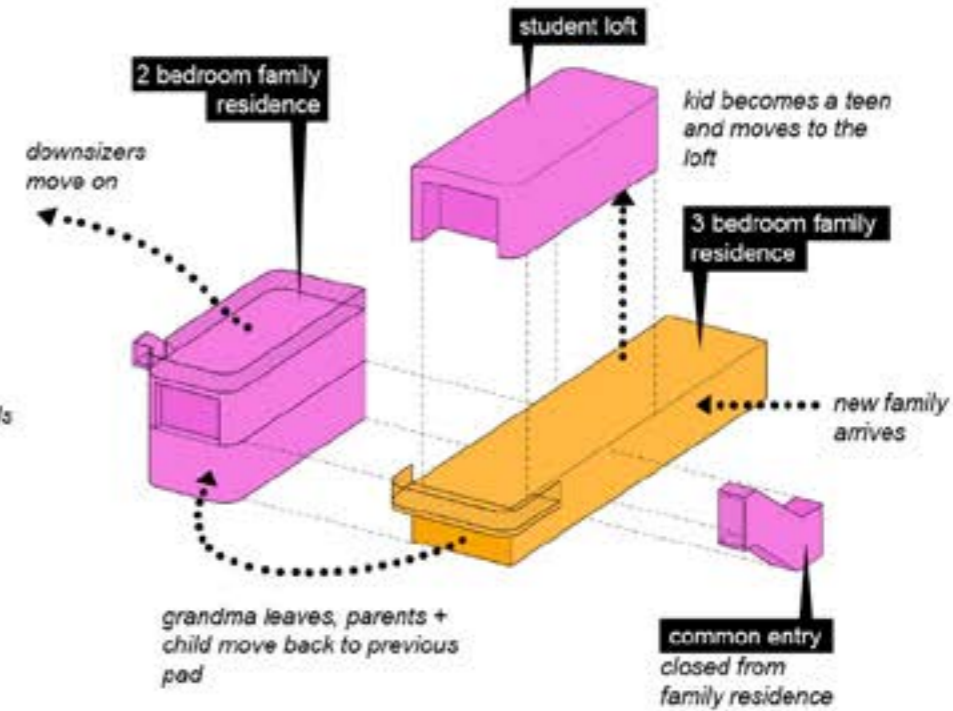
stage 01



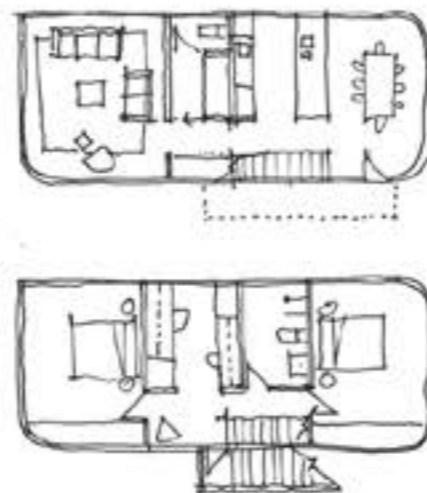
stage 02



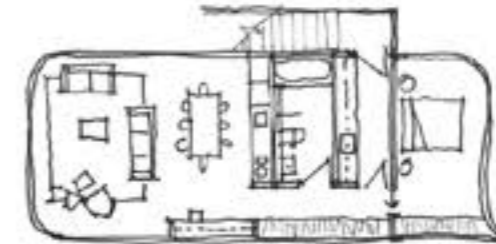
stage 03



residence 01
3 bedrooms



residence 02
2 bedrooms



residence 03
1 bedroom



manor house or dual occupancy

In preparing this competition submission we came to the realisation that the complying development criteria in the Draft Medium Density Design Guide are not well suited to the manor house typology. This is simply because they are placed under the same restrictions as dual occupancies, and are thus expected to fit into the same context as

a development with only two dwellings. The only way around this issue in our case was to treat the development as a dual occupancy for planning purposes. However in effect the submitted design is a manor house with 3 dwellings.

rules to challenge

3.4F-1/ Driveways are to be setback from a habitable room window by at least 3m if the window exceeds 1m².

challenge! In situations with limited space, this places unreasonable constraints on building form. Further, we believe this is more likely to result in the designer adjusting the windows to habitable rooms than adjusting the driveway location!

3.4o-1/ Where parking is provided above ground, at least one car space is to be provided per dwelling.

3.4o-3/ Car space are to be separated by not less than 3m from windows or doors to habitable rooms of dwellings that are not associated with the parking space.

challenge! These constraints together make it almost impossible to design a manor house on a block with only one frontage. The likely result will be that a) few manor houses will be built and b) the manor houses that are built will need to incorporate expensive underground parking, or unsightly on-grade parking with serious compromises on private outdoor space.

SKYLIGHT HOUSE



SITE CONTEXT
1:1000 @A3



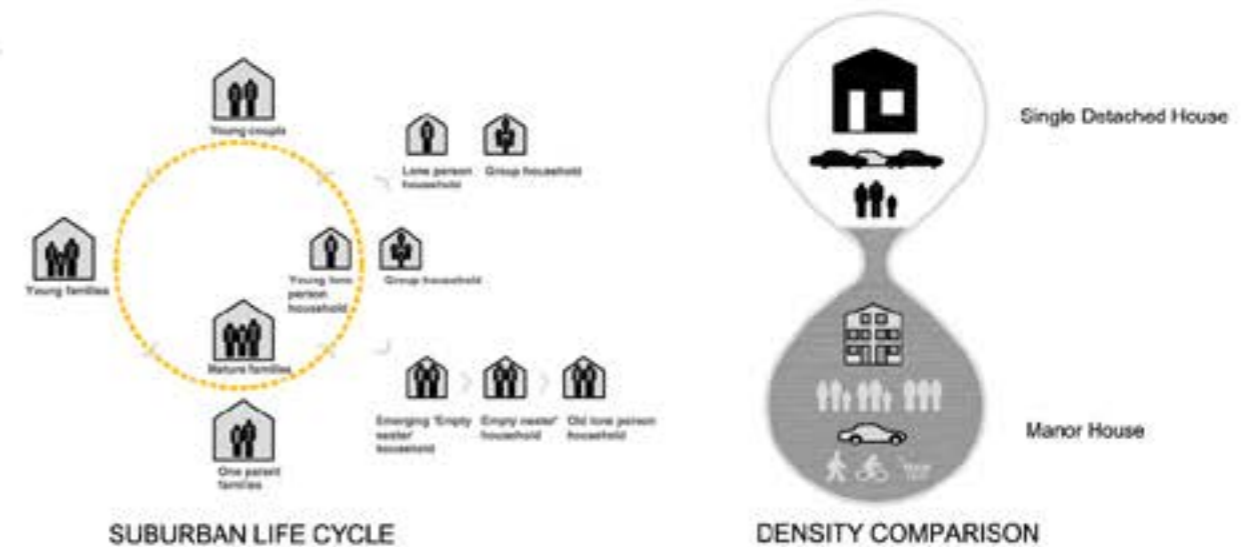
CONTEXT DIAGRAM ANALYSIS
1:1000 @A3

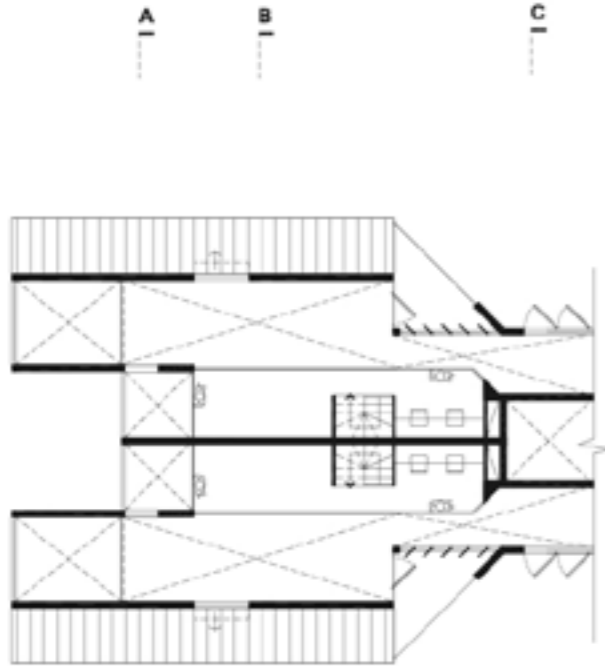
Manor house has been considered as one of typologies for "Missing Middle" in NSW. Proposed "skylight house" scheme is challenging Medium Density Design Guide to explore a new way by filling the gap between low and high rise residential zone and to unveil all creative approaches for the typology itself.

