

Appendix H

BASIX

BASIX[®]Report

Building Sustainability Index www.basix.nsw.gov.au

Project summary		
Project name	1,3,5 BATHURST ST	
Street address	1,3,5 BATHURST Street LIVERPOOL 2170	
Local Government Area	Liverpool City Council	
Plan type and plan number	deposited 33121	
Lot no.	D,E,F	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	97	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	40	Target 40
Thermal Comfort	Pass	Target Pass
Energy	21	Target 20

Description of project

Project address

Project name	1,3,5 BATHURST ST
Street address	1,3,5 BATHURST Street LIVERPOOL 2170
Local Government Area	Liverpool City Council
Plan type and plan number	deposited 33121
Lot no.	D,E,F
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	97
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m²)	2744.3
Roof area (m²)	1270
Non-residential floor area (m²)	0.0
Residential car spaces	117
Non-residential car spaces	0

Common area landscape

Common area lawn (m²)	150.0
Common area garden (m²)	425.5
Area of indigenous or low water use species (m²)	250.0

Assessor details

Assessor number	BDAV/12/1456
Certificate number	1111111111
Climate zone	28

Project score

Water	40	Target 40
Thermal Comfort	Pass	Target Pass
Energy	21	Target 20

Description of project

The tables below describe the dwellings and common areas within the project

Residential flat buildings - Building1, 97 dwellings, 9 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G01	3	89.8	2.7	0.0	-
G05	2	75.1	0.0	0.0	-
G09	3	102.6	0.0	0.0	-
1.13	2	75.1	0.0	0.0	-
1.17	2	77.6	0.0	0.0	-
1.21	1	50.4	6.5	0.0	-
2.25	2	73.0	0.0	0.0	-
2.29	2	72.4	5.2	0.0	-
3.33	2	70.3	0.0	0.0	-
3.37	2	75.1	0.0	0.0	-
3.41	3	97.2	0.0	0.0	-
4.45	2	67.8	0.0	0.0	-
4.49	2	68.4	5.8	0.0	-
4.53	2	82.5	0.0	0.0	-
5.57	2	75.1	0.0	0.0	-
5.61	2	72.4	5.2	0.0	-
5.65	1	50.4	6.5	0.0	-
6.69	2	73.0	0.0	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G02	1	46.0	5.7	0.0	-
G06	2	74.2	0.0	0.0	-
G10	1	55.1	0.0	0.0	-
1.14	2	73.0	0.0	0.0	-
1.18	2	72.4	5.2	0.0	-
2.22	2	70.3	0.0	0.0	-
2.26	2	75.1	0.0	0.0	-
2.30	3	97.2	0.0	0.0	-
3.34	2	67.8	0.0	0.0	-
3.38	2	74.2	0.0	0.0	-
3.42	2	82.5	0.0	0.0	-
4.46	2	75.1	0.0	0.0	-
4.50	2	72.4	5.2	0.0	-
4.54	1	50.4	6.5	0.0	-
5.58	2	73.0	0.0	0.0	-
5.62	2	72.4	5.2	0.0	-
6.66	2	70.3	0.0	0.0	-
6.70	2	75.1	0.0	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G03	1	54.7	0.0	0.0	-
G07	2	73.4	0.0	0.0	-
1.11	2	70.3	0.0	0.0	-
1.15	2	75.1	0.0	0.0	-
1.19	3	97.2	0.0	0.0	-
2.23	2	67.8	0.0	0.0	-
2.27	2	68.4	5.8	0.0	-
2.31	2	82.5	0.0	0.0	-
3.35	2	75.1	0.0	0.0	-
3.39	2	72.4	5.2	0.0	-
3.43	1	50.4	6.5	0.0	-
4.47	2	73.0	0.0	0.0	-
4.51	2	72.4	5.2	0.0	-
5.55	2	70.3	0.0	0.0	-
5.59	2	75.1	0.0	0.0	-
5.63	3	97.2	0.0	0.0	-
6.67	2	67.8	0.0	0.0	-
6.71	2	68.4	5.8	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G04	2	73.0	0.0	0.0	-
G08	2	73.4	0.0	0.0	-
1.12	2	67.8	0.0	0.0	-
1.16	2	74.2	0.0	0.0	-
1.20	2	82.5	0.0	0.0	-
2.24	2	75.1	0.0	0.0	-
2.28	2	72.4	5.2	0.0	-
2.32	1	50.4	6.5	0.0	-
3.36	2	73.0	0.0	0.0	-
3.40	2	72.4	5.2	0.0	-
4.44	2	70.3	0.0	0.0	-
4.48	2	75.1	0.0	0.0	-
4.52	3	97.2	0.0	0.0	-
5.56	2	67.8	0.0	0.0	-
5.60	2	68.4	5.8	0.0	-
5.64	2	82.5	0.0	0.0	-
6.68	2	75.1	0.0	0.0	-
6.72	2	72.4	5.2	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
6.73	2	72.4	5.2	0.0	-
7.77	2	70.3	0.0	0.0	-
7.81	2	75.1	0.0	0.0	-
7.85	3	97.2	0.0	0.0	-
8.89	2	73.5	0.0	0.0	-
8.93	2	72.4	5.2	0.0	-
8.97	1	50.4	6.5	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
6.74	3	97.2	0.0	0.0	-
7.78	2	67.8	0.0	0.0	-
7.82	2	68.4	5.8	0.0	-
7.86	2	82.5	0.0	0.0	-
8.90	2	73.0	0.0	0.0	-
8.94	2	72.4	5.2	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
6.75	2	82.5	0.0	0.0	-
7.79	2	75.1	0.0	0.0	-
7.83	2	72.4	5.2	0.0	-
7.87	1	50.4	6.5	0.0	-
8.91	2	75.1	0.0	0.0	-
8.95	3	97.2	0.0	0.0	-

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
6.76	1	50.4	6.5	0.0	-
7.80	2	73.0	0.0	0.0	-
7.84	2	72.4	5.2	0.0	-
8.88	2	74.3	0.0	0.0	-
8.92	2	68.4	5.8	0.0	-
8.96	2	82.5	0.0	0.0	-

Description of project

The tables below describe the dwellings and common areas within the project

Common areas of unit building - Building1

Common area	Floor area (m²)
Car park area	3840.0
Lift car (No.3)	-
Garbage room 2 & garbage chute	111.0
Services Room - Ground	18.8

Common area	Floor area (m²)
Lift car (No.1)	-
Lift car (No.4)	-
Garbage room 3 & garbage chute	112.0
Services G-L8	132.0

Common area	Floor area (m²)
Lift car (No.2)	-
Garbage room 1 & garbage chute	102.0
Pump Room	16.5

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Comfort

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - Building1

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✓	✓
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star (> 6 but <= 7.5 L/min)	4 star	4 star	4 star	-	-	4.5 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1.12, 2.23, 3.34, 4.45, 5.56, 6.67, 7.78	1-phase airconditioning EER 2.5 - 3.0	-	1-phase airconditioning EER 2.5 - 3.0	-	0	0	-	-	-	-	0	yes

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
G01, G02, G09, 1.18, 1.21, 2.27, 2.28, 2.29, 2.32, 3.38, 3.39, 3.40, 3.43, 4.49, 4.50, 4.51, 4.54, 5.60, 5.61, 5.62, 5.65, 6.71, 6.72, 6.73, 6.76, 7.82, 7.83, 7.84, 7.87, 8.92, 8.93, 8.94, 8.97	1-phase airconditioning EER 2.5 - 3.0	-	1-phase airconditioning EER 2.5 - 3.0	-	0	0	-	-	-	-	1	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
G03, G04, G05, G06, G07, G08, G10, 1.11, 1.13, 1.14, 1.15, 1.16, 1.17, 1.19, 1.20, 2.22, 2.24, 2.25, 2.26, 2.30, 2.31, 3.33, 3.35, 3.36, 3.37, 3.41, 3.42, 4.44, 4.46, 4.47, 4.48, 4.52, 4.53, 5.55, 5.57, 5.58, 5.59, 5.63, 5.64,	1-phase airconditioning EER 2.5 - 3.0	-	1-phase airconditioning EER 2.5 - 3.0	-	0	0	-	-	-	-	0	no

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
6.66, 6.68, 6.69, 6.70, 6.74, 6.75, 7.77, 7.79, 7.80, 7.81, 7.85, 7.86, 8.88, 8.89, 8.90, 8.91, 8.95, 8.96												

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	-	3 star	-	-	-	-

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.			
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.			
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
G01	45.6	32.1
G02	75.2	53.1
G03	82.2	37.1
G04	36.0	25.5
G05	32.9	47.7

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
G06	48.6	34.0
G07	41.3	32.3
G08	52.1	25.9
G09	83.5	62.8
G10	73.6	49.3
1.11	45.5	36.2
1.12	49.9	44.4
1.13	56.3	27.4
1.14	20.9	25.5
1.15	30.0	35.7
1.16	35.1	34.0
1.17	27.4	38.4
1.18	34.6	30.4
1.19	53.8	37.0
1.20	69.6	40.6
1.21	70.0	32.8
2.22	34.2	54.1
2.23	52.9	60.0
2.24	57.3	26.9
2.25	16.6	31.0
2.26	30.8	71.2
2.27	35.9	53.3
2.28	27.6	47.3
2.29	36.6	37.5
2.30	54.6	37.1
2.31	51.8	70.5
2.32	45.9	37.9

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
3.33	46.1	42.4
3.34	64.6	44.9
3.35	65.8	25.3
3.36	20.5	28.7
3.37	37.0	49.5
3.38	40.5	44.3
3.39	31.9	39.8
3.40	40.2	37.0
3.41	60.0	31.8
3.42	60.1	49.4
3.43	52.4	31.7
4.44	33.8	46.6
4.45	49.3	44.8
4.46	59.2	26.0
4.47	18.8	29.3
4.48	27.7	49.1
4.49	39.2	48.4
4.50	31.2	41.5
4.51	39.9	43.6
4.52	56.3	36.3
4.53	46.3	55.6
4.54	49.7	34.0
5.55	37.3	54.2
5.56	57.0	54.7
5.57	59.5	25.8
5.58	19.2	29.1
5.59	18.7	46.8

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
5.60	39.7	48.1
5.61	31.6	41.0
5.62	39.6	47.0
5.63	55.5	36.7
5.64	48.3	71.9
5.65	50.9	33.5
6.66	47.7	42.8
6.67	66.0	44.9
6.68	65.9	25.1
6.69	23.6	26.9
6.70	21.0	65.1
6.71	40.0	48.0
6.72	35.6	34.2
6.73	41.9	40.1
6.74	56.2	35.5
6.75	55.5	53.6
6.76	53.9	31.4
7.77	40.2	55.4
7.78	66.0	55.6
7.79	58.8	26.5
7.80	18.7	27.0
7.81	28.1	38.7
7.82	46.0	36.8
7.83	29.3	35.8
7.84	33.6	44.2
7.85	55.2	37.1
7.86	43.0	59.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
7.87	51.1	33.8
8.88	36.5	35.0
8.89	72.9	40.1
8.90	29.3	38.6
8.91	28.1	58.4
8.92	54.5	51.5
8.93	35.6	48.9
8.94	49.2	51.2
8.95	65.0	51.8
8.96	60.0	65.0
All other dwellings	58.5	47.2

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-
Fire sprinkler system (No. 2)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	motion sensors	No
Lift car (No.1)	-	-	light-emitting diode	none	No
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.3)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.4)	-	-	light-emitting diode	connected to lift call button	No
Garbage room 1 & garbage chute	ventilation exhaust only	-	fluorescent	motion sensors	No
Garbage room 2 & garbage chute	ventilation exhaust only	-	fluorescent	motion sensors	No
Garbage room 3 & garbage chute	ventilation exhaust only	-	fluorescent	motion sensors	No
Pump Room	ventilation supply only	interlocked to light	fluorescent	motion sensors	No
Services Room - Ground	no mechanical ventilation	-	fluorescent	motion sensors	No
Services G-L8	no mechanical ventilation	-	fluorescent	motion sensors	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.6 (~25 mm); (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 3

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✔" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✔" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✔" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

BASIX COMMITMENTS NOTES

* TO BE READ IN CONJUNCTION WITH APPROVED BASIX REPORT*

WATER				
Fixtures	All Shower Heads	All toilet flushing systems	All kitchen taps	All bathroom taps
	3 star(>6 but<=7.5L/min)	4 star	4 star	4 star
Fire Sprinkler	Must be configured so that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed			
Appliances:	Dishwashers - 4.5 star water rating			
ENERGY <u>REFER TO APPROVED BASIX</u>	<i>Hot water system:</i> Central Gas – Refer to approved BASIX			
	<i>Bathroom ventilation system:</i> Individual fan, ducted to façade or roof manual switch on/off			
	<i>Kitchen ventilation system:</i> Individual fan, ducted to façade or roof manual switch on/off			
	<i>Laundry ventilation system:</i> Individual fan, ducted to façade or roof manual switch on/off			
	<i>Cooling system:</i> air-conditioning 1 Phase – EER 2.5 – 3.0 – to living areas			
	<i>Heating system:</i> air-conditioning 1Phase – EER 2.5 – 3.0 – to living areas			
	<i>Artificial lighting:</i> As per BASIX <i>Natural lighting:</i> As per BASIX			
	Appliances: Gas cooktop & electric oven Dishwashers: 3.0 star energy rating			
COMMON AREAS	<u>Refer to approved BASIX cert</u>			

NatHERS - THERMAL COMFORT SUMMARY

Building Elements	Material	Detail
External walls	Brick Veneer	R1.5 Bulk Insulation
Internal walls within units	Plasterboard on studs	-
Common walls between Units	Hebel + Furring Channel + Plasterboard	-
Common walls between units and lobby	Hebel + Furring Channel + Plasterboard	-
Common walls between Units & Fire Stairs/lift Shaft	200mm Concrete+ Furring Channel + Insulation + Plasterboard	R1.5 Bulk Insulation
Ceilings	Plasterboard	-
Roof – Level 7	Concrete – insulation to concrete exposed to external environment	R2.0 Bulk Insulation
Top Floor Roof	Concrete	R2.5 Bulk Insulation
Floors	Concrete	R1.0 Bulk Insulation to suspended floors of Unit 1.21
Windows	Aluminium framed, single glazed clear – Sliding Doors	U value 6.70 or less and a SHGC of 0.70 +/- 5%
	Aluminium framed, single glazed clear – Awning Windows	U value 6.70 or less and a SHGC of 0.57 +/- 5%
<i>Lighting: These Units have been assessed without downlights</i>		
<i>Bathroom / Ensuite / Laundry exhaust fans to have self-closing dampers</i>		

Note: If any of the elements nominated above change after the DA (Development Application) has been issued, a revised assessment should be undertaken prior to the Construction Certificate being issued with Construction drawings and specifications

Appendix I

Access Report

Job No: IAC-535

Wednesday, 19 October 2016

**SYNERGY DEVELOPMENT GROUP
PO BOX 3142,
LIVERPOOL WESTFIELD NSW 2170**

Reference: **ACCESS CONSULTANCY
DEVELOPMENT APPLICATION
1 BATHURST STREET LIVERPOOL 2170**

Attention: Mr Ahmad Refaieh

Dear Sir,

In accordance with your instructions we have prepared this access report to accompany the Development Application for the proposed development at 1 Bathurst Street, Liverpool NSW 2170.

This access report has been structured in accordance with the provisions of the Disability (Access to Premises) Standard 2010 as well as the provisions of AS4299 Adaptable Housing. We have assessed this design on the provisions of AS 4299 Class C.

Detailed documentation addressing the specific details and requirements of the access legislation, codes and standards will need to be documented in the detailed construction documentation.

Please feel free to contact us should you wish to discuss any aspect of this Access Report.

Yours sincerely,



RICHARD SEIDMAN

M.PropDev, BArch (Hons), ,
ARB Reg No 4700,
ACAA (Associate No 330) ,
Livable Housing Registered Assessor 10041



iAccess Consultants is a division of Seidman & Associates Pty Ltd ABN 37 002 648 615

ACCESS REPORT DEVELOPMENT APPLICATION

RESIDENTIAL DEVELOPMENT 1-5 BATHURST STREET LIVERPOOL NSW 2170



iAccess Consultants

A division of Seidman & Associates Pty Ltd

ABN 37 002 648 615

15 September 2016

Revision [B]

19 October 2016

Document control

Project: Residential Development
Development Application
1 Bathurst Street
Liverpool NSW 2170

Document Type: Access Report

Report Number: IAC-536

The following report register documents the development and issue of this and each subsequent report(s) undertaken by iAccess Consultants.

The technical and intellectual content contained herein remain the property of iAccess Consultants and have been prepared and may only be used for the development / buildings being the subject of this report.

Revision History:

Our Reference	Rev	Remarks	Issue Date
IAC-536	Draft	Draft access report prepared and issued to client	15 September 2016
IAC-536	A	Access report prepared and issued to client	27 September 2016
IAC-536	B	Access report revised and issued to client	19 October 2016



Richard Seidman

ARB Reg No 4700,
M.PropDev, BArch (Hons),
ACAA (Associate No 330)



iAccess Consultants is a division of Seidman & Associates Pty Ltd ABN 37 002 648 615

Contents

Document control	4
Executive Summary.....	6
Council requirements – Adaptable dwellings.....	7
Legislative framework	8
AS4299 – Visitability & Adaptability	9
Accessible Criteria.....	10
1. Siting	10
2. Access within the site	10
3. Building location	10
4. Landscaping.....	10
5. Security	10
6. Carparking.....	11
7. Fire Stairs.....	12
8. Letterboxes	12
9. Signage.....	13
10. Floor level	13
11. Floor finish – Slip resistance.....	14
12. Entrances, doorways and circulation areas	15
13. Vertical Transport.....	16
14. Sanitary facilities	18
15. Kitchen Areas.....	20
16. Bedrooms.....	20
17. Living Areas	21
18. Laundry Areas.....	21
19. floors	21
20. Lighting	22
21. Ancillary	22
22. Architectural Documentation	23
23. Information to be provided on completion for OC	24
Access Report	25

Executive Summary

This access report has been prepared to accompany the Construction Certificate Application for the proposed residential development located at 1 Bathurst Street Liverpool NSW 2170.

The content of this report certifies that the adaptable dwellings are capable of being modified, when required by the occupant to comply with AS4299:1995.

The development proposes 97 dwellings. Ten (10) dwellings will be designated as being adaptable. All the nominated adaptable dwellings are 1 bedroom dwellings. Unit Nos G.03, G.09, 1.20, 2.31, 3.42, 4.53, 5.64, 6.75, 7.86 and 8.97 are nominated as the adaptable to AS4299:1995 Class C units.

A total of 117 parking spaces is provided within this development. 11 parking spaces are designated as accessible parking spaces. 10 parking spaces are allocated to the adaptable nominated dwellings and 1 space is nominated as an accessible visitor parking space.

This report certifies that if the accessible requirements identified in the legislative framework applicable to this site that accessible compliance will have been achieved.

This access report does not rely upon any access Performance Solutions to demonstrate compliance with the relevant legislative requirements.

This access report will rely upon the certification of the lift installation by the lift manufacturer.

The site is located at the corner of Bathurst and Lachlan Streets Liverpool.

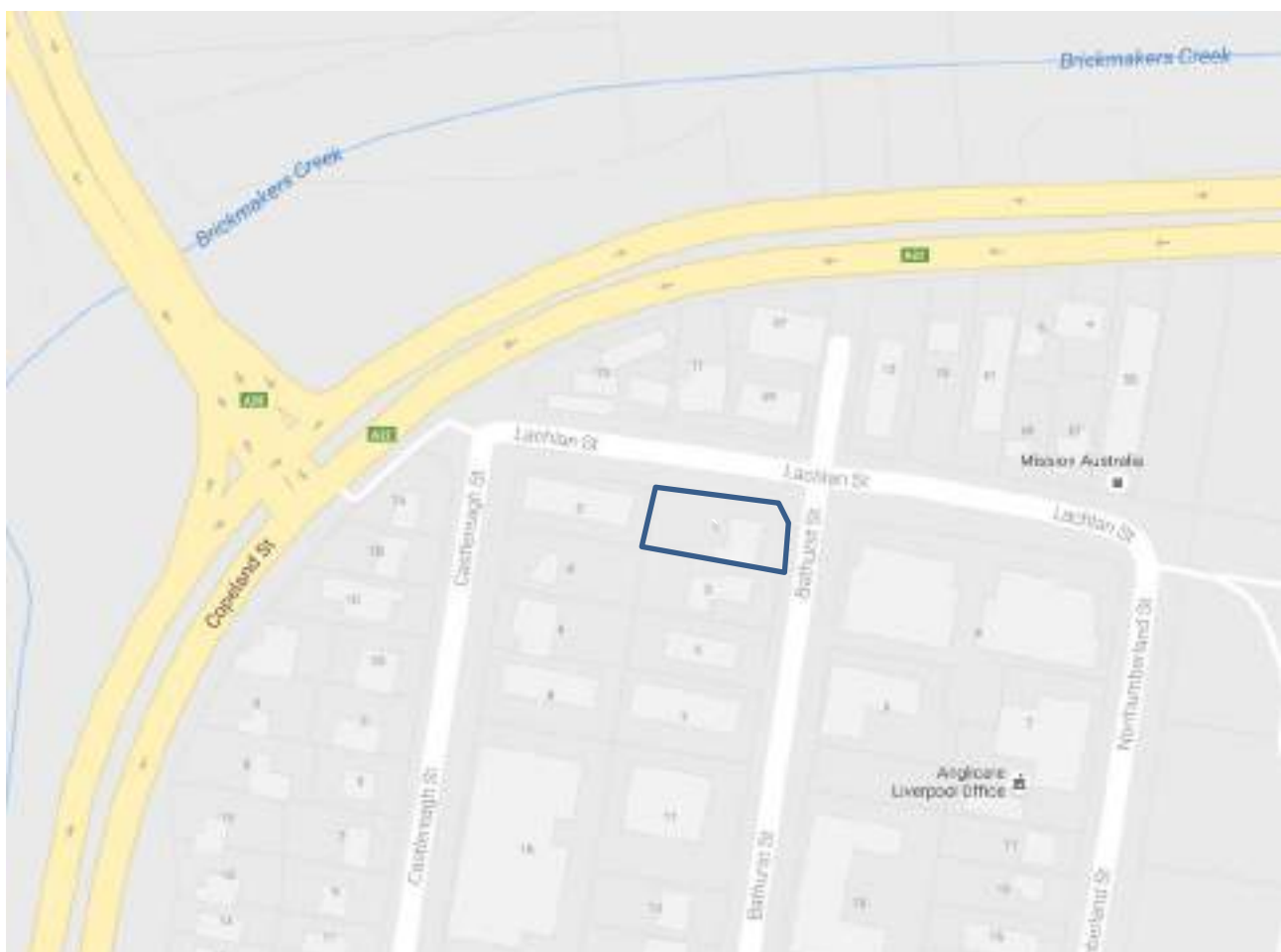


Figure 1 Location plan (source Google maps)

Council requirements – Adaptable dwellings

The site is located within the Liverpool Council LGA.

Liverpool Development Control Plan 2008 requires 10% of the residential dwellings to be AS4299 Class C compliant.

The development proposes 98 dwellings. Ten (10) dwellings will be designated as being adaptable. All the nominated adaptable dwellings are 1 bedroom dwellings. The extract from the plans following indicate adaptable dwellings provided in this development.

To achieve compliance with AS4299 compliance with AS 1428.1:2009 will need to be demonstrated.

The following floor plans indicate the adaptable unit types within this development.



Legislative framework

The legislation addressing accessibility is documented in the following Act, Code and Standards:

- Disability Discrimination Act 1992
- Disability (Access to Premises - Buildings) Standards 2010 (DDA 1992)
- National Construction Code (BCA 2014)
- AS1428.1:2009 Design for access and mobility - General requirements for access - New building work
- AS1428.2:1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities
- AS1428.4.1:2009 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators
- AS2890.6:2009 Parking facilities - Off-street parking for people with disabilities
- AS4299:2005 Adaptable Housing
- HB198 Guide to the specification and testing of slip resistance of pedestrian surfaces
- Liverpool DCP 2008

AS4299 – Visitability & Adaptability

1. Section 2.1 of AS4299 sets objectives to be satisfied. The objectives permit post construction modification of the dwelling In order to achieve compliance when needed however Objective 2.1(d) indicates that the initial design will allow for visitability through an accessible path of travel to the living room and toilet. The language is in the forward / entry direction and not exiting. It is obvious to assume that if one was able to enter then one is able to exit.
2. The following is an extract from AS4299 concerning the design and detailing of visitable dwellings:
 - 1.4.4 Circulation space—contains the net unobstructed area for a minimum height of 2000 mm above the finished floor or ground surface which is that space surrounding built elements, landscape elements, and fixtures and fittings required for movement into and within buildings.
 - 1.4.11 Visitable housing unit—housing unit which has at least one wheelchair accessible entry with an accessible path of travel to the living area and to a toilet that is either accessible or visitable.
 - 1.4.12 Visitable toilet—a toilet which has a space of minimum 1250 mm in front of the toilet × 900 mm wide clear of door swings and fixtures.
 - 2.2(a) Visitability - To be visitable by people who use wheelchairs, in that there must be at least one wheelchair accessible entry and path of travel to the living area and to a toilet that is either accessible or visitable.
 - 4.4.3 Toilet - Each housing unit shall be provided with either a visitable toilet or an accessible toilet
 - Figure 1.1 of AS4299 nominates the dimensions of a Visitable toilet as being 1850(L) x 900(w)mm
3. There is no requirement to provide any latchside clearance to the main door of the “visitable” apartment when exiting the dwelling as it would be expected that the resident of the unit would open the door for the guest to exit.

It would be expected that there would be latchside clearances to the main door of the “adaptable” units when exiting.

4. Clause 4.4.3 states that either a visitable or an accessible WC is to be provided. The size of the visitable toilet (1850 x 900mm) as depicted at Figure 1.1 of the Standard does not enable the provision of latchside clearance. Therefore, adopting the principle that each visitable unit is to be provided with a toilet designated as a visitable toilet in lieu of an accessible WC then there is no requirement to provide latchside clearances to the exit of the visitable toilet. In this instance where there are 2 bathrooms provided to each dwelling there is no requirement to make one bathroom visitable and the other accessible and similarly there is no requirement for the non-visitable bathroom to have latchside clearances to visitable units.

It is expected that the adaptable dwellings would have compliant latchside clearances when exiting the designated adaptable bathroom. It is not necessary for all bathrooms in each of the adaptable dwellings to have latchside clearances. If latchside clearances are not able to be achieved, then an alternative design solution will need to be developed.

Accessible Criteria

1. Siting

The site is located on the corner of Bathurst and Lachlan Streets Liverpool.

2. Access within the site

(a) Provision of on-site turning area for vehicles.

Suitable turning areas have been indicated on the plan for the manoeuvrability of vehicles on the site.

(b) Access for emergency vehicles.

Access for emergency vehicles is provided on street. There is no emergency vehicle parking on site

(c) Visibility of street names and numbers.

Details have yet to be provided for our review.

(d) Driveway location with regard to residents' safety and security.

The driveway to the site is located on the southern side of the site on Bathurst Street. The driveway links to the basement levels.

Details of the access control system to access and exit the parking levels has yet to be provided.

3. Building location

The design of the building has been undertaken so as to provide a balance between security and privacy.

4. Landscaping

The plans provided indicate a significant extent of landscape area at ground level. Detailed landscape plans have yet to be provided.

5. Security

Details of the external lighting of the site have yet to be provided.

Details of the security access intercom locations associated with the main entry, lobby and access to building locations and design have yet to be provided.

The position of the access control on the public side of the door will need to be installed in accordance with the manufacturer's instructions however the console is not to be installed closer than 500mm from any internal corner.

The door release button within the lobby is to be mounted between 900-1100mm AFFL and not closer than 500mm of an internal corner.

(A) Zone for Location of Switches

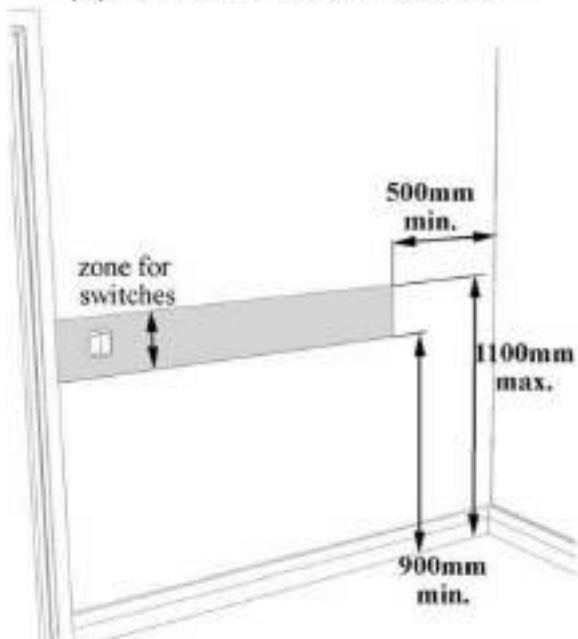


Figure 2 Locations for switches

The access control equipment will need to be located between 900-100 mm AFFL and not positioned within 500mm of an internal corner.

6. Carparking

Unrestricted on street parking is provided on Bathurst and Lachlan Streets.



Figure 3 Street view along Bathurst Street indicating on street parking.

An individual vehicle parking space has been provided for each of the 10 adaptable dwellings. A single accessible parking space has been provided for use by visitors to the development.

Six of the accessible parking space have been sized to meet the requirements of AS28906 in lieu of the provisions of clause 3.7.2. of AS4299. Five of the parking spaces have been sized to satisfy the requirements of Clause 3.7.2 of AS4299:1995. This approach is considered acceptable.

Lift access is provided from the basement parking level to each level of the development

The line marking for the 10 accessible parking spaces will need to satisfy the requirements of Section 3 of AS2890.6:2009. The international symbol of access is not required to be applied to the floor of the nominated 10 accessible parking spaces as the parking spaces are on title of the individual units.

The single accessible visitor parking space will need to be line marked to comply with the provisions of Section 3 of AS2890.6:2009. (please refer to the technical sheet attached to this report.)

3.2 SPACE DELINEATION

Pavement markings specified in Items (a) and (b) of this Clause shall be yellow and shall have a slip resistant surface. Raised pavement markers shall not be used for space delineation.

Pavement markings shall be provided as follows:

- (a) *Dedicated parking spaces shall be outlined with unbroken lines 80 to 100 mm wide on all sides excepting any side delineated by a kerb, barrier or wall.*
- (b) *Shared areas shall be marked as follows:*
 - (i) *Walkways within or partly within a shared area shall be marked with unbroken longitudinal lines on both sides of the walkway excepting any side delineated by a kerb, barrier or wall.*

7. Fire Stairs

The detailing of the fire stairs will need to satisfy requirements of NCC Clause D3.3(a)(iii) which requires fire isolated stairs to satisfy the requirements of Clause 11.1(f) and (g) of AS1428.1:2009 (extract follows)

- f) *At the nosing, each tread shall have a strip not less than 50 mm and not more than 75 mm deep across the full width of the path of travel. The strip may be set back a maximum of 15 mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall comply with Clause 7.2 and Clause 7.3.*
- g) *Where the luminance contrasting strip is not set back from the front of the nosing then any area of luminance contrast shall not extend down the riser more than 10 mm.*

8. Letterboxes

The position of the letterboxes for this development are nominated within the lobby zone of the development.

The detailing of the letterboxes will need to comply with the rules of Australia Post and AS4253:1994 – Mailboxes. Details of the mailboxes will need to be revised from that as detailed. Specific reference is directed to mounting position of mailboxes above the floor.

Mailboxes should be positioned so that the aperture is between 900 mm and 1200 mm above ground level and conveniently located so that the delivery officer does not have to dismount from a bicycle or motorcycle to insert mail.

Groups of mailboxes for flats or apartments may be positioned at right angles to the footpath or roadway and parallel to the driveway with apertures located within the height range of 600 to 1600 mm. Mailboxes positioned in this way should commence as close to

the footpath boundary as practicable, and provide adequate room for the delivery officer to park a bicycle or motorcycle and place mail in the boxes safely.

All mailboxes should be clearly labelled with the street number or flat or apartment number clearly displayed below the aperture.

