

MIRVAC

**SITE 53 -
2 FIGTREE DRIVE
SYDNEY OLYMPIC PARK**

ACCESS REVIEW

Morris Goding Accessibility Consulting

FINAL v7

16 June 2017

REPORT REVISIONS		
Date	Version	Drawing No / Revision
26.07.16	Draft	DA Coordination Issue Set by BVN Architects and issued to MGAC on Aconex: Transmittal: BVN-TRANSMIT-000043 on 21.07.2016
19.02.16	Draft v2 (Amended design)	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: BVN-TRANSMIT-000048 and BVN-TRANSMIT-000049 on 30.08.2016 and Revised unit layouts (adaptable, livable, visitable) DA-2200 (rev C), DA2201 (rev C), DA2203 (rev B), DA-2210 (rev C).Basement car-parking level plans reviewed include DA-2011-E, DA-2012-E, DA-2013-E, DA-2014-E, DA-2015-E.
29.09.16	Final (Amended design)	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: BVN-TRANSMIT-000059 on 28.09.2016 and Revised unit layouts (adaptable, livable, visitable) DA-2200 (rev E), DA2201 (rev E), DA2203 (rev D), DA-2210 (rev E); and SK-3310_WIP_160927; SK-3300_WIP_160927;
30.09.16	Final v2 (Amended design)	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: BVN-TRANSMIT-000059 on 28.09.2016 and Revised unit layouts (adaptable, livable, visitable) DA-2200 (rev E), DA2201 (rev E), DA2203 (rev D), DA-2210 (rev E); and SK-3310_WIP_160927; SK-3300_WIP_160927;
18.11.16	Final v3 (Amended design)	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: BVN-MEMO -000559 on 17.11.2016 and Revised unit layouts (adaptable, livable, visitable) DA-2200 (rev G), DA2201 (rev G), DA2203 (rev F), DA-2210 (rev G) and 161116_A-V-L_Apartment_Schedule and Basement car-parking plans 161118_Basement GA.
23.11.16	Final v4 (Amended design)	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: BVN-MEMO -000559 on 17.11.2016 and Revised unit layouts (adaptable, livable, visitable) DA-2200 (rev G), DA2201 (rev G), DA2203 (rev F), DA-2210 (rev G) and 161116_A-V-L_Apartment_Schedule Basement car-parking plans issued via Aconex on BVN-TRANSMIT-000084 on 23.11.16.
16.05.17	Final v5	Section 3.2 <i>Site Access Strategy - Residential Pedestrian Approaches</i> updated in response to Council Response to Submission and Site Accessibility Strategy document prepared by 360 Degrees landscape architects, issued to MGAC by Mirvac on 27/4/17.
07.06.17	Final v6	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: MVC-TRANSMIT-000065 on 06.06.2017; adaptable, visitable and livable plans Drawings No: DA-2200-H, DA-2201-H, DA-2203-G, DA-2210-H and BVN 170605_A-V-L_Apartment_Schedule.
16.06.17	Final v7	DA Coordination Issue Set prepared by BVN Architects and issued to MGAC on Aconex via: Transmittal: MVC-TRANSMIT-000075 on 14.06.2017; MIRVAC 170523 SOPA NEW APART MIX REV 3; BVN 170614_A-V-L_Apartment_Schedule and basement level plans (DA-2105_N, DA-2104-N, DA-2103_M, DA-2102-M).

This report prepared by:



Elisa Moechtar

Associate

Morris Goding Accessibility Consulting

TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	4
2.	INTRODUCTION.....	6
2.1.	General	6
2.2.	Objectives.....	6
2.3.	Limitations	6
2.4.	Statutory Requirements	7
3.	INGRESS & EGRESS	8
3.1.	External Approach - General.....	8
3.2.	Site Access Strategy - Residential Pedestrian Approaches	8
3.3.	Retail Development Approach	11
3.4.	Building 1 and 2, Level 01 Landscape podium.....	12
3.5.	Building 3 and 5, Level 01 Landscape podium.....	13
3.6.	Main Entry Level 01 Residential Towers	13
3.7.	Main Entry Level Retail Tenancy	14
3.8.	Emergency Egress	14
4.	RESIDENTIAL.....	16
4.1.	Path of Travel	16
4.2.	Passenger Lifts	16
4.3.	Community Room and Gym & Yoga Studio, Building3	17
4.4.	Mail Boxes	17
4.5.	Garbage Rooms	18
4.6.	Additional Common Facilities	18
5.	ACCOMMODATION	19
5.1.	Residential Unit Mix	19
5.2.	Visitable Units.....	19
5.3.	Adaptable Unit Design/s	20
5.4.	Recommendations for All Adaptable Unit Types:	21
5.5.	Liveable Units	22
6.	CAR PARKING.....	24
6.1.	General	24
6.2.	Residential Accessible Car Parking	24
6.3.	Visitor Accessible Car Parking	25

1. EXECUTIVE SUMMARY

The Access Review Report is submitted with the Development Application for a mixed use residential development located at 2 Figtree Drive, Sydney Olympic Park NSW 2127, to satisfy the requirement of the SOPA Access Guidelines 4th Edition, July 2015 for an Access Strategy. This Report is an appropriate response to the AS1428 series, Building Code of Australia (BCA), DDA Access to Premises Standards (including DDA Access Code) and ultimately the Commonwealth Disability Discrimination Act (DDA).

Morris-Goding Accessibility Consulting has prepared the Access Report to provide advice and strategies to maximise reasonable provisions of access for people with disability.

The review of the development has been made in accordance with the SOPA Masterplan 2030 Chapter 4 General Controls and Guidelines and Chapter 5.2 Central Precinct and the SOPA Access Guidelines 4th Edition, July 2015.

The development has been reviewed to ensure that ingress and egress, paths of travel, circulation areas, car parking, residential accommodation, common areas and sanitary facilities comply with relevant statutory guidelines.

