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Annex A: Update on the Built Environment Industry Transformation Map (BE ITM) progress

1 The refreshed Built Environment (BE) Industry Transformation Map (ITM) was launched on 9 September 2022 at the International Built Environment Week (IBEW) 2022. The ITM integrates the transformation plans for the Construction and Facilities Management (FM) industries under one BE umbrella, as part of a building lifecycle approach towards transformation. The three key transformation areas are (i) Integrated Planning and Design (IPD); (ii) Advanced Manufacturing and Assembly (AMA); and (iii) Sustainable Urban Systems (SUS).

Integrated Planning and Design (IPD)

2 Building on our efforts for Integrated Digital Delivery (IDD) under the Construction ITM, IPD aims to optimise the planning and design of a building/district for its entire lifecycle where downstream considerations are incorporated upfront. This will help to minimise the downstream wastage of resources for construction and maintenance, which could result in unnecessary reworks and retrofits. A key initiative under IPD is CORENET X, a one-stop integrated digital platform which streamlines the regulatory approval process of building works. CORENET X will progressively become mandatory from 1 October 2025.

3 **Target: 70% IDD adoption for all new developments [by Gross Floor Area (GFA)] by 2025**. We are on track to achieving our committed target. The IDD adoption rate for new developments (by GFA) has increased from about 58% in 2023, to 67% in 2024.

Advanced Manufacturing & Assembly (AMA)

4 Building on our efforts to drive Design for Manufacturing and Assembly (DfMA)[1] (i.e. a continuum of technologies which shifts construction activities off-site into more productive factory-like settings), AMA seeks to encourage the adoption of robotics and

[1] Examples of DfMA technologies include Prefabricated Prefinished Volumetric Construction (PPVC), structural steel, Advanced Precast Concrete System (APCS) and Prefabricated Mechanical, Electrical and Plumbing (Prefab MEP) System.

automation (R&A) to enhance construction productivity both on-site and off-site. This will also provide a better work environment and better jobs for our workforce. We will also strengthen the construction supply ecosystem by developing Integrated Construction Parks (ICPs), which would help to improve productivity and land utilisation as well as lead to leaner and more sustainable operations. Over the last 12 months, we have seen the adoption of 23 different robotics and automation solutions across 56 different projects undertaken by 50 firms. In 2024, we also saw the official opening of Jurong Port's Integrated Construction Park.

5 **Target: 70% DfMA adoption for all new developments (by GFA) by 2025**. We are on track to achieving our committed target. The DfMA adoption rate for all new developments (by GFA) has increased from about 61% in 2023 to 68% in 2024.

Sustainable Urban Systems (SUS)

6 Building on existing efforts under the Singapore Green Building Masterplan (SGBMP) launched in 2021, SUS seeks to drive best-in-class sustainability standards to achieve a low-carbon BE sector. In particular, we will ramp up our efforts at the operations and maintenance stage through smart solutions and integrated and aggregated facilities management (FM) services.

Green Buildings

7 There are three key targets under the SGBMP, or "**80-80-80 in 2030**":

a. **To green 80% of our buildings (by GFA) by 2030**. As of end December 2024, about 61% of our buildings' GFA has been greened.

b. For 80% of new developments (by GFA) to be Super Low Energy (SLE) buildings[2] **from 2030**. In 2024, close to 26% of new developments (by GFA) have been certified as SLE buildings.

c. **To achieve 80% improvement in energy efficiency (compared to 2005 levels) for best-in-class green buildings by 2030**.[3] As of Dec 2024, our

[2] SLE buildings refer to buildings that have achieved at least 60% improvement in energy efficiency compared to 2005 levels.

[3] Best-in-class buildings refer to buildings that achieve the highest possible energy efficiency standards with the technology available at the time.

best-in-class buildings have achieved 72% improvement in energy efficiency over 2005 levels.

Facilities Management (FM)

8 There are three key thrusts of FM transformation under the BE ITM:

9 Design for Maintainability (DfM). DfM involves upstream collaboration between the developers/building owners, designers, and FM companies (FMCs), to incorporate maintainability and Smart FM considerations upfront at the design stage.

10 Smart FM. Smart FM is the integration of systems, processes, technologies, and personnel to enhance the management of a building's facilities and raise productivity for FMCs.

11 Target: 80% of public buildings and 40% of private buildings (by GFA) to adopt Smart FM by 2030. We have been making good progress. The Smart FM adoption rate for public buildings (by GFA) has increased from 85% in 2023 to 93% in 2024. The adoption rate for private buildings (by GFA) has increased from 43% in 2023 to 58% in 2024.

12 Integrated FM (IFM) and Aggregated FM (AFM). FMCs can harness efficiencies from managing different FM services on an integrated platform, and aggregating FM services across many buildings.

Annex B: Built Environment Technology and Capability (BETC) Grant

1 BCA has introduced the new Built Environment Technology and Capability (BETC) grant, to drive the next phase of transformation in the Built Environment (BE) sector. The grant, with a total amount of $100 million over five (5) years, will be open to all BE firms for application on the Business Grants Portal (BGP)[4] from 1 Apr 2025 until 31 March 2030.

