

Appendix D

Design Report

TOUKLEY SENIORS LIVING DEVELOPMENT
DESIGN REPORT

PROPOSED SENIORS LIVING DEVELOPMENT
at 222 MAIN ROAD, TOUKLEY
for RUSTRUM PTY LTD

INTRODUCTION

The following design report describes the compliance of the proposed Seniors Living Development at Main Road Toukley with SEPP (Housing for Seniors or People with a Disability) 2004, SEPP 65 Design Quality Principles and the Residential Flat Design Code.

SEPP (Housing for Seniors or People with a Disability) 2004 - DESIGN QUALITY PRINCIPLES

The proposal has been designed to satisfy the aims, objectives and requirements of SEPP (Housing for Seniors or People with a Disability) 2004.

The site is located within the Toukley town centre in close proximity to public transport, shops, supermarkets, schools, community centres and professional services. It is adjacent to Toukley Gardens Park and a short distance from the waterfront reserve, Osborne Park.

While the site falls up to 9 metres from Main Road down to the foreshore, grade access has been achieved from both Main Road and Rowland Terrace as well as ramped access to the lake and landscaped foreshore area. The basement car parks have level access to the apartments with lift and stair connections to all floors of the building.

Walkways and lifts have been designed to accommodate stretchers, wheelchairs and mobility scooters with all apartments fully accessible and readily adaptable.

Neighbourhood amenity and streetscape, visual and acoustic privacy, solar access and design for climate, stormwater, security and crime prevention, and waste management have been addressed in detail elsewhere in this submission. Refer to SEPP 65 - Design Quality Principles and attached reports and drawings.

A site analysis plan is attached.

Compliance with SEPP provisions is as set out below.

SEPP (Housing for Seniors or People with a Disability) 2004 Compliance Table

25 Location and access to facilities	
(1) Residents of the proposed development will have access that complies with subclause (2) to:	
(a) shops, bank service providers and other retail and commercial services that residents may reasonably require, and	<p>The Toukley CBD (shopping centre) is a 100 metre level walk, east of the subject property at the intersection of Peel Street.</p> <p>Most local retailers are represented including: 4 pharmacies, 2 major banks, building societies and credit unions; one major supermarket (Coles); newsagency; bakery; post office; restaurants, and; specialty clothing and food stores.</p>
(b) community services and recreation facilities, and	<p>There are several parks within easy walking distance (one adjoining) and waterfront parks and recreational facilities within a 500m radius.</p> <p>The library is within the Toukley CBD as are the Community Centre and Senior Citizens centre and halls. Club Toukley includes bowling greens, recreational facilities and sporting affiliated clubs, including fishing, swimming and golf plus the usual indoor entertainment expected in large regional licensed clubs.</p>
(c) the practice of a general medical practitioner	<p>The largest medical practice in the CBD is The Toukley Family Practice in Canton Beach Road, with 16 full time GPs. This practice also includes: a gymnasium; physiotherapy; skin cancer clinic, and; other specialist clinics. There is also another smaller medical practice in Elden Street with several medical specialists, dentists and physiotherapists.</p> <p>There are three pathology laboratories in the Toukley CBD and two radiology centres.</p>
(2) Access complies with this clause if:	
(a) located at a distance of not more than 400 metres from the site of the proposed development that is a distance accessible by means of a suitable access pathway and the overall average gradient for the pathway is no more than 1:14,	<p>All of the above services located as prescribed with required access and gradients.</p> <p>It is noted that there is a main pedestrian crossing with traffic lights on Main Road in the centre of the CBD – additionally all kerbs at intersections, within the CBD, are ramped for disabled access – in short, the area is particularly user friendly to disabled and older citizens.</p>

	There are two mobility shops selling scooters and aids for the disabled in Toukley.
(b) there is a public transport service available to the residents who will occupy the proposed development:	
(i) that is located at a distance of not more than 400 metres from the site of the proposed development that is a distance accessible by means of a suitable access pathway and the overall average gradient for the pathway is no more than 1:14,	Bus stops for local Route 29 are located at the adjoining Beachcomber Hotel allotment and across Main Road with regular weekday bus services with connections to Wyong Station and Tuggerah.
(ii) that will take those residents to a place that is located at a distance of not more than 400 metres from the from the facilities referred to in subclause (1), and	See above. Lake Haven shopping centre is approximately 10 minutes by bus.
(iii) that is available both to and from the proposed development at least once between 8am and 12pm per day and at least once between 12pm and 6pm each day from Monday to Friday (both days inclusive),	Satisfies. See above. Bus route 29 provides 6 services daily Monday to Friday to The Entrance, Charmhaven shopping and Wyong Hospital. There are 3 services on Saturdays but none on Sundays and public holidays.
And the gradient along the pathway from the site to the public transport services (and from the public transport services to the facilities and services referred to in subclause(1)) complies	Satisfies. See above
33 Neighbourhood amenity and streetscape	
(a) recognise the desirable elements of the location's current character (or, in the case of precincts undergoing a transition, where described in local planning controls, the desired future character) so that new buildings contribute to the quality and identity of the area, and	See SEPP 65 section of design report
(b) retain, complement and sensitively harmonise with any heritage conservation areas in the vicinity and any relevant heritage items that are identified in a local environmental plan, and	There are no local heritage items
(c) maintain reasonable neighbourhood amenity and appropriate residential character by:	See SEPP 65 section of this report
(i) providing building setbacks to reduce bulk and overshadowing, and	The amenity and visual privacy of the adjoining dwellings in Rowland Terrace have not been compromised. The lakeside house below the site is screened by existing vegetation and change in ground level. The outlook of this

	<p>dwelling is toward the lake and as it is located due north of the development there are no overshadowing issues. The second dwelling is adjacent to the Toukley Gardens Park and has its private space screened by existing vegetation and change in level. The outlook of this dwelling is toward the north-east away from the proposed development and given its due east location there is minimum impact on its current solar access, with the dwelling receiving well above the required 3 hour minimum penetration in mid-winter.</p> <p>The amenity and visual privacy of the adjoining manager's residence to the Beachcomber site has not been compromised as it sits in the same line of the proposed building to the foreshore with its outlook north over the lake, receiving full sun to its primary northern façade all day, year round.</p>
(ii) using building form and siting that relates to the site's land form, and	<p>The built form responds to the site topography, breaking the building into 4 sections along the waterfront and stepping down from 4 storeys to the west to 2 storeys toward the residential area in Rowland Terrace.</p>
(iii) adopting building heights at the street frontage that are compatible in scale with adjacent development, and	<p>Along Main Road the proposed building presents a 3 storey façade that is compatible with the adjoining park and hotel car park.</p> <p>The 2 storey elevation to Rowland Terrace is consistent with the existing adjoining residential scale.</p> <p>Although the proposed building is higher at the street frontage than existing buildings this is acceptable in a transition precinct.</p>
(iv) considering, where buildings are located on the boundary, the impact of the boundary walls on neighbours, and	<p>No part of the building is located on the boundary. The only boundary wall is to the Beachcomber car park.</p>
(d) be designed so that the front building of the development is set back in sympathy with, but not necessarily the same as, the existing building line, and	<p>The locality has a range of setbacks the proposal is consistent with Council controls for residential flat buildings.</p>
(e) embody planting that is in sympathy with, but not necessarily the same as, other planting in the streetscape, and	<p>The landscaping seeks to integrate the proposal with the streetscape, integrate with and enhance Toukley Gardens Park and provide for passive recreation and high amenity on the private open space areas facing Budgewoi Lake.</p>

(f) retain, wherever reasonable, major existing trees, and	Large trees adjoining the foreshore will be retained
(g) be designed so that no building is constructed in a riparian zone.	A 20 metre foreshore building line has been observed
34 Visual and acoustic privacy	
The proposed development should consider the visual and acoustic privacy of neighbours in the vicinity and residents by:	Visual and acoustic privacy have been protected in accordance with SEPP 65
(a) appropriate site planning, the location and design of windows and balconies, the use of screening devices and landscaping, and	Existing vegetation provides adequate screening
(b) ensuring acceptable noise levels in bedrooms of new dwellings by locating them away from driveways, parking areas and paths.	The design minimizes noise intrusion from access points.
35 Solar access and design for climate	
The proposed development should:	
(a) ensure adequate daylight to the main living areas of neighbours in the vicinity and residents and adequate sunlight to substantial areas of private open space, and	The design complies with SEPP 65 solar access principles (See Response to 33(c)(i))
(b) involve site planning, dwelling design and landscaping that reduces energy use and makes the best practicable use of natural ventilation solar heating and lighting by locating the windows of living and dining areas in a northerly direction.	The north orientation, atrium and proposed cross ventilation combine to meet these requirements
36 Stormwater	
(a) control and minimise the disturbance and impacts of stormwater runoff on adjoining properties and receiving waters by, for example, finishing driveway surfaces with semi-pervious material, minimising the width of paths and minimising paved areas, and	<p>The design minimises driveway areas and directs roof water to storage for reuse within the development.</p> <p>All runoff from the site to the lake will be via on onsite treatment systems.</p> <p>Erosion and sediment controls are prescribed for the construction phase. No alteration or interruption of surface or ground water hydrology will occur.</p>

(b) include, where practical, on-site stormwater detention or re-use for second quality water uses.	Storm water will be collected for reuse.
37 Crime prevention	
The proposed development should provide personal property security for residents and visitors and encourage crime prevention by:	A crime prevention report has been obtained and the recommendations incorporated into the design
(a) site planning that allows observation of the approaches to a dwelling entry from inside each dwelling and general observation of public areas, driveways and streets from a dwelling that adjoins any such area, driveway or street, and	Adequate surveillance capability is provided to both within the development and surrounding vicinity
(b) where shared entries are required, providing shared entries that serve a small number of dwellings and that are able to be locked, and	Appropriate security is to be provided by locks
(c) providing dwellings designed to allow residents to see who approaches their dwellings without the need to open the front door.	Adequate surveillance will be provided either via peepholes or security screens
38 Accessibility	
The proposed development should:	
(a) have obvious and safe pedestrian links from the site that provide access to public transport services or local facilities, and	The town centre is 200 meters to the east along footpaths with reasonable level grades and in full public view
(b) provide attractive, yet safe, environments for pedestrians and motorists with convenient access and parking for residents and visitors.	Provided
39 Waste management	
The proposed development should be provided with waste facilities that maximise recycling by the provision of appropriate facilities.	A garbage and recycling room is provided as part of the proposal. A separate waste management plan has been prepared.
40 Development standards	See separate height assessment report
Schedule 3 standards	See attached unit plans with schedule 3 (DA) standards incorporated and Appendix S: Access Report.



revision	date	description	by	verification	initial	signature	date
A	13.05.09	ISSUED FOR ENVIRONMENTAL ASSESSMENT	JG	checked by	JG	<i>[Signature]</i>	15.05.09
				approved by	DS	<i>[Signature]</i>	15.05.09

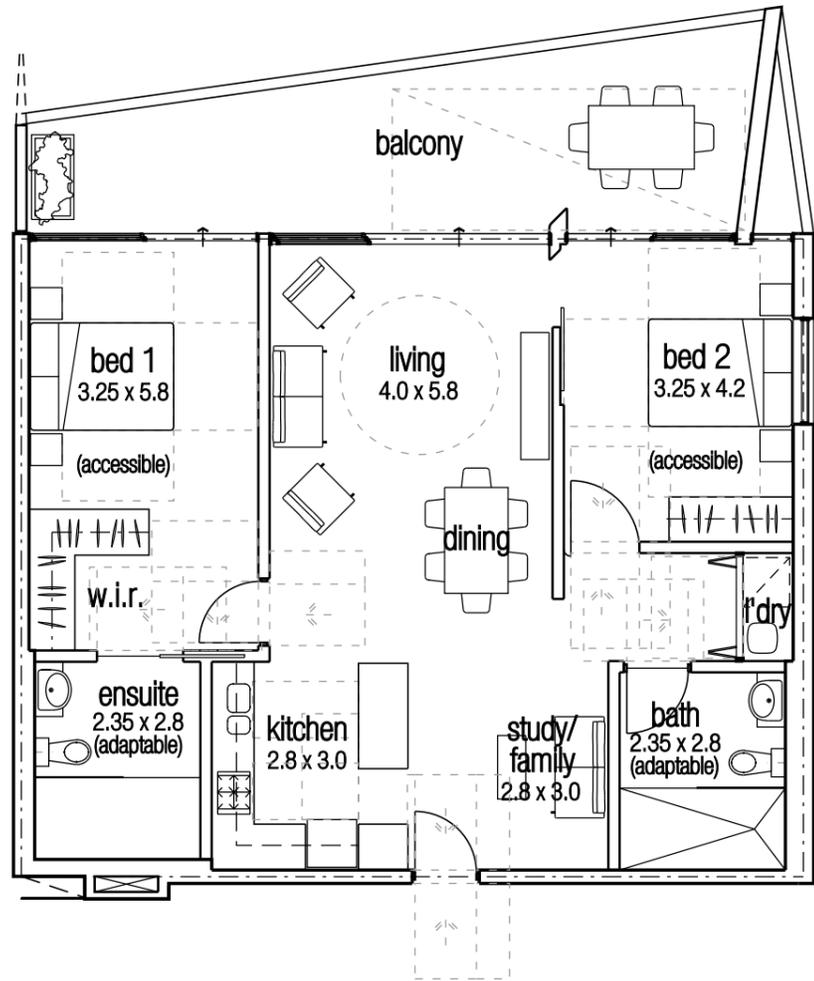
Anchor/Mortlock/Woolley
 Suite 03.10, Level 3, 22-26 Mountain Street, Ultimo NSW 2007, Australia
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 Nominated Architect: State Owned, Cert. No. 2016. FIM (Project) Cert. No. 0174

project **TOUKLEY SENIORS LIVING
222 MAIN ROAD, TOUKLEY**
 client **RUSTRUM PTY LTD**

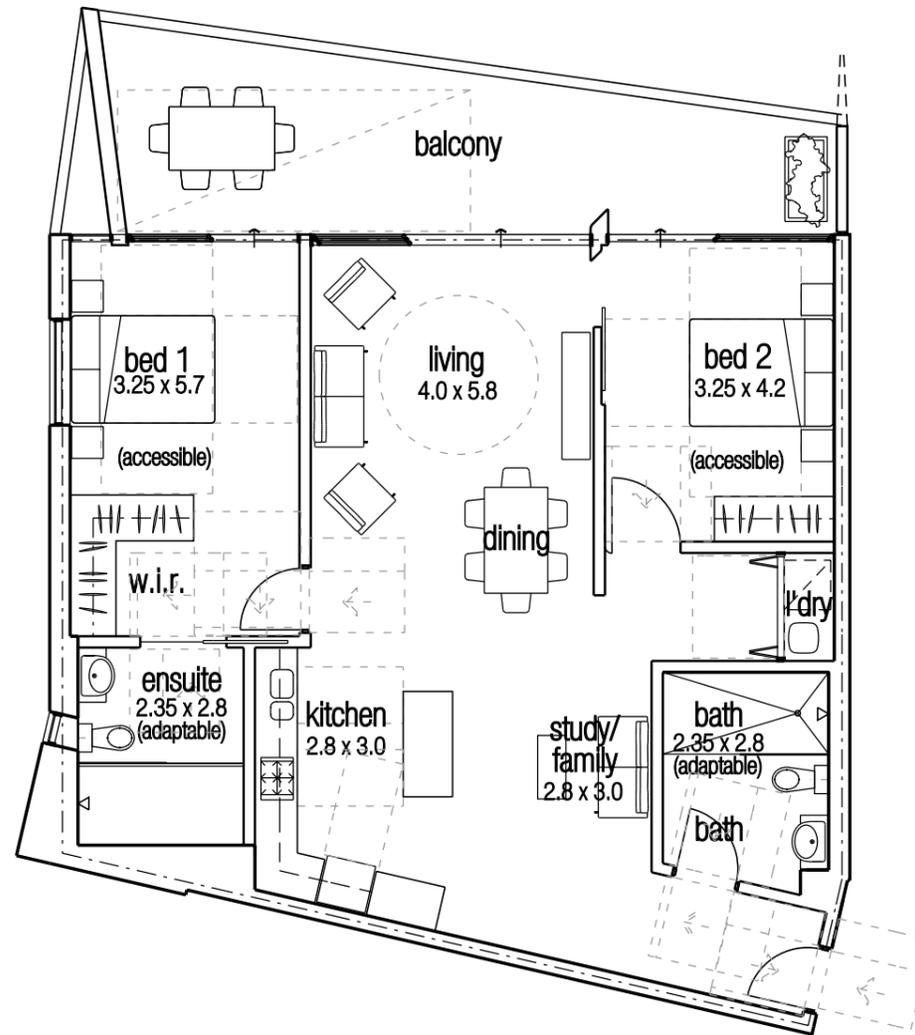
drawing **SITE ANALYSIS PLAN**

LEGEND
 PH PRE HYDRANT
 LP LAMP POST
 H HYDRANT
 MH MANHOLE
 PP POWER POLE
 T TELECOMMUNICATION
 VAP VEHICLE ACCESS POINT

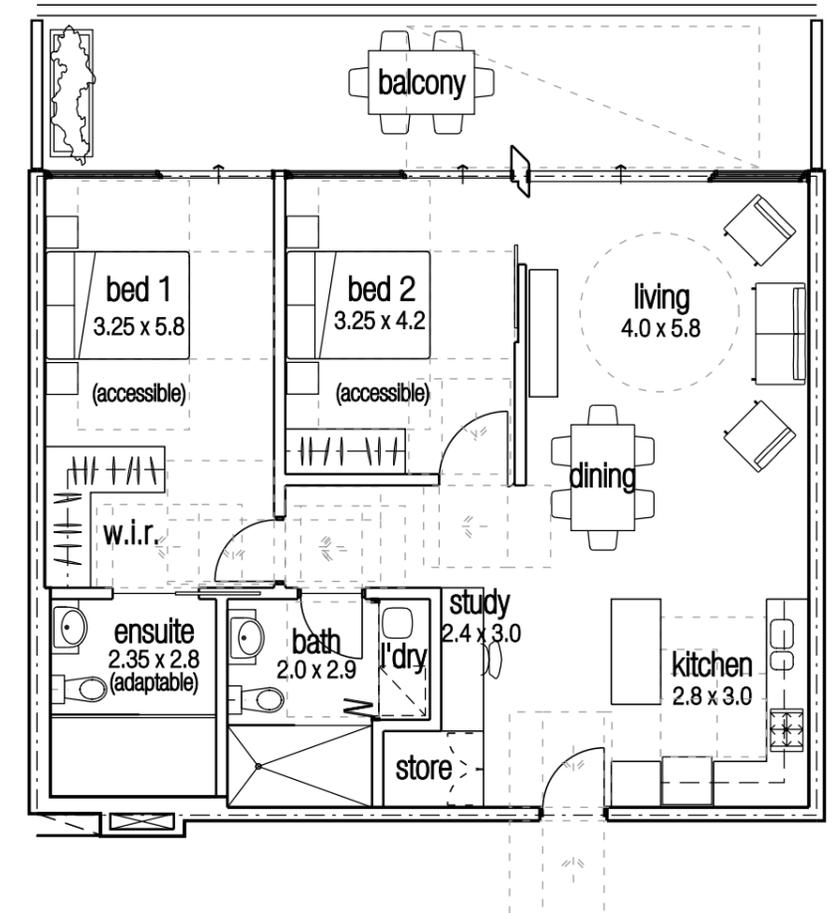
scale 1:5000A1
 drawn by JG/JJ
 project no 0809
 drawing no EA-010
 revision A