Where there is a group of mailboxes, numbers should run in a logical sequence and the street number should be displayed in a prominent position near the mailboxes so that it can be easily read from the footpath.

9. Signage

Directional and wayfinding signage will need to comply with the signage provisions of AS4299.

- (a) Be presented in large print (70–80 mm height) letters and raised 6–8 mm from background.
- (b) Be of sanserif type—upper face case preferred—light colour (e.g. white/yellow) against a dark background.
- (c) Be positioned 1500–1650 mm from ground height.
- (d) Be placed centrally on the door or letterbox.
- (e) Be well lit with matt or non-reflecting finish.

The mounting heights of signage will need to incorporate the viewing zones as identified in AS1428.2:1992. The zoned for signage is identified as being between 729 – 1709 mm AFFL.

The mounting heights of signage will need to incorporate the viewing zones as identified in AS1428.2:1992. The zoned for signage is identified as being between 729 – 1709 mm AFFL.

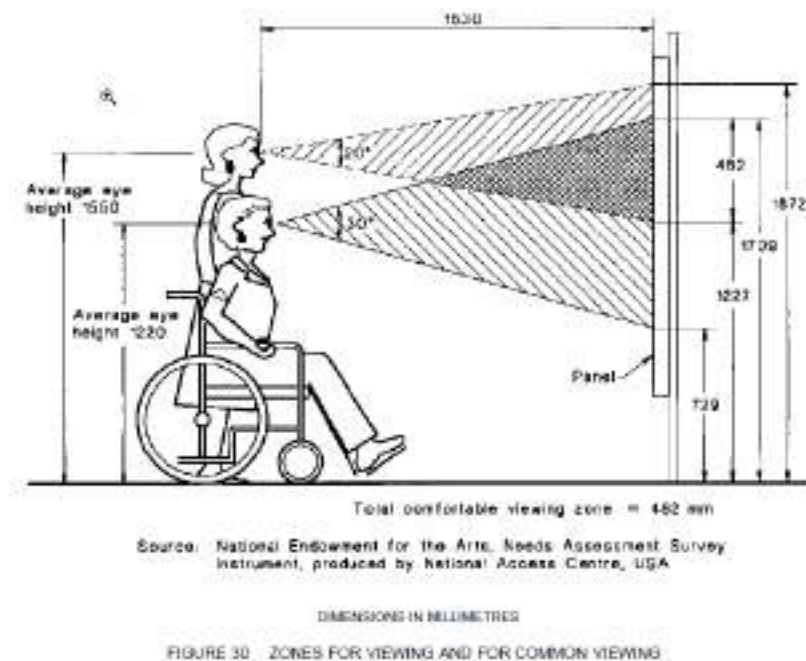


Figure 4 Extract from Australian Standard indicating acceptable view range for signage

10. Floor level

Floors are level throughout all residential levels of this development.

11. Floor finish – Slip resistance

The slip resistance of the ground floor finishes will need to satisfy the requirements of NCC Table D2.14 and Table 3A of the HB198:2014. The extract from HB198 indicates the slip resistance levels to be satisfied.

TABLE 3A
MINIMUM WET PENDULUM TEST OR OIL-WET INCLINING PLATFORM
CLASSIFICATIONS THAT ARE DEEMED TO SATISFY THE BUILDING
APPLICATIONS IN THE NATIONAL CONSTRUCTION CODE

Location	Wet pendulum test	Oil-wet inclining platform test
Stair Treads and Stairway Landings in Buildings Covered by NCC Volumes One and Two		
Stair treads and a stairway landing (when dry)	P3	R10
Stair treads and a stairway landing (when wet)	P4	R11
Nosings for Stair Treads and Stairway Landings in Buildings Covered by NCC Volumes One and Two		
Dry stair tread, a stair non-skid nosing strip and a stairway landing	P3	
Wet stair tread, a stair non-skid nosing strip and a stairway landing	P4	
Ramps in Buildings Covered by NCC Volumes One and Two		
Ramps not steeper than 1:14 gradient (when dry)	P3	R10
Ramps not steeper than 1:14 gradient (when wet)	P4	R11
Ramps steeper than 1:14 up but not steeper than 1:8 (when dry)	P4	R11
Ramps steeper than 1:14 up but not steeper than 1:8 (when wet)	P5	R12

In addition, the slip resistance of external pavement will need to satisfy the slip resistance requirements of Table 3B of HB198:2014. Specific attention is directed to the slip resistance requirements to be satisfied of undercover car parks.

TABLE 3B
WET PENDULUM TEST OR OIL-WET INCLINING PLATFORM
CLASSIFICATIONS FOR APPLICATIONS WHERE THE NCC DOES NOT
REQUIRE SLIP RESISTANCE

Location	Wet pendulum test	Oil-wet inclining platform test
External Pavements and Ramps		
External ramps including sloping driveways, footpaths etc. steeper than 1 in 14	P5	R12
External ramps including sloping driveways, footpaths, etc., under 1:14; external sales areas (e.g. markets), external carpark areas, external colonnades, walkways, pedestrian crossings, balconies, verandas, carports, driveways, courtyards and roof decks	P4	R11
Undercover car parks	P3	R10

Figure 5 Extract from HB198 indicating slip resistance requirements.

Changes in floor finishes will need to satisfy the following maximum tolerances:

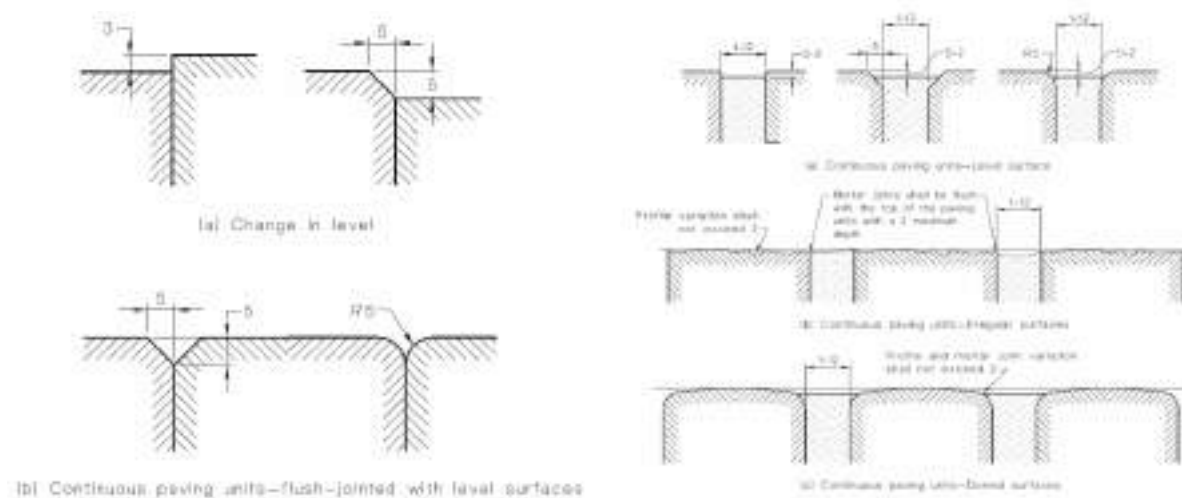


Figure 6 Acceptable tolerances for floor finishes.

12. Entrances, doorways and circulation areas

Access to the building lobby is by way of auto sliding doors. Access to be provided by way of an access control system. The particulars of the system have yet to be finalised. If the access control system has a video interface, then the unit will need to be installed in accordance with the manufacturer's instructions and it will be necessary to ensure that the unit is no closer than 500mm from an internal corner.

If the door is a glass door, then visual indicators on glazing will need to be provided on the glass to satisfy the requirements of Clause 6.63 of AS1428.1:2009 – Visual Indicators on glazing.

Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level.

Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.

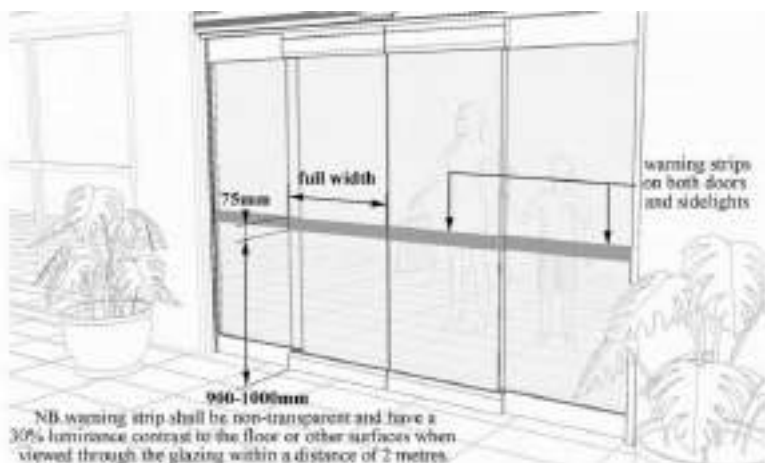


Figure 7 Indication of placement of visual indicators on glazing.

Doors to visitable and adaptable dwellings will need to have lever hardware compliant to Clause 13.5 of AS1428.1:2009. Lever hardware will need to be mounted between 900-1100mm AFFL.

Internal corridors to the dwellings will need to have a minimum clear width of 1000mm between any skirtings.

13. Vertical Transport

This scheme proposes two lifts for this development servicing all levels of the development. A goods lift is located in the south west corner of the site servicing ground and the basement levels only.

The design proposes 2 passenger lifts to service all levels of this development. The lift services the basement to level 8). As the lift travel is greater than 12m the minimum floor size of the lift car will need to be 1400 x 1600mm. The detailing of the lift car will need to be compliant to the provisions of AS1735.12.

Attention is directed to the placement of the lift call button at each level. Many lift suppliers are locating the call button for single lift car installations in the jamb of the lift door assembly. If this surface is not flush with the adjoining wall the position of the button is not compliant with the provisions of Clause 13 of AS1428.1.



Figure 8 image of non-compliant lift call button installation

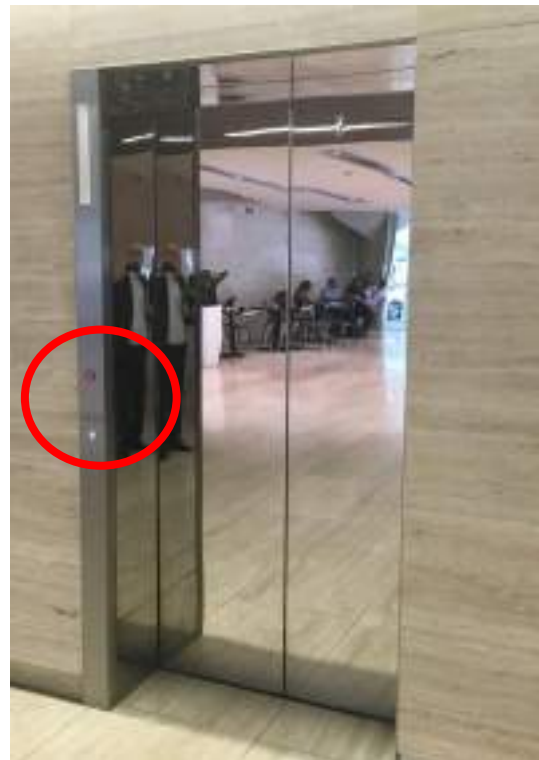


Figure 9 image of compliant lift call button installation

The following table when referenced with the requirements of AS1735.12 provides a checklist of elements to be satisfied in the lift installation.

CLAUSE	REQUIREMENT TO BE SATISFIED	STATUS	COMMENT / ACTION
Section 2	The minimum lift car internal dimensions shall be 1100 mm wide by 1400 mm deep between the inside of the closed car doors to the inside back wall of the car.		
	The minimum clear width of car door openings shall be not less than 900 mm.		

CLAUSE	REQUIREMENT TO BE SATISFIED	STATUS	COMMENT / ACTION
3.1	Any carpet shall have a pile length above the carpet substrate of not more than 6 mm. NOTE: Car floor surfaces should be firm and slip resistant.		
3.2	Where Type C safety gear as classified by AS 1735.2 is used, it shall be possible for a lift mechanic to gain access to the release mechanism of the safety gear while the lift car is occupied by a person in a wheelchair.		
4.1	Lift car doors and landing doors shall be of the horizontally sliding type, power- operated, and automatically controlled.		
4.2	Lift car doors shall be fitted with a passenger-protection system which, while activated, will hold the doors in the open position. The system shall not be nullified by objects with a reflective surface		
4.3	When the doors are responding to a landing button, they shall remain fully open for a minimum of 6 s		
5.1	Surfaces (including button cover plates), within 300 mm of car control buttons, that are parallel to the face of the buttons and the button cover plate shall have a finish that reduces glare and reflection.		
5.2	Protruding edges		
5.3	Handrails		
5.4	Seat		
Section 6	Lift car levelling		
7.1	Each landing served shall be provided with one or more control buttons to call a lift		
7.2.1	Number of control panels		
7.2.2	Control Buttons on Control Panels		
7.2.3	Key Pads		
7.3.1	Height above floor		
7.3.2	Distance from corners		
7.3.3	At lift landings		
7.3.4	Security system operating devices		
7.4.1.1	Control button movement		
7.4.1.2	Force to operate call button 5N		
7.4.2	Size of button (19mm)		
7.4.3	Separation		
7.4.4	Projection		
7.4.5	Surface		
7.4.6	Edges & Corners		
7.4.7	Inclination		
7.4.8	Highlight		
7.4.9	Identification of control Buttons		
8.1	Audible Information		
8.2	Visible Information		
8.3	Tactile information		
8.4	Shape of Characters		

CLAUSE	REQUIREMENT TO BE SATISFIED	STATUS	COMMENT / ACTION
8.5	Indication of direction of travel		
8.6.1	Car position Indicator		
8.6.2	Acknowledgement of floor calls		
9.1	Communication system		
9.2	Communication system		
9.3	Lift Identification system		
9.4	Permanently attended location		
9.5	Lift Car		
10.1	Compliance with AS1680		
10.2	General Lighting		
10.3	Lighting of lift car controls		

14. Sanitary facilities

It will be necessary to ensure that the bathroom of the dwellings is capable of being adapted to meet the needs of a person with disabilities. It is not required that the bathroom be provided in the post adapted configuration at the time of construction.

Post adaptation drawings for the adaptable dwelling will need to be prepared indicating compliance with this provision.

The design as proposed for unit G.03 will achieve a compliant accessible WC facility when adapted.

The rough in of drainage will need to allow for the pre and post adapted configuration of these units.

Details of the non-slip floor finish to the bathrooms will need to be provided. The floor tile finish will need to achieve a slip resistance of P2/A (HB198 - Guide to the specification and testing of slip resistance of pedestrian surfaces)

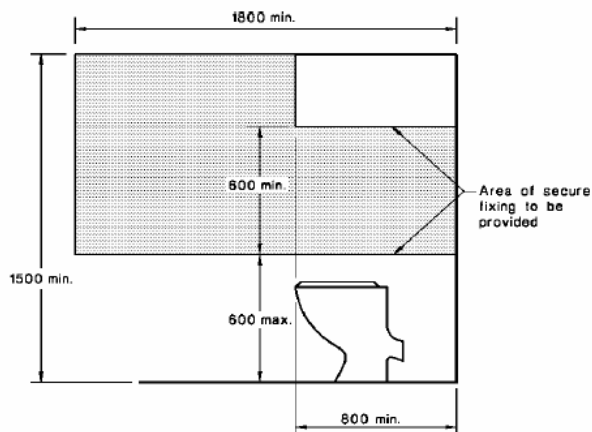
Compliant WC facilities have been nominated.

TMV details are yet to be provided

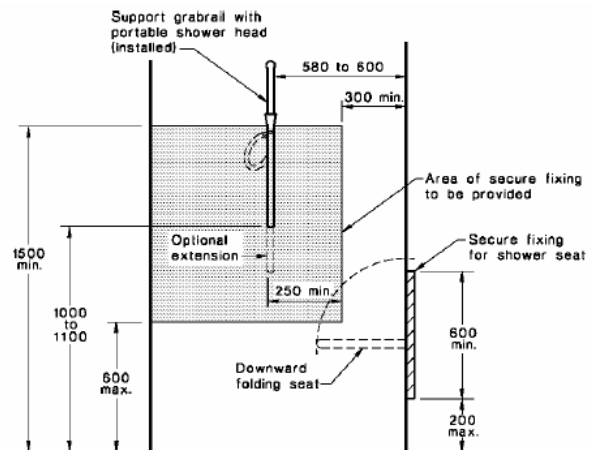
Tapsets will need to be specified with lever or capstan handles when in the adapted configuration.

The detailing of the bathroom will need to include a wall cabinet with a light above and a double GPO adjacent to the mirror. Details of the relationship of hand basin and vanity over will need to be provided. Attention is drawn to the clearances associated with lever tapware.

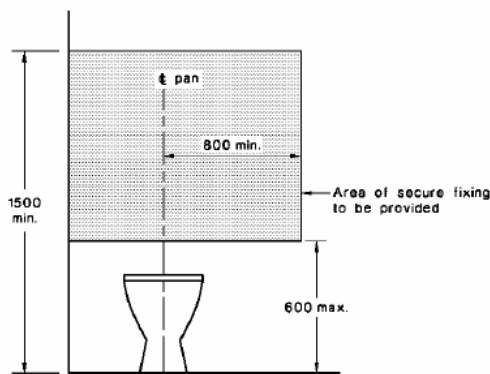
Provision of wall strengthening for grabrails will need to be provided adjacent to the WC, shower and bath of the adaptable bathroom. The wall strengthening is to be able to withstand the force of 1100kn in any direction. The use of 12mm plywood or similar in the locations indicated in the following diagrams will provide adequate strengthening.



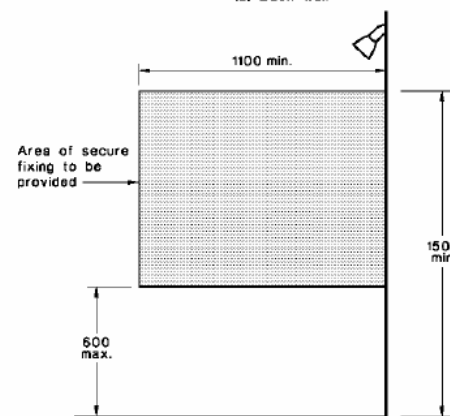
(a) Side view



(a) Back wall



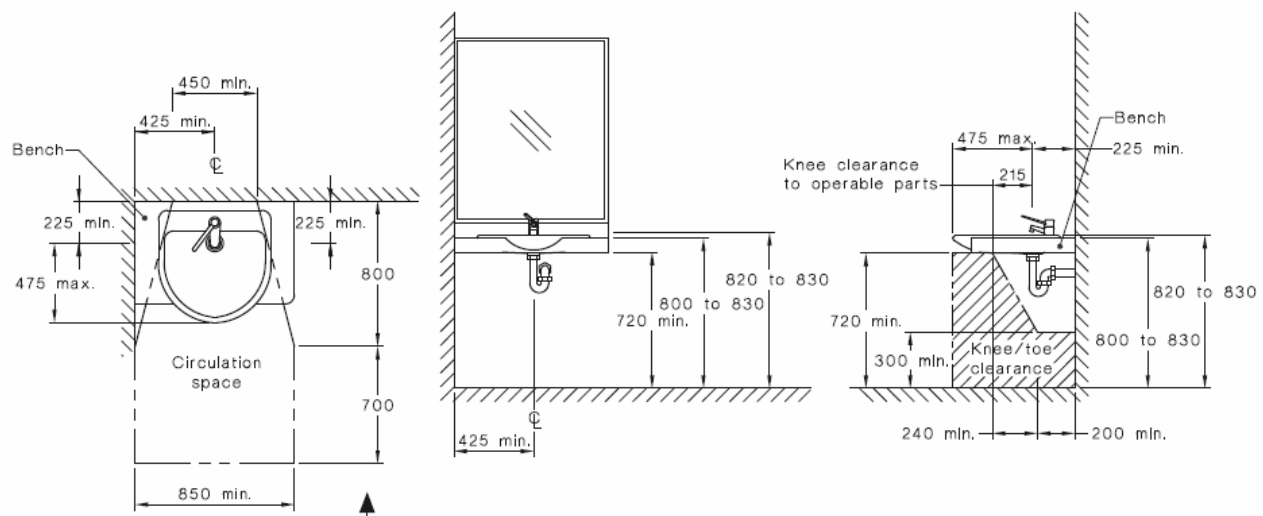
(b) Front view



(b) Side wall

The shower compartment will need to have an area of 1160 x 1100mm. The position of the shower rose, tapware and the soap holder recess will need to be compliant to the provisions of Clause 15 of AS1428.1

A wash basin with compliant circulation to AS1428.1 will need to be provided.



15. Kitchen Areas

Post adaptation drawings will need to be prepared indicating compliance with this provision.

The following is an indicative example of the kitchen design in the post adapted configuration.

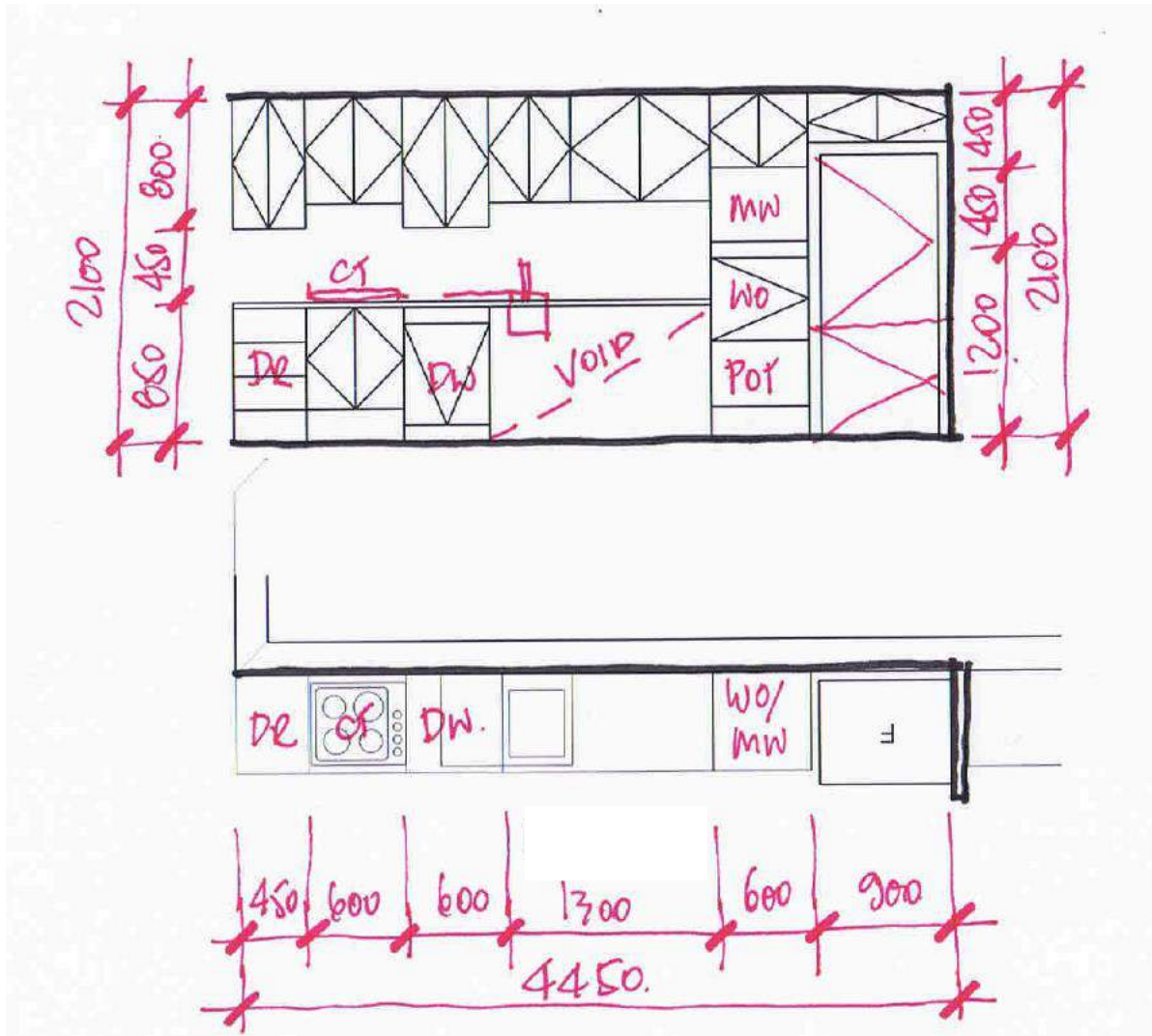


Figure 10 Schematic post adapted kitchen arrangement Typical

16. Bedrooms

Post adaptation drawings have been prepared indicating compliance with this provision.

- Bedroom areas At least one bedroom shall be capable of accommodating a queen size bed and a wardrobe and the circulation space requirements of AS 1428.2 clear of wardrobe fixtures.
- Window sills - Sleeping area window sills should be at a maximum 600 mm above floor level. Elevations of the window wall to the bedrooms will need to be provided
- Full height glazed panels or door units where provided shall have a transom at 600 to 730 mm above floor. The glazing shall be of safety glazing materials in accordance with AS 1288.
- Power outlets - A minimum of two double socket general purpose outlets shall be provided on the wall of the bedroom where the bedhead is likely to be located. GPOs should be provided to

opposite walls in the main bedroom. These should be approximately 1800 mm apart. Height to be in accordance with Clause 4.11.1.

- (e) Light switches - Two-way light switches should be provided, one located near the planned bed position. Height to be in accordance with Clause 4.11.1.
- (f) Telephone - A telephone outlet should be provided in each bedroom next to the bed on the side closest to the door.
- (g) Television outlet - A television outlet should be provided in each bedroom on the opposite wall to the bedhead, adjacent to the double GPO.
- (h) Sliding doors to wardrobe - Wardrobe sliding doors are desirable, with a full length mirror on the most accessible door.

17. Living Areas

- (a) Circulation space Provision shall be made for circulation space to enable a 360° wheelchair turn after the furniture has been placed.
- (b) 4.7.2 Windows Living area window sills should be at a maximum 730 mm above floor level. Details indicating compliance with this requirement will need to be provided
- (c) Full height glazed panels or door units where provided shall have a transom at 600 to 730 mm above floor. The glazing shall be of safety glazing materials in accordance with AS 1288.
- (d) Power outlets A minimum of four double GPOs should be provided in the living room. Height to be in accordance with Clause 4.11.1.
- (e) Telephone A telephone outlet shall be provided in the living-dining area. This should be adjacent to a GPO.
- (f) Television outlets – 2 television outlets should be provided in the living area; one location to enable viewing from dining and kitchen. Locate television outlets adjacent to GPOs.
- (g) Security screens Exterior doors and windows should have the capability for fitting security screens.

18. Laundry Areas

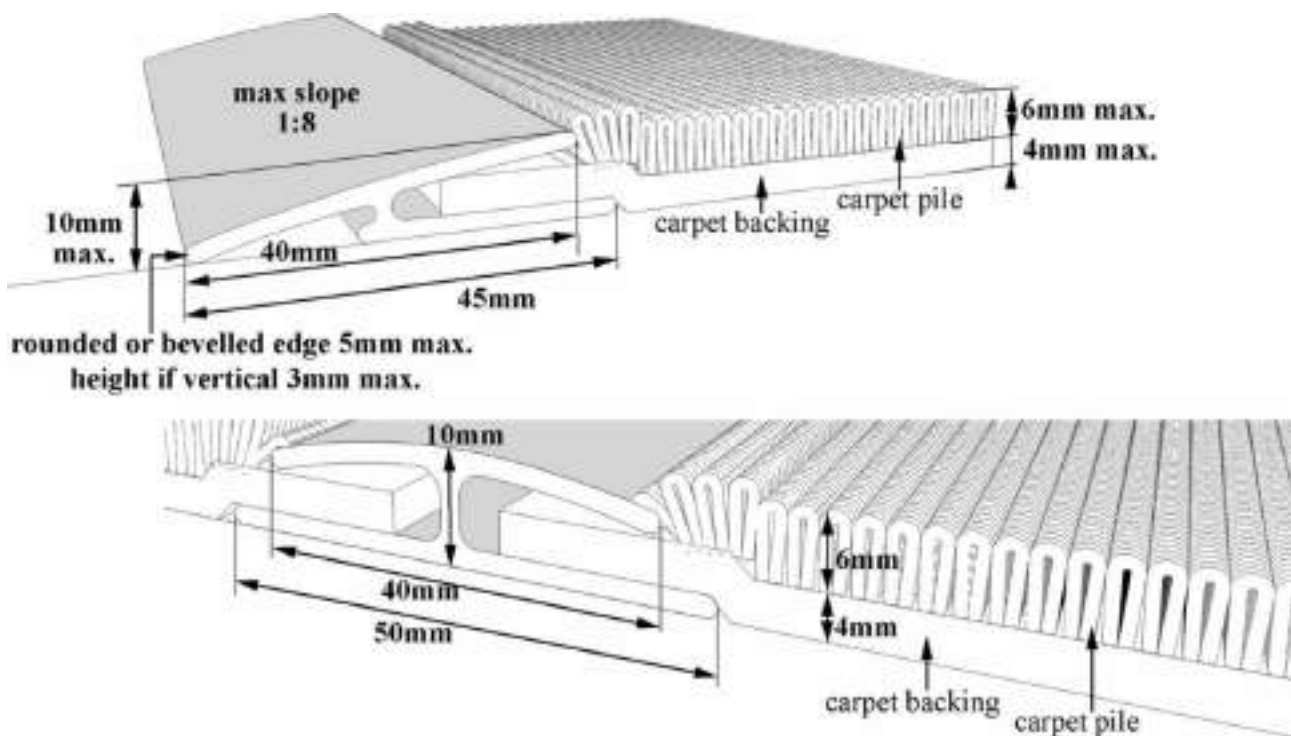
The plans provided indicate laundry cupboard arrangements. When the doors to the laundries are in the open position a 1500 x 800mm circulation zone is available in front of the fixtures

19. floors

Detail of floor finishes to bathrooms, laundries and kitchen areas have yet to be provided. Specific attention is directed to the nonslip provisions of the floor tiles to these areas.

In addition, it will be necessary to detail the junctions between differing materials in accordance with the provisions of AS 1428.1.

The pile height of the carpet will need to comply with the provisions of both the BCA and AS1428.1:2009. To achieve compliance, the carpet will need to be direct stuck to the floor substrata without the use of underlay.



20. Lighting

Lighting levels will need to satisfy the provisions of Table 4.1 of AS4299.

TABLE 4.1
RECOMMENDED ILLUMINATION LEVELS
FOR PEOPLE WITH VISION IMPAIRMENT

Area	Illumination level (Lux)	
	General	For people with vision impairment
Entries and passages	50-150	300
Steps, stairs and ramps	50-160	350
NOTE: The higher level of illumination on steps and stairs is required for safety reasons		
Living areas	110-200	300-350
Kitchens — general	160	300
— task lighting	240	550-600
Laundries — general	100	300
— task lighting	250	550-600
Toilets	80	300-350
Bathrooms — general	100	300-350
— task lighting	200	550-600
Bedrooms	50-150	300
Garages — general	50	300
— task lighting	200	550-600

21. Ancillary

4.11.1 Switches and power points. These shall be as follows:

- (a) Switches Light switches shall be located at a height not less than 900 mm or more than 1100 mm above the finished floor and in line with the door handles. Switches

shall be located adjacent to door handles where practical. Two-way switching is preferred.

Rocker action, toggle or push pad switches with a recommended width of 35 mm are preferred. For people with severe finger or hand disabilities, these allow convenient operation by arm or elbow.

- (b) GPOs shall be located at a height of not less than 600 mm, with a preferred height of 1000 mm, above the finished floor and in line with the door handles. GPOs shall be located not less than 500 mm horizontally from internal corners

4.11.2 Electrical distribution board. The electrical distribution board should be located inside the housing unit and be accessible. It is preferable that the distribution board be located between 900-1100mm AFFL.

