

\$120m for agencies to adopt prefab methods

Govt aims to make this the default way of building to boost productivity, says Zaqy

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Some \$120 million will be set aside for public sector agencies to adopt design for manufacturing and assembly (DfMA) methods in projects launched by next year, as part of efforts to boost construction productivity.

The Government aims to make DfMA the default way of building, Minister Zaqy Mohamad told Parliament yesterday.

"We are fundamentally changing the way we build through DfMA," he said at the debate on his ministry's budget. DfMA refers to a method where parts of buildings are made in a manufacturing facility before being assembled on site.

"This way, construction becomes faster, cleaner, quicker and of high quality," he added.

The additional funding will be made available under the Public Sector Construction Productivity Fund. In tandem, the adoption target for DfMA methods will be raised to 70 per cent by 2025.

Mr Zaqy said this "ambitious" target can be achieved by working with industry players. The adoption rate was 31 per cent last year, up from 22 per cent in 2018, and "we are on track to meet our DfMA adoption target of 40 per cent this year".

Responding to Mr Ong Teng Koon (Marsiling-Yew Tee GRC) on how Singapore's construction productivity compares with other countries, Mr Zaqy said site productivity has improved by more than 17 per cent in the last decade.

To boost DfMA adoption, Singapore enhanced its Buildability Framework last year, raising standards for larger residential developments and allowing outcome-based solutions to encourage build-

ing designs that can be constructed more productively. "We will further enhance the framework this year, by progressively requiring higher buildability standards for other development types, including commercial and institutional buildings," he added.

The framework will also be restructured to encourage the use of DfMA technology in the structural, architectural and mechanical, electrical and plumbing designs for buildings.

Another thrust in the sector's transformation is the use of Integrated Digital Delivery, which allows firms to digitalise various stages of building, including design, fabrication, construction.

There are now 35 public and private sector projects piloting such technology, compared with just 12 in 2018.

Mr Zaqy said the digitalisation of the construction process will facilitate wider deployment of DfMA technologies. For instance, Building Information Modelling (BIM) technology allows architects and engineers to design and build virtually, improving the accuracy of construction plans and reducing abortive works.

The Government will set aside \$19 million until January 2023 to fund small and medium-sized enterprises to adopt digital solutions that complement basic BIM software. SMEs will be guided to assess their digital readiness and identify digital solutions, like site management platforms to plan and monitor construction activities, and facilities management software.

SMEs can get up to 70 per cent funding for pre-approved solutions. They can also use the digital road map on training to identify courses for employees.

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Local company MKPL Architects began its Integrated Digital Delivery (IDD) journey in 2011. In 2018, it put its best practices to the test for the design and construction of the Singapore Management University Connexion (above). Its adoption of IDD was highlighted in Parliament yesterday. ST PHOTO: GIN TAY

Digital tech lets local firm hone design ideas

Local firm MKPL Architects is an early adopter of Integrated Digital Delivery (IDD), which it says gives its architects more time to think about design and allows its project team and clients to better refine design to meet their needs.

To digitalise the practice, MKPL developed processes to suit its workflow. Its adoption of IDD was highlighted in Parliament yesterday during the debate on the National Development Ministry's budget.

When contacted, MKPL director John McLaughlin told The Straits Times: "As a medium-sized practice, the only way to remain competitive is to leverage our design strength. To do this, we had to find more time in our schedules for design review and creative thinking."

"We made the decision to adopt IDD technology to improve the accuracy of our information which allowed us to channel our resources into more creative tasks."

Getting more local PMETs into building sector

New building technologies have created higher-skilled jobs with better salaries and work environments to attract more locals to join the sector, which is key to developing a strong core of professionals, managers, executives and technicians (PMETs).

For example, with design for manufacturing and assembly (DfMA) methods, more production managers and quality assurance personnel are needed at automated production facilities, Minister of State for National Development and Manpower Zaqy Mohamad told Parliament.

The Government is taking steps to encourage the industry to hire more locals as the share of local PMETs in construction has fallen over the past decade, even as to-

tal numbers have increased.

To rebalance the share of local PMETs in construction, Deputy Prime Minister Heng Swee Keat had in the Budget announced a reduction in the construction S Pass sub-dependency ratio ceiling from 20 per cent currently to 15 per cent next January, and subsequently to 10 per cent in January 2023.

Mr Zaqy said: "We will also progressively introduce new professional conversion programmes, or PCPs, to prepare mid-career entrants to join the sector."

"We will develop PCPs for pre-fabrication job roles. Teambuild is developing a firm-level PCP, which will be open for applications later this year."

He said he had received feed-

back on the shortage of Building Information Modelling (BIM) modellers. But firms have not been keen to take in mid-career converts before they are trained, he said.

Under the current BIM PCP, participants are trained in Building Information Modelling while undergoing on-the-job training with their firms.

But some firms prefer BIM modellers who can contribute immediately upon hiring.

Said Mr Zaqy: "We will allow participants to complete their full-time training first, before continuing with on-job training with their firms. We hope that more firms will take up the enhanced BIM PCP, which will start later this year."

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Among the advantages of adopting IDD, he said, is improved efficiency in delivering design ideas.

Also, there were fewer redundant processes, freeing up time to think and design using VDC, or virtual design for construction.

"Coordination with other specialists is far better integrated and we are able to discover problems in design much earlier."

The firm was able to test certain ideas and envisage their impact too, Mr McLaughlin said, adding: "Being able to share and quickly visualise issues drastically reduce time lost versus conventional projects."

MKPL began its IDD journey in 2011. In 2018, it put its best practices to the test for the design and construction of the Singapore Management University Connexion.

Mr McLaughlin declined to disclose the costs of adopting IDD. "There will be an increase in costs, for software, hardware and staff training." But the principal barrier is "the mindset change required by the whole team to commit time to trying out new technology and new working methods", he added.

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