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TAYLOR CONSTRUCTION
GROUP

**MANNIX PARADE
WARWICK FARM**

BASIX SUMMARY
REPORT



AUGUST 2020

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Mannix Parade Warwick Farm BASIX Summary Report



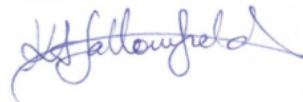
Taylor

WSP

Level 27, 680 George Street
Sydney NSW 2000
GPO Box 5394
Sydney NSW 2001

Tel: +61 2 9272 5100
Fax: +61 2 9272 5101
wsp.com

REV	DATE	DETAILS
01	27/05/2020	Issue for DA
02	18/08/2020	Updates to NatHERS Models

	NAME	DATE	SIGNATURE
Prepared by:	Meison Wallace	18/08/2020	
Reviewed by:	Allissa Abrenica	18/08/2020	
Approved by:	Katie Fallowfield	18/08/2020	

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EXECUTIVE SUMMARY

An ESD strategy has been developed for the proposed development at 11-13 Mannix Parade in Warwick Farm. This report demonstrates how the development meets the statutory requirements for single occupancy dwellings under Section J and BASIX.

BASIX requires the following benchmarks to be met:

- Water—Minimum target of 40% potable water use reduction compared to the NSW average
- Thermal comfort—Meeting a set of NatHERS modelled maximum heating and cooling loads determined by the BASIX tool according to the development type and climate zone. For this development, the thresholds are as follows:
 - Heating maximum 55.7 MJ/m² average across all units, maximum 63.2 MJ/m² for any individual unit.
 - Cooling maximum 56.2 MJ/m² average across all units, maximum 63.7 MJ/m² for any individual unit.
- Energy—Minimum required target of 25% energy consumption reduction compared to the NSW average

The proposed development achieves a BASIX Water score of 40%.

Water efficiency in the building has been achieved through the following:

- Water efficient fittings
- Native and low water use plant species have been selected for all landscaping in the site

The proposed development satisfies the minimum BASIX Thermal Comfort requirements.

NatHERS modelling has been conducted to demonstrate thermal comfort performance of the residential dwellings, and the results of this modelling demonstrate that the architectural design is able to manage thermal loads within the apartments to meet and exceed the minimum benchmark for this location.

The proposed development achieves a BASIX Energy score of 32%.

Energy consumption in multi-unit residential buildings is heavily influenced by the utilisation and servicing of the common areas. HVAC and artificial lighting systems in the common areas has been carefully designed to reduce energy demands.

Simple energy efficiency measures, such as the provision of efficient fitting and fixtures will deliver energy consumption reductions in the dwellings. These include:

- Efficient DHW heating systems
- Lighting will consist of dedicated low energy light fittings with efficient controls to limit unnecessary usage

1 INTRODUCTION

An ESD strategy has been developed for the proposed development at 11-13 Mannix Parade in Warwick Farm. This report demonstrates how the development meets the statutory requirements for single occupancy dwellings under Section J and BASIX.

1.1 ESD COMMITMENTS AND CONDITIONS OF APPROVAL

The conditions declared in the Principal's Project Requirements have been addressed in full. As per the requirements stipulated in Section 2.4.1, the project has achieved an average 7 Star NatHERS rating.

1.2 BASIX

BASIX is an online tool that is used to rate the energy and water efficiency and thermal comfort performance of residential dwellings in NSW, in accordance with NSW planning legislation (SEPP 2004). The tool sets minimum energy and water reduction targets which must be met through the design of the building and the selection of fixtures and fittings.

BASIX applies to all new dwellings including single dwellings, townhouses and low-rise, mid-rise and high-rise developments in NSW. BASIX also applies to all residential alterations and additions with a total cost of works of \$50,000 or more.

Design inputs including location, size, construction and glazing materials, water sources, equipment and fittings are used to determine the potential energy and water consumption of a new home or dwelling.

BASIX assesses three main categories:

- 1 Water;
- 2 Thermal Comfort;
- 3 Energy.

Thermal comfort is assessed by simulation in accordance with the Nationwide House Energy Rating Scheme (NatHERS) modelling protocol. This requires the modelling of each assessable dwelling by an accredited assessor, working with NatHERS accredited software.

NatHERS modelling assesses the potential of the dwelling to provide thermal comfort passively, thereby reducing energy requirements for heating and cooling. The annual heating and cooling loads calculated are entered into the BASIX tool to determine if the dwelling satisfies the maximum heating and cooling loads set for the dwelling in its climate zone.

The heating and cooling loads also affect the 'Energy' score, with more efficient dwellings contributing to an improved score in the 'Energy' section. The 'Energy' score is also affected by other inputs such as efficiency of appliances, heating and cooling system selection, hot water systems and factors such as use of renewable energy systems.

1.2.1 SOURCES OF INFORMATION

This BASIX assessment has relied on the following documentation for inputs and methodology

→ Architectural plan drawings from TURNER

Drawing	Date	Revision
Site Analysis Plan	31.07.20	A-100-102 Rev K For Information

Drawing	Date	Revision
Basement 1	31.07.20	A-110-007 Rev K For Information
Ground GA Plan	31.07.20	A-110-008 Rev K For Information
Level 1-3 GA Plan	31.07.20	A-110-010 Rev K For Information
Level 4 GA Plan	31.07.20	A-110-040 Rev K For Information
Level 5 GA Plan	31.07.20	A-110-050 Rev K For Information
Roof GA Plan	31.07.20	A-110-060 Rev K For Information

→ Architectural elevation and section drawings from TURNER.

Drawing	Date	Revision
West Elevation	31.07.20	A-250-010 Rev K For Information
East Elevation	31.07.20	A-250-020 Rev K For Information
South Elevation	31.07.20	A-250-030 Rev K For Information
North Elevation	31.07.20	A-250-040 Rev K For Information
Section AA	31.07.20	A-350-010 Rev K For Information
Section BB	31.07.20	A-350-020 Rev K For Information

→ Correspondence with the project team

→ NatHERS Technical note - version June 2019 Final

→ BASIX Thermal Comfort Protocol 01 July 2017

1.2.2 ACCREDITED NATHERS SIMULATION SOFTWARE

FirstRate5 is provided by Sustainability Victoria and is accredited for simulating the thermal performance of dwellings in Australian climates under the NatHERS software accreditation protocol.

FirstRate5 version 5.2.11(3.13) has been used in the assessment of this project, in accordance with the NatHERS Technical Note and the BASIX Thermal Comfort Protocol.

Inputs including dwelling geometry, space uses, orientation, climate zone, building materials and shading from adjacencies, architectural features and obstructions are used to calculate heating and cooling loads for the dwelling.

Resulting loads that are within the heating and cooling thresholds set under the BASIX protocol will satisfy the thermal comfort targets of BASIX.

1.3 LIMITATIONS

The results from the NatHERS modelling in this report are limited in accuracy by factors including the following:

- Actual energy consumption to achieve thermal comfort will be affected by variations in the climate, installed equipment, occupants and their behaviour which modelling does not account for;
- Construction details being consistent with the design documentation provided;
- Orientation and apartment layout being as shown on the drawings.