2 BED APARTMENT - Type 1
with STUDY NOOK
Both beds accessible
Ensuite and bath adaptable



2 BED APARTMENT - Type 2
with STUDY NOOK
Both beds accessible
Ensuite and bath adaptable

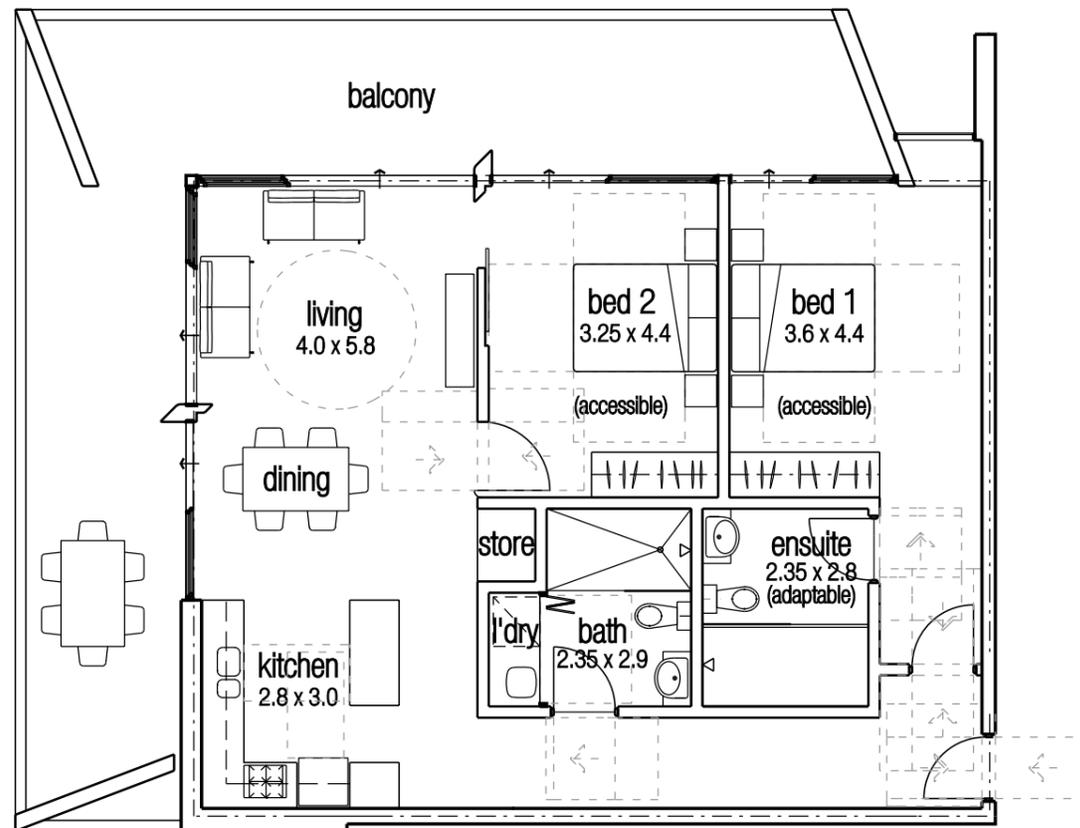


2 BED APARTMENT - Type 3
with STUDY NOOK
Both beds accessible
Ensuite adaptable

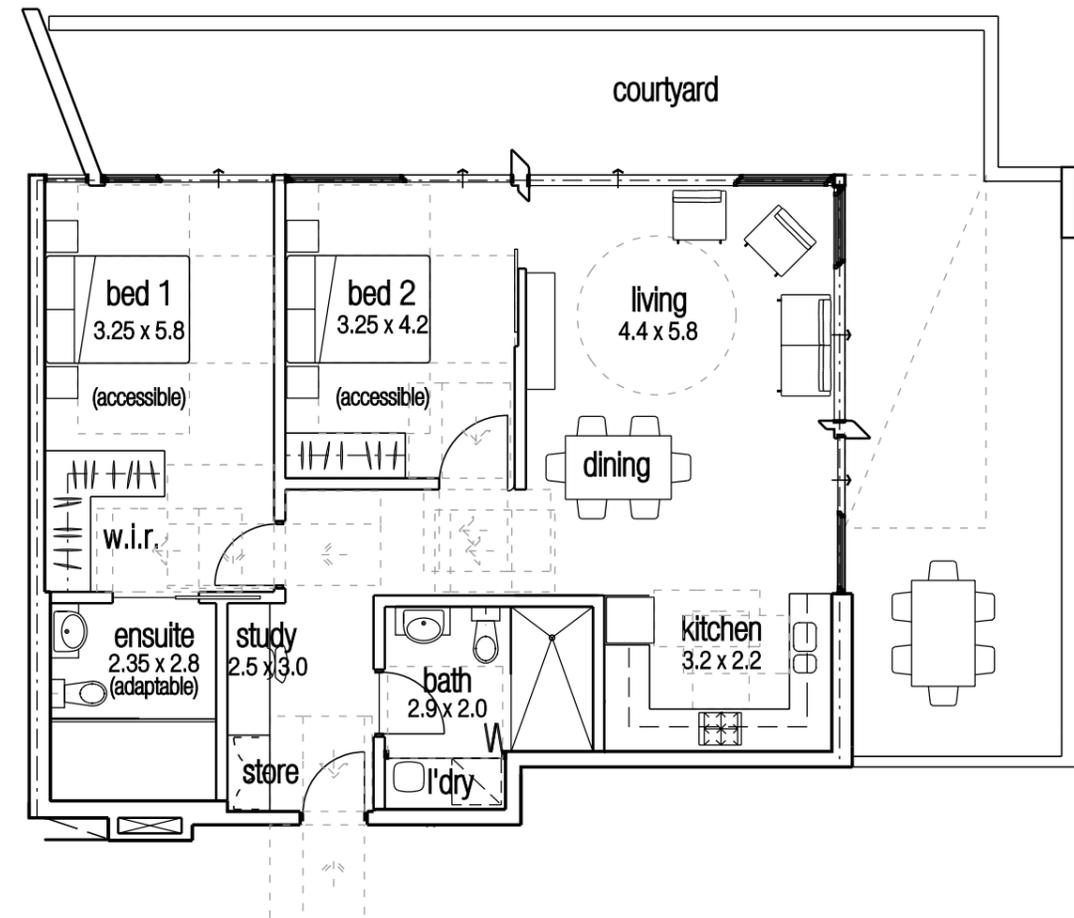
TOUKLEY SENIORS LIVING - 222 MAIN ROAD, TOUKLEY

**UNIT PLANS
0809 SK-102 REV D**

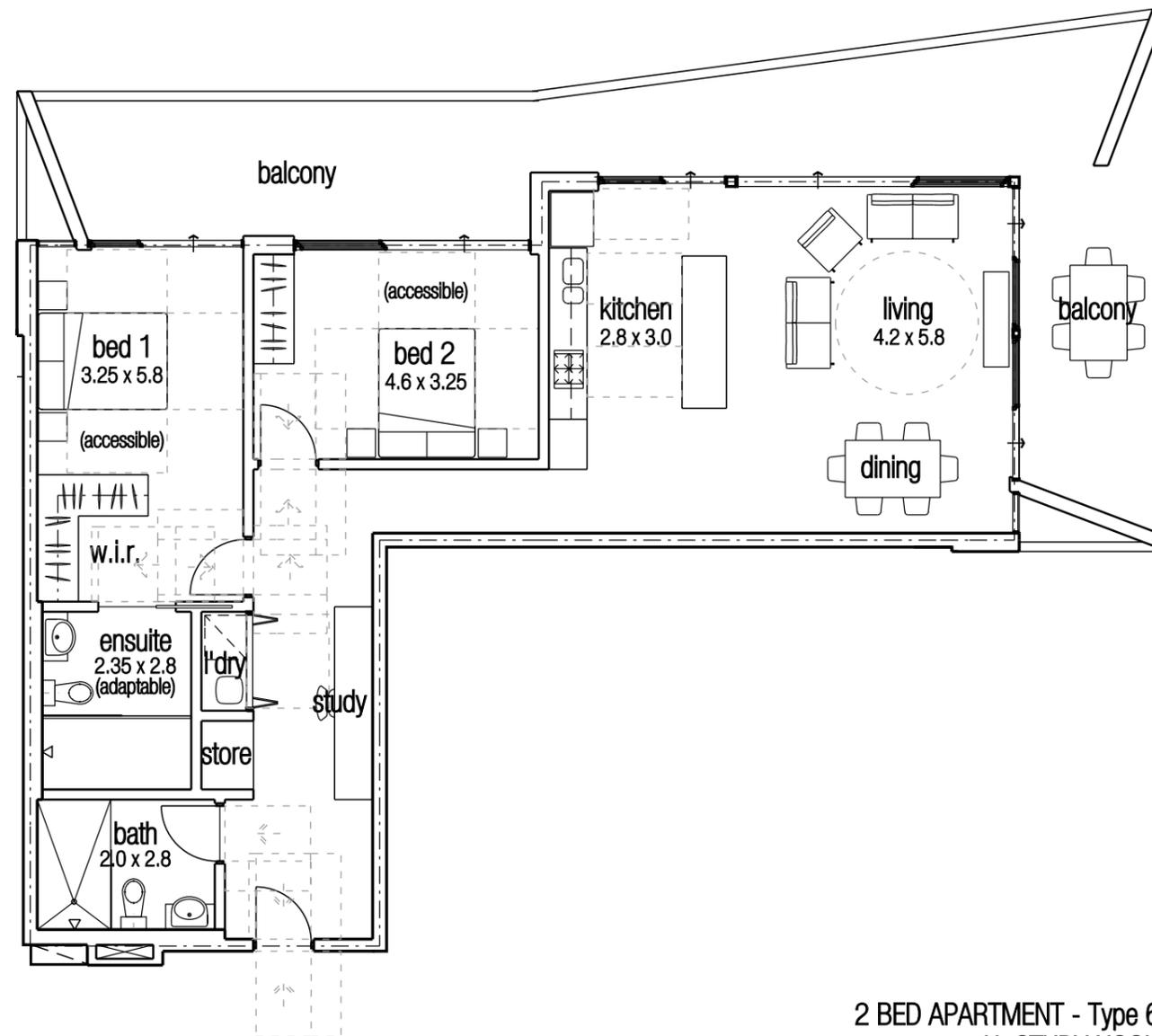
23.03.09



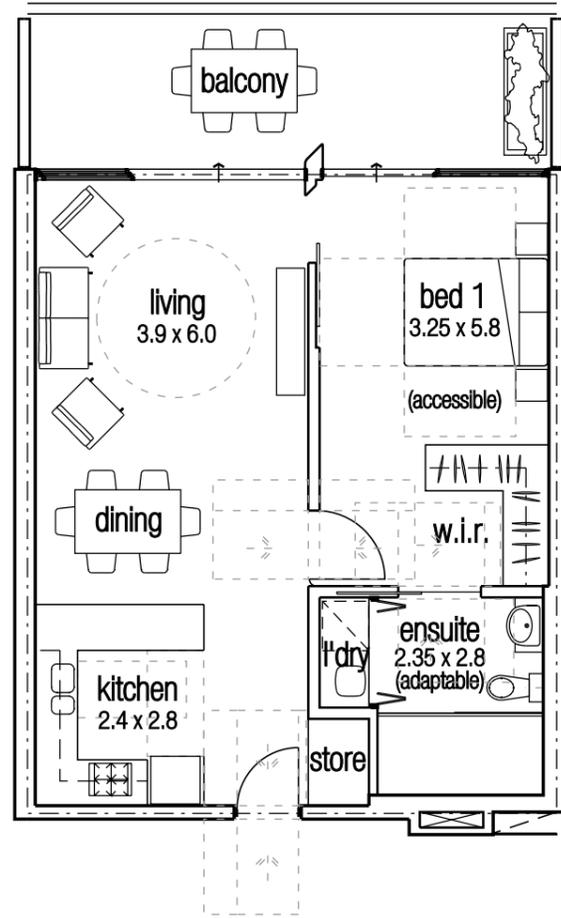
2 BED APARTMENT - Type 4
with STUDY NOOK
Both beds accessible
Ensuite adaptable