4.11.3 Additional telephone outlets. The main living area should be prewired for a second outlet.

4.11.4 Windows Operating controls should be located in an accessible position.

4.11.5 Linen storage A linen storage cupboard of minimum 600 mm width, with adjustable shelving should be provided.

4.11.6 External areas Provision should be made for the following facilities which may be required after adaptation:

- (a) Garbage storage area which is accessible from the housing unit and which is connected to an accessible path leading to an off-site disposal point.
- (b) Wheelchair storage Secure, weather-protected outside storage facilities for wheelchairs.
- (c) Charging facilities Secure facilities for recharging wheelchair batteries along with an external, weatherproof GPO.
- (d) Guide dog accommodation Paling fence minimum 1500 mm height with grassed area for toileting and provision for doggy door entrance on door nearest to grassed area.

4.11.7 Fire safety items. For guidance on fire protection items such as fire blankets and related measures, e.g. emergency procedures

22. Architectural Documentation

The following documents prepared by ALGORRY ZAPPIA & ASSOCIATES PTY LTD form the basis of this access report:

DA1349-16-A04-B
DA1349-16-A05-A
DA1349-16-A06-B
DA1349-16-A07-A
DA1349-16-A08-A
DA1349-16-A09-A
DA1349-16-A10-A
DA1349-16-A11-A
DA1349-16-A12-A
DA1349-16-A13-A

23. Information to be provided on completion for OC

The following table schedules the accessibility elements to be evidenced at Occupation Certificate Stage.

ACCERSS REQUIREMENTS TO BE PROVIDED / DEMONSTRATED AT OCCUPATION CERTIFICATE	SATISFIED
1. Pre and post adaptation drawings for the nominated dwellings	
2. Slip Resistance – Certification of the slip resistance of flooring to the kitchen and bathroom areas.	
3. Detailed post adaptation drawings of the bathroom demonstrating compliance with the provisions of Clause 4.4 of AS4299. The method of adaptation of the bathroom is to be provided. Specific attention is directed to the placement of connection points for the WC pan, shower point (700mm AFFL) and recessed soap holder.	
4. Detailed post adaptation drawings of the kitchen demonstrating compliance with the provisions of Clause 4.5 of AS4299	
5. Detailed post adaptation drawings of the bedroom demonstrating compliance with the provisions of Clause 4.6 of AS4299	
6. Photographic confirmation that the wall strengthening for the future installation of grabrails associated with the WC pan and shower enclosure has been provided in accordance with the provisions of Figure 4.5 - 4.7 of AS4299,	
7. Bathroom - Wall cabinet The bathroom should include a wall cabinet with a light above. A double GPO shall be located adjacent to the mirror.	
8. Bedrooms 4.6.3 Power outlets A minimum of two double socket general purpose outlets shall be provided on the wall of the bedroom where the bedhead is likely to be located. GPOs should be provided to opposite walls in the main bedroom. These should be approximately 1800 mm apart. Height to be in accordance with Clause 4.11.1. 4.6.4 Light switches Two-way light switches should be provided, one located near the planned bed position. Height to be in accordance with Clause 4.11.1. 4.6.5 A telephone outlet should be provided in each bedroom next to the bed on the side closest to the door. 4.6.6 A television outlet should be provided in each bedroom on the opposite wall to the bedhead, adjacent to the double GPO. 4.6.7 Sliding doors to wardrobe. Sliding doors are desirable, with a full length mirror on the most accessible door.	
9. Living Areas 4.7.3 Power outlets A minimum of four double GPOs should be provided in the living room. Height to be in accordance with Clause 4.11.1. NOTE: Power outlets are relevant for maximizing potential layouts of television sets, etc. which are important to those people with disabilities who may be shut in. 4.7.4 Telephone A telephone outlet shall be provided in the living-dining area. This should be adjacent to a GPO. 4.7.5 Television outlets Two television outlets should be provided in the living area; one location to enable viewing from dining and kitchen. Locate television outlets adjacent to GPOs. 4.7.6 Security screens Exterior doors and windows should have the capability for fitting security screens.	
10. Additional elements 4.11.2 Electrical distribution board The electrical distribution board should be located inside the housing unit and be accessible. 4.11.3 Additional telephone outlets The main living area should be prewired for a second outlet. 4.11.4 Windows Operating controls should be located in an accessible position. 4.11.5 Linen storage A linen storage cupboard of minimum 600 mm width, with adjustable shelving should be provided. 4.11.6 External areas Provision should be made for the following facilities which may be required after adaptation: (a) Garbage storage area which is accessible from the housing unit and which is connected to an accessible path leading to an off-site disposal point. (b) Wheelchair storage Secure, weather-protected outside storage facilities for wheelchairs. (c) Charging facilities Secure facilities for recharging wheelchair batteries along with an external, weatherproof GPO. (d) Guide dog accommodation Paling fence minimum 1500 mm height with grassed area for toileting and provision for doggy door entrance on door nearest to grassed area.	

Access Report

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
A4.1	Classifications Class 2 — a building containing 2 or more sole-occupancy units, each being a separate dwelling.	Note
	Class 7a — a carpark	Note
DP1	Performance requirement Access must be provided, to the degree necessary, to enable: a) people to: i. approach the building from the road boundary and from any <i>accessible</i> carparking spaces associated with the building; and	Accessible access has been provided across the boundary to the residential lobby.
	ii. approach the building from any accessible associated building; and	Not Applicable
	iii. access work and public spaces, accommodation and facilities for personal hygiene; and	Accessible access has been provided to all levels and areas of this development
	b) Identification of accessways at appropriate locations which are easy to find.	Information yet to be supplied
DP4	Performance requirement <i>Exits</i> must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to: a) the travel distance; and b) the number, mobility and other characteristics of occupants; and c) the function or use of the building; and d) the height of the building; and e) Whether the <i>exit</i> is from above or below ground level.	Satisfied

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
DP6	Performance requirement So that occupants can safely evacuate the building, <i>accessways</i> to <i>exits</i> must have dimensions appropriate to: a) the number, mobility and other characteristics of occupants; and b) the function or use of the building.	Satisfied The provision of a Dts approach for fire stairs satisfies this requirement. Refuge areas have not been nominated as part of the fire stair system. Details addressing how people with disability are to be evacuated in the event of an emergency will need to be provided with the Construction Certificate documentation. It has been assumed that the lift service will be made available to satisfy this requirement in accordance with NCC objective EO1: The Objective of this Part is to— (a) facilitate the safe movement of occupants; and - facilitate access for emergency services personnel to carry out emergency procedures and assist in the evacuation of occupants
DP8	Performance requirement Carparking spaces for use by people with a disability must be: a) provided, to the degree necessary, to give equitable access for carparking; and b) designated and easy to find.	Satisfied
DP9	Performance requirement An inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.	Not Applicable
D3.1	General Building Access Requirements Class 2	
Table D3.1	Common areas in buildings where one or more sole- occupancy units are made available for short-term rent	Satisfied
	From a pedestrian entrance required to be accessible to at least one floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level.	Satisfied

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
	To and within not less than one of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, individual shop, eating area, or the like.	Satisfied
	Where a ramp complying with AS 1428.1 or a passenger lift is installed- (a) to the entrance doorway of each sole-occupancy unit; and (b) to and within rooms or spaces for use in common by the residents, Located on the levels served by the lift or ramp.	Satisfied It will be necessary to confirm that the latchside clearances (530mm) requirements of Clause 13 of AS1428.1:2009 have been satisfied.
D3.1	General Building Access Requirements Class 7a	
Table D3.1	To and within any level containing accessible carparking spaces	Satisfied
D3.2	Access to Buildings	
	(1) An <i>accessway</i> must be provided: (a) to a building <i>required</i> to be <i>accessible</i> ;	Satisfied
	(b) from the main points of a pedestrian entry at the allotment boundary; and I. from another <i>accessible</i> building connected by a pedestrian link; and II. from any <i>required accessible</i> carparking space on the allotment.	Satisfied
	(2) In a building <i>required</i> to be <i>accessible</i> , an <i>accessway</i> must be provided through the principal pedestrian entrance, and: a. through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and b. in a building with a total <i>floor area</i> more than 500sqm, a pedestrian entrance which is not <i>accessible</i> must not be located more than 50 m from an <i>accessible</i> pedestrian entrance; except for pedestrian entrances serving only areas exempted by clause D3.4.	Satisfied

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
D3.3	Parts of buildings to be accessible	
	In a building <i>required</i> to be accessible: a) every ramp and stairway, except for ramps and stairways in areas exempted by clause D3.4, must comply with:	Satisfied
	i. for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1; and	Satisfied
	ii. for a stairway, except a fire-isolated stairway, clause 11 of AS 1428.1;	Compliance with this requirement will need to be demonstrated as part of the construction documentation
	iii. for a fire-isolated stairway, clause 11.1(f) and (g) of AS 1428.1; The following is an extract from AS1428.1 addressing this item: (f) At the nosing, each tread shall have a strip not less than 50 mm and not more than 75 mm deep across the full width of the path of travel. The strip may be set back a maximum of 15 mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall comply with Clause 7.2 and Clause 7.3. (g) Where the luminance contrasting strip is not set back from the front of the nosing then any area of luminance contrast shall not extend down the riser more than 10 mm.	Compliance with this requirement will need to be demonstrated as part of the construction documentation
	b) every passenger lift must comply with clause E3.6;	The plans propose that 2 passenger lifts service this development. These lifts service all levels of this development. As the rise is greater than 12m then the lift car size will need to be a minimum of 1400 x 1600mm. Compliance with this requirement will need to be demonstrated as part of the construction documentation

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
	c) <i>accessways</i> must have: i. passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an <i>accessway</i> where a direct line of sight is not available; and ii. turning spaces complying with AS 1428.1: A. within 2m of the end of <i>accessways</i> where it is not possible to continue travelling along the <i>accessway</i>; and B. at maximum 20 m intervals along the <i>accessway</i>;	Not Applicable
	d) an intersection of <i>accessways</i> satisfies the spatial requirements for a passing and turning space;	Not Applicable
	e) a passing space may serve as a turning space;	Not Applicable
	f) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a <i>storey</i> or level other than the entrance <i>storey</i> in a Class 5, 6, 7b or 8 building- (i) containing not more than 3 <i>storeys</i>; and (ii) with a <i>floor area</i> for each <i>storey</i>, excluding the entrance <i>storey</i>, of not more than 200sqm.	Not Applicable
D3.5	Carparking	A total of 10 accessible parking spaces has been designated on the plans provided for review

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
	Class 2 residential	There are no carparking requirements to satisfy the Disability (Access to premises – Buildings) Standard Clause 3.7.3 of AS4299 requires 1 accessible parking space per accessible dwelling is required to be provided. A total of 10 accessible parking spaces is to be provided for the residential component of this development. The line marking of the accessible parking spaces will need to be provided in accordance with the provisions of Section 3 of AS2890.6:2009. Note the painting of the international symbol of access is not required to be undertaken on the pavement as the parking spaces are on title of each of the adaptable dwellings.
	Class 7 1 space for every 100 carparking spaces or part thereof.	Not applicable as the parking is determined to meet the Class 2 use of the building.
D3.6	Signage	Braille Tactile signage associated with the exits at each level of the development are to comply with the provisions of Clause D3.6(a)(ii) of the BCA and Specification D3.6 of the BCA. <i>In a building required to be accessible—</i> (a) <i>braille and tactile signage complying with Specification D3.6 must</i> (ii) <i>identify each door required by E4.5 to be provided with an exit sign and state—</i> (A) <i>"Exit"; and</i> (B) <i>"Level"; and either</i> (aa) <i>the floor level number; or</i> (bb) <i>a floor level descriptor; or</i> (cc) <i>a combination of (aa) and (bb);</i>

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
		 The above signs provide examples of compliant exit Braille Tactile signage. A technical sheet indicating mounting heights for Braille Tactile signs is appended to this report.
D3.7	Hearing Augmentation	Not Applicable
D3.8	Tactile Indicators	Not applicable
D3.10	Swimming pool	Not Applicable
D3.11	Ramps	Not Applicable
D3.12	Glazing on an accessway	
	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with Clause 6.6 of AS 1428.1.	Details of the entry door design have yet to be provided. Compliance with this requirement will need to be demonstrated as part of the construction certificate documentation. The provisions to be complied with are:

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
		6.6 Visual indicators on glazing Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level. Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.
Part D4	Braille & Tactile Signs	Not Applicable
Part E3	Lift Installation	
Table E3.6B	Handrail complying with the provisions for a mandatory handrail in AS 1735.12	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Lift floor dimension of not less than 1 400 mm x 1 600 mm	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Minimum clear door opening complying with AS 1735.12	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Passenger protection system complying with AS 1735.12	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Lift landing doors at the upper landing	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Lift car and landing control buttons complying with AS 1735.12	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Lighting in accordance with AS 1735.12	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE / ACTION / COMMENT
	a) Automatic audible information within the lift car to identify the level each time the car stops; and b) audible and visual indication at each lift landing to indicate the arrival of the lift car; and c) audible information and audible indication <i>required</i> by (a) and (b) is to be provided in a range of between 20–80 dbA at a maximum frequency of 1 500 Hz	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
	Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received	Compliance with this requirement will need to be demonstrated as part of the construction documentation and shop drawings provided by the lift contractor.
Part F2	Sanitary and other facilities	Not Applicable

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

The table shown below indicates essential features to be incorporated into a housing unit for it to be termed an 'Adaptable House'. All essential items are pre-checked in the 'essential' features column.

Prior to commencing construction, the Architect is to sign the checklist to certify that the essential features have been incorporated into the design.

The Head Contractor must initial the second column to certify that each essential feature has been incorporated into the building (prior to Handover).

The Head Contractor shall sign the checklist signifying achievement of Class C adaptability.

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
	DRAWINGS			
1	Provision of drawings showing the housing unit in its pre-adaptation and post-adaptation stages	2.3	√	R Seidman Post adaptation drawings have yet to be provided for the adaptable dwelling.
	SITING			
3	A continuous accessible path of travel from street frontage and vehicle parking to entry complying with AS 1428.1	3.3.2	√	R. Seidman Satisfied
	LETTERBOXES IN ESTATE DEVELOPMENTS			
11	Letterboxes to be on hard standing area connected to accessible pathway	3.8	√	R Seidman <i>The location of the letter boxes has been nominated within the foyer</i> <i>The detailing and positioning of the letterboxes will need to comply with the Australia Post provisions as well as the requirements of AS4253:1994. This standard specifically addresses the mounting height of mailboxes.</i>
	PRIVATE CAR ACCOMMODATION			
14	Carparking space or garage min. area 5.4m x3.8 m	3.7.2	√	R Seidman Satisfied
16	Internal clearance of garage or carport 2.5m min.	3.7.2		R. Seidman Satisfied
	ACCESSIBLE ENTRY			
20	Accessible entry	4.3.1	√	R Seidman Satisfied
22	Accessible entry to be level (i.e. max. 1:40 slope)	4.3.2	√	R Seidman Satisfied

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
23	Threshold to be low-level	4.3.2	√	R Seidman Satisfied <i>The detailing of the thresholds is to be provided as part of the Construction documentation</i>
24	Landing to enable wheelchair manoeuvrability	4.3.2	√	R Seidman Satisfied
25	Accessible entry door to have 850 mm min. clearance	4.3.1	√	R Seidman Satisfied
27	Door lever handles and hardware to AS 1428.1	4.3.4	√	R Seidman <i>It has been assumed that this requirement will be satisfied. The design of the lever handle will need to comply with the requirements of Clause 13.5.2 of AS1428.1</i> <i>Detailing of these doors will need to be provided as part of the construction documentation.</i>
	INTERIOR: GENERAL			
32	Internal doors to have 820 mm <u>min.</u> clearance	4.3.3	√	R Seidman. Satisfied <i>The detailing of the doorways is to be provided as part of the construction documentation.</i> <i>The AS4299 standard nominates that the internal doors are to have a minimum 820 mm clear width. AS 1428.1 nominates that the minimum clear opening of doorways is to be 850 mm. As part of the detailing of this dwelling it will be preferable that the clear opening with of doorways and the primary leaf to be 850 mm clear as per the provisions of AS 1428.1.</i>
33	Internal corridors min. width of 1000 mm	4.3.7	√	R Seidman Satisfied
34	Provision for compliance with AS 1428.1 for door approaches	4.3.7	√	R Seidman Satisfied <i>The detailing of circulation at doorways to achieve compliance with clause 13 of AS 1428.1:2009 will need to be demonstrated as part of the construction certificate documentation.</i>
	LIVING ROOM & DINING ROOM			
36	Provision for circulation space of min. 2250 mm diameter	4.7.1	√	R Seidman Satisfied
38	Telephone adjacent to GPO	4.7.4	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
41	Potential illumination level min. 300 lux	4.10	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
	KITCHEN			
42	Minimum width 2.7 m (1550 mm clear between benches)	4.5.2		Not Applicable
43	Provision for circulation at doors to comply with AS 1428.1	4.5.1	√	Not Applicable
44	Provision for benches planned to include at least one work surface of 800 mm length, adjustable in height from 750 mm to 850 mm or replaceable. Refer to Figure 4.8	4.5.5	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
45	Refrigerator adjacent to work surface	4.5.5	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
46	Kitchen sink adjustable to heights from 750 mm to 850 mm or replaceable	4.5.6	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
47	Kitchen sink bowl max. 150 mm deep	4.5.6	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
48	Tap set capstan or lever handles or lever mixer	4.5.6(e)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
49	Tap set located within 300 mm of front of sink	4.5.6(e)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
51	Cooktops to include either front or side controls with raised cross bars	4.5.7	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
52	Cooktops to include isolating switch	4.5.7	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
53	Work surface min. 800 mm length adjacent to cooktop at same height	4.5.7	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
54	Oven located adjacent to an adjustable height or replaceable work surface	4.5.8	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
59	GPOs to comply with AS 1428.1. At least one double GPO within 300 mm of front of work surface	4.5.11	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
60	GPO for refrigerator to be easily reachable when the refrigerator is in its operating position	4.5.11	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
61	Slip-resistant floor surface	4.5.4	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
	MAIN BEDROOM			
62	At least one bedroom of area sufficient to accommodate queen size bed and wardrobe and circulation space requirements of AS 1428.2	4.6.1	x	R Seidman Satisfied
	BATHROOM			
75	Provision for bathroom area to comply with AS 1428.1	4.4.1	x	R Seidman Does not comply
76	Slip-resistant floor surface	4.4.2	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
77	Shower recess - no hob. Minimum size 1160 × 1100 to comply with AS 1428.1. (Refer Figures 4.6 and 4.7)	4.4.4(f)	√	R Seidman
78	Shower area waterproofed to AS 3740 with floor to fall to waste	4.4.4(f)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
79	Recessed soap holder	4.4.4(f)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
80	Shower taps positioned for easy reach to access side of shower sliding track	4.4.4(f)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
82	Provision for adjustable, detachable hand held shower rose mounted on a slider grabrail or fixed hook (plumbing and wall – strengthening provision)	4.4.4(h)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
83	Provision for grabrail in shower (Refer to Figure 4.7) to comply with AS 1428.1	4.4.4(h)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
86	Tap sets to be capstan or lever handles with single outlet	4.4.4(c)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
88	Provision for washbasin with clearances to comply with AS1428.1	4.4.4(g)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
90	Double GPO beside mirror	4.4.4(d)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
	TOILET			
92	Provision of either 'visitable toilet' or accessible toilet	4.4.3	√	R Seidman
93	Provision to comply with AS 1428.1	4.4.1	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
94	Location of WC pan at correct distance from fixed walls	4.4.3	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
95	Provision for grab rail zone. (Refer Figure 4.6)	4.4.4(h)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
96	Slip resistant floor surface. (Vitreous tiles or similar)	4.4.2	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
	LAUNDRY			
98	Circulation at doors to comply with AS 1428.1	4.8	√	R Seidman Satisfied
99	Provision for adequate circulation space in front of or beside appliances (min. 1550 mm depth)	4.8	√	R Seidman Satisfied
100	Provision for automatic washing machine	4.8(e)	√	R Seidman Satisfied
102	Where clothes line is provided, an accessible path of travel to this	4.8(a)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
105	Double GPO	4.8(g)	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
108	Slip-resistant floor surface	4.9.1	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>
	DOOR LOCKS			

Modified Extract APPENDIX A of AS4299-1995
SCHEDULE OF FEATURES FOR ADAPTABLE HOUSING – CLASS C

Review undertaken by iAccess Consultants
(a Division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Item No.	Room/Item	Clause No.	Essential	
			Required feature	Certified by
110	Door hardware operable with one hand, located 900–1100 mm above floor	4.3.4	√	R Seidman <i>It has been assumed that this requirement will be satisfied.</i>

Design

Adaptable house class C achieved

Class C (DESIGN) compliance has been achieved subject to receiving the posted annotation drawings from the architect and the provision of necessary documentation indicating the items noted above.

Head Contractor's Representative

iAccess Consultants (a division of Seidman & Associates Pty Ltd ACN 37 002 648 615)

Name of Head Contractor's Representative

Richard Seidman

Date

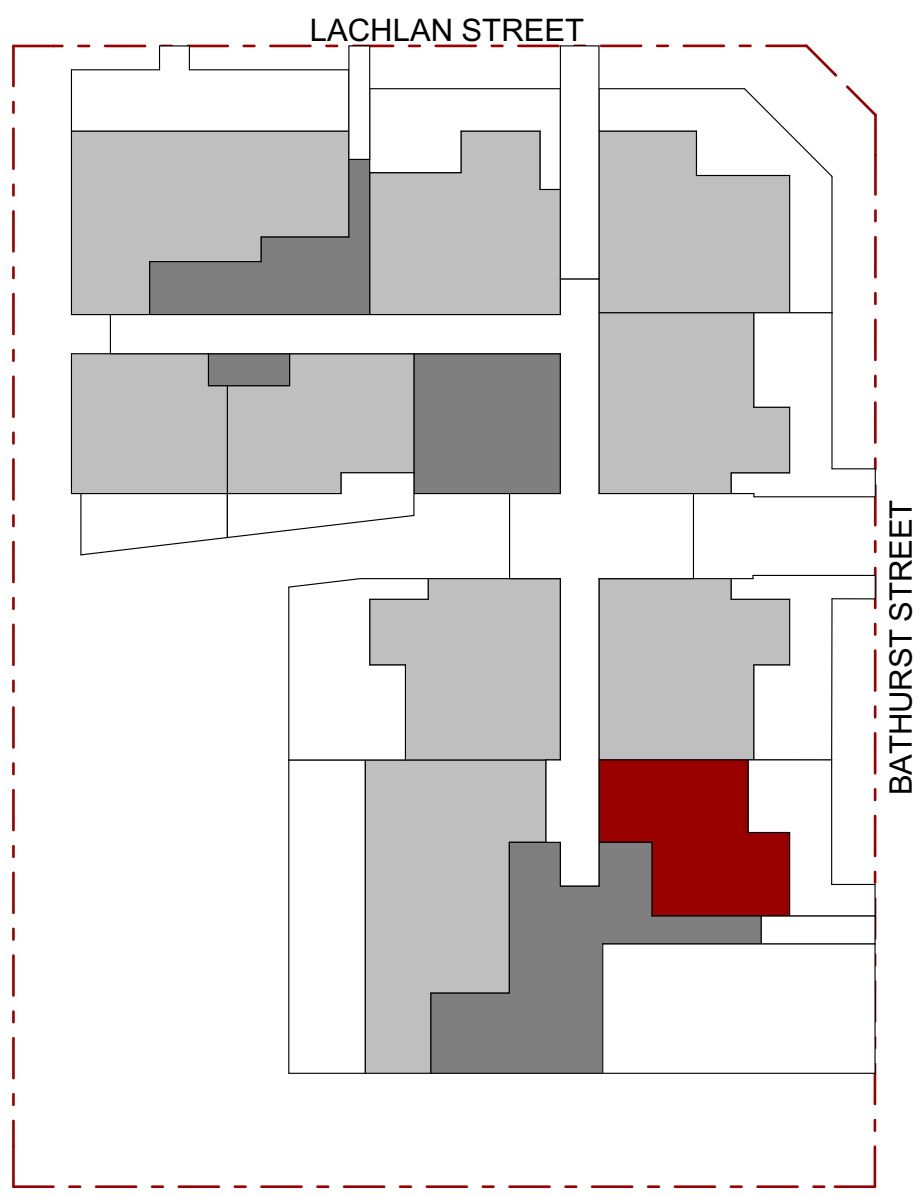
19 October 2016



PRE ADAPTATION PLAN - UNIT G.10
Scale 1:50



POST ADAPTATION PLAN - UNIT G.10
Scale 1:50



ADAPTABLE UNIT LOCATION PLAN

Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.

Consultants

villa villa

Level 4, 24 Hickson Rd : Millers Point NSW 20 00
T: 02 9247 7667 F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958

Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

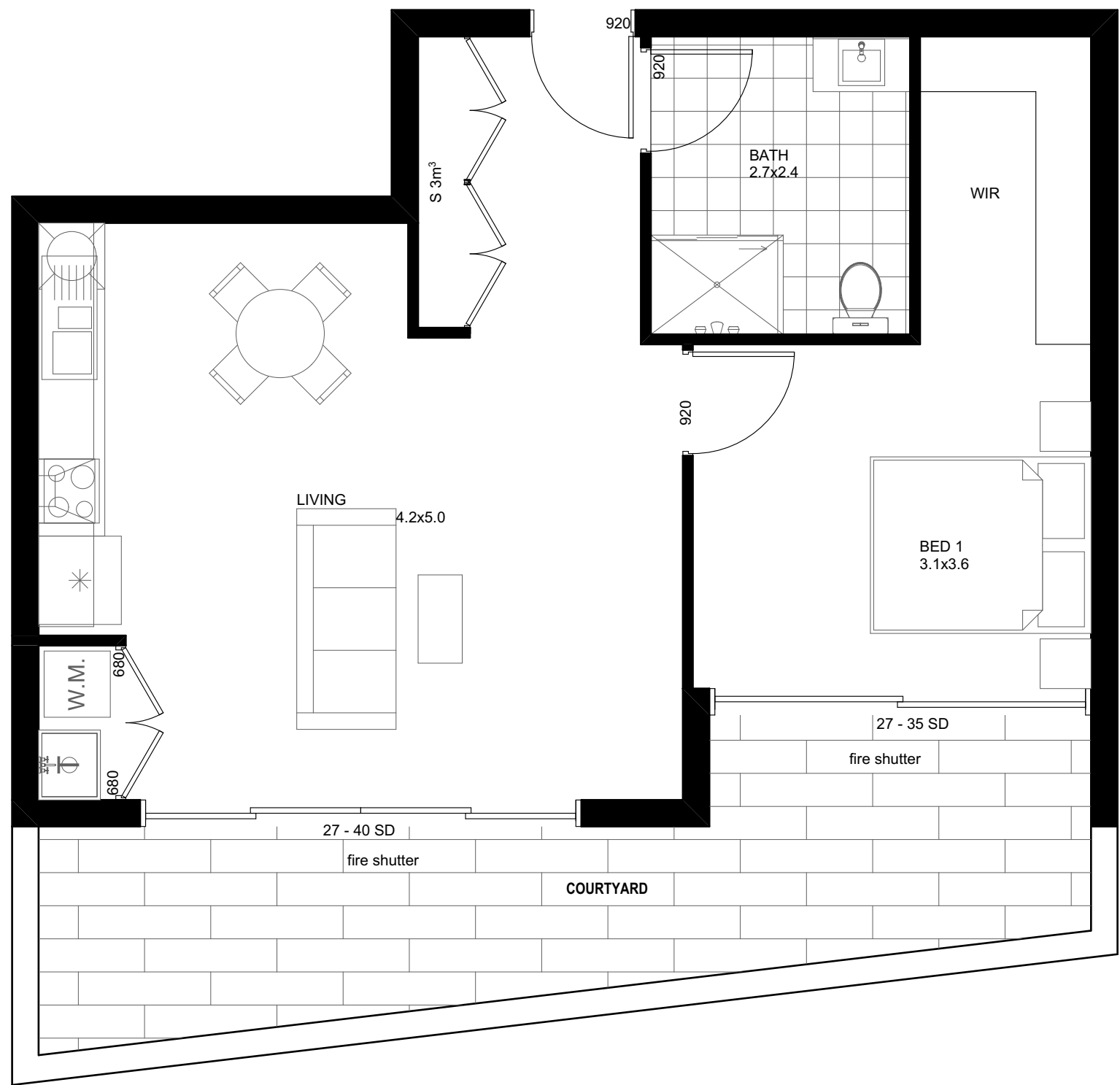
ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

Client
SYNERGY DEVELOPMENT GROUP

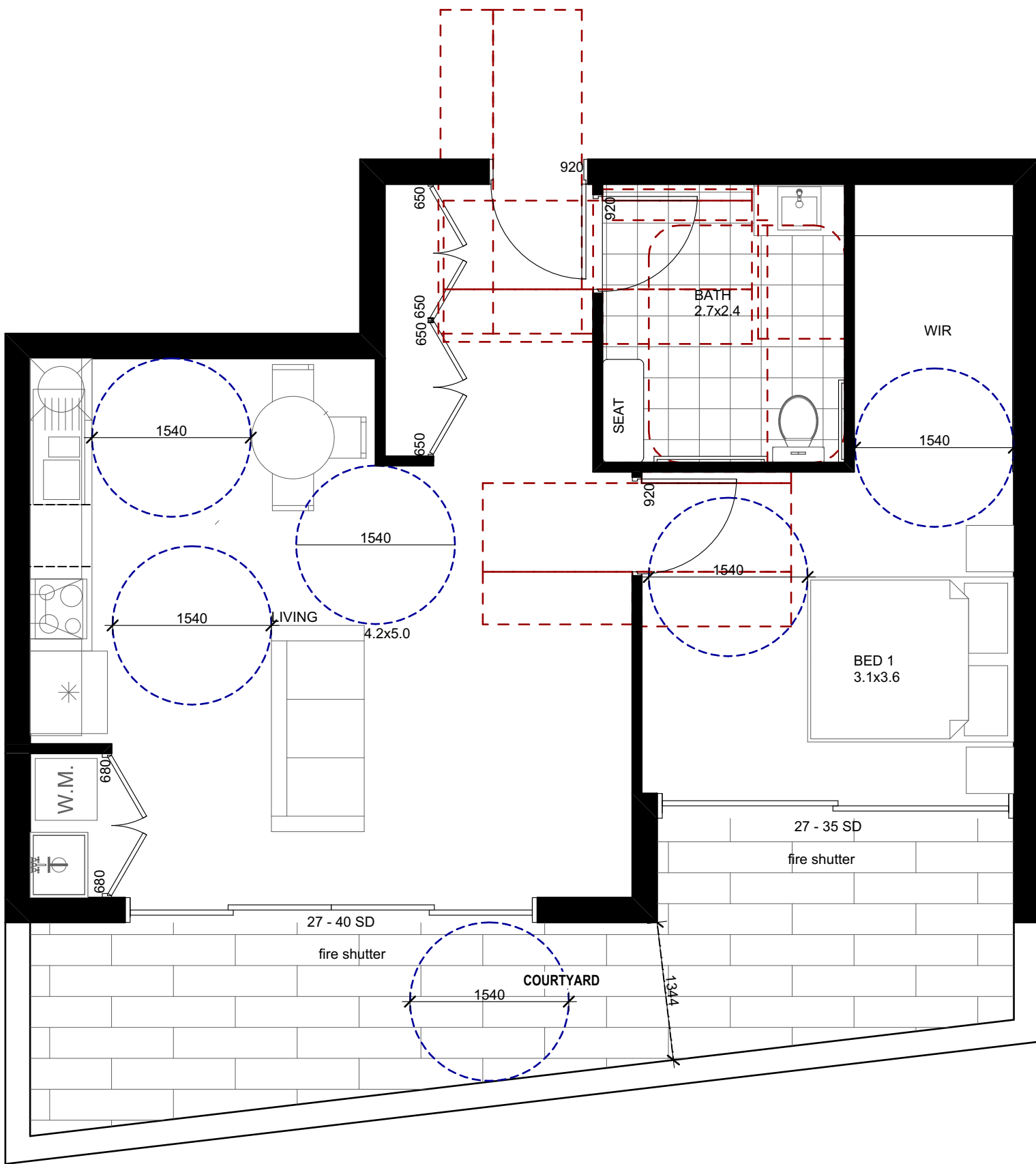
Title
ADAPTABLE UNITS LAYOUT

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A12	Issue A



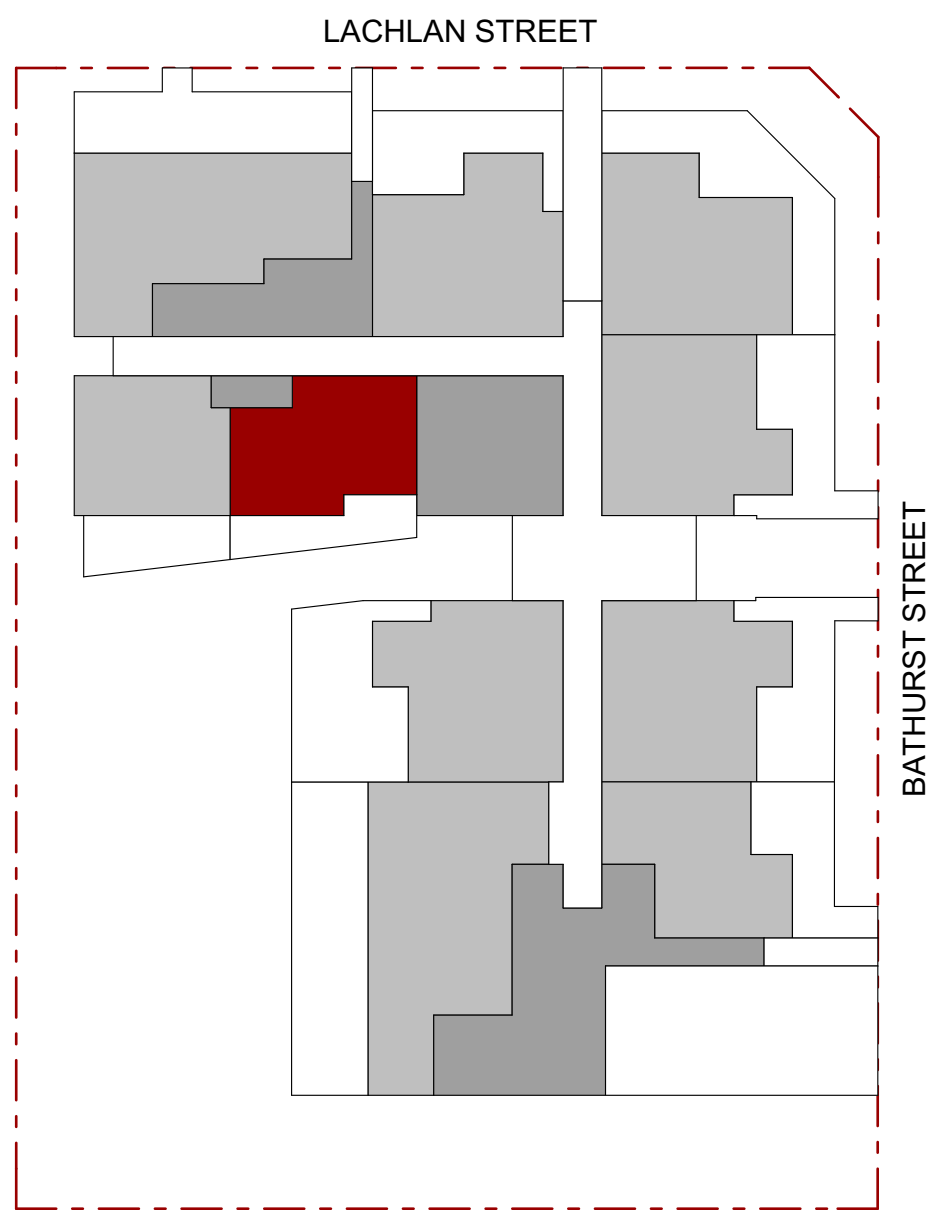
PRE ADAPTATION PLAN - UNIT G.03

Scale 1:50



POST ADAPTATION PLAN - UNIT G.03

Scale 1:50



ADAPTABLE UNIT LOCATION PLAN

Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.

