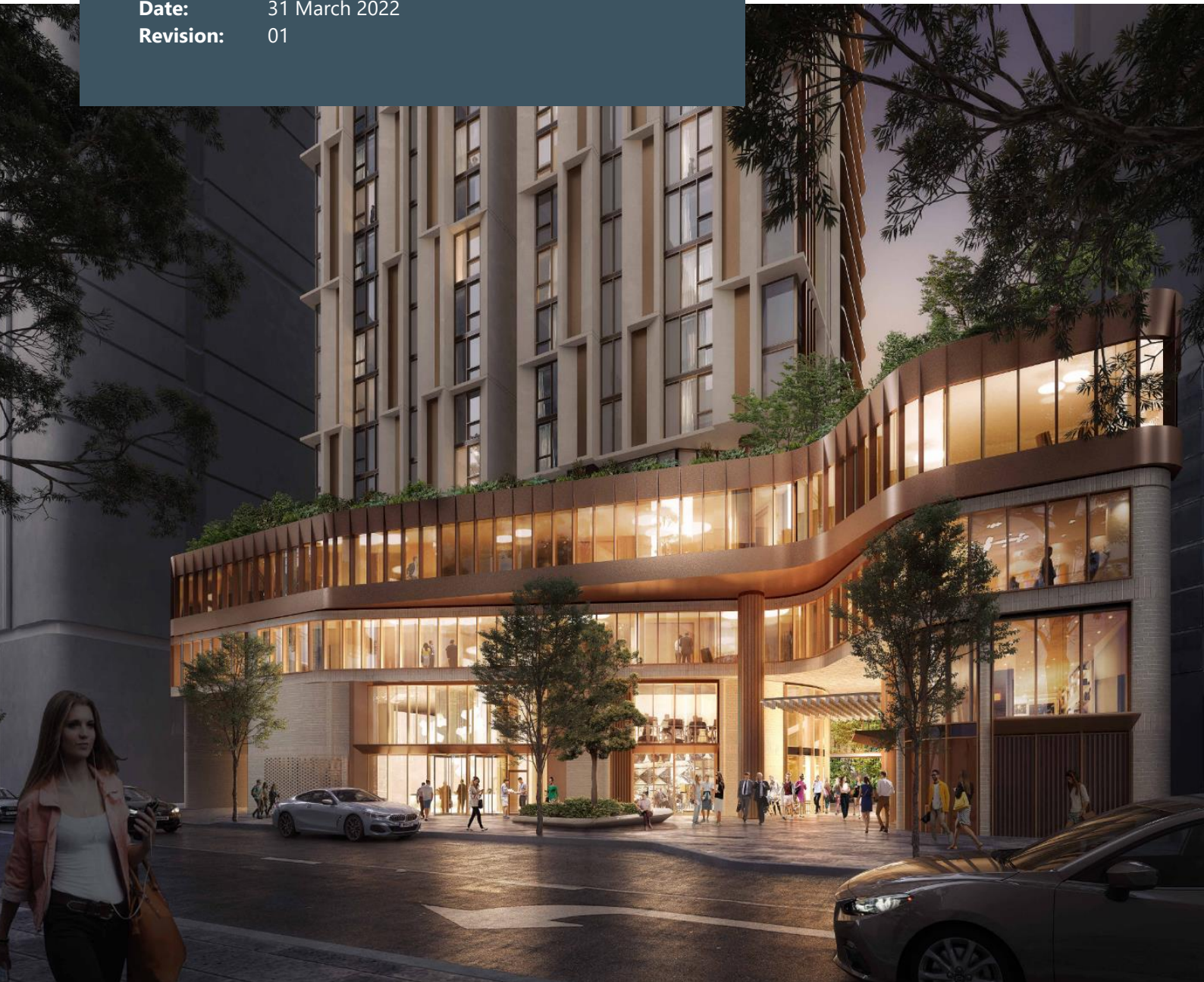


12 Hassall Street

BASIX Assessment Report

Project No: SYD2104
Date: 31 March 2022
Revision: 01



Project: 12 Hassall Street

Location: 12 Hassall Street
Parramatta NSW, 2150

Prepared by: ADP Consulting Pty Ltd
Level 3, 8 Spring Street
Sydney NSW 2000

Project No: SYD2104

Revision: 01

Date: 31 March 2022

Rev	Date	Comment	Author	Technical Review	Authorisation
01	31/03/2022	SSDA Issue	TC	ZN	SB

--

--

--

Project Team

Client Gurner Group

Architect PTW Architects



Contents

Executive Summary	3
1. Introduction	4
1.1 Project Context	4
1.2 Assessment Assumptions and References	4
1.3 BASIX Assessment	5
2. BASIX Compliance	6
2.1 Water Strategies	6
2.2 Energy Strategies	7
3. Thermal Comfort	9
3.1 National House Energy Rating Scheme (NatHERS) Assessment	9
3.2 Thermal Comfort Compliance	10

Appendices

Appendix A NatHERS Group Certificate	11
Appendix B Certified Stamped Drawings	12
Appendix C BASIX Certificate	13

Executive Summary

ADP Consulting has been engaged to undertake the following BASIX assessment and certification for the new development to be located at 12 Hassall Street, Parramatta 2150.

The proposed development is comprised of the following:

- > 4 basement levels of residential parking
- > 1 basement level of non-residential parking, waste storage and plant rooms
- > Ground level including residential lobby, commercial lobby and retail
- > Level 1 gym (not assessed)
- > 2 commercial levels (not assessed)
- > Level 4 amenities
- > 391 residential apartments
- > Common landscaping and rooftop communal open space

This BASIX report has been prepared to support the State Significant Development Application (SSDA) submission as a legislative requirement in accordance with the Environmental Planning and Assessment Act (2000) and BASIX (2004).

Based on project specific inputs and the minimum legislative provisions outlined in this report, the proposed development meets the minimum BASIX requirements for energy, water and thermal comfort respectively.

In addition to this, the development is required to comply with the City of Parramatta's Design Excellence targets and achieve an additional 10 points improvement above the minimum Energy and Water targets specified below.

Table 1 BASIX Target Scores

BASIX	Target	Design Excellence Target	Score Achieved
Water	40%	50%	51%
Energy	25%	35%	35%
Thermal Comfort	Pass	Pass	Pass

1. Introduction

ADP Consulting has been engaged to undertake the following BASIX assessment and certification for the proposed Build to Rent residential development located at 12 Hassall Street, Parramatta 2150.

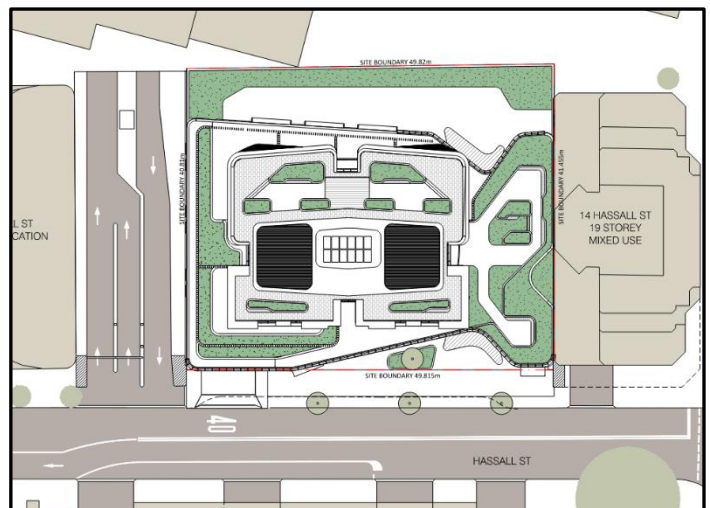
The purpose of this report is to provide a summary of the Environmentally Sustainable Design (ESD) initiatives adopted as part of the proposed building design.

This report has been prepared as a contribution to the State Significant Development Application (SSDA) submission of the above noted project.

1.1 Project Context

The proposed development is to be located in Parramatta's Central Business District, and situated to the west of Parramatta Station and to the south of the Parramatta River.

Proposed Development Site: 12 Hassall Street, Parramatta 2150



The development contains parking for residents, communal landscaped common areas and 391 residential dwellings (Class 2). Each individual dwelling has been designed with a shared living and kitchen space, one, two or three bedrooms, private amenities and balconies for private resident use.

1.2 Assessment Assumptions and References

This BASIX assessment has been based on the following SSDA architectural drawings provided by PTW Architects:

- > State Significant Development Application Issue Rev A – 28/03/2022

1.3 BASIX Assessment

The Building Sustainability Index (BASIX) for the state of NSW forms the minimum compliance control for any new residential (Class 1 & 2) developments as defined by the Department of Planning Industry and Environment.

The BASIX assessment outlines a minimum target of improvement for the proposed development's water, energy and thermal comfort performance. The minimum benchmark of improvement for each index is based on the location, size, height and dwelling density of the project development.

The proposed Build to Rent residential development has been assessed as one residential building consisting of 391 individual (class 2) dwellings in total.

For this type of development, the following minimum BASIX targets must be achieved as defined by the State of NSW and inclusive of the Design Excellence uplift to BASIX:

- > 50% improvement in Water consumption
- > 35% Improvement in Energy consumption
- > All units to 'pass' the minimum thermal performance requirements for heating and cooling (as defined by the development's climate zone)

The minimum targets required for water and energy (50% and 35% respectively) represent a percentage saving and improvement for the development when compared to that of an average benchmark development for NSW.

To satisfy the BASIX thermal comfort requirements, the following objectives must be achieved:

- > The individual heating and cooling loads for each dwelling must not exceed the limit specified in the BASIX scheme
- > The average heating and cooling loads of all dwellings in a development must not exceed the specified average limit

The thermal comfort targets are defined by the development's proposed location in NSW. This is assessed using the NatHERS thermal comfort software FirstRate 5. The thermal comfort targets are as follows:

- > Average heating load – 40 MJ/m²
- > Average cooling load – 26 MJ/m²
- > Individual heating load – 45.4 MJ/m²
- > Individual cooling load – 29.5 MJ/m²

2. BASIX Compliance

The following section provides a summary of the water, energy and thermal comfort initiatives proposed for the development to comply with the project BASIX targets.

2.1 Water Strategies

The following table outlines the water strategy proposed for the development. The project is currently achieving a **51% improvement** on the BASIX average benchmark. The target is based on a minimum 40% compliance score.

This will be achieved providing the following water commitments are implemented:

Table 2 Water Commitments

BASIX Category	Water Conservation Strategies
Individual Dwellings	Fixtures and fittings ¹ to be included:
	> Showerheads: 4-star WELS rated (> 4.5 but <= 6 L/min)
	> Toilets: 4-star WELS rated
	> Kitchen taps: 5-star WELS rated
Appliances ² (For Individual Dwellings)	> Bathroom taps: 5-star WELS rated
	> Clothes washer: 4-star WELS rated
Common Areas	> Dishwasher: 4-star WELS rated
	> Showerheads: 4-star WELS rated (> 4.5 but <= 6 L/min)
	> Toilets: 4-star WELS rated
Landscaping	> Bathroom taps: 5-star WELS rated
	> 610m ² of garden
Alternative Water	– 49% native planting
	> Rainwater tank:
	– 5kL tank connected to 95m ² of total harvested roof area
Fire Sprinkler Systems	– Servicing landscape irrigation and car wash bay
BASIX Water Target	Fire Sprinkler test water to be contained in a closed system
Design Excellence Water Target	40%
BASIX Water Score	50%
	51%

¹ More information on water efficient fixtures and fittings can be found at www.waterrating.gov.au

² More information on water efficient appliances can be found at www.waterrating.gov.au

2.2 Energy Strategies

The following table outlines the energy strategy proposed for the development. The project is currently achieving a **35% improvement** on the BASIX average benchmark. The target is based on a minimum 25% compliance score.

This will be achieved providing the following energy commitments are implemented:

Table 3 Energy Commitments

BASIX Category	Energy Conservation Strategies
Individual Dwellings	> Dedicated LED light fittings located throughout each dwelling³ (All downlights to be sealed) > Kitchen, Laundry and Bathroom Exhaust – Individual fan, ducted to roof or façade (manual switch on/off) > Day night zoning of air conditioning
Appliances ⁴ (For Individual Dwellings)	> Induction cooktop & electric oven > 6-star refrigerators – Well ventilated fridge space > 4.5-star dishwashers > 5-star clothes washers > 10-star clothes dryer
Common Areas	Ventilation systems as follows: > Car park, ventilation supply and exhaust with CO monitors and VSD fans > Garbage rooms, ventilation exhaust > Level 4 amenities, air-conditioned system, time clock or BMS controlled > Plant and services rooms, ventilation supply and exhaust, thermostatically controlled > Ground floor residential lobby, air-conditioned system, time clock or BMS controlled > Residential hallway levels 5 – 59, ventilation supply only, time clock or BMS controlled Lighting systems and efficiency measures as follows: > Carpark, LEDs – time clock and motion sensors, connected to BMS > Lift cars, LEDs – connected to the lift call buttons, connected to BMS > Plant rooms and switch rooms, LED's – motion sensors, connected to BMS > Garbage room, LED's – motion sensors, connected to BMS > Hallways and lobbies, LED's – time clock and motion sensors connected to BMS > Level 4 amenities, LED's – time clock and motion sensors, connected to BMS

³ Dedicated LED must be the predominant (i.e. 80% of fittings) light fitting in each room

⁴ More information on energy efficient appliances can be found at www.energyrating.gov.au

BASIX Category	Energy Conservation Strategies
	> Back of house, LED's – time clock and motion sensors, connected to BMS
Central Systems	> Central hot water system – Electric heat pump – air sourced with R1.0 ($\approx$ 38mm) insulation to piping external and internal to building > Central heating system – Variable refrigerant volume units – Energy source – electric driver compressor & water sourced evaporator – High COP > 5.5 > Central cooling system – Variable refrigerant volume units – Energy source – electric driven compressor – Heat rejection – water cooled condenser – High COP > 5.5 > Vertical Transport – Permanent magnet synchronous motor (PMSM) and regenerative drive > Pools – Pool heating – electric heat pump on timer
Building Management System	> BMS is included in the current strategy
Other	> Indoor clothes drying line > Private outdoor clothes drying line (on balcony)
BASIX Energy Target	25%
Design Excellence Energy Target	35%
BASIX Energy Score	35%

3. Thermal Comfort

3.1 National House Energy Rating Scheme (NatHERS) Assessment

Thermal Comfort for each dwelling has been assessed in accordance with the BASIX Thermal Comfort Protocol as defined by the Department of Planning Industry and Environment.

Thermal comfort levels for all proposed dwellings (Class 2) have been assessed using FirstRate 5 (thermal modelling software). This approach has been approved by the National House Energy Rating Scheme (NatHERS) and aims to predict annual heating and cooling loads of each dwelling.

To satisfy the BASIX thermal comfort requirements, the following objectives must be achieved:

- > The individual heating and cooling loads for each dwelling must not exceed the limit specified in the BASIX scheme
- > The average heating and cooling loads of all dwellings in a development must not exceed the specified average limit

These requirements have been provided below:

Table 4 Thermal Comfort Targets

Targets	Max. Heating Load (MJ/m ²)	Max. Cooling Load (MJ/m ²)
Individual Dwelling Loads	45.4	29.5
Average Dwelling Loads	40.0	26.0

3.2 Thermal Comfort Compliance

Thermal Comfort modelling has been undertaken to establish compliance with the minimum requirements noted in Section 3.1.

The table below outlines the building envelope constructions assumed as part of the modelling assessment and provides the average heating and cooling loads achieved for the proposed development.

Table 5 Construction Details

Building Element	Material & Detail
Construction & shading	> As indicated on the architectural drawings. Balconies have been included in the assessment.
External Walls	> Concrete wall + R2.5 bulk insulation (insulation only value)
Internal Walls	> Concrete wall + R1.5 bulk insulation (insulation only value) between apartments and unconditioned areas
Party Walls	> Plasterboard on studs as shown, no insulation between apartment rooms
Ceiling	> 200mm concrete slab + R3.0 insulation (insulation only value) where exposed above – Default colour modelled > 200mm concrete slab, no insulation where neighbour above
Floor	> 200mm concrete slab + R1.5 insulation where exposed below > 200mm concrete slab, no insulation where neighbour below
Floor coverings	> Timber flooring to kitchen, living and study areas, carpet to bedrooms, tiles to bathrooms and laundries
Glazing	> Awning windows: – U-Value: 3.1 , SHGC: 0.39 > Fixed and sliding doors/windows: – U-Value: 3.1 , SHGC: 0.49
BASIX Target	> Average Thermal Load: Heating 40 MJ/m² Cooling 26 MJ/m²
Thermal Comfort Score	> Average Thermal Load: Heating 13.1 MJ/m² Cooling 15.3 MJ/m²

Please note: glazing values quoted above are based on AFRC figures and are values for the total glazing system including frame. For all apartments, the following assumptions have been made:

- > All windows and doors are weather stripped and have insect and safety screens
- > Window openings have been calculated as per the BASIX protocol based on input from the architectural team for fixed windows, awnings windows and sliding doors.

Appendix A

NatHERS Group Certificate

Appendix B

Certified Stamped Drawings

Appendix C

BASIX Certificate

Creating great environments with great people

Melbourne
Level 11, 60 Albert Road
South Melbourne VIC 3205
t. 03 9521 1195

Sydney
Level 3, 8 Spring Street
Sydney NSW 2000
t. 02 8203 5447

Brisbane
Ground Floor, 102 Adelaide Street
Brisbane QLD 4000
t. 07 3088 4022

adpconsulting.com.au