In general, the development can achieve accessible paths of travel that are continuous throughout. In line with the report recommendations, the proposed development has demonstrated an appropriate degree of accessibility. The Development Application drawings indicate that compliance with statutory requirements, pertaining to site access, common area access, accessible parking, adaptable units and accessible sanitary facilities, can be readily achieved.

The recommendations in this report are to be developed in the ongoing design development prior to construction certificate stage. The main recommendations that have arisen from the access review, include:

- Ensure the walkway and connecting path of travel leading to Building 3 lift lobby, level B01 from Linear Park and the site allotment boundary is developed in accordance with AS1428.1 to ensure an equitable accessible route (in lieu of southern stairs) to the landscape podium (level 01), compliant with BCA/DDA Access Code.
- Ensure the landscape podium level 01, landscaped pathways between the buildings have sufficient gradients, clear widths and circulation areas for people with disability to ensure accessible linkages between building entries and common areas, compliant with BCA/DDA Access Code.
- Ensure Building 1 and 2 entry ramp design is developed in compliance with AS1428.1 and includes a passing bay, 1800mm min. W x 2000mm L (required at 20m max. intervals where a direct line of sight not available) and appropriate size mid landings (typically 1500mm W x 1500mm L for 90 degree turn; or for more than 90 degree turns 1540mm W x 2070mm L) clear of required handrails/kerbrails on both sides, compliant with AS1428.1.

- Provide documented 'protect in place strategy' for people with disability within each home unit (fire-isolated compartment) to satisfy SOPA Access Guidelines 2.6.
- Ensure the 30% of ground floor visitable units on the L01 landscape podium are designed to be visitable, in accordance with AS4299 and the SOPA Access Guidelines definition to meet SOPA Masterplan Chapter 4.6.9, Point 2.
- Ensure the 10% adaptable units of total unit provision are designed in accordance with AS4299 Class B requirements. For Unit types: 2 Bed – Type 1, 3 bed- Type 1, 3 bed- Type 5, 3 bed- Type 6, 3 bed- Type 7, 3 bed- Type 9; the provision for automatic door openers at Unit entry doors (to facilitate future installation), is to include the supply of auto door opener system and installed power source/GPO and wiring at pre-adaption. This will need to be suitably documented/managed as part of owner's manual.
- Ensure the 20% liveable units of total unit provision are designed in accordance with Universal Design Livable Housing Australia: Silver Level guidelines.
- A performance based solution to meet BCA performance requirements may be required and is supportable for 3 x accessible car bays located across levels B02, B03, B04 where a column is located within shared zone similar to the required bollard location.
- Ensure the recessed lobby space in front of single lift facing north for building 5 that provides at least 1m min. clear length in front of lift doors (basement levels B01, B02, B03, B04) is line-marked in a contrasting colour to identify the waiting/turning area with consideration for overhead signage to advise drivers and improve detectability for pedestrians (advisory).

2. INTRODUCTION

2.1. General

Mirvac has engaged Morris-Goding Accessibility Consulting to undertake a design review of the proposed residential development located at 2 Figtree Drive, Sydney Olympic Park NSW 2127.

The development consists of an approx. total of 705 residential units across four residential buildings 1, 2, 3, 5. Building 1 extends to level 12, building 2 to level 35, building 3 to level 09 and building 5 to level 23.

The residential buildings are located over 4 shared levels of basement car parking on levels B01 – B04, and the landscaped landscape podium level 01.

There is a retail tenancy space provided on level B01 of the development and public domain areas at various street frontages, including an extension of the existing Linear Park on the south side of the development, between the rail corridor and the southern site boundary.

The requirements of the design review are to:

- Review supplied drawings of the proposed development,
- Provide a report that will outline the provisions for accessibility within the development, and,
- Provide recommendations to assist the design team in achieving compliance with the Federal Disability Discrimination Act (DDA), DDA Access to Premises Standards (including DDA Access Code), Building Code of Australia (BCA), AS 1428 series, the SOPA Masterplan 2030 and the SOPA Access Guidelines.

2.2. Objectives

The Access Review Report considers user groups, who include residential occupants, staff and visitors. The Report attempts to deliver equality, independence and functionality to people with disability inclusive of:

- People with sensory impairment
- People with mobility impairments
- People with dexterity impairments

The Report is written to satisfy the requirement of SOPA Access Guidelines 4th Edition, July 2015 for an Access Strategy and to guide the design to meet the objectives of the DDA. In doing so, the Report attempts to eliminate, as far as possible, discrimination against persons on the ground of disability.

2.3. Limitations

This report is limited to the accessibility provisions of the building in general. It does not provide comment on detailed design issues, such as: internals of accessible/ambulant toilet, fit-out, lift specification, slip resistant floor finishes, door schedules, hardware and controls, glazing, luminance contrast, stair nosing, TGSI's, handrail design, signage, hearing augmentation etc. that will be included in construction documentation.

2.4. Statutory Requirements

The following standards are to be used to implement the Report:

- Disability Discrimination Act 1992
- DDA (Access to Premises- Buildings) Standards 2010 (DDA Access Code)
- Building Code of Australia 2016
- AS 1428.1-2009 (General Requirements for Access)
- AS 4299-1995 (Adaptable Housing Code)
- AS 1735.12-1999 (Lifts, Escalators, & Moving Walks)
- AS2890.6-2009 (Off-Street Parking for People with Disabilities)
- SOPA Masterplan 2030, Chapter 4.0 General Controls and Guidelines and Chapter 5.2 Central Precinct
- SOPA Access Guidelines –Fourth Edition July 2015 (as relevant)
- SEPP 65 referenced Apartment Design Guidelines Part 4Q

3. INGRESS & EGRESS

3.1. External Approach - General

The development is bound by Figtree Drive to the north, Australia Avenue to the east, New Street to the west and the railway corridor to the south.

There is an existing public domain area known as 'Linear Park' (outside of the site boundary) between the south boundary and railway corridor, with existing stairs and ramps that connect to the footpath on Australia Avenue. This public domain area is to be retained and is proposed to be extended to link Australia Avenue to New Street on the west boundary of the development.

