



The ESD objective for the proposed development of 89 George St, Parramatta is to achieve a 5 star rating under the Green Star Office Design v2 rating tool, corresponding to Australian Excellence in green design.

A 5 Star Green Star certified rating means that this project will deliver a best practice level of sustainability for the Council. The Green Star rating system takes into account a wide range of issues, among which is the energy performance of the building. In general, a Green Star Rating gives a better indication of the actual sustainability of a building than just an ABGR Rating because of the range of topics that need to be satisfied to achieve it.

It is proposed that the building will achieve a 5 Star Green Star rating through the implementation of initiatives which will:

- Minimise its energy consumption through smart façade design, efficient air conditioning selection, efficient lighting design and good management of building systems;
- Minimise its water consumption through water recycling and efficient fittings;
- Reduce materials consumption and focus on using low-emission materials; and
- Provide healthier, more comfortable internal conditions for the building occupants.

The key proposed ESD initiatives for this building are:

- Chilled beam HVAC system with ventilation rates improved to 100% greater than AS 1668.2 requirements
- Efficient T5 Lighting System design and energy monitoring ability
- Improved water efficiency with rainwater collection, efficient fittings and the re-use of fire test water
- Management and Planning Initiatives, including the provision of
 - Environmentally Sustainable and Low Emission Building Materials
 - Commissioning and building tuning
 - Façade design to maximise daylight and mitigate visual discomfort
 - Cyclist facilities
 - Tenant exhaust capability
 - Waste recycling
 - Best practice construction management

The full set of targeted points is shown in the table below. Due to the complexity of sustainable systems, the achievement of these goals can be delivered in a range of different ways.

Category	Title	Credit No.	Points Available	Points Achieved
Management				
	Green Star Accredited Professional	Man-1	2	2
	Commissioning - Clauses	Man-2	2	2
	Commissioning - Building Tuning	Man-3	1	1
	Commissioning - Commissioning Agent	Man-4	1	1
	Building Users' Guide	Man-5	1	1
	Environmental Management	Man-6	3	3
	Waste Management	Man-7	2	2
	TOTAL		12	12
Indoor Environment Quality				
	Ventilation Rates	IEQ-1	3	2
	Air Change Effectiveness	IEQ-2	2	2
	Carbon Dioxide Monitoring and Control	IEQ-3	1	1
	Daylight	IEQ-4	3	2
	Daylight Glare Control	IEQ-5	1	0
	High Frequency Ballasts	IEQ-6	1	1
	Electric Lighting Levels	IEQ-7	1	0
	External Views	IEQ-8	2	1
	Thermal Comfort	IEQ-9	2	2
	Individual Comfort Control	IEQ-10	2	0
	Asbestos	IEQ-11	0	na
	Internal Noise Levels	IEQ-12	2	2
	Volatile Organic Compounds	IEQ-13	3	3
	Formaldehyde Minimisation	IEQ-14	1	1
	Mould Prevention	IEQ-15	1	1
	Tenant Exhaust Riser	IEQ-16	1	1
	TOTAL		26	19
Energy				
	Energy	Ene-1	Conditional Reqmt	yes
	Energy Improvement	Ene-2	15	9
	Electrical Sub-metering	Ene-3	1	1
	Tenancy Sub-metering	Ene-4	1	1
	Office Lighting Power Density	Ene-5	4	3
	Office Lighting Zoning	Ene-6	1	1
	Peak Energy Demand Reduction	Ene-7	2	0
	TOTAL		24	15
Transport				
	Provision of Car Parking	Tra-1	2	0
	Small Parking Spaces	Tra-2	1	1
	Cyclist Facilities	Tra-3	3	3
	Commuting Public Transport	Tra-4	5	4
	TOTAL		11	8
Water				
	Occupant Amenity Potable Water Efficiency	Wat-1	5	5
	Water Meters	Wat-2	2	2
	Landscape Irrigation Water Efficiency	Wat-3	0	na
	Cooling Tower Water Consumption	Wat-4	4	2
	Fire System Water Consumption	Wat-5	1	1
	TOTAL		12	10
Materials				
	Recycling Waste Storage	Mat-1	2	2
	Re-use of Façade	Mat-2	0	na
	Re-use of Structure	Mat-3	0	na
	Shell and Core or Integrated Fitout	Mat-4	3	0
	Recycled Content of Concrete	Mat-5	3	2
	Recycled Content of Steel	Mat-6	2	1
	PVC Minimisation	Mat-7	2	1
	Sustainable Timber	Mat-8	2	0
	TOTAL		14	6
Land Use & Ecology				
	Ecological Value of Site	Eco-1	Conditional Reqmt	yes
	Re-use of Land	Eco-2	1	1
	Reclaimed Contaminated Land	Eco-3	2	0
	Change of Ecological Value	Eco-4	4	1
	Topsoil and Fill Removal from Site	Eco-5	1	0
	TOTAL		8	2
Emissions				
	Refrigerant ODP	Emi-1	2	2
	Refrigerant GWP	Emi-2	1	0
	Refrigerant Leak Detection	Emi-3	1	1
	Refrigerant Recovery	Emi-4	1	1
	Watercourse Pollution	Emi-5	2	2
	Reduced Flow to Sewer	Emi-6	4	2
	Light Pollution	Emi-7	1	1
	Cooling Towers	Emi-8	1	0
	Insulant ODP	Emi-9	1	1
	TOTAL		14	10
TOTAL CREDITS				
			121	82
Innovation				
	Innovative Strategies and Technologies	Inn-1	5 points in total for	0
	Exceeding Green Star Benchmarks	Inn-2	inv-1,2&3	0
	Environmental Design Initiatives	Inn-3		0
	Total		5	0
OVERALL WEIGHTED SCORE:				
				66

The strategy presented above demonstrates one set of initiatives that will deliver on these targets. However there remains scope for refining the ESD strategy for each building on this site without compromising the result.