

**SPEECH BY MR DESMOND LEE, MINISTER FOR SOCIAL AND FAMILY DEVELOPMENT AND SECOND MINISTER FOR NATIONAL DEVELOPMENT, AT THE OPENING OF THE SINGAPORE CONSTRUCTION PRODUCTIVITY WEEK 2017 ON 24 OCTOBER 2017, 9.30 AM AT SINGAPORE EXPO MAX ATRIA**

Mr Lim Ming Yan,  
President & Group CEO of CapitaLand Limited  
And Co-Chairman of the Built Environment FEC Sub-Committee

Mr Zainal Sapari  
Assistant Secretary General, NTUC  
And fellow member of the Built Environment FEC Sub-Committee

Mr Ng Yat Chung  
CEO, Singapore Press Holdings

Mr Hugh Lim  
CEO, Building and Construction Authority

All friends, colleagues and Young Leaders who have helped shape our construction industry transformation plans

1 This is our seventh year of the Singapore Construction Productivity Week, which is an event showcasing the latest technologies and innovative construction methods from around the world. We are very honoured to have many guests from the region and around the world joining us this week.

2 This year's theme is spot-on, which is "Embracing Innovation, Building Our Future", and this is exactly what we need to do here in Singapore.

3 Essentially, we are speaking about the transformation of the whole construction sector – the entire process and value chain, from end-to-end. This is not just a slogan. What we want to do is set the conditions for the entire industry to upgrade, to upskill, and to offer cutting edge products and services to Singapore, to the region and to the world. This is particularly salient given the difficult market conditions that many of us face today. These conditions make it imperative for us to start now. When we succeed, we will have Singapore firms that will not only be able to thrive locally, but also compete abroad. There will be an expansion of market opportunities that will mean better jobs and new niche areas for Singaporeans, and stronger Singapore firms.

4 It is in this spirit that my partners and I are launching the Construction Industry Transformation Map this morning. This is a roadmap for our construction sector to transform. It is the result of a collaborative effort between the industry, unions, academia, and the Government. Over the course of a year, each stakeholder brought their unique perspectives to the table, while holding a common vision to prepare both our firms and workers well for the future. I owe a debt of gratitude to my ITM co-chair, Mr Lim Ming Yan, as well as to the architects, engineers, contractors, consultants,

developers, professors, students, Young Leaders and union leaders who have helped create this roadmap along with us.

5 But what lies at the core of our construction industry transformation journey? It is about utilising more effective and productive construction methods, embracing more digitalisation, and strengthening our local workforce so that more Singaporeans can benefit from these opportunities.

6 To be very honest, we are a bit behind in these areas today, compared with some other countries. But we have always been nimble in Singapore and responsive to challenges so we will not just catch up, but aim to leapfrog our competition. This will allow Singapore firms and professionals to provide both quality work and a compelling value proposition in Singapore and abroad.

### **More effective & productive construction methods**

7 In terms of more effective and productive construction methods, the ITM focuses on Design for Manufacturing and Assembly (DfMA). DfMA involves transforming construction and making it more like a manufacturing and design process. It means moving aspects of construction away from the open worksite into a controlled environment such as a manufacturing plant, to prefabricate quality building components before bringing them onsite and assembling them. It means projects that can be completed faster, cleaner, quieter, and with better quality.

8 Our national target is to achieve 40% DfMA adoption by 2020. From fewer than 10 projects adopting mainly structural steel just 4 years ago, we now have almost 40 projects in different stages of development using various types of technologies at the higher end of the DfMA continuum. And to support this, we have three highly automated Integrated Construction and Prefabrication Hubs, or ICPHs in short, that are in operation. Two more of these facilities are under construction, and there are plans for another five more of these.

### **Digitalisation**

9 In terms of digitalisation, the ITM pushes for Integrated Digital Delivery (IDD). IDD builds on top of BIM, or Building Information Modelling. It fully integrates the entire building lifecycle, not just construction lifecycle, and its various parties via digital information. This means the accuracy of construction plans can be improved, conflicts are resolved at the design stage – not at the construction phase, and there is better coordination of the production, delivery and installation of building modules onsite. This saves time and reduces abortive and wasteful work downstream.