In terms of social impacts, understanding the changes that people make at different ages in their life, and the different types of housing they are likely to consume at those life stages is an important factor in forecasting future population and household types.

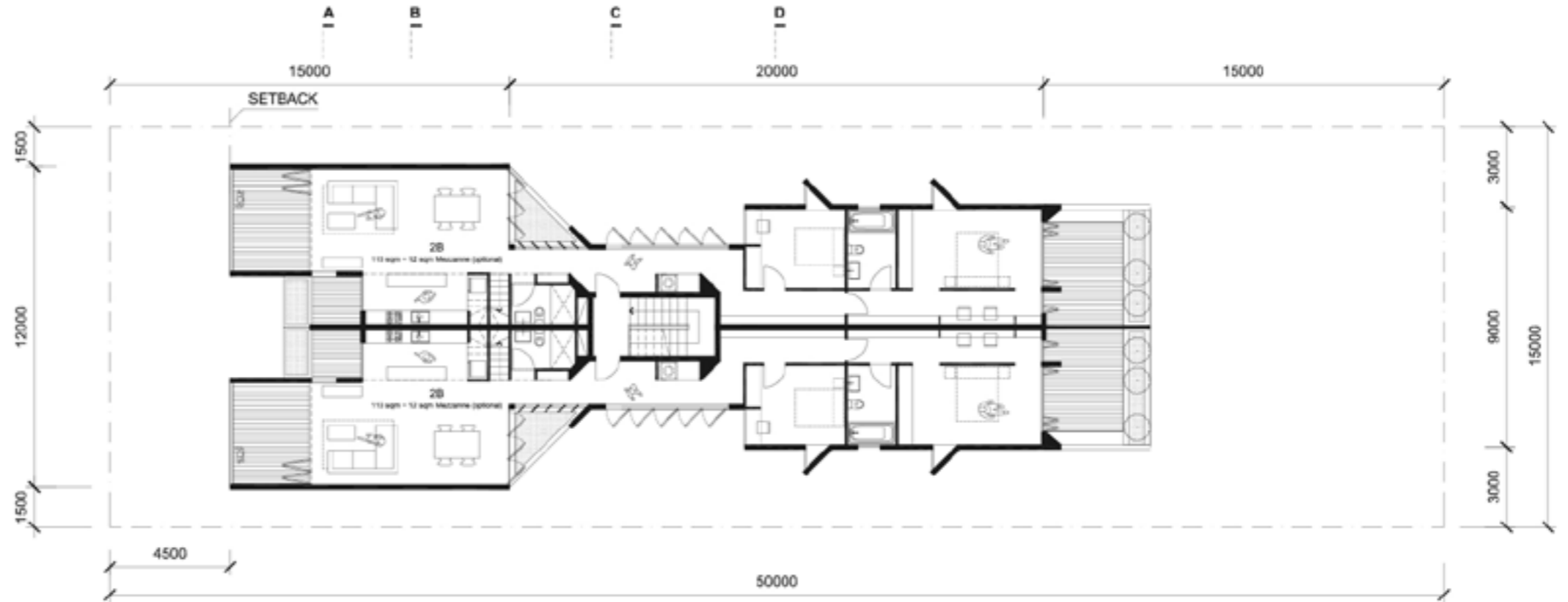
Alternatively, if a suburb is in a location close to economic drivers of change, it may be able to attract families to move back into the older dwellings in the area, increasing household size and population again. The loop in the diagram represents the process of sustainability of an LGA (or suburb), if it can attract families back into older housing in the area.

Generally, more diverse communities are more sustainable in the long term for society. Therefore, manor house can not only adapt to multi age groups living but also fulfil medium density housing issue.





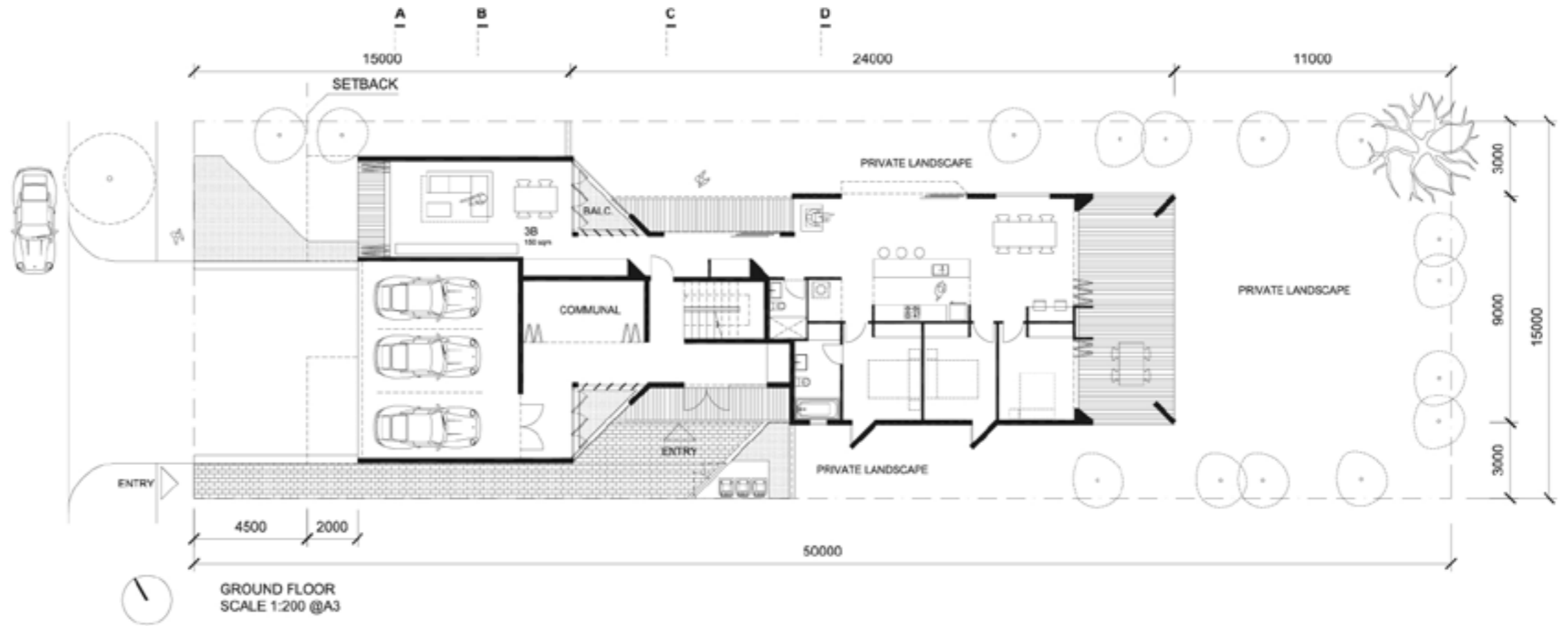
MEZZANINE
1:200 @A3



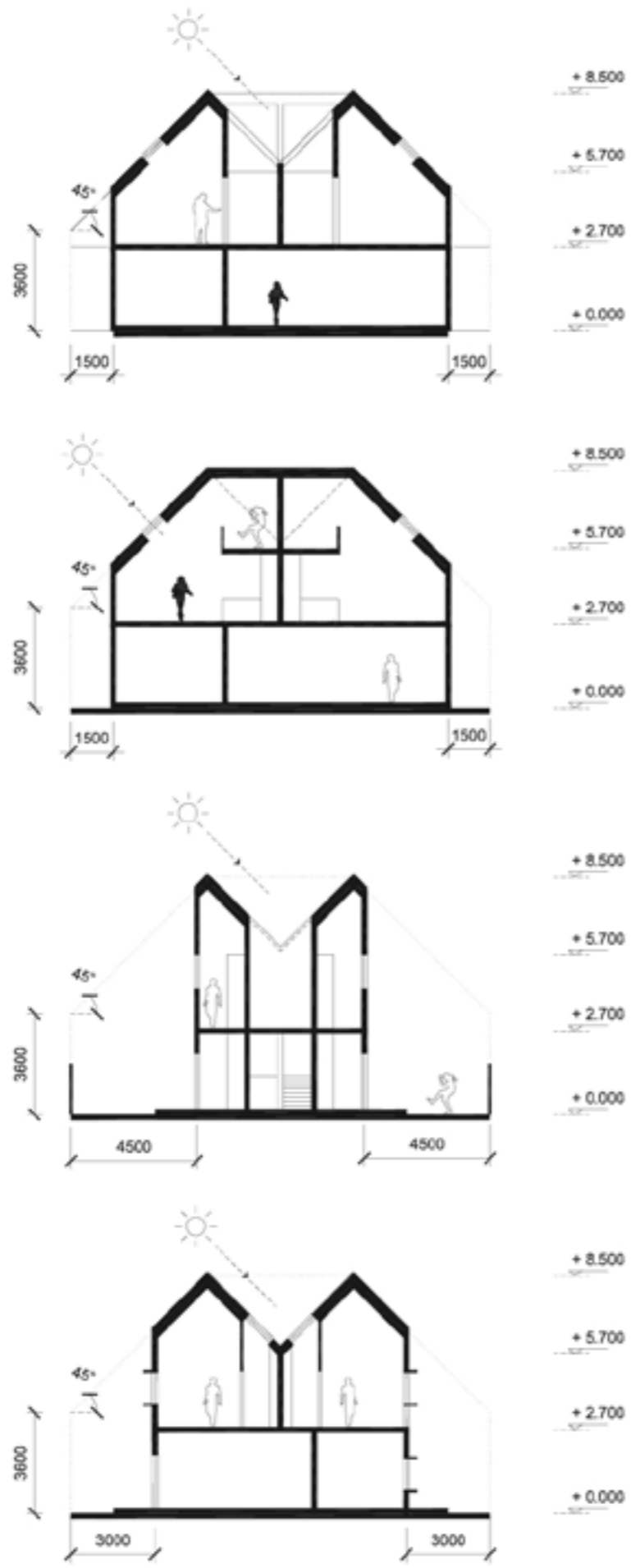
LEVEL 1
1:200 @A3

PROJECT DETAILS:

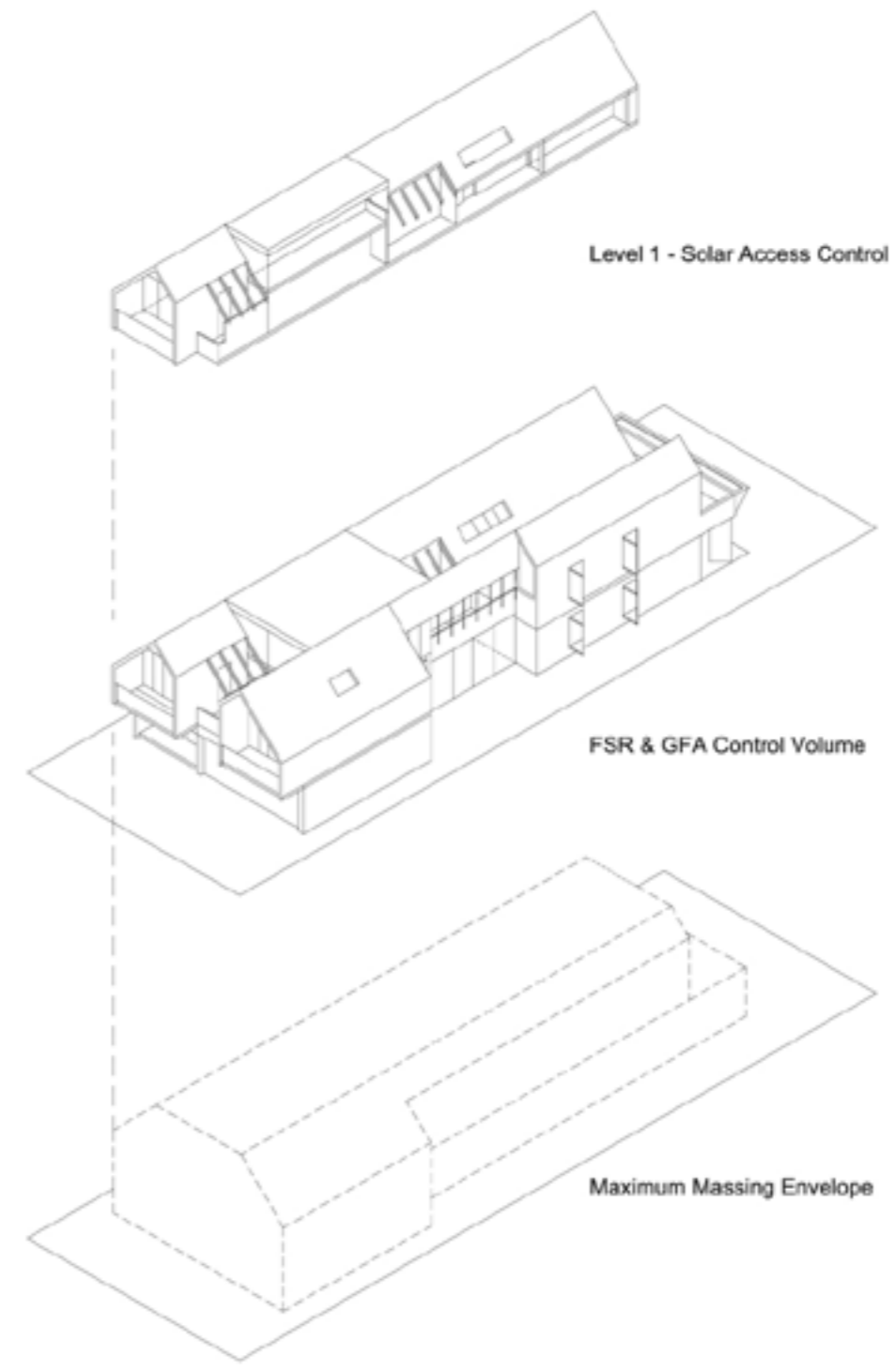
- Address: 8 Percy Street, Bankstown NSW 2200
- Residential Zone : R3
- Number of units: 3 (2x 2 Bed & 1x 3 Bed)
- Number of Storey : 2
- Lot size : 750 sqm (15 x 50 m)
- FSR 0.5 : 375 sqm (proposed 370 sqm)
- Built area : 297 sqm
- Landscape Area (30 %) : 225 sqm (proposed 450 sqm)
- Height Limit : 8.5 m
- Front Setback : 4.5 m
- Side Setback : 1.5 m and 3 m
- Rear Setback : 11 m
- 2 Bedroom Area: 110 sqm + 12 sqm Mezzanine (optional)



