

Advice Note

Subject Site: 135 Badgerys Creek Road, Bradfield, NSW 2556
Stage 2 Hotel

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NABERS Water for Hotels Assessment: S2 Hotel, 135 Badgerys Creek Road, Bradfield, NSW 2556

A preliminary NABERS Water estimation has been carried out regarding the proposed Stage 2 Hotel development at 135 Badgerys Creek Road, Bradfield, NSW 2556 with the aim of predicting the likely NABERS Water rating once the building is in operation as required by the Sustainable Buildings SEPP, that states Hotels with over 100 keys shall achieve a 3 Star NABERS Water Rating.

The following sections contain information relating to the NABERS Reverse Calculator inputs, water efficiency measures, occupancy assumptions and water consumption calculations used to determine the estimated NABERS Water Rating for the development.

Docs used for assessment

- Hotel Quality Star Rating - Appendix B;
- NABERS Reverse Calculator Hotels – Water – Appendix C; &
- Architectural Documentation: Plus Architecture Set– dated 22/09/2025.

NABERS Water Reverse Calculator Inputs

The following inputs were used to determine the benchmark water consumption threshold regarding the targeted NABERS Water rating:

Table 1: NABERS Water Rating Inputs

Parameter	Inputs
Building Postcode	2171
Hotel Quality Star Rating	4 (TBC by client)
Number of Rooms in Hotel	200
Number of Rooms with Full-Service Laundering	30 (Assumed, TBC by client)
Number of Function Room Seats	0

Note: Postcode 2171 (Hoxton Park, NSW) has been used for estimation purposes, as postcode 2556 is not available in the NABERS Online Calculators. 2171 is the closest available suburb to the project location.

Using the inputs within Table 1, the maximum annual water consumption for the development shall be no greater than **22,508kL** to achieve the targeted 3 Star NABERS Water Rating. This value has been derived from the NABERS for Hotels Reverse Calculator which is appended in Appendix C.

The following sections contain a detailed breakdown of water end uses and estimates than annual water consumption for the development.

NABERS Water Required Minimum Water Coverage

All water uses within the building used to support the Hotel during the Rated Period, including use in:

- Water for taps and sinks, both back and front of house;
- Water used in air-conditioning and other base building services, for example general cleaning, façade cleaning, etc;
- All water used for services supplied for guests such as swimming pools and gymnasiums etc;
- Water use in fire services if metered;
- Water used in on-site laundries;
- Water used in restaurants and cafes located within the hotel floor plate that have charge-to-room facilities for guests;
 - L1 Café/Bar Kitchen;
 - L1 Restaurant Kitchen; &
 - Room service.
- Water used in spas and other facilities located within the hotel floor plate that have charge-to-room facilities for guests;
- Water use in water features and irrigation associated with the hotel including those areas outside the building, but within site boundaries; &
- Water use for toilets.

NABERS Water Exclusions

Water consumption for non-hotel applications that do not have charge-to-room facilities may be excluded. These may only be excluded on the basis of meter readings specific to the application concerned. In the absence of meter readings, no exclusions are permitted & no estimates are permitted.

Assessment Scenarios

Various scenarios have been tested to assess the impact of water consumption on the estimated NABERS Rating. Scenarios assessed in this assessment are as follows:

- **Scenario 1:** All Staff EOT and Guest Room showers @ 6L/min;
- **Scenario 2:** All Staff EOT and Guest Room showers @ 7.5L/min;
- **Scenario 3:** All Staff EOT and Guest Room showers @ 9L/min; &
- **Scenario 4:** Per scenario 2 + Hotel AAA Quality Star Rating downgraded to 3.5 Stars (less water budget).

Building Occupancy

Building occupancy has been assumed as the following upon review of architectural documentation provided by Plus Architecture:

Table 2: Building Occupancy Rates - Daily

Area	Occupants	Diversity	Daily Occupants
200 Rooms	320 (1.6 people per room)	80% average - annual occupancy rate	256
Staff	25 (per day)	Assumed, to be confirmed by client	25
L1 Café/Bar	58 (peak)	50% average Occupancy (NCC Spec Jvc Table 2f) 2 hour sitting	174
L1 Restaurant	164 (peak)		339
Co-Working Space L2	60 (peak)	38% average Occupancy (NCC Spec Jvc Table 2f) 2 hour sitting	177
Co-Working Space L3	55 (peak)		177

An 80% average annual guest room occupancy rate as outlined above has been adopted as required for all of the below water use calculations.

