



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

## Multi Dwelling

Certificate number: 1005874M 03

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 1005874M lodged with the consent authority or certifier on 18 April 2019 with application DA2019/0409.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

## Secretary

Date of issue: Friday, 04 October 2019

To be valid, this certificate must be lodged within 3 months of the date of issue.



Project name	Oxford Falls_03			
Street address	1113 Oxford Falls Road Frenchs Forest 2086			
Local Government Area	Northern Beaches (	Council		
Plan type and plan number	deposited 752038			
Lot no.	1113			
Section no.	n/a			
No. of residential flat buildings	9			
No. of units in residential flat buildings	41			
No. of multi-dwelling houses	0			
No. of single dwelling houses	0			
Project score	115			
Water	✔ 42	Target 40		
Thermal Comfort	✔ Pass	Target Pass		
Energy	<b>✓</b> 45	Target 45		

## **Certificate Prepared by**

Name / Company Name: Ecological Design Pty Ltd

ABN (if applicable): 56151659120

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## Description of project

Project address	
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Street address	1113 Oxford Falls Road Frenchs Forest 2086
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Plan type and plan number	deposited 752038
Lot no.	1113
Section no.	n/a
Project type	
No. of residential flat buildings	9
No. of units in residential flat buildings	41
No. of multi-dwelling houses	0
No. of single dwelling houses	0
Site details	
Site area (m²)	33853
Roof area (m²)	3176
Non-residential floor area (m²)	389.0 .
Residential car spaces	82
Non-residential car spaces	13

Common area landscape	
Common area lawn (m²)	1370.0
Common area garden (m²)	728.0
Area of indigenous or low water use species (m²)	-
Assessor details	
Assessor number	20570
Certificate number	0004254780
Climate zone	56
Project score	
Water	√ 42 Target 40
Thermal Comfort	✓ Pass Target Pass
Energy	√ 45 Target 45

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## Description of project

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

# Residential flat buildings - Building1, 11 dwellings, 2 storeys above ground

D poid	1.2.5	1.2.1	1.1.1	Dwelling no.
	2	N	2	No. of bedrooms
Residential flat huildings	94.4	94.4	94.4	Conditioned floor area (m²)
	7.2	7.2	7.2	Unconditioned floor area (m²)
ings -	0.0	0.0	0.0	Area of garden & lawn (m²)
	1	•	1	Indigenous species (min area m²)
- Buildings A dwellings	1.2.6	1.2.2	1.1.2	Dwelling no.
<u> </u>	2	2	2	No. of bedrooms
allina	96.2	94.6	119.7	Conditioned floor area (m²)
2 ) ct.	0.0	0.0	0.0	Unconditioned floor area (m²)
OFFICE	0.0	0.0	0.0	Area of garden & lawn (m²)
shove	ı	1	ı	Indigenous species (min area m²)
2 storevs above ground	1.2.7	1.2.3	1.1.3	Dwelling no.
2	2	2	2	No. of bedrooms
	109.5	94.6	94.4	Conditioned floor area (m²)
	0.0	0.0	7.2	Unconditioned floor area (m²)
	0.0	0.0	0.0	Area of garden & lawn (m²)
	•	1	ı	Indigenous species (min area m²)
			<b>-</b>	Dwelling no.
		2.4	1.4	
		N	2	No. of bedrooms
		141.1	109.5	Conditioned floor area (m²)

## Residential flat buildings - Building2, 4 dwellings, 2 storeys above ground

	Indigenous species (min area m²)
2.2.1	Dwelling no.
2	No. of bedrooms
113.3	Conditioned floor area (m²)
0.0	Unconditioned floor area (m²)
0.0	Area of garden & lawn (m²)
ı	Indigenous species (min area m²)

Dwelling no.