Results should not be interpreted for any purpose other than for assessing the thermal comfort section of BASIX.

1.4 APPLICATION OF SECTION J OF THE NATIONAL CONSTRUCTION CODE VOLUME 1

The thermal performance requirements for a building's envelope are addressed through Section J – Energy Efficiency of the National Construction Code (NCC) Volume 1:

→ Parts J1/J2 – Building Fabric & Glazing

→ Part J3 – Building Sealing

The residential part of this project is regulated under BASIX for energy efficiency.

For each Sole Occupancy Unit (SOU) of a Class 1a or Class 2 building, BASIX satisfies the building envelope requirements of Section J.

The prescriptive provisions of Section J are therefore not directly applicable to each SOU. The relevant Performance Requirements have been stated as the maximum thermal comfort heating and cooling loads stipulated by BASIX.

The Class 2 parts of the building that are not SOUs must satisfy the prescriptive provisions of Section J.

The architect must take responsibility for specifying the Performance Requirements of the building fabric, glazing and building sealing performance, as required under BASIX, including those non-SOU parts of the building.

The relevant consultant(s) must take responsibility for specifying the Performance Requirements of the mechanical and electrical services design, as required under the relevant parts of Section J.

2 BASIX

The purpose of the BASIX analysis is to benchmark the proposed development against average NSW residential performance parameters, including:

- Water
- Thermal comfort
- Energy

BASIX requires the following benchmarks to be met:

- Water—Minimum target of 40% potable water use reduction compared to the NSW average
- Thermal comfort—Meeting a set of NatHERS modelled maximum heating and cooling loads determined by the BASIX tool. For this development, they are as follows:
 - Heating maximum 55.7 MJ/m² average across all units, maximum 63.2 MJ/m² for any individual unit.
 - Cooling maximum 56.2 MJ/m² average across all units, maximum 63.7 MJ/m² for any individual unit.
- Energy—Minimum required target of 25% energy consumption reduction compared to the NSW average

The BASIX certificate(s) for the development are included in Appendix A below.

2.1 WATER

Water efficiency in the building has been achieved through the following:

- Water efficient fittings as shown in Table 2.1 below
- Native and low water use plant species have been selected for all landscaping in the site
- Closed system for fire sprinkler test water

Table 2.1 Water Fixtures Performance

Fitting	WELS rating	Flow rate
Toilet	4 Star	
Bathroom taps	6 Star	
Kitchen taps	6 Star	
Showers	4 Star	>4.5 but ≤ 6L/min
Dishwashers	Not specified	
Washing machines	Not specified	

2.2 THERMAL COMFORT

Thermal comfort (NatHERS) modelling is employed in accordance with the BASIX protocol, to determine heating and cooling loads attributed to achieving acceptable thermal comfort in each dwelling. The results of NatHERS modelling demonstrate that the architectural design can manage thermal loads within the dwellings to meet and exceed the minimum benchmark for this location.

The maximum allowable thermal loads for a development in this location are shown in Table 2.2. The average thermal loads achieved in this development are shown in the same table for comparison.

Table 2.2 NatHERS Thermal Comfort Performance

	Heating	Cooling
Maximum individual dwelling load (set by BASIX)	63.2 MJ / m ²	63.7 MJ / m ²
Average maximum load across project (set by BASIX)	55.7 MJ / m ²	56.2 MJ / m ²
Average load achieved in Warwick Farm	28.0 MJ / m²	28.8 MJ / m²

2.2.1 NatHERS MODELLING INPUTS

This section identifies the inputs for windows, shading and constructions used for the NatHERS modelling of the dwellings.

GLAZING

Table 2.3 identifies the glazing properties (whole of window system values including frame and glass) used in the NatHERS models.

Table 2.3 Glazing properties

Location	Type	Glass	Frame	U-value	SHGC
All apartments except apartments 0.07 & the living room windows of 0.01 where specified (awning & casement windows)	Single glazed aluminium frame	High solar gain low-E	Aluminium	5.4	0.49
All apartments except apartments 0.07 & the living room windows of 0.01 where specified (sliding windows/doors and fixed windows)	Single glazed aluminium frame	High solar gain low-E	Aluminium	5.4	0.58
Apartments 0.07 & the living room windows of 0.01 where specified (awning windows)	Double glazed aluminium frame	Air Fill Clear - Clear	Aluminium	4.8	0.51

Location	Type	Glass	Frame	U-value	SHGC
Apartments 0.07 & the living room windows of 0.01 where specified (sliding windows/doors and fixed windows)	Double glazed aluminium frame	Air Fill Clear - Clear	Aluminium	4.8	0.59

Any substitution of glazing needs to ensure the system U-value is less than or equal to, and SHGC is within +/-10% of the glazing system values described above.

SHADING

Shading of the external building fabric alters the impact of solar loads on the internal conditions of each dwelling. NatHERS modelling accounts for sources of fixed shading that can impact each dwelling.

Note that models have accounted for the following:

- The overhang of any balconies above each dwelling;
- Vertical and horizontal shading elements applied to windows and balconies as indicated on stamped plans
- Projecting balcony separator walls and other 'wing-wall'-type geometry between dwellings.

Holland blinds have been modelled as required by the NatHERS protocol but are not required to be installed as part of the development.

CONSTRUCTIONS

Table 2.4 identifies the wall, floor, ceiling and roof construction properties used as part of the NatHERS models.

Table 2.4 Construction Properties

	Construction	Insulation	Detail
External walls (ground floor to sixth floor)	External brickwork lined with plasterboard	50mm acoustic insulation + thermal insulation, R2.5 added bulk insulation	
Party walls (walls between dwellings)	Shaft liner and studs each side with plasterboard lining	25mm and 50mm acoustic insulation, R1.7 added bulk insulation	
Corridor walls	Internal Plasterboard Stud Wall	25mm and 50mm acoustic insulation, R1.7 added bulk insulation	
Internal walls (Walls within dwellings)	Plasterboard stud walls	No added insulation	
Walls to service risers, stairwells and lift core	Shaft liner and studs each side with plasterboard lining	R1.7 added bulk insulation for walls to waste holding Otherwise, No added insulation	
Roof	Suspended 200mm concrete slab	R4 added insulation	Applied to all apartments
Floors	Suspended 200mm concrete slab	No added insulation	

	Construction	Insulation	Detail
Suspended floors	Suspended 200mm concrete slab	R2 added insulation	Applied to ground floor above basement carpark and other apartments over unconditioned spaces
Ceilings	Plasterboard lined	No added insulation	Ceiling between levels have neighbouring adjacencies and are not insulated.
Roof	Concrete slab 200mm	R4.0 added insulation	Top floor

2.2.2 MODELLING RESULTS

This section describes the results from NatHERS modelling. In summary, the dwelling designs identified in the stamped drawings can achieve the minimum thermal comfort requirements of BASIX without amendments.

Area adjusted heating and cooling loads and star ratings for the development are identified in Table 2.5.

Table 2.5 Area adjusted heating and cooling loads for individual dwellings

Dwelling	Heating Load (MJ/m ²)	Cooling Load (MJ/m ²)	Total Load (MJ/m ²)	Star Rating
0.01	51.7	33.5	85.2	6.1
0.02	36.9	33.6	70.5	6.8
0.03	24.7	41.1	65.8	7.0
0.04	16.1	18.0	34.1	8.4
0.05	16.0	18.0	34.0	8.4
0.06	52.7	26.7	79.4	6.4
0.07	62.5	21.3	83.8	6.2
1.01	39.2	35.0	74.2	6.6
1.02	22.5	31.6	54.1	7.5
1.03	17.8	30.7	48.5	7.8
1.04	11.1	22.9	34.0	8.5
1.05	11.0	23.0	34.0	8.4
1.06	20.1	26.3	46.4	7.9
1.07	41.2	29.4	70.6	6.8
1.08	35.0	28.8	63.8	7.1
2.01	35.9	34.8	70.7	6.8
2.02	23.1	30.6	53.7	7.6
2.03	18.6	30.0	48.6	7.8

Dwelling	Heating Load (MJ/m²)	Cooling Load (MJ/m²)	Total Load (MJ/m²)	Star Rating
2.04	9.8	23.5	33.3	8.5
2.05	9.7	23.4	33.1	8.5
2.06	15.9	25.7	41.6	8.1
2.07	31.0	29.6	60.6	7.2
2.08	31.1	28.8	59.9	7.3
3.01	36.7	34.5	71.2	6.8
3.02	23.9	29.8	53.7	7.6
3.03	19.1	29.5	48.6	7.8
3.04	12.1	22.8	34.9	8.4
3.05	12.0	22.4	34.4	8.7
3.06	16.4	25.4	41.8	8.1
3.07	31.7	29.5	61.2	7.2
3.08	32.5	27.5	60.0	7.3
4.01	39.9	30.9	70.8	6.8
4.02	25.7	26.2	51.9	7.6
4.03	22.3	25.2	47.5	7.8
4.04	14.5	20.5	35.0	8.4
4.05	18.8	29.4	48.2	7.8
4.06	38.3	27.2	65.5	7.0
5.01	48.1	38.8	86.9	6.0
5.02	35.7	32.9	68.6	6.9
5.03	35.5	33.2	68.7	6.9
5.04	29.0	27.5	56.5	7.4
5.05	31.2	42.0	73.2	6.7
5.06	47.9	37.3	85.2	6.1

2.2.3 THERMAL COMFORT MODELLING CONCLUSION

The results of NatHERS modelling demonstrate the apartments can meet the minimum requirements of the Thermal Comfort section of BASIX.

The NatHERS group Universal Certificate(s) are included in Appendix B below.

Stamped plans for submission in conjunction with the BASIX certificate are included in Appendix C below.

2.3 ENERGY

2.3.1 COMMON AREAS

Energy consumption in multi-unit residential buildings is heavily influenced by the utilisation and servicing of the common areas. HVAC and artificial lighting systems in car parks, and lobbies need to be carefully designed to reduce energy demands.

The common areas will use:

- Natural ventilation where possible
- High efficacy light fittings with appropriate control systems in all places

Further details of the proposed energy strategy for the common areas of the residential portion of the building are summarised in Table 2.6.

Table 2.6 Energy strategies for the common areas

Energy Item	Strategy
Lift motors	Gearless traction with VVVF motors
Lighting	Basement car park—LED Lifts—LED; Connected to lift call button Garbage rooms—LED; Motion Sensors Plant areas—LED; Manual on/manual off Ground floor lobby—LED; Time clock and motion sensors Hallways—LED; Motion sensors
Ventilation	Basement car park—ventilation (supply + exhaust) Garbage rooms—ventilation exhaust only Plant areas— ventilation exhaust only Ground floor lobby—no mechanical ventilation Hallways—no mechanical ventilation

2.3.2 DWELLINGS

Domestic hot water (DHW), space heating and comfort cooling account for up to 60% of the energy use of an average residential dwelling. Targeting these systems as a priority will support the greatest energy consumption reductions. Simple energy efficiency measures, such as the provision of efficient fittings and fixtures can deliver energy consumption reductions.

The dwellings will include the following initiatives:

- Efficient DHW heating systems
- Lighting will consist of dedicated low energy light fittings
- Clothes drying lines will be installed to each dwelling terrace space

Table 2.7 Energy strategies for the dwellings

Energy Item	Strategy
DHW heating system	Individual instantaneous gas to each dwelling, 4 star
Lift motors	Gearless traction with VVVF motors
Appliances	<ul style="list-style-type: none"> → Cooktop - Gas → Oven – Electric
Heating and cooling	<ul style="list-style-type: none"> → Living – ceiling fans; → Bedroom – ceiling fans
Lighting	LED fixtures, dedicated low energy light fittings to limit unnecessary energy usage
Ventilation	<ul style="list-style-type: none"> → Bathroom ventilation – individual fan, ducted to façade or roof → Laundry ventilation – individual fan, ducted to façade or roof → Kitchen ventilation – individual fan, ducted to façade or roof

APPENDIX A

BASIX CERTIFICATES

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 1093106M_02

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

Secretary

Date of issue: Tuesday, 18 August 2020

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



Planning,
Industry &
Environment

Project summary

Project name	LAHC Warwick Farm Affordable Housing_02
Street address	11-13 Mannix Street Warwick Farm 2170
Local Government Area	Liverpool City Council
Plan type and plan number	deposited 36641
Lot no.	26
Section no.	-
No. of residential flat buildings	1
No. of units in residential flat buildings	43
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 42	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 32	Target 25

Certificate Prepared by

Name / Company Name: WSP Australia Pty Ltd

ABN (if applicable): 80078004798

Description of project

Project address

Project name	LAHC Warwick Farm Affordable Housing_02
Street address	11-13 Mannix Street Warwick Farm 2170
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Plan type and plan number	deposited 36641
Lot no.	26
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	43
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m²)	1690
Roof area (m²)	790
Non-residential floor area (m²)	0.0
Residential car spaces	21
Non-residential car spaces	0

Common area landscape

Common area lawn (m²)	0.0
Common area garden (m²)	100.0
Area of indigenous or low water use species (m²)	100.0

Assessor details

Assessor number	BDAV/19/1903
Certificate number	LYXU1WER79
Climate zone	28

Project score

Water	✓ 42	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 32	Target 25

Description of project

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

Residential flat buildings - Building1, 43 dwellings, 7 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)
0.01	1	57.7	0.0	0.0	0.0
0.05	1	51.9	0.0	0.0	0.0
1.02	1	54.1	0.0	0.0	0.0
1.06	2	70.7	0.0	0.0	0.0
2.02	1	54.1	0.0	0.0	0.0
2.06	2	70.7	0.0	0.0	0.0
3.02	1	54.1	0.0	0.0	0.0
3.06	2	70.7	0.0	0.0	0.0
4.02	1	54.1	0.0	0.0	0.0
4.06	2	80.5	0.0	0.0	0.0
5.04	1	51.9	0.0	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)
0.02	1	54.1	0.0	0.0	0.0
0.06	1	51.6	0.0	0.0	0.0
1.03	2	70.5	0.0	0.0	0.0
1.07	2	70.8	0.0	0.0	0.0
2.03	2	70.5	0.0	0.0	0.0
2.07	2	70.8	0.0	0.0	0.0
3.03	2	70.5	0.0	0.0	0.0
3.07	2	70.8	0.0	0.0	0.0
4.03	2	70.5	0.0	0.0	0.0
5.01	2	72.2	0.0	0.0	0.0
5.05	2	74.9	0.0	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)
0.03	2	70.2	0.0	0.0	0.0
0.07	2	80.1	0.0	0.0	0.0
1.04	1	51.9	0.0	0.0	0.0
1.08	1	52.3	0.0	0.0	0.0
2.04	1	51.9	0.0	0.0	0.0
2.08	1	52.3	0.0	0.0	0.0
3.04	1	51.9	0.0	0.0	0.0
3.08	1	52.3	0.0	0.0	0.0
4.04	1	51.9	0.0	0.0	0.0
5.02	1	54.1	0.0	0.0	0.0
5.06	2	81.4	0.0	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)
0.04	1	51.9	0.0	0.0	0.0
1.01	2	72.2	0.0	0.0	0.0
1.05	1	51.9	0.0	0.0	0.0
2.01	2	72.2	0.0	0.0	0.0
2.05	1	51.9	0.0	0.0	0.0
3.01	2	72.2	0.0	0.0	0.0
3.05	1	51.9	0.0	0.0	0.0
4.01	2	72.2	0.0	0.0	0.0
4.05	2	74.9	0.0	0.0	0.0
5.03	2	70.5	0.0	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 (No. 1)	907.0
Switch room (No. 1)	11.0
Fire Pump room	16.0
Hallway/lobby type (No. 1)	260.0

Common area	Floor area (m²)
Lift car (No.1)	-
Garbage and bulky goods	50.0
Cold Water Pump Room	7.5

Common area	Floor area (m²)
Lift car (No.2)	-
comms room	4.4
Ground floor lobby type (No. 1)	59.0

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	4 star (> 4.5 but <= 6 L/min)	4 star	6 star	6 star	no	-	-	-	-	-	-	-	-	-

	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	gas instantaneous 4 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

	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
All dwellings	ceiling fans	ceiling fans	-	-	0 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	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	-	no	-	-	-	no	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.	✓		
(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)
0.01	51.7	33.5
0.02	36.9	33.6
0.03	24.7	41.1
0.04	16.1	18.0
0.05	16.0	18.0
0.06	52.7	26.7
0.07	62.5	21.3
1.01	39.2	35.0
1.02	22.5	31.6
1.03	17.8	30.7
1.04	11.1	22.9
1.05	11.0	23.0
1.06	20.1	26.3
1.07	41.2	29.4
1.08	35.0	28.8
2.01	35.9	34.8
2.02	23.1	30.6
2.03	18.6	30.0
2.04	9.8	23.5
2.05	9.7	23.4
2.06	15.9	25.7
2.07	31.0	29.6
2.08	31.1	28.8
3.01	36.7	34.5
3.02	23.9	29.8
3.03	19.1	29.5
3.04	12.1	22.8

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
3.05	12.0	22.4
3.06	16.4	25.4
3.07	31.7	29.5
3.08	32.5	27.5
4.01	39.9	30.9
4.02	25.7	26.2
4.03	22.3	25.2
4.04	14.5	20.5
4.05	18.8	29.4
4.06	38.3	27.2
5.01	48.1	38.8
5.02	35.7	32.9
5.03	35.5	33.2
5.04	29.0	27.5
5.05	31.2	42.0
All other dwellings	47.9	37.3

(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	no common facility	6 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.	-

(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 (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	none	No
Lift car (No.1)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	No
Switch room (No. 1)	ventilation exhaust only	thermostatically controlled	light-emitting diode	manual on / manual off	No
Garbage and bulky goods	ventilation exhaust only	-	light-emitting diode	motion sensors	No
comms room	ventilation exhaust only	thermostatically controlled	light-emitting diode	manual on / manual off	No
Fire Pump room	ventilation exhaust only	thermostatically controlled	light-emitting diode	manual on / manual off	No
Cold Water Pump Room	ventilation exhaust only	thermostatically controlled	light-emitting diode	manual on / manual off	No
Ground floor lobby type (No. 1)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	No
Hallway/lobby type (No. 1)	no mechanical ventilation	-	light-emitting diode	motion sensors	No

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 8
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 8

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	no common facility	6 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).

APPENDIX B

NATHERS GROUP UNIVERSAL CERTIFICATES

Nationwide House Energy Rating Scheme — Class 2 summary

Generated on 18 Aug 2020 using FirstRate5 v5.3.0a

Property

Address 11-13 Mannix Parade, Warwick Farm,
NSW, 2170

Lot/DP

NatHERS climate zone

Accredited assessor



Christie Woinarski

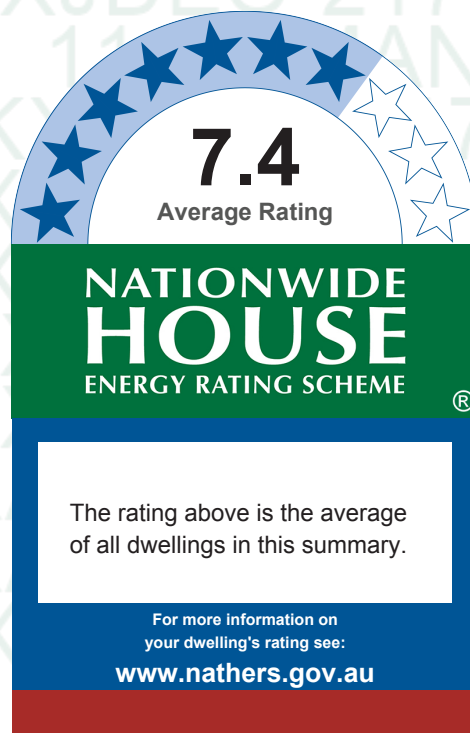
WSP

christie.woinarski@wsp.com

0428937977

Accreditation No. DMN/19/1903

Assessor Accrediting Organisation DMN



Verification

To verify this certificate, scan the QR code or visit

<https://www.fr5.com.au/QRCodeLanding?PublicId=57MVKXJDEO&GrpCert=1> When using either link, ensure you are visiting www.fr5.com.au.

