

The Source of Arden-Macaulay

A benchmark mixed-use development for Arden-Macaulay's rebirth as an inclusive, productive and affordable inner city neighbourhood



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Executive Summary

This report responds to a brief provided by the City of Melbourne, Places Victoria, Housing Choices Australia (HCA) and the Lord Mayor's Charitable Foundation (LMCF) to provide family-friendly affordable housing in the inner city. The key criteria of these four organisations was to provide a minimum level of social housing, cross subsidised with a large element of private housing to be sold on the market. The report investigated the feasibility of achieving this brief in the Arden-Macaulay urban renewal area at a site directly adjacent to Macaulay Train Station. An extensive site analysis is provided, followed by the future Vision. The site is entitled, The Source of Arden Macaulay, referencing the intention to identify its centrality in establishing a precedent exemplar of urban renewal that achieves an affordable housing development that also makes the numbers stack up. The Source of Arden Macaulay seeks to move beyond the provision of affordable housing, expanding this to include affordable working to achieve a more holistic approach to urban renewal that delivers a broader notion of long term 'affordability'.

The Brief

The brief requires;

- To develop the following, preferably dispersed across the site to promote sociability and inclusion;
 - 30 social housing units, comprised of;
 - 5 units – tenants with mental health conditions at risk of homelessness
 - 5 units – tenants with a disability (modified units)
 - 10 units – elderly tenants at risk of homelessness
 - 10 units – families
 - Staff office/s
 - Substantial number of private dwellings to subsidise social housing component
- A particular emphasis on delivering family-friendly, affordable living in the inner city through urban renewal projects
- Attempts to develop innovative solutions to minimising life-cycle, social housing operating costs
- Building and designing according to high quality standards to maximise solar access, natural ventilation, passive building designs, and address noise and pollution issues through design
- The development of flexible housing typologies
- The building of social capital through ‘place capital’ which benefits the wider community
- The provision of community and commercial spaces
- The delivery a positive ecological outcomes
- Financially sustainable business models that set a precedent for similar, future developments

Site Overview

2.0 Site

Image 1: Satellite image of the site



2.1 Demographics

The site is located on the boundary of two Australian Bureau of Statistics statistical local areas. This report treats both local areas significant to the social context of the site. Kensington and North Melbourne have both a greater concentration of high income earners, and greater concentration of low income earners relative to Greater Melbourne. This suggests demand for both affordable housing and luxury housing in the area. There is also a higher number of young people (12-25 years) suggesting a higher need for appropriate youth recreational facilities, as well as education and training opportunities. Kensington has the highest concentration of couples with children in the City of Melbourne.

Table 1: Key Demographic Data

	Kensington	North Melbourne	Melbourne
Young people aged 12-25 years*	20%	21%	17% (Greater Melbourne)
Older people aged 60+ years*	9%	11%	8% (Greater Melbourne)
Residents born overseas *	28%	40%	42% (LGA)
Most common Language Other than English *	Cantonese	Mandarin	Mandarin (LGA)
Weekly income < \$300	8%	14%	6% (Greater Melbourne)
Weekly income > \$1500	51%	38%	40% (Greater Melbourne)
Median Rent \$/week	350	335	300
Median Mortgage \$/month	2,167	2,000	1,810 (Greater Melbourne)
University students*	10%	18%	21%
Bachelor degree or higher	34%	33%	33%

(Source: ABS 2006a,b&c Census of Population and Housing; ABS 2011a,b&c Census of Population and Housing)

Table 2: North Melbourne and Kensington Unit Prices

North Melbourne			
	Buy (\$)	Rent (\$/week)	
1 bed		250	
2 bed		450-500	
3 bed		430-480 (very few available)	
4 bed		N/A	
Avg	446,000	335	
Kensington			
	Buy (\$)	Rent (\$/week)	
1 bed		\$350	
2 bed			
3 bed			
4 bed			

Avg	\$503,000	\$350 (ABS)	
Melbourne			
	Buy (\$)	Rent (\$/week)	
Avg	\$396,000 - \$464,500	300	
Victoria			
	Buy (\$)	Rent (\$/week)	
Avg		277	

(Source: Realestate 2013a,b,c &d)

2.2 Urban Environment and Built Form

2.2.1 Environmental Factors

There are a number of opportunities for the site regarding solar access. The site is large, which means there is lots of space to play around with in providing solar access to the development. The challenge will be in attempting to minimise the loss of sunlight from the CityLink overpass, especially on the lower floors below the overpass.

Image 2

OVERSHADOWING AND HEIGHT DIAGRAM



Shows the overshadowing of the site on the western edge from the CityLink freeway overpass

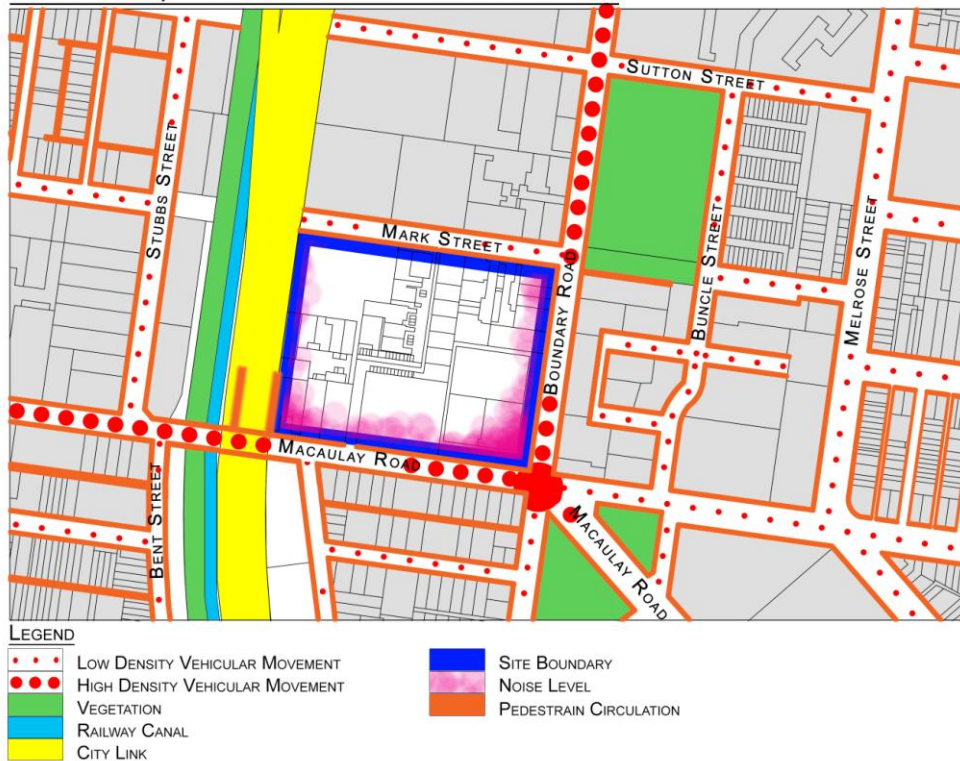
The topography also provides positive opportunities, as the site is located on flat land. Although the site is not subject to flooding, inundation occurs on adjacent sites to the south and west and around Macaulay Station. Development should consider that the surrounding areas are prone to flooding in design considerations, especially in terms of pedestrian access across the train lines in heavy rainfall.