No. of bedrooms

Conditioned floor area (m²)

Unconditioned filoor area (m²)

Area of garden & lawn (m²)

Indigenous species (min area m²)

Dwelling no.

area (m²)

No. of bedrooms Conditioned floor

Unconditioned floor area (m²)

Area of garden & lawn (m²)

N

99.3

Residential flat buildings - Building3, 2 dwellings, 2 storeys above ground

2.1.2

(min area m²)

Dwelling no. No. of bedrooms Conditioned floor area (m²) Unconditioned

Area of garden & lawn (m²)

floor area (m²)

0.0

0.0

Unconditioned

floor area (m²)

Area of garden & lawn (m²)

Indigenous species

(min area m²)

Indigenous species

Residential flat buildings - Building6, 4	1.1 3 No Go ar 161.1 0.0 flo Ar la	velling no.  o. of bedrooms  onditioned floor rea (m²)  nconditioned oor area (m²)  rea of garden & wn (m²)  digenous species nin area m²)	Residential flat buildings - Building5,	4.1.1 3 143.8 0.0 0.0 -	Dwelling no.  No. of bedrooms  Conditioned floor area (m²)  Unconditioned floor area (m²)  Area of garden & lawn (m²)  Indigenous species (min area m²)	Residential flat buildings - Building4,	Dwelling no.  No. of bedrooms  Conditioned floor area (m²)  Unconditioned floor area (m²)  Area of garden & lawn (m²)  Indigenous species (min area m²)
ng6, 4	5.1.2	welling no.	ng5, 4	4.1.2	Dwelling no.	ng4, 4	ω No.
dwe	ω Ιλι	o. of bedrooms	dwe	3	No. of bedrooms		No. of bedrooms
lling		onditioned floor rea (m²)	dwellings,	143.8	Conditioned floor area (m²)	dwellings,	Conditioned floor area (m²)
s, 2 s		nconditioned por area (m²)	N	0.0	Unconditioned floor area (m²)	2	Unconditioned floor area (m²)
torey		rea of garden & wn (m²)	storeys	0.0	Area of garden & lawn (m²)	storeys	Area of garden & lawn (m²)
dwellings, 2 storeys above ground	' វភ	digenous species nin area m²)	s above	1	Indigenous species (min area m²)	above	Indigenous species (min area m²)
groun	5.2.1	welling no.	ground	4.2.1	Dwelling no.	ground	
Q.		o. of bedrooms	d	3	No. of bedrooms	Q.	
		onditioned floor rea (m²)		182.3	Conditioned floor area (m²)		
	0.0 (i)	nconditioned oor area (m²)		0.0	Unconditioned floor area (m²)		
		rea of garden & wn (m²)		0.0	Area of garden & lawn (m²)		
	la ' lin	rea of garden &		0.0 -			
	la li li (n	rea of garden & wn (m²) digenous species		0.0 - 4.2.2	lawn (m²) Indigenous species		
	- In (n 5.2.2 3	rea of garden & wn (m²) idigenous species nin area m²)		- 4.2.2 3	lawn (m²)  Indigenous species (min area m²)  Dwelling no.  No. of bedrooms		
	Ia   In (n   5.2.2   3   14	rea of garden & wn (m²) rdigenous species nin area m²) welling no.	Construction of Military Construction of the C	- 4.2.2	lawn (m²)  Indigenous species (min area m²)  Dwelling no.		
	5.2.2 3 143.8 0.0	rea of garden & wn (m²)  digenous species nin area m²)  welling no.  o. of bedrooms	Consistencia del Caldado de Calda	- 4.2.2 3 143	lawn (m²)  Indigenous species (min area m²)  Dwelling no.  No. of bedrooms  Conditioned floor		
	5.2.2 3 143.8 0.0 0.0	rea of garden & wn (m²) digenous species min area m²) welling no. o. of bedrooms onditioned floor rea (m²)		- 4.2.2 3 143.8	lawn (m²)  Indigenous species (min area m²)  Dwelling no.  No. of bedrooms  Conditioned floor area (m²)  Unconditioned		

Resid	8.1.1	Dwelling no.	Resid	7.1.1	Dwelling no.	Resid	6.1.1	Dwelling no.
lent	2	No. of bedrooms	lent	2	No. of bedrooms	lent	2	No. of bedrooms
Residential flat	99.3	Conditioned floor area (m²)	Residential flat	99.3	Conditioned floor area (m²)	Residential flat	136.8	Conditioned floor area (m²)
t buildings	0.0	Unconditioned floor area (m²)	t buildings	0.0	Unconditioned floor area (m²)	t builc	0.0	Unconditioned floor area (m²)
lings	0.0	Area of garden & lawn (m²)		0.0	Area of garden & lawn (m²)	buildings	0.0	Area of garden & lawn (m²)
- Buildi	1	Indigenous species (min area m²)	- Building8,	•	Indigenous species (min area m²)	- Buildi	ı	Indigenous species (min area m²)
Building9, 4	8.1.2	Dwelling no.	4	7.1.2	Dwelling no.	Building7, 4	6.1.2	Dwelling no.
dwellings,	2 99	No. of bedrooms	dwellings,	2 99	No. of bedrooms	dwell	2 1	No. of bedrooms
	ω	area (m²)		ယ	area (m²)	dwellings,	103.1 0	area (m²)
2 sto	0.0	Unconditioned floor area (m²)	2 sto	0.0	Unconditioned floor area (m²)	2 sto	0.0	Unconditioned floor area (m²)
storeys a	0.0	Area of garden & lawn (m²)	storeys a	0.0	Area of garden & lawn (m²)	storeys a	0.0	Area of garden & lawn (m²)
above	ı	Indigenous species (min area m²)	above	•	Indigenous species (min area m²)	above	1	Indigenous species (min area m²)
ground	8.2.1	Dwelling no.	ground	7.2.1	Dwelling no.	ground	6.2.1	Dwelling no.
<u>α</u>	2	No. of bedrooms	₫	2	No. of bedrooms	<u>a</u>	2	No. of bedrooms
:	99.3	Conditioned floor area (m²)		99.3	Conditioned floor area (m²)		136.8	Conditioned floor area (m²)
	0.0	Unconditioned floor area (m²)		0.0	Unconditioned floor area (m²)		0.0	Unconditioned floor area (m²)
	0.0	Area of garden & lawn (m²)		0.0	Area of garden & lawn (m²)		0.0	Area of garden & lawn (m²)
	1	Indigenous species (min area m²)		1	Indigenous species (min area m²)	***************************************	(	Indigenous species (min area m²)
	8.2.2	Dwelling no.		7.2.2	Dwelling no.		6.2.2	Dwelling no.
	2	No. of bedrooms		2	No. of bedrooms		2	No. of bedrooms
	99.3	Conditioned floor area (m²)		99.3	Conditioned floor area (m²)		1.3.1	Conditioned floor area (m²)
	0.0	Unconditioned floor area (m²)		0.0	Unconditioned floor area (m²)		0.0	Unconditioned floor area (m²)
	0.0	Area of garden & lawn (m²)		0.0	Area of garden & lawn (m²)	***************************************	0.0	Area of garden & lawn (m²)
	,	Indigenous species (min area m²)		1	Indigenous species (min area m²)	***************************************	1	Indigenous species (min area m²)

9.1.1	Dwelling no.
2	Na. of bedrooms
103.1	Conditioned floor area (m²)
0.0	Unconditioned floor area (m²)
0.0	Area of garden & lawn (m²)
-	Indigenous species (min area m²)

9.1.2	Dwelling no.
2	No, of bedrooms
148.5	Conditioned floor area (m²)
0.0	Unconditioned floor area (m²)
0.0	Area of garden & lawn (m²)
•	Indigenous species (min area m²)

9.2.1	Dwelling no.
2	No. of bedrooms
103.1	Conditioned floor area (m²)
0.0	Unconditioned floor area (m²)
0,0	Area of garden & lawn (m²)
1	Indigenous species (min area m²)

	(mmegrazam)
9.2.2	Dwelling no.
N	No. of bedrooms
145.4	Conditioned floor area (m²)
0.0	Unconditioned floor area (m²)
0.0	Area of garden & lawn (m²)
-	Indigenous specie (min area m²)

## **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 buildings 1	1207.0
Garbage room building 1	30.7
Waste room building 1 First	8.1
craft	29.4
Fire Control room	21.6
Stairs/corridors Building 1 ground	120.7

Common area	Floor area (m²)
Lift car (No.3)	-
Waste room building 1 Ground	8.1
Games/lounge	113.6
office	10.6
rest rooms	11.5
Hallway/stairs Building 1 first	120.7

Common area	Floor area (m²)
Lift car (No.4)	-
Waste room building 1 carpark	14.0
Reception/kitchen	191.0
Fan Room building 1	6.5
BOH and Storage, Services	153.0
Lobby building 1 Carpark	18.2

## Common areas of the development (non-building specific)

Common area	Floor area (m²)
Pool	194.5
Car park Building 6,7,8,9	1410.0
waste Room building 2&3 ground	10.0
waste Room3 building 4&5 carpark	17.1
waste Room 4 building 6,7,8,9 carpark	21.7
Amenities Pool/Gym	32.3
Hallway 4&5 first	15.0
Hallway building 6,7,8,9 ground	163.7

Common area	Floor area (m²)
Gym	61.9
Lift car (No.1)	_
waste Room building 4&5 first	8.8
waste Room building 6,7,8,9 first	8.7
fan room 4&5	11.2
Hallways 2&3 first	26.0
Lobby 4&5 Carpark	37.2
Lobby 6,7,8,9 Carpark	43.5

Common area	Floor area (m²)
Car park Building 4 and 5	693.0
Lift car (No.2)	-
waste Room building 4&5 ground	8.8
waste Room building 6,7,8,9 ground	7.6
fan room 6,7,8,9	18.2
Hallway 2&3 ground	51.0
Hallway building 6,7,8,9 first	90.0

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## 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 Residential flat buildings Building2
  - (a) Dwellings
    - (i) Water
    - (ii) Energy
    - (iii) Thermal Comfort
  - (b) Common areas and central systems/facilities
    - (i) Water
    - (ii) Energy
- 3. Commitments for Residential flat buildings Building3
  - (a) Dwellings
    - (i) Water
    - (ii) Energy
    - (iii) Thermal Comfort
  - (b) Common areas and central systems/facilities
    - (i) Water
    - (ii) Energy
- 4. Commitments for Residential flat buildings Building4
  - (a) Dwellings

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- (i) Water (ii) Energy (iii) Thermal Comfort (b) Common areas and central systems/facilities (i) Water (ii) Energy
  - 5. Commitments for Residential flat buildings Building5
    - (a) Dwellings
      - (i) Water
      - (ii) Energy
      - (iii) Thermal Comfort
    - (b) Common areas and central systems/facilities
      - (i) Water
      - (ii) Energy
  - 6. Commitments for Residential flat buildings Building6
    - (a) Dwellings
      - (i) Water
      - (ii) Energy
      - (iii) Thermal Comfort
    - (b) Common areas and central systems/facilities
      - (i) Water
      - (ii) Energy
  - 7. Commitments for Residential flat buildings Building7
    - (a) Dwellings
      - (i) Water
      - (ii) Energy
      - (iii) Thermal Comfort
    - (b) Common areas and central systems/facilities
      - (i) Water