Water Fixture Efficiency

The following water fixture efficiencies have been based on assumptions in absence of design documentation. Design team to confirm and provide FFE schedule showing WELS rating for fixtures for inclusion in next update.

Table 3: Fixture Efficiency

Item	Efficiency
Taps	4.5L/min (6 Star WELS) for Staff Amenities & Guestrooms
WC's	4.5L/flush (4 Star WELS) for Staff Amenities & Guestrooms
Showers	Scenario 1: 6.0L/min for Staff Showers, and Guest Rooms Scenario 2: 7.5L/min for Staff Showers, and Guest Rooms Scenario 3: 9.0L/min for Staff Showers, and Guest Rooms
Dishwashers	Place setting 13, 11.7L/Cycle (4.5 Star WELS)
Washing Machines	44.3L/Cycle

Fire System Test Water

Water used during fire system testing has been assumed at 25kL per year, with 0% of test water being captured, therefore **25kL being expelled annually**. The fire sprinkler system engineer should review and confirm the following:

- If fire system test water is recaptured for building re-use;
- Total volume of fire system test water expelled annually (month monthly pump & annual anubar tests).

Laundry

Laundrying services are estimated for 15% of the total rooms, based on an estimated daily load of 3.5 kg per room, including towels, bed linens, pillowcases, and bathmats. On-site laundrying services are based on the use of five 9.5 kg commercial washing machines, each consuming 44.3 litres of water per full load. It is assumed that each machine operates at a frequency of 15 cycles per week to cater for total load from 15% rooms.

Table 4: Estimated Weekly Laundry Cycles

Laundry Estimation	Quantity	Unit
Total Rooms	200	Rooms
15% Rooms to have laundry service (Assumed)	30	Rooms
Avg Load per room per day	3.5	kg
Total Load per day	105	kg
Washing Machine Capacity	9.5	kg
No Of Machines (Assumed)	5.00	-
Load per week	735	kg
Cycles per week (per machine)	15	Total

Table 4.1: Estimated Water Consumption from Laundry

	Capacity (kg)	Litres per Cycle	Cycles per Week	Quantity	Annual Consumption (kL)
Washer	9.5kg	44.3	15	5	173

Taps

Table 5 below shows estimated tap water consumption from the following spaces:

- Staff Kitchen;
- Staff End-of-Trip (EOT) facilities;
- L1 Café/Bar;
- L1 Restaurant; &
- L1 Guest Washroom.

The following water fixture efficiencies have been based on assumptions in absence of design documentation. Design team to confirm and provide FFE schedule showing WELS rating for fixtures for inclusion in next update.

Water consumption associated with taps is provided in Table 5 below:

Table 5: Estimated Water Consumption from Taps

	Occupancy	Tap Flow rate (L/min)	Duration (seconds per day)	Annual Consumption (kL)
Staff Kitchen	25	4.5	40	27
Staff EOT & Amenities	5	4.5	40	5
L1 Bar/ Café	174	4.5	10	95
L1 All Day/Night Restaurant	339	4.5	20	186
L1 Guest Washroom	256.5	4.5	20	70
L2 Co-Working	177	4.5	20	97
L3 Co-Working	177	4.5	40	97
Hotel Guest Rooms	256	4.5	20	280
Total				664

WC's

Table 6 shows estimated water consumption from WC's. All calculations are based on all flush to be at full volume at 4.5L/flush to provide a conservative estimation of the water consumption.

Table 6: Estimated Water Consumption from WC's – Staff Amenities & Hotel Guest Room

	People	Flushes per person per day	Litres per flush	Annual Consumption (kL)
Staff – WC	25	3	4.5	123
L1 Guest Washroom	256.5	1	4.5	421
Hotel Guests	256	3	4.5	1,261
L2 Co-Working	88.5	1	4.5	145
L3 Co-Working	88.5	1	4.5	145
Total				2,097

Showers

Tables below show estimated water consumption from hotel guest room shower usage has been calculated at a rate of 1.5 showers per day per guest. It is assumed that 20% of Staff will use the EOT shower facility per day.