Consultants

villa & villa

Level 4, 24 Hickson Rd. Millers PoinNSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958

Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

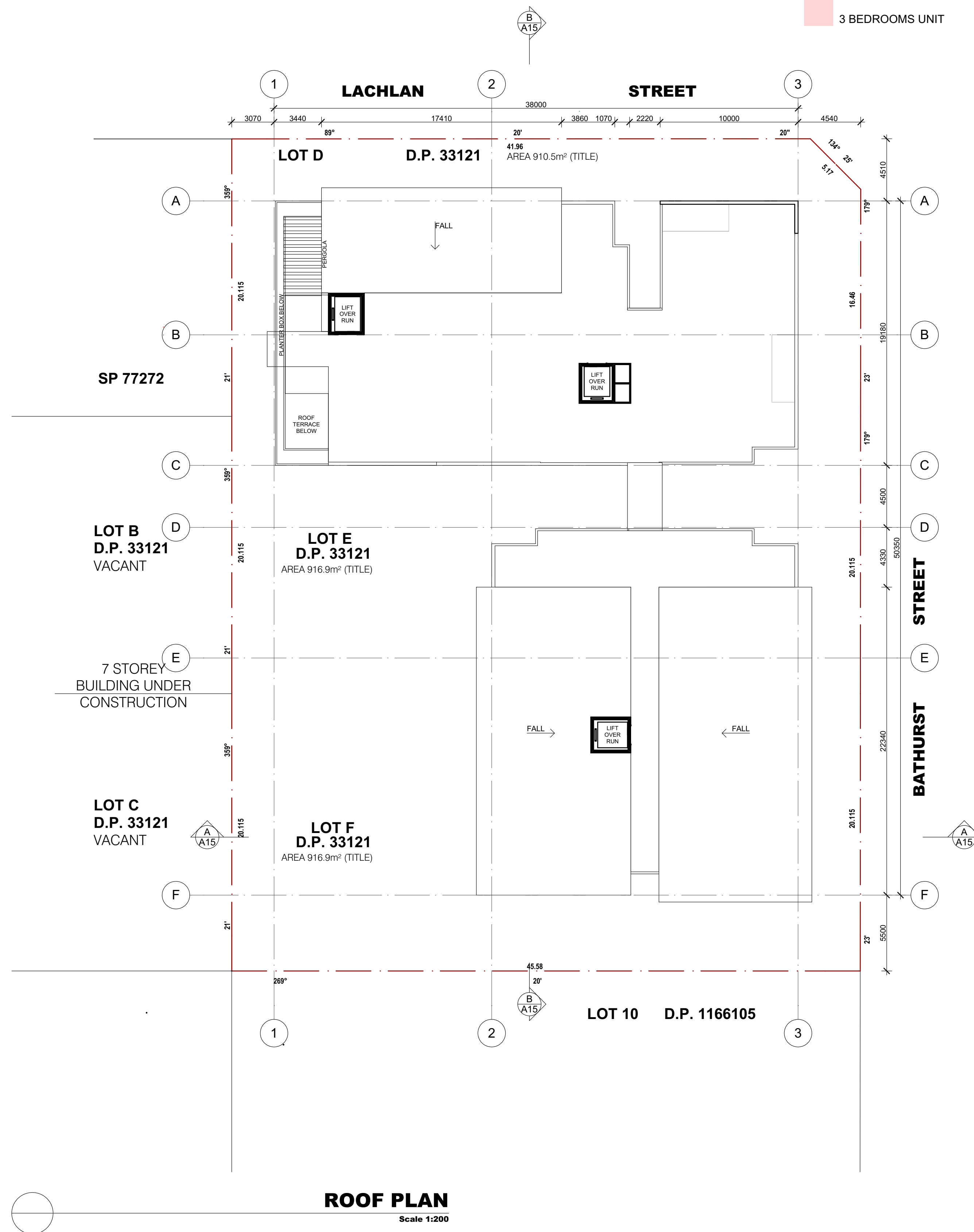
Client
SYNERGY DEVELOPMENT GROUP

Title
ADAPTABLE UNITS LAYOUT

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A11	Issue A

LEGEND

- 1 BEDROOM UNIT
- 2 BEDROOMS UNIT
- 3 BEDROOMS UNIT

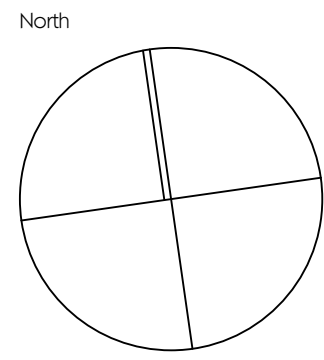


Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants

villa villa

Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958

Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

Client
SYNERGY DEVELOPMENT GROUP

Title
FLOOR PLAN

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A10	Issue A

LEGEND

- 1 BEDROOM UNIT
- 2 BEDROOMS UNIT
- 3 BEDROOMS UNIT



FLOOR PLAN LEVEL 6
Scale 1:200



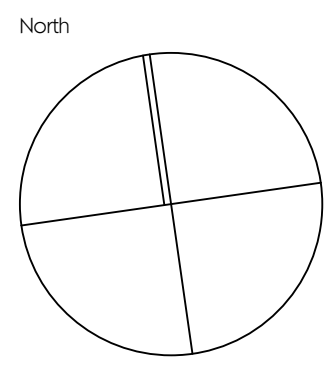
FLOOR PLAN LEVEL 7
Scale 1:200

Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants

villa villa

Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958
Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

Client
SYNERGY DEVELOPMENT GROUP

Title
FLOOR PLAN

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A09	Issue A

LEGEND

1 BEDROOM UNIT

2 BEDROOMS UNIT

3 BEDROOMS UNIT

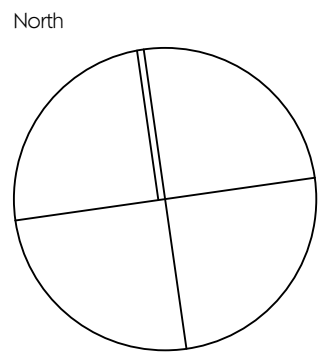


Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants

villa villa

Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958
Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

Client
SYNERGY DEVELOPMENT GROUP

Title
FLOOR PLAN

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A08	Issue A

LEGEND

1 BEDROOM UNIT

2 BEDROOMS UNIT

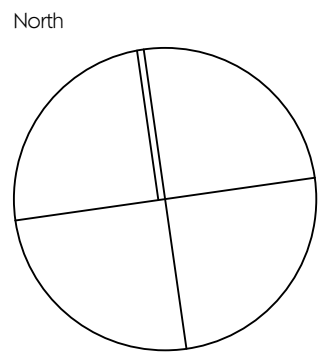
3 BEDROOMS UNIT



Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:
1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
2) Levels shown are approximate unless accompanied by reduced levels.
3) Figured dimensions must be taken in preference to scaling.
4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
5) Where engineering drawings are required such must take preference to this drawing.
6) Stormwater to be discharged to Council's requirements and AS 3500.3-1990.
7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants
villa villa
Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958
Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers
a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au
ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL
Client
SYNERGY DEVELOPMENT GROUP
Title
FLOOR PLAN

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A07	Issue A

LEGEND

1 BEDROOM UNIT

2 BEDROOMS UNIT

3 BEDROOMS UNIT



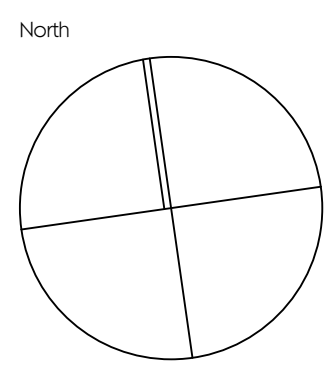
Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ
B	FOR DA	19.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3:1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:

This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants

villa villa

Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958
Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9609 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

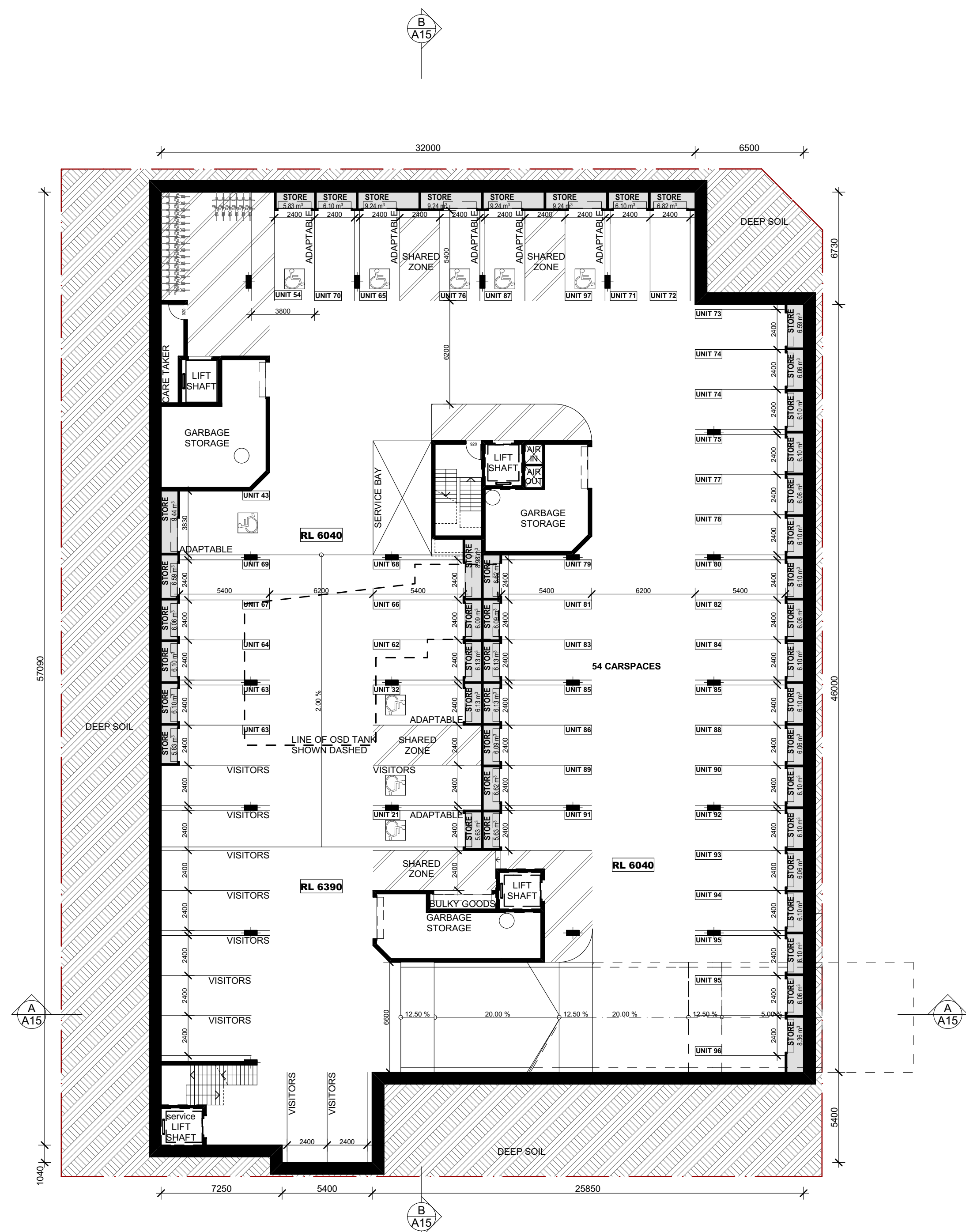
ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

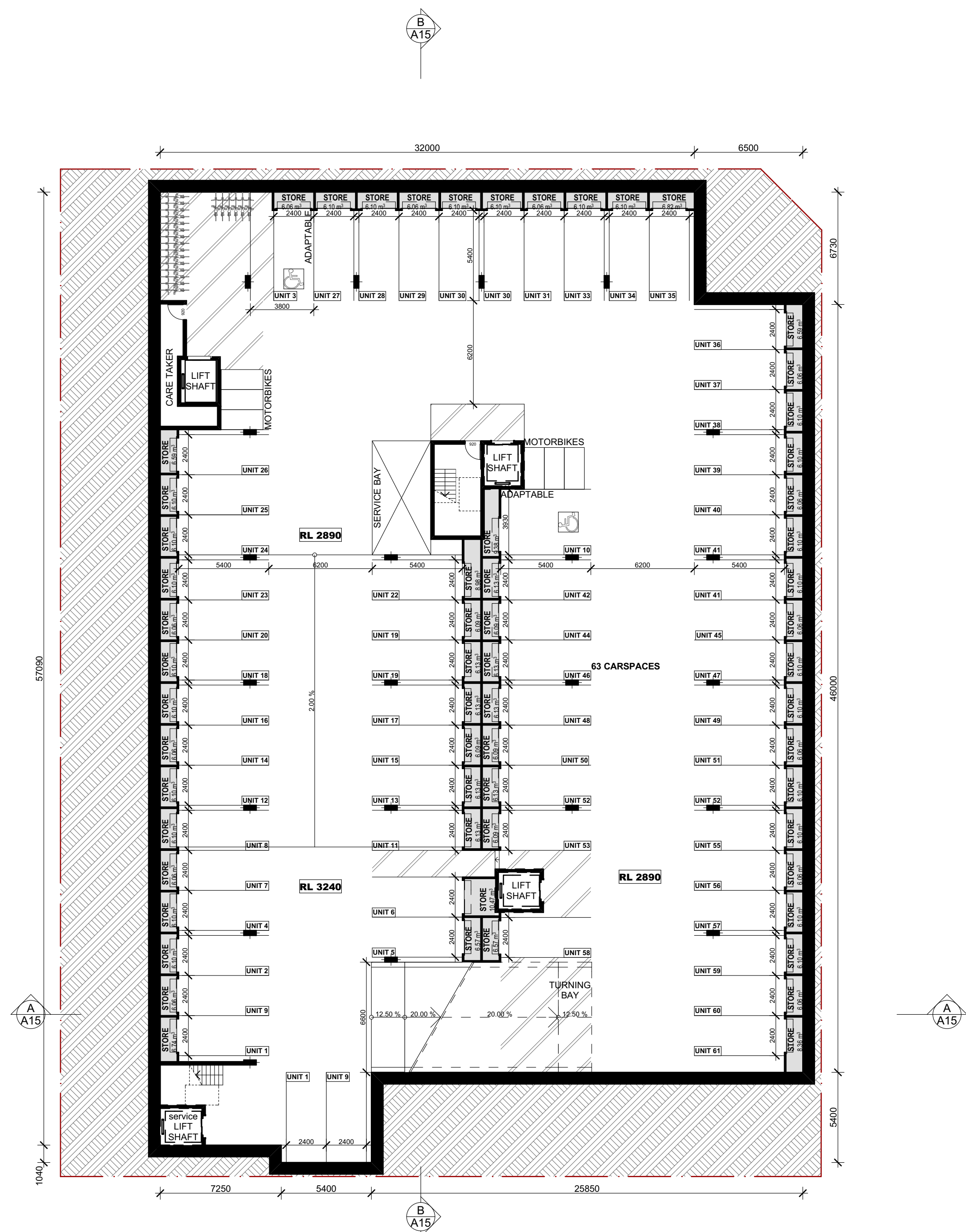
Client
SYNERGY DEVELOPMENT GROUP

Title
FLOOR PLAN

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A06	Issue B



FLOOR PLAN LEVEL -1
Scale 1:200



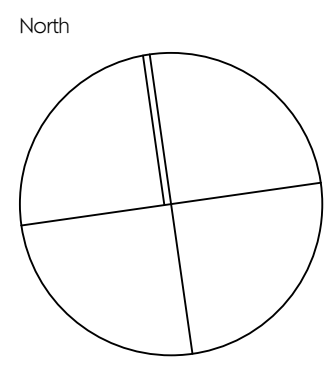
FLOOR PLAN LEVEL -2
Scale 1:200

Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Council's requirements and AS 3500.3:1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.



Consultants

villa villa

Level 4, 24 Hickson Rd. Millers Point NSW 20 00
T: 02 9247 7667; 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958

Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

Client **SYNERGY DEVELOPMENT GROUP**

Title
FLOOR PLAN

Drawn
D.R.

