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Sustainability Impacts from Transport

Aim of Credit

To reward projects that implement design and operational measures to reduce the carbon emissions from staff transport to and from the project compared to a benchmark building.

Credit Criteria

There are two pathways available to projects teams to demonstrate compliance, a (1) Performance pathway and (2) Deemed-to-Satisfy pathway. Projects shall nominate pathway 1 or 2 to demonstrate credit compliance.

1	**Sustainability Impacts from transport – Performance Pathway**	Up to 10 points are awarded where the carbon emissions from staff transport to and from the building is predicted to be reduced and participation in active transport is increased, when compared to a benchmark building. Points are awarded based on the proposed building's ability to significantly reduce the greenhouse gas emissions from transport, the reduction of dependence on car commuting and its associated benefits, the promotion of health and fitness to commuters, and the increased livability of the location of the site.
2	**Sustainability Impacts from Transport – Deemed-to-Satisfy Pathway**	Up to 7 points out of 10 are awarded where reduced carbon emissions from transport and increased active transport mode participation are demonstrated using DTS criteria for the following issues: • Access by Public Transport • Reduced Car Parking Provision • Low emission vehicle infrastructure • Active transport facilities • Walkable Neighbourhoods

Compliance Requirements

This credit only refers to permanent staff or residents within the building.

1. Sustainability Impacts from Transport - Performance pathway

It is a requirement of this pathway that a travel plan be developed to ensure all aspects of transport have been considered and addressed as part of this pathway. Up to 10 points are then awarded where based on the holistic approach to reducing the impacts from transport against a reference building.

Refer to the Sustainable Impacts from Transport calculator guide for details on the Travel plan requirements, the calculation methodology, and the definition of Reference Building.

2. Sustainability Impacts from Transport - Deemed to Satisfy Pathway

2.1	**Access by public transport**	Up to 3 points are awarded based on the accessibility of the site by public transport. This score is determined by the Access by Public Transport Calculator.
2.2	**Reduced car parking provision**	1 is awarded where there is a the reduction of car parking spaces for staff or visitors in the proposed building when compared against the maximum rates allowed as determined by the accessibility of the site.
2.3	**Low emission vehicle infrastructure**	1 point is awarded where parking spaces for staff or visitors and/or dedicated infrastructure is provided to support the uptake of low-emission vehicles.
2.4	**Active transport facilities**	1 point is awarded where bicycle parking and associated facilities are provided to a proportion of staff, occupants, and short term visitors.
2.5	**Walkable Neighbourhoods**	1 point is awarded where either: At least 4 amenities (Class 7) or at least 8 amenities (all other classes) are within 400m of the development. OR The project achieves a walk score of at least 70 (Class 7) or at least 80 (all other classes), as determined by the website www.walkscore.com, using their 'street smart' method of calculation.

2.1 Access by Public Transport

The Public Transport Accessibility calculator involves the use of a uniquely developed Public Transport Accessibility Index (PTAI) to determine the projects score that reflects how well a particular destination is served by public transport.

The measure of the accessibility relates to 'the number of residents that can access the nominated destination through the use of public transport within a 45 minute time-band during morning peak hour'.

The 45 minute threshold includes:

- Walk time to and from the public transport stop at both ends of the trip;
- In-vehicle time; and

– Wait/transfer times.

The number of points achieved is determined by using the Public Transport Accessibility calculator, which is available from the GBCA website. Information within the guide is mandatory and all projects claiming this credit are required to comply with it.

Points are based on the number of people that can access the site by public transport with 45mins in peak hour, as follows:

Number of Points	Number of People
0	0-149,999
1	150,000-299,999
2	300,000-449,999
3	450,000+

2.2 Reduced Car Parking Provision

Points are awarded where the number of parking spaces provided meets the maximum rates outlined in the table below. Where a building has multiple uses, a hybrid rate will be determined based on the proportion attributable to each use. The project's Accessibility Rating is determined through use of the Access by Public Transport Calculator.

Space Use Type	Points	Maximum car parking to occupant ratio (1 car space to x building occupants)		
		Accessibility Rating 1	Accessibility Rating 2	Accessibility Rating 3 (highly accessible)
Multi Unit Residential	**0.5**	3	3	4
	1	4	4	5
Office	**0.5**	5	6	7
	1	7	8	9
Public Building	**0.5**	5	6	7
	1	8	9	10
Retail Centre	**0.5**	4	5	6
	1	6	7	8
Education	**0.5**	15	20	25
	1	20	25	30
Industrial	**0.5**	3	4	5
	1	4	5	6
Healthcare	**0.5**	2	3	4
	1	3	4	5

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This credit is applicable regardless of the location of the project or the nature of local planning requirements, as neither of these factors lessens the environmental impact of the use of motor vehicles.

If it can be demonstrated that no car parking will be provided as part of the project this credit is not applicable. Projects that provide no car parking may be eligible for points within Inn-2 Exceeding Green Star Benchmarks

Disabled parking spaces may be excluded from the total number of parking spaces included in the submission.

Parking spaces designed to accommodate commercial vehicles required for the industrial or commercial activity in the building (i.e. vehicles not used to transport people to the building) may be excluded from the total number of parking spaces in the Green Star submission. Examples of such parking spaces include, but are not limited to:

- Parking spaces for heavy vehicles; and
- Parking spaces for delivery and distribution vehicles

To exclude these parking spaces they must be clearly marked, for example through use of different coloured line markings and highly visible signage.

Car parks on adjacent sites are generally excluded from the car parking spaces available for the project, whether public or commercial. If external car parking spaces are used to meet the requirements of the development approval, these should be included in the Green Star assessment.

To achieve points in this credit the project must meet the rates outlined in **Error! Reference source not found.**, irrespective of any local planning requirements for minimum car parking rates.

Total building occupancy is determined by the BCA Review Report prepared by a qualified Building Surveyor which must be provided as part of the credit submission.

2.3 Low Emission Vehicle Infrastructure

1 point is awarded where the project includes low emission vehicle infrastructure that meets one of the following benchmarks:

- 15% of parking is designated for fuel efficient vehicles
- 5% of parking is designated for electric vehicles and charging infrastructure is provided.
- Dedicated car share space/s and vehicle/s are provided at the rate of 1 per 30 units or 1 car per 100 building occupants

At least 80% of the parking for low emission vehicle infrastructure must be in a preferred location

Fuel Efficient Vehicles

Fuel efficient vehicles are defined as those having an overall rated fuel efficiency of 5L/100km or better. This may include fuel efficient cars, hybrid cars, electric vehicles and

motorcycles. A maximum of 5% of Fuel Efficient Vehicle spaces can be dedicated to motorcycle parking.

Parking for fuel efficient, hybrid and electric vehicles

Parking spaces for fuel efficient, hybrid and electric vehicles must be clearly designated, for example through use of different coloured line markings and highly visible signage. Designations must be supported be a management system to ensure use exclusively by fuel-efficient, hybrid and electric vehicles.

Appropriate electric vehicle charging infrastructure must be easily accessed by the users of dedicated electric vehicle charging spaces. It must comply with all relevant standards and health and safety legislation.

Parking for car share vehicles (Multi Unit Residential space type only)

Parking spaces for car share vehicles should be provided at a rate of 1 per 70 building occupants, and must be clearly designated, for example through use of different coloured line markings and highly visible signage.

The car share parking space must be accessible to all car share scheme members.

2.4 Active Transport Facilities

For criterion compliance, the following conditions must be met for all building use types:

Cycle Facilities – Regular Building Occupants	
Building Class	**Cycle Facilities**
Class 2	Secure bicycle parking for occupants is provided at a rate of 3 spaces per every 10 units
Class 3 to 9 buildings	Secure bicycle parking for staff is provided for 7.5% of total staff, with associated end of trip facilities.
Class 9b – Primary and Secondary School	In addition to the class 3 to 9 requirements, secure bicycle parking is provided for 40% of students over grade 4
Class 9b Education - Tertiary education only	In addition to the class 3 to 9 requirements, secure bicycle parking is provided for 10% of students, calculated at 75% of peak occupancy
Cycle Facilities – Building Visitors	
Building Class	**Cycle Facilities**
Class 2	Secure bicycle parking for visitors is provided for 5% of dwellings.
All other building classes	Secure bicycle parking for visitors is provided for 5% of peak visitors.

The number of staff and visitors shall be confirmed by the building owner.

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Facilities can be provided within the building's boundary, or outside. If the facilities are outside the site boundary, they must be under control of the building owner.

Secure bicycle parking is defined as that which is in accordance with AS2890.3.

End of trip facilities are defined as showers, changing amenities with appropriate drying space, and lockers. End of trip facilities must be provided at a rate in line with an appropriate standard.

The design of the end-of trip facilities must be appropriate to encourage their use over that of private vehicle use. Therefore, the project team is expected to justify how their location, locker sizes, privacy requirements, and size are conducive to this aim.

2.5 Walkable Neighbourhoods

The distance is defined as a diameter from the centre of the development.

Amenities can be off or on site and are defined as Convenience Stores; Pharmacies; Post offices, Restaurants, food and beverage; Gyms, pools and sports facilities; Hospitals, clinics and healthcare centres; Childcare centres; Newsagencies; Retail centres; Cinemas and theatres; Supermarkets and grocery stores; Libraries; Banks or ATMs; Public Parks; Community centres; Churches; and Educational Facilities (i.e. schools or universities).

A similar type of amenity to that of the development cannot be considered as such for purposes of this project. That is, a project with residential unit cannot consider other residences as amenities. Where there are two or more of any one amenity this will count as only 2 amenities. (For example, 3 restaurants will only count as 2 amenities, 4 convenience stores will only count as 2 and so on).

Guidance

Exclusions and notes

Car parks on adjacent sites are generally excluded from the car parking spaces available for the project, whether public or commercial. If external car parking spaces are used to meet the requirements of the development approval, these should be included in the Green Star assessment.

Projects in a campus style situation, where one, or more, car parks or car parking spaces exist to service a large number of buildings must demonstrate that the number of car parks within 800 metres of the site has not increased at a ratio higher than that of what is allowed by this credit to claim this point. The time from which this is measured is at the time of development approval, or from two years prior to practical completion.

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).

Standards and guidelines noted in this credit

Electric Vehicle Charge Points

- IEC 62196-1:2011 Plugs, Socket-Outlets, Vehicle Connectors and Vehicle Inlets – Conductive Charging of Electrical Vehicles – Part 1 : General Requirements

End of Trip Facilities

- the Australian Bicycle Council's fact sheet for Developers, http://cyclingresourcecentre.org.au/images/uploads/post/attachment/ABC_FactSheet_-_Bike_Parking.pdf
- AS2890.3 Parking Facilities Part 3: Bicycle Parking Facilities
- AS1158 Lighting for Roads and Public Spaces, Part 3.1: Pedestrian area lighting

Definitions

Suitably qualified professional: Tertiary qualified sustainability professional.

Preferred location: Preferred parking spaces are defined as those located closest to the main entrance of the building or the lift core.

Building occupant: Refers to the total building population (i.e. staff+ visitors in an office building, and staff + student in an education facility) at peak occupancy as per the BCA Review Report.

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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

- Description of the timing and process of developing the site-specific transport assessment and the Travel Plan
- Summary of how the recommendations of the Travel Plan were included in the project's design
- Summary of how improvements in carbon emissions from transport and the inputs into the Transport Calculator. Refer to the Sustainability Impacts from Transport Calculator for details on justifying improvements in carbon emissions

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

- **Green Star – Design & As Built Sustainable Impacts from Transport Calculator**
- **Travel Plan** including a site-specific transport assessment and transport improvements as outlined in the Compliance Requirements
- **Transport Drawings** showing the provision and location of transport facilities as recommended by the Travel Plan, and justifying inputs into the Sustainability Impacts from Transport Calculator

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*

- The number of staff, occupants and short term visitors expected for the project
- Results from the Green Star – Design & As Built Access by Public Transport Calculator
- A summary table of the maximum car park spaces allowed and the proposed car park spaces

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- The number of proposed car park spaces and the number of car park spaces for low-emission vehicles, electric vehicles or car sharing schemes
- The number of bicycle parking spaces that have been provided and the number that are required for credit compliance
- A description of the secure bicycle spaces and end of trip facilities (i.e. showers and lockers)
- The WalkScore or the project or a summary of the number of amenities within the relevant distance to the site.

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

- **Green Star – Design & As Built Access by Public Transport Calculator**
- **Project Drawings*** showing the proposed car parking spaces, bicycle parking spaces, and end-of trip facilities
- **Walkscore Report***
- **Site Plan***showing the amenities nearby

Please provide feedback on the technical content of this credit: