

# Biophilia in BCA Green Mark

<p><b>BCA Green Mark (Building and Construction Authority)</b></p> <p>Singapore Green Building Council</p> <p><b>Energy Efficiency 22 points</b></p> <p>2.1a Air Conditioning Total System Efficiency (5 pts)                  2.1b Lighting System Efficiency (3 pts)                  2.1c Carpark System Efficiency (2 pts)                  2.1d Receptacle Load Efficiency (1 pt)                  2.1e Building Energy (11 pts)                  Option 2: Performance-Based Computation                  2.1f Space Conditioning Energy (10 pts)                  2.1g Lighting Energy (6 pts)                  2.1h Building Energy (6 pts)</p> <p><b>Renewable Energy 8 points</b></p> <p>2.2a Solar Energy Feasibility Study (0.5 pt)                  2.2b Solar Ready Roof (1.5 pts)                  2.2c Adoption of Renewable Energy (6 pts)</p> <p><b>Resource Stewardship</b></p> <p>Water 8points                  Material 18 points                  Waste 4 points                  Advanced Green Efforts 8 points</p> <p><b>Smart and Healthy Building</b></p> <p>Indoor Air Quality 10 points                  Spacial Quality 10 points                  Smart Operation 10 points                  Advanced Green efforts 10 points</p>	<p><b>Spatial Quality (10 pts)</b></p> <p>The spatial quality of a building is assessed through the experiential value of both the physical and social qualities of the spaces within the development. Although many spatial quality indicators are qualitative, there are a number of commonly agreed upon indicators that act as a reliable proxy to determine the projects spatial quality which can enhance the indoor environment and wellbeing of the occupants and visitors to the building. These include creating access to quality daylight and artificial lighting, ensuring spaces are acoustically comfortable and inclusive as well as incorporating design features that evoke a connection to nature</p>	<p><b>Well Being 1-2 points</b></p> <p>The state of being comfortable, healthy or happy. Nurturing, healing and inclusive spaces can enhance the building occupant and user's environment, and overall wellbeing.</p> <p><b>1. Biophilic Design</b></p> <p>Provision of accessible sky gardens, sky terraces, internal courtyards and rooftop gardens as areas for respite.</p> <p>Building design that adopt biomimicry designs.</p> <p>The provision for at least 5% of the common areas or functional spaces to have fixed indoor planting.</p> <p>Building design that takes after any natural shapes and forms/ creates ecological attachment to the place.</p> <p>Provision of images of nature for 5% of common areas.</p> <p><b>2. Universal Design (UD) Mark</b></p> <p>The BCA UD Mark accords recognition to developments that adopt a user-centric philosophy in their design, operations and maintenance. Points can be scored for projects being awarded either:</p>	<p><b>Urban Harmony 10 points</b></p> <p>With buildings forming part of a larger urban environment, it is important to identify the impact of the physical form of a building, which prefixes its sustainable performance, with respect to its immediate locale and larger context. Designing for a building's humancentricity looks at how its presence can coexist in harmony with its surrounding context and positively impact the movement and comfort of the people in its neighbourhood.</p> <p>≥ 50% site coverage (at plan view) with mitigation measures (1point)                  ≥ 80% site coverage (at plan view) with mitigation measures (0.5-1 point)</p> <p>Integrate a verdant landscape and waterscape into their building design, to enhance the biodiversity around the development and provide visual relief to building occupants and neighbours.</p>	<p><b>Topicality 10 points</b></p> <p>Shaping building passive design in consideration of the climatic context, including its orientation, facades as well as interior layout can reduce the building's heat load and energy usage and enhance effective thermal comfort for its occupants. From a performance point of view, buildings should be highly permeable in areas of natural ventilation and at the same time be shielded against heat ingress.</p> <p>1.3a Tropical Façade Performance (3 pts)                  1.3b Internal Spatial Organisation (3 pts)                  1.3c Ventilation Performance (4 pts)</p>
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