Checked
CZ

Date
JUNE 2016

Activity Type
DA

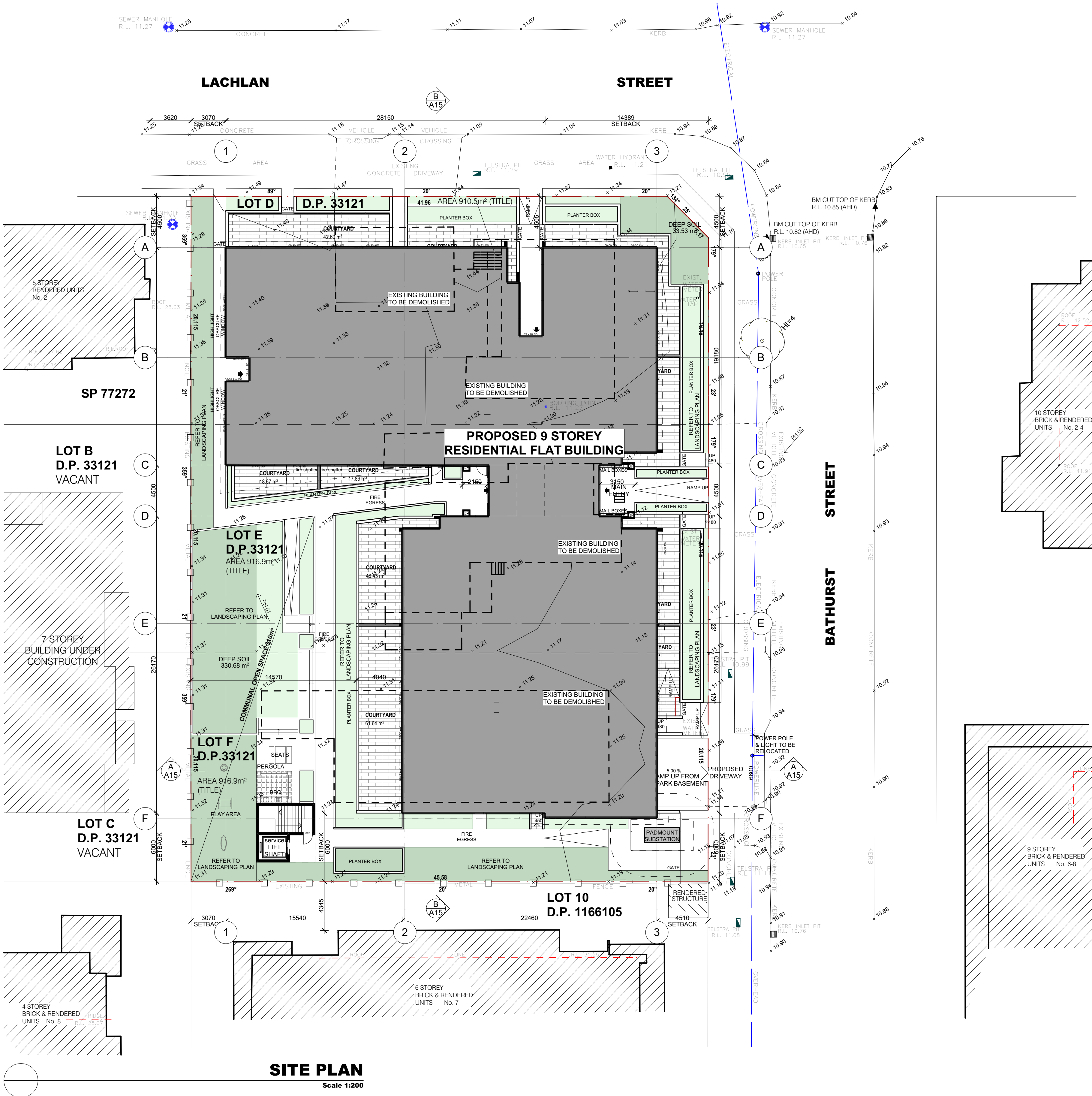
Job #
1349-16

Scale @ A1
AS SHOWN

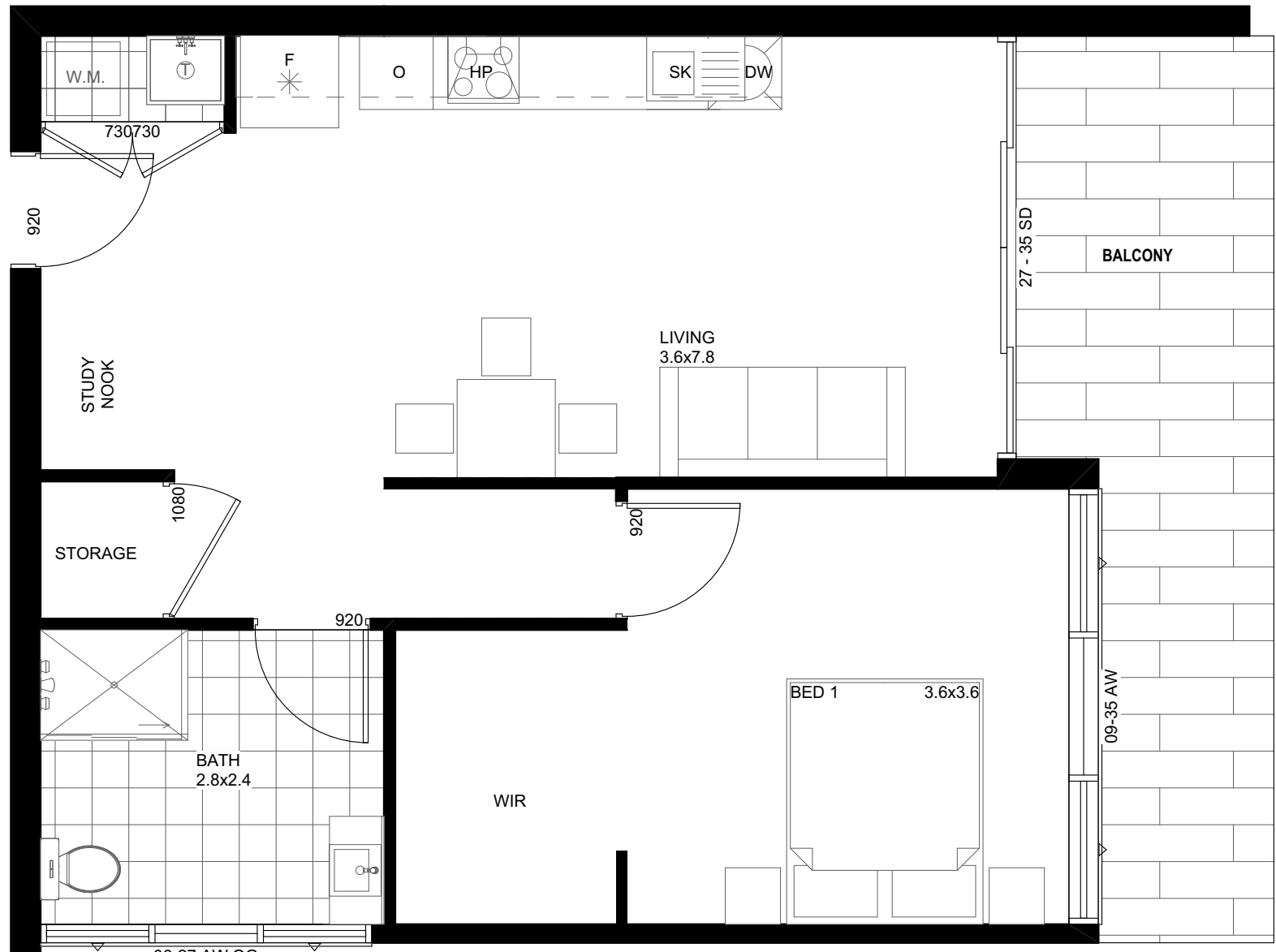
Project #
P4714

Sheet #
A05

Issue
A

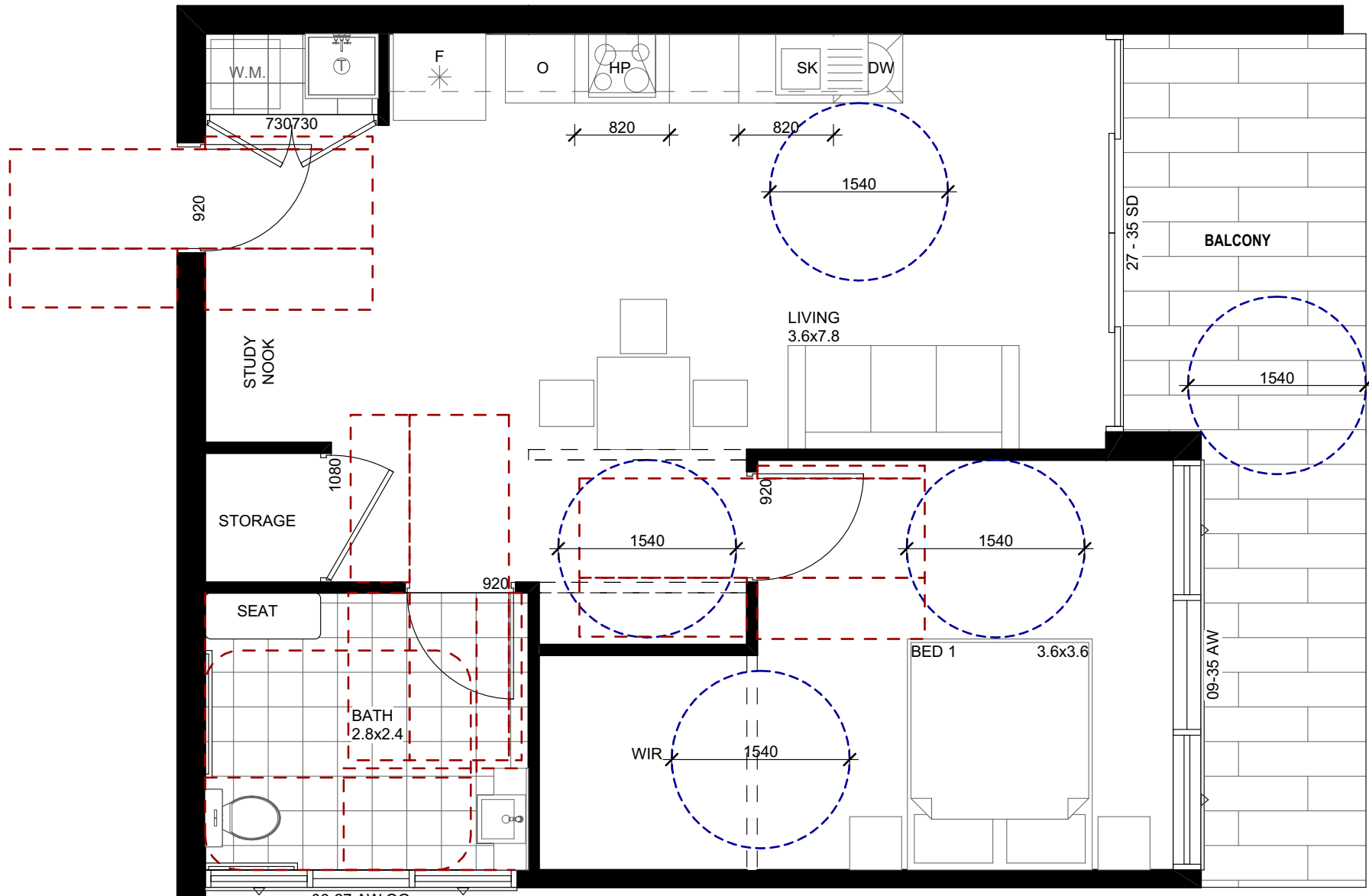


APARTMENTS DATA TABLE													
UNIT NO.	N. OF BEDS	AREA M ²		TOTAL	STORAGE M ³		TOTAL	N. OF CARS	CROSS VENTILATION	2H SUN MID WINTER	1H SUN MID WINTER		
		INTERNAL	BALCONY		INTERNAL	BASEMENT MIN.							
GROUND FLOOR LEVEL													
1	3	95.52	42.60	138.12	5.10	6.74	11.84	2	YES	YES	YES		
2	1	52.56	18.67	71.22	9.10	6.10	15.20	1	YES	NO	YES		
3	1	56.46	17.89	74.35	3.00	6.06	9.06	1	NO	NO	NO		
4	2	75.20	31.08	106.28	5.70	6.10	11.80	1	NO	YES	YES		
5	2	78.49	42.80	121.29	4.30	6.57	10.87	1	YES	YES	YES		
6	2	76.08	32.32	108.40	5.70	6.09	11.79	1	NO	YES	YES		
7	2	76.08	32.32	108.31	5.70	6.06	11.76	1	NO	YES	YES		
8	2	76.08	48.43	124.51	5.70	6.10	11.80	1	NO	NO	NO		
9	3	104.48	61.64	166.12	6.10	6.06	12.16	2	NO	NO	NO		
10	1	56.68	24.12	80.80	3.10	9.38	12.48	1	NO	YES	YES		
FLOOR LEVEL 1													
11	2	72.84	10.08	82.92	4.20	6.13	10.33	1	YES	YES	YES		
12	2	70.54	10.83	81.37	4.10	6.10	10.20	1	YES	NO	YES		
13	2	77.32	20.67	97.99	4.00	6.13	10.13	1	YES	NO	YES		
14	2	75.20	10.10	85.30	5.70	6.06	11.76	1	NO	YES	YES		
15	2	78.49	10.12	88.61	4.30	6.09	10.39	1	YES	YES	YES		
16	2	76.08	10.24	86.32	5.70	6.10	11.80	1	NO	YES	YES		
17	2	80.62	10.24	90.86	5.70	6.13	11.83	1	NO	YES	YES		
18	2	80.62	10.24	90.86	5.70	6.13	11.83	1	YES	NO	YES		
19	3	99.31	22.41	121.72	5.00	12.22	17.22	2	YES	NO	YES		
20	2	83.74	10.92	94.66	4.10	6.06	10.16	1	YES	NO	NO		
21	1	58.53	12.88	71.41	3.00	5.63	8.63	1	YES	YES	YES		
FLOOR LEVEL 2													
22	2	72.84	10.08	82.92	4.20	6.09	10.29	1	YES	YES	YES		
23	2	70.54	11.11	81.65	4.10	6.10	10.20	1	YES	NO	YES		
24	2	77.32	20.67	97.99	4.00	6.10	10.10	1	YES	YES	YES		
25	2	75.20	10.10	85.30	5.70	6.10	11.80	1	NO	YES	YES		
26	2	78.49	10.12	88.61	4.30	6.09	10.39	1	YES	YES	YES		
27	2	76.08	10.24	86.32	5.70	6.10	11.80	1	YES	YES	YES		
28	2	80.62	10.24	90.86	5.70	6.10	11.80	1	YES	YES	YES		
29	2	80.62	10.24	90.86	5.70	6.09	11.79	1	YES	YES	YES		
30	3	99.31	20.93	120.24	5.00	12.20	17.20	2	YES	NO	YES		
31	1	58.53	10.16	68.69	4.10	6.06	10.16	1	YES	NO	YES		
32	1	58.53	12.66	71.19	3.00	6.13	9.13	1	YES	YES	YES		
FLOOR LEVEL 3													
33	2	72.84	10.08	82.92	4.20	6.10	10.30	1	YES	YES	YES		
34	2	70.54	11.11	81.65	4.10	6.10	10.20	1	YES	NO	YES		
35	2	77.32	20.67	97.99	4.00	6.12	10.32	1	YES	YES	YES		
36	2	75.20	10.10	85.30	5.70	6.10	11.80	1	NO	YES	YES		
37	2	78.49	10.12	88.61	4.30	6.06	10.36	1	YES	YES	YES		
38	2	76.08	10.24	86.32	5.70	6.10	11.80	1	YES	YES	YES		
39	2	80.62	10.24	90.86	5.70	6.10	11.80	1	YES	YES	YES		
40	2	80.62	10.24	90.86	5.70	6.09	11.79	1	YES	YES	YES		
41	3	99.31	20.93	120.24	5.00	12.20	17.20	2	YES	NO	YES		
42	2	83.74	10.92	94.66	4.10	6.13	10.23	1	YES	NO	YES		
43	1	58.53	12.66	71.19	3.00	9.44	12.44	1	YES	YES	YES		
FLOOR LEVEL 4													
44	2	72.84	10.08	82.92	4.20	6.09	10.29	1	YES	YES	YES		
45	2	70.54	11.11	81.65	4.10	6.06	10.16	1	YES	NO	YES		
46	2	77.32	20.67	97.99	4.00	6.13	10.13	1	YES	YES	YES		
47	2	75.20	10.10	85.30	5.70	6.10	11.80	1	NO	YES	YES		
48	2	78.49	10.12	88.61	4.30	6.13	10.43	1	YES	YES	YES		
49	2	76.08	10.24	86.32	5.70	6.10	11.80	1	YES	YES	YES		
50	2	80.62	10.24	90.86	5.70	6.09	11.79	1	YES	YES	YES		
51	2	80.62	10.24	90.86	5.70	6.09	11.79	1	YES	NO	NO		
52	3	99.31	27.01	126.32	5.00	12.23	17.23	2	YES	NO	YES		
53	2	83.74	10.92	94.66	4.10	6.09	10.19	1	YES	NO	YES		
54	1	58.53	12.88	71.41	3.00	5.83	8.83	1	YES	YES	YES		
FLOOR LEVELS 5													
55	2	72.84	10.08	82.92	4.20	6.10	10.30	1	YES	YES	YES		
56	2	70.54	11.11	81.65	4.10	6.06	10.16	1	YES	YES	YES		
57	2	77.32	20.67	97.99	4.00	6.10	10.10	1	YES	YES	YES		
58	2	75.20	10.10	85.30	5.70	6.12	12.27	1	NO	YES	YES		
59	2	78.49	10.12	88.61	4.30	6.10	10.40	1	YES	YES	YES		
60	2	76.08	10.24	86.32	5.70	6.10	11.76	1	NO	YES	YES		
61	2	80.62	10.24	90.86	5.70	6.36	14.06	1	YES	YES	YES		
62	2	80.62	10.24	90.86	5.70	6.13	11.83	1	YES	NO	NO		
63	3	99.31	20.93	120.24	5.00	11.93	16.93	2	YES	NO	YES		
64	2	83.74	10.92	94.66	4.10	6.10	10.20	1	YES	YES	YES		
65	1	58.53	12.66	71.19	3.00	9.24	12.24	1	YES	YES	YES		
FLOOR LEVEL 6													
66	2	72.84	10.08	82.92	4.20	6.09	10.29	1	YES	YES	YES		
67	2	70.54	11.11	81.65	4.10	6.06	10.16	1	YES	YES	YES		
68	2	77.32	20.67	97.99	4.00	6.10	10.10	1	YES	YES	YES		
69	2	75.20	10.10	85.30	5.70	6.12	12.29	1	NO	YES	YES		
70	2	78.49	10.12	88.61	4.30	6.10	10.40	1	YES	YES	YES		
71	2	76.08	10.24	86.32	5.70	6.10	11.76	1	NO	YES	YES		
72	2	80.62	10.24	90.86	5.70	6.10	12.22	1	YES	YES	YES		
73	2	80.62	10.24	90.86	5.70	6.09	12.29	1	YES	NO	YES		
74	3	99.31	20.93	120.24	5.00	12.16	17.16	2	YES	NO	YES		
75	2	83.74	10.92	94.66	4.10	6.10	10.20	1	YES	YES	YES		
76	1	58.53	12.66	71.19	3.00	9.24	12.24	1	YES	YES	YES		
FLOOR LEVEL 7													
77	2	72.84	10.08	82.92	4.20	6.06	10.26	1	YES	YES	YES		
78	2	70.54	11.11	81.65	4.10	6.10	10.20	1	YES	YES	YES		
79	2	77.32	20.67	97.99	4.00	6.02	10.62	1	YES	YES	YES		
80	2	75.20	10.10	85.30	5.70	6.10	11.80	1	NO	YES	YES		
81	2	78.49	10.12	88.61	4.30	6.09	10.39	1	YES	YES	YES		
82	2	76.08	10.24	86.32	5.70	6.06	11.76	1	YES	YES	YES		
83	2	80.62	10.24	90.86	5.70	6.13	11.83	1	YES	YES	YES		
84	2	80.62	10.24	90.86	5.70	6.10	11.80	1	YES	YES	YES		
85	3	99.31	27.01	126.32	5.00	12.23	17.23	2	YES	YES	YES		
86	2	83.74	10.92	94.66	4.10	6.09	10.19	1	YES	YES	YES		
87	1	58.53	12.88	71.41	3.00	9.24	12.24	1	YES	YES	YES		
FLOOR LEVEL 8													
88	2	70.56	10.16	80.82	5.40	6.06	11.46	1	NO	YES	YES		
89	2	76.02	10.06	86.08	4.30	6.02	10.92	1	NO	YES	YES		
90	2	75.20	10.10	85.30	5.70	6.10	11.80	1	NO	YES	YES		
91	2	78.49	10.12	88.61	4.30	5.83	9.83	1	YES	YES	YES		
92	2	76.08	10.24	86.32	5.70	6.10	11.80	1	YES	YES	YES		
93	2	80.62	10.24	90.86	5.70	6.10	11.76	1	YES	YES	YES		
94	2	80.62	10.24	90.86	5.70	6.10	11.80	1	YES	YES	YES		
95	3	99.31	27.01	126.32	5.00	12.16	17.16	2	YES	YES	YES		
96	2	83.74	10.92	94.66	4.10	6.36	12.46	1	YES	YES	YES		
97	1	58.53	12.88	71.41	3.00	9.24	12.24	1	YES	YES	YES		
TOTAL													
		8443.00		8955.03				117	80%	75%	88%		
LOBBIES		58.53											



PRE ADAPTATION PLAN

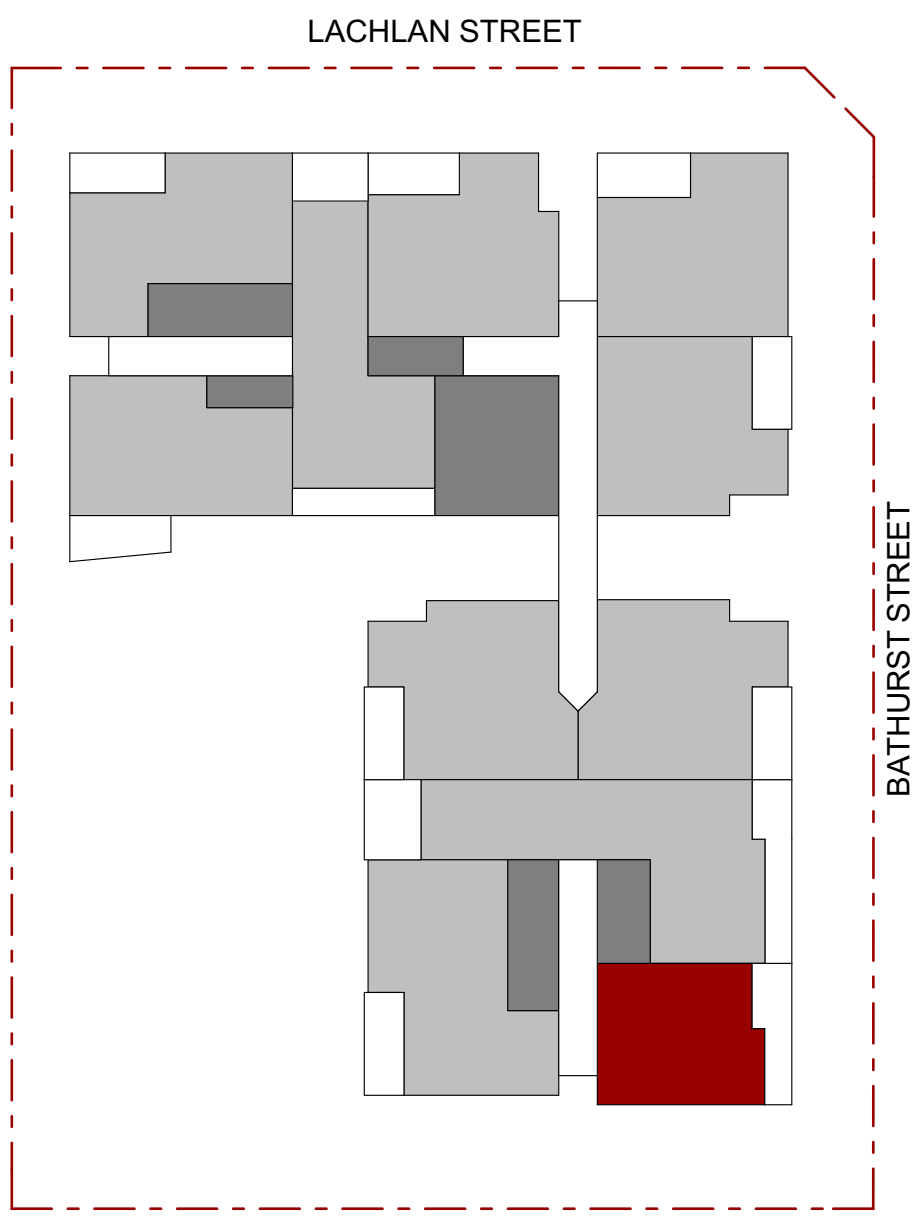
Scale 1:50



POST ADAPTATION PLAN

Scale 1:50

UNITS 1.21 - 2.32 - 3.43 - 4.54 - 5.65 - 6.76 - 7.87 - 8.97



ADAPTABLE UNIT LOCATION PLAN

Issue	Description	Date	Drawn	Issued
A	FOR DA	18.10.2016	D.R.	CZ

General Notes:

- 1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
- 2) Levels shown are approximate unless accompanied by reduced levels.
- 3) Figured dimensions must be taken in preference to scaling.
- 4) All boundary clearances must be verified by the surveyor prior to commencement of any building work.
- 5) Where engineering drawings are required such must take preference to this drawing.
- 6) Stormwater to be discharged to Councils' requirements and AS 3500.3-1990.
- 7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

COPYRIGHT:
This design and the associated documents is subject to copyright laws and may not be reproduced in any form without written consent from Algorry Zappia & Associates Pty Ltd.

Consultants

villa villa

Level 4, 24 Hickson Rd : Millers PoinNSW 20 00
T: 02 9247 7667F: 02 9 247 7665
E: eduardo@villaandvilla.com.au Abn: 27 085 744 958

Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Building Designers & Consulting Civil & Structural Engineers

a Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 825, Liverpool Business Centre, NSW 1871
t 9602 3133 / 9602 0303 f 9601 6903
e admin@algorryzappia.com.au
w www.algorryzappia.com.au

ABN 43 064 952 692

Project
PROPOSED RESIDENTIAL DEVELOPMENT
Lot D-E-F DP33121 - n. 1-3-5 Bathurst Street
LIVERPOOL

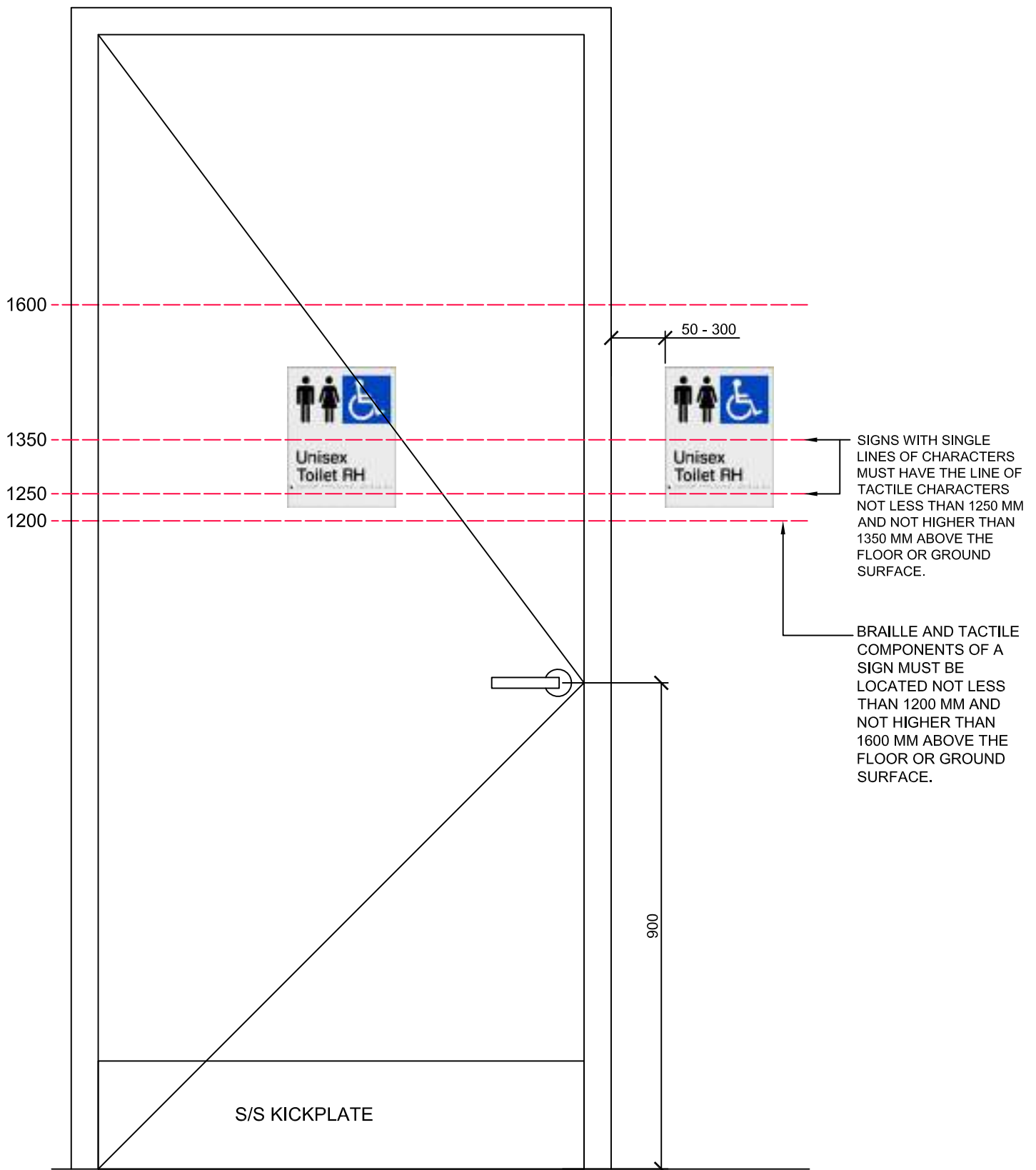
Client
SYNERGY DEVELOPMENT GROUP

Title
ADAPTABLE UNITS LAYOUT

Drawn D.R.	Checked CZ	Date JUNE 2016
Activity Type DA	Job # 1349-16	Scale @ A1 AS SHOWN
Project # P4714	Sheet # A13	Issue A

SUMMARY OF ELECTRICAL REQUIREMENTS AS NOTED IN AS4299:1995

Location	GPO	Light switch	Telephone	TV outlet	NBN / Broadband	Elec DB	Light	Comment
	General							GPOs shall be located at a height of not less than 600 mm, with a preferred height of 1000 mm, above the finished floor and in line with the door handles. GPOs shall be located not less than 500 mm horizontally from internal corners.
		General						Light switches shall be located at a height not less than 900 mm nor more than 1100 mm above the finished floor and in line with the door handles. Switches shall be located adjacent to door handles where practical. Two-way switching is preferred.
Bathroom	1 x DGPO							Locate adjacent to mirror
Bathroom							1	Locate adjacent to mirror
Kitchen - Fridge	1 x GPO							Located adjacent to the fridge in an easy accessible location
Kitchen GPO	1 x DGPO							At least one double general purpose outlet shall be located with a horizontally accessible reach over a work surface at a maximum of 300 mm from the front of the work surface.
Kitchen - MW	1 x GPO							Located associated with the microwave
Kitchen - DW	1 x GPO							Located associated with the dishwasher
Kitchen - WO								Power supply as required for selected wall oven
Kitchen - RH	1 x GPO							Located associated with the range hood
Kitchen - General	2 x DGPO							Locate as required
Bedroom	2 x DGPO							Located on either side of the bed (1800mm apart) Mount @ 600mm AFFL
Bedroom	1 x DGPO							Locate on wall at foot of bed - mount @ 600mm AFFL
Bedroom		2						Two-way light switches should be provided, one located near the planned bed position.
Bedroom			1					A telephone outlet should be provided in each bedroom next to the bed on the side closest to the door.
Bedroom				1				A television outlet should be provided in each bedroom on the opposite wall to the bedhead, adjacent to the double GPO.
Bedroom					1			Locate adjacent to the TV outlet
Living area	4 x DGPO							
Living area			1					A telephone outlet shall be provided in the living-dining area. This should be adjacent to a GPO.
Living area				2				Two television outlets should be provided in the living area; one location to enable viewing from dining and kitchen. Locate television outlets adjacent to GPOs.
Living area					2			Locate adjacent to the TV outlet
Laundry	1 x DGPO							
Elec DB						1		The electrical distribution board should be located inside the housing unit and be accessible. (locate DB between 900-1100 AFFL in an accessible location)
External	1 x DGPO							Waterproof fitting (This GPO is in addition to any power requirements associated with air conditioning equipment)



1 ACCESSIBLE DOOR SIGN

Scale: 1:10@A4

THE LOCATION OF THE SIGN IS PREFERRED TO BE LOCATED ON THE LATCH SIDE OF THE DOOR. WHERE THIS IS **NOT POSSIBLE** THE SIGN MAY BE LOCATED ON THE DOOR.

ACCESSIBLE WC REQUIREMENTS TO BE SATISFIED

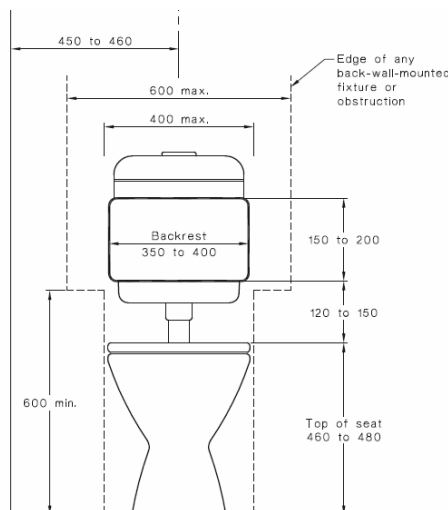
AS 1428.1:2009 ACCESSIBLE WC CHECKLIST

REQUIREMENTS FOR ACCESSIBLE WC AND SHOWER FACILITIES



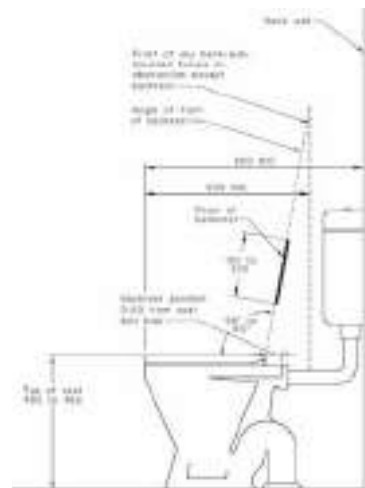
WATER TAPS	STATUS
Taps shall have lever handles, sensor plates, or other similar controls.	
Lever handles shall have not less than 50 mm clearance from an adjacent surface.	
Where separate taps are provided for hot and cold water, the hot water tap shall be placed to the left of the cold water tap for horizontal configurations, or above the cold water tap for vertical configurations.	
Where hot water is provided, the water shall be delivered through a mixing spout.	

WC PAN CLEARANCES	STATUS
Offset from side wall to CL of WC pan	450-460 mm
Distance from rear wall to front of WC Pan	800 ±10 mm
Top of seat height	460-480 mm AFFL



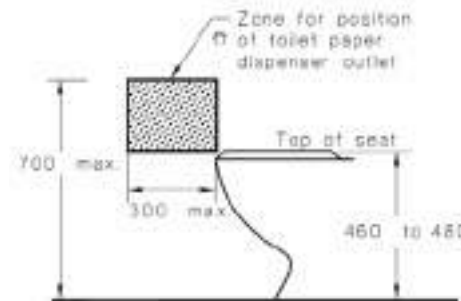
WC SEAT	STATUS
be of the full-round type	
be securely fixed in position when in use;	
have seat fixings that create lateral stability for the seat when in use;	
be load-rated to 150 kg;	
have a minimum luminance contrast of 30% with the background (e.g., pan, wall or floor against which it is viewed).	

BACKREST	STATUS
Shall be capable of withstanding a force in any direction of 1100 N;	
Width of backrest – 350-400 mm	
Height of backrest – 150-200 mm	
Bottom of back rest – 120-150 mm above top of seat	
Angle of incline 95-100 °	

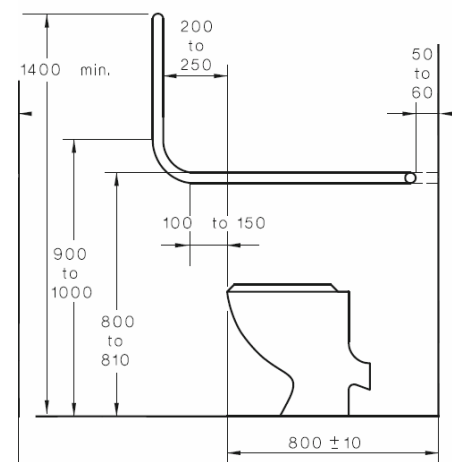


FLUSHING CONTROL	STATUS
Flushing controls shall be user activated, either hand operated or automatic..	
The flushing control shall be proud of the surface and shall activate the flush before the button becomes level with the surrounding surface.	

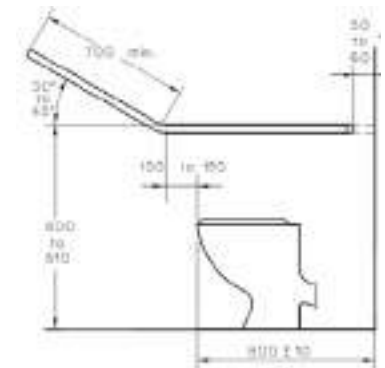
TOILET PAPER DISPENSER	STATUS
Distance in front of front of WC pan	300 mm max
Height above floor	700 mm max



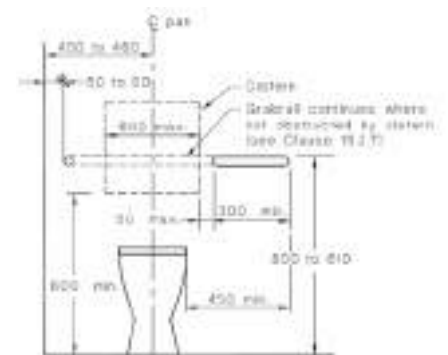
GRABRAILS 90 DEG	STATUS
Horizontal rail height	800 ±10 mm
Distance from front of WC pan to vertical rail	200-250 mm
Top of vertical rail	1400 mm AFFL min



GRABRAILS 45 DEG	STATUS
Horizontal rail height	800 ±10 mm
Distance from front of WC pan to inclined rail	100-150 mm
Length of inclined rail	700 mm min



GRABRAILS REAR RAIL	STATUS
Horizontal rail height	800 ±10 mm
Distance from front of WC pan to vertical rail	200-250 mm
Top of vertical rail	1400 mm AFFL min



ACCESSIBLE WC REQUIREMENTS TO BE SATISFIED

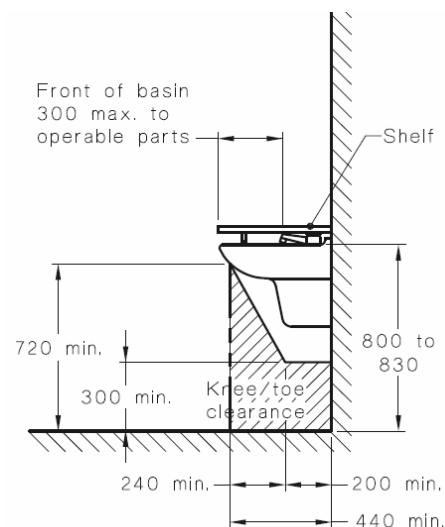
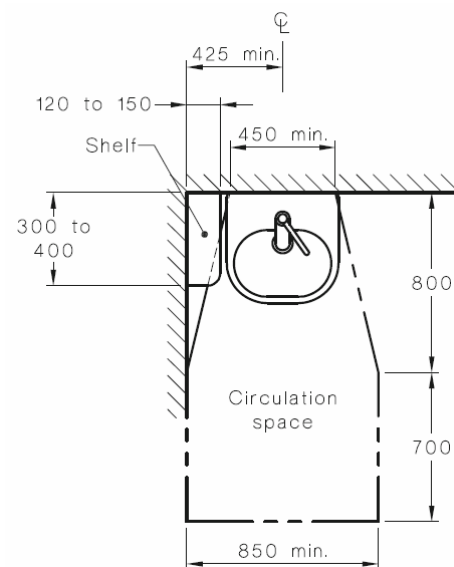
AS 1428.1:2009 ACCESSIBLE WC CHECKLIST

REQUIREMENTS FOR ACCESSIBLE WC AND SHOWER FACILITIES

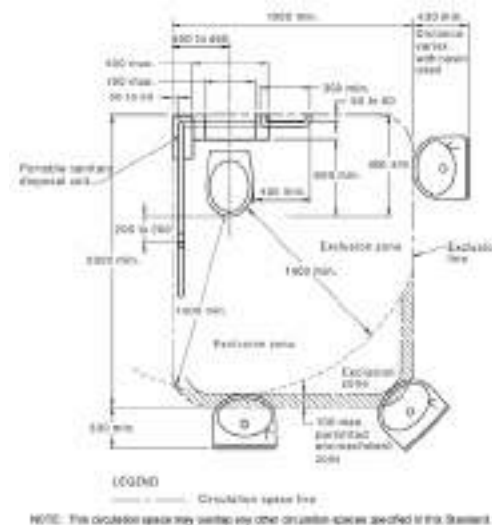


WC DOORS	STATUS
WC doors may be either hinged or sliding.	
Outward-opening doors shall have a mechanism that holds the door in a closed position without the use of a latch.	
Doors shall be provided with an in-use indicator and a bolt or catch. Where a snib catch is used, the snib handle shall have a minimum length of 45 mm from the centre of the spindle.	
In an emergency, the latch mechanism shall be openable from the outside.	
The force required to operate the door shall be not greater than 20N	
Door handles and hardware shall be lever or "D" handle type	

HANDBASINS	STATUS
The washbasin shall be outside the pan circulation	
Exposed hot water supply pipes shall be insulated or located so as not to present a hazard.	
The projection of the washbasin from the wall and the position of taps, bowl and drain outlet shall be determined in accordance with Figures 44(A) and 44(B);	
Water supply pipes and waste outlet pipes shall not encroach on the required clear space under the washbasin.	
Centreline distance from side wall – 425 mm	
Circulation space 1500 x 850 mm min	
Top of basin – 800-830 mm	



WC CIRCULATION	STATUS
Width of WC zone	1900 mm min
Length of WC zone	2300 mm min
Exclusion zone in front of WC pan	1400 mm min
Encroachment by handbasin	100 mm max



MIRROR	STATUS
In all sanitary facilities, the mirror shall be located either above or adjacent to the washbasin.	
Top of vanity – 800-830 mm	
Bottom of mirror – 900 mm max	
Top of mirror – 1850 mm min	

SHELVES	STATUS
As a vanity top at a height of 800 mm to 830 mm and a minimum width of 120 mm and depth of 300 mm to 400 mm without encroaching into any circulation space.	
A separate fixture within any circulation space at a height of 900 mm to 1000 mm with a width of 120 mm to 150 mm and length of 300 mm to 400 mm;	

SHELVES	STATUS
A separate fixture external to all circulation spaces at a height of 790 mm to 1000 mm with a minimum width of 120 mm and minimum length of 400 mm.	

SOAP DISPENSERS, TOWEL DISPENSERS	STATUS
soap dispensers, towel dispensers, hand dryers and similar fittings shall be operable by one hand	
be installed with the height of their operative component or outlet not less than 900 mm and not more than 1100 mm above the plane of the finished floor	
no closer than 500 mm from an internal corner	

CLOTHES HOOKS (INDIVIDUAL WC)	STATUS
A clothes-hook shall be installed 1200 mm to 1350 mm above the plane of the finished floor and not less than 500 mm out from any internal corner.	