Summary of all dwellings

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
GAN1K244ME	0.01	51.7	33.5	85.2	6.1
LCLF66CKRY	0.02	36.9	33.6	70.5	6.8
I8DNFKXGB4	0.03	24.7	41.1	65.8	7
WZ20M4NWSW	0.04	16.1	18	34.1	8.4
M4WISY8HVA	0.05	16	18	34	8.4
NSGO2H7AW9	0.06	52.7	26.7	79.4	6.4
EY3SRWJU2C	0.07	62.5	21.3	83.8	6.2

Continued over

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
SP24LNM44Q	1.01	39.2	35	74.2	6.6
MPUBQETO7F	1.02	22.5	31.6	54.1	7.5
6NASRYBD15	1.03	17.8	30.7	48.5	7.8
PNPSR7ZLCP	1.04	11.1	22.9	34	8.5
5DFFXYD1CM	1.05	11	23	34	8.4
D5XXGFPJNW	1.06	20.1	26.3	46.4	7.9
LID9B8ACTS	1.07	41.2	29.4	70.6	6.8
OHMSJ2I552	1.08	35	28.8	63.8	7.1
VKBO2U01ML	2.01	35.9	34.8	70.7	6.8
SQ7PDX9GDZ	2.02	23.1	30.6	53.7	7.6
YAHT75SENN	2.03	18.6	30	48.6	7.8
7TOUABGYGR	2.04	9.8	23.5	33.3	8.5
HJ0I98K6PW	2.05	9.7	23.4	33.1	8.5
2B2GEUCSQ7	2.06	15.9	25.7	41.6	8.1
BWO8O9CNPB	2.07	31	29.6	60.6	7.2
FU21H8VFNR	2.08	31.1	28.8	59.9	7.3
VWZ0U51IQP	3.01	36.7	34.5	71.2	6.8
9XIJQV413A	3.02	23.9	29.8	53.7	7.6
66RNFRRBGYZ	3.03	19.1	29.5	48.6	7.8
KC8RLO6YNS	3.04	12.1	22.8	34.9	8.4
I369C3D0F6	3.05	12	22.4	34.4	8.4
UTGTCYFMUD	3.06	16.4	25.4	41.8	8.1
4UT0F7Y07C	3.07	31.7	29.5	61.2	7.2
YGNK2CARLM	3.08	32.5	27.8	60.3	7.3
OKB1F05PPX	4.01	39.9	30.9	70.8	6.8
IUDKYXJG3E	4.02	25.7	26.2	51.9	7.6
EM3CHNF509	4.03	22.3	25.2	47.5	7.8
YXBIYTT2VO	4.04	14.5	20.5	35	8.4
BJLJ3ECDWE	4.05	18.8	29.4	48.2	7.8
24YGIBR8U1	4.06	38.3	27.2	65.5	7
VAYP9VT5VF	5.01	48.1	38.8	86.9	6
DRUOD5BTJD	5.02	35.7	32.9	68.6	6.9
LBIWG495AW	5.03	35.5	33.2	68.7	6.9
BUH43AU6KI	5.04	29	27.5	56.5	7.4
VHRRALJJCM	5.05	31.2	42	73.2	6.7
A7YQQT1CIE	5.06	47.9	37.3	85.2	6.1
Average		28	28.8	56.8	7.4

Explanatory notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

APPENDIX C

BASIX STAMPED PLANS SET

7.4

Average
star rating

NATIONWIDE
HOUSE

ENERGY RATING SCHEME

www.nathers.gov.au

57MVKXJDEO 18/08/2020

Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170



https://www.fr5.com.au/QRCodeLanding?PublicId=57MVKXJDEO&GrpCert=1



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CLIENT
NSW Land and Housing Corporation

Rev	Date	Approved by	Issue Name
K	31/07/20	VS	For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Drawing Title
General
Cover Sheet_DA

Scale @A1, 50%@A3	Project No. 19010	Drawn by BP/VS/MM	North ↑
Status LAHC Review	Dwg No. A-000-000	Rev K	

57MVKXJDEO 18/08/2020

Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170



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Drawing List

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CLIENT
NSW Land and Housing Corporation

Rev	Date	Approved by	Issue Name
K	31/07/20	VS	For information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Scale
 @A1 50% @A2

Project No. 19010

Drawn by
BD/MM/JS

North

Dwg No. **A 001 001**

Rev **K**

Drawing Title

General

Drawing List

TURNER

Level 7 **ONE** Oxford Street
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AUSTRALIA

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ummersaudio.com

7.4
Average
star rating
NATIONWIDE
HOUSE
ENERGY RATING SCHEME
www.nathers.gov.au

57MVKXJDEO 18/08/2020

Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170



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NSW Land and Housing Corporation

Rev K Date 31/07/20 Approved by VS Issue Name For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
Context Plans
Location Plan

Scale
1:200 @A1, 50% @A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-100-101
Drawn by
BP, MM
Rev
K
North
↑

TURNER

Level 7 ONE Oxford Street
Sydney NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0068
turner@turner.com.au

7.4

Average star rating

NATIONWIDE HOUSE

ENERGY RATING SCHEME

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57MVKXJDEO 18/08/2020

Assessor
Accreditation No.
Address

Christie Woinarski
DMN/19/1903

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170



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NSW Land and Housing Corporation

DLCS Quality Endorsed Company ISO 9001:2015, Registration Number 236176
Notwithstanding to which the drawings are made, the drawings are not to be used for any purpose other than that for which they were prepared.

LEGEND	CLIENT	DP	DOWN PIPE	K	KITCHEN
AIN	AWNING	FCL	FINISHED CEILING LEVEL	L1, 2...	LIFT NO.1, 2, ETC.
B1, 2...	BATHROOM	FK	FIRE EXTINGUISHER	L	LIVING
BAL	BEDROOM 1, BEDROOM 2	FFL	FINISHED FLOOR LEVEL	LY	LAUNDRY
BW	BALCONY	FI	FIRE INDICATOR	S	SCREEN
BY	BALCONY RAIN WATER OUTLET	PIP	FIRE INDICATOR PANEL	SCN	STRUCTURAL SLAB LEVEL
CIL	BALCONY RETRACTABLE CLOTHES DRYING LINE	H	HYDRAULIC	SSL	STAIR NO.1, 2, ETC.
		HWU	HOT WATER UNIT	ST, 1	

Rev	Date	Approved	Issue Name
K	31/07/20	VS	For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
GA Plans
Basement 1

Scale
1:100 @A1, 50% @A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-110-007
Drawn by
BP, MM
Rev
K

TURNER

Level 7 ONE Oxford Street
Sydney NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0088
turner@turner.com.au



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Assessor
Accreditation No.
Address
11-13 Mannix Parade,
Warwick Farm,
NSW, 2170

Christie Woinarski
DMN/19/1903



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2 MCGIRR PARADE
To be Demolished

GIRR PARADE

MCGIRR PARADE

MANNIX PARADE

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LEGEND
AWN
B.L.
BAL.
BND.
BROW
BY
CBL

AWNING
BATHROOM
BEDROOM 1, BEDROOM 2
BALUSTRADE
BICYCLE RACK
BALCONY RAIN WATER OUTLET
BALCONY
RETRACTABLE CLOTHES DRYING LINE

DP
FCL
FEX
FFL
FH
FP
HWU

DOWN PIPE
FINISHED CEILING LEVEL
FIRE EXTINGUISHER
FINISHED FLOOR LEVEL
FIRE HYDRANT
FIRE INDICATOR PANEL
HYDRAULIC
HOT WATER UNIT

K
L1, L2
LY
S
SCN
SS
ST, ST1

KITCHEN
LIFT NO.1, 2, ETC.
LIVING
LAUNDRY
STORAGE
SCREEN
STRUCTURAL SLAB LEVEL
STAIR NO.1, 2, ETC.

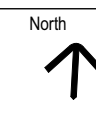
Rev
K
Date
31/07/20
Approved by
VS
Issue Name
For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
GA Plans
Ground Level

Scale
1:100 @A1, 50% @A3
Status
LAHC Review

Project No.
19010
Dwg No.
A-110-008

Drawn by
BP, MM, JC
Rev
K



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Level 7 ONE Oxford Street
Sydney NSW 2100
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0068
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Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

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GIRR PARADE

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LEGEND
A/N
B1, 2
BAL
BWC
BY
CIL
AWING
BATHROOM
BEDROOM 1, BEDROOM 2
BALUSTRADE
BICYCLE RACK
BALCONY RAIN WATER OUTLET
BALCONY
RETRACTABLE CLOTHES DRYING LINE

DP
FCL
FKX
FFL
FH
FIP
HWU

DOWN PIPE
FINISHED CEILING LEVEL
FIRE EXTINGUISHER
FINISHED FLOOR LEVEL
FIRE HYDRANT
FIRE INDICATOR PANEL
HYDRAULIC
HOT WATER UNIT

K
L1, 2
LY
S
SCN
SSL
ST, 1

KITCHEN
LIFT NO 1, 2, ETC.
LIVING
LAUNDRY
STORAGE
SCREEN
STRUCTURAL SLAB LEVEL
STAIR NO 1, 2, ETC.

Rev
K
Date
31/07/20
Approved by
VS
Issue Name
For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
GA Plans
Level 01 - 03

Scale
1:100 @A1, 50% @A3
Status
LAHC Review

Project No.
19010
Dwg No.
A-110-010
Drawn by
BP, MM, JC
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Level 7 ONE Oxford Street
Darlinghurst NSW 2010
AUSTRALIA
T +61 2 8668 0000
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GIRR PARADE



Site Boundary



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LEGEND
A/N
B1
B2
BAL
BRN
BWU
BY
CBL

DP
FCL
FEX
FFL
FPI
FPP
H
HWU

DOWN PIPE
FINISHED CEILING LEVEL
FIRE EXTINGUISHER
FINISHED FLOOR LEVEL
FIRE HYDRANT
FIRE INDICATOR PANEL
HYDRAULIC
HOT WATER UNIT

K
L1, L2
L
LY
SCN
SSL
ST, ST1

KITCHEN
LIFT NO. 1, 2, ETC.
LIVING
LAUNDRY
STORAGE
SCREEN
STRUCTURAL SLAB LEVEL
STAIR NO. 1, 2, ETC.

Rev
K
Date
31/07/20
Approved by
VS
Issue Name
For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
GA Plans
Level 04

Scale
1:100 @A1, 50% @A3
Status
LAHC Review

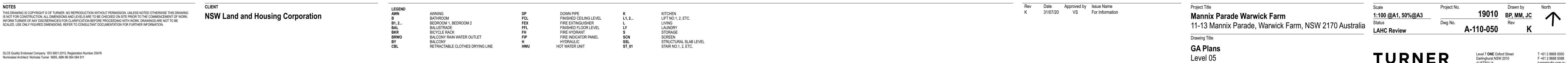
Project No.
19010
Dwg No.
A-110-040
Drawn by
BP, MM, JC
Rev
K



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Notified Architect Nicholas Turner 6885, APN 96 904 094 011

Level 7 ONE Oxford Street
Sydney NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0068
turner@turner.com.au

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Average star rating

NATIONWIDE HOUSE

ENERGY RATING SCHEME

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Address

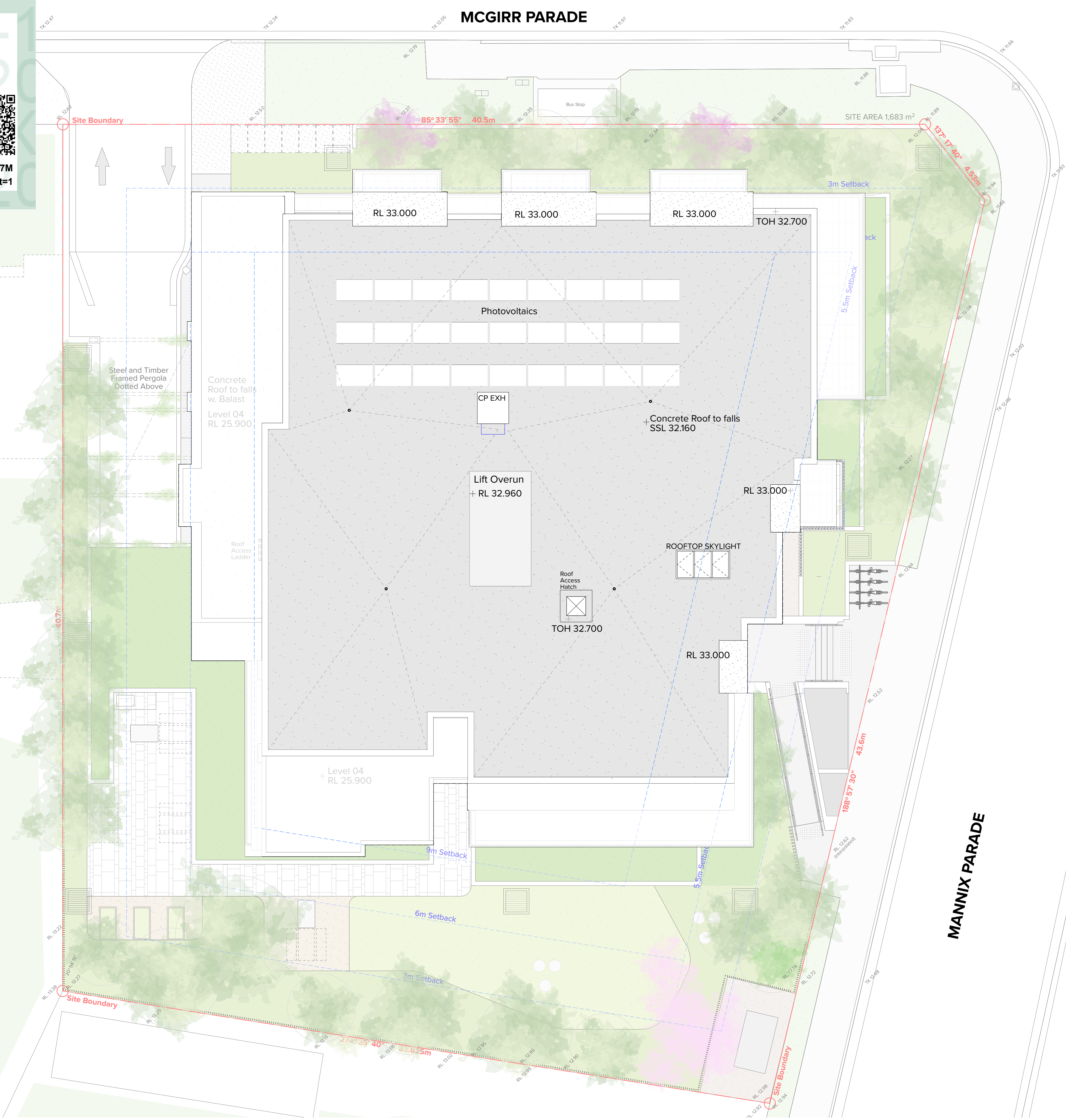
11-13 Mannix Parade,
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DMN/19/1903

CGIRR PARADE





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NSW, 2170



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▼Roof
RL32.100

▼Level 05
RL29.000

▼Level 04
RL25.900

▼Level 03
RL22.700

▼Level 02
RL19.600

▼Level 01
RL16.500

▼Ground Level
RL13.150

▼Basement 01
RL9.450



Materials Legend

(BAL1)

Balustrade Type 1
Vertical 75mm x 20mm metal baluster with aluminium plate. 100mm x 20mm metal top rail. PCF1

(BWK1)

Brick, Type 1
Austral Bowral Dry Pressed. Colour: Gertrude's Brown or Similar 230x76 'Stack Bond' Mortar Colour 'Terracotta'

(BWK2)

Brick, Type 2
Austral Bowral Dry Pressed. Colour: Praline or Similar. 230x76 Horizontal mortar joints; raked. Vertical mortar joints; flush Mortar Colour 'Off White'

(BWK3)

Brick, Type 3
Corbelled Brick Pattern

(COF1)

Concrete Off Form, Type 1
Natural Finish.

(GC1)

Glass, Clear Type 1
Clear glass with Aluminium Framing System - PFC1

(GD1)

Glass, Decorative Type 1
Glass to match Viridian ScalaTexture Squarelite.

(PCF1)

Powder Coat Finish, Type 1
Powder Coat to match Duralloy Monument

(PCF2)

Powder Coat Finish, Type 2
Powder Coat to match Duralloy Wallaby

(SCN1)

Aluminium Screening, Powder coat finish.
Colour to match PCF1.

(STL1)

Metal Fence
Alternating Vertical Cross Sections of 75 x 25mm and 50 x 100mm
Steel fence. No top rail. Powder coat finish.
Colour to match PCF2

(STL2)

Metal Fence
Vertical 65x15mm Metal Slat Fence.
No top rail. Powder coat finish. Colour to match PCF2.

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NSW Land and Housing Corporation

Rev K Date 31/07/20 Approved by VS Issue Name For information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Scale
1:100 @A1, 50% @A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-250-010
Drawn by
VS/BP/MM
Rev
K
North
↑

Drawing Title
GA Elevations
West Elevation

TURNER

Level 7 ONE Oxford Street
Darlinghurst NSW 2010
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0088
turnerstudio.com.au

T +61 2 8668 0000
F +61 2 8668 0068
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Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

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Warwick Farm,
NSW, 2170



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▼Roof
RL32.100

▼Level 05
RL29.000

▼Level 04
RL25.900

▼Level 03
RL22.700

▼Level 02
RL19.600

▼Level 01
RL16.500

▼Ground Level
RL13.150

▼Basement 01
RL9.450

Site Boundary

LEP 21m Height Limit
Above natural ground line at the
South Elevation

Lift Overrun
RL 32.960

Site Boundary

BAL1

SCN1

GC1

BWK3

BWK2

BWK2

STL1

BWK1

To be Demolished

Substation

BASEMENT BEYOND

2 HINKLER AVENUE

Proposed Development

FOOTPATH

MANNIX PARADE

Materials Legend

(BAL1)

Balustrade Type 1
Vertical 75mm x 20mm metal baluster with aluminium
plate, 100mm x 20mm metal top rail, PCF1

(BWK1)

Brick, Type 1
Austral, Bowral Dry Pressed, Colour: Gertrude's Brown or Similar
230x76 'Stack Bond' Mortar Colour 'Terracotta'

(BWK2)

Brick, Type 2
Austral, Bowral Dry Pressed, Colour: Praline or Similar,
230x76 Horizontal mortar joints; raked, Vertical mortar joints; flush
Mortar Colour "Off White"

(BWK3)

Brick, Type 3
Corbelled Brick Pattern

(COF1)

Concrete Off Form, Type 1
Natural Finish.

(GC1)

Glass, Clear Type 1
Clear glass with Aluminium Framing System - PFC1

(GDI)

Glass, Decorative Type 1
Glass to match Viridian ScalaTexture Squarelite.

(PCF1)

Powder Coat Finish, Type 1
Powder Coat to match Duralloy Monument

(PCF2)

Powder Coat Finish, Type 2
Powder Coat to match Duralloy Wallaby

(SCN1)

Aluminium Screening, Powder coat finish.
Colour to match PCF1.

(STL1)

Metal Fence
Alternating Vertical Cross Sections of 75 x 25mm and 50 x 100mm
Steel Fence, No top rail, Powder coat finish.
Colour to match PCF2

(STL2)

Metal Fence
Vertical 65x15mm Metal Slat Fence.
No top rail, Powder coat finish. Colour to match PCF2.

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NSW Land and Housing Corporation

Rev K Date 31/07/20 Approved by VS Issue Name For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Scale
1:100 @A1, 50% @A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-250-030
Drawn by
VS/BP/MM
Rev
K

North
↑

Drawing Title
GA Elevations
South Elevation

TURNER

Level 7 ONE Oxford Street
Darlinghurst NSW 2010
AUSTRALIA

T +61 2 8668 0000
F +61 2 8668 0068
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Notified Architect Nicholas Turner 6085, ABN 58 584 394 871



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Assessor

Christie Woinarski

Accreditation No.

DMN/19/1903

Address

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170



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▼Roof
RL32.100

▼Level 05
RL29.000

▼Level 04
RL25.900

▼Level 03
RL22.700

▼Level 02
RL19.600

▼Level 01
RL16.500

▼Ground Level
RL13.150

▼Basement 01
RL9.450

COF1

BAL1

SCN1

BWK2

COF1

GC1

STL1

BWK1

T/O Parapet Level
RL 32.600

Lift Overrun
RL 32.950

LEP 21m Height Limit
Above natural ground line
at the North Elevation

T/O Parapet Level
RL 26.950

Steel and Timber Planted Pergola

To be Demolished

Bin Holding

Driveway Entry

BASEMENT BEYOND

MANNIX PARADE

Proposed Development

2 MCGIRR PARADE

4 MCGIRR PARADE

Materials Legend

(BAL1)

Balustrade Type 1
Vertical 75mm x 20mm metal baluster with aluminium plate. 100mm x 20mm metal top rail. PCF1

(BWK1)

Brick, Type 1
Austral Bowral Dry Pressed. Colour: Gertrude's Brown or Similar 230x76 'Stack Bond' Mortar Colour 'Terracotta'

(BWK2)

Brick, Type 2
Austral Bowral Dry Pressed. Colour: Praline or Similar. 230x76 Horizontal mortar joints; raked. Vertical mortar joints; flush Mortar Colour 'Off White'

(BWK3)

Brick, Type 3
Corbelled Brick Pattern

(COF1)

Concrete Off Form, Type 1
Natural Finish.

(GC1)

Glass, Clear Type 1
Clear glass with Aluminium Framing System - PCF1

(GD1)

Glass, Decorative Type 1
Glass to match Viridian ScalaTexture Squarelite.

(PCF1)

Powder Coat Finish, Type 1
Powder Coat to match Duralloy Monument

(PCF2)

Powder Coat Finish, Type 2
Powder Coat to match Duralloy Wallaby

(SCN1)

Aluminium Screening, Powder coat finish.
Colour to match PCF1.

(STL1)

Metal Fence
Alternating Vertical Cross Sections of 75 x 25mm and 50 x 100mm
Steel fence. No top rail. Powder coat finish.
Colour to match PCF2

(STL2)

Metal Fence
Vertical 65x15mm Metal Slat Fence.
No top rail. Powder coat finish. Colour to match PCF2.

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Rev K Date 31/07/20 Approved by VS Issue Name For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Scale
1:100 @A1, 50% @A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-250-040
Drawn by
VS/BP/MM
Rev
K
North
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Drawing Title
GA Elevations
North Elevation

TURNER

Level 7 ONE Oxford Street
Sydney NSW 2100
AUSTRALIA
T +61 2 8688 0000
F +61 2 8688 0088
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57MVKXJDEO 18/08/2020

Assessor Christie Woinarski
Accreditation No. DMN/19/1903
Address 11-13 Mannix Parade,
Warwick Farm,
NSW, 2170

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- ▼Roof
RL32.100
- ▼Level 05
RL29.000
- ▼Level 04
RL25.900
- ▼Level 03
RL22.700
- ▼Level 02
RL19.600
- ▼Level 01
RL16.500
- ▼Ground Level
RL13.150
- ▼Basement
RL9.450



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Rev K Date 31/07/20 Approved by VS Issue Name For Information DEP Response_Review 01

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Drawing Title
GA Sections
Section AA

Scale
1:100 @A1, 50% @A3

Project No.
19010

Drawn by
BP/MM

Status
LAHC Review

Dwg No.
A-350-010

Rev
J

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Level 7 ONE Oxford Street
Darlinghurst NSW 2010
AUSTRALIA

T +61 2 8668 0000
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Average star rating

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ENERGY RATING SCHEME

www.nathers.gov.au

57MVKXJDEO 18/08/2020

Assessor

Accreditation No.

Address

11-13 Mannix Parade,
Warwick Farm,
NSW, 2170

https://www.fr5.com.au/QRCodeLanding?PublicId=57MVKXJDEO&GrpCert=1

Christie Woinarski

DMN/19/1903



Materials Legend

<div>BAL1</div>	Balustrade Type 1 Vertical 75mm x 20mm metal baluster with aluminium plate. 100mm x 20mm metal top rail. PCF1	<div>COF1</div>	Concrete Off Form, Type 1 Natural Finish.	<div>PCF2</div>	Powder Coat Finish, Type 2 Powder Coat to match Duralloy Wallaby
<div>BWK1</div>	Brick, Type 1 Austral. Bowral Dry Pressed. Colour: Gertrude's Brown or Similar 230x76 'Stack Bond' Mortar Colour 'Terracotta'	<div>GC1</div>	Glass, Clear Type 1 Clear glass with Aluminium Framing System - PFC1	<div>SCN1</div>	Aluminium Screening, Powder coat finish. Colour to match PCF1.
<div>BWK2</div>	Brick, Type 2 Austral. Bowral Dry Pressed. Colour: Praline or Similar. 230x76 Horizontal mortar joints; raked, Vertical mortar joints; flush Mortar Colour "Off White"	<div>GDI1</div>	Glass, Decorative Type 1 Glass to match Viridian ScalaTexture Squarelite.	<div>STL1</div>	Metal Fence Alternating Vertical Cross Sections of 75 x 25mm and 50 x 100mm steel fence. No top rail. Powder coat finish. Colour to match PCF2
<div>BWK3</div>	Brick, Type 3 Corbelled Brick Pattern	<div>PCF1</div>	Powder Coat Finish, Type 1 Powder Coat to match Duralloy Monument	<div>STL2</div>	Metal Fence Vertical 65x15mm Metal Slat Fence. No top rail. Powder coat finish. Colour to match PCF2.

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CLIENT
NSW Land and Housing Corporation

Rev
K

Date
31/07/20

Approved by
VS

Issue Name
For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia

Drawing Title
GA Sections
Section BB

Scale
1:100 @A1, 50% @A3

Status
LAHC Review

Project No.
19010

Dwg No.
A-350-020

Drawn by
BP/MM

Rev
K

North
↑

TURNER

7.4

Average star rating

NATIONWIDE HOUSE

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Materials Legend

BAL1

Balustrade Type 1
Vertical 75mm x 20mm metal baluster with aluminium plate. 100mm x 20mm metal top rail. PCF1

BWK1

Brick, Type 1
Austral. Bowral Dry Pressed. Colour: Gertrudis Brown or Similar 230x76 'Stack Bond' Mortar Colour 'Terracotta'

BWK2

Brick, Type 2
Austral. Bowral Dry Pressed. Colour: Praline or Similar, 230x76 Horizontal mortar joints; raked, Vertical mortar joints; flush Mortar Colour 'Off White'

BWK3

Brick, Type 3
Corbelled Brick Pattern

COF1

Concrete Off Form, Type 1
Natural Finish.

GC1

Glass, Clear Type 1
Clear glass with Aluminium Framing System - PFC1

GD1

Glass, Decorative Type 1
Austral. Bowral Dry Pressed. Colour: Praline or Similar, 230x76 Horizontal mortar joints; raked, Vertical mortar joints; flush Mortar Colour 'Off White'

PCF1

Powder Coat Finish, Type 1
Powder Coat to match Duralloy Monument

PCF2

Powder Coat Finish, Type 2
Powder Coat to match Duralloy Wallaby

SCN1

Aluminium Screening, Powder coat finish.
Colour to match PCF1.

STL1

Metal Fence
Alternating Vertical Cross Sections of 75 x 25mm and 50 x 100mm steel fence. No top rail, Powder coat finish.
Colour to match PCF2

STL2

Metal Fence
Vertical 65x15mm Metal Slot Fence.
No top rail, Powder coat finish. Colour to match PCF2.

Dulux Paint Colour
Colorbond 'Monument'

Concrete Off Form - Slab Edge
Natural Finish

Dulux Paint Colour
Colorbond 'Wallaby'

Balustrade Type 1
Prefabricated Steel Balustrade with Perforated
Metal Mesh Backing

Brick Type 2
Off-White Brick, 230 x 76 'Standard Format'. Raked Joint
Similar to "Austral Praline"

Brick Type 3
Corbelled Brick Pattern
Colour: Off-White Brick. Similar to "Austral Praline"

Glazed Colour Tile
Cobalt Blue, White and Black Glazed Tile

Brick Type 1
"Austral Gertrudis" Brown Brick, 230 x 76 Stack Bond,
tooled joint

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CLIENT
NSW Land and Housing Corporation

Rev K Date 31/07/20 Approved by VS Issue Name For Information

Project Title
Mannix Parade Warwick Farm
11-13 Mannix Parade, Warwick Farm, NSW 2170 Australia
Drawing Title
Materials & Finishes
Materials & Finishes External

Scale
@A1, 50%@A3
Status
LAHC Review
Project No.
19010
Dwg No.
A-830-010
Drawn by
BP/MM
Rev
K
North
↑

TURNER

Level 7 ONE Oxford Street
Sydney NSW 2100
AUSTRALIA
T +61 2 8668 0000
F +61 2 8668 0088
turner@turner.com.au