**MEDIA RELEASE**

# New study shows cost and manpower savings from Design for Maintainability measures

- *Investing in Design for Maintainability (DfM) measures facilitates more efficient maintenance over a building's lifespan*
- *Revision of plans to mandate CORENET X adoption*

**Singapore, 22 July 2026** – The Building and Construction Authority (BCA) today released preliminary findings from a study, demonstrating the business case for investing in Design for Maintainability (DfM) features. By incorporating these features early in the design process, developers, building owners and tenants can expect to benefit from substantial maintenance cost and manpower savings over a building's life cycle.

2. Revisions to the plans to mandate CORENET X adoption were also announced, following a review of early adoption projects and feedback from the industry. These refinements will support a more calibrated and targeted approach to CORENET X adoption going forward.

**Designing for Long-Term Resilience**

3. Demand for building maintenance works continues to increase as Singapore's building stock grows and age. At the same time, the manpower available to maintain our buildings continues to shrink as the population ages.

4. To ensure that our buildings remain well-maintained over time, BCA has been advocating for the BE sector to adopt Design for Maintainability, or DfM. This entails factoring longer-term maintainability considerations into the design process, so that buildings are easier and more cost-effective to maintain through their operational phase.

**Key Findings from the Study**

5. To quantify the benefits of DfM, BCA worked with Surbana Jurong (SJ Group) to study four local developments – two existing commercial buildings, one new commercial development, and one new residential development[1]. The study used the Green Mark Maintainability (Mt) framework and life-cycle cost[2] analysis approach.

6. The findings showed that **adopting DfM can yield annual operational savings and deliver net positive returns after relatively short payback periods**. Across the three commercial buildings studied, potential annual operational savings from adopting DfM ranged from $310,000 to $950,000, with the majority of DfM measures achieving a payback period of less than six years. For the residential development, potential annual operational savings can be up to $110,000, with the majority of DfM measures achieving payback within five years.

7. For example, without dedicated access built into the design, maintenance workers servicing the fan and basin at the top of a cooling tower would need to rely on temporary scaffolding — a costly and time-consuming exercise every time routine maintenance is required. By incorporating a cat ladder into the design, maintenance teams can gain safer and more direct access to the cooling tower. This straightforward design decision can generate potential life-cycle savings of over $750,000, with a payback period of just three years, in the case of Shaw Tower. Given that cooling towers typically have a lifespan of 15 years, recovering the investment in three years means net positive returns thereafter for the remaining 12 years.

8. The **study also showed meaningful productivity gains from adopting DfM**. All DfM features studied helped reduce annual maintenance man-days, with many achieving reductions of more than 60%. The largest gains came from architectural decisions such as choices about design specifications

[1] The developments comprised – Ascent from CapitaLand Development, SJ Campus from SJ Group, Shaw Tower from Shaw Towers Realty with Lendlease as project and development manager, and Copen Grand by City Developments Limited (CDL) and Sunway MCL.

[2] More information on Green Mark Mt Section and LCC *(within the Mt Section Technical Guide)* can be found here: https://www1.bca.gov.sg/sustainability/greenmark/green-mark-2021/

floor materials, ceiling types, and façade access, underscoring the importance of making maintainability an upfront design consideration.

9. Across the buildings studied, the additional cost of incorporating DfM for the commercial buildings ranged from 0.6% to 1.5% of total construction cost, and was just 0.2% for the residential development.

**Call to Action for the Industry**

10. Developers and building owners are strongly encouraged to attain the Green Mark Mt Badge[3] for their building projects to enhance the long-term performance, unlock significant savings over the building's lifespan and add value to their properties.

11. For developers seeking to sell units upon completion, the Green Mark Mt Badge provides added assurance of the asset's long-term sustainability, cost-efficient maintenance requirements and lower potential savings in maintenance costs.

12. Architects and engineers are also encouraged to embrace DfM and actively apply maintainability considerations in your projects. This not only strengthens the value proposition for clients but also supports broader efforts to transform and future-proof our Built Environment (BE) sector.

13. BCA and SJ Group will work together with trade associations and chambers in the BE sector to hold a series of engagements with architects, engineers, developers, and FM practitioners to share the study's findings and gather industry feedback on how DfM can be more widely adopted across the sector.

[3] The Mt Badge is awarded under BCA's Green Mark (GM) 2021 Certification Scheme, which integrates DfM within its Mt Section. Projects that comply with all applicable DfM pre-requisites and score at least 10 of the 15 available GM points in the Mt Section are awarded the Mt Badge.

14. “For too long, maintenance has been treated as someone else's problem – to be addressed only after the building is handed over. This study shows that designing for maintainability is not a cost burden, but a sound investment. By making maintainability a priority from day one, we can reduce long-term costs, improve productivity and create a more resilient built environment that serves future generations well. We encourage developers, designers, and building owners to embrace DfM and the Mt Badge, as we shift from building for completion to building for long-term performance.” said Mr Ang Kian Seng, Group Director of Environment Sustainability at BCA.

**Calibrated Approach to CORENET X Adoption**

15. As more projects come onto CORENET X, agencies have been reviewing its implementation and engaging industry to understand its impact. The review found that the benefits of CORENET X are more significant for larger and more complex projects, which typically involve more agencies and regulatory submissions. Early coordination through CORENET X helps these projects surface and resolve issues earlier, reducing downstream delays.

16. For smaller projects, which generally involve fewer agencies and are often undertaken by smaller firms with more limited manpower resources, the costs of mandatory adoption may outweigh the benefits. The approach for mandatory adoption of CORENET X is therefore being adjusted to better reflect these differences.

17. From 1 October 2026, all new projects with Gross Floor Area (GFA) of 5,000 square metres and above will be required to make submissions via CORENET X. It will no longer be mandatory for projects with GFA below 5,000 square metres to make submissions via the CORENET X gateway processes. Ongoing projects on CORENET 2.0 and projects with GFA below 5,000 square metres can continue to use CORENET 2.0 to make submissions for now.

18. These refinements reflect our continued commitment to building a more future-ready Built Environment sector, adopting digital transformation where it matters most and delivers the greatest value.

**Factsheets**

ANNEX A – DESIGN FOR MAINTAINABILITY CONSULTANCY STUDY

ANNEX B – ADDITIONAL QUOTES FROM STUDY PARTICIPANTS

About BCA

The Building and Construction Authority (BCA) champions a safe, sustainable, and liveable built environment for Singapore. As a leader in the sector, BCA is dedicated to driving industry transformation and setting rigorous standards in building safety, quality, and environmental sustainability. By advancing innovation, digitalisation, and the development of a skilled workforce, BCA fosters a dynamic industry that is ready to meet the evolving needs of the nation and build a resilient and progressive built environment for all. For more information, visit www.bca.gov.sg