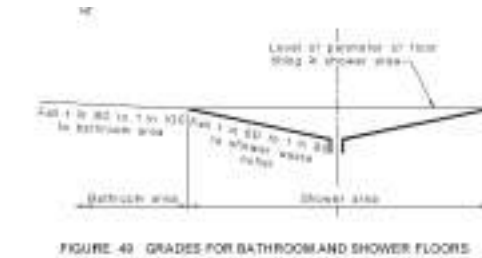
SLIP RESISTANCE HB198	STATUS
Wet pendulum test – P3	
Oil-wet inclining platform test – R10	

ACCESSIBLE WC
REQUIREMENTS TO BE SATISFIED

AS 1428.1:2009
ACCESSIBLE WC CHECKLIST

SHOWERS	STATUS
Shower recesses and the circulation space for each shower recess from the finished floor to a height of not less than 900 mm shall be as shown in Figure 47. Grabrails, shower hose fittings; taps, soap holder, shelf (if provided) and the folding seat are the only fixtures permitted in these spaces.	
Shower recess fittings shall be provided as shown in Figures 47 and 48. Not less than two clothes-hanging devices, as specified in Clause 15.4.4, shall be fitted outside the shower recess. One such device shall be located within 400 ±10 mm and the other within 600 ±10 mm of the folding seat.	

FLOOR WASTES	STATUS
The floor of the shower recess and associated circulation space shall be self draining and without a step-down, raised step kerb or hob at the entry to the recess.	
The waste outlet for the shower shall be provided in accordance with Figure 47.	
The slope of the floor of the shower recess shall have a gradient between 1:60 and 1:80,	
The slope of floor of the remainder of the sanitary facility shall have a gradient between 1:80 and 1:100,	



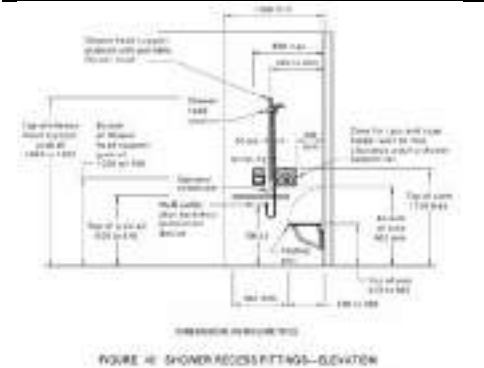
OPENING SHOWER SCREENS	STATUS
------------------------	--------

The means of screening a shower recess shall be either by a curtain or a door system that maintains the required circulation space of 1600 mm × 2350 mm.	
--	--

GRABRAILS	STATUS
Grabrails shall be fixed on the walls in the positions shown in Figures 47 and 48. Taps, soap holder and shower head support grabrail may encroach into the 600 mm clearance above the grabrail.	

SOAP HOLDER	STATUS
The soap holder shall be located within the zone shown in Figure 48.	

TAPS	STATUS
Taps, as specified in Clause 15.2.1, shall be located within the zone shown in Figure 48.	

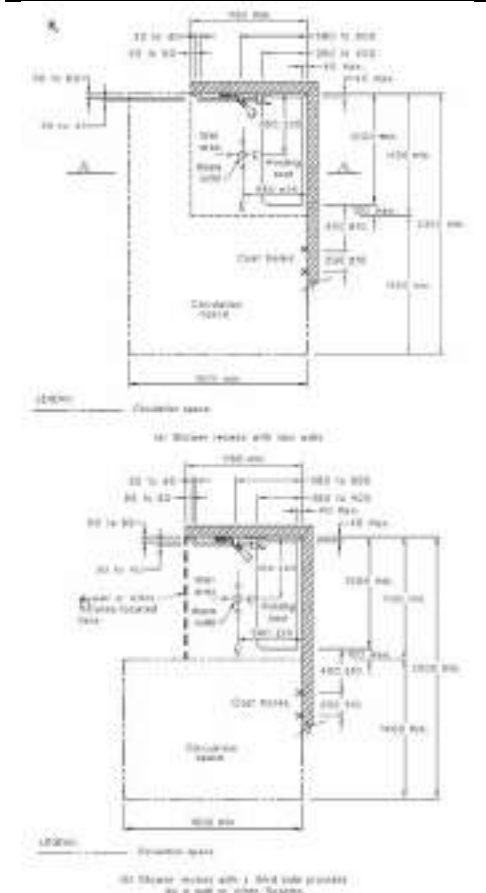


SHOWER HEAD	STATUS
A hand-held shower head shall be provided, which shall have a flexible hose of a minimum length of 1500 mm.	
An adjustable shower head holder shall be provided to support the shower head and shall—	
be installed on the shower head holder support grabrail	
allow the graspable portion of the shower head to be positioned at various angles and heights;	

REQUIREMENTS FOR ACCESSIBLE WC AND SHOWER FACILITIES

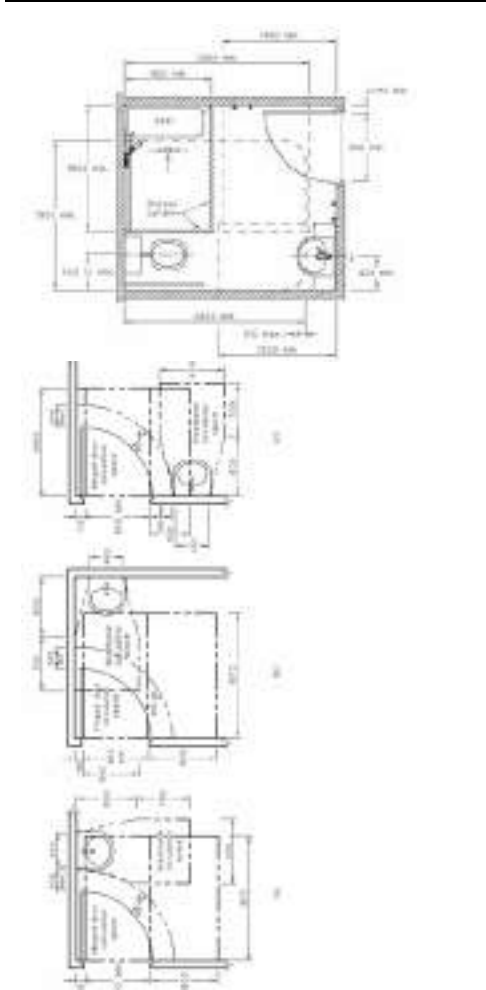


SHOWER HEAD	STATUS
allow the graspable portion of the shower head to be located at heights between 1000 mm and 1800 mm above the plane of the finished floor; and	
allow access and adjustment from a seated position.	



CLOTHES HOOKS (SHOWERS)	STATUS
Two clothes hooks shall be installed within reach of the shower seat.	

CIRCULATION SPACES	STATUS
Circulation spaces, including door circulation spaces, may be overlapped.	



Appendix J

Clause 4.6 Variations (FSR)

Attachment J – Clause 4.6 Variation to Floor Space Ratio

Variation to Clause 4.4 of the Liverpool Local Environmental Plan (LLEP) 2008 – Floor Space Ratio (FSR)

1 Introduction

A variation pursuant to Clause 4.6 'Exceptions to Development Standards' of LLEP 2008 has been prepared to justify a variation to the maximum permitted FSR development standard as it applies to the property at 1-5 Bathurst Street, Liverpool. This written request seeks a variation to the development standard under Clause 4.4 'Floor Space Ratio'.

The site is zoned R4 High Density Residential and a maximum FSR of 3:1 applies to the site and development under LLEP 2008. The LLEP 2008 FSR map permits a maximum FSR of 2:1 on the site as identified in Figure 1 below.

Floor space ratio map - sheet FSR-011

Maximum Floor Space Ratio (n:1)

A1	0.01
A2	0.1
A3	0.15
A4	0.25
B	0.5
F	0.6
G	0.65
I	0.75
N	1.0
P	1.2
S1	1.5
S2	1.7
T	2.0
U	2.5
V	3.0
X	4.0
Z	6.0
	refer to clause 4.4
	refer to clause T.29
	refer to clause T.30
	refer to clause T.32



Figure 1 Extract of FSR Map Liverpool LEP 2008 (Source: www.legislation.nsw.gov.au)

However, Clause 4.4(2B) states:

(2B) Despite subclause (2), the maximum floor space ratio of a building in the Liverpool city centre that is:

- (a) on a site area greater than 1,000 square metres, and
- (b) on land in a zone specified in the Table to this clause, and
- (c) on land for which the maximum building height shown on the Height of Buildings Map is as specified in Column 1 of the Table under the heading for that zone, is the amount specified opposite that height in:
- (d) Column 2 of the Table, if the site area for the building is greater than 1,000 square metres but less than 2,500 square metres, or
- (e) Column 3 of the Table, if the site area for the development is equal to, or greater than 2,500 square metres.

$$X = (\text{the number of square metres of the site area} - 1000) / 1000$$

Column 1	Column 2	Column 3
Zone B3 Commercial Core		
21m	$(3 + 0.5X):1$	3.5:1
28m	$(3 + X):1$	4:1
35m	$(4 + X):1$	5:1
45m	$(4.5 + 1.5X):1$	6:1
100m	$(5 + 3X):1$	8:1
Zone B1 Neighbourhood Centre, B4 Mixed Use, SP1 Special Activities or SP2 Infrastructure		
18m	$(1.5 + 0.5X):1$	2:1
24m	$(2 + X):1$	3:1
35m	$(2.5 + X):1$	3.5:1
45m	$(2.5 + 1.5X):1$	4:1
80m	$(2.5 + 3.5X):1$	6:1
Zone R4 High Density Residential		
18m	$(1 + X):1$	2:1
24m	$(1.5 + X):1$	2.5:1
35m	$(2 + X):1$	3:1
45m	$(2 + 1.5X):1$	3.5:1

As the site is located within the Liverpool City Centre, Clause 4.4(2B) applies. Therefore, as the site is over 2,500 square metres and has a maximum building height of 35m, a maximum FSR of 3:1 is permissible.

2. The Proposed Development

The proposed development seeks approval for a maximum 8,443m² of Gross Floor Area (GFA) over the entire site. With a site area of 2,744.30m², the proposed development has an overall FSR of 3.07:1. Therefore, the proposed development exceeds the maximum FSR development standard by 0.07:1.

The purpose of the FSR standard is to provide sufficient floor space for the anticipated development needs of the future, regulate the scale and intensity of buildings, ensure that development does not exceed the capacity of community infrastructure and respects the character and amenity of the locality. As demonstrated, the proposed development is located within walking distance to bus and train services, community facilities and commercial premises. As such it is well placed to provide the proposed built form, which would accommodate 97 residential units.

The proposed development will not result in any significant adverse environmental impacts to surrounding development. The proposed density of the development, with an overall FSR of 3.07:1 is generally consistent with the scale and nature of existing development along Bathurst Street. Strict compliance with the numeric FSR development standard would not result in any adverse impacts to surrounding development, such as overshadowing, views or privacy.

Architectural Drawings (A00-A25 inclusive, dated 22 April 2016) prepared by Algorry Zappia and Associates Pty Ltd are included at **Appendix B**. Perspectives of the proposed development are shown in Figure 2..



Figure 2 Perspectives of the proposed development

3. Principles of Exceptions to Development Standards

Clause 4.6 of the Liverpool LEP 2008 provides flexibility in the application of planning controls by allowing Council to approve a development application that does not comply with a development standard where it can be shown that flexibility in particular circumstances achieve better outcomes for and from development. It replaces SEPP 1. Subclauses (3), (4), (5) and (8) from Clause 4.6 are extracted below:

- (3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:
 - (a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
 - (b) that there are sufficient environmental planning grounds to justify contravening the development standard.**
- (4) Development consent must not be granted for development that contravenes a development standard unless:
 - (a) the consent authority is satisfied that:
 - (i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
 - (ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and**
 - (b) the concurrence of the Director-General has been obtained.**
- (5) In deciding whether to grant concurrence, the Director-General must consider:
 - (a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
 - (b) the public benefit of maintaining the development standard, and*
 - (c) any other matters required to be taken into consideration by the Director-General before granting concurrence.**
- (8) This clause does not allow development consent to be granted for development that would contravene any of the following:
 - (a) a development standard for complying development,*
 - (b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,*
 - (c) clause 5.4.**

The NSW Government guidelines for varying development standards advise that Clause 4.6 was modelled along the lines of *State Environmental Planning Policy – Development Standards* (SEPP 1). As such the principles for assessment and determination of applications to vary development standards are relevant. In line with this, the decision of Justice Lloyd in *Winten v North Sydney Council* [2001] NSWLEC 46 identifies the principles for which a SEPP 1 objection must be made.

The principles of a SEPP 1 objection are:

- *Is the planning control in question a development standard;*
- *What is the underlying object or purpose of the standard;*
- *Is compliance with the development standard consistent with the aims of the Policy, and in particular does compliance with the development standard tend to hinder the attainment of the objects specified in section 5(a)(i) and (ii) of the EP&A Act;*
- *Is compliance with the development standard unreasonable or unnecessary in the circumstances of the case;*
- *Is a development which complies with the development standard unreasonable or unnecessary in the circumstances of the case; and*
- *Is the objection well founded?*

The decision of Justice Preston in *Wehbe V Pittwater* [2007] NSWLEC 827 has since expanded the considerations of a SEPP 1 objection and established the five (5) part test to determine whether compliance with a development standard is unreasonable or unnecessary based on the following:

- Would the proposal, despite numerical non-compliance, be consistent with the relevant environmental or planning objectives;
- Is the underlying objective or purpose of the standard not relevant to the development thereby making compliance with any such development standard unnecessary;
- Would the underlying objective or purpose would be defeated or thwarted were compliance required, making compliance with any such development standard unreasonable;
- Has Council by its own actions, abandoned or destroyed the development standard, by granting consent that depart from the standard, making compliance with the development standard by others both unnecessary and unreasonable; or
- Is the “zoning of particular land” unreasonable or inappropriate so that a development standard appropriate for that zoning was also unreasonable and unnecessary as it applied to that land. Consequently compliance with that development standard is unnecessary and unreasonable.

Further, the decision in *Four2Five Pty Ltd v Ashfield Council* [2015] NSWLEC 90 indicates that showing that the development achieves the objectives of the development standard would be insufficient, and may require identification of grounds particular to the circumstances of the proposed development.

The following section addresses these following considerations:

- The local provisions of Clause 4.6 of Liverpool LEP 2008;
- The principles of *Winten v North Sydney Council*;
- The expanded 5 part test established by *Wehbe V Pittwater*; and
- The need to identify grounds particular to the circumstances of the proposed development in *Four2Five Pty Ltd v Ashfield Council*.

3.1 Is the Planning Control in question a development standard?

The floor space ratio planning control is a development standard under Clause 4.4 of the Liverpool LEP 2008. Council may consider the variation to the FSR as the site is not excluded from consideration under Clause 4.6 (8). Clause 4.4 nominates a maximum FSR of 3:1 for the site.

3.2 What is the underlying objective of the Standard?

The objectives for the FSR development standard under Liverpool LEP 2008 state the following:

4.4 Floor space ratio

(1) *The objectives of this clause are as follows:*

- (a) to establish standards for the maximum development density and intensity of land use, taking into account the availability of infrastructure and the generation of vehicle and pedestrian traffic,*
- (b) to control building density and bulk in relation to the site area in order to achieve the desired future character for different locations,*
- (c) to minimise adverse environmental effects on the use or enjoyment of adjoining properties and the public domain,*
- (d) to maintain an appropriate visual relationship between new development and the existing character of areas or locations that are not undergoing, and are not likely to undergo, a substantial transformation,*
- (e) to provide an appropriate correlation between the size of a site and the extent of any development on that site,*
- (f) to facilitate design excellence in the Liverpool city centre by ensuring the extent of floor space in building envelopes leaves generous space for the articulation and modulation of design.*

The proposal is consistent with the relevant objectives of Clause 4.4 for the following reasons:

- It will improve the appearance of the site when viewed from the public domain;
- It will improve the housing mix within the Liverpool City Centre;
- It will not detract from the heritage significance of the grid street pattern;
- It will deliver embellished landscaped areas; and
- It does not cause any significant environmental impacts to adjoining properties or the public domain in terms of overshadowing, privacy, access to sunlight and natural ventilation.

The proposed development is consistent with the planning and environmental objectives of the development standard.

3.3 What is the numeric value of the development standard in the environmental planning instrument? What is proposed numeric value of the development standard in the development application? What is the percentage variation (between the proposal and the environmental planning instrument)?

The proposal has an FSR of 3.07:1 and exceeds the maximum 3:1 development standard by 0.07:1. The proposed density of the development is consistent with the scale and nature of development along Bathurst Street

and Lachlan Street and Council's vision for this part of the City Centre which comprises of taller and denser building forms.

3.4 Is compliance with the development standard consistent with the aims of the Policy, and in particular does compliance with the development standard tend to hinder the attainment of the objects specified in section 5(a)(i) and (ii) of the EP&A Act

The aims and objectives of Clause 4.6 are as follows:

"To provide flexibility in the application of planning controls operating by virtue of development standards in circumstances where strict compliance with those standards would, in any particular case, be unreasonable or necessary or tend to hinder the attainment of the objects specified in section 5 (a) (i) and (ii) of the Act."

The objects set down in section 5(a) (i) and (ii) are as follows:

- "(a) to encourage*
- (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural area, forest, mineral, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment.*
 - (ii) the promotion and co-ordination of the orderly and economic use and development of land..."*

The development is generally consistent with the objects of the Act, in respect to the following:

- The site is located within an established urban environment and is presently used for residential purposes. The proposal will contribute a high quality residential flat building development to the transitioning high density precinct and is compatible with the emerging character of the area. The proposal largely accords with the relevant development guidelines under the ADG and principles of SEPP 65.
- The development reflects orderly and economic use of the land. The proposed exception does not contribute to an unreasonable or quantifiable loss of amenity to adjacent land or contribute to an inconsistent streetscape profile. The delivery of new housing within an established urban environment located near public transport, without significant or unreasonable environmental impact is considered to be both orderly and economic use of urban land.

3.5 Is compliance with the development standard unreasonable or unnecessary in the circumstances of the case?

The proposed development will not result in any significant adverse environmental impacts to the surrounding area. The proposed density of the development, with an overall FSR of 3.16:1 is generally consistent with the scale and nature of existing development along Bathurst Street. Strict compliance with the numeric FSR development standard would not result create any adverse environmental impacts (overshadowing, views or privacy).

Compliance with the development standard is considered unreasonable and unnecessary in the circumstances. It improves the appearance of the site when viewed from the public domain, will improve the housing mix within the Liverpool City Centre, will not detract from the heritage significance of Bathurst or Lachlan Streets and does not cause any significant environmental impacts to adjoining properties or the public domain.

Numerical compliance with the 3:1 FSR standard would not contribute to an improved outcome in this particular instance. The proposal does not result in any adverse impacts and exhibits a high quality design which contributes to enhancement of the streetscape. As such it is considered that compliance with the development standards is neither reasonable nor necessary in the circumstances.

3.6 Is the development standard a performance based control?

The development standard under Clause 4.4 is not a performance based control.

3.7 Are there sufficient environmental planning grounds to justify contravening the development standard? Give details.

Yes, there are sufficient environmental planning grounds to justify the contravening development. These include:

- The variation does not result in adverse amenity impacts on adjacent land;
- The variation does not diminish the development potential of adjacent land;
- The development achieves suitable internal amenity including compliance with SEPP 65 separation distances;
- The development provides all necessary supporting facilities and infrastructure within the site; and
- The scale of development along Bathurst Street and Lachlan Street is comparable to established development and those under construction nearby.

3.8 Is the objection well founded?

The proposed exception to the FSR development standard will, help facilitate the delivery of additional housing located within an established urban area within proximity to public transport connections. This presents a positive environmental planning outcome.

Crucially, this development application is in accordance with Liverpool Council's vision for Liverpool City Centre and addresses the need for additional housing as identified in recent research undertaken by MacroPlan Dimasi and the Property Council of Australia, *Missing the Mark - An Audit of Housing Targets* (2014).

This research entailed a comprehensive audit of housing target performance across metropolitan Sydney, the Lower Hunter and Illawarra local government areas (LGAs). All councils were benchmarked in relation to approvals against housing targets by LGA assigned in the relevant subregional and regional strategies.

Based on actual population growth and household formation it was found that *the majority of Councils across metropolitan Sydney had not delivered housing where it is needed, nor have the allotted targets reflected actual demand... Fringe suburbs (i.e. Blacktown, The Hills, Penrith, Camden and Liverpool) remain central sources of housing supply, but a lesser reliance on new estate locations in delivering Sydney's housing needs is anticipated in the projections.*

South West subregions have lagged behind their allocated targets, as the contribution from the Growth Centres has not occurred at the rate expected. Housing production in these areas has increased, but only more recently i.e. since 2010 onwards. It considered that Liverpool has underperformed but has experienced high population growth, indicating the need for additional housing.

As outlined in Section 3.2, the development is consistent with the objectives of the development standard. Moreover, the proposal is consistent with the aims of the policy to allow flexibility in the application of development standards where to require compliance would hinder the objectives. Compliance in this circumstance would not improve the outcome. Rather it would necessitate the loss of housing by reducing the FSR, for no better outcome than compliance itself. It is our view that to force compliance in the circumstance would be antipathetic to the intent of the policy, thereby hindering the attainment of its objectives and thwarting housing supply in Liverpool City Centre.

3.9 Would non-compliance raise any matter of significance for State or Regional Planning?

The non-compliance will not raise any matter of State or Regional Significance.

3.10 Is there a public benefit of maintaining the planning control standard?

The proposed exception to the FSR development standard will, in part, facilitate the delivery of additional housing located within an established urban area in proximity to public transport connections.

The development is considered to offer a positive environmental outcome (social and economic). In particular the variation does not diminish the redevelopment potential or amenity of any adjoining land.

The development provides all necessary services and facilities required by Council's planning controls including common and private open space, parking, storage, servicing and waste areas. In this regard the additional development area imposes no unreasonable pressure on the broader public to facilitate or support the development.

Based on the above and the matters outlined in this written request it is considered that there is no public benefit in maintaining the planning control standard.

4 Conclusion

The development exceeds the permissible Floor Space Ratio by 0.07:1. The proposed density of the development, with an FSR of 3.07:1 is consistent with the large scale residential development which surrounds the site. A development strictly complying with the numerical standard would not significantly improve the amenity of surrounding land uses. In the context of the locality it would be unreasonable for strict compliance to be enforced, as the height and scale of the proposed development is compatible with surrounding existing and likely future development. Furthermore the development, as demonstrated in the SEE, is largely consistent with Council's key development objectives for the R4 High Density Residential zone and controls for the Liverpool City Centre.

On the basis of reasons provided within this written request it is concluded that the objection is well founded as compliance with the standard is both unnecessary and unreasonable.

Appendix K

Clause 4.6 Variations (Building Specification)

Attachment K – Clause 4.6 Variation to Building Separation

Clause 7.4, LLEP 2008 – ‘Building Separation in Liverpool City Centre.’

1 Introduction

A variation pursuant to Clause 4.6 ‘Exceptions to Development Standards’ of Liverpool LEP 2008 is provided to justify a variation to the development standard. This written request seeks a variation to the development standard under Clause 7.4 ‘Building separation in Liverpool city centre.’

The site is zoned R4 High Density Residential and has a maximum height of 35m.

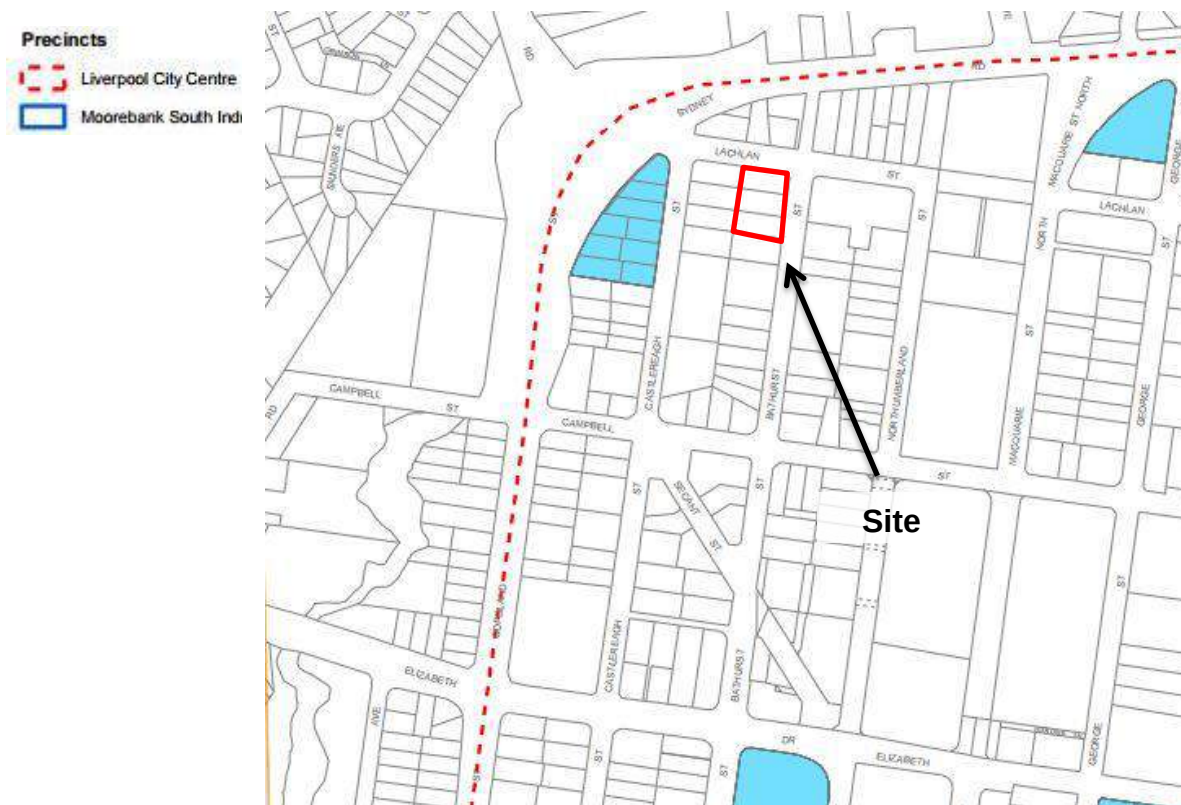


Figure 1 Extract of Key Sites Map Liverpool LEP 2008 (Source: www.legislation.nsw.gov.au)

As stated in Clause 7.4(2):

Development consent must not be granted to development for the purposes of a building on land in Liverpool city centre unless the separation distance from neighbouring buildings and between separate towers, or other separate raised parts, of the same building is at least:

- (a) 9 metres for parts of buildings between 12 metres and 25 metres above ground level (finished) on land in Zone R4 High Density Residential, and
- (b) 12 metres for parts of buildings between 25 metres and 35 metres above ground level (finished) on land in Zone R4 High Density Residential, and
- (c) 18 metres for parts of buildings above 35 metres on land in Zone R4 High Density Residential and
- (d) 12 metres for parts of buildings between 25 metres and 45 metres above ground level (finished) on land in Zone B3 Commercial Core or B4 Mixed Use, and
- (e) 28 metres for parts of buildings 45 metres or more above ground level (finished) on land in Zone B3 Commercial Core or B4 Mixed Use.

As such, the minimum permissible separation distance for the proposed development is 12m.

2. The Proposed Development

The proposed development seeks approval for a building that is 7.5m from a 5 storey unit block on the western boundary situated at 2 Castlereagh Street, and 10m from a 6 storey unit block on the southern boundary. The numerical non-compliances are 4.5m and 2m respectively.

The purpose of Clause 7.4 is to ensure minimum sufficient separation distances between buildings to protect privacy and solar access to buildings. While the numerical standard offered by the *Liverpool Local Environmental Plan 2008* ('Liverpool LEP') is seen as the primary means through which these measures of amenity can be achieved, this document will demonstrate that the considered design elements of the proposed development can achieve similar outcomes.

The proposed development will not result in any significant adverse environmental impacts to surrounding development. The proposed density, height and bulk of the development is characteristic of existing developments in the area and those immediately surrounding the site. A less strict interpretation of the numeric development standard would not result in any adverse impacts to visual appearance, privacy and solar access.

Architectural Drawings (dated 16 October 2016) prepared by Algorry Zappia and Associates Pty Ltd are included at **Appendix B**.

Figure 2 Shade diagrams demonstrating even solar access to all surrounding development.



3. Principles of Exceptions to Development Standards

Clause 4.6 of the Liverpool LEP 2008 provides flexibility in the application of planning controls by allowing Council to approve a development application that does not comply with a development standard where it can be shown that flexibility in particular circumstances achieve better outcomes for and from development. It replaces SEPP 1. Subclauses (3), (4), (5) and (8) from Clause 4.6 are extracted below:

- (3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:
 - (a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
 - (b) that there are sufficient environmental planning grounds to justify contravening the development standard.**
- (4) Development consent must not be granted for development that contravenes a development standard unless:
 - (a) the consent authority is satisfied that:
 - (i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
 - (ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and**
 - (b) the concurrence of the Director-General has been obtained.**
- (5) In deciding whether to grant concurrence, the Director-General must consider:
 - (a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
 - (b) the public benefit of maintaining the development standard, and*
 - (c) any other matters required to be taken into consideration by the Director-General before granting concurrence.**
- (8) This clause does not allow development consent to be granted for development that would contravene any of the following:
 - (a) a development standard for complying development,*
 - (b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,*
 - (c) clause 5.4.**

The NSW Government guidelines for varying development standards advise that Clause 4.6 was modelled along the lines of *State Environmental Planning Policy – Development Standards* (SEPP 1). As such the principles for assessment and determination of applications to vary development standards are relevant. In line with this, the decision of Justice Lloyd in *Winten v North Sydney Council* [2001] NSWLEC 46 identifies the principles for which a SEPP 1 objection must be made.

The principles of a SEPP 1 objection are:

- *Is the planning control in question a development standard;*
- *What is the underlying object or purpose of the standard;*
- *Is compliance with the development standard consistent with the aims of the Policy, and in particular does compliance with the development standard tend to hinder the attainment of the objects specified in section 5(a)(i) and (ii) of the EP&A Act;*
- *Is compliance with the development standard unreasonable or unnecessary in the circumstances of the case;*
- *Is a development which complies with the development standard unreasonable or unnecessary in the circumstances of the case; and*
- *Is the objection well founded?*

The decision of Justice Preston in *Wehbe V Pittwater* [2007] NSWLEC 827 has since expanded the considerations of a SEPP 1 objection and established the five (5) part test to determine whether compliance with a development standard is unreasonable or unnecessary based on the following:

- Would the proposal, despite numerical non-compliance, be consistent with the relevant environmental or planning objectives;
- Is the underlying objective or purpose of the standard not relevant to the development thereby making compliance with any such development standard unnecessary;
- Would the underlying objective or purpose would be defeated or thwarted were compliance required, making compliance with any such development standard unreasonable;
- Has Council by its own actions, abandoned or destroyed the development standard, by granting consent that depart from the standard, making compliance with the development standard by others both unnecessary and unreasonable; or
- Is the “zoning of particular land” unreasonable or inappropriate so that a development standard appropriate for that zoning was also unreasonable and unnecessary as it applied to that land. Consequently compliance with that development standard is unnecessary and unreasonable.

Further, the decision in *Four2Five Pty Ltd v Ashfield Council* [2015] NSWLEC 90 indicates that showing that the development achieves the objectives of the development standard would be insufficient, and may require identification of grounds particular to the circumstances of the proposed development.

The following section addresses these following considerations:

- The local provisions of Clause 4.6 of Liverpool LEP 2008;
- The principles of *Winten v North Sydney Council*;
- The expanded 5 part test established by *Wehbe V Pittwater*; and
- The need to identify grounds particular to the circumstances of the proposed development in *Four2Five Pty Ltd v Ashfield Council*.

3.1 Is the Planning Control in question a development standard?

The planning control is a development standard affecting building separation in the Liverpool City Centre under Clause 7.4 of the Liverpool LEP 2008. Council may consider the variation to the building separation requirements as the site is not excluded from consideration under Clause 4.6 (8). Clause 7.4 nominates a minimum separation distance of 12m for the site to adjoining and surrounding buildings.