There will be new public domain areas within the perimeter of the site boundary that will interface with the surrounding public footpaths and the development.

Continuous paths of travel from the site boundary entry points on Figtree Drive, Australia Avenue, Linear Park and New Street to the residential building development and landscape podium on L01, and from the forecourt entry to retail area on level B01 can be achieved to comply with BCA/DDA Access Code as outlined below.

3.2. Site Access Strategy - Residential Pedestrian Approaches

Various pedestrian entrance points are proposed at the site allotment boundary to approach the residential development for public/visitors and private residents including:

Main Building Entrances:

- Figtree Drive: principal public pedestrian entry point and visitor access to site and to Building 1 and 2 main entrances and landscape podium, level 01 (accessible);
- Figtree Drive: principal public pedestrian entry point and visitor access to site and Building 3 and 5 main entrances and landscape podium, level 01 (accessible);

Secondary Building Entrances:

- Australia Avenue: private pedestrian entry point for residents to Building 1 lift lobby, level B01 and landscape podium, level 01 via Building 1 lift, (accessible);
- Linear Park: private pedestrian entry point for residents to landscape podium level 01 via stairs from level B02 (not accessible);
- Linear Park: public pedestrian entry point to New Street (outside secure line) and private pedestrian entry point for residents to Building 3 lift lobby, level B01 and landscape podium, level 01 via Building 3 lift, (accessible);
- Linear Park: private pedestrian entry point for residents to Building 2 lift lobby, level B01 (not accessible);
- New Street: private pedestrian entry point for residents to Building 5 lift lobby, level B01 (not accessible).

GROUND PLANE / ENTRY STRATEGY

ISSUE 4



58

Figure 1. Main Building Entries / Address



Figure 2. Site Access and Main Building Entries

An accessible path of travel from the two principal public pedestrian entry points on Figtree Drive footpath is achievable for all residents and visitors to residential buildings 1 – 5 via ramps and landscaped landscape podium at level 01 (See Sections 3.5, 3.5 below) as required by BCA/DDA Access Code Part D3.2. An accessible path of travel is also provided to and through at least 50% of other secondary private pedestrian entry points for residents, in line with the intent of BCA/DDA Access Code Part D3.2. It is understood that the existing street levels along Figtree Drive (outside of site boundary) are to be re-graded/improved by others.

Due to the existing site topography and street levels that have been driven by the Masterplan, there is a significant height variation from the existing Linear Park southern boundary to the existing northern boundary at the top of New Street (8.9M height variation) and landscape podium, level 01. The secondary private pedestrian stair entry for residents to the landscape podium from this approach is therefore not accessible for residents with mobility impairment. However an alternate accessible pedestrian route from this approach is proposed and achievable via a series of 1:20 walkways that will connect Linear Park in the south to the lower part of New Street in the west. The secondary private pedestrian stair entry for residents from Linear Park will be designed to comply with AS1428.1 with appropriate set-backs and access features for improved safety and access for people with ambulant and sensory disability.

The proposed accessible walkway from Linear Park is an improvement that will provide public access between these areas at all times (walkways located outside secure line of residential site), and an alternate accessible (step-free) path of travel for private residents to landscape podium, level 01, through the Building 3 lift lobby, level B01. The base of the proposed new walkway is within reasonable proximity to the base of the stairs (50m max. distance), which will satisfy the intent of BCA Clause D3.2. The proximity of the proposed walkway to New Street vehicular basement entry/exit point to development will require further review during design development, prior to Construction Certificate, to ensure compliance and pedestrian safety is maintained.

The new civil road levels of New Street have been driven by the Masterplan and existing trees that must be retained, resulting in footpath grades (outside site boundary) and between Building 3 and Building 5 entry points that are steeper than 1:14 gradients which exceed AS1428.1 requirements. The secondary private pedestrian entry point for residents to Building 3 from the lower side of the New Street site boundary will however be developed to meet AS1428.1 in accordance with BCA Clause D3.2 to facilitate access when approaching from Linear Park.

The site access strategy for the residential pedestrian approaches to the development have sought to maximise access for people with disability within existing topographical constraints. By locating the principal public pedestrian entry points and all visitor access to the development site at Figtree Avenue, where gradients are most gradual, on-grade site access is readily achievable. Where site conditions have permitted, secondary private pedestrian entry points for residents to buildings 1 and 3 and the landscape podium, level 01 from the site boundary are also accessible. Where site conditions have resulted in significant height variation between the public footpath and building levels,

some secondary pedestrian entry points for residents ie. to buildings 2 and 5 from the site boundary are not accessible however the stairways in these areas will be designed to comply with AS1428.1 with appropriate set-backs and access features for improved safety and access for people with ambulant and sensory disability.

To improve general resident access, the client has confirmed that the accessible secondary private pedestrian entry points for residents to buildings 1 and 3, (ie. that face Australia Ave and accessible retail development, and lower New Street and accessible walkway system from Linear Park) will be available to all residents of all residential buildings, regardless of which building they reside in. In this way all residents approaching the development from the accessible secondary private pedestrian building entry points will have increased choice/flexibility and equitable access to the passenger lifts (within buildings 1 and 3) to access the landscape podium level 01 and the main entrances of all buildings 1-4 at this level.

Recommendations:

- (i) Ensure the walkway and connecting path of travel leading to Building 3 lift lobby, level B01 from Linear Park and the site allotment boundary is developed in accordance with AS1428.1 to ensure an equitable accessible route (in lieu of southern stairs) to the landscape podium (level 01), compliant with BCA/DDA Access Code.
- (ii) Ensure all stairways are suitably set-back at top and base areas for handrails on both sides that do not protrude into transverse paths of travel, compliant with BCA/DDA Access Code.
- (iii) Ensure there are continuous accessible paths of travel to and within public domain areas within the site boundary that connect to existing pedestrian network in line with the requirements of the SOPA Masterplan 2030 Chapter 4.3.

