

OPENING ADDRESS BY MR LAWRENCE WONG, MINISTER FOR NATIONAL DEVELOPMENT AND SECOND MINISTER FOR FINANCE, AT THE OPENING OF THE SINGAPORE CONSTRUCTION PRODUCTIVITY WEEK ON 18 OCT 2016, 9.30AM, SINGAPORE EXPO MAX ATRIA

Mr Lee Fook Sun

Chairman, Building and Construction Authority

Dr John Keung

CEO, Building and Construction Authority

Distinguished guests

Ladies and Gentlemen,

1 I am very happy to join you this morning for the Singapore Construction Productivity Week.

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2 This is a milestone event for BCA and the built environment sector in showcasing our productivity efforts. This year is our 6th edition of the event and it is good to see so many of you here from the Built Environment sector to support our transformation journey.

Outlook of the Built Environment Sector

3 I know that many firms have been under pressure in recent months. Particularly with the economic slowdown, there's been a contraction in private sector construction demand and projects. Many companies have felt the slowdown and have been impacted by it.

4 But the Government is committed to help you ride through this period. This is why we are rolling out more public sector projects.

5 In the first half of this year, we had \$11 billion worth of public sector projects.

6 And that is an increase of about 40% from the same period last year.

7 Going forward, we will continue to have more projects in areas like housing, estate upgrading and the construction of new MRT lines as well as other transport facilities. So we are continuing with our pipeline of public sector projects, which are important for the government.

8 But it is not just in the short-term. It is not just one or two years, because there will also be major projects that we are embarking on that will stretch out over many years and decades, and indeed over several terms of government.

9 For example, in Jurong, many of you would know that we are building a High Speed Rail that connects Singapore and KL. The terminus station will be at the

Jurong Lake District, where we are also developing our new CBD. In the eastern front in Changi, we are building Changi Air Hub with Terminal 5 and expanding our airport capacity. And on the western front in Tuas, we are consolidating our seaports. And with the expansion of the airport in the east, and the seaport in the west, we will be freeing up land from the consolidation of the ports at the Pasir Panjang area. All of that entire land in the city port will be freed up. This will allow us to develop a new waterfront city at Tanjong Pagar. At the same time, with the expansion of the airport in Changi, we will be able to relocate Paya Lebar Airbase to Changi and we will free up land at Paya Lebar as well. And that will allow us to develop an entire new precinct at Paya Lebar, which will be a large precinct, and it can be a mixed use area which will have industrial, commercial and residential use.

10 So, if you look at these major plans, it is a lot of projects that we can undertake. There will be a healthy pipeline of construction projects. But while we will have a healthy pipeline of construction projects, manpower will continue to be tight. That's the situation we are facing and manpower will be a key constraint for us in embarking on our urban transformation efforts.

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11 If you look at the plans I just outlined, in the long term, over many years, as we develop our waterfront city at Tanjong Pagar, because of the freeing up of the ports, that entire space is equivalent to three times the size of Marina Bay. If you look at Paya Lebar Airbase being freed up, that plot of land is equivalent to half of Jurong Industrial Estate, one Ang Mo Kio town and two Tampines Regional Centres.

12 Just imagine the scale of what we are talking about, it is not something we are doing over the next five years. This is over decades; even we may not be able to see it in our lifetime, maybe our children would see the fruition of some of these projects. Think about these long-term possibilities. There are projects to do and there will be work happening. But our key constraint is that we may not have workers to do the work. We have to make efforts or we have to push on our productivity journey to make sure that the construction sector is productive and we are able to embark on productivity improvements so that we can seize and capitalise on these opportunities ahead.

Achieve a Greater Growth in Productivity

13 And I would say that for many of the construction firms, all of you which have been embarking on this journey, I know many of you have been working hard and we have already seen some progress over the recent years.

14 We have started this journey for some time. Since 2009, when we started looking at construction site productivity, we have seen site productivity increasing by an average of 1.3% per annum.

15 In the last 2 years, we have managed to increase site productivity to 2% per annum.

16 I think this is encouraging, but we must still do better. We aim to improve productivity on the construction site to 3% by 2020. We have a roadmap towards this

journey and we have some plans to achieve this. Let me share with you some of our measures and plans to reach this new construction target.

17 First, we will require more productive construction methods and best practices to be adopted at public sector projects and also Government Land Sale (GLS) sites.

18 For selected land sale sites, we have already mandated the use of certain productive technologies like PPVC (Prefabricated Pre-finished Volumetric Construction). We have already started to require sale sites to make use of certain more productive construction technologies.

19 But we know that PPVC is not the only way of achieving higher productivity. There may be other methods.

20 So we are also looking at piloting a GLS site that specifies a productivity outcome without mandating specific technologies. This will give firms greater flexibility. You can choose. If you believe that there is a technology out there that can achieve higher productivity than PPVC, you can put up the proposal because the sale site, in terms of the evaluation criteria, will be based on productivity outcomes and we will select the bids that will provide us with the most productive outcomes. So that's one thing we are doing for sales sites.