		-
(ii) Energy		
8. Commitments for Residential flat buildings - Building8		
(a) Dwellings		
(i) Water		
(ii) Energy		
(iii) Thermal Comfort		
(b) Common areas and central systems/facilities		
(i) Water		
(ii) Energy		
Commitments for Residential flat buildings - Building9		
(a) Dwellings		
(i) Water		
(ii) Energy		
(iii) Thermal Comfort		
(b) Common areas and central systems/facilities		
(i) Water		
(ii) Energy		
10. Commitments for multi-dwelling houses		
44. Committee outs for simple develling bounds		

- 11. Commitments for single dwelling houses
- 12. Commitments for common areas and central systems/facilities for the development (non-building specific)
  - (i) Water
  - (ii) Energy

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## 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.		~	V
(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.		~	V
(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		•	V
(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.		•	V
(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.	V	~	
(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.	V	V	
(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.	~	~	V

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	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 (> 7.5 but <= 9 L/min)	3 star	3 star	3 star	no	3.5 star	3.5 star		-	-	-	-		-

BATALLE	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	-		1 - /	-	-	-	-	-		

(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.		~	~

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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.	200	<b>✓</b>	
(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".		<b>V</b>	

Dwelling no.	Hot water	Bathroom ver	tilation system Kitchen v		ilation system	Laundry ventilation system		
	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control	
All dwellings	gas instantaneous 5 star	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	

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			Hea	ting	Artificial lighting						Natural lighting	
Dwelling no.	living 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 kitcher
1.2.4	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes
All other dwellings	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Individual pool		Individual s	pa	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	3.5 star (new rating)	no	3.5 star	3.5 star	3.5 star	yes	yes

(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.	V		

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(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)					
1.1.1	24.6	28.2					
1.1.2	37.7	18.3					
1.1.3	35.9	19.7					
1.1.4	31.8	21.4					
1.2.1	23.6	24.6					
1.2.2	26.2	23.9					
1.2.3	23.8	23.3					
1.2.4	42.4	28.3					
1.2.5	9.2	25.1					
1.2.6	10.0	21.5					
All other dwellings	11.1	26.9					

## (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.		~	V
(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.	V	~	
(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.		~	V
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		~	V

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but <= 9 L/min)	3 star	3 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.	~	~	~

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Bergeral De Maria	Common area	ventilation system	·	Common area lighting	
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Car park buildings 1	ventilation exhaust only	carbon monoxide monitor + 2-speed fan	light-emitting diode	daylight sensor and motion sensor	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 building 1	ventilation exhaust only	-	light-emitting diode	motion sensors	No
Waste room building 1 Ground	no mechanical ventilation	_	light-emitting diode	motion sensors	No
Waste room building 1 carpark	no mechanical ventilation	-	light-emitting diode	motion sensors	No
Waste room building 1 First	no mechanical ventilation	•	light-emitting diode	motion sensors	No
Games/lounge	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	No
Reception/kitchen	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	No
craft	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	No
office	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	No
Fan Room building 1	no mechanical ventilation	-	light-emitting diode	manual on / manual off	No
Fire Control room	no mechanical ventilation	-	light-emitting diode	manual on / manual off	No
rest rooms	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	motion sensors	No
BOH and Storage,Services	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / manual off	No
Stairs/corridors Building 1 ground	air conditioning system	time clock or BMS controlled	light-emitting diode	daylight sensors	No
Hallway/stairs Building 1 first	no mechanical ventilation	-	light-emitting diode	daylight sensors	No
Lobby building 1 Carpark	no mechanical ventilation	-	light-emitting diode	daylight sensors	No

Central energy systems	Туре	Specification
Lift (No. 3)	gearless traction with V V V	Number of levels (including basement): 4
	F motor	

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Central energy systems	Туре	Specification
Lift (No. 4)	hydraulic	Number of levels (including basement): 3

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## 2. Commitments for Residential flat buildings - Building2

## (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.		~	v
(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.		V	v
(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		•	V
(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.		•	V
(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.	V	•	
(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.	V	•	
(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.	~	~	~

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