Table 7: Estimated Water Consumption from Showers (Flowrate: 6l/min) – Scenario 1

	People	Showers / baths per day	Shower Duration (minutes)	Flow rate (L/min)	Annual Consumption (kL)
Staff	5	1	5	6	55
Hotel Guests (showers only)	256	1.5	8	6	6,728
Total					6,782

Shower fixtures with efficiencies 7.5l/min and 9l/min have been tested to check sensitivity against shower flow rates on the NABERS Water estimation.

Table 7.1: Estimated Water Consumption from Showers (Flowrate: 7.5l/min) – Scenario 2

	People	Showers / baths per day	Shower Duration (minutes)	Flow rate (L/min)	Annual Consumption (kL)
Staff	5	1	5	7.5	68
Hotel Guests (showers only)	256	1.5	8	7.5	8,410
Total					8,478

Table 7.2: Estimated Water Consumption from Showers (Flowrate: 9l/min) - Scenario 3

	People	Showers / baths per day	Shower Duration (minutes)	Flow rate (L/min)	Annual Consumption (kL)
Staff	5	1	5	9	82
Hotel Guests (showers only)	256	1.5	8	9	10,092
Total					10,174

Cleaning

Water use associated with cleaning has been conservatively estimated at a rate of **250kL per year**.

Drinking Water

Table 8 shows estimated potable water consumption associated with drinking water.

Table 8: Estimated Water Consumption Associated with Drinking Water

	People	Diversity	L/Day (Per Person)	Annual Consumption (kL)
Staff	25 per day	100%	2	18
Hotel Guests	256 per day	100%	2	187
Total				205

Irrigation

A landscape area of 297m² has been measured from the architectural plans issued by Plus Architecture dated 22nd September 2025. The Green Star Potable Water Calculator has been used to estimate annual water consumption for irrigation requirements. Design team to confirm and provide landscape documentation specifying Undercover percentage, Weighted Crop Coefficient and Irrigation measures for inclusion in next update.

Table 9: Estimated Water Consumption Associated with Irrigation

	Area (m ²)	% Undercover	Weighted Crop Coefficient	Irrigation Measure	Annual Consumption (kL)
Landscape	297	0	0.4	Drip – Under Mulch	9

Kitchens/Cooking

Water consumption associated with kitchen activities has been based on assumptions, with estimated daily meal quantities outlined in Table 12. For the purpose of calculations, it is assumed that:

- A diversity factor of 50% has been applied to Café/Bar to reflect the likelihood that a portion of meals served will be lighter in nature; &
- 50% of hotel guest room occupants are assumed to order 1 breakfast, 1 lunch and 1 dinner from main kitchen per day.

Table 10: Estimated Water Consumption Associated with Kitchens

Area	People	Meals Per Day Per Occupant	Total Meals Per Day	Litres Per Meal	Diversity	Annual Consumption (kL)
L1 Café/Bar – Public	174	0.5	87	4.5	50%	71.4
L1 Restaurant – Public	339	1.5	508.5	4.5	100%	835.2
Hotel Guest Meals	256	1.5	384	4.5	100%	630.7
Total						1,537.4

Dishwashing

Based on number of occupants and meals, commercial dishwashers have been assumed in absence of design documentation.

Table 11: Estimated Water Consumption Associated with Dishwashers

Area	WELS Star Rating	Machine Capacity (number of place setting)	Litres per cycle	Cycles per week	Number of Machines	Annual Consumption (kL)
L1 Café/Bar	4.5	13	11.7	14	2	17.0
L1 Restaurant	4.5	13	11.7	35	2	42.6
Main Kitchen	4.5	13	11.7	42	4	102.2
Total						161.8

Rainwater Reuse

No rainwater tanks have been used in this assessment.

Contingency

A 10% contingency will be included to account for periods of erroneous water consumption.

NABERS Assessment Results

Various scenarios have been tested to assess the impact of water consumption on the buildings NABERS Rating. Scenarios assessed are as follows:

- **Scenario 1:** All Staff EOT and Guest Room showers @ 6L/min;
- **Scenario 2:** All Staff EOT and Guest Room showers @ 7.5L/min;
- **Scenario 3:** All Staff EOT and Guest Room showers @ 9L/min; &
- **Scenario 4:** Per scenario 2 + Hotel AAA Quality Star Rating downgraded to 3.5 Stars (less water budget).

The following table summarises NABERS Water for Hotels Assessment results for S2 Hotel, 135 Badgerys Creek Road, Bradfield, NSW 2556:

Table 12: NABERS Assessment Results

Scenario	Hotel AAA Star Rating	Annual Water Consumption (kL)	NABERS Star Rating Achieved	NABERS Decimal Star Rating
Scenario 1	4	13,308	4 Star	4.2 Star
Scenario 2	4	15,173	4 Star	4 Star
Scenario 3	4	17,038	3.5 Star	3.7 Star
Scenario 4	3.5	15,173	3.5 Star	3.8 Star

Conclusion

This advice note confirms the development is capable of achieving a 3.5 Star, exceeding the minimum 3 Star NABERS Water Rating required by the Sustainable Buildings SEPP.

The inputs and estimations used within this advice should be reviewed by the project team. Feedback will be used to refine the calculations and provide an updated NABERS Water report as design progresses.

Kind regards,



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Appendix A: Water Consumption Estimation

The following table shows the estimated water consumption for scenario 1 for the development.

Table 1: Estimated Water Consumption Summary (Scenario 1)

End Use	Annual Water Consumption (kL)	Comment
Fire Sprinkler System	25	
Laundry	173	
Taps	858	
WC's	2,097	
Showers	6,782	Shower efficiency: 6 l/min
Cleaning	250	
Drinking Water	205	
Irrigation	9	
Kitchen	1,537	
Dishwasher	162	
Contingency	1,210	10% contingency factor
Rainwater Tank	0	
Totals	13,308	4 Star NABERS Water Achieved (4.2 Star Decimal)
NABERS Limit	22,508	3 Star NABERS Water Limit
Improvement	40.87%	Satisfactory buffer



Your estimated Water rating is
4 star.

The water intensity of the hotel is 66.5 kL/room p.a.

4.2 stars

Rating progress metric 

0 %

Recycled water

13308 kL p.a.

Total water consumption without recycled water

66.5 kL/room p.a.

Water intensity without recycled water

The following table shows the estimated water consumption for scenario 2 for the development.

Table 2: Estimated Water Consumption Summary (Scenario 2)

End Use	Annual Water Consumption (kL)	Comment
Fire Sprinkler System	25	
Laundry	173	
Taps	858	
WC's	2,097	
Showers	8,478	Shower efficiency: 7.5 l/min
Cleaning	250	
Drinking Water	205	
Irrigation	9	
Kitchen	1,537	
Dishwasher	162	
Contingency	1,379	10% contingency factor
Rainwater Tank	0	
Totals	15,173	4 Star NABERS Water Achieved (4.0 Star Decimal)
NABERS Limit	22,508	3 Star NABERS Water Limit
Improvement	32.59%	Satisfactory buffer



Your estimated Water rating is
4 star.

The water intensity of the hotel is 75.9 kL/room p.a.

4 stars

Rating progress metric 

0 %

Recycled water

15173 kL p.a.

Total water consumption without recycled water

75.9 kL/room p.a.

Water intensity without recycled water

The following table shows the estimated water consumption for scenario 3 for the development.

Table 3: Estimated Water Consumption Summary (Scenario 3)

End Use	Annual Water Consumption (kL)	Comment
Fire Sprinkler System	25	
Laundry	173	
Taps	858	
WC's	2,097	
Showers	10,174	Shower efficiency: 9 l/min
Cleaning	250	
Drinking Water	205	
Irrigation	9	
Kitchen	1,537	
Dishwasher	162	
Contingency	1,549	10% contingency factor
Rainwater Tank	0	
Totals	17,038	3.5 Star NABERS Water Achieved (3.7 Star Decimal)
NABERS Limit	22,508	3 Star NABERS Water Limit
Improvement	24.3%	Satisfactory buffer



Your estimated Water rating is
3.5 star.

The water intensity of the hotel is 85.2 kL/room p.a.

3.7 stars

Rating progress metric 

0 %

Recycled water

17038 kL p.a.

Total water consumption without recycled water

85.2 kL/room p.a.

Water intensity without recycled water

The following table shows the estimated water consumption for scenario 4 for the development.

Table 4: Estimated Water Consumption Summary (Scenario 4)

End Use	Annual Water Consumption (kL)	Comment
Fire Sprinkler System	25	
Laundry	173	
Taps	858	
WC's	2,097	
Showers	8,478	Shower efficiency: 7.5 l/min
Cleaning	250	
Drinking Water	205	
Irrigation	9	
Kitchen	1,537	
Dishwasher	162	
Contingency	1,379	10% contingency factor
Rainwater Tank	0	
Totals	15,173	3.5 Star NABERS Water Achieved (3.8 Star Decimal)
NABERS Limit	20,714	3 Star NABERS Water Limit
Improvement	26.75%	Satisfactory buffer



Your estimated Water rating is
3.5 star.