2.2.2 Pollution

Substantial noise pollution emanates from the CityLink overpass, which forms the western border of the site. Given that the overpass is 20 metres in height, noise pollution is likely to be an issue for the development at this height, around 5-6 storeys. Noise pollution from the railway station, including the level crossing is also significant. The disamenity caused by noise pollution can be somewhat ameliorated through design considerations. One strategy is to cluster high density residential development away from the freeway. Commercial uses could be developed on areas adjacent to the railway.

Image 3

VEHICULAR, PEDESTRAIN AND NOISE DIAGAM



Shows extensive noise pollution issues on the perimeter of the site, due to heavy traffic along Boundary and Macaulay roads and the CityLink freeway

Truck and vehicle traffic are a source of exhaust pollution on CityLink and the arterial roads surrounding the site. Increasing green buffers between the site and arterial roads can mitigate surrounding pollution effects. Another strategy involves locating residential population away from the roads. There are also issues with fumes from surrounding heavy industries, such as the asphalt factory. Again, the challenge will be about utilising design initiatives to minimise these effects, and orienting the building to avoid these negative elements.

2.3 Access and Movement

2.3.1 Transport

The site is immediately adjacent to Macaulay Railway station and within 800m of Kensington Railway Station. This location provides good access to the rail network via the Upfield and Craigieburn lines. However, the current station is poorly integrated with the site, is poorly lit, very unattractive and feels dangerous. There is an opportunity to integrate the station with development on the site, improve its attractiveness, perhaps through regaining some of its former heritage (see image 4). The 402 bus route travelling east-west, services our site, operating along Macaulay Road, providing access to Footscray and East Melbourne via the Melbourne University and the Parkville medical precinct. This bus route also travels past Melbourne Museum and Exhibition Gardens.

Image 4: Public transport, pedestrian and bicycle map of site

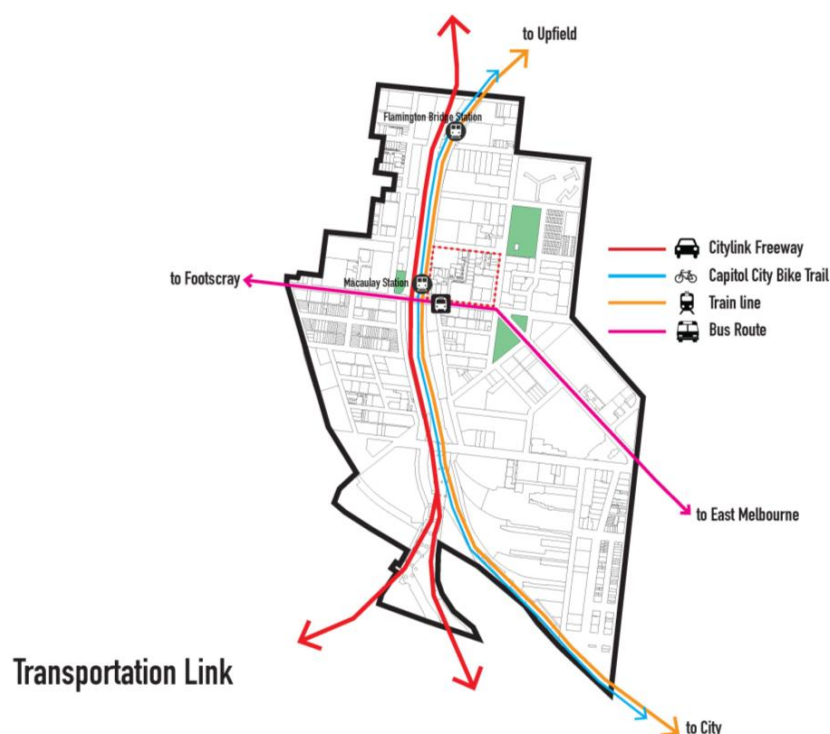


Image 5: Old Macaulay Station



This has since been demolished
(Source: Mow Your Lawn Blog 2011)

Image 6: Current Macaulay Station



The current station suffers from poor lighting and is simply

dwarfed by the CityLink overpass
(Source: Site visit 8th August 2013)

2.3.2 Pedestrian & Cycling Environment

The pedestrian environment around the site is very poor. The narrow, uneven footpaths are difficult to navigate, unsheltered and unshaded. Priority is given to fast-moving traffic, including heavy freight. Cycling conditions are similarly poor, with cyclists competing with again, fast-moving, heavy traffic, including trucks. However, there does exist a well-designed off-road cycle path adjacent to Moonee Ponds Creek (see image 4).

Image 7



Uneven, narrow pavements along large, industrial blocks make for a poor pedestrian environment

(Source: Site visit 8th August 2013)

Image 8

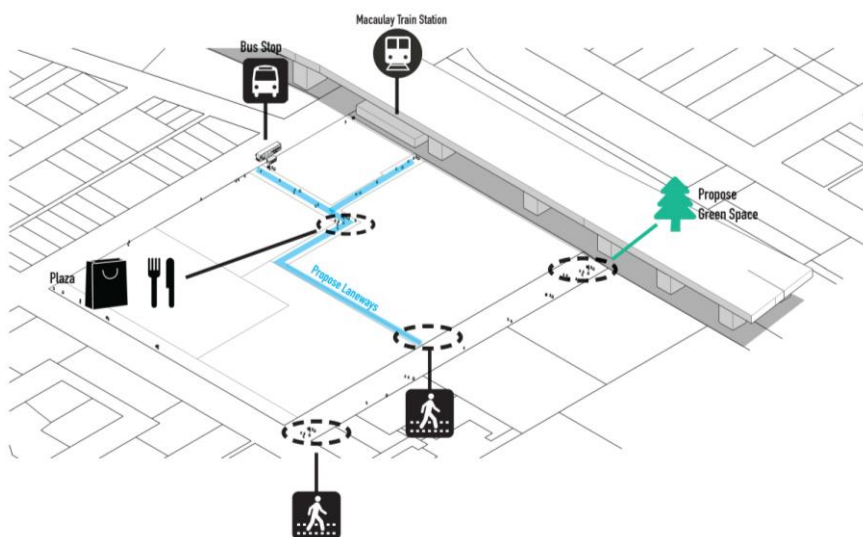


Heavy traffic is not conducive to walking

(Source: Site visit 8th August 2013)

The size and location of the site offers an excellent opportunity to increase pedestrian mobility through the neighbourhood. Cutting pedestrian access through the block would provide more direct access to existing and proposed community infrastructure. Access to Macaulay Station for the residential population beyond Boundary Road, especially those in the existing social housing, would be greatly enhanced. The Arden-Macaulay Structure plan recommends creating laneways on the existing (publicly inaccessible) vehicle circulation routes within the site.

Image 9: City of Melbourne's proposed pedestrian laneway through site



2.3.3 Social Infrastructure and Walkability

The site presents an excellent opportunity for facilitating greater linkages across the existing community infrastructure in Kensington and North Melbourne. The North Melbourne Community Centre is accessible via a footbridge over Boundary Rd. North Melbourne Community Centre is in the process of renewal with comprehensive community consultations conducted in 2012. The centre currently offers a range of health and fitness programs and a homework club. There is also a range of community spaces available for use. The grounds incorporate a tennis/soccer court, a playground and a community garden (see image 11). However, this centre is currently at capacity. The North Melbourne Recreation and Leisure Centre is less than 800m by foot. The Recreation centre includes public swimming pools and a fitness centre (see image 10).

