Potable Water

Aim of Credit

To encourage building design that minimises potable water consumption in operations.

Credit Criteria

There are two pathways available to demonstrating compliance, a (1) Performance pathway and a (2) Deemed-to-Satisfy pathway. Projects must nominate pathway 1 or 2.

1	**Potable Water – Performance Pathway**	Up to 12 points are available based on the reduction of predicted potable water consumption when compared against a reference building or a building code benchmark.Points are awarded based on the proposed building's ability to reduce its predicted consumption to zero. This credit addresses the potable water consumption from the use of sanitary fixtures, appliances, HVAC, irrigation systems, and swimming pools (where present).
2	**Potable Water – Deemed to Satisfy Pathway**	Up to 6 points out of 12 are available where it is demonstrated that the building's potable water consumption has been reduced through best practice water saving design features

Compliance Requirements

1. Potable Water - Performance Pathway

Up to 12 points are awarded where it is demonstrated that building's predicted potable water consumption has been reduced below that of a 'Benchmark Building'. Points are awarded as follows:

Predicted reduction in potable water use (%)	Points awarded
0	No points
5	1
15	2
25	3
35	4
45	5
55	6
65	7
75	8
85	10
95	12

The Credit Compliance Requirements and Guidance for the modelled water balance approach is addressed in the Green Star Potable Water Calculator Guide. Points achieved by the modelled water balance apporach are determined by the Green Star Potable Water Calculator.

Shared Services

Project teams are able to clarify the amount of non-potable water that is available from a central or shared service for use within the building.

2. Potable Water - Deemed to Satisfy Pathway

Points under the deemend to satisfy criteria are awarded for each initiative included in the project as outlined in the following table. Each requirements except for 'Heat Rejection' are worth 1 point. Achieving 'Heat Rejection' is rewarded with 2 points :

<table>
<tr><td>2.1</td><td>Sanitary Fixture Efficiency</td><td>1 point is awarded where all fixtures are within one star of the best available WELS rating.</td></tr>
<tr><td>2.2</td><td>Rainwater Reuse</td><td>1 point is awarded when a rainwater tank is installed to collect and reuse rainwater within the project's site boundary and the rainwater tank size meets the following criteria:

<table><tr><td>Gross Floor Area (m2)</td><td>Rainwater Tank Volume (kL)</td></tr><tr><td>2,500</td><td>7.5</td></tr><tr><td>5,000</td><td>15</td></tr><tr><td>10,000</td><td>30</td></tr><tr><td>20,000</td><td>60</td></tr></table></td></tr>
<tr><td>2.3</td><td>Heat Rejection</td><td>2 points are awarded where no water is used for heat rejection.</td></tr>
<tr><td>2.4</td><td>Landscape Irrigation</td><td>1 point is awarder where either:
Drip irrigation with moisture sensor override is installed
OR
No water used for irrigation</td></tr>
<tr><td>2.5</td><td>Fire System Test Water</td><td>The fire system does not expel water for testing; or
The fire system includes temporary storage for 80% of the routine fire protection system test water and maintenance drain-downs for reuse on-site, and if sprinkler systems are installed, each floor must be fitted with isolation valves or shut-off points for floor-by-floor testing.</td></tr>
</table>

2.1 Sanitary Fixture Efficiency

All fixtures are within one star of the best available WELS rating, defined as follows:

Fixture / Equipment Type	WELS Rating
Taps	6 Star
Urinals	6 Star
Toilet	5 Star
Showers	3 Star
Clothes Washing Machines	5 Star
Dishwashers	6 Star

It should be noted that only appliances and fixtures which are provided need to be compliant with the requirement outlined above.

2.2 Rainwater Reuse

Where the GFA of the building falls between the figures outlined in Table Wat-1.1, or for projects above or below the areas listed in the table, a ratio of 3 L/m^2 should be used to determine the minimum tank size required to meet the deemed to satisfy provisions.

It is recognised that the sizing of the rainwater tank is highly dependant on the collection area, the rainfall in a particular location, and the demands for rainwater on the project. The sizing of the rainwater tank has been over-simplified for this DTS methodology. Project teams should not rely on this sizing information to achive the best outcome for their project.

2.3 Heat Rejection

To claim that the project is naturally ventilated, the project must, demonstrate that greater than 95% of the Usable Floor Area (UFA) is naturally ventilated in accordance with AS1668.2-2002.

If this has been demonstrated in the credit IEQ - Distribution of Air, project teams may

2.4 Landscape Irrigation

To achieve crirtion compliance the project must have designed the landscaping and associated systems to reduce the consumption of potable water required for irrigation through the installation of subsoil drip irrigation and moisture sensor controls.

In the cse of a xeriscape garden, the provision of irrigation systems must removed within three months of landscaping installation and that the landscape will not receive watering after this time.

2.5 Fire System Test Water

To consider this criterion met, one of the following conditions must be met:

- The fire system does not expel water for testing; or
- The fire system includes temporary storage for 80% of the routine fire protection system test water and maintenance drain-downs for reuse on-site, and if sprinkler systems are installed, each floor must be fitted with isolation valves or shut-off points for floor-by-floor testing.