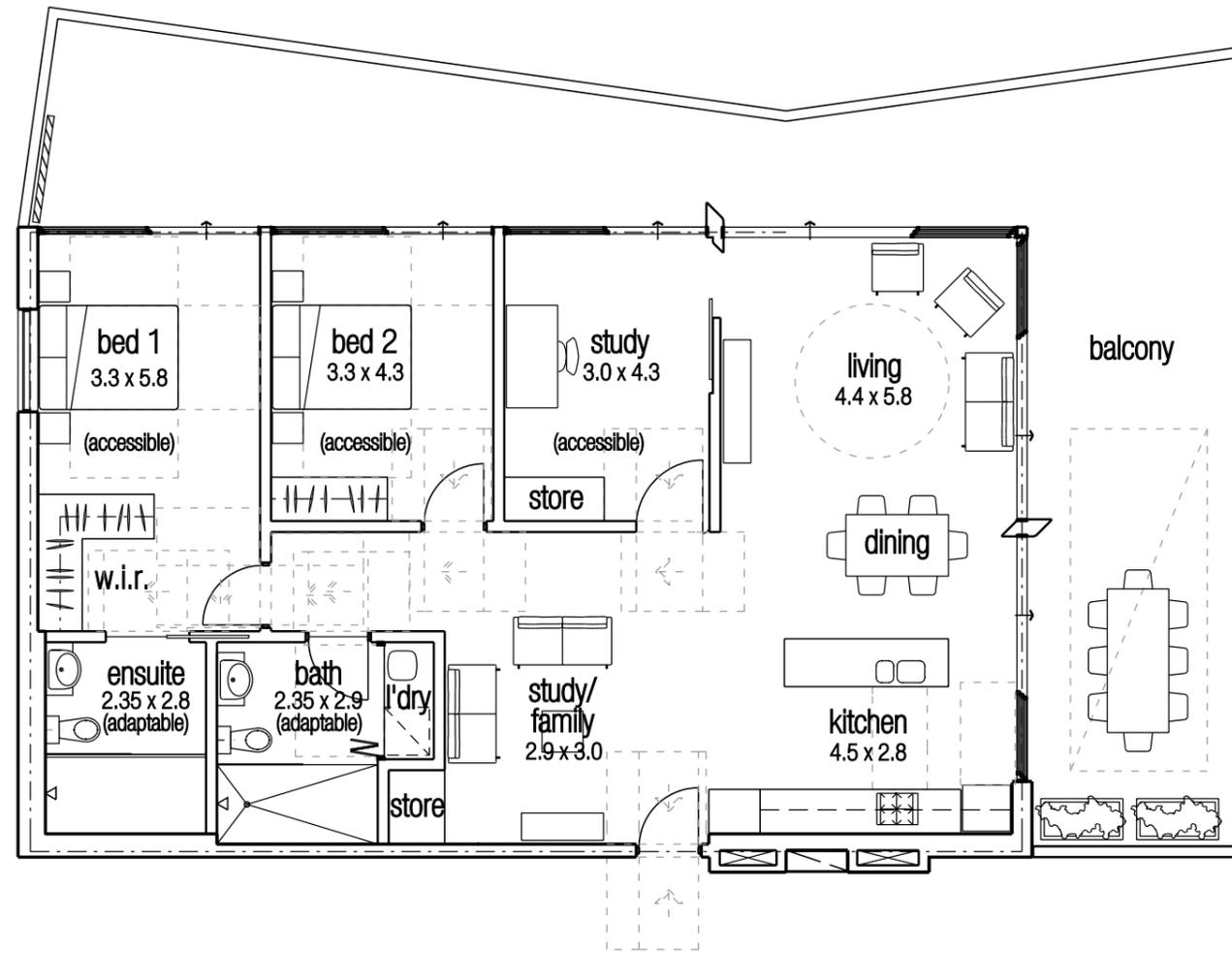
2 BED APARTMENT - Type 5
with STUDY NOOK
Both beds accessible
Ensuite adaptable



2 BED APARTMENT - Type 6
with STUDY NOOK
Both beds accessible
Ensuite adaptable



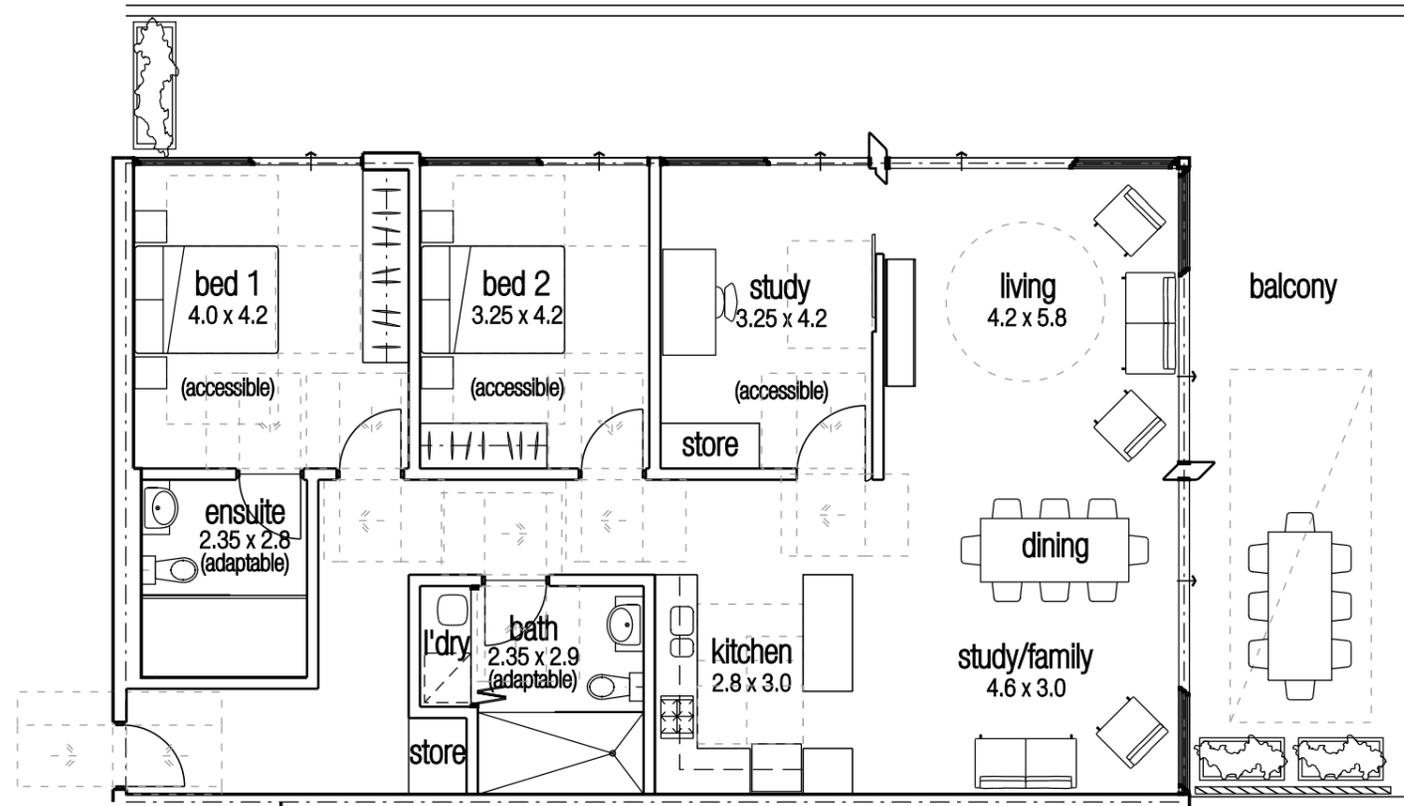
1 BED APARTMENT - Type 1
 Bed accessible
 Ensuite adaptable



2 BED + STUDY APARTMENT - Type 1
 All beds accessible
 Ensuite and bath adaptable

TOUKLEY SENIORS LIVING - 222 MAIN ROAD, TOUKLEY

UNIT PLANS
0809 SK-105 REV D
 23.03.09



2 BED + STUDY APARTMENT - Type 2
 All beds accessible
 Ensuite and bath adaptable

SEPP 65 - DESIGN QUALITY PRINCIPLES

The proposal has been designed to capture the opportunities provided by the north facing lakefront site and to respond to both the current and future built form of the precinct.

The design incorporates the design quality principles set out below as well as those additional requirements detailed in the Residential Flat Design Code. The design also complies with SEPP (Housing for Seniors or People with a Disability) 2004 standards.

1. Context

This is a precinct undergoing transition and will develop in the future in accordance with the Draft Toukley Planning Strategy and the Central Coast Regional Strategy 2008.

The Central Coast Regional Strategy recommends buildings of up to 6 storeys where appropriate, the Draft Toukley Planning Strategy, envisages buildings of 3 – 4 storeys.

To the west of the site there are 2, 3 and 4 storey residential and motel developments along the lake edge. The proposed development completes this line of buildings, transitions to the west to Toukley Gardens Park on Main Street, and steps down to the residential housing along the western waterfront.

The existing mature trees are retained as an interface to the surrounding buildings.

2. Scale

As above this is a precinct undergoing transition which is clearly envisaged to have buildings of a bulk and scale similar to what is being proposed.

The existing residential developments to the west along the lake are generally 3 – 4 storeys with unarticulated façades presenting an exaggerated horizontal built form to the lake.

The proposal breaks the building into 4 sections along the waterfront stepping down from 4 storeys to the west to 2 storeys toward the residential area in Rowland Terrace.

Along Main Road the proposed building presents a 3 storey façade, with the top level articulated through generous roof overhangs, while the 2 storey elevation to Rowland Terrace is consistent with the existing residential scale.

The proposed building is articulated and stepped on all facades relating to the scale of the existing surrounding buildings and responding to what is envisaged by the Regional and Toukley Planning Strategies.

3. Built Form

Further to points 1 Context and 2 Scale, we consider that the proposal achieves an appropriate form for the site and sets a design precedent for the development strategy envisaged for this precinct.

Built form principles for the site were developed in discussion with DoP and Wyong Council.

The building is proposed to have a defined solid based, and contrasting top accentuated with generous roof overhangs.

The amenity of Toukley Gardens Park is improved by the proposed adjacent landscape areas on the site. The passive surveillance of the park and public domain is improved by the disposition of the upper level apartments and walkways.

Internally the walkways which are naturally ventilated afford views between the articulated forms of the building and into the internal courtyard off Main Road.

4. Density

As this is a precinct undergoing transition, the proposal is for a development with a density which is consistent with what is anticipated for the precinct and with the existing developments to the west of the site.

On site car parking is provided for all apartments and visitors in accordance with SEPP (Housing for Seniors or People with a Disability) 2004 requirements and, in addition, there is access and parking for mobility scooters.

The proposed development is close to the town centre, central community facilities and infrastructure which will sustain the densities proposed.

5. Resource, Energy and Water Efficiency

The design intent is to make efficient use of natural resources energy and water throughout the full life cycle of the building, including construction.

There are no structures on site for adaptable reuse. The proposed building has been designed in accordance with effective passive solar design principles, with efficient appliances and mechanical services, soil zones for vegetation and reuse of water, as shown on the design drawings.

All apartments have natural cross ventilation through the space between buildings and across the naturally ventilated walkways.

6. Landscape

Landscaping for the site has been designed to comply with SEPP (Housing for Seniors or People with a Disability) 2004 and provide enhanced amenity for residents.

The landscaping seeks to integrate the proposal with the streetscape, integrate with and enhance Toukley Gardens Park and provide for passive recreation and high amenity on the private open space areas facing Budgewoi Lake.

7. Amenity

The development has been designed for Seniors Living. All apartments are adaptable including bathrooms, bedrooms and living areas. All rooms exceed minimum area standards; all apartments have full width balconies.

Apartments face North, East or West overlooking the lake to the north, Toukley Garden Park to the east and the lake to the west and south.

The proposed development has community facilities, such as a work room, gymnasium, library, meeting room, outdoor pool and a landscaped waterfront garden.

Apartments can be naturally ventilated and have access to sunlight including the courtyard areas and access walkways.

8. Safety and Security

The entrances from both Main Road and Rowland Terrace are visually permeable, yet secure from unwarranted public access. There is a clear definition between public and private spaces.

The waterfront garden and pool area and landscaped courtyards provide secure and safe external open spaces for all the residents of the development, maintaining residents' internal apartment privacy.

The apartments provide passive surveillance of the surrounding public and communal spaces.

Lighting will be provided which is appropriate to the location and private activities.

9. Social dimensions

The building has also been designed to SEPP (Housing for Seniors or People with a Disability) 2004 requirements.

The need for seniors living accommodation is identified in the Central Coast Regional Strategy. The proximity of the site to the Toukley Town Centre creates an outstanding opportunity to support the town centre, meet regional

housing needs and meet SEPP (Housing for Seniors or People with a Disability) 2004 requirements consistent with the desired future character of the area.

10. Aesthetics

The aesthetic outcome of the building will be a direct result of the response to all of the Design Quality Principles outlined above.

Materials are being proposed which reinforce the scale and context of the building.

The horizontal is emphasised, articulated in 4 stepped elements along the waterfront, rather than a continuous bulk with vertical expression common to the adjoining developments.

The layering and articulation of elements is continued on the east, south and western elevations of the building.

Roofs have simple skillion and hipped forms with generous overhangs to provide shelter to outdoor spaces. All communal spaces, walkways, courtyards, provide outlook and integration with the landscape and lake.

Colouring will be in natural tones with some emphasis on screens and louvres to enliven the composition.

Residential Flat Design Code - DESIGN QUALITY PRINCIPLES

The proposal has been designed to satisfy the aims and objectives of the Residential Flat Design Code (2002).

The primary objective of this code is to “provide benchmarks for better practice in the planning and design of residential flat buildings” in support of the ten quality principles identified in SEPP 65 (previously detailed).

We consider that the proposal achieves an appropriate form for the site and sets a design precedent for the development strategy envisaged for this precinct.

Compliance with Residential Flat Design Code objectives is as set out below.

1 LOCAL CONTEXT

This is a precinct undergoing transition and will develop in the future in accordance with the Draft Toukley Planning Strategy and the Central Coast Regional Strategy 2008.

The Central Coast Regional Strategy recommends buildings of up to 6 storeys where appropriate, the Draft Toukley Planning Strategy, envisages buildings of 3 – 4 storeys.

To the west of the site there are 3 and 4 storey residential and motel developments along the lake edge. The proposed development completes this line of buildings, transitions to the west to Toukley Gardens Park on Main Street, and steps down to the residential housing along the western waterfront.

Built form principles for the site were developed in discussion with DoP and Wyong Council.

1.1 Primary Development Controls

1.1.1 Building Height

Objectives:

- *To ensure future development responds to the desired scale and character of the street and local area.*
- *To allow reasonable daylight access to all developments and the public domain.*

Outcome:

The proposal breaks the building into 4 sections along the waterfront stepping down from 4 storeys to the west to 2 storeys toward the residential area in Rowland Terrace. Along Main Road the proposed building presents a 3 storey façade, while the 2 storey elevation to Rowland Terrace is consistent with the existing residential scale.

The foreshore landscaped area including the pool has year round solar access, while the internal atrium brings natural light and ventilation to the Main Road component of the development.

The height is based on existing large water front buildings, the height of the tree canopy and the height of buildings to the east. This gives an upper building limit consistent with the locality while allowing the achievement of greater dwelling density through design.



Waterfront Elevation showing building height stepping down between adjoining properties



North Elevation showing building stepping with the existing topography and foreshore open space

Refer to *Appendix Q: Building Height Assessment* and the building elevations and montages in Appendix B for further detail.

1.1.2 Building Depth

Objectives:

- To ensure that the bulk of the development is in scale with the existing or desired future context.
- To provide adequate amenity for building occupants in terms of sun access and natural ventilation.
- To provide for dual aspect apartments.

Outcome:

The proposed building is articulated and stepped on all facades relating to the scale of the existing surrounding buildings and responding to what is envisaged by the Regional and Toukley Planning Strategies.

The typical building depth is 13.75 metres including balconies and corridors, with this form disposed around the perimeter of the site. This falls within the prescribed depth of 10-18 metres, ensuring appropriate daylighting and natural ventilation.

Both edges of this plan form are open and highly active, with a full length balcony to the primary outlook and the continuous glazed corridors to the secondary outlook.

Dual aspect apartments are provided in corner locations.

1.1.3 Building Separation

Objectives:

- *To ensure that new development is scaled to support the desired area character with appropriate massing and spaces between buildings.*
- *To provide visual and acoustic privacy for existing and new residents.*
- *To control overshadowing of adjacent properties and private or shared open space.*
- *To allow for the provision of open space with appropriate size and proportion for recreational activities for building occupants.*
- *To provide deep soil zones for stormwater management and tree planting, where contextual and site conditions allow.*

Outcome:

The site has a park to the east and a car park and single storey dwelling to the west. Similarly, the adjoining dwellings along Rowland Terrace are typically single or double storey and have typical residential setbacks.

The internal entry atrium to Main Road has a minimum clear dimension of 12 metres between corridors and a further 2.2 metres on each side given the open nature of these zones. This separation between buildings is well above the prescribed minimum ensuring increased solar penetration to the courtyard and an appropriate volumetric outcome. This courtyard zone is landscaped to provide not only a place for passive recreation but also an outlook from the upper level corridors.

Adequate separation from adjoining buildings is achieved through increased setbacks at ground levels which are consistent with mitigation of shadowing issues and protection of visual and acoustic privacy. The 20 metre foreshore building line provides for a large practical open space area for recreation and water management.

1.1.4 Street Setbacks

Objectives:

- *To establish the desired spatial proportions of the street and define the street edge.*
- *To create a clear threshold by providing a transition between public and private space.*
- *To assist in achieving visual privacy to apartments from the street.*
- *To create good quality entry spaces to lobbies, foyers or individual dwelling entrances.*
- *To allow an outlook to and surveillance of the street.*
- *To allow for street landscape character.*

Outcome:

The existing setbacks along Main Road are inconsistent, varying from zero setbacks to a mixed range between 1.5 metres and 12 metres.

The main building line has been setback 7.5 metres from the Main Road boundary, with the façade stepped to break down the overall form and respond to the angle of the site. Balconies, roof overhangs and courtyard fencing and landscaping have been introduced within this zone to provide depth and articulation to the façade while providing passive surveillance to the street.

The entrances from both Main Road and Rowland Terrace are visually permeable, yet secure from unwarranted public access with clear definition between public and private spaces.

1.1.5 Side + Rear Setbacks

Objectives:

Side Setbacks:

- *To minimise the impact of development on light, air, sun, privacy, views and outlook for neighbouring properties, including future buildings.*
- *To retain or create a rhythm or pattern of development that positively defines the streetscape so that space is not just what is left over around the building form.*

Rear setbacks:

- *To maintain deep soil zones to maximise natural site drainage and protect the water table.*
- *To maximise the opportunity to retain and reinforce mature vegetation.*
- *To optimise the use of land at the rear and surveillance of the street at the front.*
- *To maximise building separation to provide visual and acoustic privacy.*

Outcome:

The site has a park to the east and a car park and single storey dwelling to the west. Similarly the adjoining dwellings along Rowland Terrace are typically single or double storey and have typical residential setbacks.

The side setbacks to the park and Beachcomber site are generally 4.5 metres to the balcony and 6.8 metres to the building line, with this distance narrowing at the front and rear building lines to provide a clear visual and acoustic barrier between public and private spaces.

The existing adjoining mature planting along the park and on the foreshore to the Beachcomber and adjoining dwelling will be preserved and provide a privacy screen to the development.

The amenity and visual privacy of the adjoining dwellings in Rowland Terrace has not been compromised. The lakeside house is below the site and private areas are screened by existing vegetation and change in ground level. The outlook of this dwelling is toward the lake and as it is located due north of the development there are no overshadowing issues.

The second dwelling is adjacent to the Toukley Gardens Park and has its private space screened by existing vegetation and change in level. The outlook of this dwelling is toward the north-east away from the proposed development and given its due east location there is minimum impact on its current solar access, with the dwelling receiving well above the required 3 hour minimum penetration in mid-winter.

The amenity and visual privacy of the adjoining manager's residence to the Beachcomber site has not been compromised as it sits in the same line of the proposed building to the foreshore with its outlook north over the lake. Given its due east location the dwelling receives full sun to its primary northern façade all day, year round.

The rear setback is dictated by the 20 metre foreshore building line, with the main building line of all apartments fully compliant. Balconies have been introduced within this zone to create depth and articulation in the façade. This waterfront garden and pool area is heavily landscaped to provide meeting places, opportunities for passive recreation and meandering and a connection with the water at the foreshore

1.1.6 Floor Space Ratio

Refer to *Appendix P: Planning Report* for floor area calculations.

Objectives:

- *To ensure that development is in keeping with the optimum capacity of the site and the local area.*
- *To define allowable development density for generic building types.*
- *To provide opportunities for modulation and depth of external walls within the allowable FSR.*
- *To promote thin cross-section buildings, which maximise daylight access and natural ventilation.*
- *To allow generous habitable balconies.*

Outcome:

The development achieves an FSR of 1.01:1. This is consistent with the CC Regional Strategy which anticipates higher density residential development of up to 6 storeys. The FSR achieved indicates the height, setbacks and number of storeys is appropriate for the site.

The proposal provides an FSR test for the locality, with the FSR of 1:1 providing a guideline for future development within the Toukley Town Centre.

The proposal incorporates suitable depth and modulation of the external walls of the building.

The building design utilises the north aspect of the site which combined with the atrium provides for appropriate cross sections, solar access and ventilation. Each balcony is typically 25% or more of the apartment area.

All the relevant RDFC objectives and guidelines are met by the proposal.

2 SITE DESIGN

2.1 Site Configuration

2.1.1 Deep Soil Zones

Objectives:

- *To assist with management of the water table.*
- *To assist with management of water quality.*

- *To improve the amenity of developments through the retention and/or planting of large and medium size trees.*

Outcome:

The adjoining park is heavily planted along its western and northern boundaries which abut the site. This existing vegetation will be preserved and provide a privacy screen to the development from the park.

The majority of the 20 metre foreshore landscaped zone has been allocated to deep soil planting, vegetated with native coastal heath scrubs and groundcovers sourced from endemic species and planted in native soil mix. This foreshore landscaped area will far exceed the minimum deep soil zone requirements, noted as 25% of the total open space. There is adequate area for management of water quality.

2.1.2 Fences + Walls

Objectives:

- *To define the edges between public and private land.*
- *To define the boundaries between areas within the development having different functions or owners.*
- *To provide privacy and security.*
- *To contribute positively to the public domain.*

Outcome:

Courtyard fences define the boundaries between public and private space along the Main Road frontage, clearly delineating the secure pedestrian and vehicular access points. While these walls form a solid base to anchor the building, landscaping is provided at low level to soften their appearance to Main Road.

2.1.3 Landscape Design

The site is adjoined by a public park to the east and a narrow strip of Crown land to the north that forms the foreshore to Lake Budgewoi. The landscaping integrates with the park and will provide a coastal heath vegetation assembly to the adjoining lake front. The atrium of the proposal will be landscaped to provide a high amenity internal open space. The frontages to Rowland Terrace and Main Rd will be planted consistent with their respective streetscapes.

Objectives:

- *To add value to residents' quality of life within the development in the forms of privacy, outlook and views.*
- *To provide habitat for native indigenous plants and animals.*
- *To improve stormwater quality and reduce quantity.*
- *To improve the microclimate and solar performance within the development.*
- *To improve urban air quality.*
- *To contribute to biodiversity.*

Outcome:

The landscaping will integrate the proposal with the locality while providing passive recreation opportunities and high amenity outlooks for residents. The landscaping will enhance the function of adjoining public spaces.

The ecological opportunities of the site have been addressed through the establishment of coastal heath adjoining the foreshore. Refer to *Appendix C: Landscape Plan* for further detail.

The RFDC objectives are met by the proposal.

2.1.4 Open Space

Objectives:

- *To provide residents with passive and active recreational opportunities.*
- *To provide an area on site that enables soft landscaping and deep soil planting.*
- *To ensure that communal open space is consolidated, configured and designed to be useable and attractive.*
- *To provide a pleasant outlook.*

Outcome:

A high level of environmental and residential amenity has been created by the introduction of landscaped courtyards and foreshore treatments. The waterfront garden and pool area and landscaped courtyards provide secure and safe external open spaces for all the residents of the development, while maintaining residents' internal apartment privacy.

Open space provided satisfies the minimum area of 25-30% of the site area.

The landscaped zones provide meeting places, opportunities for passive recreation and meandering and a connection with the water at the foreshore.

A series of courtyard apartments are provided around the atrium at Level 2 while the four ground level apartments open onto a large deck overlooking the lake and landscape foreshore area. These private open spaces are in excess of the minimum area and dimensional requirements of 25m² and 4 metres respectively.

All areas are fully accessible with circulation and grades satisfying the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004.

Refer to *Appendix C: Landscape Plan* for further detail.

2.1.5 Orientation

Objectives:

- *To optimise solar access to residential apartments within the development and adjacent development.*
- *To contribute positively to desired streetscape character.*
- *To support landscape design of consolidated open space areas.*
- *To protect the amenity of existing development.*

Outcome:

The apartments have been oriented to maximise solar access, provide acoustic and visual privacy to adjoining apartments and neighbouring properties. The majority of apartments have a northerly aspect overlooking the lake protected by large balcony and roof projections. The remainder take advantage of morning and afternoon solar access while having water or park views.

The foreshore landscaped area including the pool has year round solar access, while the internal atrium brings natural light and ventilation to the Main Road component of the development.

The amenity and visual privacy of the adjoining dwellings in Rowland Terrace has not been compromised. The lakeside house is below the site and private areas are screened by existing vegetation and change in ground level. The outlook of this dwelling is toward the lake and as it is located due north of the development there are no overshadowing issues.

The second dwelling is adjacent to the Toukley Gardens Park and has its private space screened by existing vegetation and change in level. The outlook of this dwelling is toward the north-east away from the proposed development and given its due east location there is minimum impact on its current solar access, with the dwelling receiving well above the required 3 hour minimum penetration in mid-winter.

The amenity and visual privacy of the adjoining manager's residence to the Beachcomber site has not been compromised as it sits in the same line of the proposed building to the foreshore with its outlook north over the lake. Given its due east location the dwelling receives full sun to its primary northern façade all day, year round.

2.1.6 Planting on Structures

Objectives:

- *To contribute to the quality and amenity of communal open space on roof tops, podiums and internal courtyards.*
- *To encourage the establishment and healthy growth of trees in urban areas.*

Outcome:

The internal entry atrium to Main Road is landscaped to provide not only a meeting place and opportunities for passive recreation but also an outlook from the upper level corridors. Refer to *Appendix C: Landscape Plan* for further detail.

2.1.7 Stormwater Management

A Sediment Control Plan and Construction Management Plan have been provided to minimise any adverse affect on the surrounding environment and lakefront during construction.

Objectives:

- *To minimise the impacts of residential flat development and associated infrastructure on the health and amenity of natural waterways.*
- *To preserve existing topographic and natural features, including watercourses and wetlands.*
- *To minimise the discharge of sediment and other pollutants to the urban stormwater drainage system during construction activity.*

Outcome:

The design minimises driveway areas and directs roof water to storage for reuse within the development. All runoff from the site to the lake will be via on onsite treatment systems. Refer *Appendix O: Civil engineering report*.

Erosion and sediment controls are prescribed for the construction phase. No alteration or interruption of surface or ground water hydrology will occur. While some dewatering of excavated areas may be required the geotechnical assessment did not identify any aquifer systems flowing through the site. There are no natural surface drainage features on the site.

No adverse effects on the local hydrology or water bodies are likely. The RFDC objectives are met.

2.2 Site Amenity

2.2.1 Safety

A Crime Risk Assessment has been completed, refer to *Appendix R*.

Objectives:

- *To ensure residential flat developments are safe and secure for residents and visitors.*
- *To contribute to the safety of the public domain.*

Outcome:

The entrances from both Main Road and Rowland Terrace are visually permeable, yet secure from unwarranted public access. There is a clear definition between public and private spaces with the apartments providing passive surveillance of the surrounding public and communal spaces.

2.2.2 Visual Privacy

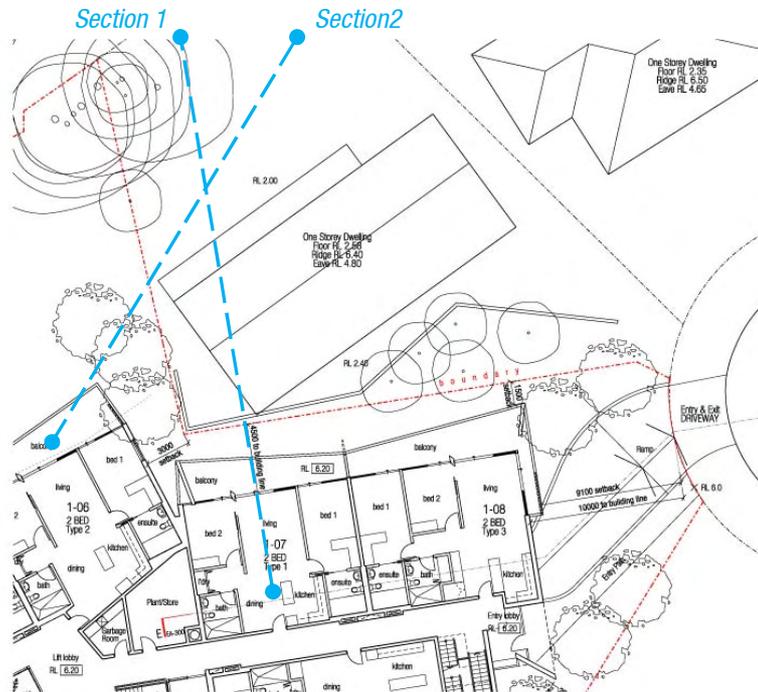
Objectives:

- *To provide reasonable levels of visual privacy externally and internally, during the day and at night.*
- *To maximise outlook and views from principal rooms and private open space without compromising visual privacy.*

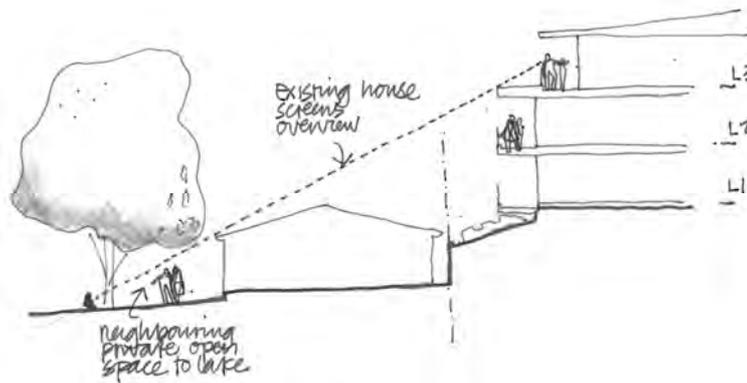
Outcome:

Visual privacy is primarily achieved through the orientation of the apartments away from each other and the communal areas, the stepping of the building in plan and the addition of privacy screens between adjoining apartments.

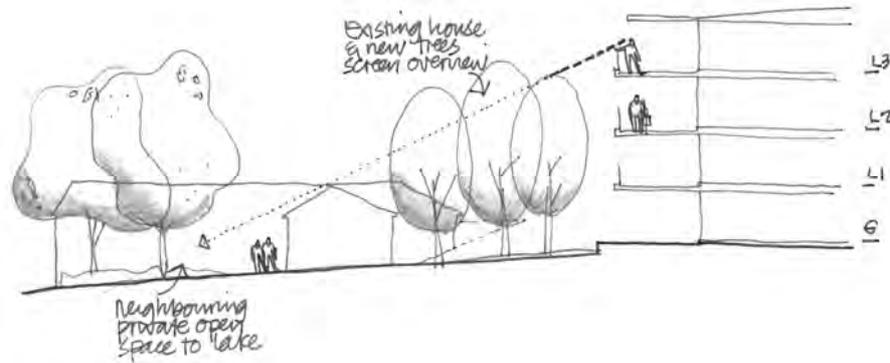
The amenity and visual privacy of the adjoining dwellings in Rowland Terrace has not been compromised. The lakeside house is below the site – with the ridge line at a similar level to the proposed floor level above – and private areas are screened by existing vegetation and change in ground level. The outlook of this dwelling is toward the lake and as it is located due north of the development there are no overshadowing issues.



Level 1 detail plan showing adjoining dwelling to the north

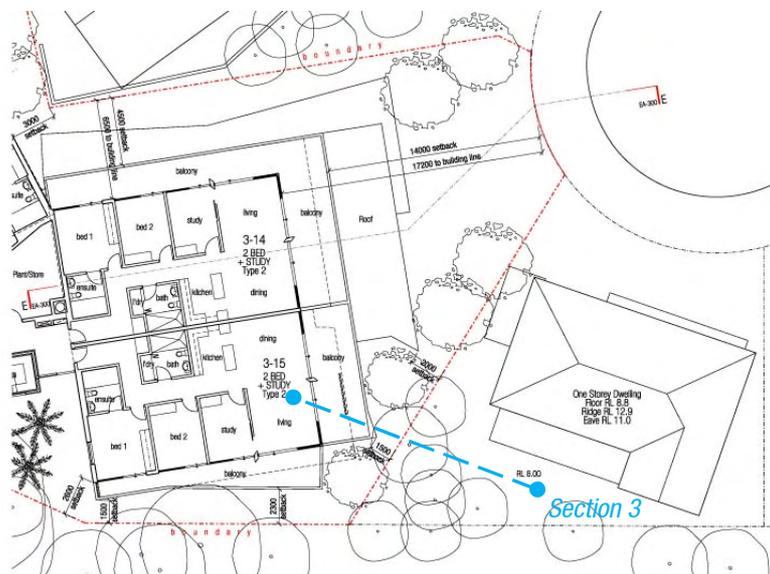


Section 1 showing natural screening to adjoining property to the north

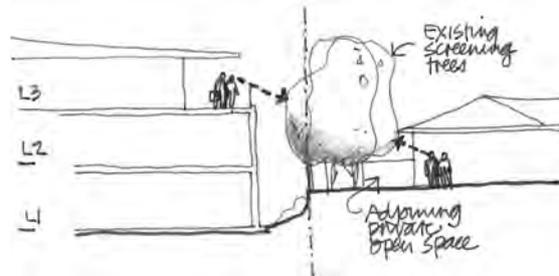


Section 2 showing screening to adjoining property to the north

The second dwelling is adjacent to the Toukley Gardens Park and has its private space screened by existing vegetation and change in level. The outlook of this dwelling is toward the north-east away from the proposed development and given its due east location there is minimum impact on its current solar access, with the dwelling receiving well above the required 3 hour minimum penetration in mid-winter.

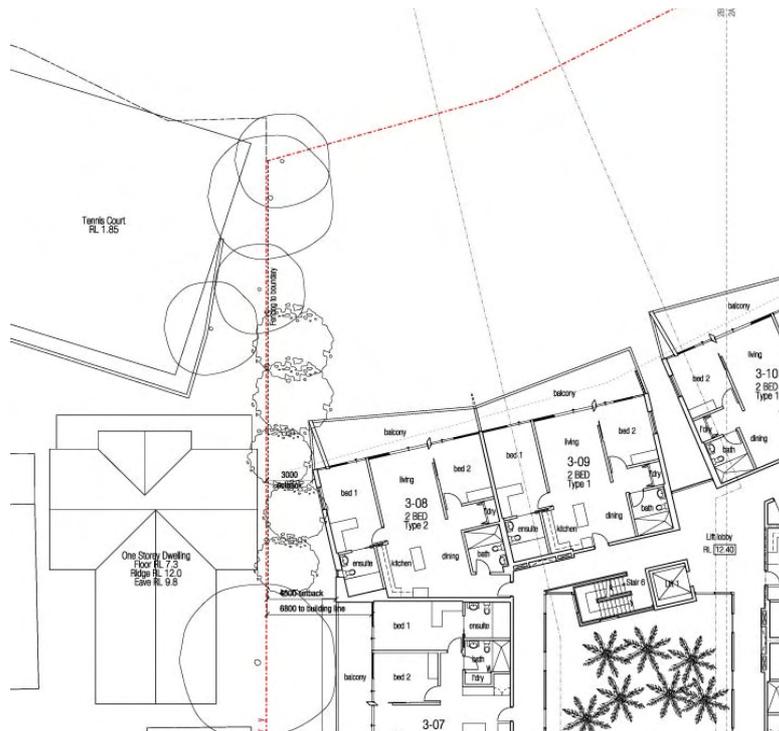


Level 3 detail plan showing adjoining dwelling to the east



Section 3 showing natural screening to adjoining property to the east

The amenity and visual privacy of the adjoining manager's residence to the Beachcomber site has not been compromised as it sits in the same line of the proposed building to the foreshore with its outlook north over the lake. Given its due east location the dwelling receives full sun to its primary northern façade all day, year round.



Level 3 detail plan showing Beachcomber site to the west

2.3 Site Access

2.3.1 Building Entry

Objectives:

- *To create entrances which provide a desirable residential identity for the development.*
- *To orient the visitor.*
- *To contribute positively to the streetscape and building facade design.*

Outcome:

The entrances from both Main Road and Rowland Terrace are visually permeable, yet secure from unwarranted public access.

These entry points are well located in relation to the boundary both visually and physically allowing clear and direct access from both street frontages.

Courtyard fences define the boundaries between public and private space along the Main Road frontage, clearly delineating the secure pedestrian and vehicular access points. While these walls form a solid base to anchor the building, landscaping is provided at low level to soften their appearance to Main Road.

All entries to the development are fully accessible with circulation and grades satisfying the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004. Refer to *Appendix S: Access Report* for further detail.



Main Road elevation showing entry definition

2.3.2 Parking

A Traffic and Car parking Report has been undertaken for the development. Refer to *Appendix H*.

Objectives:

- *To minimise car dependency for commuting and recreational transport use and to promote alternative means of transport-public transport, bicycling, and walking.*
- *To provide adequate car parking for the building's users and visitors, depending on building type and proximity to public transport.*
- *To integrate the location and design of car parking with the design of the site and the building.*

Outcome:

The development provides parking for 70 cars in two secure basement car parking zones, the primary off Main Road and another smaller area off Rowland Terrace.

Grade access from car parking to building lobbies and foyers is compliant with the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004.

An additional screened parking space in the forecourt will cater for emergency vehicles and medical practitioners while the pick-up and drop-off area at the porte cochere will eliminate the need for vehicles to stop on Main Road, and will provide for taxis and mini-bus transport services.

Areas for bicycle parking are provided in the basement car parks.

2.3.3 Pedestrian Access

Objectives:

- *To promote residential flat development which is well connected to the street and contributes to the accessibility of the public domain.*
- *To ensure that residents, including users of strollers and wheelchairs and people with bicycles, are able to reach and enter their apartment and use communal areas via minimum grade ramps, paths, access ways or lifts.*

Outcome:

The entrances from both Main Road and Rowland Terrace are visually permeable, yet secure from unwarranted public access. There is a clear definition between public and private spaces with the apartments providing passive surveillance of the surrounding public and communal spaces.

These entry points are well located in relation to the boundary both visually and physically allowing clear and direct access from both street frontages.

All entries to the development are fully accessible with circulation and grades satisfying the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004. Refer to *Appendix S: Access Report* for further detail.

2.3.4 Vehicle Access

A Traffic and Car parking Report has been undertaken for the development. Refer to *Appendix H*.

Objectives:

- *To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety.*
- *To encourage the active use of street frontages.*

Outcome:

Vehicular access to the site to is available via reconstructed existing driveways to Main Road and Rowland Terrace.

The pick-up and drop-off area at the porte cochere will eliminate the need for vehicles to stop on Main Road, and will provide for taxis and mini-bus transport services.

3 BUILDING DESIGN

3.1 Building Configuration

3.1.1 Apartment Layout

Objectives:

- *To ensure the spatial arrangement of apartments is functional and well organised.*
- *To ensure that apartment layouts provide high standards of residential amenity.*
- *To maximise the environmental performance of apartments.*
- *To accommodate a variety of household activities and occupants' needs.*

Outcome:

Apartment layouts have been designed to satisfy the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004 as noted earlier in this design report. Refer to *Appendix S: Access Report* for further detail.

All apartment sizes are well above the minimum areas prescribed in the rule of thumb values, with net unit areas generally:

1 bedroom	- 64 m ² ;
2 bedroom	- 95 m ² ;
2 bedroom + study	- 125 m ² .

Refer to *Appendix P: Planning Report* for further detail.

Living and bedroom areas have been located along the external face of the building to maximise natural lighting, ventilation and views over the lake and adjoining park, with service zones located at the back of the units.

While the distance to the back of the kitchen from the main glazing line is slightly greater than the rule of thumb at 9 metres, this is due to the increased spatial requirements of SEPP (Housing for Seniors or People with a Disability) 2004, with all living and kitchen areas increased to allow adequate manoeuvrability and workroom for the disabled.

3.1.2 Apartment Mix

Objectives:

- *To provide a diversity of apartments types, which cater for different household requirements now and in the future.*
- *To maintain equitable access to new housing by cultural and socio-economic groups.*

Outcome:

The apartment mix was carefully considered in consultation with a seniors living consultant in respect to local population trends and housing demands. The outcome of this consultation was the provision of a majority of 2 bedroom apartments with a small number of 1 bedroom and 2 bedroom + study apartments.

Additionally, a number of the 2 bedroom apartments are configured to cater for 2 unrelated persons to live independently, with bedrooms and bathrooms located at opposite ends of the unit with a shared living zone between.

This apartment mix is apportioned over all floors of the development.

3.1.3 Balconies

Objectives:

- *To provide all apartments with private open space.*
- *To ensure balconies are functional and responsive to the environment thereby promoting the enjoyment of outdoor living for apartment residents.*
- *To ensure that balconies are integrated into the overall architectural form and detail of residential flat buildings.*
- *To contribute to the safety and liveliness of the street by allowing for casual overlooking and address.*

Outcome:

All apartments as provided with generous full length balconies, courtyards or decks as an extension of the primary living and bedroom areas to promote outdoor living, with the vast majority of these balconies and courtyards primarily facing north, east and west enjoying solar access and views over the lake and adjoining park.

Balconies satisfy the minimum distances and dimensions prescribed in SEPP (Housing for Seniors or People with a Disability) 2004, and the rule of thumb minimum of 2 metres as do the private open spaces at grade, detailed previously.