21 For public sector projects, we are also giving greater weight for productivity efforts in our evaluation criteria.

22 In fact, earlier this year, we have already adjusted our tender evaluation matrix in the public sector to include a new productivity component. In tandem, we lowered the weightage on price.

23 Many firms have given feedback that more productivity methods tend to be higher-priced, and if it is higher price, government projects always go on lowest quote and we are disadvantaged. The reality is that our tender evaluation matrix is already being adjusted to give higher weightage on productivity and lower emphasis on price. This has benefited the more progressive firms.

24 In fact to date, 70% of our projects have gone to firms that scored well in the productivity element. They may have bidden on a higher price, but because they have scored well on productivity, they were able to secure the project.

25 This includes many local firms like CES Engineering & Construction and LC&T Builders. They have successfully clinched public sector projects with high productivity scores and quality track records, without being the lowest in price.

26 We will do even more, with this evaluation matrix that emphasises productivity, to support more productive firms. I am pleased to announce that there will be more emphasis on productivity in BCA's 9th Edition of the Construction Quality Assessment System (CONQUAS). This will be launched later.

27 And compared to the previous edition of CONQUAS, the latest edition will give firms more bonus points for the adoption of productive technologies and materials.

28 Firms that are more productive will score higher in CONQUAS. And again, if you score higher in CONQUAS, your quality scores in evaluation will also go up. This means that all things being equal, progressive firms with higher CONQUAS points will enjoy a significant competitive edge when bidding for public sector projects.

29 So the direction is very clear – either through land sales or through public sector projects bidding – our emphasis is going to be on productivity and firms that do well will have a much higher chance of securing either a land sale project or a public sector project.

30 One feedback I regularly get from contractors is that they would like to be involved much earlier in the projects, in order to drive productivity upstream. The contractors and the builders will often say in the land sales project, or in a public sector project, the one bidding for the project is not the construction company. It is the developer, and the developer drives the project, makes the decisions with the architects. By the time the contractors come in, all the decisions have been made and even though we may feel that there is a better way of doing things, we cannot change things anymore because all the decisions have been made, projects have been bid on, finances have already been closed, and we can only implement.

31 I can understand why the contractors sometimes feel this way and I understand their concerns because they would like to be involved earlier in the process to drive productivity upstream.

32 So I have asked BCA and URA to see how we can get contractors involved much earlier in the project decision process, not just downstream as an implementor. That is something that our agencies are studying – how we can facilitate this – but I believe it can be done.

33 With greater upstream collaboration between developers, architects, engineers, and contractors, we can all look forward to more robust designs, less reworking and duplication of efforts, and more efficient construction processes. That's our first priority.

34 Our second priority is to help firms harness the full potential of Building Information Modelling (BIM) and Virtual Design Construction to improve collaboration and enhance the construction management processes.

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35 Many of you are familiar with BIM. Many of you already use it. But I think we are not harnessing the full potential of BIM. One of the issues that prevents us or hinders us from harnessing the full potential of BIM is indeed this idea that contractors need to be involved much earlier upstream because if the contractors are only involved much later, very often, there is a BIM done by the architects and then the BIM done by the contractors. Early involvement by contractors can help, and that

is why I mentioned earlier that we are looking at how we can get contractors to be involved much earlier.

36 But another issue with BIM adoption is that contractors sometimes find it hard to use the BIM model that is developed by architects and engineers as the models often lack construction details. The contractor getting the BIM finds that the BIM is not very useful because the construction details are not in the model, then they have to create their own or they find that the BIM is not useful and may not even use it.

37 To address this point, BCA will launch a Code of Practice (COP) later this month to guide the industry on how to include information needed by contractors into the BIM models.

38 We will work towards making this COP mandatory for building and structural plan submissions in the future.

39 We will start with a Code of Practice but over time, we want to make this mandatory. It is not just firms making use of this. Regulators will also step up, just as we want companies to be more productive, regulators also have to be more productive.

40 With the use of BIM, with standardised information, all of you in the private sector can also look forward to faster regulatory approvals - because we can have standardised information, we can automate the checking of BIM submissions, we can do better at shortening approval times. If we all do together and combine efforts

both in the private sector and the public sector, I think we can have much more efficient construction processes.

41 Thirdly, we will help the industry innovate to push boundaries and build a future-ready construction sector.

42 The industry can already tap on funding programmes, and there are many of them, from BCA and other government agencies for your research, for your development efforts and for your innovation efforts. For example, we have the MND Research Fund (MNDRF) and BCA's Innovation Grant (I-Grant).

43 The schemes are there and we encourage you to apply and make use of these funding efforts to capitalise or to push your innovation and productivity efforts.