3.3. Retail Development Approach

The site allotment boundary principal pedestrian entrance point to approach the retail development is from Australia Avenue via the retail forecourt. The forecourt functions as an access-way to the retail tenancy main entrance and also to the retail/residential corridor that connects to the public/visitor car-park and to the secondary private pedestrian entry point to Building 1 via lift lobby, level B01. This route will be developed to include an accessible ramp and stairs in accordance with BCA/DDA Access Code Part 3.2 requirements.

There is an alternate retail entry path to the retail forecourt from Figtree Avenue (that also functions as fire egress path from level B01). This path of travel is not proposed to be accessible to people with mobility impairment due to stair only access, however the stairway will be designed to comply with AS1428.1 with appropriate set-backs and access features for improved safety for all, including people with ambulant and sensory disability.

Access to and within the retail forecourt area from the primary street approach is achievable and will be developed during design development, prior to Construction Certificate, to ensure compliance.

Recommendations:

- (i) Ensure all stairways and ramps to retail forecourt and retail main entry are suitably set-back at top and base areas for handrails on both sides that do not protrude into transverse paths of travel, compliant with BCA/DDA Access Code.
- (ii) Ensure there are continuous accessible paths of travel to and within public domain areas within the site boundary that connect to existing pedestrian network in line with the requirements of the SOPA Masterplan 2030 Chapter 4.3.

3.4. Building 1 and 2, Level 01 Landscape podium

An accessible path of travel from the site boundary entry on Figtree Drive footpath can be achieved to the main entrances of residential tower building 1 and 2 at level 01. Access is proposed via entry ramps (and stairs) up to the landscape podium level outside building 1 entry lobby. From this area, a covered external walkway then connects the two buildings through the common landscape podium, level 01.

The entry ramp system will include a series of ramps with a maximum gradient of 1:14 with maximum ramp lengths that do not exceed 9m between level landings as required by AS1428.1. The ramp design will be developed further during design development stage to provide appropriate wheelchair passing bays (at 20m max. intervals) and ensure that the required circulation space on intermediate landings satisfies AS1428.1 and is clear of required handrail extensions. Our review of the preliminary design indicates that this is achievable.

The adjacent stairs have regular configuration that can easily achieve the required set-backs from adjacent paths of travel to accommodate compliant handrails on both stairs in accordance with AS1428.1.

The landscape podium, level 01 of the development provides access to the entry door of each of the residential towers and the common-use facilities (community room, gym/yoga studio, bike parking) of the development as required by the BCA/DDA Access Code.

The alternate secondary private pedestrian entry points for residents to the landscape podium level have been covered in Section 3.2. The access pathways within the landscape podium level 01 to the entry door of each of the residential towers and to and within common use landscape areas/facilities will be developed as part of the landscape design documentation.

Recommendations:

- (i) Ensure ramp design is developed in compliance with AS1428.1 and includes a passing bay, 1800mm min. W x 2000mm L (required at 20m max. intervals where a direct line of sight not available).
- (ii) Ensure all mid landings on ramp have min. dimensions (Typically 1500mm W x 1500mm L for 90 degree turn; or for more than 90 degree turns 1540mm W x 2070mm L) clear of required handrails/kerbrails on both sides, compliant with AS1428.1.
- (iii) Ensure the landscape podium, level 01 main walkways and connecting pathways between the buildings have sufficient gradients, clear widths

and circulation areas for people with disability to access the entry door of each of the buildings and to and within common use landscape areas/facilities, compliant with the BCA/DDA Access Code and AS1428.1.

3.5. Building 3 and 5, Level 01 Landscape podium

An accessible path of travel from the site boundary entry on Figtree Drive footpath can be achieved to the main entrances of residential tower building 3 and 5 at level 01. Access is proposed via an entry ramp up to the landscape podium level, outside building 5 entry lobby. From this area, external access pathways will be developed to connect the two buildings through the common landscape podium.

The entry ramp system will include a series of ramps with a maximum 1:14 gradient with maximum ramp lengths that do not exceed 9m between level landings as required by AS1428.1. The ramp needs to achieve passing bays on intermediate landings (min. dimensions 1800mm W x 2000mm L clear of handrails) at 20m max. intervals where a direct line of sight is not available.

The landscape podium, level 01 of the development provides access to the entry door of each of the residential towers and the common-use facilities (community room, gym/yoga studio, bicycle parking) of the development as required by the BCA/DDA Access Code.

The alternate secondary private pedestrian entry points for residents to the landscape podium level have been covered in Section 3.2. The access pathways within the landscape podium level 01 to the entry door of each of the residential towers and to and within common use landscape areas/facilities, will be developed as part of the landscape design documentation.

Recommendations:

- (i) Ensure ramp design is developed in compliance with AS1428.1 and includes required handrails/kerbrails on both sides and passing bays on intermediate landings at 20m max. intervals where a direct line of sight is not available.
- (ii) Ensure the landscape podium level 01 connecting pathways between the buildings have sufficient gradients, clear widths and circulation areas for people with disability to access the entry door of each of the buildings and to and within common use landscape areas/facilities, compliant with the BCA/DDA Access Code and AS1428.1.

3.6. Main Entry Level 01 Residential Towers

The main entrances of each of the residential towers is accessed from the landscape podium level of the development (L01).

The entry door of each of the residential towers 1, 2, 3 and 5 can achieve door clearances and circulation areas to allow wheelchair users to access the entry lobbies, compliant with the BCA/DDA Access Code.

The entry lobby of each of the residential towers has sufficient circulation areas for wheelchair users to perform a 180 degrees turn and to pass one another in an equitable and dignified manner, compliant with BCA/DDA Access Code.

Recommendation:

- (i) Ensure the building entry doorways comply with the BCA/DDA Access Code.

3.7. Main Entry Level Retail Tenancy

The external retail tenancy is located at level LB01 addressing Australia Avenue, with entry via an accessible retail forecourt. The retail fit-out will be subject to a future development application by the landowner. Therefore the shopfront design, including the main entry door, is not detailed as part of this Development Application. However, there is sufficient frontage to the retail entry forecourt to achieve an accessible entrance as required under the BCA/DDA Access Code.