GROUND FLOOR
SCALE 1:200 @A3



CROSS SECTIONS
1:200 @A3

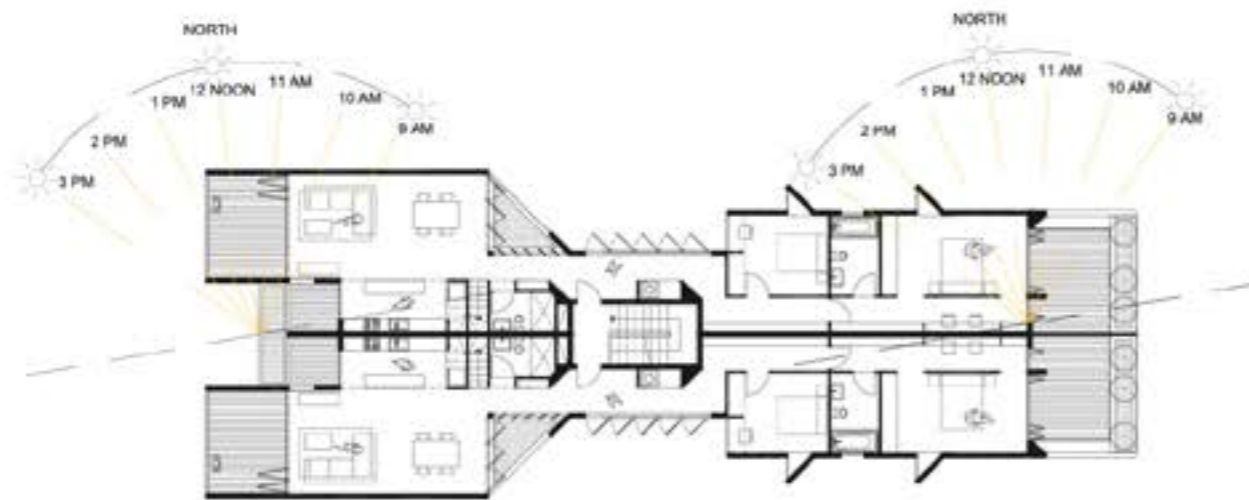


AXONOMETRIC DIAGRAM

KEY CHALLENGES:

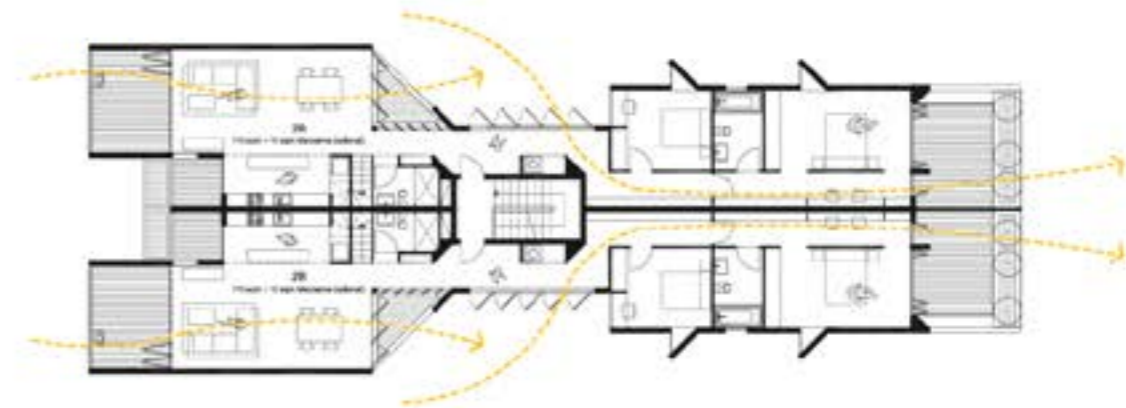
Design brief provides massing envelop which turns into barrier in setting out roof form. The proposed scheme approaches based on maximum volume, then design several skylights and openings through a series of cross sections to respond to the design guide.

Another challenge can be found in the brief requires all units need to face frontage that eliminate the ideas of units facing back yard only. To adapt this issue, the scheme suggests long linear plan, however, it could be hard situation for lots facing east west, and south face unit is limited by solar access.



SOLAR ACCESS COMPLIANCE

Achieve 2 hours of direct sunlight in mid winter, a diagram above is to check whether the sun can 'see' the living room window and private open space between 11 am and 1 pm in plan view



NATURAL CROSS VENTILATION COMPLIANCE

Natural ventilation which allows air to flow between positive pressure on the windward side of the building to the negative pressure on the leeward side of the building providing a greater degree of comfort and amenity for occupants. The connection between these windows provides a clear, unobstructed air flow path. The majority of the primary living space and 2 & 3 bedrooms (where n is the number of bedrooms) is designed on a ventilation path



Legend

RL	Low Density Residential	RI	General Industrial	SI	Commer
RI	Medium Density Residential	LI	Light Industrial	SI	Mixed U
SI	Infrastructure	RE	Public Recreation	SI	Business
●	Bus Stop	◆	Residential Interface		



SITE
130-150 HEFFRON RD
1 : 1000 @ A3

2 hectares - 4 blocks
75 dwellings
• 14 Manor Houses
• 19 Terraces
200 pax - 2.5 persons / dwelling
37 dwellings / hectare

Manor House Terrace House

DESIGN PRINCIPLES

CO-living – The collective is large enough to share: child/aged/community care, Library Resources, Laundry, Recreation, Transport, Work Space, Study Space.

MO Modular – Housing size and configuration can flex with size and makeup of the family unit. As a family unit grows or reduces, modules can be added or subtracted. Likewise, the modules can be adjusted to suit income and budget.

DO my Home – A place to call home with a unique street address and unique private open space maximising privacy and environmental conditions.

Comodorms is an opportunity to provide choice and flexibility to those who are struggling most in the housing market. The choice to be private at times and the choice at other times to engage with the community grows with the concept of social living. The choice to expand and contract. The choice to enter a community generated safe environment.

CO
Co-Living

MO
Modular Design

DOMUS
Latin for House

COMO. DOMUS

Located on the inner edge of the Sydney Middle Ring. The suburb is Pagewood south of Sydney CBD. It's a precinct that straddles light industry, retail, residential, and recreational zones. Ready for reinvigoration with MIDDLE DENSITY HOUSING connecting existing adjacencies and leveraging current well established infrastructure.

The design approach breaks down a generous 2 hectare site into a fine-grain rhythm of manor and terrace houses, planned strategically to place emphasis on pedestrian-friendly circulation, ease of access to shared community facilities, and to provide a sense of individual place within the community

CONTEXT

COMO. DOMUS



Total Site



Street Address



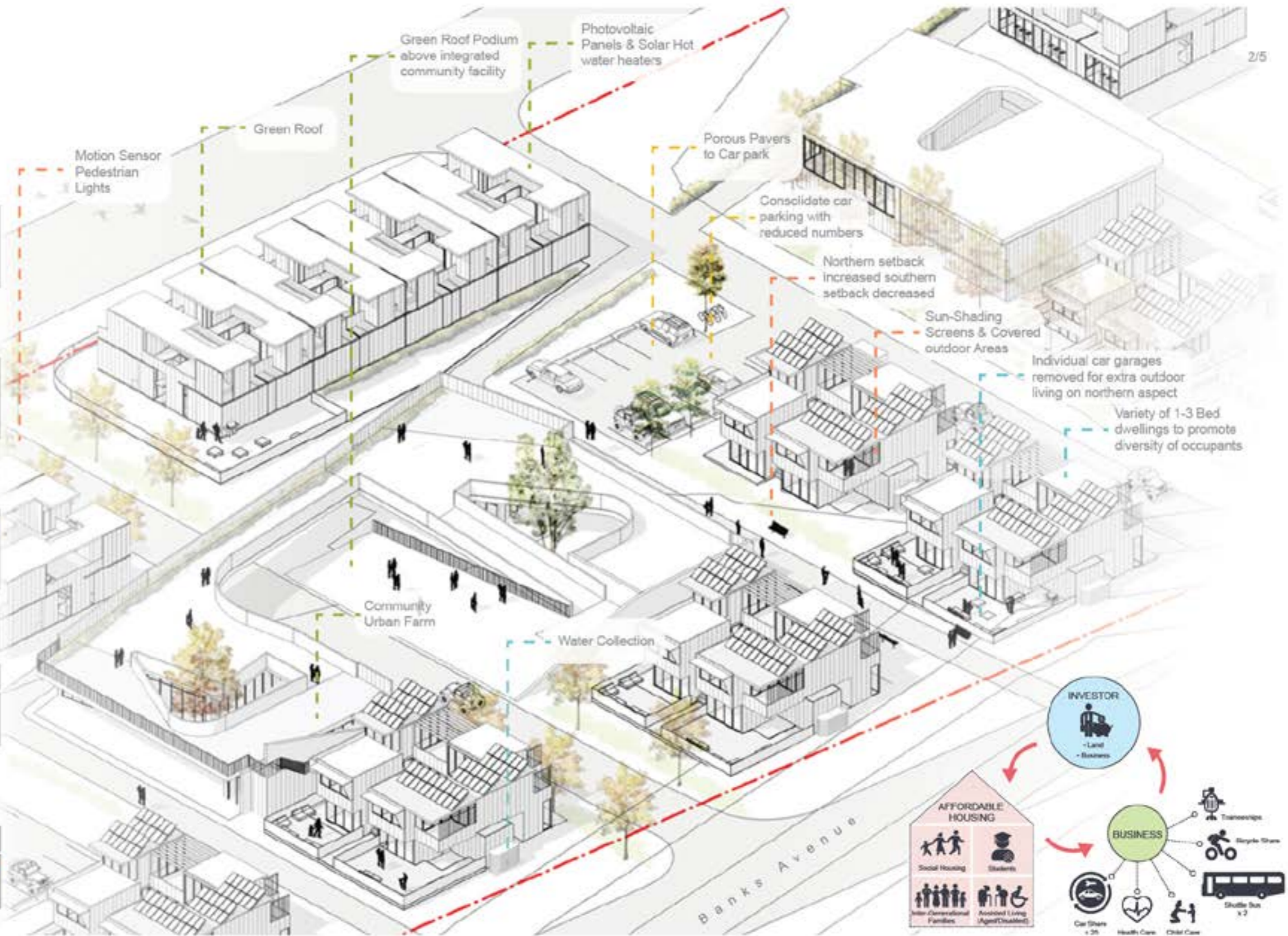
Green Connection



Shared Connection



Plan



2/5

CONCEPT DESIGN

BUSINESS MODEL

The Comodomus business model is a cycle suited to those who require affordable housing.

Investor: Invests in land and also business model

Inhabitants: Have the opportunity to purchase or rent a modular housing facility which can be relocated in time, and pay less rent.



Assisted Living pays more to be cared for in a community environment.

Business: As most inhabitants pay less, they are invited to participate in a self-sufficient model, paying for 'rent' by giving back to society through job and traineeship opportunities. A health care, child care, car & bike share facilities are additions to the business, suited for the demographics at Comodomus.

COMO. DOMUS

CO-HOUSING

Medium density housing is most suited to those looking for a compromise between the suburban and urban. As our site is in close proximity to UNSW and the city, but still far enough to be suitable for a suburban lifestyle, our site is suited particularly to students and workers nearby. As older couples make up for the largest percentage of people in Pagewood, elderly people have become a large portion of our demographics, being cared for by other residents. As a co-housing model, students, key workers, social housing residents and elderly can perform daily tasks in a communal model.

MODULAR

Three different sized modules form the basis for the Manor Houses, Terrace Houses and Communal areas. The use of modules allows different housing configurations and sizes to be easily interchangeable for the faster house transitioning that occurs with our targeted demographics.

DOMUS

Each inhabitant is free to rent or purchase their own module(s), empowering these occupants with more choice than the traditional housing model. This system also lends itself to more affordable housing, suiting the minority groups in our model.

1:200 @ A3

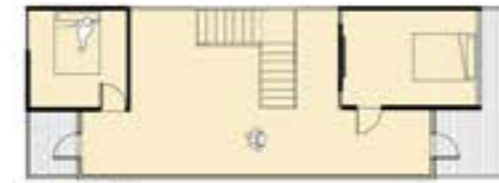
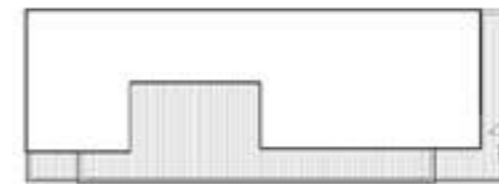


- Studio
- 3 Bed
- 2 Bed

MANOR HOUSE

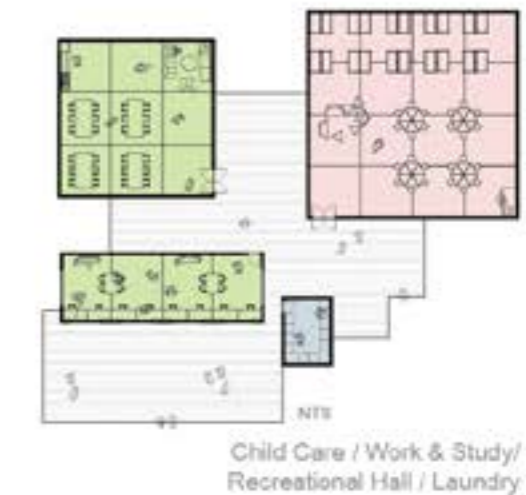
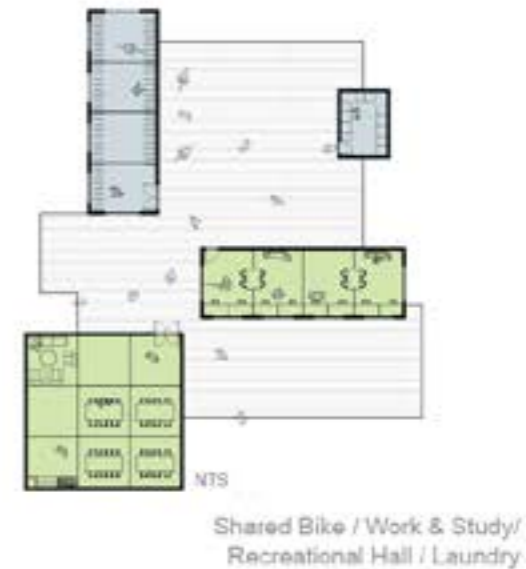


TERRACE HOUSE



Manor House Section

SHARED SPACES



CONCEPT DESIGN

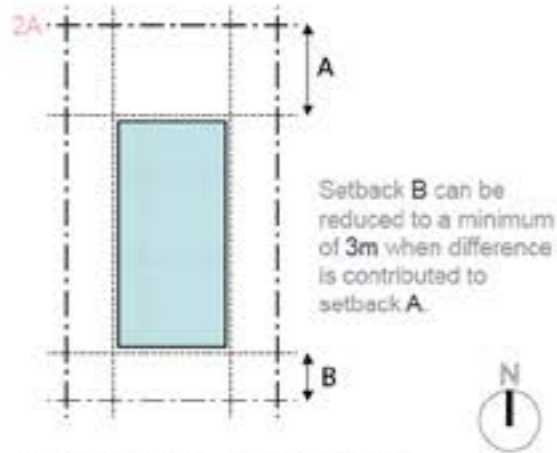
COMO. DOMUS

TEST 1

Where possible / appropriate a southern setback can be reduced (to a min of x) and difference distributed to a northern setback to create a larger outdoor living area facing the northern aspect.