3.2 What is the underlying objective of the Standard?

The objective for the development standard under Liverpool LEP 2008 is provided below:

7.4 Building separation in the Liverpool city centre

(1) The objective of this clause is to ensure minimum sufficient separation of buildings for reasons of visual appearance, privacy and solar access.

The proposal is considered consistent with the relevant objectives of Clause 7.4 for the following reasons:

- As shown in Figure 3, the closer separation distance will not compromise the visual appearance of the development or adjoining developments to the south or west. Most of the building complies with the minimum 12m separation distance and as such forms a large communal open space that creates a suitable buffer between developments and ensures residential amenity is assured. Landscaping will also help to soften the built form and create an inviting, aesthetically appealing space that is not compromised by lesser building separation.
- Privacy will not be affected by a departure from the numerical standard for building separation. As shown in the drawings included in **Appendix B**, high-mounted, obscure glass windows will be installed along the western aspect. These windows will ensure visual privacy is maintained to the adjoining balconies and habitable areas in the development to the west at 2 Castlereagh Street.
- Solar access will not be compromised by an exception to this standard. The shadow diagrams included in Figure 4 demonstrate that all surrounding developments will receive at least 2 hours of direct sunlight during the mid-winter solstice.
- Spaces of habitation in the development itself will also have good solar access, with high-mounted windows designed to maximise sunlight exposure. The section of the building with the smallest separation distance also has uninterrupted access to northern sunlight in mid-winter.

The proposed development is consistent with the planning and environmental objectives of the development standard.

3.3 What is the numeric value of the development standard in the environmental planning instrument?

What is proposed numeric value of the development standard in the development application? What is the percentage variation (between the proposal and the environmental planning instrument)?

The proposal has a separation distance of 7.5m to the development to the west at 2 Castlereagh Street and falls short of the minimum 12m development standard by 4.5m. This represents a variation of 37.5%. However, it is important to note that this section represents approximately 15% of the length of the exterior wall of the building along the western aspect. Overall, only 33% of the exterior wall is proposed to be built at a non-compliant separation distance along the western and southern aspects.

The proposed separation distance of the development is consistent with the scale and nature of development along Bathurst Street and Lachlan Street, and Council's vision for this part of the City Centre which comprises of taller and denser building forms. For example, development of a comparable height directly east of the site has approximately 8m separation between buildings. The existing unit block west of the site is also 3.6m from the boundary: a similar distance to what is proposed for this development.

Further to this, it is noted that the neighbouring buildings within the separation distance of 12m are actually 5 and 6 storey constructions, subject to a lower separation distance of 9m. As such, solar access will be improved and visual bulk will be reduced, differentiating this context to others with taller surrounding development.

3.4 Is compliance with the development standard consistent with the aims of the Policy, and in particular does compliance with the development standard tend to hinder the attainment of the objects specified in section 5(a)(i) and (ii) of the EP&A Act.

The aims and objectives of Clause 4.6 are as follows:

"To provide flexibility in the application of planning controls operating by virtue of development standards in circumstances where strict compliance with those standards would, in any particular case, be unreasonable or necessary or tend to hinder the attainment of the objects specified in section 5 (a) (i) and (ii) of the Act."

The objects set down in section 5(a) (i) and (ii) are as follows:

- "(a) to encourage*
- (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural area, forest, mineral, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment.*
 - (ii) the promotion and co-ordination of the orderly and economic use and development of land..."*

The development is generally consistent with the objects of the Act, in respect to the following:

- The site is located within an established urban environment and is presently used for residential purposes.
- The development reflects orderly and economic use of the land, as that the proposed exception does not contribute to an unreasonable or quantifiable loss of amenity to adjacent land or contribute to an inconsistent streetscape profile. The delivery of new housing within an established urban environment located near public transport options without significant or unreasonable environmental impact is considered to be both orderly and economic use of urban land.

3.5 Is compliance with the development standard unreasonable or unnecessary in the circumstances of the case?

The proposed development will not result in any significant adverse environmental impacts to surrounding area. The proposed separation distance of the development is generally consistent with the scale and nature of existing development along Bathurst Street and Lachlan Street. A departure from the numeric building separation development standard would not create any adverse environmental impacts (overshadowing, visual amenity or

privacy) and would be generally consistent with the existing separation distances between similar built forms surrounding the site.

Compliance with the development standard is considered unreasonable and unnecessary in the circumstances. The proposed building separation will not detract from the visual appeal of the building from the public domain, will improve the housing mix within the Liverpool City Centre, will not detract from the heritage significance of grid street pattern and does not cause any significant environmental impacts to its surrounds.

Based on the insignificant nature of impacts arising from the proposed variation, numerical compliance would not contribute to an improved outcome. As such it is considered that compliance with the development standard is neither reasonable, nor necessary in the circumstances.

3.6 Is the development standard a performance based control?

The development standard under Clause 7.4 is not a performance based control.

3.7 Are there sufficient environmental planning grounds to justify contravening the development standard? Give details.

Yes, there are sufficient environmental planning grounds to justify the contravening development. These include:

- The variation does not result in adverse amenity impacts to adjacent land;
- The variation does not diminish the development potential of adjacent land;
- The development achieves suitable internal amenity;
- The development provides all necessary supporting facilities and infrastructure within the site; and
- The scale of surrounding development is comparable, with reduced separation distances already evident in the area.

3.8 Is the objection well founded?

The proposed exception to the building separation development standard will help facilitate the delivery of additional housing located within an established urban area within proximity to public transport connections. This presents a positive environmental planning outcome.

Crucially, this development application is in accordance with Liverpool Council's vision for Liverpool City Centre and addresses the need for additional housing as identified in recent research undertaken by MacroPlan Dimasi and the Property Council of Australia, *Missing the Mark - An Audit of Housing Targets* (2014).

This research entailed a comprehensive audit of housing target performance across metropolitan Sydney, the Lower Hunter and Illawarra local government areas (LGAs). All councils were benchmarked in relation to approvals against housing targets by LGA assigned in the relevant subregional and regional strategies.

Based on actual population growth and household formation it was found that *the majority of councils across metropolitan Sydney had not delivered housing where it is needed, nor have the allotted targets reflected actual demand... Fringe suburbs (i.e. Blacktown, The Hills, Penrith, Camden and Liverpool) remain central sources of housing supply, but a lesser reliance on new estate locations in delivering Sydney's housing needs is anticipated in the projections.*

South West subregions have lagged behind their allocated targets, as the contribution from the Growth Centres has not occurred at the rate expected. Housing production in these areas has increased, but only more recently i.e. since 2010 onwards. It considered that Liverpool has underperformed but has experienced high population growth, indicating the need for additional housing.

As outlined in Section 3.2, the development is consistent with the objectives of the development standard. Moreover, the proposal is consistent with the aims of the policy to allow flexibility in the application of development standards where to require compliance would hinder the objectives. Compliance in this circumstance would not improve the outcome. Rather it would necessitate the loss of housing by reducing the GFA, for no better outcome than compliance itself. It is our view that to force compliance in the circumstance would be antipathetic to the intent of the policy, thereby hindering the attainment of its objectives and thwarting housing supply in Liverpool City Centre.

3.9 Would non-compliance raise any matter of significance for State or Regional Planning?

The non-compliance will not raise any matter of State or Regional Significance.

3.10 Is there a public benefit of maintaining the planning control standard?

The proposed variation to the building separation standard will, in part, facilitate the delivery of additional housing located within an established urban area in proximity to public transport connections.

The development is considered to offer a positive environmental outcome (social and economic). In particular the variation does not diminish the redevelopment potential or amenity of any adjoining land.

The development provides all necessary services and facilities required by Council's planning controls including common and private open space, parking, storage, servicing and waste areas. In this regard the closer positioning of buildings imposes no unreasonable pressure on the broader public to facilitate or support the development.

Based on the above and the matters outlined in this written request it is considered that there is no public benefit in maintaining the planning control standard.

4 Conclusion

The development falls short of the minimum separation distance of 12m by 4.5m to the adjoining residential flat building to the west at 2 Castlereagh Street. The proposed separation distance of 7.5m would not be out of keeping with the large scale residential development which surrounds the site. It is also important to note that this extent of non-compliance exists for only 15% of the building's western aspect. A development strictly complying with the numerical standard would not significantly improve the amenity of surrounding land uses. In the context of the locality it would be unreasonable for strict compliance to be enforced, as positioning and bulk of the proposed development is compatible with surrounding existing and likely future development. As evidenced by photomontages, plans and shadow diagrams the proposed development will still offer good visual amenity, privacy and solar access: the key objectives behind the subject clause. Furthermore the development, as demonstrated in the SEE, is consistent with Council's key development objectives for the R4 High Density Residential zone and Liverpool City Centre.

On the basis of reasons provided within this written request it is concluded that the objection is well founded as compliance with the standard is both unnecessary and unreasonable.

Appendix L

SEPP 65 Compliance Table

17th October 2016

The General Manager
Liverpool City Council
Locked Bag 7064
LIVERPOOL NSW 2170

Dear Sir,

**RE: PROPOSED RESIDENTIAL DEVELOPMENT AT
1-3-5 Bathurst Street - LIVERPOOL**

Pursuant to Clause 50 (1A) of the Environmental Planning and Assessment Regulation 2000, I hereby declare that I am a qualified designer, which means a person registered as an architect in accordance with the Architects Act 2003 as defined by Clause 3 of the Environmental Planning and Assessment Regulation 2000.

I directed the design of the above mentioned address and confirm that the design achieved the design quality principles set out in the State Environmental Planning Policy no. 65 – Design Quality of Residential Apartment Development.

If you have any queries please do not hesitate to contact the undersigned.

Yours Faithfully,



Eduardo Villa
Director / Qualified Architect.
(NSW Registration Board) Reg. No 6813

Design Quality Compliance table

Proposed Residential Flat Building

at

Lot D-E-F DP33121

N.1-3-5 Bathurst Street - LIVERPOOL

for

SYNERGY DEVELOPMENT GROUP

Prepared by

*Villa & Villa Architects
Level 4, No. 24 Hickson Road
Millers Point NSW 2000*

PHONE: 9247 7677

FAX: 9247 7665

17th October 2016

REF	ITEM DESCRIPTION	DESIGN CRITERIA	DESIGN GUIDANCE	NOTES	ACHIEVED ✓ / ✗
PART 3	SITING THE DEVELOPMENT				
3A	SITING ANALYSIS				
3A-1 Objective	<i>Site analysis illustrates that design decisions have been based on opportunities and constraints of the site conditions and their relationship to the surrounding context</i>				
3A-1.1	Each element in the Site Analysis Checklist should be addressed (see Appendix 1 in ADG)		●		✓
3B	ORIENTATION				
3B-1 Objective	<i>Building types and layouts respond to the streetscape and site while optimizing solar access within the development</i>				
3B-1.1	Buildings along the street frontage define the street, by facing it and incorporating direct access from the street (see figure 3B.1 in ADG)		●		✓
3B-1.2	Where the street frontage is to the east or west, rear buildings are orientated to the north		●		✓
3B-1.3	Where the street frontage is to the north or south, overshadowing to the south should be minimized and buildings behind the street frontage should be orientated to the east and west (see figure 3B.2 in ADG)		●		✓
3B-2 Objective	<i>Overshadowing of neighboring properties is minimized during mid winter</i>				
3B-2.1	Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access		●		✓
3B-2.2	Solar access to living rooms, balconies and private open spaces of neighbours should be considered		●		✓
3B-2.3	Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighboring properties is not reduced by more than 20%		●		✓
3B-2.4	If the proposal will reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy		●		N/A
3B-2.5	Overshadowing is minimized to the south or downhill by increased upper level setback		●		✓
3B-2.6	It is optimal to orientate buildings at 90 degrees to the boundary with neighboring properties to minimize overshadowing and privacy impacts, particularly where minimum setbacks are used and where buildings are higher than the adjoining development		●		N/A
3B-2.7	A minimum of 4 hours of solar access should be retained to solar collectors on neighboring buildings		●		N/A

3C	PUBLIC DOMAIN INTERFACE				
3C-1 Objective	Transition between private and public domain is achieved without compromising safety and security				
3C-1.1	Terraces, balconies and courtyard apartments should have direct street entry, where appropriate		●		✓
3C-1.2	Changes in level between private terraces, front gardens and dwelling entries above the street level provide surveillance and improve visual privacy for ground level dwellings (see figure 3C.1 in ADG)		●		X
3C-1.3	Upper level balconies and windows should overlook the public domain		●	Where possible	✓
3C-1.4	Front fences and walls along street frontages should use visually permeable materials and treatments. The height of solid fences or walls is limited to 1m		●		✓
3C-1.5	Length of solid walls should be limited along street frontages		●		✓
3C-1.6	Opportunities should be provided for casual interaction between residents & the public domain. Design solutions may include seating at building entries, near letter boxes and in private courtyards adjacent to streets		●	Vicinity with public open space	X
3C-1.7	In developments with multiple buildings and/or entries, pedestrian entries and spaces associated with individual buildings/entries should be differentiated to improve legibility for residents, using a number of the following design solutions: · Architectural detailing · Changes in materials · Plant species · Colors		●		N/A
3C-1.8	Opportunities for people to be concealed should be minimized		●		✓
3C-2 Objective	Amenity of the public domain is retained and enhanced				
3C-2.1	Planting softens the edges of any raised terraces to the street, for example above sub-basement car parking		●		✓
3C-2.2	Mail boxes are located in lobbies, perpendicular to the street alignment or integrated into front fences where individual street entries are provided		●		✓
3C-2.3	The visual prominence of underground car park vents should be minimized and located at a low level where possible		●		✓
3C-2.4	Substations, pump rooms, garbage storage areas and other service requirements should be located in basement car parks or out of view		●		✓
3C-2.5	Ramping for accessibility should be minimized by building entry location and setting ground floor levels in relation to footpath levels		●		✓
3C-2.6	Durable, graffiti resistant and easily cleanable materials should be used		●		✓

3C-2.7	Where development adjoins public parks, open space or bush land, the design positively addresses this interface and uses a number of the following design solutions: •street access, pedestrian paths and building entries which are clearly defined •paths, low fences and planting that clearly delineate between communal/private open space and the adjoining public open space •minimal use of blank walls, fences and ground level parking		•		N/A
3C-2.8	On sloping sites protrusion of car parking above ground level should be minimized by using split levels to step underground car parking		•		N/A
3D	COMMUNAL AND PUBLIC OPEN SPACE				
3D-1 Objective	An adequate area of communal open space is provided to enhance residential amenity and to provide opportunities for landscaping				
3D-1.1	Communal open space has a minimum area equal to 25% of the site (see figure 3D.3 in ADG)	•		Proximity with Public Open Space	X
3D-1.2	Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9am and 3pm on 21 June (mid winter)	•			✓
3D-1.3	Communal open space should be consolidated into a well designed, easily identified and usable area		•		✓
3D-1.4	Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions		•		✓
3D-1.5	Communal open space should be collocated with deep soil areas		•		✓
3D-1.6	Direct, equitable access should be provided to communal open space areas from common circulation areas, entries and lobbies		•		✓
3D-1.7	Where communal open space cannot be provided at ground level, it should be provided on a podium or roof		•		✓
3D-1.8	Where developments are unable to achieve the design criteria, such as on small lots, sites within business zones, or in a dense urban area, they should: •provide communal spaces elsewhere such as a landscaped roof top terrace or a common room •provide larger balconies or increased private open space for apartments •demonstrate good proximity to public open space and facilities and/or provide contributions to public open space		•	Public open space at 150m walking distance.	✓
3D-2 Objective	Communal open space is designed to allow for a range of activities, respond to site conditions and be attractive and inviting				

3D-2.1	Facilities are provided within communal open spaces and common spaces for a range of age groups (see also 4F Common circulation and spaces), incorporating some of the following elements: •eating for individuals or groups •barbecue areas •play equipment or play areas •swimming pools, gyms, tennis courts or common rooms		●		✓
3D-2.2	The location of facilities responds to microclimate and site conditions with access to sun in winter, shade in summer and shelter from strong winds and down drafts		●		✓
3D-2.3	Visual impacts of services should be minimized, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks		●		✓
3D-3 Objective	Communal open space is designed to maximize safety				
3D-3.1	Communal open space and the public domain should be readily visible from habitable rooms and private open space areas while maintaining visual privacy. Design solutions may include: •bay windows •corner windows •balconies		●		✓
3D-3.2	Communal open space should be well lit		●		✓
3D-3.3	Where communal open space/facilities are provided for children and young people they are safe and contained		●		✓
3D-4 Objective	Public open space, where provided, is responsive to the existing pattern and uses of the neighborhood				
3D-4.1	The public open space should be well connected with public streets along at least one edge		●		X

3D-4.2	The public open space should be connected with nearby parks and other landscape elements		●		X															
3D-4.3	Public open space should be linked through view lines, pedestrian desire paths, termination points and the wider street grid		●		X															
3D-4.4	Solar access should be provided year round along with protection from strong winds		●		X															
3D-4.5	Opportunities for a range of recreational activities should be provided for people of all age		●		X															
3D-4.6	A positive address and active frontages should be provided adjacent to public open space		●		X															
3D-4.7	Boundaries should be clearly defined between public open space and private areas		●		X															
3E	DEEP SOIL ZONES																			
3E-1 Objective	Deep soil zones provide areas on the site that allow for and support healthy plant and tree growth. They improve residential amenity and promote management of water and air quality																			
3E-1.1	Deep soil zones are to meet the following minimum requirements: <table><tr><td>Site area (% of Site area)</td><td>Minimum dim</td><td>Deep soil zone</td></tr><tr><td>< 650m₂</td><td>-</td><td>7%</td></tr><tr><td>650m₂-1500m₂</td><td>3m</td><td>7%</td></tr><tr><td>> 1,500m₂</td><td>6m</td><td>7%</td></tr><tr><td>> 1,500m₂ with significant existing tree cover</td><td>6m</td><td>7%</td></tr></table>	Site area (% of Site area)	Minimum dim	Deep soil zone	< 650m ₂	-	7%	650m ₂ -1500m ₂	3m	7%	> 1,500m ₂	6m	7%	> 1,500m ₂ with significant existing tree cover	6m	7%	●			✓
Site area (% of Site area)	Minimum dim	Deep soil zone																		
< 650m ₂	-	7%																		
650m ₂ -1500m ₂	3m	7%																		
> 1,500m ₂	6m	7%																		
> 1,500m ₂ with significant existing tree cover	6m	7%																		
3E-1.2	On some sites it may be possible to provide larger deep soil zones, depending on the site area and context: •10% of the site as deep soil on sites with an area of 650m2-1,500m2 •15% of the site as deep soil on sites greater than 1,500m2		●		✓															
3E-1.3	Deep soil zones should be located to retain existing significant trees and to allow for the development of healthy root systems, providing anchorage and stability for mature trees. Design solutions may include: •basement and sub basement car park design that is consolidated beneath building footprints •use of increased front and side setbacks •adequate clearance around trees to ensure long term health •co-location with other deep soil areas on adjacent sites to create larger contiguous areas of deep soil		●	Where possible	✓															
3E-1.4	Achieving the design criteria may not be possible on some sites including where: •the location and building typology have limited or no space for deep soil at ground level (e.g. central business district, constrained sites, high density areas, or in centres) •there is 100% site coverage or non-residential uses at ground floor level Where a proposal does not achieve deep soil requirements, acceptable stormwater management should be achieved and alternative forms of planting provided such as on structure		●		N/A															

3F	VISUAL PRIVACY																
3F-1 Objective	Adequate building separation distances are shared equitably between neighboring sites, to achieve reasonable levels of external and internal visual privacy																
3F-1.1	Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to the side and rear boundaries are as follows: <table><tr><td>Building height balconies</td><td>Habitable rooms</td><td>Non-habitable and rooms</td></tr><tr><td>Up to 12m (4 storeys)</td><td>6m</td><td>3m</td></tr><tr><td>Up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr><tr><td>Over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr></table> Note: Separation distances between buildings on the same site should combine required building separations depending on the type of room (see figure 3F.2 in ADG) Gallery access circulation should be treated as habitable space when measuring privacy separation distances between neighboring properties	Building height balconies	Habitable rooms	Non-habitable and rooms	Up to 12m (4 storeys)	6m	3m	Up to 25m (5-8 storeys)	9m	4.5m	Over 25m (9+ storeys)	12m	6m	●		Where minimum separation is not achieved highlight obscure windows will be provide only as secondary ventilation and light access	✓
Building height balconies	Habitable rooms	Non-habitable and rooms															
Up to 12m (4 storeys)	6m	3m															
Up to 25m (5-8 storeys)	9m	4.5m															
Over 25m (9+ storeys)	12m	6m															
3F-1.2	Generally one step in the built form as the height increases due to building separations is desirable. Additional steps should be careful not to cause a 'ziggurat' appearance		●		✓												
3F-1.3	For residential buildings next to commercial buildings, separation distances should be measured as follows: •for retail, office spaces and commercial balconies use the habitable room distances •for service and plant areas use the non-habitable room distances		●		N/A												
3F-1.4	New development should be located and oriented to maximize visual privacy between buildings on site and for neighboring buildings. Design solutions include: •site layout and building orientation to minimize privacy impacts (see also section 3B Orientation) •on sloping sites, apartments on different levels have appropriate visual separation distances (see figure 3F.4 in ADG)		●		✓												
3F-1.5	Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping (figure 3F.5 in ADG)		●		N/A												
3F-1.6	Direct lines of sight should be avoided for windows and balconies across corners		●		✓												
3F-1.7	No separation is required between blank walls		●		✓												

3F-2 Objective	Site and building design elements increase privacy without compromising access to light and air and balance outlook and views from habitable rooms and private open space				
3F-2.1	Communal open space, common areas and access paths should be separated from private open space and windows to apartments, particularly habitable room windows. Design solutions may include: •setbacks •solid or partially solid balustrades to balconies at lower levels •fencing and/or trees and vegetation to separate spaces •screening devices •bay windows or pop out windows to provide privacy in one direction and outlook in another •raising apartments/private open space above the public domain or communal open space •planter boxes incorporated into walls and balustrades to increase visual separation •pergolas or shading devices to limit overlooking of lower apartments or private open space •on constrained sites where it can be demonstrated that building layout opportunities are limited, fixed louvres or screen panels to windows and/or balconies		●		✓
3F-2.2	Bedrooms, living spaces and other habitable rooms should be separated from gallery access and other open circulation space by the apartment's service areas		●	Where possible	✓
3F-2.3	Balconies and private terraces should be located in front of living rooms to increase internal privacy		●		✓
3F-2.4	Windows should be offset from the windows of adjacent buildings		●		✓
3F-2.5	Recessed balconies and / or vertical fins should be used between adjacent balconies		●		✓
3G	PEDESTRIAN ACCESS AND ENTRIES				
3G-1 Objective	Building entries and pedestrian access connects to and addresses the public domain				
3G-1.1	Multiple entries (including communal building entries and individual ground floor entries) should be provided to activate the street edge		●		✓
3G-1.2	Entry locations relate to the street and subdivision pattern and the existing pedestrian network		●		✓
3G-1.3	Building entries should be clearly identifiable and communal entries should be clearly distinguishable from private entries		●		✓
3G-1.4	Where street frontage is limited and multiple buildings are located on the site, a primary street address should be provided with clear sight lines and pathways to secondary building entries		●		✓
3G-2 Objective	Access, entries and pathways are accessible and easy to identify				
3G-2.1	Building access areas including lift lobbies, stairwells and hallways should be clearly visible from the public domain and communal spaces		●		✓

3G-2.2	The design of ground floors and underground car parks minimize level changes along pathways and entries		●		✓
3G-2.3	Steps and ramps should be integrated into the overall building and landscape design		●		✓
3G-2.4	For large developments 'way finding' maps should be provided to assist visitors and residents (see figure 4T.3 in ADG)		●		N/A
3G-3 Objective	Large sites provide pedestrian links for access to streets and connection to destinations				
3G-3.1	Pedestrian links through sites facilitate direct connections to open space, main streets, centres and public transport		●		✓
3G-3.2	Pedestrian links should be direct, have clear sight lines, be overlooked by habitable rooms or private open spaces of dwellings, be well lit and contain active uses, where appropriate		●		✓
3H	VEHICLE ACCESS				
3H-1 Objective	Vehicle access points are designed and located to achieve safety, minimise conflicts between pedestrians and vehicles and create high quality streetscapes				
3H-1.1	Car park access should be integrated with the building's overall facade. Design solutions may include: •the materials and color palette to minimize visibility from the street •security doors or gates at entries that minimize voids in the façade •where doors are not provided, the visible interior reflects the façade design and the building services, pipes and ducts are concealed		●		✓
3H-1.2	Car park entries should be located behind the building line		●		✓
3H-1.3	Vehicle entries should be located at the lowest point of the site minimizing ramp lengths, excavation and impacts on the building form and layout		●		✓
3H-1.4	Car park entry and access should be located on secondary streets or lanes where available		●		✓
3H-1.5	Vehicle standing areas that increase driveway width and encroach into setbacks should be avoided		●		✓
3H-1.6	Access point locations should avoid headlight glare to habitable rooms		●		✓
3H-1.7	Adequate separation distances should be provided between vehicle entries and street intersections		●		✓
3H-1.8	The width and number of vehicle access points should be limited to the minimum		●		✓
3H-1.9	Visual impact of long driveways should be minimized through changing alignments and screen planting		●		✓
3H-1.10	The need for large vehicles to enter or turn around within the site should be avoided		●		✓
3H-1.11	Garbage collection, loading and servicing areas are screened		●		✓
3H-1.12	Clear sight lines should be provided at pedestrian and vehicle crossings		●		✓
3H-1.13	Traffic calming devices such as changes in paving material or textures should be used where appropriate		●		✓

3H-1.14	Pedestrian and vehicle access should be separated and distinguishable. Design solutions may include: • changes in surface materials • level changes • the use of landscaping for separation		•		✓
3J	BICYCLE AND CAR PARKING				
3J-1 Objective	<i>Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas</i>				
3J-1.1	For developments in the following locations: • on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or • on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less. The car parking needs for a development must be provided off street	•			N/A
3J-1.2	Where a car share scheme operates locally, provide car share parking spaces within the development. Car share spaces, when provided, should be on site		•		N/A
3J-1.3	Where less car parking is provided in a development, council should not provide on street resident parking permit		•		N/A
3J-2 Objective	<i>Parking and facilities are provided for other modes of transport</i>				
3J-2.1	Conveniently located and sufficient numbers of parking spaces should be provided for motorbikes and scooters		•		✓
3J-2.2	Secure undercover bicycle parking should be provided that is easily accessible from both the public domain and common areas		•		✓
3J-2.3	Conveniently located charging stations are provided for electric vehicles, where desirable		•	Can be provided	✓
3J-3 Objective	<i>Car park design and access is safe and secure</i>				
3J-3.1	Supporting facilities within car parks, including garbage, plant and switch rooms, storage areas and car wash bays can be accessed without crossing car parking spaces		•		✓
3J-3.2	Direct, clearly visible and well lit access should be provided into common circulation areas		•		✓
3J-3.3	A clearly defined and visible lobby or waiting area should be provided to lifts and stairs		•		✓
3J-3.4	For larger car parks, safe pedestrian access should be clearly defined and circulation areas have good lighting, colour, line marking and/or bollards		•		N/A

3J-4 Objective	Visual and environmental impacts of underground car parking are minimised				
3J-4.1	Excavation should be minimized through efficient car park layouts and ramp design		●		✓
3J-4.2	Car parking layout should be well organised, using a logical, efficient structural grid and double loaded aisles		●		✓
3J-4.3	Protrusion of car parks should not exceed 1m above ground level. Design solutions may include stepping car park levels or using split levels on sloping sites		●		N/A
3J-4.4	Natural ventilation should be provided to basement and sub basement car parking areas		●	Mechanical ventilation	✓
3J-4.5	Ventilation grills or screening devices for car parking openings should be integrated into the facade and landscape design		●		✓
3J-5 Objective	Visual and environmental impacts of on-grade car parking are minimised				
3J-5.1	On-grade car parking should be avoided		●		✓
3J-5.2	Where on-grade car parking is unavoidable, the following design solutions are used: •parking is located on the side or rear of the lot away from the primary street frontage •cars are screened from view of streets, buildings, communal and private open space areas •safe and direct access to building entry points is provided •parking is incorporated into the landscape design of the site, by extending planting and materials into the car park space •stormwater run-off is managed appropriately from car parking surfaces •bio-swailes, rain gardens or on site detention tanks are provided, where appropriate •light coloured paving materials or permeable paving systems are used and shade trees are planted between every 4-5 parking spaces to reduce increased surface temperatures from large areas of paving		●		N/A
3J-6 Objective	Visual and environmental impacts of on-grade car parking are minimised				
3J-6.1	Exposed parking should not be located along primary street frontages		●		N/A
3J-6.2	Screening, landscaping and other design elements including public art should be used to integrate the above ground car parking with the facade. Design solutions may include: •car parking that is concealed behind the facade, with windows integrated into the overall façade design (approach should be limited to developments where a larger floor plate podium is suitable at lower levels) •car parking that is 'wrapped' with other uses, such as retail, commercial or two storey Small Office/Home Office (SOHO) units along the street frontage (see figure 3J.9 in ADG)		●		✓
3J-6.3	Positive street address and active frontages should be provided at ground level		●		✓

PART 4	DESIGNING THE BUILDING				
4A	SOLAR AND DAYLIGHT				
4A-1 Objective	<i>To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space</i>				
4A-1.1	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas	●			✓
4A-1.2	In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid winter	●			N/A
4A-1.3	A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter	●			✓
4A-1.4	The design maximises north aspect and the number of single aspect south facing apartments is minimised		●		✓
4A-1.5	Single aspect, single storey apartments should have a northerly or easterly aspect		●	Where possible	✓
4A-1.6	Living areas are best located to the north and service areas to the south and west of apartments		●		✓
4A-1.7	To optimise the direct sunlight to habitable rooms and balconies a number of the following design features are used: • dual aspect apartments • shallow apartment layouts • two storey and mezzanine level apartments • bay windows		●		✓
4A-1.8	To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m ² of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes		●		✓
4A-1.9	Achieving the design criteria may not be possible on some sites. This includes: • where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source • on south facing sloping sites • where significant views are oriented away from the desired aspect for direct sunlight • Design drawings need to demonstrate how site constraints and orientation preclude meeting the design criteria and how the development meets the objective		●		N/A
4A-2 Objective	<i>Daylight access is maximised where sunlight is limited</i>				
4A-2.1	Courtyards, skylights and high level windows (with sills of 1,500mm or greater) are used only as a secondary light source in habitable rooms		●		✓

4A-2.2	Where courtyards are used: •use is restricted to kitchens, bathrooms and service areas •building services are concealed with appropriate detailing and materials to visible walls •courtyards are fully open to the sky •access is provided to the light well from a communal area for cleaning and maintenance •acoustic privacy, fire safety and minimum privacy separation distances (see section 3F Visual privacy) are achieved		●		✓
4A-2.3	Opportunities for reflected light into apartments are optimised through: •reflective exterior surfaces on buildings opposite south facing windows •positioning windows to face other buildings or surfaces (on neighbouring sites or within the site) that will reflect light •integrating light shelves into the design •light coloured internal finishes		●		✓
4A-3 Objective	Design incorporates shading and glare control, particularly for warmer months				
4A-3.1	A number of the following design features are used: •balconies or sun shading that extend far enough to shade summer sun, but allow winter sun to penetrate living areas •shading devices such as eaves, awnings, balconies, pergolas, external louvres and planting •horizontal shading to north facing windows •vertical shading to east and particularly west facing windows •operable shading to allow adjustment and choice •high performance glass that minimises external glare off windows, with consideration given to reduced tint glass or glass with a reflectance level below 20% (reflective films are avoided)		●		✓
4B	NATURAL VENTILATION				
4B-1 Objective	All habitable rooms are naturally ventilated				
4B-1.1	The building's orientation maximizes capture and use of prevailing breezes for natural ventilation in habitable rooms		●		✓
4B-1.2	Depths of habitable rooms support natural ventilation		●		✓
4B-1.3	The area of unobstructed window openings should be equal to at least 5% of the floor area served		●		✓
4B-1.4	Light wells are not the primary air source for habitable rooms		●		✓
4B-1.5	Doors and openable windows maximise natural ventilation opportunities by using the following design solutions: •adjustable windows with large effective openable areas •a variety of window types that provide safety and flexibility such as awnings and louvres •windows which the occupants can reconfigure to funnel breezes into the apartment such as vertical louvres, casement windows and externally opening doors		●		✓