There is a retail corridor to the north of the open-plan retail tenancy that connects the retail forecourt to the LB01 carpark and an alternate secondary private pedestrian entry points for residents to building tower 1 via passenger lift. The corridors have sufficient circulation areas, to allow wheelchair users to perform a 180 degrees turn and to pass one another in an equitable and dignified manner, compliant with BCA/DDA Access Code.

Recommendation:

- (i) Ensure the building retail entrance, and connecting doorways to car-park and building tower 1 comply with the BCA/DDA Access Code.

3.8. Emergency Egress

Each residential tower has emergency fire isolated stairways that provide egress to street level and/or open space from the upper residential levels and from the basement levels. The plans indicate an offset tread at the base of each egress stair flight to facilitate provision of a continuous consistent height handrail BCA D2.17 and AS1428.1 Clause 12.

There are additional doors from the L01 common corridor in building tower 2 that are understood to provide egress from this entry level space, in addition to the main entry lobby doors of each building.

The SOPA Access Guidelines require the provision of accessible emergency egress or suitable fire evacuation refuge areas that are fire-rated to assist people with disability in the event of an emergency. A 'protect in place strategy' for people with disability within each home residential unit (fire-isolated compartment) will be developed and formalised through strata by-laws and managed by the Owner's corporation and/or Building Manager.

Recommendations:

- (i) Ensure all egress doors at level 01 (except fire isolated stairs egressing at level 01) within building towers have 850mm min. clear width and level door threshold to external areas.
- (ii) Ensure continuous handrails at a consistent height along required along egress routes (e.g. fire stairs/ramps) to comply with BCA D2.17 and AS1428.1 Clause 12.

- (iii) Provide documented 'protect in place strategy' for people with disability within each home unit (fire-isolated compartment) to satisfy SOPA Access Guidelines 2.6.
- (iv) Provide suitable visual system for emergency announcements in common areas to assist people who are deaf or hearing impaired to respond the emergencies, to satisfy SOPA Access Guidelines 2.6.

4. RESIDENTIAL

4.1. Path of Travel

There is an accessible path of travel from the principal pedestrian building entrances (i.e. each residential tower lobby) to the entry door of each of the residential units within the building, compliant with BCA/DDA Access Code.

For each residential tower, there are passenger lifts that provide a path of travel from the entry lobby to the basement levels and the common use corridors on the upper residential levels of the building.

The common residential corridors provide a continuous accessible path of travel to the entry door of each of the residential units in the building, compliant with BCA/DDA Access Code.

The common residential corridors have sufficient clearances and circulation areas, to allow wheelchair users to pass one another at suitable intervals. The corridors have sufficient clearances to allow wheelchair users to perform a 90° turn at change of directions and to perform a 180° turn at corridor ends, compliant with the BCA/DDA Access Code and SOPA Access Guidelines.

Recommendation:

- (i) Ensure all common use doorways (e.g. building entrances, garbage rooms, community room, interconnecting corridors, bike storage etc.) have 850mm clear opening width and suitable latch side door circulation area, compliant with the BCA/DDA Access Code.

4.2. Passenger Lifts

For each residential tower, passenger lifts provide vertical access between the basement levels, entry lobby (landscape podium level) and the upper residential levels. Buildings 1 has 2 x passenger lifts, Building 2 has 4 x passenger lifts, Building 3 has 2 x passenger lifts Building 5 has 3 x passenger lifts.

The passenger lifts can achieve at least 1400mm (width) x 1600mm (depth) internal dimensions to satisfy access requirements of BCA/DDA Access Code Table E3.6

On all residential levels and generally within basements, there are sufficient circulation areas of at least 1800mm min. width provided in front of all passenger lifts to allow wheelchair users to pass one another and to access the lift car in an equitable and dignified manner, compliant with BCA/DDA Access Code.

An exception is noted at the designated space in front of the single lift facing north at basement lifts for building 5 (basement levels B01, B02, B03, B04) where the area in front of lift doors is reduced to 1050mm width clear between lift and vehicular aisles. This is insufficient for a 90 degree wheelchair turn, under AS1428.1 however it is noted that there is more space available (within the vehicular aisle) to functionally turn. As this lift is located within an aisle end (not thoroughfare) with a significant number of accessible car bays it is anticipated that traffic will be reduced, however additional measures are

recommended to be included during design development stage for improved access/safety for pedestrians.

Recommendations:

- (i) Ensure the recessed lobby space in front of single lift facing north for building 5 that provides at least 1m min. clear length in front of lift doors (basement levels B01, B02, B03, B04) is line-marked in a contrasting colour to identify the waiting/turning area with consideration for overhead signage to advise drivers and improve detectability for pedestrians (advisory).
- (ii) Ensure the lift car components (grabrail, control buttons, lighting) comply with BCA/DDA Access Code.

4.3. Community Room and Gym & Yoga Studio, Building3

There is a Community room and Gym and Yoga Studio located on landscape podium level 01 at the south side of residential tower 3. There is sufficient frontage to the landscaped landscape podium to achieve an accessible entrance to each common-use facility as required under the BCA/DDA Access Code.

Appropriate means of access for people with disability to the Gym and Yoga Studio and Community room is achieved via external pathways from each of the residential tower entry doors through common landscape podium, level 01.

The Gym and Yoga Studio and Community room are interconnected open plan areas and have sufficient overall internal dimensions to ensure access to and within all areas, compliant with BCA/DDA Access Code.

There is a common-use accessible toilet, within the Community Room, which can achieve sufficient circulation areas to meet AS1428.1.

Recommendations:

- (i) Ensure entry doors to Community room and Gym and Yoga Studio have a minimum 850mm clear opening width (each active leaf) and door circulation, compliant with the BCA/DDA Access Code.
- (ii) Ensure accessible unisex toilet achieves circulation in accordance with AS1428.1 and BCA/DDA Access Code Part F2.4.

4.4. Mail Boxes

There are mailboxes for buildings 1 - 5 residents provided in an accessible location at landscape podium level 01, adjacent to Building 1 and 2 and Building 3 – 5 main entry ramps from Figtree Drive. The mailboxes are external however are covered and weather protected by the overhead building floor level.