ORIENTATION

Flexible setbacks to favour orientation



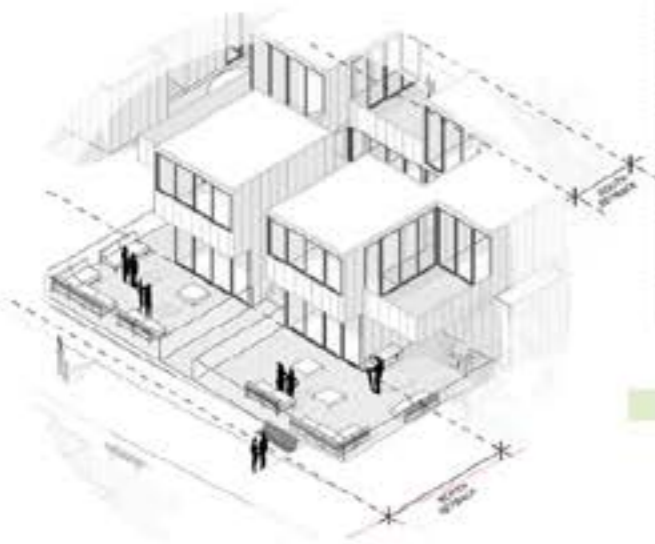
Setback B - southern short boundary

Setback A - northern short boundary

2A BUILDING ENVELOPES - HEIGHTS AND SETBACKS

Building envelopes help to:

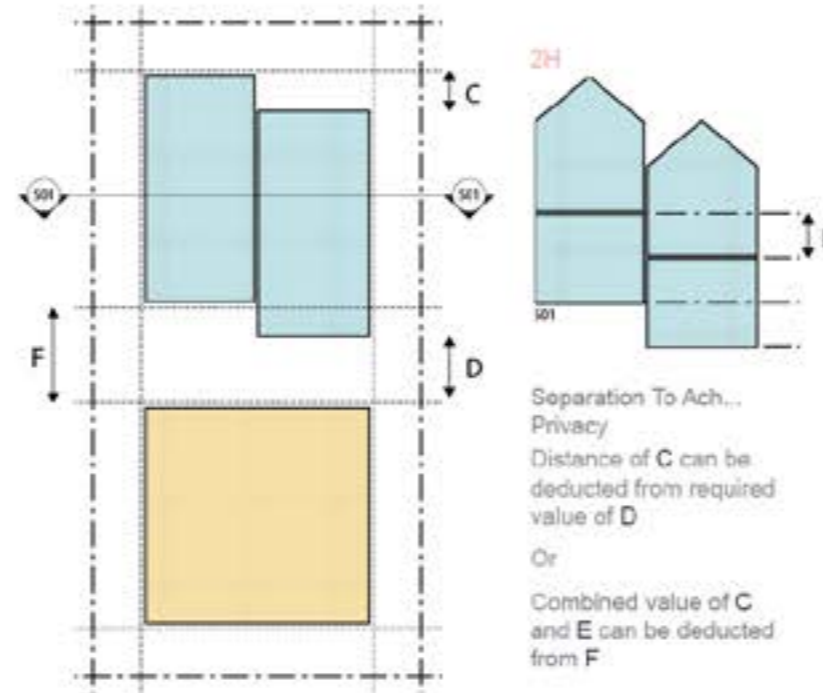
- Define open spaces and landscape areas



2G ORIENTATION AND SITTING

Designing the site layout to maximise northern orientation is an important consideration, but it must be balanced with:

- Promoting amenity for the proposed development and neighbouring properties;
- Providing for the enjoyment of significant views;
- Retaining trees and locating open spaces;
- Responding to sun and shadow.



2H BUILDING SEPARATION

The spaces between buildings are an important consideration as they:

- Provide suitable areas for private open spaces, deep soil zones and landscaping

SEPARATION (privacy)

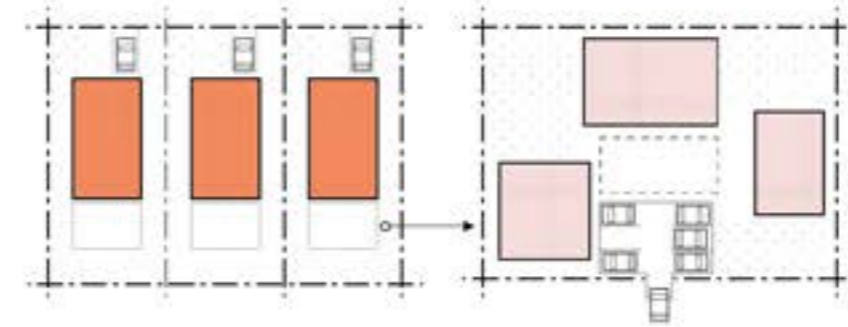
Flexible separation to achieve privacy

TEST 2

Consolidated car parking across the development would require less car spaces promoting healthier lifestyle also allowing more space for communal facility.

CONSOLIDATION

Consolidated communal amenities and facilities



2O CAR AND BICYCLE PARKING

In order to provide a diverse and attractive streetscape, the building façade should be dominant with garages as a recessive element on the street.

- Providing for the enjoyment of significant views;
- Retaining trees and locating open spaces;
- Responding to sun and shadow.



2T COMMUNAL SPACE

Communal space is an important amenity resource that provides outdoor recreation opportunities for residents, connection to the natural environment and valuable 'breathing space' between dwellings in larger medium density development.

- Providing for the enjoyment of significant views;
- Retaining trees and locating open spaces;
- Responding to sun and shadow.



TESTING THE DESIGN

THE MISSING MIDDLE

20 LOWANA STREET, VILLAWOOD NSW
THE CITY OF BANKSTOWN

Suburban Villawood consists of houses of one and two stories on large blocks of land that were designed for couples with children. It has a large, diverse, migrant population, 25% of whom are couples with children.

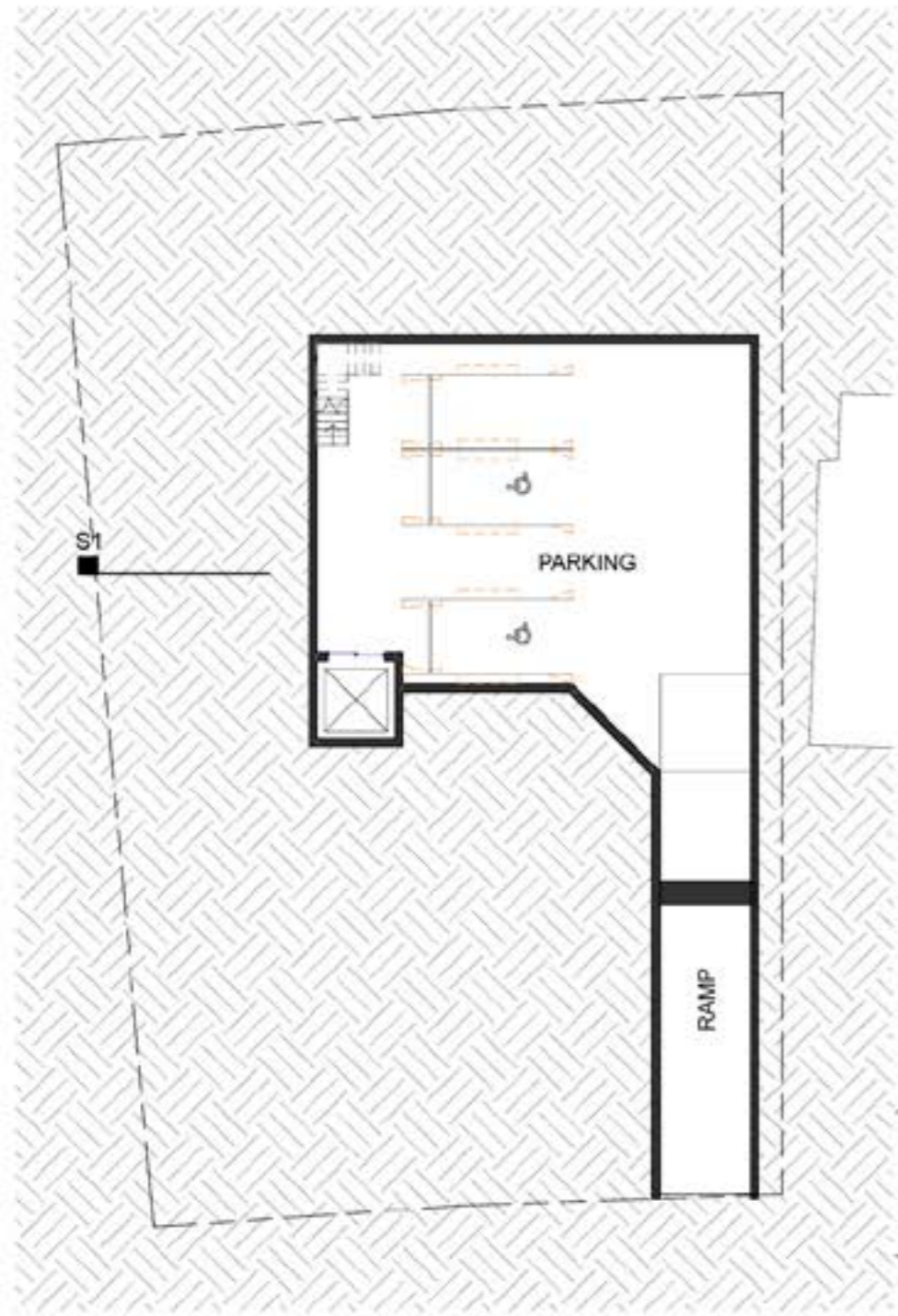
We challenge the preconceived social structure that informs housing design by engaging with the reality of multiple household types within the same co-operative family group, particularly amongst migrants. Elderly family members perform child rearing and household duties to allow working age family members to earn money; infirm family members are cared for within the family group.

The Co-housing model replicates this co-operative communal existence with an accommodation and social contract disparate households commit to. Our entry shows a three bedroom family home flanked with studio, one bed and two bed dwellings, intended to house elderly relatives, a second family, a single working age relative or single parent family. As well as dedicated private open space, there is a climatically appropriate communal open space with ancillary workshop, cooking facilities and recreation space. Two storey, Class 2 buildings can be built in Type C construction. Multiple manor houses on adjoining lots could also make up a growing co-housing community.

The manor house form will not disrupt suburban fabric, and forms a financially accessible, superannuation investment. In summary the proposal achieves:

- Future proof housing diversity
- Social Flexibility
- Economical domestic construction
- Communal space that does not compromise privacy
- Suburban fit
- Low cost, grass roots investment

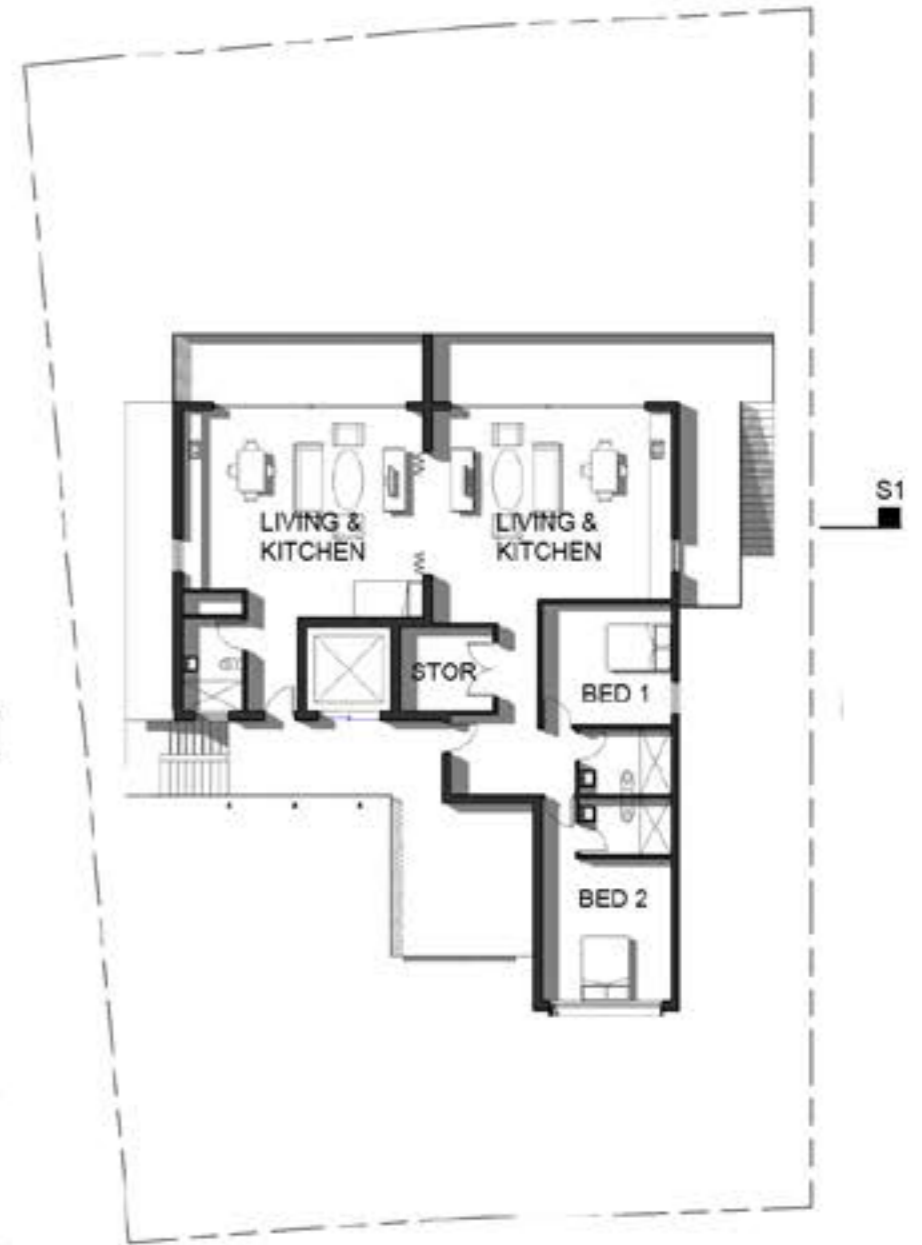




BASEMENT FLOOR PLAN
SCALE 1:200

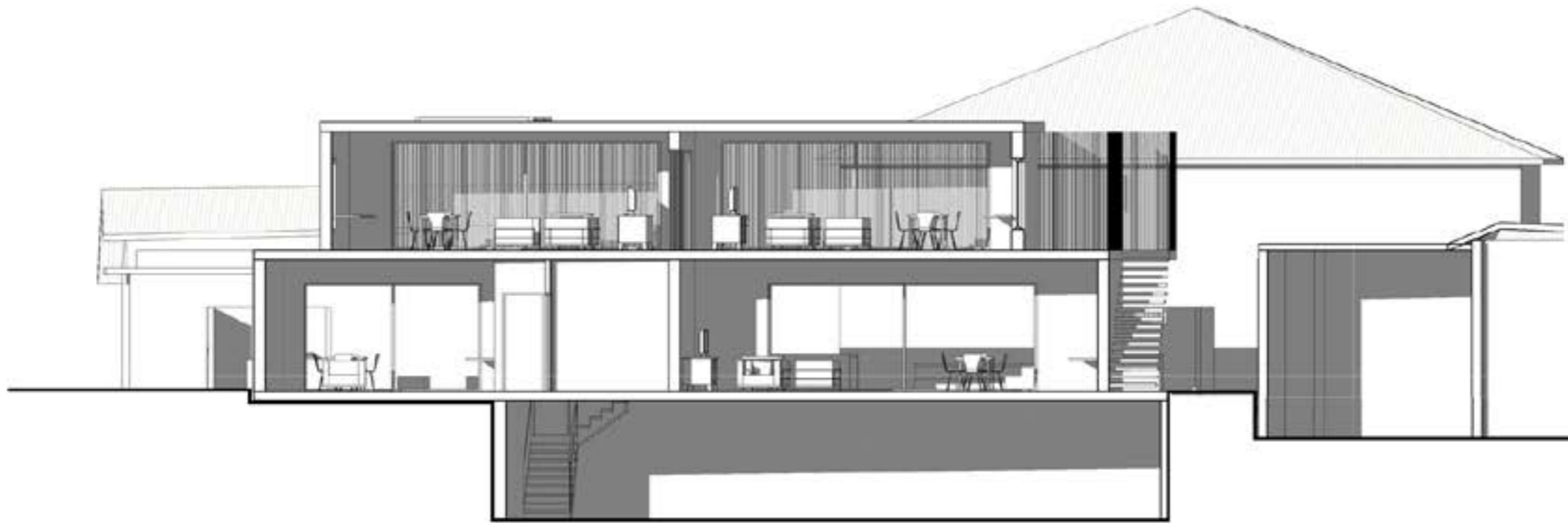


GROUND FLOOR PLAN
SCALE 1:200



1ST FLOOR PLAN
SCALE 1:200

CONCEPT **A02**

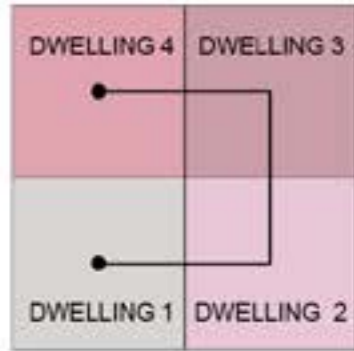


SECTION
SCALE 1:200

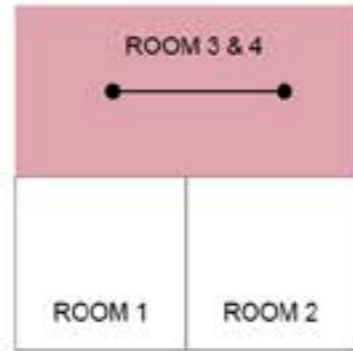


FRONT-FACADE PERSPECTIVE
SCALE NTS

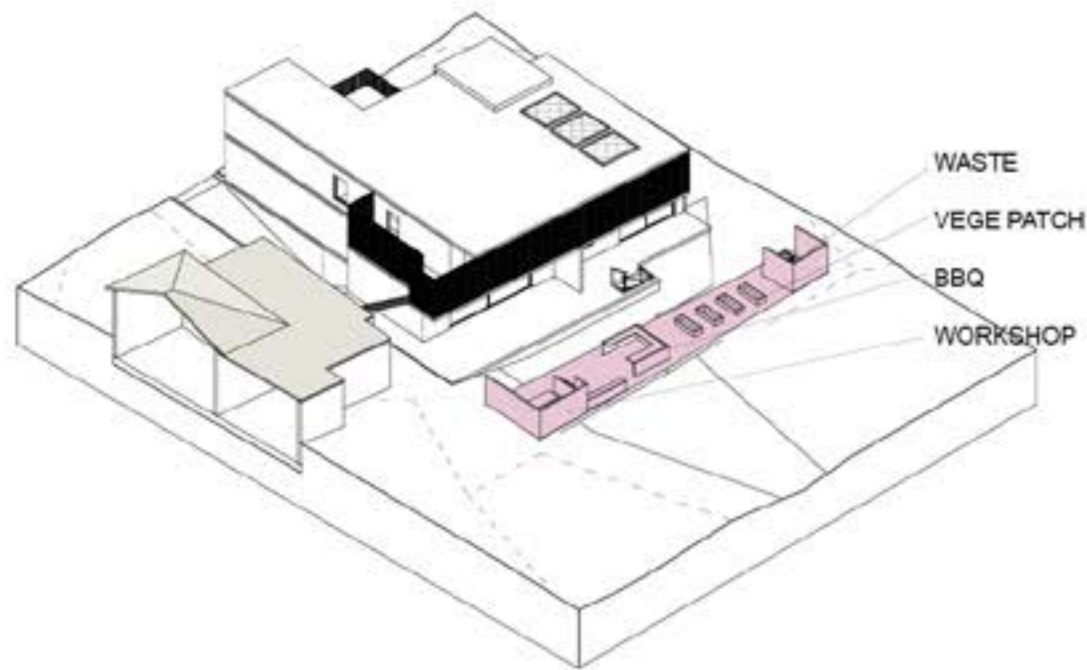
CONCEPT
DESIGNER **A03**



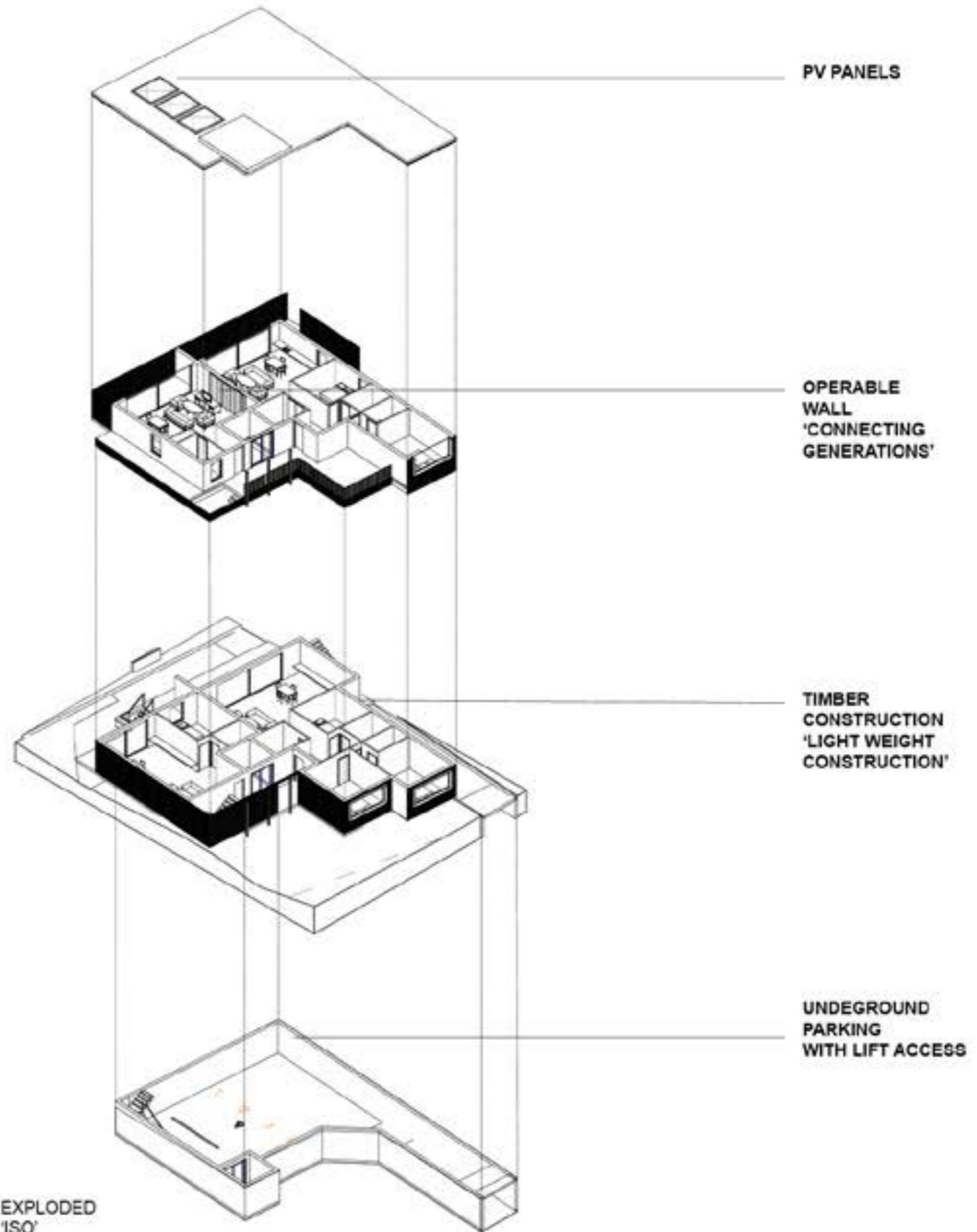
MANOR HOUSE
MOVEMENT THROUGH
'GENERATIONS'



1st FLOOR
ROOM CONNECTIONS
'CONNECTING GENERATIONS'



CO-HOUSING
COMMUNAL
FACILITIES



EXPLODED
'ISO'
VIEW

PV PANELS

OPERABLE
WALL
'CONNECTING
GENERATIONS'

TIMBER
CONSTRUCTION
'LIGHT WEIGHT
CONSTRUCTION'

UNDEGROUND
PARKING
WITH LIFT ACCESS

TESTING
A04

