# AVON ROAD DEVELOPMENT ARCHITECTURAL STATEMENT



## Location

The site spans a number of sites in Pymble- Nos. 1, 1a, 5 Avon Road, 1 Arilla Road, 4 & 8 Beechworth Road. The site slopes from a high point of RL157.34 on Beechworth Road to an internal gully which runs from the north to south to an RL117.03 on Arilla Road. At the present time the site is largely overrun by weed species however, there many tall trees remaining on the site. There are also several residential dwellings on the site in varying condition.

The site is within walking distance from Pymble Station and the town centre. Surrounding the site are residential dwellings, PLC school, and the North Shore railway corridor.

## Use

The proposed development is for residential apartments with underground parking. There is a potential commercial, retail, or community space on the ground floor of the stage 1 building. Seven different types of apartments are provided in the development to allow a variety of different living typologies.

SITE BOUNDARY



## **Built Form**

The stage 1 building is roughly rectangular in shape (approximately 48x35m). The form has been generated from arrangement of 29 - 150m<sup>2</sup> apartment modules (typically 6 per floor), organised to allow a coherent arrangement of balconies and building form, high amenity to residents, an efficient arrangement of circulation areas and services, and modulation in the facade. Each module can contain a 3 bedroom apartment or two separate apartments: a 2 bedroom and a 1 bedroom apartment. The modules have been further manipulated to respond to the undulating terrain. This modulation has enabled the development of roof-top gardens and ground level courtyards to a number of the apartments. The central modules on typical floors have been reduced in length to allow the central corridor to be opened to the outside and one side of the module to have an additional aspect.

The stage 1 building is part of a larger development for the whole site containing 5 buildings. The other four buildings are similar to stage 1 in building form although they are further manipulated in order to respond appropriately to the micro-context where they are situated. As a set, the buildings will appear as a cohesive development, each building having family resemblances to the others while maintaining an individual identity.

To Avon Road the stage 1 building presents a 4-5 storey frontage. As the topography of the site slopes approximately 3.0m south on the street frontage, the height of the building is articulated to respond to the terrain. A roof-top garden and ground level courtyard gardens are incorporated into the street elevation in order to provide amenity to residents as well as blurring the edges of the development into the landscape beyond. The west elevation (into the site toward the gully) has 6 storeys situated above the edge of the car parking. The sloping terrain to the south of the building allows an on-grade entry to the car parking from the Avon Road frontage. In later stages of the development of the whole site, this road will continue further into the site and emerge further north on Avon Road at the Number 1 frontage, connecting stages 1 to 4.



MODULE DESIGN CONCEPT

## Design Concept

The design concept is to produce high quality apartment housing in a landscaped, park like, environment, responding to the immediate context of residences around the site as well as the larger locality of Pymble and the North Shore.

An important consideration in the development is that of scale. Being larger than normal residences all apartments must take scale into consideration in order to appropriately relate to the context, individual residents, visitors, and people who reside or are users of spaces nearby the building. In order to respond appropriately to this, the stage 1 development utilises several different strategies in order to present an appropriate scale.

First, the mass of the building is articulated due to the compositional strategy of the apartment modules. This compositional strategy avoids long expanses of flat walls which are potentially difficult to relate to adjoining view points. As presented, the articulation of the development demonstrates the numerous modules that make up the building.

Second a semi-abstract tree motif has been introduced in to the balcony structure. The subtle tree motif acts to provide support to the balconies as well as enclosure for the residents of the apartments. Rather than the ubiquitous open glass balconies, a user-adaptable system of bi folding aluminium screens is provided to allow a variability of privacy. A prefabricated steel balustrade is located within the aluminium screens. As a contrasting alternative, there are concrete and hybrid balustrade treatments including a small proportion of balconies are glass with a partial concrete upturn.

From the outside the fine elements of the screen and balustrades are analogous to the fine branches and leaves of the eucalypts and angophoras on the site and in the area. The thicker support elements function as the trunk and branches providing the structure and contrast to the finer elements.

Third a differentiation of material and texture is used to provide a vertical stratification as well as human scaled elements in accessible areas. A clear palette of materials and architectural language gives definition and character



to each part of the building. However, the palette and language is carefully ordered to ensure a cohesive assemblage.

The vertical stratification of the proposal roughly follows the classical tripartite order of heavy base, middle, and lighter top. At the ground level heavy masonry and stone elements are used in massive forms. The middle layer is lighter with a textured render. The balcony forms inhabit the middle layer becoming finer and lighter at high levels. The top layer is predominately glass forms to the perimeter. The balconies have some solid elements but are kept separate from the roof form. Rooftop gardens and terraces bring plants and vegetation to the top of the building further softening the edges. For detailed discussion of the materials and finishes refer to the External Finishes Table below.

A further consideration in the design of the proposal is the use of an apartment module. Using a long aspect rectangular base form (8.5x17.5m), the apartment module allows the efficiencies of a repeated element while providing suitable flexibility for different apartment layouts (studio, 1 bedroom, 2 bedroom, 3 bedroom, and adaptable 1, 2, and 3 bedrooms). The long frontage also offers a superior amenity to the residents as the critical rooms (such as living spaces and bedrooms) are located along the perimeter, typically with direct access to a balcony. On corner apartments, the living areas occupy the corner segment so that residents can enjoy the amenity of two aspects.

All plant is concealed within the overall building form, allowing an animated roof line contrasting elements of built form with the roof garden.



## Environmentally Sustainable Design [ESD]

The development is designed to respond to and respect the requirements of both BASIX and the Residential Flat Design Code SEPP 65. Therefore, a number of different environmentally sustainable technologies and strategies are provided. Passive environmental considerations include deep balconies with user adjustable shading devices to control solar gain, naturally ventilated circulation areas, high-efficiency roof and wall insulation, and the use of thermal mass to retain heat. The internal circulation spaces have been pushed through to the building perimeter allow natural air to flow through the corridors.

Further energy efficiencies are gained by a centralised 5-star hybrid gassolar hot water system, high efficiency variable refrigerant volume (VRV) air conditioning plant, and dedicated service zones in order to reduce service runs. A dedicated area on the roof is set aside for the installation of photovoltaic panels or evacuated tube solar collectors. CO controlled variable speed ventilation with energy efficient BCA Section J compliant motors are proposed for the garage. A tank is provided for rainwater harvesting for irrigation to the landscaping. Water efficient fixtures and high efficiency appliances are also proposed for the development. Refer to the BASIX certification submitted with this application.

#### Landscaping

While at the present time, the site requires considerable remediation in order to remove the invasive weed species, the park like character of the site and the vistas to and over the existing trees are important characteristics of the site that are intended to remain largely intact for the development. For the amenity of the residents it is therefore very important to repair, maintain, and improve the landscape of the site so that the outlooks and screening to adjacent properties are retained and enhanced. Urban and Rural Design was engaged to provide a landscape concept and management plan for the whole of the site. Wherever possible, major and significant trees are retained in the development. All





## SEPP65 STATEMENT

Principle	Design Quality	Proposal	
1.	Context		
	Good design responds and contributes to its context	While this building is a different form to the residential dwellings adjoining the site, the design conscientiously considers the transition to the periphery in order to appropriately establish dialogue with the context.	
		The use of the existing landscaping, supplemented with additional new planting, softens the building in its surroundings while continuing the language of tree canopies and gardens prevalent in the area.	
		The controlled height of the buildings allows transitions to lower scale dwellings. The changes in height respond to the natural variations in the topography.	
		The buildings of the context plan (including stage 1) are articulated in order to share and enjoy the vistas created within the site as well as those to areas further afield.	
		The existing site is remediated to allow neighbouring properties to continue to enjoy the landscape while also providing outlook, screening, and a buffer zone between the neighbours and the apartments.	
		The proposed materials of the development include elements found in the surrounding residences. However, the materials are reinterpreted and combined with some new forms more suited to multi-residential construction and to the architectural design strategy.	
2.	Scale		
	Good design provides an appropriate scale in terms of bulk and height that suits the scale of the street and the surrounding	A lower scale form is presented to the Avon Road elevation.	
		The scale of the building is higher to the west to address taller buildings in the concept plan (stages 3 & 4) and to relate to very large trees in the gully to the west.	
	buildings.	The average height of stage 1 is largely within the height limit set by the Draft Town Centres LEP 2006 [Refer to drawing PA-300].	
		The location of the driveway and landscaping to the south to allows a transition and buffer zone to the adjoining residents to the south.	
		Screening and buffer landscape elements are located so that the amenity to the residence to the north is maintained.	
		Landscaped courtyard gardens and rooftop gardens are integrated into the building form in order to blur the edges of the building into the landscape beyond while also integrating the development into the surrounding context.	
		There is an intentional ordering of architectural elements to provide a human scale to residents, visitors, and neighbours by the introduction of smaller material module sizes and the use of textured finishes.	