2 The key aims of the BETC grant are to:

(i) Encourage firms to transform and achieve outcomes aligned with the BE Industry Transformation Map (ITM);

(ii) Introduce support to more ITM areas; and

(iii) Emphasise longer-term capability building to advance transformation.

Scope of the BETC Grant

3 The BETC grant will support BE firms in developing capabilities across three key areas: (i) Enterprise, (ii) Technology, and (iii) Manpower.

4 It is intended to support firms in:

(i) Developing new enterprise capabilities, e.g. lean construction and collaborative contracting;

(ii) Increasing adoption of advanced technologies, e.g. digital solutions, robotics and automation; and

(iii) Building manpower capabilities strategically, e.g., innovative sourcing method for higher skilled workers, job and process redesign and specialised training.

5 The BETC grant will replace the existing Productivity Innovation Project (PIP) grant which is ending on 31 March 2025. This will ensure continued industry support beyond 2025. BCA will continue to review our schemes and streamline them under

[4] Please visit the Business Grants Portal (BGP) at https://www.apply.gov.sg/grants/business.

the BETC to align with the sector's transformation objectives and priorities, where applicable.

Eligibility Criteria

6 The BETC grant is open to all BE firms including developers, main builders, sub-contractors, consultants, prefabricators, and suppliers. Eligible firms must meet the following eligibility criteria:

(i) Be a business entity registered and operating in Singapore*;*

(ii) Be a business related to the Built Environment (BE) sector; and

(iii) Be financially capable to start and complete the proposed initiative(s).

7 Applicants will need to demonstrate how they plan to implement and sustain the new capability building beyond just an individual project, drive continuous improvement and facilitate knowledge transfer for subsequent projects. They would also need to outline how the new capabilities they aim to develop align with their company's longer-term goals. The capabilities and transformation outcomes should surpass relevant current industry standards.

Funding Support

8 Funding support will be up to 70% of qualifying costs for Small and Medium-sized Enterprises (SMEs)[5], and up to 50% for non-SMEs in the first two years (from 1 April 2025 to 31 Mar 2027). It will taper to up to 50% for SMEs and up to 30% for non-SMEs in the subsequent three years (from 1 April 2027 to 31 Mar 2030).

9 The funding support for each BETC grant application will be evaluated by BCA, based on the expected transformation outcomes, level of innovation and investment costs of the proposed initiatives. The funding will be disbursed on a reimbursement basis where firms will need to show proof of costs incurred and payment, e.g. invoices, bank statements, receipts.

[5] Company has a group annual sales turnover not exceeding S$100 mil or group employment size not exceeding 200 employees.

Project Outcomes

10 The project outcomes for firms include achieving (i) productivity improvement; (ii) increase in skilled workers[6]; (iii) increase in local employees with higher wages;[7] and/or (iv) increase in upskilled PMETs.[8]

11 The project outcomes will be pegged to the specific BETC grant applications, i.e. they depend on the scope of the initiative(s) for which funding is sought. For example, an applicant may apply for the BETC grant to support the adoption of advanced technologies and build manpower capabilities through specialised training. In this case, the applicable project outcomes would be to achieve productivity improvement and increase in upskilled PMETs.

12 Firms must meet at least one out of four project outcomes, but may be required to meet more outcomes based on the proposed initiative(s) in their grant application.

13 More information on the BETC Grant can be found on go.gov.sg/bca-betc.

[6] Refers to workers who have successfully completed the specific new training or have been recruited through innovative methods supported by the BETC.
[7] Refers to monthly wages of SGD5,000 and above. The figure is subject to review by BCA.
[8] Refers to PMETs upskilled through curated specialised courses/in-house training academy supported by the BETC.

Annex C: Initiatives Arising from the Taskforce for Architectural and Engineering Consultants

1 The number of locals in the BE sector has increased gradually over the past few years, from 150,000 in 2019 before the COVID-19 pandemic to about 170,000 in 2024. With the strong construction demand and pipeline of developments, such as Jurong Lake District and the Greater Southern Waterfront, the sector will continue to offer good career opportunities for locals keen to play a role in building Singapore's infrastructure. There is therefore a need to maintain a strong and competent local core. This involves working with our industry stakeholders to strengthen (a) talent attraction, (b) talent development, and (c) talent retention, so as to make the BE sector a career of choice.

2 To further strengthen the talent pipeline and business sustainability of the BE professions, the Taskforce for Architectural & Engineering Consultants ("Taskforce") was set up in Sep 2024.

3 The Taskforce is co-chaired by 2M Indranee Rajah and Mr Chaly Mah, Chairman of Surbana Jurong Group, and comprises representatives from the key Trade Associations & Chambers (TACs), consultancy firms, major service buyers, Institutes of Higher Learning (IHLs), public agencies and young professionals.

4 Since its set up in Sep 2024, the Taskforce has been working on 4 key areas of focus, namely:

a. Talent pipeline – to strengthen the talent pipeline and position BE careers as a preferred choice.
b. Business sustainability – to foster business models that are sustainable, profitable and value-adding.
c. Industry and workforce transformation – to grow and enable a dynamic and progressive BE consultancy sub-sector.
d. Morale – to raise standing of BE professions and morale of BE professionals.

Reduced Fee Score Formula and Contractual Clauses Review

5 The Taskforce recognises the industry's concerns on how aggressive tender bidding behaviours could undermine firms' ability to invest in human capital, technology and innovation. As a major buyer of BE consultancy services, the Government has been progressively enhancing our procurement approach to deter fee-diving and strengthen quality-based procurement.

6 Today, the majority of public sector for BE consultancy service tenders are awarded to bids with top quality scores. Correspondingly, the proportion of tenders awarded to low outlier bids has declined significantly from 2017 to 2024, in tandem with our progressive enhancement of the Quality-Fee Method used to evaluate tender bids.

7 To give the industry greater assurance to invest more in human capital and innovation, the Government will expand the 'Reduced Fee Score' pilot to more public sector projects, and also review contractual clauses to ensure fairer balance of risks between service buyers and consultants. This includes reviewing the use of Limitation of Liability in the Public Sector Standard Consultancy Agreement amongst others. This will provide for greater assurance to firms, and make the professions more sustainable.

8 Reduced Fee Score Formula. As part of the Government's efforts to deter fee-diving and strengthen quality-based procurement, the "Reduced Fee Score" pilot was first introduced in March 2024 for all consultancy tenders with an estimated construction project cost of S$50mil and below. For such projects, all low outlier bids that fall below 70% of the median price bid will be disqualified. This complements the existing Quality Fee Method (QFM) framework which scores bids on both price and quality criteria and gives greater weightage to the quality score in determining the winning bid. The expansion of the pilot will further deter fee-diving behaviour and increase the emphasis on quality proposals.

9 Reviewing contractual clauses. One of the areas of review include the use of the Limitation of Liability clause in the Public Sector Standard Consultancy Agreement (SCA). In November 2024, the Government had introduced an optional Limitation of Liability clause in the SCA. This sets a cap on the maximum damages that can be claimed from BE consultants in the event of a breach or error, thereby allowing BE consultants to acquire the appropriate Professional Indemnity Insurance (PII) coverage and enable more sustainable risk-sharing at the sectoral level.

10 Locally, BE consultants of several Government agencies, such as the Land Transport Authority (LTA) and the PUB, have already benefited from the Limitation of Liability contractual provisions. Such contractual provisions have also become increasingly common in other jurisdictions in Australia, Europe and New Zealand. Drawing upon the lessons from these practices, the Government is looking at further expanding the use of Limitation of Liability in public sector BE consultancy projects.

11 Another area of review is the “Fit for Purpose (FfP)” clause in the Public Sector Standard Conditions of Contract for Design & Build (D&B) construction contracts. “Design & Build” contracts allow developers to contract out both design consultancy and construction works as a package to builders, to promote better integration between the design and construction processes. In such contracts, builders are responsible to ensure that the resultant building is ‘fit for purpose’ or will be liable for claims. However, some builders may pass on the FfP liabilities to their BE consultants, thereby exposing BE consultants to significant liabilities that are uninsurable through the consultants’ PII.

12 The Government will be reviewing the FfP clause to ensure a fairer balance of risks. We noted that the FfP clause has been removed from or made optional in the D&B public sector construction contracts in other jurisdictions such as the UK and Hong Kong.

13 The Taskforce is also engaging the private sector to adopt similar efforts and principles to strengthen quality-based procurement, ensure fairer balance of risks, and

give firms the assurance to compete on quality and invest in human capital and innovation.

Annex D: Update on Code on Accessibility 2025

1 First introduced in 1990, the Code on Accessibility in the Built Environment ("Code") sets out the minimum standards for accessibility in buildings to ensure that persons with disabilities and other users can access and use buildings and their facilities. The Code applies to new buildings, as well as existing buildings undergoing addition and alteration (A&A) works that require plan approval from BCA.

2 The Code is periodically reviewed and updated to reflect the evolving needs of the communities. Universal Design (UD) principles have been incorporated into the Code to benefit a wider spectrum of people, including the elderly and families with young children. The Code review process is carried out by a Code Review Committee comprising representatives from government agencies, social services agencies, industry stakeholders and interest groups, to balance the needs of different users and the impact on the industry. The Code on Accessibility in the Built Environment 2019 is the latest version of the Code.

3 The Code is currently undergoing review. The draft of the revised Code was launched for public consultation in Dec 2024. Some of the key proposed changes include:

a) Increasing the minimum depth of wheelchair-accessible passenger lifts;

b) Lowering the GFA threshold for office and business parks for the provision of lactation rooms; and

c) Mandatory features that lactation rooms should be equipped with.

4 Following the completion of the public consultation, the Code Review Committee will assess the feedback received before finalising the proposed revisions. BCA targets to release the revised Code later in the year, and the industry will be given six months' notice before the new Code takes effect for compliance. BCA will work with social service agencies and industry to publicise the launch of the revised Code and hold industry seminars/workshops to help the industry familiarise itself with the revised standards.