There is at least 1550mm min. diameter turning area in front of all mailboxes, suitable for wheelchair users to perform a 180 degrees turn, compliant with AS1428.1 and AS4299.

Recommendation:

- (i) Ensure the mailboxes for each residential tower are located on a level surface with suitable gradients and cross-fall (no steeper than 1:40), compliant with BCA/DDA Access Code.

4.5. Garbage Rooms

Garbage chute rooms are provided on each residential floor in each of the residential towers 1, 2, 3 and 5. Within Buildings 1, 2, 3 and 5 the garbage room doors each achieve 850mm min. clear width opening with door circulation area, compliant with AS1428.1 and 1550mm min. diameter space for wheelchair access.

4.6. Additional Common Facilities

There are additional common-use facilities for residents within the development including:

- Residential bicycle parking, Building 5, landscape podium level 01
- Terrace, Building 2, landscape podium level 01

An accessible path of travel, compliant with AS1428.1 can be achieved to the common-use facilities at landscape podium level 01, via the access pathways to be developed through the common landscape podium.

Recommendations:

- (i) Ensure common door to bicycle storage area from corridor achieves door circulation area (530mm min. latch side clearance), compliant with AS1428.1.
- (ii) Building 2: ensure continuous access to external common terrace area from internal entry lobby, level 01 compliant with AS1428.1:2009.

5. ACCOMMODATION

5.1. Residential Unit Mix

The passenger lifts in the residential towers provide a continuous accessible path of travel from the basement car parking and entry landscape podium level 01 to the upper levels containing residential units, compliant with BCA/DDA Access Code.

There are approx. 705 residential apartments in total proposed across the four residential towers. The development contains a variety of 1bed (x 279) 2bed (x 324) and 3bed (x 91) apartments.

The proposed residential unit mix includes adaptable, visitable and livable design units to promote flexibility in use, in order to meet the SOPA Masterplan 2030, SOPA Access Guidelines Fourth Edition – July 2015 and SEPP 65 – referenced Apartment Design Guide Part 4Q.

Some unit types propose to meet the design requirements of more than one design standard and/or guideline set. This is an acceptable approach when unit type meets all requirements of the relevant standard and/or guideline set.

The development proposes the following unit mix/types to ensure a choice of levels, aspect and price range in accordance with SOPA Access Guidelines and the intent of SEPP 65:

Visitable Units

- 8 x Visitable units of 24 total units on L01 landscape podium. This satisfies the numerical requirement (30%) of SOPA Masterplan Chapter 4.6.9, Point 2.
- There are 1 bed (x1), 2 bed (x 6) and 3 bed (x 1) visitable units proposed across entry level 01 of Building cores 1, 2 and 5.

Adaptable Units

- 71 x Adaptable units of 705 total units. This satisfies the numerical requirement (10%) of the SOPA Access Guidelines Part 5.3.
- There are a range of 1 bed (x 4), 2 bed (x 21) and 3 bed (x 46) adaptable units in various layout types proposed across building cores 1, 2, 3 and 5.

Livable Units

- 142 x Livable units of 705 total units. This satisfies the numerical requirement (20%) of the ADG part 4Q referenced by SEPP 65.
- There are a range of 1 bed, 2 bed and 3 bed liveable unit types proposed across building cores 1, 2, 3 and 5.

A detailed summary of unit mix/type and specific unit nos. for visitable, adaptable and livable units has been provided by Schedules from the client 170523 SOPA NEW APART MIX REV3 and by the architect BVN 170614_A-V-L_Apartment_Schedule which have been used as part of this access review.

5.2. Visitable Units

Drawing No: DA-2210-J shows that the 8 x Visitable units can achieve 850mm min. clear width unit entry door and a minimum 1000mm clear path of travel from the unit entry door to a corridor of sufficient width to access a bathroom with a visitable toilet and the living area with balcony area.

All visitable units have at least one bathroom with 850mm min. clear width opening door and a clear circulation area in front of toilet pan of at least 900mm x 1250mm as required under AS4299.

Recommendation:

- (i) Provide wheelchair access to/from Courtyards in visitable units from lounge area from the outset in line with the SOPA Access Guidelines definition to meet SOPA Masterplan Chapter 4.6.9, Point 2.

5.3. Adaptable Unit Design/s

The concept of adaptable housing is to design units with provisions in place from the outset (pre-adaption) so they can be easily adapted to meet changing needs of residents in the future (post-adaption). The adaptable unit is also required to be 'visitable' from the outset i.e. enable visitors with disability to enter the unit through the front entry door and have access to the living room and a 'visitable' toilet, in accordance with AS4299.

Drawings No: DA-2200-I, DA-2201-I, DA-2202-H have been reviewed for the key elements required at pre-adaption stage to satisfy the spatial requirements of AS4299. Based on the drawings and the schedules, there are 11 adaptable unit types proposed within the development that include 1 Bed (x4), 2 Bed – Type 1 (x 21), 3 bed- Type 1 (x13), 3 bed- Type 2 (x14), 3 bed- Type 3 (x4), 3 bed- Type 4 (x6), 3 bed- Type 5 (x1), 3 bed- Type 6 (x1), 3 bed- Type 7 (x1), 3 bed- Type 8 (mirrored x4) and 3 bed-Type 9 (x2).

Each adaptable unit type has an 850mm min. clear width opening hinged unit entry door that can achieve door clearances compliant with AS4299. Generally this is achieved via manual door operation, however Unit types: 2 Bed – Type 1, 3 bed- Type 1, 3 bed- Type 5, 3 bed- Type 6, 3 bed- Type 7, 3 bed- Type 9 propose pre-adaption provisions for automatic door openers to facilitate ease of installation at post-adaption.

There are accessible internal corridors leading to the essential features of the adaptable unit. The internal doors within the adaptable housing unit (as defined in AS4299 clause 1.4.6) have appropriate 850mm clear width opening and can or have provision to achieve door clearances compliant with AS4299.