The balconies cantilever from the main building to provide depth and articulation to the façade while providing passive surveillance to the street, and shelter and shading to those below.

3.1.4 Ceiling Heights

Objectives:

- *To increase the sense of space in apartments and provide well proportioned rooms.*
- *To promote the penetration of daylight into the depths of the apartment.*

- *To contribute to flexibility of use.*
- *To achieve quality interior spaces while considering the external building form requirements.*

Outcome:

All living and bedroom areas have 2.7 metre ceilings while the wet areas at the rear of the apartments have lowered bulkheads at 2.4 metres to create a spatial definition between the two zones while accommodating the necessary services, each satisfying the prescribed minimum heights.

Full height glazed doors are provided along the façade to maximise natural lighting with balcony ceiling levels following the internal datum at 2.7 metres to create an extended living zone.

3.1.5 Flexibility

Objectives:

- *To encourage housing designs which meet the broadest range of the occupants' needs possible.*
- *To promote 'long life loose fit' buildings, which can accommodate whole or partial changes of use.*
- *To encourage adaptive re-use.*
- *To save the embodied energy expended in building demolition.*

Outcome:

All apartments have been designed to satisfy the requirements of SEPP (Housing for Seniors or People with a Disability) 2004 which readily allows for the adaptation of units to accommodate the disabled. Refer to *Appendix S: Access Report* for further detail.

Apartments are provided with sliding walls and pivoting doors which allow the occupants to readily manipulate their environment to create alternate spatial volumes and privacy barriers.

3.1.6 Ground Floor Apartments

Objectives:

- *To contribute to the desired streetscape of an area and to create active safe streets.*
- *To increase the housing and lifestyle choices available in apartment buildings.*

Outcome:

A series of courtyard apartments are provided around the atrium at Level 2. These apartments have an external landscaped courtyard which contributes to the visual definition along Main Road and the adjoining park, while providing opportunities for passive surveillance. These courtyard walls additionally serve to define the public and private zones of the development and clearly identifying the entry points. These landscaped courtyards all exceed the minimum rule of thumb area and dimensional requirements of 25m² and 4 metres respectively.

An additional internal entry court provides private access from the main atrium, acting as a buffer to the communal space while articulating this zone at low level with a series of separate entries and courtyard walls.

The four apartments at the lowest level open onto a large deck overlooking the lake and landscape foreshore area. These decks are raised above the level of the communal path to ensure adequate privacy while not compromising their aspect and amenity. These decks to the ground level apartments all exceed the minimum rule of thumb area and dimensional requirements of 25m² and 4 metres respectively.

3.1.7 Internal Circulation

Objectives:

- *To create safe and pleasant spaces for the circulation of people and their personal possessions.*
- *To facilitate quality apartment layouts, such as dual aspect apartments.*
- *To contribute positively to the form and articulation of the building facade and its relationship to the urban environment.*
- *To encourage interaction and recognition between residents to contribute to a sense of community and improve perceptions of safety.*

Outcome:

Given the shape and size of the site single loaded corridors have been utilised to achieve a high level of amenity for the residents. Corridor lengths are minimised with the circulation zone stepping with the line of the building to articulate the facade. Nodal points and generous lobby areas provide meeting places to encourage interaction between residents.

All corridors are naturally ventilated and lit and provided with an outlook, whether south over the park, internally to the atrium, or through the breaks in the building to the lake, encouraging passive surveillance of both the internal and adjoining environments.

All corridors are fully accessible with circulation satisfying the requirements and objectives of SEPP (Housing for Seniors or People with a Disability) 2004. Refer to *Appendix S: Access Report* for further detail.

3.1.8 Mixed Use

Not applicable.

3.1.9 Storage

Objectives:

- *To provide adequate storage for everyday household items within easy access of the apartment.*
- *To provide storage for sporting, leisure, fitness and hobby equipment.*

Outcome:

Storage within each apartment has been provided in accordance with SEPP (Housing for Seniors or People with a Disability) 2004. Additionally each unit has a dedicated storage cage in the basement car park for sporting equipment etc, and shared storage rooms are located at each level of the development.

3.2 Building Amenity

3.2.1 Acoustic Privacy

Objectives:

- *To ensure a high level of amenity by protecting the privacy of residents within residential flat buildings both within the apartments and in private open spaces.*

Outcome:

Acoustic privacy is primarily achieved through the orientation of the apartments away from each other and the communal areas. Apartments are typically configured to ensure similar activities are mirrored around party walls.

The adjoining properties along Rowland Terrace and Main Rd are oriented away from the proposed development toward the park and lake.

3.2.2 Daylight Access

Objectives:

- *To ensure that daylight access is provided to all habitable rooms and encouraged in all other areas of residential flat development.*
- *To provide adequate ambient lighting and minimise the need for artificial lighting during daylight hours.*
- *To provide residents with the ability to adjust the quantity of daylight to suit their needs.*

Outcome:

The majority of apartments have a northerly aspect overlooking the lake protected by large balcony and roof projections. The remainder take advantage of morning and afternoon solar access while having water or park views.

Only two single aspect apartments have a southerly aspect, equating to a less than 5% of the total apartment number, less than half the rule of thumb maximum. All other units achieve the rule of thumb minimum 3 hours of direct sunlight in mid winter.

Living and bedroom areas have been located along the external face of the building to maximise natural lighting, ventilation and views over the lake and adjoining park, with service zones located at the back of the units.

The circulation corridors are fully glazed to receive adequate natural lighting and ventilation with providing passive surveillance.

The foreshore landscaped area including the pool has year round solar access, while the internal atrium brings natural light and ventilation to the Main Road component of the development.

3.2.3 Natural Ventilation

Objectives:

- *To ensure that apartments are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants.*
- *To provide natural ventilation in non-habitable rooms, where possible.*
- *To reduce energy consumption by minimising the use of mechanical ventilation, particularly air conditioning.*

Outcome:

Living and bedroom areas have been located along the external face of the building with full height and width operable glazing to make use of natural ventilation. Cross ventilation is provided to the waterfront apartments through the breaks in the building and to the corner units at Rowland Terrace and Main Road.

Given the irregular shape and size of the site, and the demand for living areas along the primary frontage, non-habitable rooms are located at the rear of the apartments and as such mechanically ventilated.

All of the corridors are naturally ventilated with operable louvers incorporated into the façade.

As previously detailed, the building depth is 13.75 metres including balconies and corridors, with this form disposed around the perimeter of the site. This dimension falls within the rule of thumb range of 10-18 metres.

3.3 Building Form

3.3.1 Awnings + Signage

Objectives:

- *To provide shelter for public streets.*
- *To ensure signage is in keeping with desired streetscape character and with the development in scale, detail and overall design.*

Outcome:

Shelter is provided to the main entry of the development to facilitate a meeting and waiting area for the residents. Identity signage for the development is provided along the landscape wall adjoining the egress stair to Main Road.

3.3.2 Facades

Objectives:

- *To promote high architectural quality in residential flat buildings.*
- *To ensure that new developments have facades which define and enhance the public domain and desired street character.*
- *To ensure that building elements are integrated into the overall building form and facade design.*

Outcome:

The building is proposed to have a defined solid based and contrasting top accentuated with generous roof overhangs, articulated and stepped on all facades to relate to the scale of the existing surrounding buildings and responding to what is envisaged by the Regional and Toukley Planning Strategies.

The horizontal is emphasised with the layering and articulation of balcony projections and roof overhangs wrapping around the building, to provide depth and articulation to the façade while providing passive surveillance to the street, and shelter for the occupants.

Materials are proposed which reinforce the scale and context of the building with colouring in natural tones with some emphasis on screens and louvres to enliven the composition.

3.3.3 Roof Design

Objectives:

- *To provide quality roof designs, which contribute to the overall design and performance of residential flat buildings.*
- *To integrate the design of the roof into the overall facade, building composition and desired contextual response.*
- *To increase the longevity of the building through weather protection.*

Outcome:

Roofs have simple skillion and hipped forms with generous overhangs to provide shelter to outdoor spaces. The roof is cut and turned down to form part of the wall to the upper level units to create visual interest and provide privacy screening while acting to reduce the scale of building.

3.4 Building Performance

3.4.1 Energy Efficiency

A SEPP Basix report has been prepared for the proposal, refer Appendix T.

The equable local climate minimises heating and cooling requirements. The design optimises solar access, promotes natural lighting and natural ventilation and has a large flat roof area that will be suitable for future installation of solar panels.

Objectives:

- *To reduce the necessity for mechanical heating and cooling.*
- *To reduce reliance on fossil fuels.*
- *To minimise greenhouse gas emissions.*
- *To support and promote renewable energy initiatives.*

Outcome:

The RDFC objectives are achieved. Less than 10% of the apartments have a single southerly aspect. The proposal will make efficient use of natural resources such as energy and water throughout the full life cycle of the building, including construction.

The proposed building has been designed in accordance with effective passive solar design principles, with efficient appliances and mechanical services. Refer to *Appendix T: BASIX Report* for further detail.

3.4.2 Maintenance

Objective:

- *To ensure long life and ease of maintenance for the development.*

Outcome:

The materials, finishes, landscaping and vegetation selected are low maintenance and require minimal upkeep. Balustrades for maintenance of rooftop plant have been provided in the form of upturns to the flat roof areas, Adequate storage is provided within the building for cleaning, gardening and general storage.

3.4.3 Waste Management

A Construction Management Plan has been prepared. Refer to *Appendix E: Construction Management Plan*.

A Garbage Management Plan has been prepared and approved for the proposal, refer to *Appendix X*.

Waste minimisation through the construction phase will be achieved through design, accurate quantity surveying and focussed construction project management. The amount and disposal of waste to be generated during demolition, excavation and construction of the development is included in Construction Management Plan.

Objectives:

- *To avoid the generation of waste through design, material selection and building practices.*
- *To plan for the types, amount and disposal of waste to be generated during demolition, excavation and construction of the development.*
- *To encourage waste minimisation, including source separation, reuse and recycling.*
- *To ensure efficient storage and collection of waste and quality design of facilities.*

Outcome:

The proposal achieves the objectives of the RFDC for waste management. Adequate areas for storage of garbage and recycling have been designed into the project at the basement car park levels. Garbage rooms are provided at each floor with a chute and areas for recycling drop-off.

3.4.4 Water Conservation

Objectives:

- *To reduce mains consumption of potable water.*
- *To reduce the quantity of urban stormwater run off.*

Outcome:

Rainwater from the roofs will be harvested and stored on the site and used for irrigation and toilet flushing.

The building will incorporate water efficient appliances. Refer to *Appendix T: BASIX Report* for further detail.

The proposal utilises available best practices consistent with the RFDC.