4B-2 Objective	<i>The layout and design of single aspect apartments maximises natural ventilation</i>				
4B-2.1	Apartment depths are limited to maximise ventilation and airflow (see also figure 4D.3 in ADG)		●		✓
4B-2.2	Natural ventilation to single aspect apartments is achieved with the following design solutions: •primary windows are augmented with plenums and light wells (generally not suitable for cross ventilation) •stack effect ventilation / solar chimneys or similar to naturally ventilate internal building areas or rooms such as bathrooms and laundries •courtyards or building indentations have a width to depth ratio of 2:1 or 3:1 to ensure effective air circulation and avoid trapped smells		●		✓
4B-3 Objective	<i>The number of apartments with natural cross ventilation is maximised to create a comfortable indoor environment for residents</i>				
4B-3.1	At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed	●			✓
4B-3.2	Overall depth of a cross-over or cross through apartment does not exceed 18m, measured glass line to glass line	●			✓
4B-3.3	The building should include dual aspect apartments, cross through apartments and corner apartments and limit apartment depths		●		✓
4B-3.4	In cross-through apartments external window and door opening sizes/areas on one side of an apartment (inlet side) are approximately equal to the external window and door opening sizes/areas on the other side of the apartment (outlet side) (see figure 4B.4 in ADG)		●		✓
4B-3.5	Apartment designs to minimize the number of corners, doors and rooms that might obstruct airflow		●		✓
4B-3.6	Apartment depths, combined with appropriate ceiling heights, maximize cross ventilation and airflow		●		✓
4C	CEILING HEIGHTS				
4C-1 Objective	<i>Ceiling height achieves sufficient natural ventilation and daylight access</i>				
4C-1.1	Measured from finished floor level to finished ceiling level, minimum ceiling heights are: Min. ceiling heights for apartment and mixed use buildings Habitable rooms 2.7m Non-habitable 2.4m 2 storey apartments 2.7m for main living area floor 2.4m for second floor, where its area does not exceed 50% of the apartment area Attic spaces 1.8m at edge of room with a 30 degree minimum slope If located in mixed use areas 3.3m for ground and first floor to promote future flexibility of use These minimums do not preclude higher ceilings if desired	●			✓
4C-1.2	Ceiling height can accommodate use of ceiling fans for cooling and heat distribution		●		✓

4C-2 Objective	Ceiling height increases the sense of space in apartments and provides for well proportioned rooms				
4C-1.1	A number of the following design solutions can be used: - the hierarchy of rooms in an apartment is defined using changes in ceiling heights and alternatives such as raked or curved ceilings, or double height spaces - well proportioned rooms are provided, for example, smaller rooms feel larger and more spacious with higher ceilings - ceiling heights are maximised in habitable rooms by ensuring that bulkheads do not intrude. The stacking of service rooms from floor to floor and coordination of bulkhead location above non habitable areas, such as robes or storage, can assist		●		✓
4C-3 Objective	Ceiling heights contribute to the flexibility of building use over the life of the building				
4C-3.1	Ceiling heights of lower level apartments in centres should be greater than the minimum required by the design criteria allowing flexibility and conversion to non-residential uses (see figure 4C.1 in ADG)		●		✓
4D	APARTMENT SIZE AND LAYOUT				
4D-1 Objective	The layout of rooms within an apartment is functional, well organised and provides a high standard of amenity				
4D-1.1	Apartments are required to have the following minimum internal areas: Apartment type Min. internal area Studio 35m2 1 bedroom 50m2 2 bedroom 70m2 3 bedroom 90m2 The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m2 each. A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m2 each	●			✓
4D-1.2	Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms	●			✓
4D-1.3	Kitchens should not be located as part of the main circulation space in larger apartments (such as hallway or entry space)		●		✓
4D-1.4	A window should be visible from any point in a habitable room		●		✓
4D-1.5	Where minimum areas or room dimensions are not met apartments need to demonstrate that they are well designed and demonstrate the usability and functionality of the space with realistically scaled furniture layouts and circulation areas. These circumstances would be assessed on their merits		●		N/A
4D-2 Objective	Environmental performance of the apartment is maximised				
4D-2.1	Habitable room depths are limited to a maximum of 2.5 x the ceiling height	●			✓
4D-2.2	In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window	●			✓

4D-2.3	Greater than minimum ceiling heights can allow for proportional increases in room depth up to the permitted maximum depths		●		N/A
4D-2.4	All living areas and bedrooms should be located on the external face of the building		●		✓
4D-2.5	Where possible: •bathrooms and laundries should have an external openable window •main living spaces should be oriented toward the primary outlook and aspect and away from noise sources		●		✓
4D-3 Objective	Apartment layouts are designed to accommodate a variety of household activities and needs				
4D-3.1	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² (excluding wardrobe space)	●			✓
4D-3.2	Bedrooms have a minimum dimension of 3m (excluding wardrobe space)	●			✓
4D-3.3	Living rooms or combined living/dining rooms have a minimum width of: •3.6m for studio and 1 bedroom apartments •4m for 2 and 3 bedroom apartments	●			✓
4D-3.4	The width of cross-over or crossthrough apartments are at least 4m internally to avoid deep narrow apartment layouts	●			✓
4D-3.5	Access to bedrooms, bathrooms and laundries is separated from living areas minimising direct openings between living and service areas		●		✓
4D-3.6	All bedrooms allow a minimum length of 1.5m for robes		●		✓
4D-3.7	The main bedroom of an apartment or a studio apartment should be provided with a wardrobe of a minimum 1.8m long, 0.6m deep and 2.1m high		●		✓
4D-3.8	Apartment layouts allow flexibility over time, design solutions may include: •dimensions that facilitate a variety of furniture arrangements and removal •spaces for a range of activities and privacy levels between different spaces within the apartment •dual master apartments •dual key apartments Note: dual key apartments which are separate but on the same title are regarded as two sole occupancy units for the purposes of the Building Code of Australia and for calculating the mix of apartments •room sizes and proportions or open plans (rectangular spaces (2:3) are more easily furnished than square spaces (1:1)) •efficient planning of circulation by stairs, corridors and through rooms to maximise the amount of usable floor space in rooms		●	Generally complies; considered design solutions have enabled various furniture arrangement options, room sizes and proportions have been considered to enable ease of furnishing, narrow or oddly shaped living areas and bedrooms have been avoided wherever possible. Wherever possible efficient planning principles have been implemented particularly in relation to consolidation of circulation space in apartments to maximise usable space	✓

4E	PRIVATE OPEN SPACE AND BALCONIES				
4E-1 Objective	Apartments provide appropriately sized private open space and balconies to enhance residential amenity				
4E-1.1	All apartments are required to have primary balconies as follows: Dwelling type Minimum area Minimum depth Studio apartments 4m2 - 1 bedroom apartments 8m2 2m 2 bedroom apartments 10m2 2m 3+bedroom apartments 12m2 2.4m	●			✓
	The minimum balcony depth to be counted as contributing to the balcony area is 1m	●			✓
4E-1.2	For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m2 and a minimum depth of 3m	●			✓
4E-1.3	Increased communal open space should be provided where the number or size of balconies are reduced		●		N/A
4E-1.4	Storage areas on balconies is additional to the minimum balcony size		●		N/A
4E-1.5	Balcony use may be limited in some proposals by: • consistently high wind speeds at 10 storeys and above •close proximity to road, rail or other noise sources •exposure to significant levels of aircraft noise •heritage and adaptive reuse of existing buildings In these situations, juliet balconies, operable walls, enclosed winter gardens or bay windows may be appropriate, and other amenity benefits for occupants should also be provided in the apartments or in the development or both. Natural ventilation also needs to be demonstrated		●		✓
4E-2 Objective	Primary private open space and balconies are appropriately located to enhance liveability for residents				
4E-2.1	Primary open space and balconies should be located adjacent to the living room, dining room or kitchen to extend the living space		●		✓
4E-2.2	Private open spaces and balconies predominantly face north, east or west		●		✓
4E-2.3	Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms		●		✓
4E-3 Objective	Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building				
4E-3.1	Solid, partially solid or transparent fences and balustrades are selected to respond to the location. They are designed to allow views and passive surveillance of the street while maintaining visual privacy and allowing for a range of uses on the balcony. Solid and partially solid balustrades are preferred		●		✓
4E-3.2	Full width full height glass balustrades alone are generally not desirable		●		✓

4E-3.3	Projecting balconies should be integrated into the building design and the design of soffits considered		●		✓
4E-3.4	Operable screens, shutters, hoods and pergolas are used to control sunlight and wind		●		✓
4E-3.5	Balustrades are set back from the building or balcony edge where overlooking or safety is an issue		●		✓
4E-3.6	Downpipes and balcony drainage are integrated with the overall facade and building design		●		✓
4E-3.7	Air-conditioning units should be located on roofs, in basements, or fully integrated into the building design		●		✓
4E-3.8	Where clothes drying, storage or air conditioning units are located on balconies, they should be screened and integrated in the building design		●	Mostly behind swinging metal louvers on the balcony	✓
4E-3.9	Ceilings of apartments below terraces should be insulated to avoid heat loss		●		✓
4E-3.10	Water and gas outlets should be provided for primary balconies and private open space		●		✓
4E-4 Objective	Private open space and balcony design maximises safety				
4E-4.1	Changes in ground levels or landscaping are minimised		●		✓
4E-4.2	Design and detailing of balconies avoids opportunities for climbing and falls		●		✓
4F	COMMON CIRCULATION AND SPACES				
4F-1 Objective	Common circulation spaces achieve good amenity and properly service the number of apartments				
4F-1.1	The maximum number of apartments off a circulation core on a single level is eight	●			✓
4F-1.2	For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	●			N/A
4F-1.3	Greater than minimum requirements for corridor widths and/ or ceiling heights allow comfortable movement and access particularly in entry lobbies, outside lifts and at apartment entry doors		●		✓
4F-1.4	Daylight and natural ventilation should be provided to all common circulation spaces that are above ground		●		✓
4F-1.5	Windows should be provided in common circulation spaces and should be adjacent to the stair or lift core or at the ends of corridors		●		✓
4F-1.6	Longer corridors greater than 12m in length from the lift core should be articulated. Design solutions may include: •a series of foyer areas with windows and spaces for seating •wider areas at apartment entry doors and varied ceiling heights		●		X
4F-1.7	Design common circulation spaces to maximise opportunities for dual aspect apartments, including multiple core apartment buildings and cross over apartments		●		X

4F-1.8	Achieving the design criteria for the number of apartments off a circulation core may not be possible. Where a development is unable to achieve the design criteria, a high level of amenity for common lobbies, corridors and apartments should be demonstrated, including: •sunlight and natural cross ventilation in apartments access to ample daylight and natural ventilation in common circulation spaces •common areas for seating and gathering •generous corridors with greater than minimum ceiling heights •other innovative design solutions that provide high levels of amenity		•		N/A
4F-1.9	Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level		•		N/A
4F-1.10	Primary living room or bedroom windows should not open directly onto common circulation spaces, whether open or enclosed. Visual and acoustic privacy from common circulation spaces to any other rooms should be carefully controlled		•		✓
4F-2 Objective	Common circulation spaces promote safety and provide for social interaction between residents				
4F-2.1	Direct and legible access should be provided between vertical circulation points and apartment entries by minimising corridor or gallery length to give short, straight, clear sight lines		•		✓
4E-2.2	Tight corners and spaces are avoided		•		✓
4E-2.3	Circulation spaces should be well lit at night		•		✓
4E-2.4	Legible signage should be provided for apartment numbers, common areas and general way finding		•		✓
4E-2.5	Incidental spaces, for example space for seating in a corridor, at a stair landing, or near a window are provided		•		✓
4E-2.6	In larger developments, community rooms for activities such as owners corporation meetings or resident use should be provided and are ideally collocated with communal open space		•		N/A
4E-2.7	Where external galleries are provided, they are more open than closed above the balustrade along their length		•		N/A
4G	STORAGE				
4G-1 Objective	Adequate, well designed storage is provided in each apartment				
4G-1.1	In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type Storage size volume Studio apartments 4m3 1 bedroom apartments 6m3 2 bedroom apartments 8m3 3+ bedroom apartments 10m3 At least 50% of the required storage is to be located within the apartment	•			✓
4G-1.2	Storage is accessible from either circulation or living areas		•		✓

4G-1.3	Storage provided on balconies (in addition to the minimum balcony size) is integrated into the balcony design, weather proof and screened from view from the street		●		N/A
4G-1.4	Left over space such as under stairs is used for storage		●		N/A
4G-2 Objective	Additional storage is conveniently located, accessible and nominated for individual apartments				
4G-2.1	Storage not located in apartments is secure and clearly allocated to specific apartments		●		✓
4G-2.2	Storage is provided for larger and less frequently accessed items		●		✓
4G-2.3	Storage space in internal or basement car parks is provided at the rear or side of car spaces or in cages so that allocated car parking remains accessible		●		✓
4G-2.4	If communal storage rooms are provided they should be accessible from common circulation areas of the building		●		N/A
4G-2.5	Storage not located in an apartment is integrated into the overall building design and is not visible from the public domain		●		✓
4H	ACOUSTIC PRIVACY				
4H-1 Objective	Noise transfer is minimised through the siting of buildings and building layout				
4H-1.1	Adequate building separation is provided within the development and from neighbouring buildings adjacent uses (see also section 2F Building separation and section 3F Visual privacy)		●	Where is not achieved highlight obscure windows are provided only as secondary ventilation and daylight access	✓
4H-1.2	Window and door openings are generally orientated away from noise sources		●		✓
4H-1.3	Noisy areas within buildings including building entries and corridors should be located next to or above each other and quieter areas next to or above quieter areas		●		✓
4H-1.4	Storage, circulation areas and non habitable rooms should be located to buffer noise from external sources		●		✓
4H-1.5	The number of party walls (walls shared with other apartments) are limited and are appropriately insulated		●		✓
4H-1.6	Noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open spaces and circulation areas should be located at least 3m away from bedrooms		●		✓
4H-2 Objective	Noise impacts are mitigated within apartments through layout and acoustic treatments				
4H-2.1	Internal apartment layout separates noisy spaces from quiet spaces, using a number of the following design solutions: •rooms with similar noise requirements are grouped together •doors separate different use zones •wardrobes in bedrooms are collocated to act as sound buffers		●		✓

4H-2.2	Where physical separation cannot be achieved noise conflicts are resolved using the following design solutions: •double or acoustic glazing •acoustic seals •use of materials with low noise penetration properties •continuous walls to ground level courtyards where they do not conflict with streetscape or other amenity requirements		●		✓
4J	NOISE AND POLLUTION				
4J-1 Objective	<i>In noisy or hostile environments the impacts of external noise and pollution are minimized through the careful siting and layout of buildings</i>				
4J-1.1	To minimise impacts the following design solutions may be used: •physical separation between buildings and the noise or pollution source •residential uses are located perpendicular to the noise source and where possible buffered by other uses •non-residential buildings are sited to be parallel with the noise source to provide a continuous building that shields residential uses and communal open spaces •non-residential uses are located at lower levels vertically separating the residential component from the noise or pollution source. Setbacks to the underside of residential floor levels should increase relative to traffic volumes and other noise sources •buildings should respond to both solar access and noise. Where solar access is away from the noise source, non-habitable rooms can provide a buffer •where solar access is in the same direction as the noise source, dual aspect apartments with shallow building depths are preferable (see figure 4J.4 in ADG) •landscape design reduces the perception of noise and acts as a filter for air pollution generated by traffic and industry		●		✓
4J-1.2	Achieving the design criteria in this Apartment Design Guide may not be possible in some situations due to noise and pollution. Where developments are unable to achieve the design criteria, alternatives may be considered in the following areas: •solar and daylight access •private open space and balconies •natural cross ventilation		●		✓
4J-2 Objective	Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission				
4J-2.1	Design solutions to mitigate noise include: •limiting the number and size of openings facing noise sources •providing seals to prevent noise transfer through gaps •using double or acoustic glazing, acoustic louvres or enclosed balconies (winter gardens) •using materials with mass and/or sound insulation or absorption properties e.g. solid balcony balustrades, external screens and soffits		●		✓

4K	APARTMENT MIX				
4K-1 Objective	A range of apartment types and sizes is provided to cater for different household types now and into the future				
4K-1.1	A variety of apartment types is provided		●		✓
4K-1.2	The apartment mix is appropriate, taking into consideration: •the distance to public transport, employment and education centres •the current market demands and projected future demographic trends •the demand for social and affordable housing •different cultural and socioeconomic groups		●		✓
4K-1.3	Flexible apartment configurations are provided to support diverse household types and stages of life including single person households, families, multi-generational families and group households		●		✓
4K-2 Objective	The apartment mix is distributed to suitable locations within the building				
4K-2.1	Different apartment types are located to achieve successful façade composition and to optimise solar access (see figure 4K.3 in ADG)		●		✓
4K-2.2	Larger apartment types are located on the ground or roof level where there is potential for more open space and on corners where more building frontage is available		●		X
4L	GROUND FLOOR APARTMENTS				
4L-1 Objective	Street frontage activity is maximised where ground floor apartments are located				
4L-1.1	Direct street access should be provided to ground floor apartments		●		✓
4L-1.2	Activity is achieved through front gardens, terraces and the facade of the building. Design solutions may include: •both street, foyer and other common internal circulation entrances to ground floor apartments •private open space is next to the street •doors and windows face the street		●		✓
4L-1.3	Retail or home office spaces should be located along street frontages		●		N/A
4L-1.4	Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion		●		N/A
4L-2 Objective	Design of ground floor apartments delivers amenity and safety for residents				
4L-2.1	Privacy and safety should be provided without obstructing casual surveillance. Design solutions may include: •elevation of private gardens and terraces above the street level by 1-1.5m (see figure 4L.4 in ADG) •landscaping and private courtyards •window sill heights that minimize sight lines into apartments •integrating balustrades, safety bars or screens with the exterior design		●		✓

4L-2.2	Solar access should be maximized through: • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer		●		✓
4M	FACADES				
4M-1 Objective	<i>Building facades provide visual interest along the street while respecting the character of the local area</i>				
4M-1.1	Design solutions for front building facades may include: • a composition of varied building elements • a defined base, middle and top of buildings • revealing and concealing certain elements • changes in texture, material, detail and colour to modify the prominence of elements		●		✓
4M-1.2	Building services should be integrated within the overall facade		●		✓
4M-1.3	Building facades should be well resolved with an appropriate scale and proportion to the streetscape and human scale. Design solutions may include: • well composed horizontal and vertical elements • variation in floor heights to enhance the human scale • elements that are proportional and arranged in patterns • public artwork or treatments to exterior blank walls • grouping of floors or elements such as balconies and windows on taller buildings		●		✓
4M-1.4	Building facades relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights		●		✓
4M-1.5	Shadow is created on the façade throughout the day with building articulation, balconies and deeper window reveals		●		✓
4M-2 Objective	<i>Building functions are expressed by the facade</i>				
4M-2.1	Building entries should be clearly defined		●		✓
4M-2.2	Important corners are given visual prominence through a change in articulation, materials or colour, roof expression or changes in height		●		✓
4M-2.3	The apartment layout should be expressed externally through façade features such as party walls and floor slabs		●		✓
4N	ROOF DESIGN				
4N-1 Objective	<i>Roof treatments are integrated into the building design and positively respond to the street</i>				
4N-1.1	Roof design relates to the street. Design solutions may include: • special roof features and strong corners • use of skillion or very low pitch hipped roofs • breaking down the massing of the roof by using smaller elements to avoid bulk • using materials or a pitched form complementary to adjacent buildings		●		✓
4N-1.2	Roof treatments should be integrated with the building design. Design solutions may include: • roof design proportionate to the overall building size, scale and form • roof materials complement the building • service elements are integrated		●		✓

4N-2 Objective	Opportunities to use roof space for residential accommodation and open space are maximised				
4N-2.1	Habitable roof space should be provided with good levels of amenity. Design solutions may include: •penthouse apartments •dormer or clerestory windows •openable skylights		●		X
4N-2.2	Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations		●		✓
4N-3 Objective	Roof design incorporates sustainability features				
4N-3.1	Roof design maximises solar access to apartments during winter and provides shade during summer. Design solutions may include: •the roof lifts to the north •eaves and overhangs shade walls and windows from summer sun		●		✓
4N-3.2	Skylights and ventilation systems should be integrated into the roof design		●		✓
4O	LANDSCAPE DESIGN				
4O-1 Objective	Landscape design is viable and sustainable				
4O-1.1	Landscape design should be environmentally sustainable and can enhance environmental performance by incorporating: •diverse and appropriate planting •bio-filtration gardens •appropriately planted shading trees •areas for residents to plant vegetables and herbs •composting •green roofs or walls		●	Refer to landscape architects design plan	✓
4O-1.2	Ongoing maintenance plans should be prepared		●	Refer to landscape architects design plan	✓
4O-1.3	Microclimate is enhanced by: •appropriately scaled trees near the eastern and western elevations for shade •a balance of evergreen and deciduous trees to provide shading in summer and sunlight access in winter •shade structures such as pergolas for balconies and courtyards		●	Refer to landscape architects design plan	✓
4O-1.4	Tree and shrub selection considers size at maturity and the potential for roots to compete (see Table 4 in ADG)		●	Refer to landscape architects design plan	✓
4O-2 Objective	Landscape design contributes to the streetscape and amenity				
4O-2.1	Landscape design responds to the existing site conditions including: •changes of levels •views •significant landscape features including trees and rock outcrops		●	Refer to landscape architects design plan	✓
4O-2.2	Significant landscape features should be protected by: •tree protection zones (see figure 4O.5 in ADG) •appropriate signage and fencing during construction		●	Refer to landscape architects design plan	✓

4O-2.3	Plants selected should be endemic to the region and reflect the local ecology		●	Refer to landscape architects design plan	✓
4P	PLANTING ON STRUCTURES				
4P-1 Objective	Appropriate soil profiles are provided				
4P-1.1	Structures are reinforced for additional saturated soil weight		●	Refer to landscape architects design plan	✓
4P-1.2	Soil volume is appropriate for plant growth, considerations include: •modifying depths and widths according to the planting mix and irrigation frequency •free draining and long soil life span •tree anchorage		●	Refer to landscape architects design plan	✓
4P-1.3	Minimum soil standards for plant sizes should be provided in accordance with Table 5 (in ADG)		●	Refer to landscape architects design plan	✓
4P-2 Objective	Plant growth is optimised with appropriate selection and maintenance				
4P-2.1	Plants are suited to site conditions, considerations include: •drought and wind tolerance •seasonal changes in solar access •modified substrate depths for a diverse range of plants •plant longevity		●	Refer to landscape architects design plan	✓
4P-2.2	A landscape maintenance plan is prepared		●	Refer to landscape architects design plan	✓
4P-2.3	Irrigation and drainage systems respond to: •changing site conditions •soil profile and the planting regime •whether rainwater, stormwater or recycled grey water is used		●	Refer to landscape architects design plan	✓
4P-3 Objective	Planting on structures contributes to the quality and amenity of communal and public open spaces				
4P-3.1	Building design incorporates opportunities for planting on structures. Design solutions may include: •green walls with specialized lighting for indoor green walls •wall design that incorporates planting •green roofs, particularly where roofs are visible from the public domain •planter boxes Note: structures designed to accommodate green walls should be integrated into the building facade and consider the ability of the facade to change over time		●	Refer to landscape architects design plan	✓
4Q	UNIVERSAL DESIGN				
4Q-1 Objective	Universal design features are included in apartment design to promote flexible housing for all community members				
4Q-1.1	Developments achieve a benchmark of 20% of the total apartments incorporating the Livable Housing Guideline's silver level universal design features		●		X

4Q-2 Objective	<i>A variety of apartments with adaptable designs are provided</i>				
4Q-2.1	Adaptable housing should be provided in accordance with the relevant council policy		●	Accessible unit is provided as per DCP requirements	✓
4Q-2.2	Design solutions for adaptable apartments include: •convenient access to communal and public areas •high level of solar access •minimal structural change and residential amenity loss when adapted •larger car parking spaces for accessibility •parking titled separately from apartments or shared car parking arrangements		●		✓
4Q-3 Objective	<i>Apartment layouts are flexible and accommodate a range of lifestyle needs</i>				
4Q-3.1	Apartment design incorporates flexible design solutions which may include: •rooms with multiple functions •dual master bedroom apartments with separate bathrooms •larger apartments with various living space options •open plan 'loft' style apartments with only a fixed kitchen, laundry and bathroom		●	Incorporated open plan living/dining/kitchen spaces with large bedrooms.	✓
4R	ADAPTIVE REUSE				
4R-1 Objective	<i>New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place</i>				
4R-1.1	Design solutions may include: • new elements to align with the existing building •additions that complement the existing character, siting, scale, proportion, pattern, form and detailing • use of contemporary and complementary materials, •finishes, textures and colours		●		N/A
4R-1.2	Additions to heritage items should be clearly identifiable from the original building		●		N/A
4R-1.3	New additions allow for the interpretation and future evolution of the building		●		N/A
4R-2 Objective	<i>Adapted buildings provide residential amenity while not precluding future adaptive reuse</i>				
4R-2.1	Design features should be incorporated sensitively into adapted buildings to make up for any physical limitations, to ensure residential amenity is achieved. Design solutions may include: •generously sized voids in deeper buildings •alternative apartment types when orientation is poor •using additions to expand the existing building envelope		●		N/A

4R-2.2	Some proposals that adapt existing buildings may not be able to achieve all of the design criteria in this Apartment Design Guide. Where developments are unable to achieve the design criteria, alternatives could be considered in the following areas: •where there are existing higher ceilings, depths of habitable rooms could increase subject to demonstrating access to natural ventilation, cross ventilation (when applicable) and solar and daylight access (see also sections 4A Solar and daylight access and 4B Natural ventilation) •alternatives to providing deep soil where less than the minimum requirement is currently available on the site •building and visual separation – subject to demonstrating alternative design approaches to achieving privacy •common circulation •car parking •alternative approaches to private •open space and balconies		●		N/A
4S	MIXED USE				
4S-1 Objective	<i>Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement</i>				
4S-1.1	Mixed use development should be concentrated around public transport and centres		●		N/A
4S-1.2	Mixed use developments positively contribute to the public domain. Design solutions may include: •development addresses the street •active frontages are provided •diverse activities and uses •avoiding blank walls at the ground level •live/work apartments on the ground floor level, rather than commercial		●		N/A
4S-2 Objective	<i>Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents</i>				
4S-2.1	Residential circulation areas should be clearly defined. Design solutions may include: •residential entries are separated from commercial entries and directly accessible from the street •commercial service areas are separated from residential components •residential car parking and communal facilities are separated or secured •security at entries and safe pedestrian routes are provided •concealment opportunities are avoided		●		N/A
4S-2.2	Landscaped communal open space should be provided at podium or roof levels		●		N/A
4T	AWNINGS AND SIGNAGE				
4T-1 Objective	<i>Awnings are well located and complement and integrate with the building design</i>				
4T-1.1	Awnings should be located along streets with high pedestrian activity and active frontages		●		N/A

4T-1.2	A number of the following design solutions are used: •continuous awnings are maintained and provided in areas with an existing pattern •height, depth, material and form complements the existing street character •protection from the sun and rain is provided •awnings are wrapped around the secondary frontages of corner sites •awnings are retractable in areas without an established pattern		●		N/A
4T-1.3	Awnings should be located over building entries for building address and public domain amenity		●		N/A
4T-1.4	Awnings relate to residential windows, balconies, street tree planting, power poles and street infrastructure		●		N/A
4T-1.5	Gutters and down pipes should be integrated and concealed		●		N/A
4T-1.6	Lighting under awnings should be provided for pedestrian safety		●		N/A
4T-2 Objective	Signage responds to the context and desired streetscape character				
4T-2.1	Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development		●		N/A
4T-2.2	Legible and discrete way finding should be provided for larger developments		●		N/A
4T-2.3	Signage is limited to being on and below awnings and a single façade sign on the primary street frontage		●		N/A
4U	ENERGY EFFICIENCY				
4U-1 Objective	Development incorporates passive environmental design				
4U-1.1	Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)		●		✓
4U-1.2	Well located, screened outdoor areas should be provided for clothes drying		●	All apartments incorporate laundries with dryers	✓
4U-2 Objective	Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer				
4U-2.1	A number of the following design solutions are used: •the use of smart glass or other technologies on north and west elevations •thermal mass in the floors and walls of north facing rooms is maximised •polished concrete floors, tiles or timber rather than carpet •insulated roofs, walls and floors and seals on window and door openings •overhangs and shading devices such as awnings, blinds and screens		●		✓
4U-2.2	Provision of consolidated heating and cooling infrastructure should be located in a centralised location (e.g. the basement)		●		✓
4U-3 Objective	Adequate natural ventilation minimises the need for mechanical ventilation				

4U-3.1	A number of the following design solutions are used: •rooms with similar usage are grouped together •natural cross ventilation for apartments is optimised •natural ventilation is provided to all habitable rooms and as many non-habitable rooms, common areas and circulation spaces as possible		●		✓
4V	WATER MANAGEMENT AND CONSERVATION				
4V-1 Objective	<i>Potable water use is minimised</i>				
4V-1.1	Water efficient fittings, appliances and wastewater reuse should be incorporated		●		✓
4V-1.2	Apartments should be individually metered		●		✓
4V-1.3	Rainwater should be collected, stored and reused on site		●		✓
4V-1.4	Drought tolerant, low water use plants should be used within landscaped areas		●		✓
4V-2 Objective	<i>Urban stormwater is treated on site before being discharged to receiving waters</i>				
4V-2.1	Water sensitive urban design systems are designed by a suitably qualified professional		●		✓
4V-2.2	A number of the following design solutions are used: •runoff is collected from roofs and balconies in water tanks and plumbed into toilets, laundry and irrigation •porous and open paving materials is maximised •on site stormwater and infiltration, including bio-retention systems such as rain gardens or street tree pits		●		✓
4W	WASTE MANAGEMENT				
4W-1 Objective	<i>Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents</i>				
4W-1.1	Adequately sized storage areas for rubbish bins should be located discreetly away from the front of the development or in the basement carpark		●		✓
4W-1.2	Waste and recycling storage areas should be well ventilated		●		✓
4W-1.3	Circulation design allows bins to be easily manoeuvred between storage and collection points		●		✓
4W-1.4	Temporary storage should be provided for large bulk items such as mattresses		●		✓
4W-1.5	A waste management plan should be prepared		●		✓
4W-2 Objective	<i>Domestic waste is minimised by providing safe and convenient source separation and recycling</i>				
4W-2.1	All dwellings should have a waste and recycling cupboard or temporary storage area of sufficient size to hold two days worth of waste and recycling		●		✓
4W-2.2	Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core		●		✓
4W-2.3	For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses		●		N/A
4W-2.4	Alternative waste disposal methods such as composting should be provided		●		X

4X	BUILDING MAINTENANCE				
4X-1 Objective	<i>Building design detail provides protection from weathering</i>				
4X-1.1	A number of the following design solutions are used: •roof overhangs to protect walls •hoods over windows and doors to protect openings •detailing horizontal edges with drip lines to avoid staining of surfaces •methods to eliminate or reduce planter box leaching •appropriate design and material selection for hostile locations		●		✓
4X-2 Objective	<i>Systems and access enable ease of maintenance</i>				
4X-2.1	Window design enables cleaning from the inside of the building		●		✓
4X-2.2	Building maintenance systems should be incorporated and integrated into the design of the building form, roof and facade		●		✓
4X-2.3	Design solutions do not require external scaffolding for maintenance access		●		✓
4X-2.4	Manually operated systems such as blinds, sunshades and curtains are used in preference to mechanical systems		●		✓
4X-2.5	Centralised maintenance, services and storage should be provided for communal open space areas within the building		●		✓
4X-3 Objective	<i>Material selection reduces ongoing maintenance costs</i>				
4X-3.1	A number of the following design solutions are used: •sensors to control artificial lighting in common circulation and spaces •natural materials that weather well and improve with time such as face brickwork •easily cleaned surfaces that are graffiti resistant •robust and durable materials and finishes are used in locations which receive heavy wear and tear, such as common circulation •areas and lift interiors		●		✓