The adaptable bedroom has appropriate internal dimensions and provisions to be able to achieve AS4299 circulation requirements.

The adaptable bathroom has suitable internal dimensions and provisions to satisfy shower, pan, wash basin circulation area requirements of AS4299. A visitable toilet has been provided within the adaptable unit as required by AS4299.

The kitchen has provisions to achieve appropriate clearance of 1550mm as required under AS4299 and can achieve work bench spaces adjacent to refrigerator, cook top, oven and sink under AS4299.

The living area has minimum clear area of 2250mm minimum diameter after the furniture has been placed, suitable under AS4299.

The laundry area can achieve or has provisions for circulation area in front of the laundry appliances of 1550mm in diameter, suitable under AS4299.

The lounge room shows there will be at least one door to balcony, which has 850mm min. clear width opening, and door circulation to facilitate balcony access.

Recommendations:

- (i) Unit types: 2 Bed – Type 1, 3 bed- Type 1, 3 bed- Type 5, 3 bed- Type 6, 3 bed- Type 7, 3 bed- Type 9; the provision for automatic door openers at Unit entry doors (to facilitate future installation), is to include the supply of auto door opener system and installed power source/GPO and wiring at pre-adaption. This will need to be suitably documented/managed as part of owner's manual.
- (ii) Unit type: 2 bed – Type 1 (x21), we recommend to re-hinge the pre-adaption entry door to opposite side (ie. so that it opens against fridge cabinet and not storage cabinet), so that AS1428.1 compliant latch side clearance can be achieved at post adaption without the need for provision for automatic door opener at this unit type.
- (iii) Ensure that any partitions that are proposed to be removed between pre and post stages do not include any installed services (plumbing or electrical) at pre-adaption for ease of modification in the future.
- (iv) In Unit type: 3 Bed- Type 8 (x4): the pre-adaption corridor outside the adaptable ensuite in main bedroom needs to provide 1230mm min. clear width from the outset to enable functional access to the visitable toilet located within this bathroom.
- (v) In Unit type: 3 Bed- Type 2 (x14): the post adaption plan to be amended to show adaptable bedroom door location centred to column to achieve 300mm max. distance between door and wall face on either side for access into adaptable bedroom.
- (vi) In Unit type: 3 Bed- Type 6 (x1): the main corridor wall does not need to be relocated between pre and post stages to achieve AS1428.1 door circulation to adaptable bedroom door. Instead the post-adaption plan to be amended to retain corridor wall and re-hinge adaptable bedroom door to other side and remove wardrobe behind bedroom door. The other wardrobe (opposite bedroom door can be retained as 340mm min. latch side is achievable for side approach to adaptable bathroom).
- (vii) In Unit type: 3 Bed- Type 8 (x4): the post-adaption plan to be amended to show the external nib wall of laundry to corridor reduced in length to enable enough space for a 90 degree wheelchair turn and access around the corridor to laundry and second bedrooms.

5.4. Recommendations for All Adaptable Unit Types:

In addition to the currently documented spatial provisions and notes included on Drawing No: DA-2200-I, DA-2201-I, DA-2202-H the following recommendations are applicable to all adaptable unit types.

- (i) Ensure adaptable units are designed in accordance with AS4299 Class B (All essential, and minimum 50% of desirable features incorporated, including all those notated 'first priority) to satisfy the requirements of the SOPA Access Guidelines Part 5.3.
- (ii) Provide a slip-resistant floor surface in kitchen, laundry and adaptable bathroom at pre-adaption stage as required by AS4299 clause 4.5.4.
- (iii) All internal doors of the adaptable housing unit (as defined in AS4299 clause 1.4.6 as a 'single residence or part of a residence, containing living area and sleeping space, kitchen, toilet and bath or shower room') require 850mm clear width (pre-adaption). This is in accordance with the SOPA Access Guidelines, over and above the 820mm clear width noted as an essential feature in AS4299 clause 4.3.3.
- (iv) For any bathtub, plinth or joinery units (adaptable bathroom) proposed to be removed at post-adaption, provide continuous waterproofing underneath/behind from the outset to allow for ease of adaptation.
- (v) For any plinth or joinery units (adaptable kitchen) proposed to be removed at post-adaption, provide continuous tiling underneath/behind from the outset to allow for ease of adaptation.
- (vi) Within adaptable bathroom; wall-strengthening around pan, shower and bathtub (for grab rails and shower seat) and waterproofing of walls to be provided at pre-adaptation stage in accordance with AS4299, clause 4.4.4h.
- (vii) The adaptable unit balconies to make provision for future wheelchair ramp access from lounge area ie. it is understood that proposed approach is for minimal height hob with raised self-draining flooring system to finish at same FFL. The external balustrade will be installed above the raised external floor to satisfy BCA requirements at pre-adaption stage.

5.5. Liveable Units

Drawing Nos: DA-2200-I, DA-2201-I, DA-2202-H, DA-2210-J show 20% of total residential units (ie. 142 liveable for 705 total units) can generally achieve compliance with Universal Design LHA: Silver Level.

The eight essential elements are as follows:

Note that Element 3 has not been included as not required for this project.

Element 1 – Dwelling access: a safe, continuous step-free pathway from the street entrance to unit entry that is level, will be addressed by general access requirements of BCA/DDA Access Code.

Element 2 – Dwelling entrance: the unit entry will provide at least one level (step-free) entrance (820mm min. clear opening width) into the dwelling. Where livable units are also as adaptable or visitable units, the unit entry door will exceed this width, as 850mm min. clear opening is required.

Element 4 – Internal Doors and corridors: All internal doors and corridors can achieve comfortable/unimpeded movement between all rooms and spaces on entry level (820mm min. clear door opening and 1000mm min. corridors).

Element 5 – Toilet: The unit entry level has at least one toilet to support easy access for home occupants and visitors, with pan located in a corner (to enable future installation of grab rails), with a clear circulation space of 900 W x 1200mm L (free of door swing) forward of the pan.

Element 6 – Shower – At least one bathroom has a shower with hob-less, slip resistant shower located in a corner of one bathroom (to enable future installation of grab rails).

Element 7 – Wall reinforcement – The toilet and bathroom have wall reinforcement to enable grabrails to be safely and economically installed in the future.

Element 8 – Internal stairways - Where installed, stairways include a continuous handrail on one side of stairs when rise exceeds 1m to reduce the likelihood of injury.

Recommendations:

- (i) Element 4: Ensure the design development for doors on entry level ensures level threshold transitions into all rooms.
- (ii) Element 6 – Shower – Ensure the nominated bathroom is developed to ensure a hob-less, slip resistant shower to meet LHA requirements.
- (iii) Element 7 – Wall reinforcement – Ensure that livable bathroom walls with cavity sliding door can achieve required door clearances and sufficient wall strengthening beside pan for future grab-rail installation. As indicated on reviewed drawings wall reinforcement is required at entry level pan, hob-less shower and around baths where provided in line with LHA requirements.

6. CAR PARKING

6.1. General

The on-site car parking bays are provided are spread across Levels B01, B02, B03, and B04 of the development.

As illustrated on the plans provided (DA-2105_N, DA-2104-N, DA-2103_M, DA-2102-M), there are car parking bays reserved for residents, across levels B02-B04 and a separated area reserved for residents on level B01 as well as residential visitor and retail car parking, on level B01. There are a total of 79 accessible car-parking bays proposed.

6.2. Residential Accessible Car Parking

Of the total residential car-parking provision there are 73 nominated as accessible car parking bays, which satisfies and exceeds the numerical requirement for at least one accessible car-parking bay provided for each required adaptable unit (71 required for 705 total units), compliant with AS4299 and SOPA Access Guidelines.

The residential accessible car-parking bays are suitably distributed near each lift core as follows:

Carpark level	Core 1	Core 2	Core 3	Core 5	Total
Basement B01	0	0	0	6	6
Basement B02	2	14	0	3	19
Basement B03	2	14	4	4	24
Basement B04	0	16	4	4	24
Total	4	44	8	17	73
Adaptable units	4	44	8	15	71

The proposed residential accessible car parking bays can achieve 2.4m width x 5.4m length and located directly adjacent a shared zone of the same dimensions, in line with AS2890.6-2009. It is noted that the SOPA Access Guidelines request accessible residential car bays to be 3.8m wide (without the need for a shared zone) to comply with AS4299.

MGAC supports the provision of 2.4m wide car bays adjacent 2.4m shared zones as per the current accessible car-parking standard AS2890.6-2009, provided the shared zones are marked and/or delineated with bollards so as to prevent the shared zones to be used for parking. The bollards within the shared zones are not to obstruct the required circulation areas adjacent the vehicle under AS2890.6 or AS4299. The current documentation indicates that this is achievable.

In addition the shared zone circulation space between two accessible car spaces is to remain common building property (to ensure its use as circulation zone and not an additional car bay). However when there are instances where the shared zone circulation space is located on one side only of a single

accessible car space, both spaces can be allocated to the residential lot for use of the apartment owner.

There are 3 x accessible car bays located across levels all B02, B03, B04 where a column is located within the shared zone, however the location is similar to the required bollard, providing functional access and a performance based solution to meet BCA performance requirements is supportable if required by the PCA.

The proposed distribution of accessible car bays is adjacent to or in close proximity to the relevant lift core to suit the number and locations of adaptable units within the relevant buildings.

An accessible path of travel from each accessible car bay to its relevant lift core and adaptable unit is required under AS4299 and SOPA Access Guidelines and is achievable.

Across levels B02 - B04, there are split basement levels and inclined areas with 1:22 gradients (approx. 22m max. lengths) in various vehicular aisles between north and south sides of the development. Whilst the inclined lengths exceed AS1428.1 design requirements (ie. 1:22 gradients should be no more than 16.5m max. lengths), provided that the final accessible car-parking bay distribution does not require use of the inclined aisle areas in order to access the lift core associated with the adaptable units then this can be supported.

Recommendations:

- (i) A performance based solution to meet BCA performance requirements may be required and is supportable for 3 x accessible car bays located across levels B02, B03, B04 where a column is located within shared zone similar to the required bollard location.
- (ii) All accessible car bays and shared zones to be located on a level surface, (no steeper than 1:40 gradient and cross-fall), compliant with AS2890.6.
- (iii) The car park requires 2.2m min. vertical clearance leading up to the accessible car bays. The accessible residential car bays (and shared zones) require 2.5m min. vertical clearance, to comply with AS2890.6-2009.

6.3. Visitor Accessible Car Parking

There are visitor/retail car bays provided within the Visitors and Retail Car Park located at level B01. It has been advised that there is no proposed allocation between retail and visitor car-parking bays.

Of the total provision there are 6 car bays nominated as accessible car parking bays, which satisfies and exceeds the minimum 2% requirement of the SOPA Access Guidelines and the 2% requirement for retail development under BCA/DDA Access Code Table D3.5.

The accessible car bays are suitably located good visibility and proximity to retail corridor that connects to retail tenancy forecourt, level B01 and the building tower 1 lift to residential landscape podium level 01 and residential tower main entrances. It is unclear if entry access will be provided to any other residential building lift cores at basement level B01.

The 6 accessible visitor car bays are 2.4m wide and located adjacent a 2.4m wide shared zone, compliant with AS2890.6-2009. The shared zones will be marked and include a bollard; to prevent these shared zones being used for parking.

Recommendations:

- (i) The car park requires 2.2m min. vertical clearance leading up to the accessible car bays. The accessible visitor car bays (and shared zones) require 2.5m min. vertical clearance, to comply with AS2890.6-2009.
- (ii) Ensure an accessible path of travel for residential visitors from accessible car-parking level B01 to level 1 landscaped podium. Given proposed residential secure line separates residential visitor/retail car-bays from residential lift cores 02, 03, 05 it is assumed that all residential visitors will need to use the intercom entry access at residential lifts in building core 01.