Innovation opportunities

Heat rejection systems in equipment requiring process cooling

One Innovation point is available where water use from process cooling in medical, laboratory, or industrial equipment, is at least 10% of the building's total water consumption. In such a case, an innovation point can be achieved if:

- 95% of the water requirement for once-through cooling of equipment requiring process cooling is sourced from non-potable water;

OR

- All equipment requiring process cooling uses cooling systems other than once-through cooling systems.

This point is deemed 'Not Applicable' where the project does not contain equipment requiring process cooling.

Guidance

Relevant Authority Approval

Where greywater and/or blackwater treatment and reuse systems are present, it is the project team's responsibility to seek and achieve any relevant authority approval, and comply with the relevant legislation.

Alternative Compliance Methods

A Credit Interpretation Request (CIR) may be submitted to the Green Building Council of Australia (GBCA) when a registered project wishes to advocate for an alternative yet equivalent method of meeting Compliance Requirements. This is a formal process, reviewed by the GBCA (or other independent external assessors, depending on the complexity of the issue).

Definitions

Rainwater

Rainwater refers to the water that arrives on the site through rain events, falling on roofs within the site boundary.

Stormwater

Stormwater refers to the water that arrives on the site through rain events, falling on hard surfaces other than roofs within the site boundary.

Greywater

Grey water can be recovered from sinks and showers, washing machines, cooling towers and other water sources that do not contain food or human waste.

Blackwater

Blackwater is water from kitchen sinks and toilets that is contaminated with humans waste or food.

Documentation Requirements

1. Performance Pathway

'Design Review' Submission (Optional)

Project teams are to submit information/documentation marked with an asterisk* for 'Design Review'.

As Built Submission

All project teams are to submit the following documentation:

Submission Template*

- A breakdown of space types justifying the entries to the Calculator*
- A description of occupancy profiles justifying the entries in the Calculator*
- A summary of the water efficient fixtures used within the building including their quantities and flow rates*
- The heat rejection system proposed*
- Listing the name, location, and size of each zone as it appears in the Calculator
- Listing the dominant plant species in each zone, and the corresponding crop coefficients entered into the Calculator
- Describing the pool to be installed as part of the project including justification of all inputs into the Calculator*
- A description of reclaimed water systems used

Green Star Potable Water Calculator

Project teams are required to provide documentation supporting credit compliance and the entries in the Green Star Potable Water Calculator. The following documents may be used to demonstrate compliance:

- **WELS certificates** for all toilets, urinals, taps, showers, dishwashers, and residential-scale laundry equipment clearly showing the flow rates of each item.
- **Manufacturer's data** for commercial-scale laundry equipment, should be submitted in lieu of WELS certificates.
- **Mechanical Drawing(s)** clearly showing the location of all heat rejection equipment to be installed on the project.
- **Landscape Irrigation Manufacturer's information** or specifications clearly showing that the nominated application efficiency for the landscape irrigation system can be achieved under the conditions specified in the narrative.
- **Weather data** from the Bureau of Meteorology containing the site specific mean monthly evapotranspiration and meant monthly rainfall data, including the grid coordinates of the site.
- **Manufacturers Swimming Pool Data** included backwash volume and frequency of filter cleaning
- **Contract from off-site water supplier** stating the volume to be supplied and date of commencement of delivery where off-ste reclaimed water supply is included in the design.

2. Deemed to Satisfy Pathway

'Design Review' Submission (Optional)

Project teams are to submit information/documentation marked with an asterisk* for 'Design Review'.

As Built Submission

All project teams are to submit the following documentation:

Submission Template*

- A schedule of the water effieicnt fixtures used within the building including their quantities and flow rates*
- A description of the rainwater strategy including the tank size and the demands being met by the rainwater system*
- A description of the heat rejection strategy*
- A description of the landscape design and irrigation strategy*
- A description of the fire protection system, its operation and testing requirements*
- Calculations demonstrating that the fire protection system captures greater then 80% of test water (where applicable).

Project teams are required to provide documentation supporting credit compliance. The following documents may be used to demonstrate compliance:

- **WELS certificates** for all toilets, urinals, taps, showers, dishwashers, and residential-scale laundry equipment clearly showing the flow rates of each item.
- **Manufacturer's data** for commercial-scale laundry equipment, may be submitted in lieu of WELS certificates.
- **Tank Specification** indicating size and location of the rainwater system and the connections to the water end uses.
- **Landscape/Hydraulics drawings** showing either the drip irrigation system, or showing the location of the xeriscape garden.
- **Xeriscape garden drawings or specification**
- **Extracts from the Fire Engineering Report** where it states that the building's fire suppression system has no sprinklers.
- **As built fire suppression drawing(s)** for each typical floor showing isolation valves for floor-by-floor testing of the fire sprinkler system, and drawings of the water storage and re-use system(s).

Please provide feedback on the technical content of this credit: