The BCA Green and Gracious Builder Star Champion Award was introduced to recognise builders which have demonstrated exemplary green and gracious performance in their projects and consistently achieved the highest tier rating (i.e. Star Category). The pinnacle award also aims to encourage the whole construction value chain to embrace a green and gracious culture.

Builders that met the following criteria would be recommended for this Award:

i. Achieved GGBS STAR rating for five (5) consecutive times (commencing from a certification, recertification or renewal audit) for a period of five (5) years;

ii. No adverse feedback and green and gracious related stop work order in the past 3 years; and

iii. Engaged at least five (5) or more GGBS or GGBS(SMC) certified sub-contractors/partners in ongoing projects
In line with Lendlease’s vision to ‘Create the Best Places’, they place great emphasis on ensuring that both the public and environment are least impacted by their construction activities.

Lendlease has set company-wide targets to reduce emissions, energy intensity, water and waste to landfill by 20% by year 2020. An in-house Green Site Rating Tool which stipulates minimum requirements was rolled out. A system “Footprint” records all data for energy, emissions, water, waste etc. and data are audited by external auditors annually and reported.

As part of pre-qualification requirements to work on their projects, the supply chain are required to commit to their Supply Chain Sustainability Responsibility declaration. At a project level, they actively promote the use of prefabricated solutions to minimize labour and resource usage e.g. pre-cast components, modular pie racks. They also adopt the use of environment friendly equipment and sustainable materials e.g. paper from farmed sources, construction materials with Green label and energy efficient air-cons, lighting, etc.
Unison Construction Pte Ltd has played an integral role in promoting the best green and gracious practices in Singapore’s built environment.

Their management actively fosters environmental awareness by involving all employees in the use of recycled materials and reduction in energy and water consumption on site. This includes the installation of energy-efficient and water recycling appliances and equipment. Air quality management, housekeeping procedures and incentive programs are also implemented to ensure a healthy and safe workplace environment. In addition, green performance is an important criteria during the assessment and evaluation of Unison’s Suppliers and Sub-contractors.

Beyond green initiatives, Unison encourages gracious practices that minimise the impact on site and surroundings. Comprehensive guidelines and manpower management are established to ensure enhanced accessibility, public safety and better mitigation of noise and vibration. Sharing sessions for staff and subcontractors are conducted regularly to develop innovative green and gracious practices and technologies. As part of their Corporate Social Responsibility activity, they have also committed 50 trees to Nparks’ Plant-A-Tree (PAT) program.
<table>
<thead>
<tr>
<th>ORGANISATION NAME</th>
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<tr>
<td>LendLease Singapore Pte. Ltd.</td>
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<tr>
<td>Unison Construction Pte Ltd</td>
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The Green and Gracious Builder Award (GGBA) was introduced in February 2009 to recognise progressive builders who adopt environmentally friendly practices and minimise the effects of construction for people living close to the worksite. Builders are rated on their performance in adopting best practices in construction site management.

The scheme was enhanced to stay relevant with the dynamics of the industry and to further encourage builders to adopt more of such best practices. This award recognises the conscious effort of builders in implementing environment protection and gracious practices during the construction phase of projects.

The GGBA 2018 will be given to the following ratings:

i. STAR

ii. EXCELLENT
Key Features

• Use of BIM to reduce interfacing issues, enable containment of noise during construction and thus increasing productivity.

• Use of Bio-metric face recogniser to capture the attendance that reduce paperwork and improve productivity.

• Provide traffic warden with LED vest for better visibility when directing traffic.

• Motion sensor connected to lighting to reduce electricity.
Key Features

• Use of portable noise barriers which can be easily assembled and dismantled.
• Use of rain-water for various construction activities to reduce water consumption.
• Allow daylight through glass-like material on roof of site office to minimize need for powered lighting.
• Use of BIM for all its projects.
Key Features

• Maximise usage of BIM application through integrating it with other smart technologies.
• Use of 5D simulation for project planning.
• Adopt top down construction to mitigate noise generated in bottom-up construction.
• Protection of trees within and around site that is beyond regulatory requirement.
Key Features

- Use of modular mobile guard room with biometric authentication system and rotating bar barriers for attendance tracking.
- Extensive use of green wall at main site entrance.
- Use of VDC and BIM to aid planning.
Key Features

• Use of rainwater coupled with a system to water plants and garden within the site.
• Provision of 10m high noise barrier hoarding to minimise noise impact on a neighbouring school.
• Include cleaning up of public areas as part of housekeeping regime.
Key Features

- Tutelage to subcontractors and encourage them to attain higher levels for GGBS and BIZsafe.
- Arrange various yearly community service projects for their staff to participate and contribute.
- Use of system to report and record defects and rectification thus reducing usage of paper.
Key Features

- Use of biometric system for attendance on site.
- Use of drone technology for site utilisation monitoring and housekeeping inspection.
- Provision of AED and full emergency kit on site.
Key Features

- Use of technology to recycle the heat energy from ACU to provide electricity for their offices.
- Use of GNSS technology to increase accuracy of piles thus reduce wastages.
- Provision of yearly study trips for staff to gain insights of overseas good practices.
Key Features

• Well-designed and maintained wheelchair accessibility around the site.
• Active and passive noise prevention control in place such as provision of extensive noise barrier for works and generators.
• Implement 3-pronged approach to save water through water rationing, reused condensate water and reused collected rainwater.
Key Features
• Use of robotic aqua crusher for its work.
• Short-term attachment to structural consultants for exposure to different job scope.
HPC BUILDERS PTE. LTD.

BCA GREEN AND GRACIOUS BUILDER AWARD | EXCELLENT

Key Features

• Adoption of BIM and PPVC for its project.
• Conservation of existing trees within site.
Key Features

• Extensive provision of recreation for workers’ welfare, which include game room, reading corner and sports area.
• Use of motion sensor at its site offices.
• Use of biometric attendance system to reduce usage of paper.
Key Features

- Install auto-timer for lighting in hoarding for efficiency and power saving.
- Use of e-Permit-to-Work system through mobile phone for better efficiency.
- Provision of air coolers and fans to neighbouring school affected by the construction to improve comfort of the students.
Key Features

• Use of thermite welding for rail joints to eliminate the need for electricity for welding works.
• Replace concrete blocks with steel plates for pile load test to reduce material usage.
• Use of recycle grinded wood from site clearance as wood fertilizer for site use.
• Use of biometric face screening to monitor attendance.
Key Features

• Use of see-through mesh hoarding at corners to facilitate sighting of pedestrians for public safety.

• Self-designed roof edge barriers to aid maintenance works at old HDB roofs.
Key Features

- Adopt TBM U-turn method instead re-launching to reduce construction time significantly.
- Adopt HAT pile installation that reduce noise impact and ground settlement.
- Considerateness towards the safety of students and residents by shifting site entrance to PIE slip road instead to reduce the number of heavy vehicles passing through the roads of the neighbourhood and a neighbouring school.
Key Features

- Pipe jacking method used instead of open cut to avoid shoring and reduce the use of timber and steel.
- Proposed use of precast component instead of cast in situ to reduce concrete waste.
Key Features

- Provision of fridges for workers to keep their food fresh.
- Use of synthetic grass, that is visually soothing, to address soil erosion problem and dust generated at site.
- Provision of a temporary ramp instead a temporary staircase replacement required.
Key Features

• Use of drone to check for stagnant water on temporary holding areas’ platform roofs thus improve productivity and reduce the need for mobile lifts.

• Use of remote controlled self-propelling modular transport to shift the railway platforms to minimise vibration, prevent damages to the surrounding and improve productivity.

• Extensive reuse of left over material from past projects and own factory to build up storage on site.
Key Features

- Extensive greenery, which include vertical greens at the site office and a mini garden.
- Use of plastic water bottles to bring in natural lighting on temporary metal roof.
- Provision of masks and ear plugs for residents.
Key Features

- Use of biometric attendance system to reduce paper usage.
- Use of automated wheel washer to increase productivity and reduce water usage.
- Self-made plastic water tank attached to fork lift vehicle for dust control on site.
Key Features

- Extensive Green efforts for site office, which include north-south facing, insulation metal roofing and lower ceiling height.
- Extensive provision of noise barriers around site.
- Relocation of public carpark to improve neighbouring school students’ safety and accessibility.
# BCA Green and Gracious Builder Award | Star

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<tr>
<td>China State Construction Engineering Corporation Limited Singapore Branch</td>
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<td>Chye Joo Construction Pte Ltd</td>
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<td>Kimly Construction Private Limited</td>
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<td>Asiabuild Construction Pte. Ltd.</td>
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<td>BHCC Construction Pte. Ltd.</td>
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<td>Boustead Projects E&amp;C Pte Ltd</td>
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<td>China Railway First Group Co., Ltd. Singapore Branch</td>
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<td>Chiu Teng Construction Co. Pte. Ltd.</td>
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<td>Gennal Industries Pte Ltd.</td>
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<td>Hock Lian Seng Infrastructure Pte. Ltd.</td>
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<td>Keong Hong Construction Pte Ltd</td>
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<td>Koon Construction &amp; Transport Co. Pte. Ltd.</td>
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<td>Logistics Construction Pte Ltd</td>
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<td>Nishimatsu Construction Co., Ltd.</td>
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<td>Progressive Builders Private Limited</td>
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# BCA Green and Gracious Builder Award | Excellent

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<tr>
<td>Quek &amp; Quek Civil Engineering Pte Ltd</td>
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<td>Tat Hin Builders Pte Ltd</td>
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<td>Welltech Construction Pte Ltd</td>
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<td>Woodwater Integrated Pte. Ltd</td>
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