The water intensity of the hotel is 75.9 kL/room p.a.

3.8 stars

Rating progress metric 

0 %

Recycled water

15173 kL p.a.

Total water consumption without recycled water

75.9 kL/room p.a.

Water intensity without recycled water

Appendix B: Hotel Quality Star Rating

KPI Related Question	KPI Answers	KPI Category	KPI Weighting
How many hours per day is the reception staffed?	24 hrs	4 to 5 Star	1
How many meals per day does the hotel serve? (Dine in options)	7 days, 3 meals	4 to 5 Star	1
Is room service offered by the hotel?	Yes, 24 hr to room	4 to 5 Star	1
Does the hotel have a bar/ lounge?	Yes	4 to 5 Star	1
Does the hotel have a swimming pool?	No	No Contribution	0
Does the hotel have a spa or sauna? (Common area)	No	No Contribution	0
Does the hotel have a gym?	No	No Contribution	0
Does the hotel offer guest laundry services?	Yes, laundry and dry-cleaning service	4 to 5 Star	1
Does the hotel have a concierge?	Yes	4 to 5 Star	1
Does the hotel have a porter?	Yes	4 to 5 Star	1
Does the hotel have business/ conference facilities?	Yes	4 to 5 Star	1
What is the average guest room size? (sqm) - See Table 3.2	22.41	3 to 5 Star	1
Total 4 to 5 Star KPI			7
Total 3 to 5 Star KPI			2
Hotel Star Rating to enter into NABERS Rate	4 Star		

Appendix C: NABERS for Hotels Reverse Water Calculator (4 Star AAA)

Building details

What is the quality star rating of the hotel?*

Use either ATIC-certified quality star rating, or self-assessed using "Quality Star Rating for Hotels" Ruling v1.0

4 stars

How many rooms are there in the hotel?*

200 rooms

How many rooms receive full service laundering on-site?*

Full service laundering includes both towels and linen. If some laundering is sent off-site, adjust the number accordingly.

30 rooms

How many function room seats are there in the hotel?*

Enter the maximum capacity of function and meeting rooms that are used at least once a week.

0 seats

Results

Predicted Average Water Consumption for this hotel:	24,309 kL/year
Maximum Water Consumption at 3 Star NABERS Water:	22,508 kL/year
Water Intensity at 3 Star NABERS Water:	112 kL/room.year

Results

Predicted Average Water Consumption for this hotel:	24,309 kL/year
Maximum Water Consumption at 3.5 Star NABERS Water:	18,905 kL/year
Water Intensity at 3.5 Star NABERS Water:	94 kL/room.year

Results

Predicted Average Water Consumption for this hotel:	24,309 kL/year
Maximum Water Consumption at 4 Star NABERS Water:	15,302 kL/year
Water Intensity at 4 Star NABERS Water:	76 kL/room.year

Appendix C: NABERS for Hotels Reverse Water Calculator (3.5 Star AAA)

Building details

What is the quality star rating of the hotel?*

Use either ATIC-certified quality star rating, or self-assessed using "Quality Star Rating for Hotels" Ruling v1.0

3.5 stars

How many rooms are there in the hotel?*

200 rooms

How many rooms receive full service laundering on-site?*

Full service laundering includes both towels and linen. If some laundering is sent off-site, adjust the number accordingly.

30 rooms

How many function room seats are there in the hotel?*

Enter the maximum capacity of function and meeting rooms that are used at least once a week.

0 seats

Results

Predicted Average Water Consumption for this hotel: 22,385 kL/year

Maximum Water Consumption at 3 Star NABERS Water: 20,714 kL/year

Water Intensity at 3 Star NABERS Water: 103 kL/room.year

Results

Predicted Average Water Consumption for this hotel: 22,385 kL/year

Maximum Water Consumption at 3.5 Star NABERS Water: 17,371 kL/year

Water Intensity at 3.5 Star NABERS Water: 86 kL/room.year

Results

Predicted Average Water Consumption for this hotel: 22,385 kL/year

Maximum Water Consumption at 4 Star NABERS Water: 14,028 kL/year

Water Intensity at 4 Star NABERS Water: 70 kL/room.year