10 But it is not just about more efficient construction. IDD can also help us achieve savings by taking a lifecycle perspective at the design stage. As facilities managers will tell you, the operations and maintenance (O&M) of a building throughout its life cycle can cost up to 4 to 5 times more than the cost of actual construction. If we can optimize O&M through designing and building using IDD, the potential life cycle savings will be considerable.

11 I am heartened to see some leading firms beginning to explore and embrace IDD. One example is the development of Paya Lebar Quarter by Lend Lease. When we visited the project earlier this year, we were impressed by the BIM model by DP Architects. Apart from optimising building design, it allowed the tracking of construction progress, logistics planning, cost, and also the spatial location of workers onsite and this helps to enhance workers' safety.

12 More Singapore firms are actively building up capabilities in BIM because this will put them in a good position to compete and secure projects locally and overseas. And we have schemes to help firms level up on BIM and work through all the teething issues that they face.

13 To drive the adoption of IDD, we are developing a masterplan by bringing the various parties and stakeholders together. As a start, we will develop shared platforms and standards to ensure IDD interoperability across the entire construction value chain. We recognise that true integration of different systems will take time, but collectively, we will get there.

### **Strengthening the Singapore workforce**

14 Finally, strengthening our workforce is at the heart and core of this transformation. We want better opportunities for Singaporeans in the sector. To this end, we aim to train a total of 80,000 professionals specializing in Green Buildings, DfMA, and IDD by 2025. We will develop a suite of training programmes, internships and enhanced development pathways for new graduates and existing professionals to upskill so that they can take on new functions in the sector.

15 With the push for DfMA and IDD, construction will become more like manufacturing. This can create new niche areas and jobs for Singaporeans, where none used to exist. For example, there will be more jobs to operate high tech machinery and to use computer software that promotes integrated design. And these are not just for new entrants of the sector. In-service personnel can also find opportunities to upgrade themselves and move into these new niches.

16 Sam Yong has been in the sector for more than 20 years. He became interested in BIM and took up various BIM courses. Currently, he is leading a team of BIM modellers to build fabrication models that support automated production at the Greyform ICPH. As a firm believer of life-long learning, Sam has always sought opportunities to improve his knowledge and skills beyond his scope of work. He is currently pursuing a Specialist Diploma in DfMA offered by the BCA Academy.

17 We have a suite of scholarships and sponsorships for in-service personnel to continue to improve, and we encourage everyone to make use of them to pursue your interests and do better in whatever you are doing today.

18 The construction ITM is a big step, but it is really a first step in our transformation journey for the entire Built Environment sector. We are also developing plans to transform the real estate, security, environmental services, and landscape sectors. Together, they make up the whole built environment. For instance, we are looking into how the Facilities Management (FM) industry can be further strengthened,

and whether they can better leverage on IDD to use BIM models to better manage buildings and infrastructure throughout their life cycle.

19 We are also seeing how facilities management and maintainability can be better integrated upfront at the building design stage, so we achieve a more efficient, green and sustainable city of the future. Eventually, we can bring all these plans together horizontally so that we can provide all-in-one integrated services for building projects. This can be a truly competitive edge for Singapore and our firms.

20 What we are doing is ambitious. But this is necessary ambition. We all want the same thing – which is a vibrant and successful built environment sector. We want strong and profitable firms that thrive locally and abroad. We want good jobs for Singaporeans. We want cutting edge capabilities anchored in Singapore. This will be no small feat, and the journey will be tough, but collectively we can do it together. Just like the ITM, when everyone collaborates, big things can happen!

21 We usually think of tripartism as a strength of our labour relations, attracting firms to set up shop here to hire Singaporeans. But it is also a competitive advantage for Singapore and our industries, when the Government, industry workers and unions can come together to plan and transform our industries and sectors, grow better jobs, strengthen our workers' skills and enhance our overall economic potential.

22 Let us embark on this journey together because we will only be able to succeed in this end-to-end transformation and beyond if everyone steps up to the plate and plays a role. Transforming Singapore's construction sector is a legacy that we all can share. And with that, I would like to invite all my partners of the Sub-Committee to join me on stage to collectively and officially launch the Construction ITM in a tripartite fashion. Thank you.

National Archives of Singapore