Image 10: North Melbourne Swimming Pool



Image 11: North Melbourne Community Centre's community garden



Images show the range of community infrastructure currently existing in the Arden-Macaulay area near the site. Development should seek to integrate and provide connections to such centres

(Source: Site visit 8th August 2013)

(Source: Site visit 8th August 2013)

There are few schools in the area accessible by foot. There is a notable absence of a state primary schools within walking distance. There are several secondary schools within 2 km radius accessible by public transport or bicycle. A potential school site is identified in the Arden-Macaulay Structure plan on the Victorian Archives site in Shield St. North Melbourne. This new school would be 600m from the site, or approximately 5 minutes walk. However, the safety of school children walking to this site would depend on traffic calming measures at the intersection of Macaulay and Boundary roads. Hotham Hub Children's Centre is 400m from the site, accessible via the footbridge over Boundary Rd.

The Arden-Macaulay structure plan envisions the consolidation and expansion of retail trade between Macaulay Station and the existing Melrose St. shopping strip. Several cafes already operate on Macaulay Road directly opposite the site. The Kensington village shopping precinct is within 800m of the site (see image 12). There are also several health providers including Dootta Galla Community Health Centre, a provider with particular focus on clients at risk of exclusion. Centrelink is easily accessible by the 402 bus in either Newmarket or Footscray. The neighbourhood supports several pubs and bars. There is an increasing presence of performance and visual arts in Kensington. Revolt Theatre on Macaulay Rd. offers a range of performances and is a host venue for events such as Melbourne Fringe Festival, The Melbourne International Comedy Festival and so on.

Image 12: Kensington High Street



View of Bellair Street, Kensington, the closest, neighbouring major activity hub which will ultimately connect to the Arden-Macaulay activity hub
(Source: Site visit 8th August 2013)

In terms of employment, the site currently acts as an employment hub, with a range of small, medium and large enterprises. Also, the close proximity of other employment hubs, such as Kensington activity centre and the Parkville medical cluster, provide further opportunities for employment access. The close proximity of these hubs provides further opportunity and incentives to further facilitate the development and establishment of further commercial activity, as outlined in the AMSP. The opportunity lies in consolidating and strengthening the site as a place of employment, commercial activity and innovation.

In short, the site is well placed to take advantage of existing shopping, social and community infrastructure. It is also within easy walking distance of the school site proposed in the Arden-Macaulay Structure Plan. Residential densification of the site will place strain on existing facilities. Further investment in early childhood centres, schools and other education and training opportunities will be required. Pedestrian mobility throughout the neighbourhood would be greatly enhanced by the introduction of thoroughfares through the site.

2.3.4 Green Space

While there is an existing network of green spaces around the site, these are of poor quality with little tree coverage and few facilities to encourage visitation. The AMSP identifies the provision of green space and the expansion of green linkages between these spaces as a key strategy in addressing the urban heat island effect in the area (see image 13). The main strategy to achieve this is through the expansion of the tree canopy through tree planting and landscaping in the urban realm. The regeneration and improvement of Moonee Ponds Creek, as well as the development of a public space at the western end of Mark St. have particular relevance to the site in question. Taking a strategic approach, development on the site can set a precedent for the local area in encouraging future private and public developments to improve the area's network of public open space and its linkages. 'Biophilic design' acknowledges the health benefits associated with access to biodiverse ecosystems. Trees and vegetation also provide ecosystem services that can increase the energy efficiency and ecological health of built-up areas. Given the orientation of the site, the lack of overshadowing there is an opportunity to incorporate parks and gardens into any development. The disamenity caused by nearby transport, and the urban heat island effect make such a strategy imperative.

Image 13

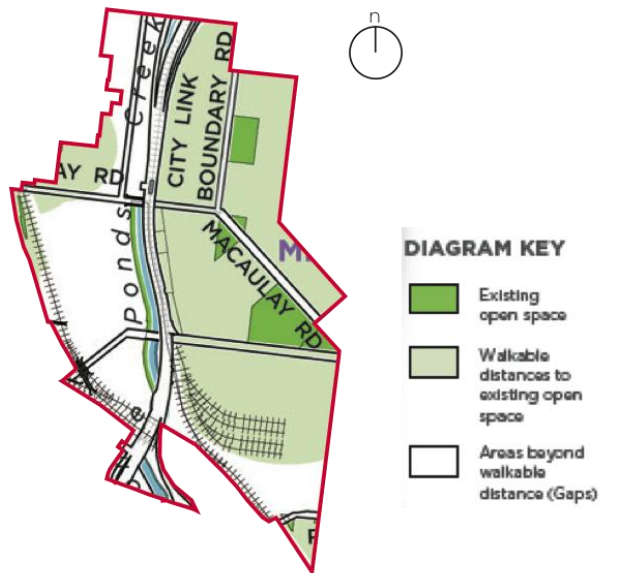


Figure 5.3: City of Melbourne Open Space Strategy (draft 2011) gap analysis.

(Source: City of Melbourne 2012, p.54)

Shows the City of Melbourne's proposed greening strategies, articulating a system of interlinked parks to be connected via canopied, green corridors

2.4 Heritage and Planning

2.4.1 Existing and Proposed Land-Uses

The site is currently zoned industrial (IN1Z) with proposed amendments to the planning scheme pending which would transition the site to a Business 1 Zone (B1Z) and Mixed-Use Zone (MUZ) (see image 14). As shown in image 15, the site is made up of 16 individual lots presenting challenges to land assemblage.

Image 14

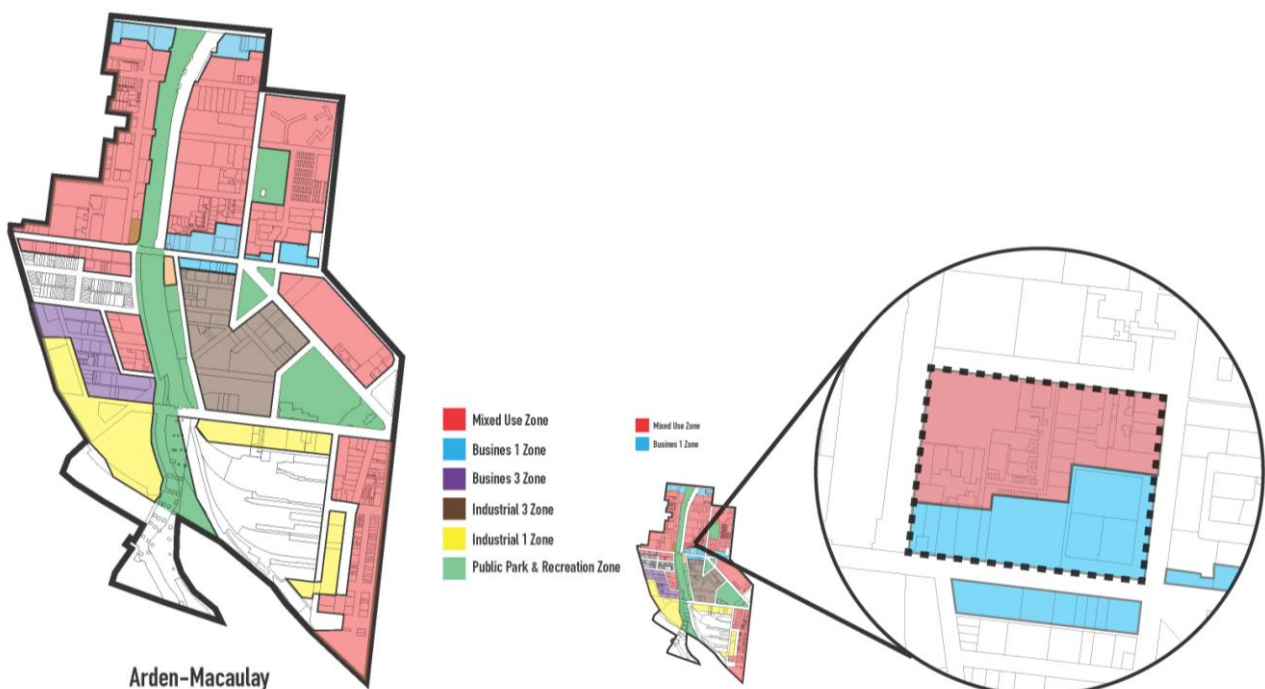


Image shows proposed zones via amendment C130 to the City of Melbourne planning scheme from IZ1 to MUZ and B1Z

Image 15



Shows the presumed ownership patterns of 16 individual parcels of land on the site

The site currently supports a number of enterprises including: a self storage facility, an international college, a plastics engineering company, a costume hire business, two-way radio manufacturer, a multi-media production company, as well as a number of small-scale workshops (see image 16). A key challenge to developing this site managing the transition with the least amount of disruption to existing businesses. Another challenge involves retaining the economically productive uses on the site while increasing the amount of housing.

Image 16



Shows the diversity of existing small to medium businesses on the site. Some of these businesses are already transitioning to commercial uses, including marginal commercial and light industrial uses

(Source: Site visit 8th August 2013)

The height proposed in the Arden-Macaulay Structure Plan limit mixed-use developments to 20 metres or approximately six storeys. The Arden-Macaulay Structure plan envisions height limits of 20m on the northern side with 30m heights along Macaulay Road and Boundary Road (see image 17). A higher built form along the busier road, coinciding with the proposed commercial zoning, can buffer the quieter lots on the northern side of the site from disamenities created by traffic. The height limits direct us towards a scale and typology of building commonly found in pre-auto era cities. Importantly, there are no existing or proposed overlays for the site, which presents a significant opportunity for freer, less restrictive development designs.

Image 17: Proposed building heights



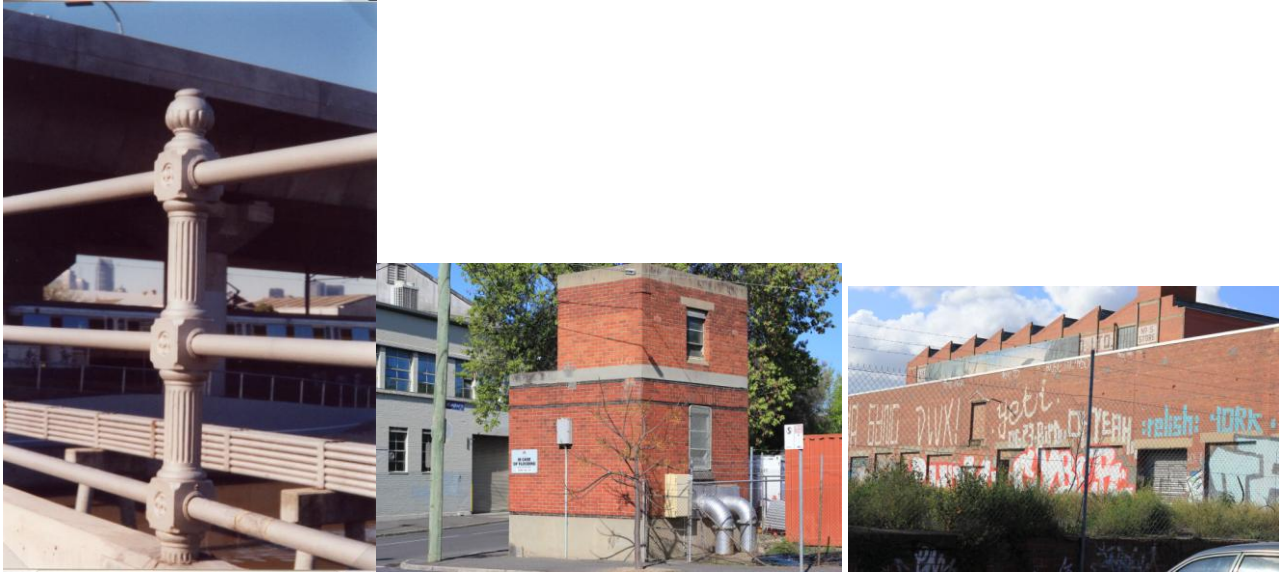
Note the higher height limits on the southern, B1Z area to the south of the site and the lower height limits for the northern MUZ
 (Source: Site visit 8th August 2013)

The population density of the site is very low currently. Under the proposed planning scheme the potential developable envelope is over 2 hectares. The Arden-Macaulay Structure Plan envisions a minimum of 100 dwellings per hectare, which suggests a minimum development of 200 dwellings. Given its adjacency to Macaulay Railway Station and the Macaulay Road transit corridor, the site lends itself to a high population density, transport oriented design strategy.

2.4.2 Heritage Considerations

The existing built form on the site consists of relatively modern, low-rise warehouses. None of the existing buildings are of heritage significance. There is no existing heritage overlay on the site. No buildings on the site are proposed for addition to the heritage register. However, the broader neighbourhood character is rich with historical buildings, especially those that document the commercial and industrial history of Melbourne (see image 18)

Image 18



Shows the range of historical architectural and industrial features surrounding the site, including the historic balustrade (left), the old pumping station (middle) and 19th century style industrial warehouses (right)

(Source: Site visit 8th August 2013)

A key question for this site is how to integrate local industrial heritage into design in the absence of buildings earmarked for protection. Using materials and forms that reference the surrounding heritage is one strategy. Another strategy suggests that new development not only references the legacy of commercial use in Arden-Macaulay but seeks to retain it.

3.0 Vision: The Source of Arden-Macaulay

What is the source of Joy?

What is the source of Peace?

What is the source of Purpose?

What is the source of Meaning?

What is the source of Comfort?

What is the source of Kindness?

What is the source of Morality?

What is the source of Unity?

What is the source of Resilience?

This friendship is my source of Joy

This garden is my source of Peace

This business is my source of Purpose

This family is my source of Meaning

This neighbourhood is my source of Comfort

This stranger is my source of Kindness

This cooperative is my source of Morality

This chit-chat is my source of Unity

This community is my source of Resilience

To promote a just and equitable community that connects people to public places, spaces, nature and each other. Our development will be the origin of the Arden-Macaulay renovation. It will shift thinking on how to achieve housing affordability, social equity and economic development. Based on the philosophy of open source resource sharing and management, our development will promote acts of ‘commoning’. Full and equal access to shared assets and resources such as public plazas, parks and gardens and transport will be a key priority. Our proposal aims to build social capital through ‘place capital’ as well as homes. Our vision celebrates grit and industry. Our vision lauds entrepreneurialism and enables enterprise.

4.0 Inspiration

Our design draws inspiration from a few key project precedents

4.1 The Mountain Dwelling

Copenhagen, Denmark

BIG + JDS Architects

This design is located in a very similar urban context to our site. The development immediately abuts a freeway overpass with a creek running under it (see image 19). The environment looks very similar to the CityLink overpass and Moonee Ponds Creek. We admired the way the building used its heaviest massing to back onto the freeway to act as a noise and pollution barrier (see image 20). The building avoids ‘turning its back’ to the creek through active windows. The windows provide passive surveillance to a potentially unlit, ‘dead’ space. We were impressed that all units in this development had direct, full access to sun, using an architecturally simple, but aesthetically elegant design.

Image 19



Shows the dwelling's interaction with its urban context.

Image 20



The stair case design, oriented north, maximises solar access

4.2 Via Verde

New York, USA

Grimshaw & Dattner Architects

The Via Verde or Green Way development in New York City is an award-winning, social housing project. The staggered, step-down design for the building's green roofs directly informed our staggered, mixed-height rooftop garden design. We also drew inspiration from the strong sense of community this development created, through provision of communal spaces and the passive surveillance generated by its vertically staggered, gardens. Via Verde is a mixed-use development that incorporates commercial and community spaces, as well as diverse tenure types and residents.

Image 20



Image 21



The vertically integrated rooftop gardens were a key inspiration, which interact seamlessly from the ground to the top storey, providing a sense of integration, community and passive surveillance through many ‘eyes on the street’

4.3 Urban Trees

Seattle, USA

B9 Architects

Urban Trees incorporates flexible live/work residences around a plaza. Inspired by Dutch *woonerf* or “living yards”, the street environment prioritizes pedestrian movement over cars. The courtyard space is generous enough to enable solitude, but functions to increase sociability among residents. Apartment floor plans are designed for adaptability over life stages and changing work/life arrangements.

Image 22



Image 23



The small, enclosed, shared communal spaces were a key inspiration. We were interested in how to maximise use and sociability of small, enclosed spaces like Urban Trees’ courtyard

5.0 Design Statement

Our design responds to two principal areas of opportunity presented by the site context and the brief: **Connecting people through place**, and **creating affordable spaces to live and work**.

We have identified eight design elements within these areas. These specific elements are key to the development and resolution of our site's design.

5.1 The source: Of connectivity and community

"Cities are human systems first and built environments second"

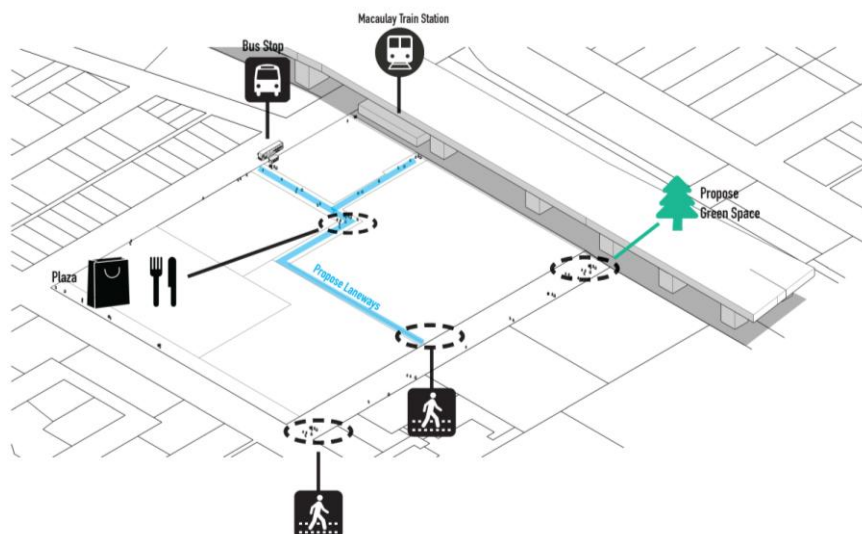
5.1.1 Key Design Elements (KDEs)

- **5.1.1.1 Pedestrian laneways to connect the neighbourhood**
 - Create a network of laneways through the site that are intimate and vibrant and link important points of the site, including the station, the plaza, Mark Street's proposed park and other transport modes

Justification & response to brief

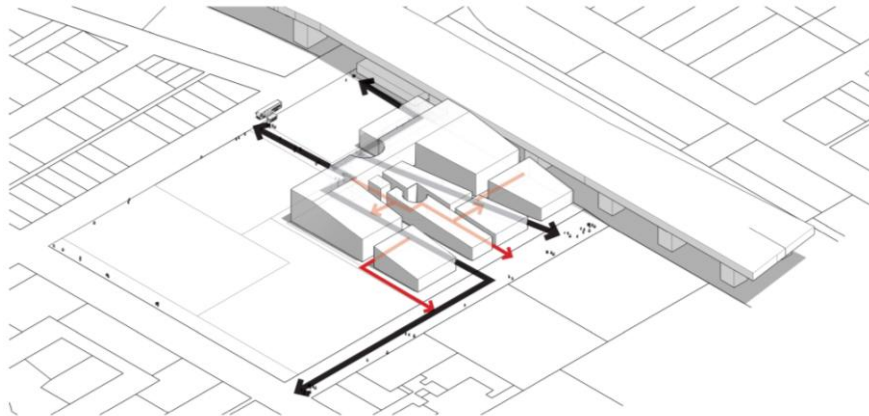
- Lack of pedestrian permeability creates access issues for onsite uses, as well as creating large, monolithic street blocks which deny neighbourhood pedestrian circulation.
- The Arden Macaulay Structure Plan envisions a finer grain street network in which laneways penetrate large blocks to maximise pedestrian movement.
- The enhancement of the public realm through the comprehensive integration of public transport, a public laneway network, as a well as a system of open spaces contributes to the accessibility, sociability of the neighbourhood
- This design element intends to enhance place capital by improving the value of the public realm, as well as social capital through the promotion of chance encounters and an active, engaged street and civic life

Image 24



Shows the design's pedestrian route in its basic framework conception, without massing

Image 25



Increase permeability + create small laneways in between

Shows the pedestrian laneway network cutting through the massing of our buildings, creating tight, intimate spaces and connections from the train to the proposed park in Mark Street

- **5.1.1.2 Public plaza for commerce and sociability**

- An intimate plaza between the mid-rise buildings carves out more public space in a densely built-up block. This plaza can support a range of commercial, civic and social uses.

Justification & response to brief

- Increasing the provision of public spaces is a central objective of the AMSP
- Our plaza will act as a central hub and focal point for our development, acting as a commercial, leisure and civic centre to enhance economic activity and promote a sense of pride and ownership amongst the residents
- The laneway network will compliment and connect this civic centre

Image 26



Shows how the intimate courtyard at the south side of our design is envisaged. Note the enclosed nature that still allows access to sun and ventilation with high buildings that do not feel overwhelming

- **5.1.1.3 Sunny backyards that reach out to the street**

- Backyards that are actively engaged with the street help breakdown rigid notions of privatisation and separateness, allowing the site to stay actively engaged with its surrounds and prevent exclusion
- Provision of both private and public green space in a way that blurs the boundaries between them. Design to create a sense of ownership over the “community backyard”

Justification & response to brief

- Providing common play areas for children, passively surveilled by overlooking dwellings, inspired by Via Verde’s vertically integrated rooftop community spaces and gardens
- Linking green spaces to Mark Street to improve quality of public realm
- Taking full advantage of the site’s orientation to enable people (and vegetation) to thrive while minimising exposure to traffic noise and industrial pollution

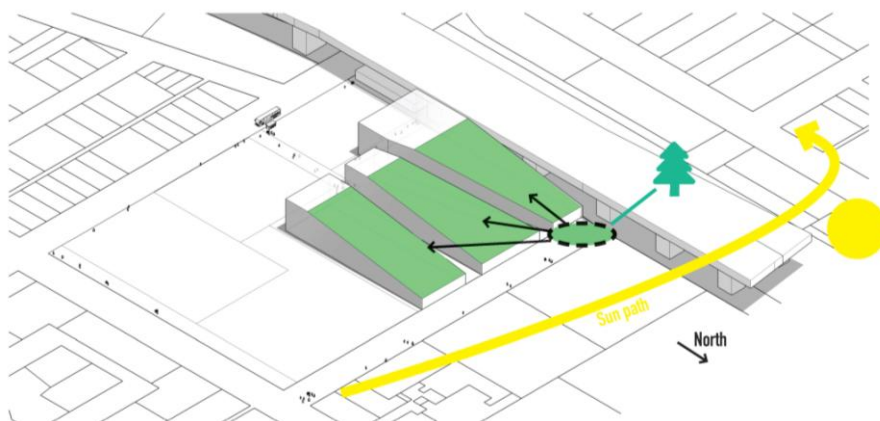
Image 27



Reclaiming green space = Rooftop garden

Passive surveillance occurs through the horizontally and vertically staggered design, allowing many eyes on the neighbourhood as well as providing a sense of neighbourliness through visual openness. Public/private dichotomy is somewhat blurred through visually open design of the private backyards, which seamlessly blend into ground floor, semi-public space.

Image 28



Green Open space to rooftop garden

Vertically integrated green rooftop gardens oriented northwards, with strategic building massing designed to maximise sunshine exposure

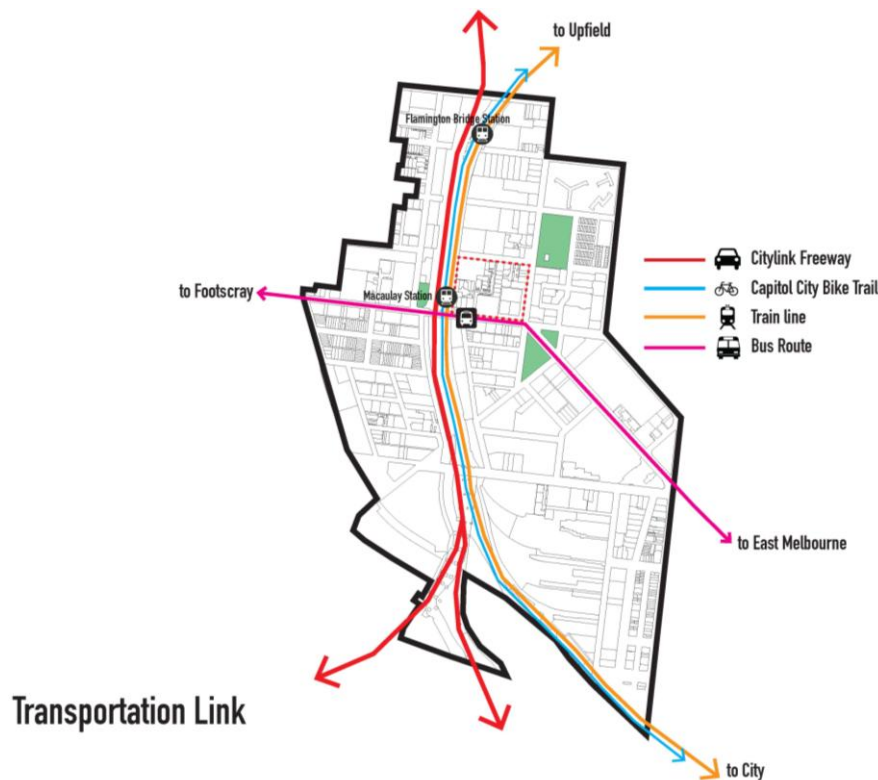
- **5.1.1.4 Design towards public transport**

- Achieved through fully integrating Macaulay Station into the design, as well as the 402 bus route and north-south and east-west bike paths to achieve Transport Oriented Development (TOD)

Justification & response to brief

- TOD is a key objective of the AMSP
- Decreases reliance on cars--benefits the environment and increases affordability
- Focus on moving people rather than cars
- Higher densities, another AMSP desired design outcome, are facilitated by mass transit
- Respond to HCA's criteria for the design to allow for independent mobility through full accessibility to all groups, especially the elderly and disabled

Image 29



Shows the provision of public transport to and around the site. Note the site's design that consciously integrates Macaulay Station into its development in order to achieve 'Transport Oriented Development'

5.2 The source: Of affordable living & affordable working

"Old ideas can sometimes use new buildings. New ideas must use old buildings"

5.2.1 Key Design Elements

- **5.2.1.1 Build alongside existing low-value buildings**

- Retain viable light industrial, commercial and marginal uses currently in operation on the site
- Enable diversity of uses through mixture of overheads

Justification & response to brief

- This compliments the broader objective to achieve 'affordable living' by retaining uses that cannot afford the high rents associated with 'highest and best use' conceptions of land use
- This 'working affordability' compliments the housing affordability criteria desired by HCA, the LMCF, City of Melbourne and Places Victoria

Image 30



Design intends to retain viable, light industrial uses in order to gradually transition towards commercial uses. The retention of above buildings and uses similar to the above is central to achieving this

- **5.2.1.2 Increase supply of flexible commercial spaces**
 - Promote development of Macaulay local activity centre
 - To create active street frontages around public transport nodes and pedestrian thoroughfares

Justification & response to brief

- Increase supply of affordable, creative spaces to foster innovation and entrepreneurialism

Image 31



Flexible spaces are part of the brief, recommended to foster creative, innovative, affordable spaces, enterprises and activities

- **5.2.1.3 Investigate commons-based strategies to capture rising land values**
 - Research and development of alternative mechanism for retaining affordability in gentrifying neighbourhoods

Justification & response to brief

- This element recognises the need to investigate financial, institutional and policy mechanisms in order to achieve ongoing, sustainable models that can deliver inner city, family-friendly social housing

Image 32



Shows the Hepburn Windfarm, a local, collective initiative to reduce energy consumption and respond to broader social and environmental issue of climate change. Similar collective-based solutions can be investigated in the urban renewal context of Arden Macaulay in working towards complex social problems such as housing affordability

- **5.2.1.4 Subsidise social housing with private housing**
 - Co-development of social housing and housing for private market

Justification & response to brief

- In line with HCA desire to achieve social diversity amongst its developments, including socio-economic diversity
- Is a proven strategy for financing affordable housing developments, fitting in with all four organisations' desire to find sustainable financial models for social housing

Image 32








The Mariner housing development delivered by Housing Choices Australia (HCA) in Docklands. Successfully integrates both public and private housing, using this approach to fund the project successfully

6.0 Design & Massing

The brief requests a minimum of 30 social housing units, subsidised by private housing

6.1 Our design

	 x1	 x2	 x3	 x3+	 DDA
Private	78	74	14	8	-
Social	9	15	18	-	10

Private total = 191

Social total = 52

Grand total = 234

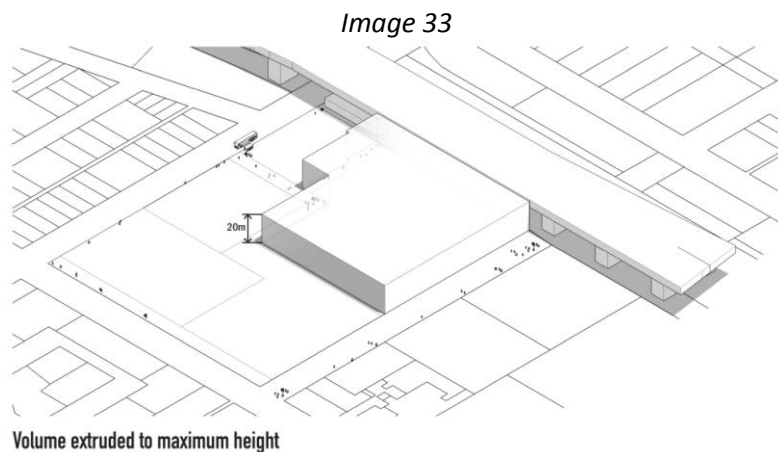
Given the significant size of our site, our development proposes to almost double the social housing component to 52. We consider this a feasible number given that we can also substantially increase the private proportion given the amount of space our site provides.

6.2 Massing: The Process

This process was based around massing the buildings on the above-mentioned key design elements (KDEs). The design elements under 5.2 informed the conceptual thinking, while the elements under 5.2 directly influenced the physical location of the building masses.

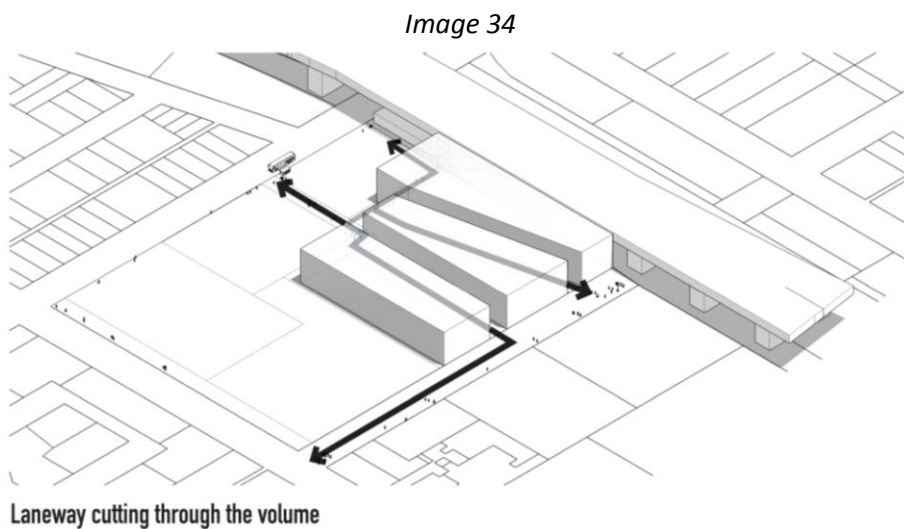
Step 1

A 20 metre high building volume was used to begin, based on the height limits set out in the AMSP



Step 2

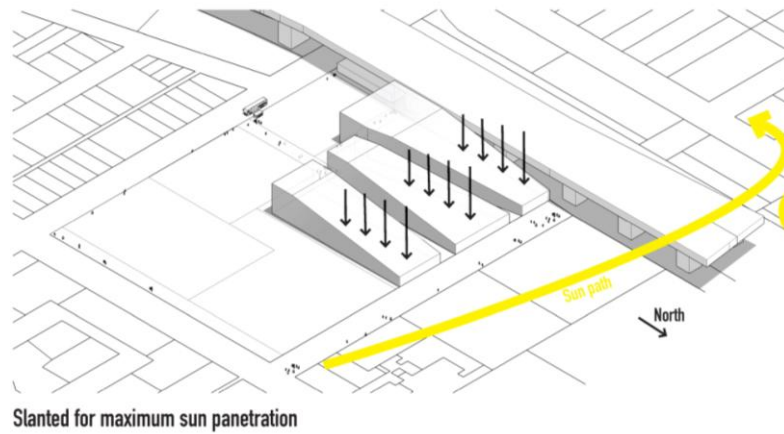
The laneways were carved out of the building mass, based on key design element 5.1.1.1 (Pedestrian laneways to connect the neighbourhood)



Step 3

Solar exposure was maximised by creating a diagonal carving, facing north, in line with KDE 5.1.1.3 (Sunny backyards that reach out to the street)

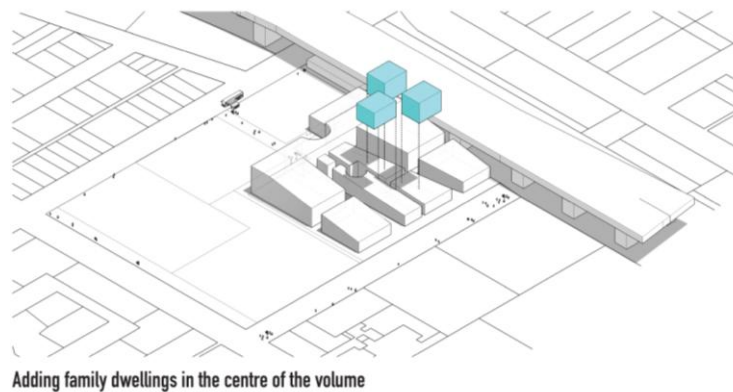
Image 34



Step 4

The social housing, family units were placed in the centre of the design, given their centrality to their overall brief. This central location offers maximum passive building design, achieving excellent solar access and ventilation

Image 35



Step 5

Green roofs were added to utilise the space atop the buildings, providing the sunny backyards

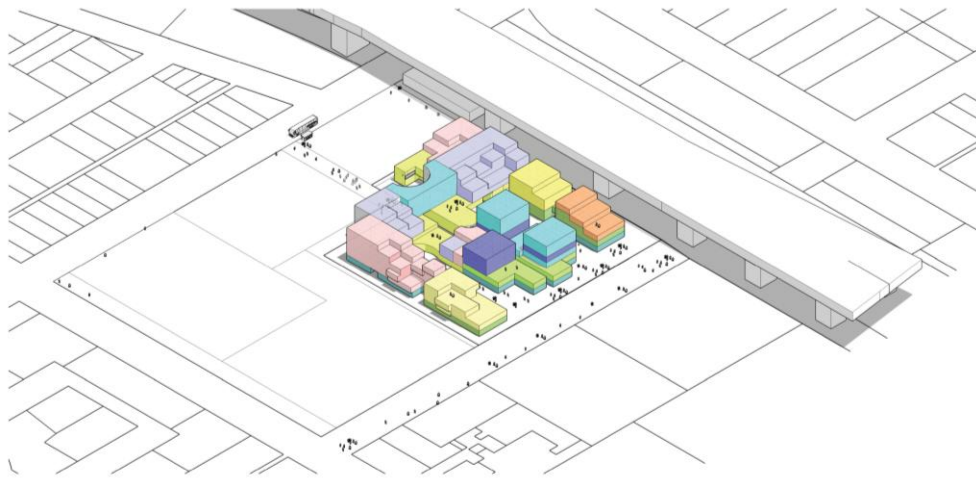
Image 36



Step 6

Final massing arrangement (see following pages for unit composition)

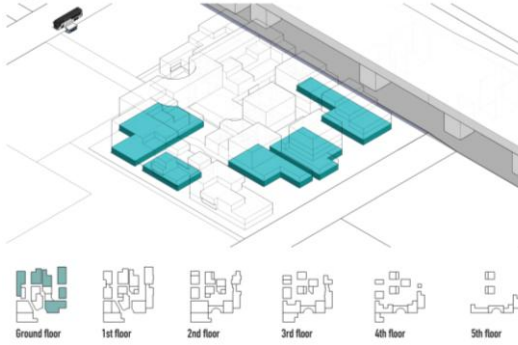
Image 37



Optimization = Final massing

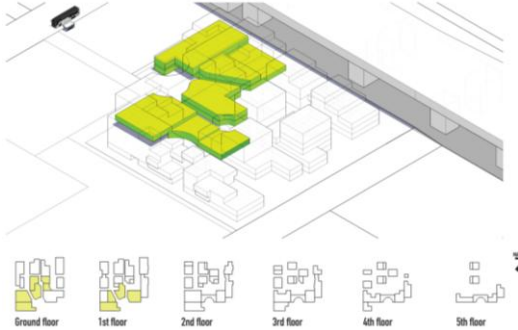
6.3 Building Composition

Carpark



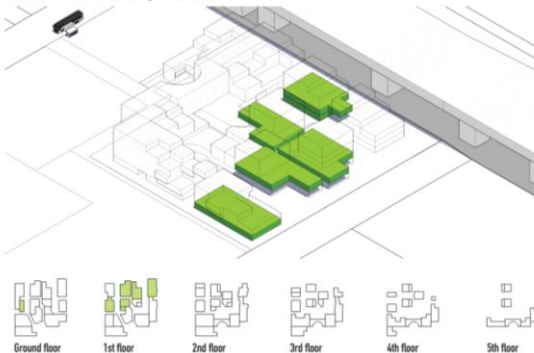
3103m², 160 units - Ground floor parking for easy access

Commercial



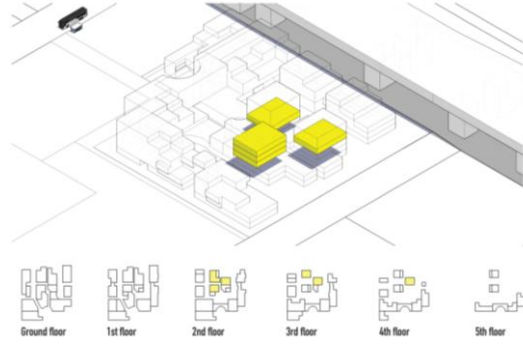
4712m² - Provision of significant ground floor commercial space, placed towards the southern, business-oriented end of the design. Note the provision of commercial spaces along the freeway. We assumed this use was the least sensitive to overshadowing and noise created by the overpass

Office + Community Facilities



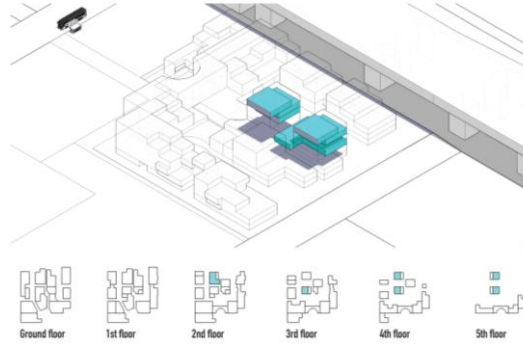
2880m² - Ample office space provided on first floors. Note the office space at the northeast corner for support staff, housing staff and concierge, as required by the HCA brief

3 Bedrooms social units



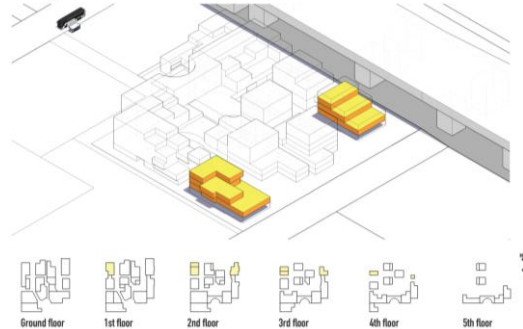
1701m², 18 units - Family friendly units placed in prominent position with excellent amenity. We were conscious not to ghetto-ise the social housing units, believing that all units should be provided with generous access to amenity-rich areas

3 Bedrooms private units



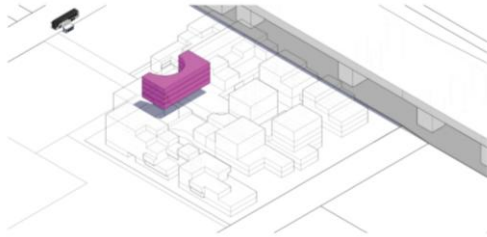
145m², 14 units - Intermingling of social and private family units, located within the same building mass, influenced by the desire to achieve socio-economic diversity as specified by HCA

Elderly + DDA Units



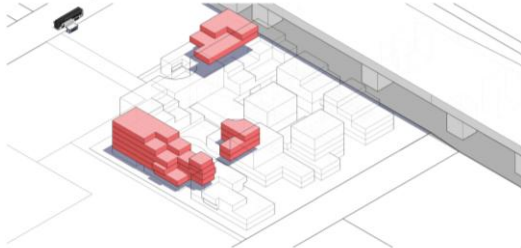
1980m², 25 units - DDA units located on lower, first floor. Both unit massing locations have convenient access to the quiet Mark Sreet. The northeast corner has is located away from noisy CityLink and air pollution. The northwest corner will open onto the proposed park on Mark Street.

3+ bedrooms units



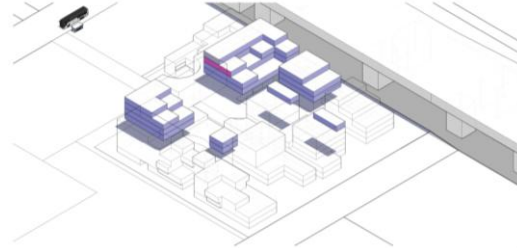
1268m², 8 units - bedroom or larger private dwellings located at southern end, overlooking the plaza

1 Bedroom private units



3900m², 78 units - These units were massed around the commercial hubs to have easy access to the social and commercial facilities of the site which single people may desire

2 Bedrooms private units



6226m², 82 units - A similar rationale was applied to the 2 bedroom units as the 1 bedrooms, giving excellent access to shops and commercial activity

7.0 Where to Next?

This initial urban design framework is only the beginning of the journey towards the Source of Arden-Macaulay. There are many aspects of the architectural form that are yet to be resolved. More work needs to be done around cost and construction. There is much research to be done around the various 'commoning' mechanisms available to planners and affordable housing advocates in working towards more sustainable models and partnerships that deliver affordable, family friendly housing in the inner city.

6.1 Urban design challenges

- As the site contains 16 individual parcels, assembly land for development is a particular challenge for this urban design.
- Pressure on height limits
- Masterplan? Directing development across larger site area will require consideration. This again will be affected by further land assemblage negotiations with all land holders
- Railway station interface requires extensive refurbishment if it is to be successfully integrated into any TOD strategies for the site

6.2 Architectural challenges

There are many aspects of the design that require resolution, specifically;

- Walkways - avoiding the use of double loaded corridors
- Floor plans of units - proper spatial layout is required to create a comfortable living condition on the internal space
- Interiors double volume/ single volume - In the difference in height, spatial awareness can be manipulated as an individual would to interact with it
- Specifics of the environmental design strategy
 - passive systems - with the knowledge of designing to the surrounding helps reduce the amount of energy that is needed to provide a comfortable living.
 - lighting and ventilation - natural lighting and proper ventilation design is well needed to increase productivity rate of the occupants.
 - heat gain and loss - ensuring proper passive design helps insulate the building in an optimum level that would reduce the cost.
- Envelope
 - facade design
 - Aesthetics – how to achieve a positive interface with the external and internal public/private urban realms
 - environmental considerations to achieve passive building designs

Materials and construction

- Investigate the feasibility of modular construction for the site in an effort to significantly reduce construction costs
- Costs – Await land valuation for the site, as this will significantly influence cost considerations

6.3 Policy and Planning challenges

- Research mechanisms for capturing the rising value of land such as land trusts
- Investigate international best practice for delivering affordable family housing that uses sustainable financial models and stakeholder partnerships
- Investigate the applicability to Victorian and local site contexts

8.0 References

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