44 We will also help to pull together the industry and our research institutions – our universities and our tertiary institutions – to share ideas and work on common research projects. These include regular site visits and seminars which BCA organises from time to time.

45 We are already doing a lot in this area for R&D. We have funding provided, we have platforms, we have workshops, we have seminars. But I think there is a need to accelerate our R&D efforts to give it a greater push. So, BCA has been working on this. They have worked with 400 different stakeholders to develop a Construction Productivity R&D roadmap to identify priority areas that can truly transform the construction industry.

46 So far, BCA has identified 7 R&D clusters with 35 prioritised technologies. Some of these more promising technologies include DfMA, 3D printing and advanced robotics for construction.

47 With this roadmap developed with all stakeholders, BCA will now study how we can support these different research priorities and give them a greater push.

48 For example in the DfMA cluster, BCA will be awarding a total of \$2 million to 4 applied research projects that will promote the adoption of DfMA technologies.

49 One example is a project by NTU which looks at wood-based construction methods. We think this is a promising area. We have seen it in many different countries, making greater use of wood for construction, but the concern is always about fire safety, termites and issues like this. That hinders us from having greater adoption of wood for construction.

50 There is another project by SimTech and A*Star that is looking at PPVC modules; in particular, the concern about corrosion in PPVC modules. Again, with research projects like this, hopefully we can address the concerns and over time, this can lead to greater adoption of PPVC as well.

Support the Industry to be more Productive

51 I have outlined three broad areas that we are going to work on in order to achieve our construction productivity targets and to continue and push forward in this transformation journey in the built environment sector. I know that the transformation will not be easy. But it is absolutely necessary. I would like to assure you that the Government will partner all of you in this journey.

52 We are also doing our part. Like I said, we want you to be productive but the government and the regulatory agencies must also be productive, and we will help you in this journey. BCA is working with agencies to remove regulatory hurdles that may impede the adoption of productive technologies.

53 For example, we have been working with SCDF. The SCDF has recently removed the height limit for non-healthcare timber buildings, which will open up more options for the use of Mass Engineered Timber.

54 We have also been working with LTA. They have relaxed the requirement for auxiliary police to escort large trucks that are used to transport big PPVC modules to sites. As there is a requirement previously, and then you have to have large trucks for escorting of the PPVC modules, it adds to cost and it makes it more complex. So BCA has been working with LTA to relax such a requirement. Continuously, BCA will get the feedback from the industry and we will work with regulatory agencies to remove any regulatory hurdles and to streamline regulatory processes.

55 We are also building an ecosystem to sustain new technologies in the longer term.

56 BCA has been putting out land for Integrated Construction and Prefabricated Hubs (ICPHs). Several construction companies have already bid for it and are investing in these hubs, which will allow us to build facilities for DfMA capabilities so that we can have a site that executes all the different activities in the value chain, from design to production to assembly on-site.

57 We also have platforms for test-bedding of new technologies. Many of you will know about the recently opened SkyLab at BCA Academy. It is the world's first 360-degree rotatable laboratory. In fact, at the SkyLab, you can test-bed different technologies. It is rotatable, so you can try out your technologies under different real-time conditions, and you will be able to test-bed and eventually implement new technologies in a real-life setting.

58 This is the broader ecosystem that we are investing in. It is not just about pushing a technology, but having an ecosystem that facilitates the adoption of new technologies. BCA and MND are committed to this journey and we will work within the government, with relevant agencies, to facilitate these efforts.

Conclusion

59 In conclusion, I would say we have made headway in our productivity journey. We have made progress, but we still have a lot more to do. And the Government is

here to give you full support. We are entering a new phase of disruption, which makes industry transformation more urgent than before. We can either change ourselves or be changed by external circumstances. If we do not change, if we do not improve, if we do not become more productive, I think we will miss out on many opportunities. We will lose our competitiveness in infrastructure and potentially, it will undermine our economic competitiveness as well.

60 We really have to start changing. We already have started this journey, but we have to keep moving forward – raise our productivity targets even higher, set more ambitious targets for ourselves and the whole industry, and continue to press ahead in the transformation.

61 I would encourage everyone today to forge ahead in transforming the way we build. It is a continuous process of improvement. I know it is not easy. I will assure you that this process, this transformation journey, is not unique to us. I have visited many countries, just in the past year in MND, and many countries are also grappling with how to make construction more productive. Even in first world economies, mature economies. Others are also grappling with similar challenges, and they are also trying to make their own built environment sectors more productive and all the more we, in Singapore, we have to stay ahead. We have to press forward in our construction transformation efforts, and I am sure that if we persevere and work together, we can continue to build a better Singapore for a long time to come.

62 On that note, I wish all of you a fruitful Singapore Construction Productivity Week ahead. There are many pavilions, booths and activities for all of us in the

coming week. Take full advantage, learn about new technologies, network with one another and let us all aspire towards a more productive built environment sector for Singapore.

63 Thank you very much and have a fruitful time ahead.

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