

Nigel Bertram A Geomorphological and Hybrid Approach





10b



11b

05a (page 58) Map of Victoria showing uplands and their relation to major inland/offshore sedimentary basins.

1986 (page 60)
Section from Rowaley Fault is the North-west, through the swampy surelands of Port Phillip and Westersport bays, through to the coal gas seams of the largely offshore Gippsland Basin to the South-east.

10b Post-industrial landscape of the Winton Wetlands, 2017

11b Sphagrum bogs in Pretty Valley among the Bogong high plains, 2017

12 (page 62).
Perspective section through the Great Artesian Basin showing its structure in relation to surface and subsurface water flows.







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Dummy text missing caption fragment of J Crofs
1938 map showing the location of the Moonee
Moonee Chain of Ponds and the West Melbourne

Dummy text missing caption by a series of dama that separate water types. The dams create new environmental conditions and subdivision zones of ecological vegetation class and enicroclimates: the area closest for the Port Philip Bay is safty; the one in the middle is brackish and the one upstream is fresh.

Dummy text missing caption A fragment of J Crofs 1938 map showing the location of the Moonee Moonee Chain of Ponds and the West Melbourne Swamp.

Dummy text missing caption The dams create new environmental conditions and subdivision zones of ecological vogetation class and micro-cimates: the area closest to the Port Philip Bay is salty, the one in the middle is brockish and the une upstream is fresh.

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Moonee Moonee Chain of Ponds and the West
Melbourne Swamp.



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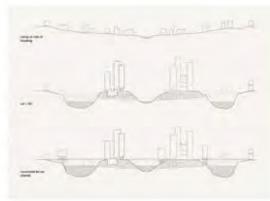




70 and 72 (following pages)
This strategy makes space for water while allowing for permanent flood-protected housing. The islands of high-density development are created by cut and fill, with the creek branching out across the valley.

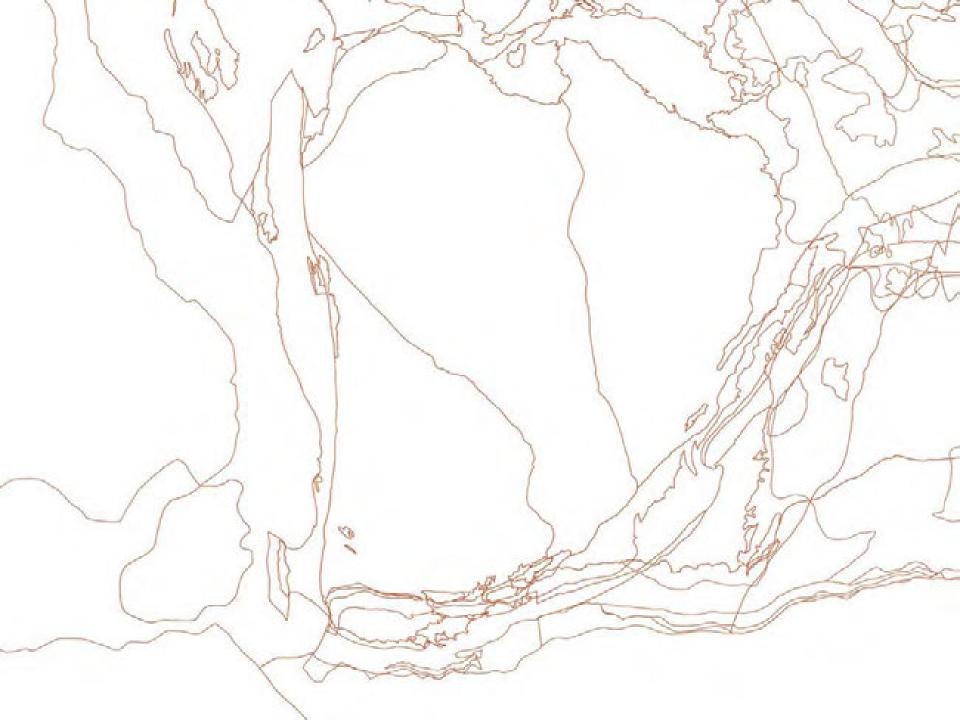
Macaulay Common: groundwater-fed swamp covered with couch grassland and absorbent peat moss acts as a retaining basin with perpendicular connections across the creek

Arden Moraiss: an expanse of salt marsh and tall reath grass coverage provides shelter and habitat for fauna as well as enhancing urben activity and access throughout the area.



70













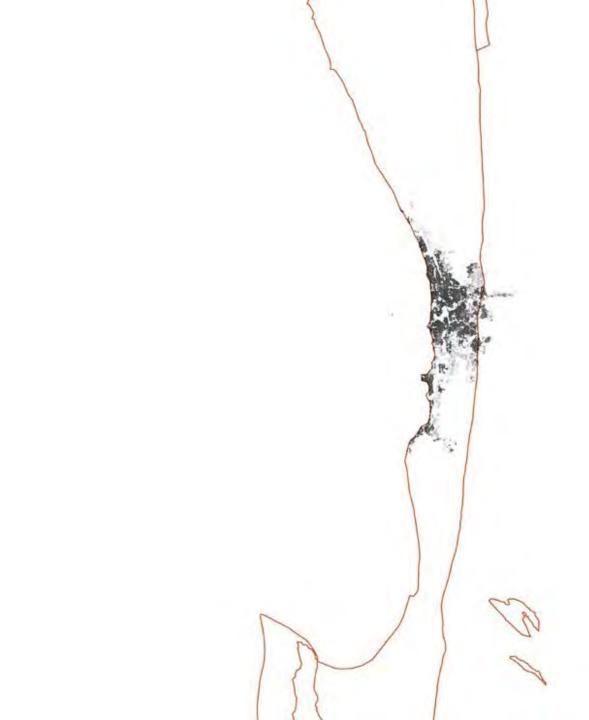


































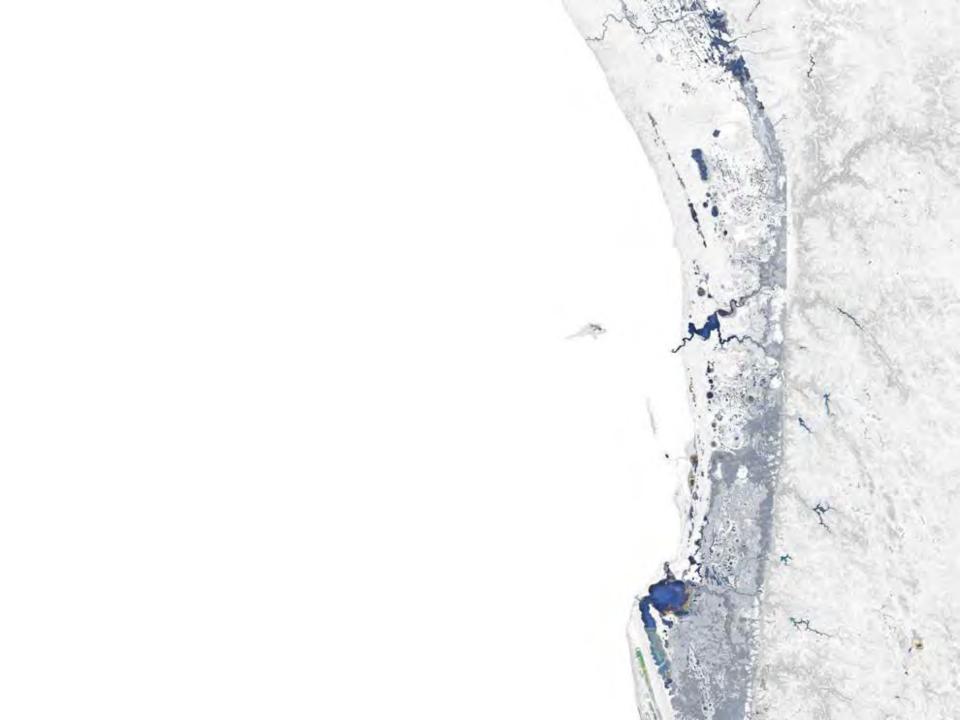




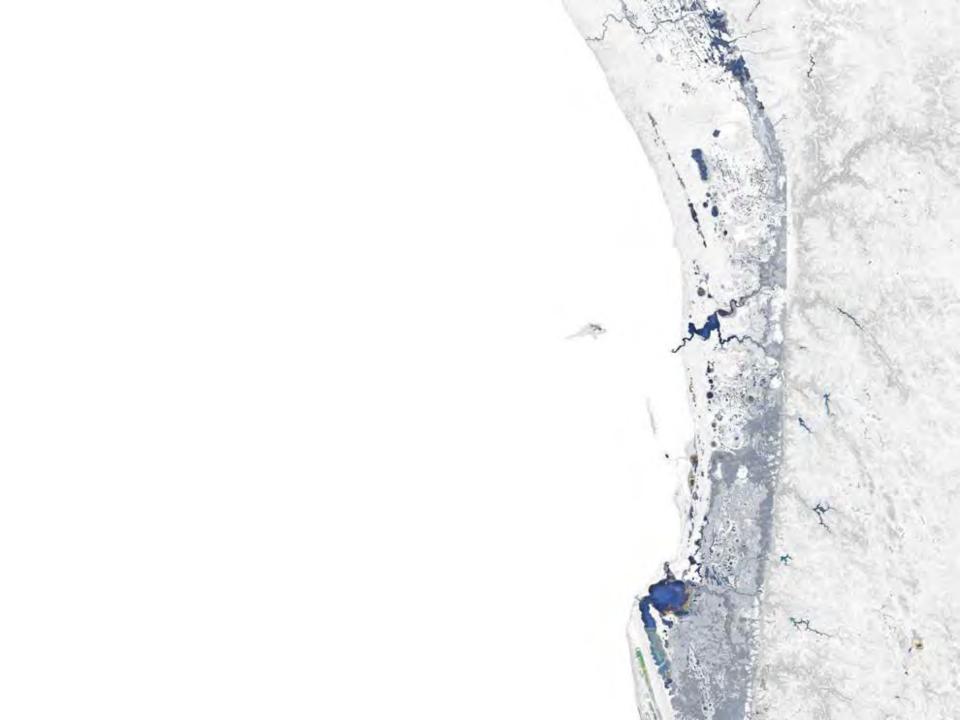


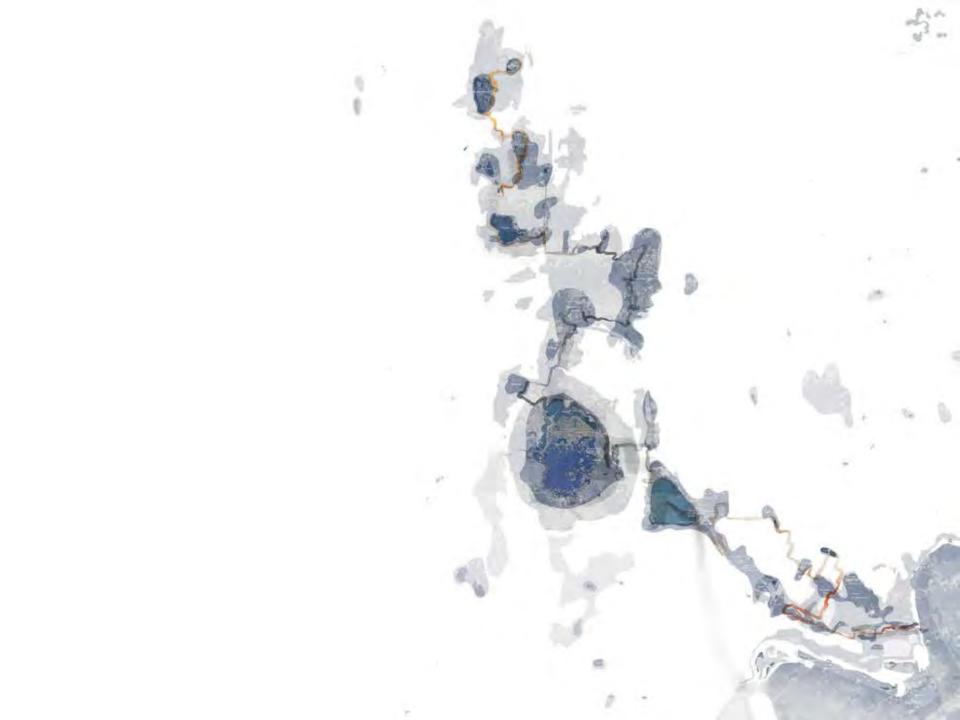


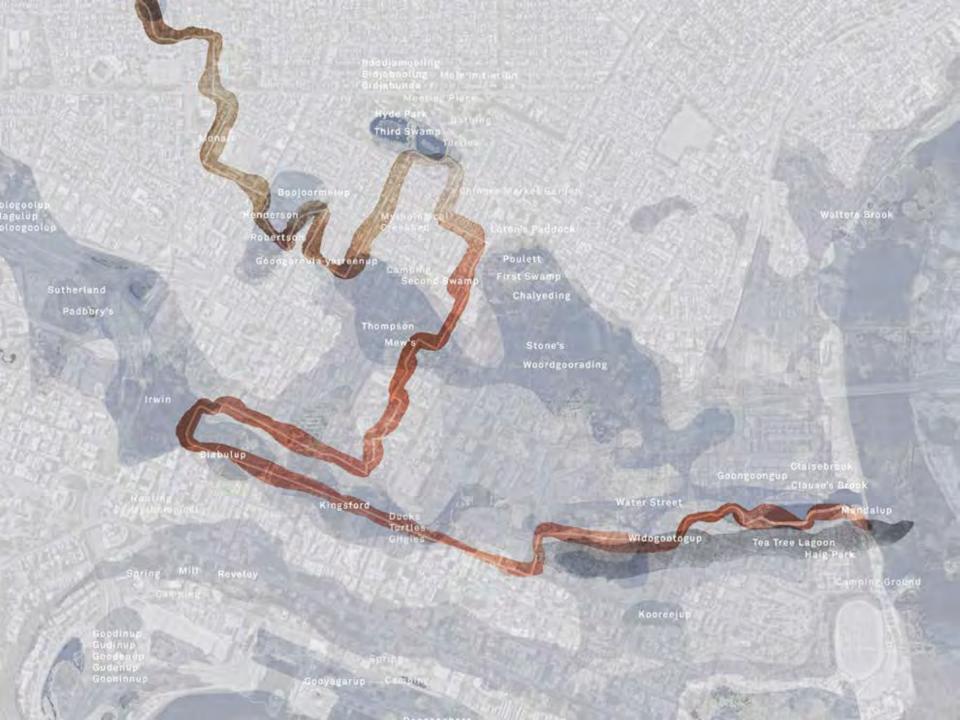












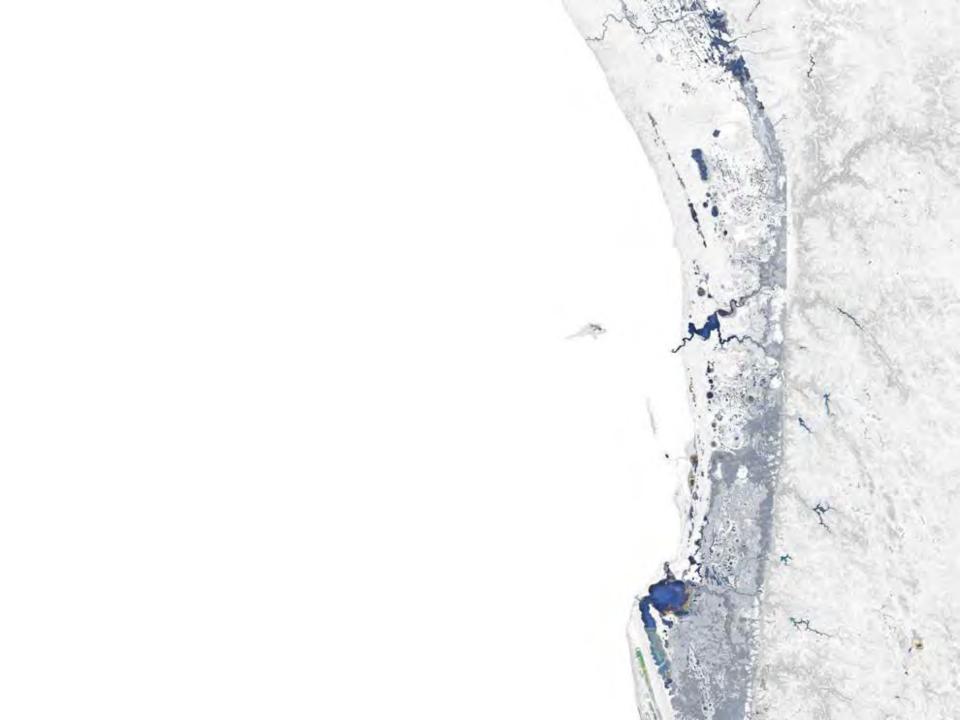






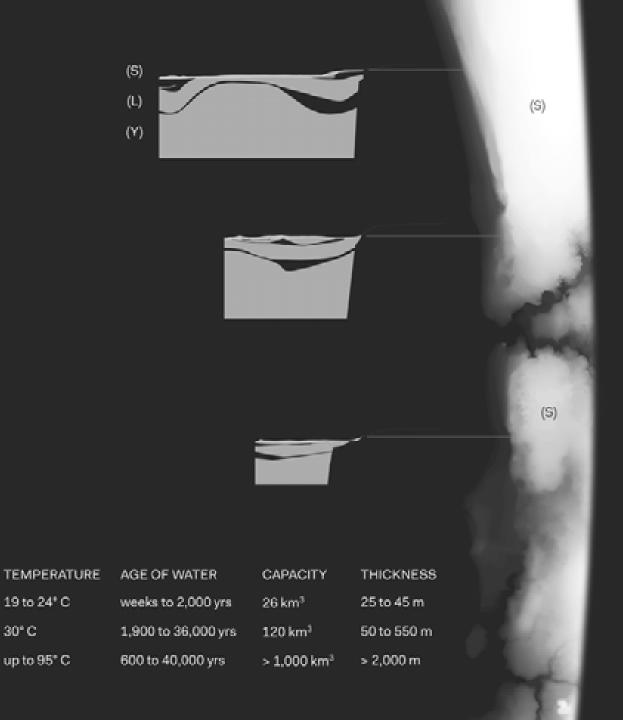












(S) SUPERFICIAL

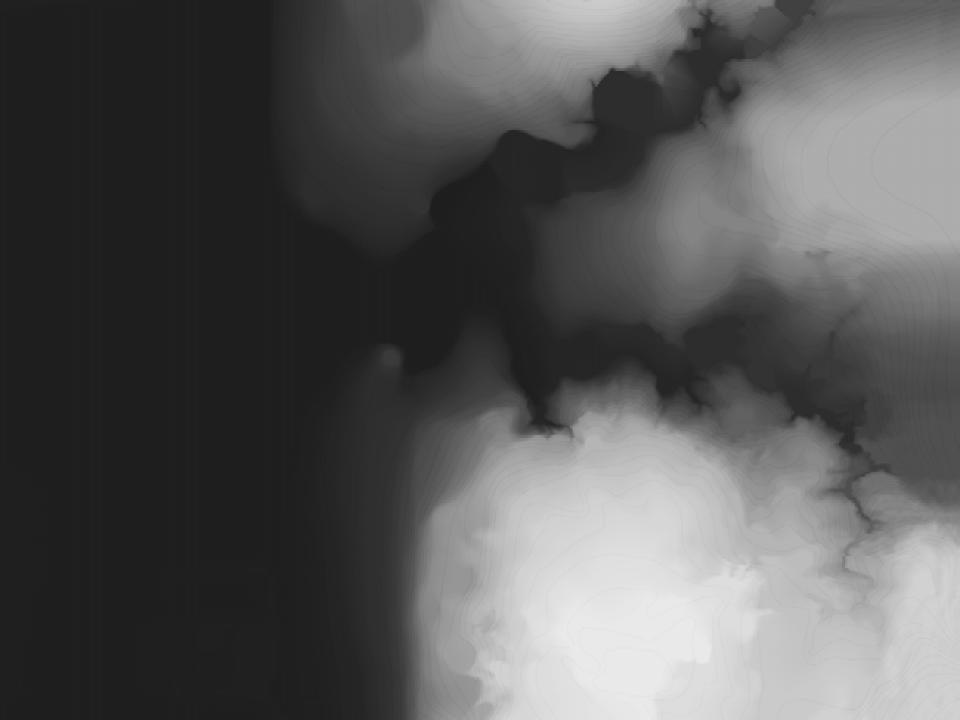
LEEDERVILLE

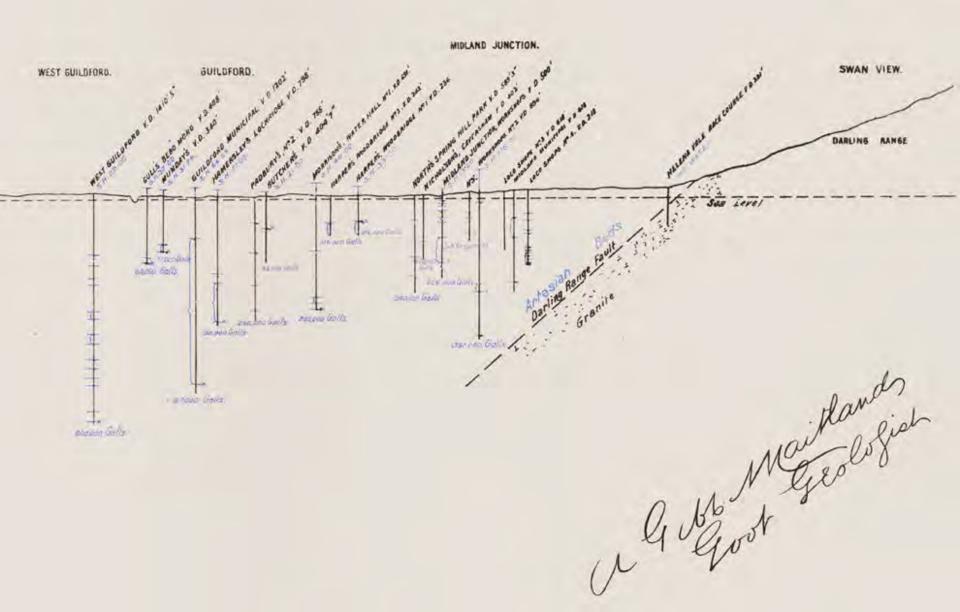
YARRAGADEE

19 to 24° C

up to 95° C

30° C





nose, and a query fracture of the skull. Her son after treatment for abea-sions was allowed to leave hospital.

NUDITY AT DALKEITH

POLICE RAID HOT POOL

Fines Follow In City Court Today.

in the early heavy of this morn-ing the police descended on the but peel at Dasketth and there discover-ed two young men bathing is the

Also present were two girl com-panions, who were only one minute garment each.

The quariette were charged in the Perth Police Court this morning, when one of the men was fined £3 and the other £4. On one of the males also a further pen-alty—£2—was imposed for tendering a false name.

Tallse name.

The girls were fixed £1 each.

Incidentally bathing in the nude, or the nearly nude, has been going on of warm, nights at the hot peed at Dalkeith for se many years that many people will probably consider the quartette unitalky to be aught out of the scores who go there—minus bathers.

FELL FROM BUILDING













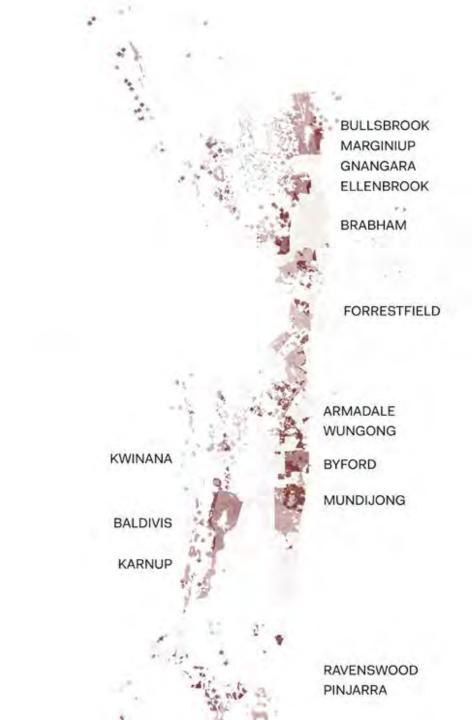






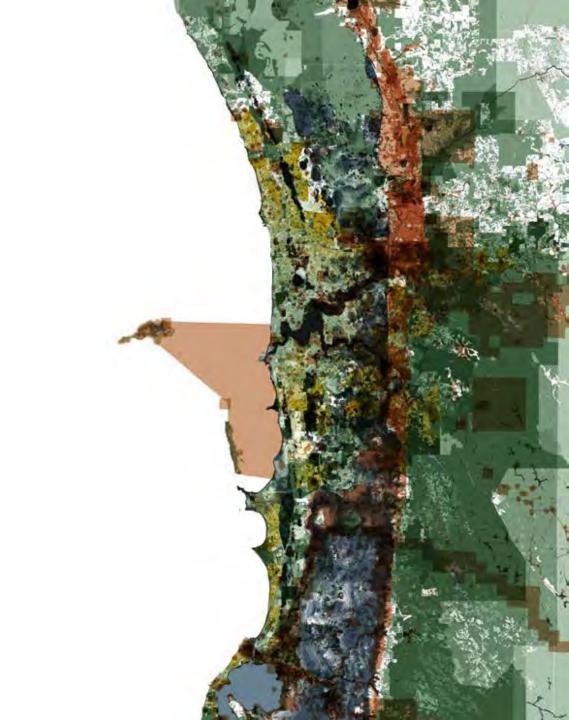




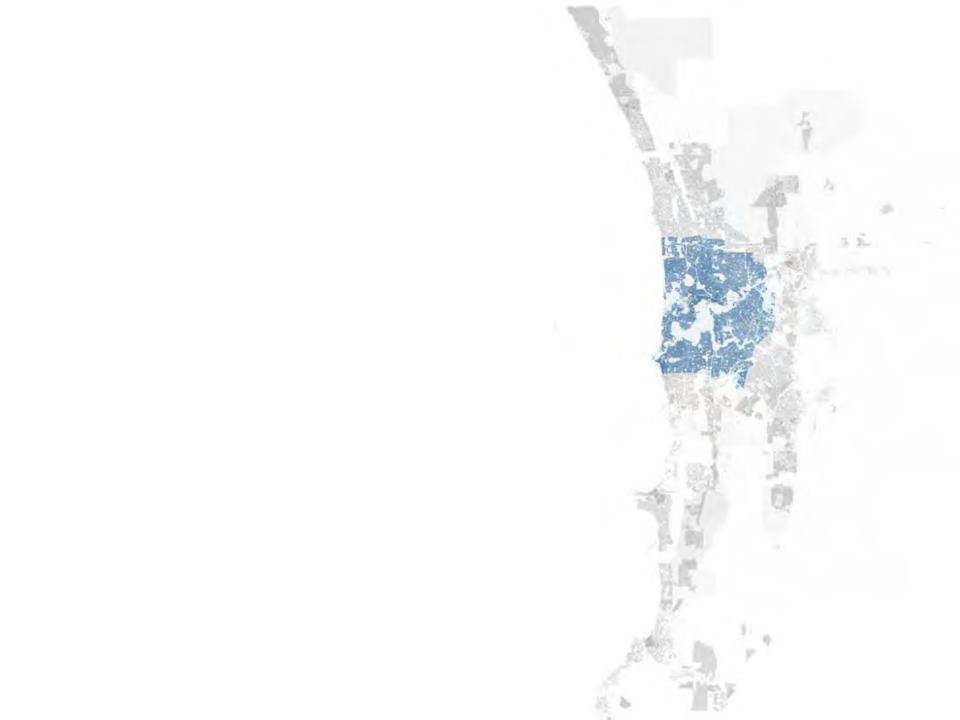




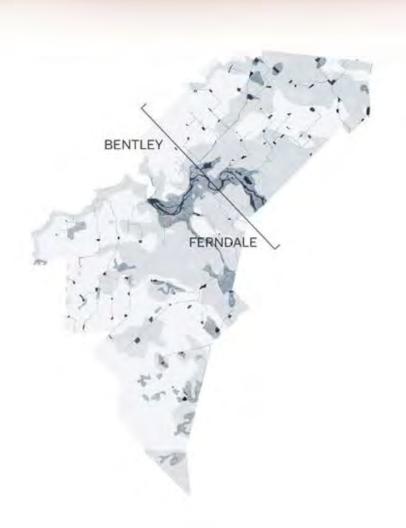


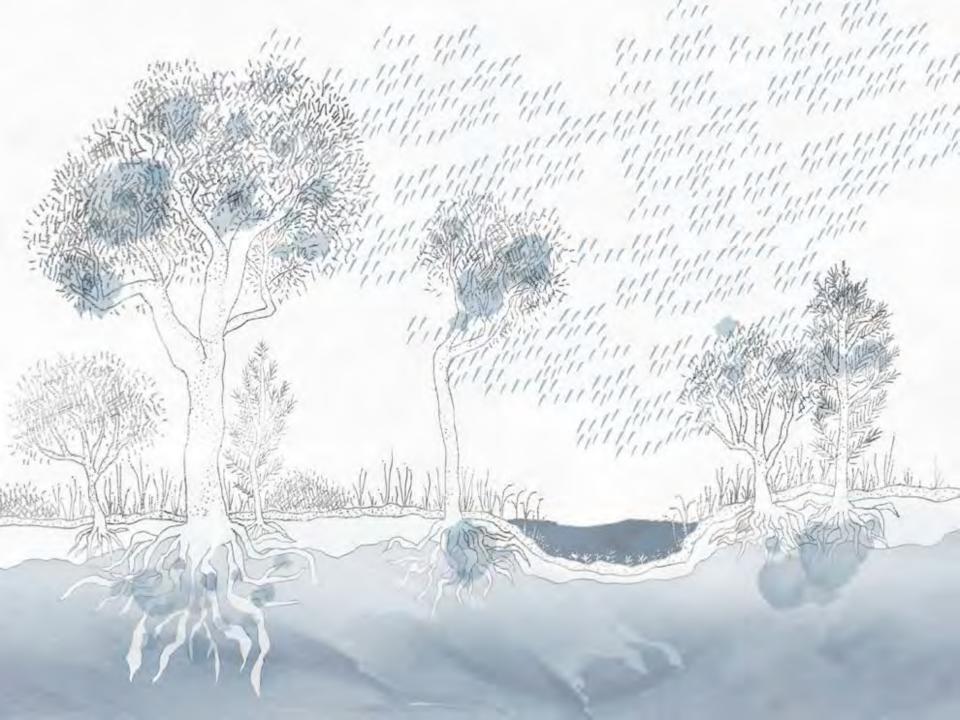




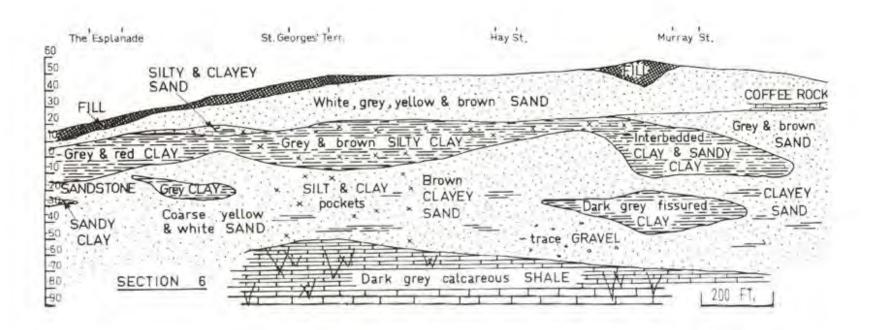












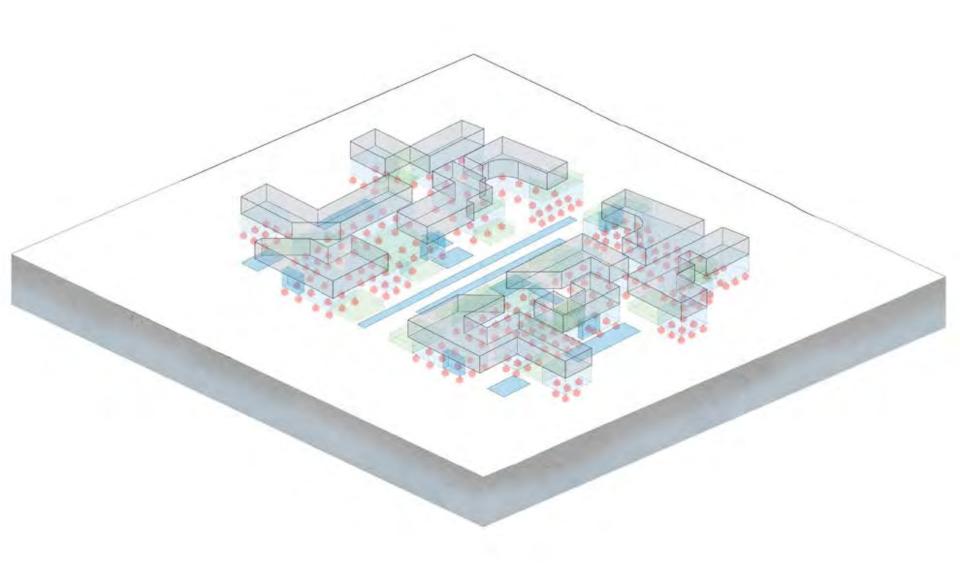




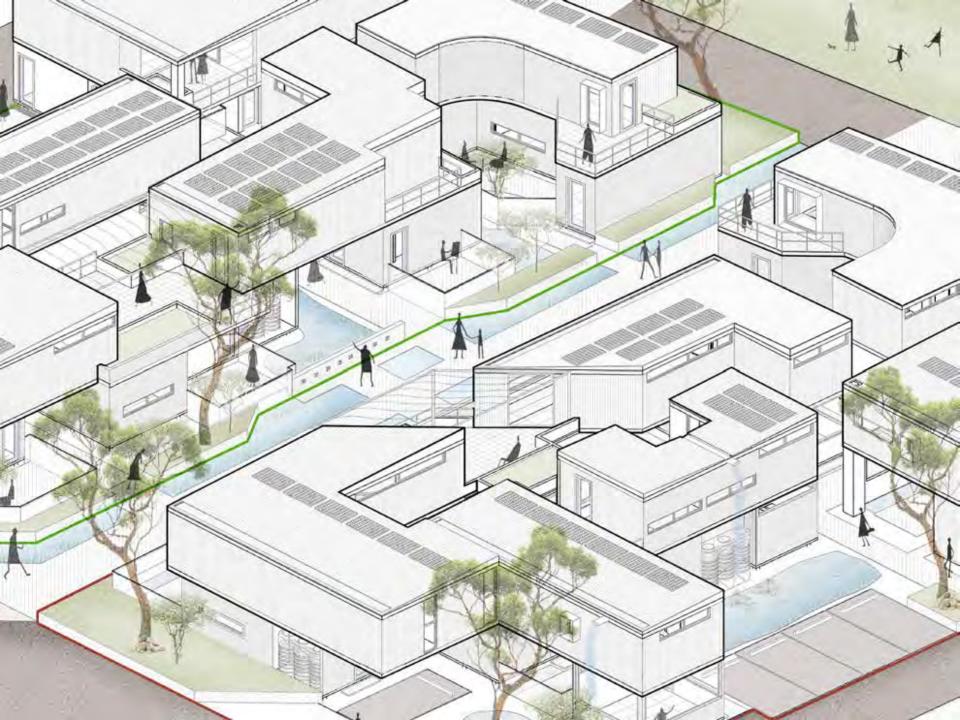


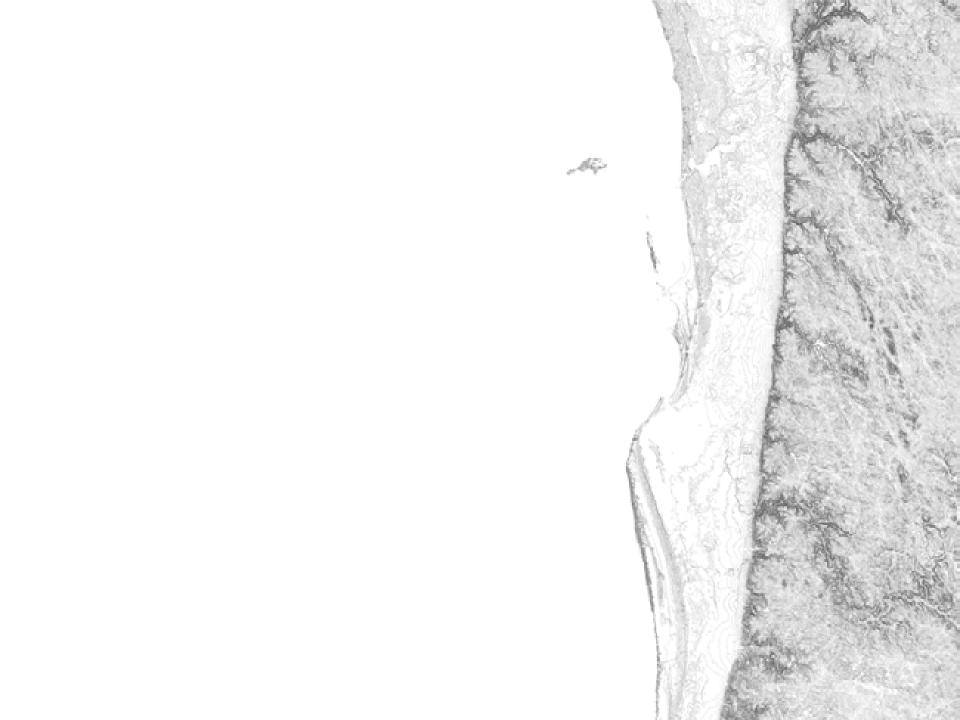
















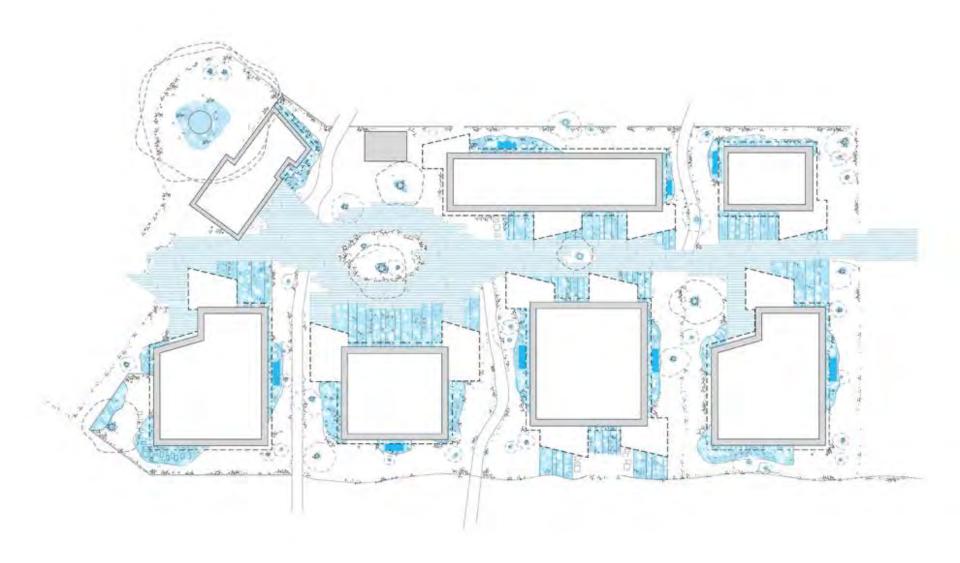




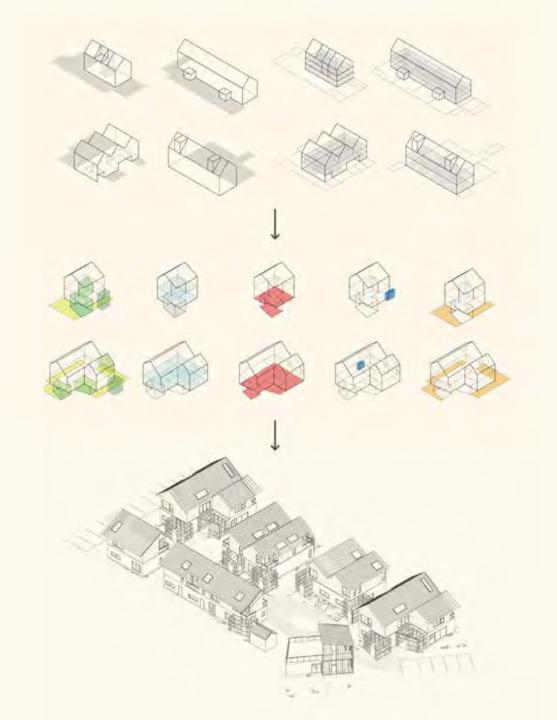


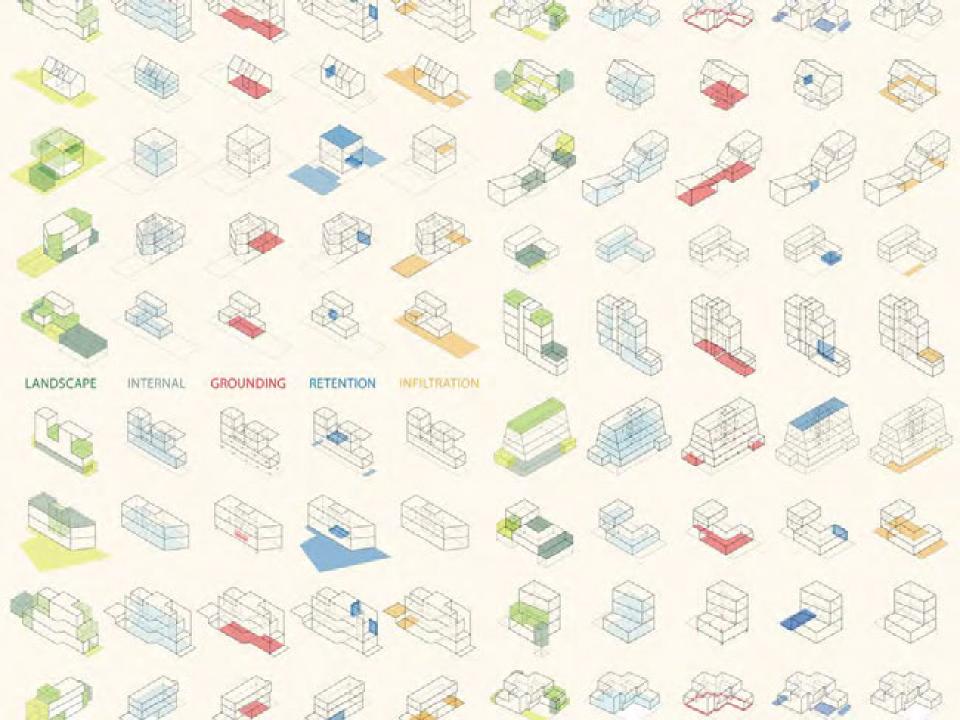


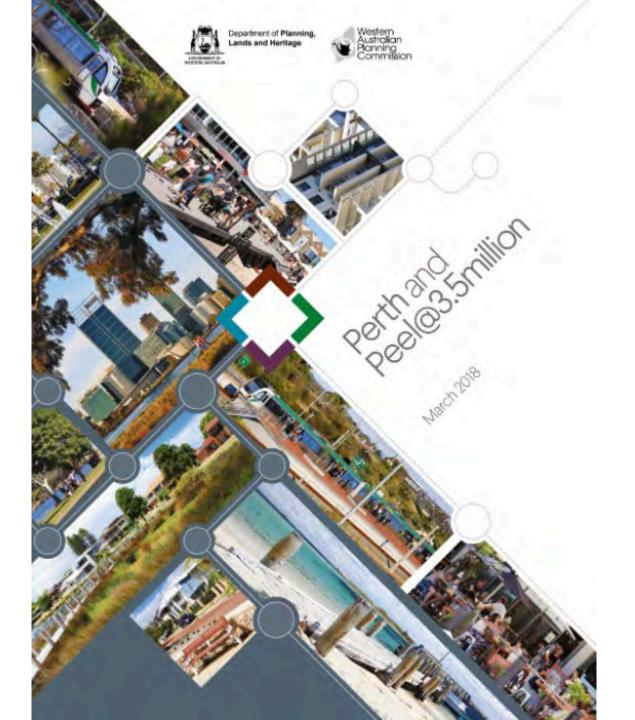












In March 2018, the Western Australian Planning Commission (WAPC) released the *Perth & Peel @ 3.5 Million* report, which sets out the strategic vision for the growth of Perth to 2050. Perth is expected to grow by 1.5 million people, with 800,000 new dwellings required in order to accommodate that growth.

The report sets out a target of 47% of that growth to be absorbed within the existing metropolitan area. This will require a substantial change from business-as-usual development, as approximately three quarters of urban development currently occurs at the fringe, and the dominant housing supply and preference remains detached housing.





Jindalee, 35km north of Perth, 2018





1985 2013



R50 2675m2 11 dwellings



loss of tree canopy

While Perth's infill target is 47% of all new housing, the highest figure we have achieved is 34% and 60% of that is in the form of single detached housing.

Perth has the lowest infill target of all Australian cities.

Adelaide has an infill target of **70%** overall and **85%** close to the city and they are achieving it.

The need for more medium density housing

Population growth, demographic changes, lifestyle trends and a need for more affordable housing are driving demand for more homes and a greater variety of housing options in NSW.

One of the ways we can provide more diverse housing options is to increase the supply and quality of low rise medium density housing across NSW.

Low rise medium density housing includes:

- townhouses and terraces
- dual occupancies (two homes on one block of land)
- manor homes (small low-rise residential buildings containing only 3 to 4 homes).

The missing middle



79% of Australians live in detached dwellings9% live in attached dwellings (terraces or duplexes)12% live in apartments

The public sector funds less than 1.5% of housing

Less than 10% of housing has architectural involvement

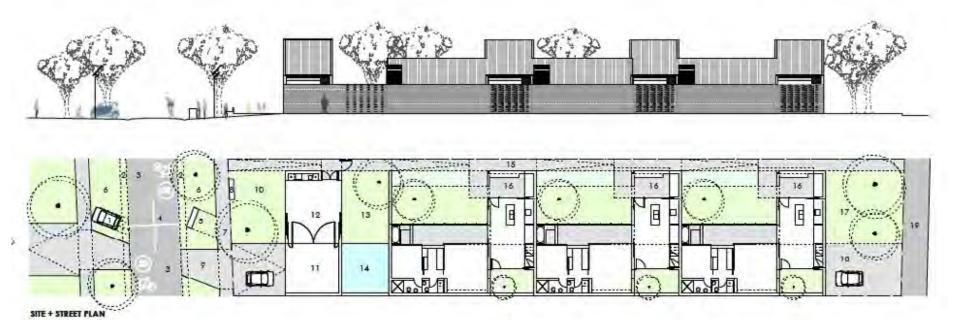


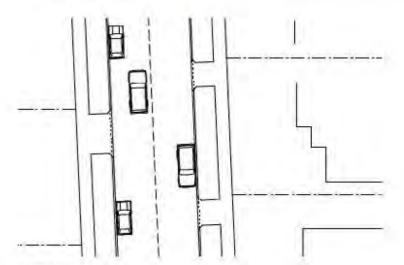
Housing Australia: How Architects Can Make a Difference

Edited by Geoffrey London and Simon Anderson



SUBURBAN LINEAL PARK PROTOCOLS





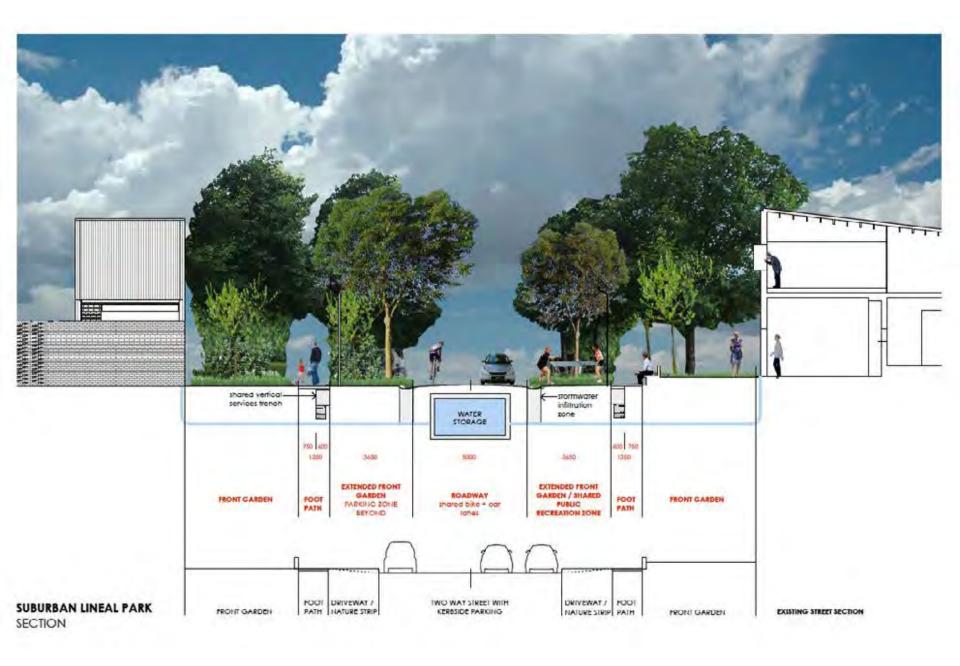
EXISTING STREET PLAN

STREET FACILITIES

- street parking on permeable paving
- landscaped stormwater infiltration zone
- shared our and bike lane with 30km/h speed limit
- handball court
- burbeque area
- extended front garden in public domain
- tootpath over shared vertical services trench
- 8
- 9 driveway crossover

COMMUNAL SPACES WITHIN PRIVATE DEVELOPMENT

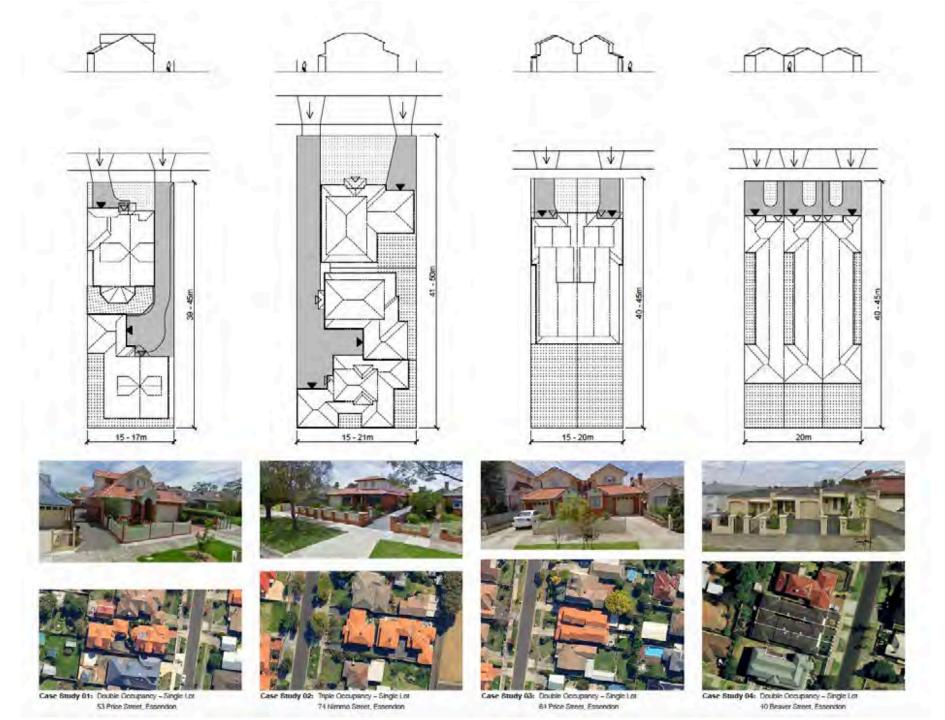
- 10 front garden
- 11 garage, workshop or tumpus room
- communal room for dining or creche
- grass court to poor 13
- 14 pool with swimming jets
- 15 landscaped through-site link
- verandah beside fhrough-site link
- 17 communal vegetable and fruit tree garden
- 18 offiane car space
- 19 rear lane



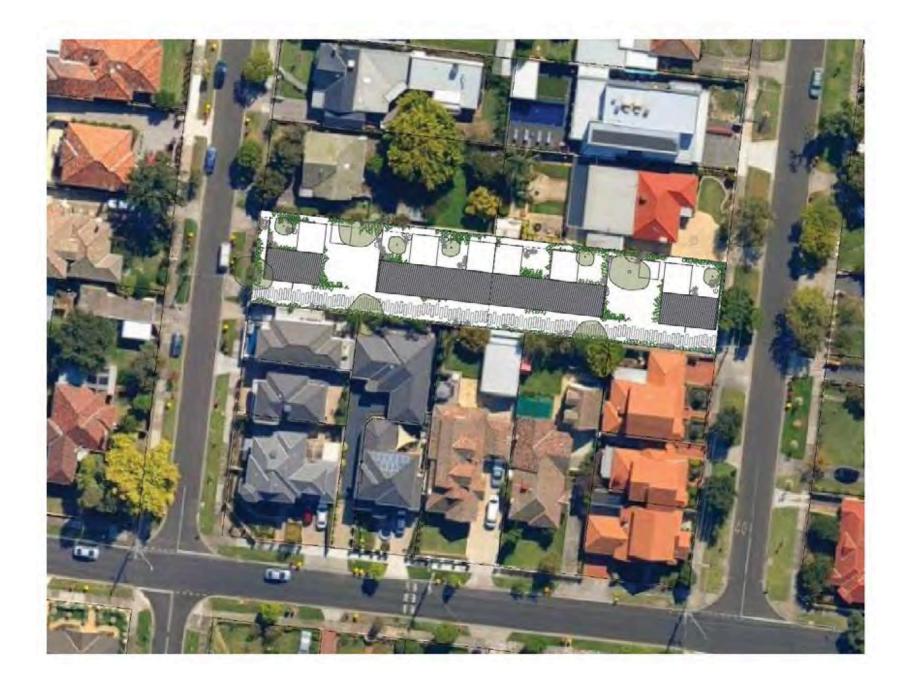
INFILL OPPORTUNITIES

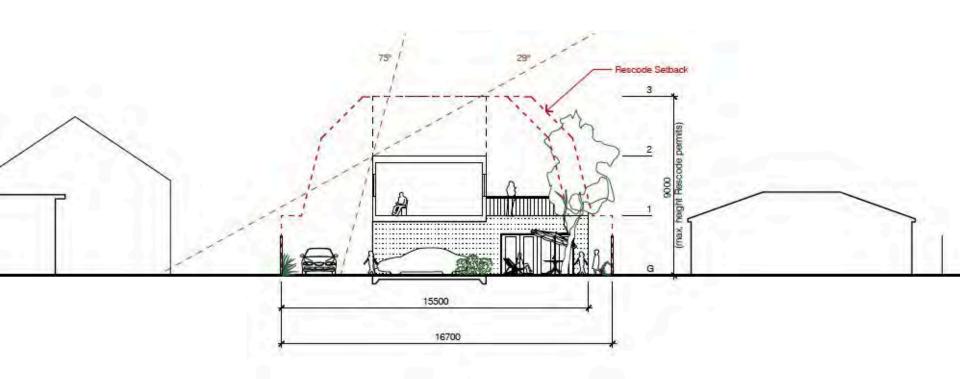
Design Research Report prepared for the OVGA, November 2011

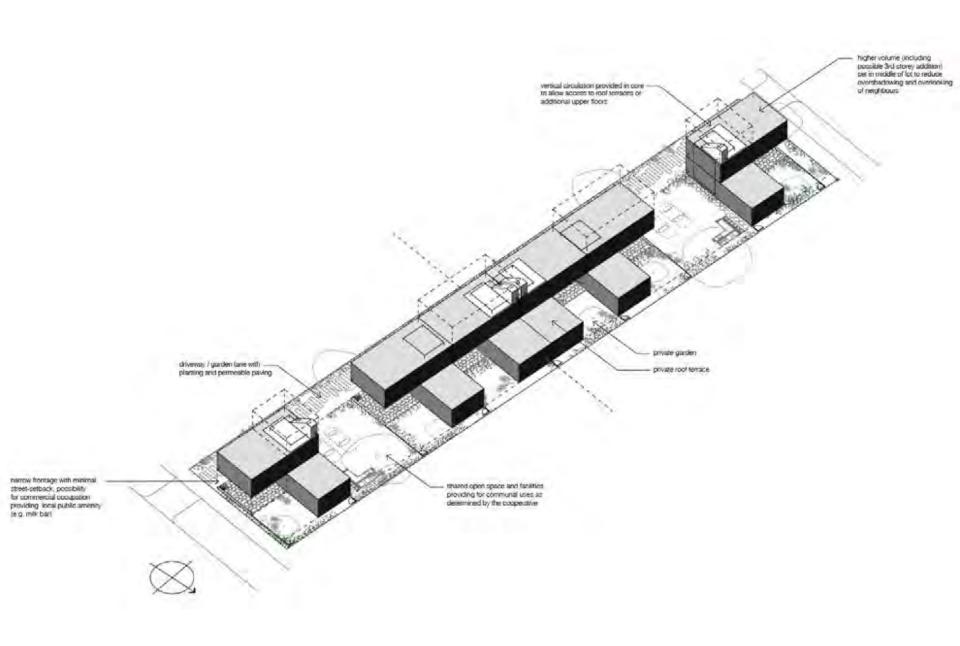










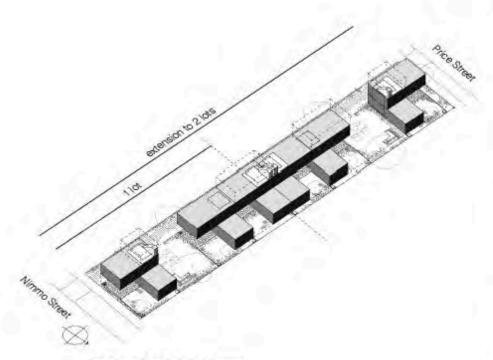




Infill Opportunities Design Research Report Design Visualisations



Date Nov 2011 Scale 1:250



Design Model: L-House

L-HOUSE TYPE

Project Data	1 lot	2 lots
Site Area:	698m²	1,422m²
Number of lots:	1	2
Dwellings:	3	6
Cars:	3 + visitor	6 + visitor
Density:	42 dwellings p	er hectare
Building Footprint:	165m²	330m²
Floor Area:	306 - 554m²	612 - 1108m²
Open Space	533m²	1092m²
Site Coverage:	24%	23%
Floor Area Ratio:	0.44 - 0.79	

Design Description

3 for 1 dwelling replacement

1:1 car parking

Subdivision allows for effective shared space and facilities.

Flexible & diverse housing types

Site and dwellings accommodate future change and growth

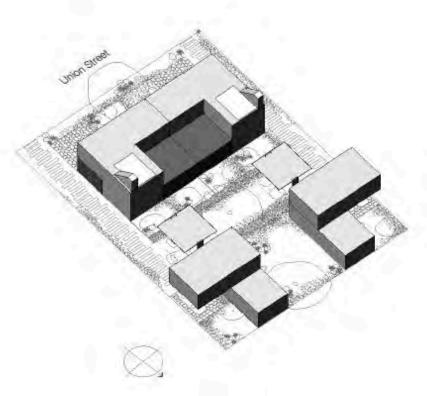
Building model optimizes passive design opportunities

Ground floor access to all dwellings.

Building mass and height contained to centre of the site

Design responds to the surrounding context

Building regulations are maintained



Design Model

MANSION TYPE

Project Data

Site Area: 1262m²

Number of lots: 2

Dwellings: 6-7

Cars: 6 + visitor parking options

Density: 48-55 dwellings per hectare

Building Footprint: 346m²

Floor Area: 575 - 952m²

Open Space 916m²

Site Coverage: 27%

Floor Area Ratio: 0.46 - 0.75

Design Description

Potential to achieve up to 7 dwellings on 2 sites

"Mansion" typology with individual access points

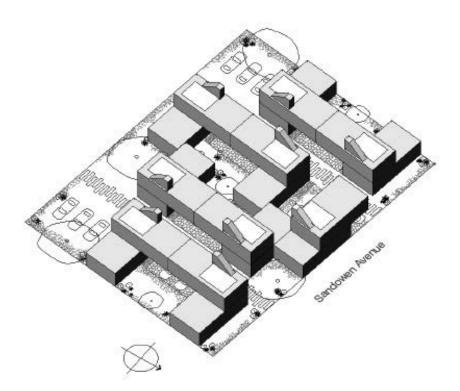
Dwellings can be universally accessible

Subdivision allows for effective shared space and facilities

Building model optimizes passive design opportunities

Building mass, height and setbacks respond to the existing context

Some building regulations would be need challenging



Design Model

CLUSTER TYPE

Project Data

Site Area: 1751m²

Number of lots: 3

Dwellings: 9

Cars: 9 + visitor parking options

Density: 51 dwellings per hectare

Building Footprint: 533m²

Floor Area: 924 - 1509m²

Open Space 1218m²

Site Coverage: 30%

Floor Area Ratio: 0.53 - 0.86

Design Description

Potential to achieve up to 7 dwellings on 2 sites

"Mansion" typology with individual access points

Dwellings can be universally accessible

Subdivision allows for effective shared space and facilities

Building model optimizes passive design opportunities

Building mass, height and setbacks respond to the existing context

Some building regulations would be need challenging



Aenal photograph of piecemeal infill redevelopment. City of Monash 2002-2006



Indicative proposal for coordinated precinct redevelopment on the same sites as above





PRECINT-SCALED REDEVELOPMENT

Coordinated design across clusters of dispersed sites

2-4 times the yield of BAU

Diversity of housing types

High quality, sustainable housing

Public realm enhancements

Community amenity

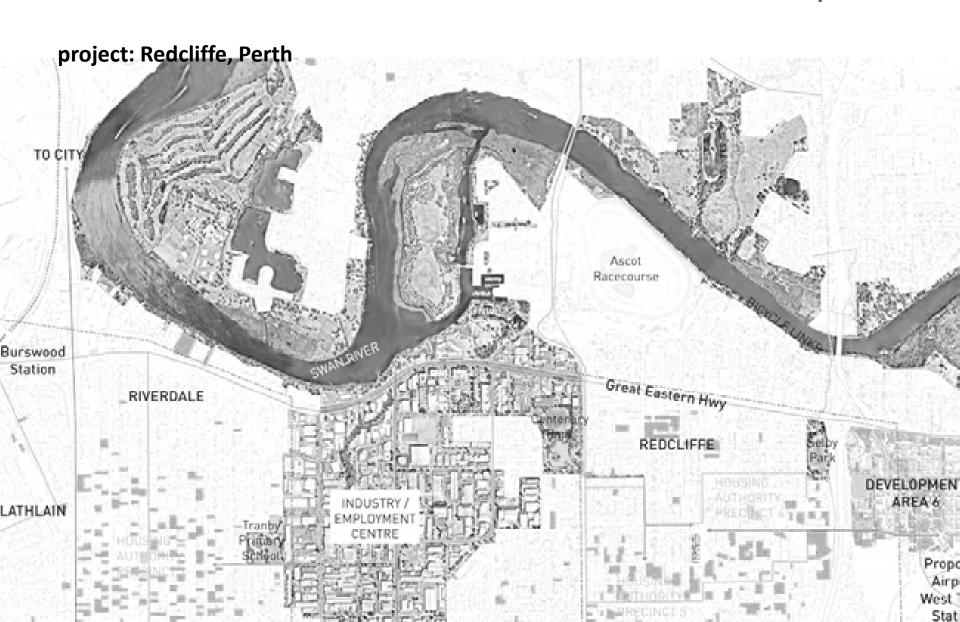
Potential for networked services





PROGRAM D: ADOPTION PATHWAYS | PROJECT D5.1

Urban Intensification and Green Infrastructure: Towards a water sensitive city









Dwelling model

The dwelling model has been developed in response to the existing built context, typical allotment sizes, terrain changes and streetscape conditions. It is one of a number of dwelling typologies that could be pursued within the proposed precinct. In fact, a diversity of dwelling outcomes would be encouraged. For the purposes of this research, the proposed courtyard type illustrates the design principles and considerations for achieving high density, high quality and high amenity living outcomes.

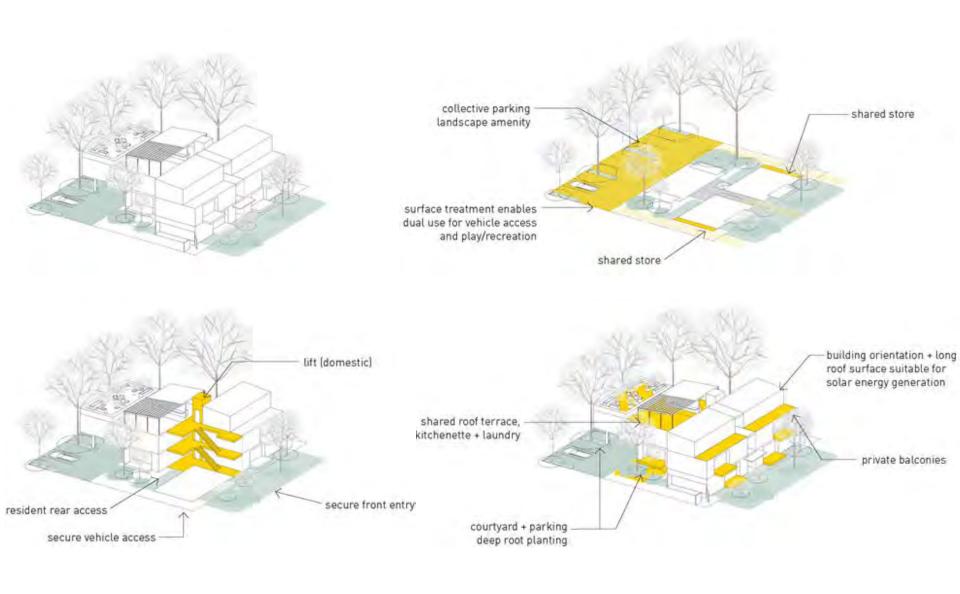
The base model works across two allotments (or can be halved for a single property). This base module can be repeated to form a continuous 'run' of courtyard dwellings on larger sites. The units and circulation core are designed to provide spatial and formal flexibility at a site level while offering high levels of privacy and amenity for individual residents.

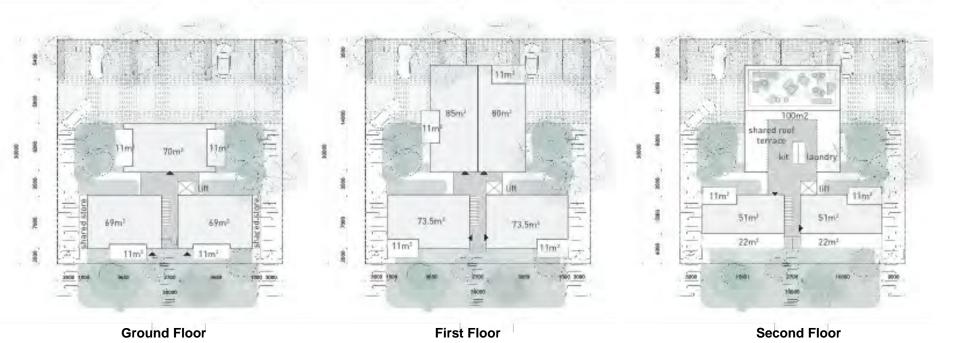
The three volumes encasing the 'void' of the circulation can be manoeuvred or skewed for unique siting alignments and stepped across changing ground levels. The shared circulation core means that each volume is comprised of a discreet dwelling unit at each floor level. This enables the subtraction of 'building blocks' at sensitive boundary conditions, or unit additions where higher building forms are appropriate. These advantages are demonstrated through the site applications in the following pages.

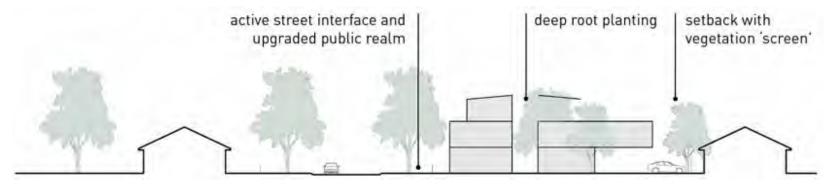
Design Principles

- Provide a mix of dwelling types and tenancy/ ownership structures. Dwelling mix to be distributed in response to existing context (e.g. family-friendly housing adjacent to existing schools).
- 2. Achieve an overall intensification and densification of the area, while respecting local qualities and site-specific opportunities.
- 3. Control the scale of new infill development, with localised manipulations in response to existing context.
- 4. Use the arrangement of new dwellings and entrances (stair halls rather than gallery circulation), semi-private and private open space to reinforce both individual privacy and amenity and group identity, and provide passive surveillance/ increased neighbourhood security through more "eyes on the street".
- 5. Maximise potential for dwelling exposure to outlook, sunlight, air and greenery. Optimise passive environmental performance of building and site.

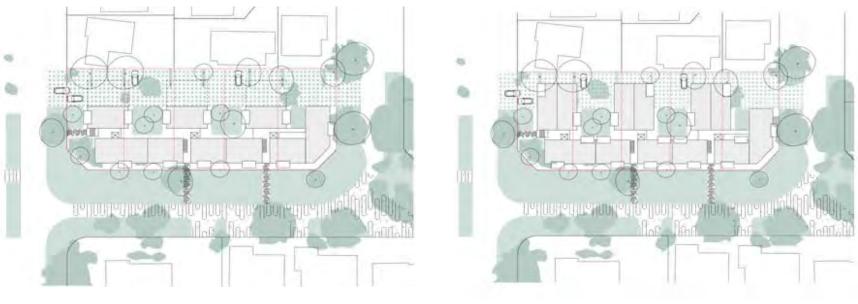
- 6. Increase connectivity for pedestrian and cyclist movement, and between existing neighbourhood attractions/ distinguishing features.
- 7. Provide secure shared amenity areas on rooftop terraces where appropriate, including recreational BBQ areas, kitchenettes, planting boxes, and possible shared laundry facilities.
- 8. Provide ample deep root zones to enable significant mature vegetation, greening the suburb and increasing canopy shade over time. Increase porous surfaces and integrate localised water-sensitive urban design connections with each development.
- Use the process of development and densification to contribute appropriately to the wider public realm, including landscape and streetscape improvements, and increase the amenity of the area for all residents and visitors.
- 10.Provide 1 car space per dwelling, within the title boundary. Ground surfaces treatments should maximise the potential of driveways and car turning areas to perform dual roles of vehicle access and play/recreation space.







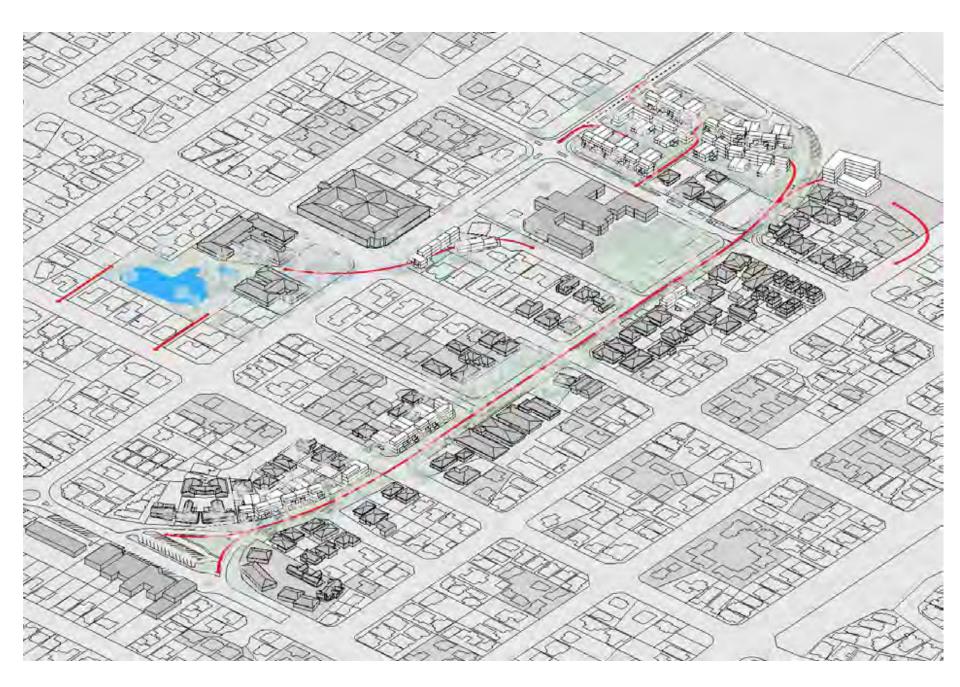
Sectional diagram



⊘^N Ground Floor



First Floor





Design Research Principles

Precinct Principles	Context:	The prominence of the selected sites calls for a built form response that encompasses a mix of medium and higher-rise typologies.
		Transition between higher density development to the north of the freeway and the low-rise residential context to the south of the freeway.
		Maximise the value of public assets in relation to Metronet investment.
Ce	Connections:	Bookend to green link proposed in Stage 1, which links St Maria Goretti's Catholic School with the local shops on Epsom Avenue further south.
		Important multi-modal transit node: vehicle-crossing over Tonkin Highway; bicycle networks to Swan River and surrounding amenity; local public transport routes and connection to Metronet.
		Urban design to consider existing and future street hierarchies and local linkages.
	Ecology:	Develop a bespoke sustainability strategy that delivers project-specific initiatives, as well as provides a framework that can be applied to other sites.
		Urban design responses to consider existing water assets and enhancement strategies.
		Landscape and infrastructure initiatives to address identified needs for local fauna habitat and enhanced biodiversity outcomes.
	Servicing:	Investigate opportunities for effective precinct-wide servicing strategies and sustainable technologies.
		Identify existing schemes for district energy, wastewater and alternative supplies that the precinct may become a part of.
Siting Principles	Vegetation:	Retain existing trees where possible and enhance public realm through landscape design.
		Provide ample deep root zones to enable further 'greening' of the suburb over time with mature vegetation.
		Achieve a net increase in canopy cover, or meet any relevant local targets already developed.
	Connection:	Facilitate pedestrian and bicycle connections through the design and treatment of public open space amenity and public interfaces.
Sus		Maximise visual connections and aspects to escarpment and surrounding vegetation zones.
	Streetscape:	Entrances and open spaces to provide active frontages, increase passive surveillance and enhance neighbourhood security through 'eyes on the street'
	Sustainability:	Maximise passive design opportunities through building design and siting. Increase porous ground surfaces for water sensitive design solutions.
	Dwelling Mix:	20:60:20 %-mix of 1:2:3 bedrooms
	Vehicles:	Minimise cross-overs and control vehicle movement to prioritise pedestrian circulation into and across the site.
	Parking:	Provide 1 car space per dwelling. Maximise advantages of car-sharing arrangements, Ground surface treatments to enable shared uses.

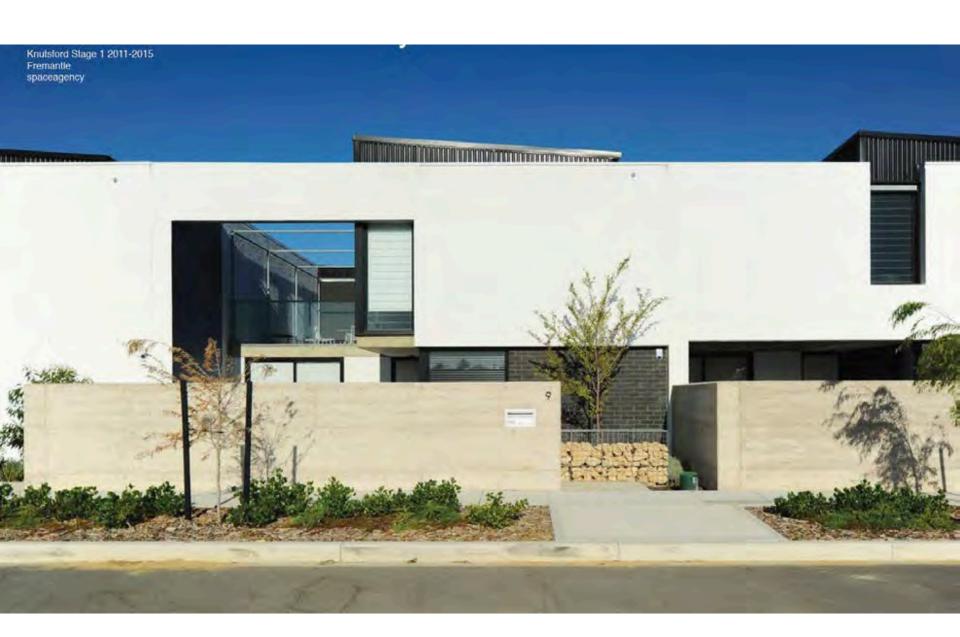
Cluster Principles	Privacy and identity	Use a combination of private and shared open spaces to reinforce privacy, security and group identity.
		Limit cross-overs and separate vehicle and resident entries where possible. Design shared entry ways to enhance street activation and encourage neighbourly interactions.
Scale and density:	Scale and density:	Distribution of dwelling types and forms to sensitively respond to existing built context.
	Governance:	Maximise cost and maintenance efficiencies offered by shared energy, waste and water servicing, supported by appropriate strata arrangements.
	Cost efficiencies:	Capture cost efficiencies offered by economy of scale, standardised construction techniques and effective sharing of services.
	Amenity:	Enhance the quality of the public realm and semi-public open spaces. Provide secure shared amenity on rooftop terraces where appropriate.
Building Principles	Sustainability:	Optimise thermal performance of buildings through effective construction technique. Provide sufficient roof space for on-site solar power generation.
		Investigate possibilities for green roofs and walls.
	Accessibility:	Silver standard to all dwellings (except where lifts are not provided)
		Gold standard achievable with minor modifications.
	Storage:	Mix of storage options provided within dwelling and common areas.
	Design WA:	Meet WAPC apartment design code requirements.
		Possible trade-offs between storage, accessibility, private laundries etc.
Dwelling Principles	Flexibility:	Spatial zones and fixed joinery allows internal dwelling arrangements to occupied by unconventional households or be adapted over time
	Tenure Mix:	Designs to support a diversity of tenancy and ownership structures, including age-friendly, family-friendly and disability-friendly homes.
	Resource reduction:	Efficient fixtures and fittings installed to reduce consumption of water and energy.





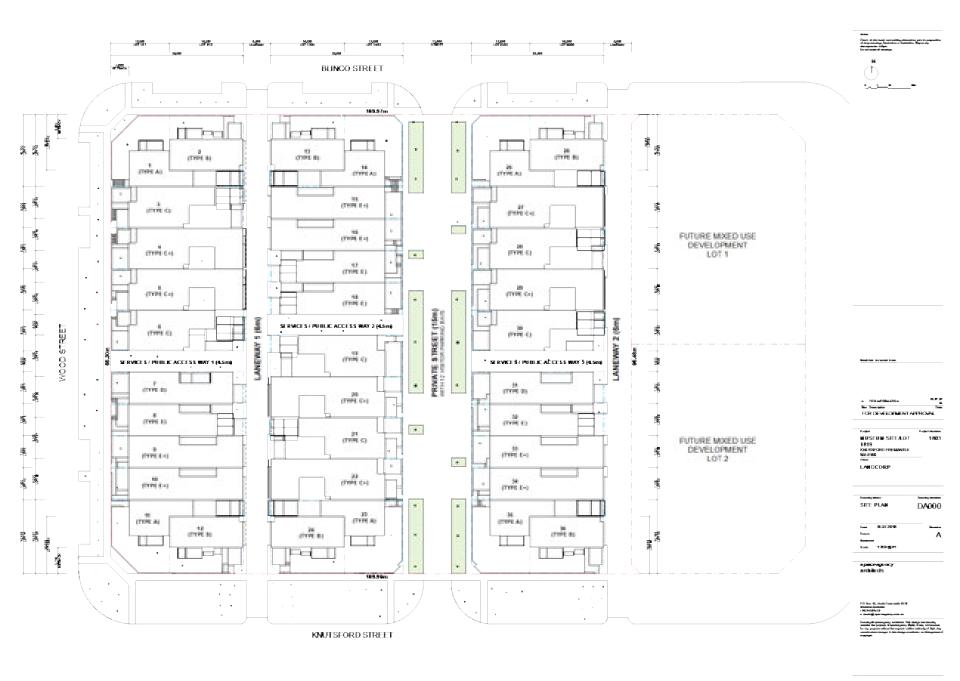




















Community Garden and Orchard Trees

along knowing littlet is a proposal summarry garder such raised productive garden halo, tool shed and parting benches. This space may also have the payerable inter-commonly pushings educating such large, and demonstrations.

Up hard trees have been used to frame the instructive entrances. Undertions and companies plantings will be aucladed to maintain view lines







Proposed Private Street and PAW Community Spaces

Signal for and more commons than the spices, along Kongshord Steed, these actives of peckets and than the publicity were boundary and soon or and locals to a slage them as these con-

The CHIP's will provide key justesician convections, as well as informal gathering spaces. They will make a operatal community space, so the proposed private effect, with public amendian and better lighting.







Knutsford Street Community Spaces

Executing of two keys area, within olde of the purposed private tireer, the remaining places cannot be a single of users.

time and others a large open space who so he adapted for various community systems and activities, while the vitter in a county-one style space to be used for vitables, informal galactings. Each was in fraction by tast on others the cerem expansives.



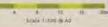


Public Amenities

Positioned at lary footbook throughout for this politic annuries with ethicar's the user experience and encourage playle in stay longer without it sport. These may londer, shade surviview, pichs, Laber, Sendinger, Belly, Sending

These terms maybe be content designed as arrived thems, which is with the create a variety where of place and can be carried through the Electrical Major process.



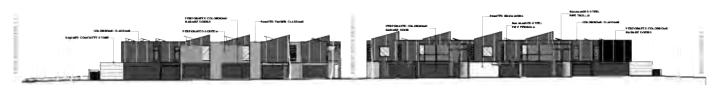


I have an April 1 many 2 Continues at these

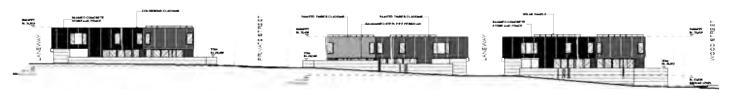




WEST ELEVATION (WOOD STREET)



EAST ELEVATION (LANE 2)



NORTH ELEVATION (BLINCO STREET)



SOUTH ELEVATION (KNUTSFORD STREET)

Comments of the Comments of th

الاستنادات

Restrict Service Service

MUSEUM SITEALOT 1803
1819
KNUISPORD PREMANULE
KNA 1980
Comm

DA200

LANDCORP

STREET ELEVATIONS

28.07.20°B

paceagency orbitosto

P.O. Rose 46, strate Press come 415 I PR. Prist Sale

Очентирей правоподного поставлень. Таке «полиде име аконому, аконому таке разращену об правоподного убрафу и току или поментам for нар украсностийского биз-правопо инивидент полицений инивидентый сельщений в за без намера сельтийся на выборажения.

Category A: Suburban Lot Subdivision Existing Surburban Condition Single Detached House (1 per lot) Essendon, VIC



Site Data			
Sile Area:	1420 m2	Viogetated Surface (garden/ trees)	4S1 m2 (per awreing)
Number of Lots:	2	Deep Roof Zones:	4 (726 m2)
Number of Dwellings:	2	Carsopy Trees	15+
Density:	14 dwellings per hectre	Other on-site rainwater water storage capacity (stormwater):	?
Open Space:	1160 m2	Expected imigation pattern for planned garden area:	7
Site Goverage:	18%	Vegetation characteristics (i.e., vegetation type, leaf area):	2
Permeable Hard Surface (car, people):	0 m2	Soil cheracteratics (i.e., soil type, top soil depth)	7
Non Permanile Hant Surface:	142 m2 (per dwelling)		

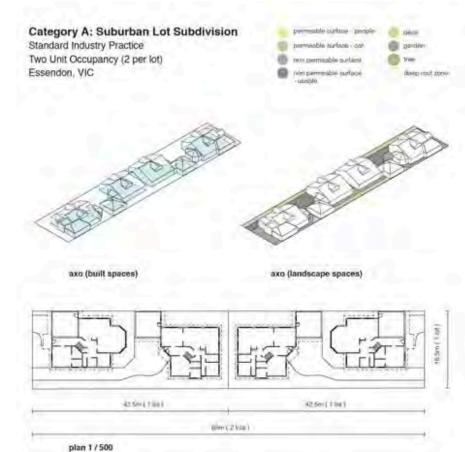


Dwelling Data	A Comment	12-000-00	
Bogrooms	3 (per dwaling)	Gardey-Areu:	431 m2 (per dwriting)
Occupants:	4-6 (per dwelling)	Roof Surface Area;	7 m2 (per awelling)
Gars:	2+ (per dwelling)	Roof Surface Type:	7
Building Stoneys:	T.	Volume:	ma
Building Sile Area	1420 m2 (2 lots)	Area of roof area connected to ranwater storage:	2%
Building Footprint:	127 m2 (per owelling including garage)	Ramwater Storage Capacity:	5
Floor Area (building):	127 m2 (per dwelling including garage)	Household water appliances; (per dwelling)	1 x shower, besin, wc. bath, kitch sink, faun tub, wm.
Floor Area (deck):	0 m2	Building material:	weatherboard

Category A: Suburban Lot Subdivision Standard Industry Practice Two Unit Occupancy (2 per lot) Essendon, VIC



Site Data			
Site Area:	1420 m2	Vigetaled Surface (garden/ lines)	5.105
Number of Lotic	2	Deep floot Zones:	none
Number of Dwellings:	4	Canopy Trees	14+
Density:	28 dwellings per hectre	Other on-site rainwater water storage capacity (stormwater)	7
Open Space:	770 m2	Expected irrigation pattern for planned garden area:	?
Site Coverage:	7%	Vegetation characteristics (i.e., vegetation type, leaf area);	7
Permisable Hard Surface (car, people)	0 m2	Sull characteristics (i.e., sull type, top soil depth)	7
Non Permeable Hard Surface:	-420 m2		

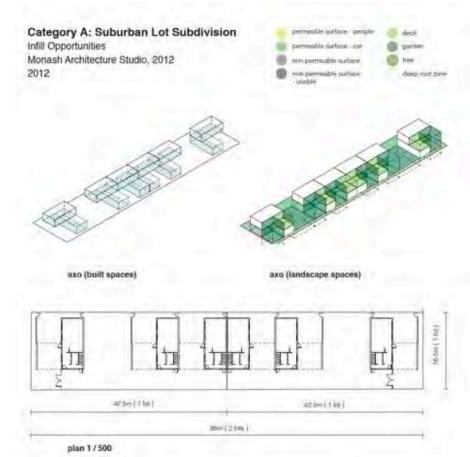


Dwelling Data			
Bedrooms	3 (per dwelling)	Garden Area:	350 m2 (2 lols)
Occupants:	4-5 (per dwelling)	Roof Surface Area:	442 m2 (4 dwellings and garages)
Cars;	2 (per dwelling)	Roof Surface Type:	9
Building Storeys:	2	Volume:	m3
Building Stie Aresi.	1420 m2 (2 lofs)	Area of roof area connected to rainwater storage:	2
Building Footprint:	650 m2 (4 dwellings and garages)	Hainwater Storage Capacity.	1
Floor Area (building):	750 m2 (4 awelings and garages)	Household water appliances: (per dwelling)	2 x shower, basin, wc; 1 x bath, kitch swa, laun tub, wire
Floor Area (dock):	7 m2	Building material:	weatherboard

Category A: Suburban Lot Subdivision Infill Opportunities Monash Architecture Studio 2012 Category A: Suburban Lot Subdivision Category A: Subdivis



Site Data			
Site Area:	1420 m2	Vigetated Sartace (garden/ lines)	532 m2
Number of Lots:	2	Deep Root Zones:	8 (430 m2)
Number of Dwellings	В	Canopy Trees	12+
Density	42 dwellings per hectre	Other on-site rainwater water storage capacity (stormwater):	5
Open Space:	1090 m2	Expected irrigation pattern for Manned garden area:	2
Sille Coverage:	.23%	Vegetation characteristics (i.e., vegetation type, leaf area);	7
Permeable Hard Surface (car, people):	539 m2	Soil characteristics (i.e., soil type, top soil depth)	7
Non Permesble Hard Surface:	0 m2		



Dwelling Data 7 and 3 (per aweling) Betrooms Garden Area: 502 mg Occupants: 2-5 (per awaling) Hoof Surface Area: 360 m2 12 Root Surface Type: Building Storeys: \$ (3) Volume: 686 m3 Building Site Area: 1420 m2 Area of roof area connected to 100% rainwater storage. Building Footprint: 330 m2 Risrwater Storage Capacity: 480000 itres (16 x 2500f water tanks) Floor Area (building) B12 m2 Household water appliances: 12 x shower, basin, 6 ir wc. kitch strik, blund Nib, wm. (per dwelling) Floor Area (deck). 161 m2 Building material: ground floor missowry, limber upper floors