CONCEPT PLAN

Principle	Design Quality	Proposal
3.	Built Form	
	Good design achieves an appropriate built form for a site and the building's purpose, in terms of building alignments, proportions, building type, and manipulation of the building's elements.	The stage 1 building is designed as part of the 5 building concept plan. The concept plan shows how the buildings are located to allow appropriate dialogue with adjoining streets, dwellings, trees, and terrain. The building locations also allow appropriate transition between the taller forms and the adjoining lower scale dwellings while responding to the character and constraints of the site. Very large trees on the site allow mediation between the large forms and the smaller forms.
		In Stage 1 the articulated rectangular form assists the building to fit within the east leg of the site while providing an appropriate street frontage and main entry for the whole development on Avon Road.
		Like the other buildings of the concept plan, the stage 1 building is made up of 6 apartment modules which have been carefully arranged to allow efficiecies of repetition as well as planning flexibility and enhanced amenity for the residents. Most of the units have excellent views to the landscaping within the site or to the more distant vistas to the city and the blue mountains.
		The Stage 1 proposal corresponds closely with the Draft Town Centres LEP 2006 in terms of height. A small section of the building exceeds the prescribed height (17.5m), but this section is located on the North East corner of the building, away from adjoining residents and adjacent to the higher height limit (23.5m), to the taller forms of stage 3 & 4, and to the very tall trees to the West. Significant portions of the building are less than the prescribed heights.
		Car parking is located in a large subterranean garage under the building. Where the edges of the parking structure are exposed due to the undulating terrain, courtyard gardens have been integrated into form. The exposed edges allow supplementary natural ventilation to the basement levels reducing the reliance on the mechanical plant.



STAGE 1 - GROUND FLOOR PLAN

Principle	Design Quality	Proposal	
4.	Density		
	Good design has a density appropriate for a site and its context, in terms of floor space yields (or number of units or	The stage 1 building is the first stage of a development for the whole Avon Road site. For the whole development of five buildings an FSR of 1.37 is proposed. However, as the site is not proposed to be subdivided for each of the buildings the FSR calculation is not pertinent for the stage 1 building by itself (approximately 0.19).	
	residents)	The stage 1 building encompasses a GFA of 4,830m <sup>2</sup> $_{(DRAFT TOWN CENTRES LEP 2006)}$ and FSA of 4,712m <sup>2</sup> $_{(SEPP53)}$	
		In the stage 1 building there are 50 apartments with a range of 1 bedroom, 2 bedroom, and 3 bedroom apartments (including adaptable apartments of 1, 2 and 3 bedrooms) allowing a large range of typologies and living arrangements.	
		In the overall concept plan for the site, the five buildings have been located to allow appropriate transition between the taller forms and the adjoining lower scale dwellings while responding the character and constraints of the site. Very large trees on the site allow mediation between the large forms with the smaller forms. The landscaping of the site allows a unique opportunity to provide outlook to both the residents and neighbours as well as screening between sites.	
		Surrounding multi-residential developments of a similar nature have a commensurate density to the proposal.	
		The proximity to Pymble Station allows residents to take advantage of public transport thereby reducing the need for regular vehicle use.	
5. Resource, Energy, and Water Efficiency		ficiency	
	Good design makes efficient use of natural resources, energy, and water throughout its full life cycle, including construction.	The development embraces ESD principles and seeks to implement innovative design and energy saving technologies wherever feasible.	
		Cross ventilation, passive solar design, facade shading, efficient mechanical systems, rainwater harvesting and reuse are all utilised in this development. Further, a central high efficiency solar boosted gas powered hot water heating plant is located on the roof which is supplemented by solar collection devices. There is a dedicated zone for photovoltaics or other solar collection panels provided on the roof top.	
		The modular design of the apartments facilitate excellent access to natural light as well as ventilation for living spaces and bedrooms due to the wide frontage allocated to each module. Service rooms and other non habitable areas such as bathrooms, storage, and laundries are located along the back of the module.	



AVON ROAD VIEW

Principle	Design Quality	Proposal
6.	Landscaping	
	together landscape and building operate as an integrated and	The remediation of the site is an important characteristic of the proposal. The existing trees and context are regarded as a vital asset to the site and will be of great benefit to both residents of the development and to the neighbouring residents. The remediation and ongoing management of the landscape is essential for the desirability of the completed residences.
	in greater aesthetic quality and amenity for both occupants and the adjoining public domain.	In addition, courtyard and rooftop gardens have been incorporated in order to further integrate landscape into the built form and to blur the edges of the development into the background.
		Subtle tree motifs incorporated into the balcony design and facades in order to provide an architectural analogue to the landscapes of the site and locality.
		Walking paths, open areas, viewing platforms and provided as part of the landscaping of the site to be enjoyed by the residents.
		Buffer zones are defined on the perimeter of the development for the amenity of the adjoining residence.
		The landscaping has been designed to take into account water and flood control during rain and storm events.
		Further information concerning the design and management of the landscape can be found in the landscape documentation by Urban and Rural Design.
7.	Amenity	
	Good design provides amenity through the physical, spatial,	The stage 1 building is part of a wider concept plan for the whole site. The concept plan demonstrates that the buildings have been designed to sit well with each other.
	and environmental quality of a development.	The buildings of the concept plan have been orientated to avoid direct facing elevations which result in poor outlooks for the apartments. Instead the buildings angle away from each other - reducing the closing points to discrete locations.
		The modular design of the buildings allows flexibility in planning the apartment types in the development. The wide aspect apartment module (8.5x17.5m) allows enhanced amenity as bedrooms and living areas can be located on the perimeter of the building rather than further with the envelope.
		The extensions to the open circulation corridor doubles as secondary aspect to centre modules allowing a second aspect to the adjoining apartment.
		Accessible apartments are provided at a rate of over 10% of the total yield.



DETAIL ELEVATION - WEST

Principle	Design Quality	Proposal
8.	Safety and Security	
	Good design optimises safety	The development has a clear address from Avon Road.
	and security, both internal and development and for the public	The stage 1 building is therefore aligned to the street frontage.
	domain.	When subsequent stages of development are completed, pedestrian routes will be provided to other buildings in the development and to the landscaped areas.
		Passive surveillance is enhanced by balconies and windows at higher levels.
		There is no "rear" elevation to the development as the apartments are located on all sides.
		The development, occupation, and management of the site prevent the current ad hoc visitation of the site.
9.	Social Dimensions	
	Good design responds to the social context and needs of the	Different apartment types and sizes are provided in order to accommodate a variety of living typologies.
	local community in terms of lifestyles, affordability, and access to social facilities.	Recently completed developments in the area have attracted residents from a variety of backgrounds and age groups, it is anticipated that this development will also attract a similarly diverse group.
		Facilities such as a swimming pools and a gymnasium are to be constructed in latter stages (notably stage 3).
10.	Aesthetics	
	Quality aesthetics require the appropriate composition of building elements, textures, materials, and colours, and reflect the use, internal design and structure of the development. Aesthetics should relate to the context, particularly responding to the desirable elements of the existing streetscape or, in precincts undergoing transition, contribute to desired future character of the area.	Stage 1 is comprised of a modular plan which is arranged in order to define an articulated facade. The horizontal lengths of the elements, of around 15 metres, are analogous to that of the dwellings in the vicinity. The variation in the facades prevents monotonous elevations.
		The elevations have been composed as elements in themselves with due reference to internal planning - rather than as simply out workings of the plans. Variations of balcony forms are designed to offer appropriate privacy and amenity to residences while facilitating an interesting face to external viewpoints.
		A tripartite arrangement of materials has been appropriate in order to differentiate between the low, middle, and top of the building reducing the scale of the building to a comprehensible level of an individual user. A subtle tree form has been integrated into the tripartite ordering to establish a dialogue with the existing trees on the site.
		Materials are chosen for their weathering properties so as to allow the building fit into its environment through the life of the building rather than just for a short period after completion. Low maintenance finishes have been adopted wherever possible.

Ancher/Mortlock/Woolley



# EXTERNAL MATERIALS SCHEDULE

Code	Element	Туре	Colour
BAS1	Base wall and structure	Stone cladding	Dry packed sandstone
BAS2	Base wall and structure	Masonry	Boral Blue
BAS3 (detail)	Base wall and structure	Concrete	Off form
SLA	Balcony slabs	Concrete - Rendered	Plaster of Paris
COL	Balcony columns	Concrete - Rendered	Plaster of Paris
WAL1	Wall elements	Precast - Stain finish	Deep Grey
FAC	Roof: facia	Concrete - Rendered	Plaster of Paris
SOF	Roof: soffit	Concrete/FC Painted	Paint - Carmen Miranda
WIN1	Windows: fixed	Aluminium - Anodised	Clear 25µ
WIN2	Windows: sashes	Aluminium - Powdercoated	Charcoal
WIN3	Window shelf	Steel/FC	Charcoal/White (upper face)
DOR	Sliding Doors	Aluminium - Anodised	Clear 25µ
GAT	Gates and fixed screens	Steel	Micaeous Oxide - Natural Grey
SCR	Balcony screens	Aluminium - Powdercoated	Charcoal
BAL1	Balustrade	Steel - Painted	Micaeous Oxide - Natural Grey
BAL2	Balustrade	Glass	
LWA1	Landscape walls	Stone	Dry packed sandstone
LWA2	Landscape walls	Brickwork	Boral Blue
LWA3	Landscape walls	Precast	Aggregate

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# SEPP 65 RULES OF THUMB

Relating to local context	Yes
	The stage 1 building has been designed to relate to the Avon Road streetscape, the topography of the site, and to provide appropriate transitions to the lower-scale residential dwellings adjoining the site.
Depth of building	Complies in principle
	The cross sectional depth of the stage 1 building is 19.5 from glass to glass. This distance allows for two 8.5m wide modules and a generous 2.0m circulation corridor between the modules. The building cross section is justified given the wide frontage of the apartments and the natural light and ventilation provided to the circulation corridor. Further a 3.05m floor to floor height allows higher ceilings in circulation areas.
Distance between	Yes
buildings [between habitable rooms] Up to 12m height: 12m Up to 25m height: 18m Over 25m height: 24m	A minimum setback of 18m has been utilised between buildings on the site. In addition, buildings of subsequent stages in the development have been rotated to avoid parallel facing outlooks between buildings.
Minimum open space for deep planting Minimum 25% of site area.	Yes
	A very large proportion of the site is left undeveloped by building form. This area has been set aside in order to retain most of significant trees on the site, to provide landscape outlook for the apartments, and to allow for landscape buffer zones to adjoining residential development.
	The area of deep planting is approximately 40% of the site area.
Communal open space At least 25-30% of the site areas	Yes
	The Avon Road site has very large areas of landscaped space for the use of residents of the development. The landscaping plans shows further detail about the character, planting, and maintenance of these areas.
Minimum area of 25m <sup>2</sup> for private open space for	Yes
	Courtyard gardens are provided to apartments on grade. The gardens vary in size from 25 to 95m <sup>2</sup>
level or on a structure. Minimum dimension in	All courtyard gardens allow a minimum dimension of 4m in at least on direction.
	Depth of building   Depth of building   Distance between   buildings   [between habitable   rooms]   Up to 12m height: 12m   Up to 25m height: 18m   Over 25m height: 24m   Minimum open space for   deep planting   Minimum 25% of site   area.   Communal open space   At least 25-30% of the   site areas   Minimum area of 25m <sup>2</sup> for private open space for   each apartment at ground   level or on a structure.

# Ancher/Mortlock/Woolley



50-51	Site configuration -	Yes
	orientation	The east elevation of the building aligns with Avon Road.
52-53	Planting on Structures	The stage 1 building has a number of roof top gardens and planters integrated into the design. There are also courtyard gardens provided over the car parking structure on the ground floor.
		On the roof gardens, raised terraces area utilised in order to cover large planters. Approximately 1m of soil depth is obtainable in these planters allowing medium and small sized trees.
		In the courtyard gardens located over structures, sloped gardens, planters, and set-downs are used to form transitions from grade to soil depths of 0.8m allowing the planting of small trees, ground cover, and turf.
50-57	Site amenity - safety	Yes
		The development has secure access points to the circulation corridors. Balconies and windows overlooking the public areas provide passive surveillance.
58-59	Site amenity - visual	Yes
	privacy	In the overall development buildings have been located to avoid direct facing of elevations between different buildings. In addition, screens are provided to the long balconies to allow user-definable privacy to the balconies.
64	Pedestrian Access Accessible route from street to entry Barrier free access to at least 20% of the apartments	Yes
		An accessible pedestrian footpath is provided from Avon Road to the ground floor entry. The car park entry on basement Level 1 is also accessible from the Avon Road frontage.
		All apartments in stage 1 have barrier free access to the apartments. Lift service all levels of the apartments and the basement.
65	Vehicle Access	There are two vehicular access routes into stage 1. The main entrance is from the Avon Road frontage. The driveway is 6.1m wide in order to comply with the AS2890.1 requirements. The main pedestrian entrance is located adjacent to the front drive and separated by low height landscape walls.
		The second access is from the internal road along the southern boundary of the Avon Road portion of the side. This road allows on grade access into the basement Level 1 parking area.
		The access road will be extended through the site to a point further up Avon Road in later stages of the development.
		Two vehicular entries are provided in stage 1 to allow for the additional volume of traffic access is found in the traffic report.



3	BEDROOM	PLAN

69	8m maximum depth to single aspect apartments	Compliance in principle An apartment module of 17.5x8.5m has been designed for this development. The central apartment modules, and some of the smaller apartments do have a single aspect and thus a small section of the apartment is further than 8m from a window (max 8.5m) in some single aspect apartments. However, typically service areas and joinery occupy the rear portion of the apartments and therefore there is not habitable space (besides the entry) in this zone. The apartments are therefore considered to provide a space of high amenity.
		Some apartments have access to the end of the corridor extension, allowing a secondary frontage to those apartments.
69	8m maximum from rear of kitchen to glass	Compliance in principle Most kitchens are located within 8m of a window. In two apartment types the kitchen is located in a large open plan room and a portion the rear wall of the kitchen is located a maximum of 8.5m from a window. As this distance is very close to the stipulated distance and because of the open plan arrangement, the kitchen remains an amenable space.
69	Minimum unit sizes	Yes Studio apartments 1 bedroom apartments 2 bedroom apartments
		3 bedroom apartments - 138m <sup>2</sup> or 148m <sup>2</sup>
72	2m balcony	Yes All apartments have a balcony or open space of at least 2.4m in width. Many apartments have wider balconies or supplementary balcony spaces. Some apartments have courtyard gardens or rooftop gardens.
74	2.7m minimum ceiling height in habitable areas	Yes A typical floor to floor height of 3.05m is used in this proposal. The apartments have been designed with dedicated service zones to the rear of the module (circulation side). Services are therefore confined to this zone which allows the ceiling height to remain at 2.7m or above in the habitable areas.
74	2.25-2.4m ceiling height in non habitable areas	Yes The typical floor to floor height of 3.05m allows adequate space for services, allowing ceiling levels of at least 2.25m (typically higher than 2.4m) in all non-habitable areas.



2 + 1 BEDROOM PLAN

70	Outline and the second	Ver
78	Optimise ground floor units with separate entries	Yes
		3 apartments have ground floor access points direct to the apartments. Due to the undulating nature of the site it is difficult to provide further connections to apartments at the lower levels.
		Where possible, adaptable apartments (AS4299) have been provided at the ground level.
79	Maximum of 8 apartments off a double loaded corridor area	Yes The arrangement of the apartment modules prevents an accumulation of apartment entries on double loaded corridors. There is a maximum of 4 apartment entries of any corridor. The ends of the side corridors are also open to allow the ingress of natural light and ventilation.
82	Storage provisions Studio: 6m <sup>3</sup> 1 Bedroom: 6m <sup>3</sup> 2 Bedroom: 9m <sup>3</sup> 3 Bedroom: 10m <sup>3</sup> Half provided within the unit	Yes Storage areas have been provided within the apartments (in addition to generous kitchen and bedroom joinery). At least half of the required storage is located within the apartments. Supplementary storage is also provided in the car parking areas.
85(Urban)	70% of units to receive 2 hours of direct sunlight to living rooms and private open spaces	Yes 74% of units receive 2 hours or more of direct sunlight to private open spaces or living areas in mid winter.
85	70% of units to receive 3 hours of direct sunlight to living rooms and private open spaces during mid	66% of unit receive 3 hours or more of direct sunlight to private open spaces or living areas in mid winter. The stage 1 building is atypical as compared with the other stages of the Avon Road development.
	winter	Because stage 1 is relatively confined between adjoining sites along Avon Road it is not possible to orientate the building form to a north-south axis as with all the other proposed buildings of the concept plan. The north-south orientation allows a more equitable access to sunlight during the course of a winter day.
87	Natural ventilation - cross ventilation 60% of units to be cross ventilated.	Yes
		62% of apartments have more than one aspect allowing cross ventilation. A further 15% of apartments have a secondary aspect to corridor extension allowing enhanced ventilation.
87	Natural ventilation -	Yes
	kitchens	Kitchens are located in large open plan room with the dining and living areas. These rooms have large sliding doors providing natural ventilation. Supplementary ventilation is possible from the circulation corridor.