

**SPEECH BY MR LAWRENCE WONG, MINISTER FOR NATIONAL DEVELOPMENT AND 2<sup>ND</sup> MINISTER FOR FINANCE, AT THE INAUGURAL JOINT BOA-ACES CONFERENCE ON 31 MAY 2017, MARINA BAY SANDS, 8.30AM**

Mr Tan Shao Yen,  
President  
Board of Architects, Singapore

Engineer Ling Shiang Yun  
President  
Association of Consulting Engineers Singapore

Distinguished guests,

Ladies and Gentlemen,

1. I am very happy to be here this morning to join all of you at the inaugural joint BOA-ACES Conference. This is the first time that we are having this joint conference co-organised by both architects and engineers in our built environment sector.
2. I would like to start by thanking all of you for helping to build today's Singapore. Every time I receive visitors who have come from abroad, they never fail to remark at the quality of our buildings and our urban landscape. All that we have achieved today is due to the contributions of our architects and engineers, as well as our developers and contractors working together in the built environment sector. Let us give a big round of applause to thank everyone here for their efforts.
3. While we take tremendous pride in what we have achieved today, we all know that we cannot afford to rest on our laurels. The world is changing rapidly. We face an unpredictable environment, with new technological disruptions with automation and new inventions coming up quickly. There are rising protectionist and anti-globalisation sentiments everywhere, which will impact us because we are such a small and open economy.

4. There is rising competition too, not just within Singapore but from other countries and cities. Many of them make no bones about their ambition to take over from Singapore to become the hub for the region.
5. That is why we convened the Committee on the Future Economy (CFE) last year to chart out new directions for our economy. One of the key recommendations that the CFE put out was to invest in infrastructure to keep Singapore competitive and relevant to the world.
6. We do have a pipeline of major investments coming up, not just over the next few years but over the next decade and beyond. For example, we have plans to double the capacity of our air and sea ports. We are building a new Terminal 5 in the east, which will effectively double Changi Airport's current capacity. We are building a new Tuas mega port in the western part of Singapore. This is done by consolidating our current ports, and adding new capacity, which will effectively double the capacity of our current Tuas port. These will enhance our competitiveness as an air and sea hub for the region.
7. We are also going beyond land and sea, to land connectivity as well. We have plans to build a High-Speed Rail Terminus connecting Singapore and Kuala Lumpur, as well as a Rail Transit Link connecting Woodlands to Johor Bahru.
8. Beyond the connectivity links, we are building new centres within Singapore, not just focusing on the downtown, but also beyond the Central Business District (CBD). For example, in Jurong Lake District, we are building a new CBD; in Woodlands, which will become a new cluster, especially with the Rail Transit Link; and in Punggol, where SIT's new campus will be located and where we are building a new cluster for the digital economy.
9. This is a major investment in Singapore's infrastructure which will be progressively put into place over the next decade. To realise these plans,

we need a strong consultancy sector – which refers to both architects and engineers - with advanced capabilities to deliver high-quality work. On this front, I am glad that we have made some progress in building up such strong capabilities in our consultancy sector. But we all recognize that much more still needs to be done to build up a strong core of Singapore-based firms with the scale and capabilities to deliver quality projects, not just locally but also in the region.

10. The Government will do its part to support these efforts. One way is to do more to share with industry the multi-year pipeline of projects so that companies can prepare ahead and invest in new capabilities to bid for these projects. We are also studying how to put greater emphasis on quality assessments, to not just focus on fees and pricing, when agencies procure consultancy services, be it for Qualified Persons' (QPs) and Accredited Checkers' (AC) work. For example, we can evaluate based on adequacy and quality assessment of the bid. BCA has already introduced the Consultants' Performance Appraisal System, or the CPAS score. We are looking to put weightage on CPAS scores when looking at bids.

11. Just as we emphasize quality, we will also be stricter on poor performers, by limiting their opportunities to participate in tenders. We want to have more balanced quality and fee competition and provide greater rewards for firms that deliver high-quality work.

12. These are ideas that are being explored. They will not be implemented so quickly as the different government agencies which do procurement need more time to put this into place. We are sharing these ahead of implementation to let you know that we are taking this seriously, and we want to work with all of you to push for quality improvements.

13. While the Government does its part, the industry must also take steps to restructure and strengthen the sector. For a small market like Singapore, we have a diverse and fragmented consultancy sector. It takes time for new best practices or new technologies to filter through the entire industry.

14. There is also the risk of working in silos and not coordinating effectively amongst ourselves. For example, the traditional view is that architects focus on design and aesthetics, and engineers oversee the implementation of the architect's plans, determining what is physically doable. But that way of thinking is outdated.
15. The demands of the built environment sector are becoming increasingly wide-ranging and complex. What we used to know as our traditional roles and responsibilities have evolved. We cannot just design and build a building; we also have to think about how the building can be built in a more productive way, how it can be better maintained, or how it can help reduce our carbon footprint.
16. In short, architects now need to keep all these different considerations when mind when designing a building. Likewise, engineers also have to consider aesthetic and design factors when doing their work. The two must come together. That is why global consultancy firms are all building multi-disciplinary capabilities in both architecture and engineering.
17. Likewise, we need to work in a more integrated, interdisciplinary fashion. This is not just something we are grappling with in Singapore. Not too long ago, we had the World Cities Summit in Suzhou, where we invited mayors from all over the world to have a discussion on the challenges with their own cities. Many of these mayors talked about similar issues – how they could integrate these different capabilities in order to build their city. They recognized it is important to bring people of different skillsets to come together. We had a very good and rich discussion.
18. Mr Liu Thai Ker, who was there at the Forum, summarized it very well: “To build a city, we need the heart of a humanist, mind of a scientist; and eye of an artist”. That is the kind of multi-disciplinary skillset we need to bring together to one team. Sometimes, we can have a big enough team where all of this can be residing within one firm, perhaps possible within big firms. Sometimes, your firm may not be big enough to do all this but you can still

do this by working in consortiums or partnerships. This way of working together in collaboration must be the new way for the industry.

19. And I am glad that through forums like this, the industry itself is taking steps to come together to facilitate collaboration.
20. The Government, on our part, will do more to help facilitate this collaboration within the industry. I will share some ideas which we are looking at.
21. **First**, we want to encourage more early contractor involvement in projects. The current building process, as all of you are aware, is very linear. It starts with the project owner, the developer, goes to the architect, passes on to the consultant, and then the many layers of sub-contractors.
22. We are exploring ways to encourage early involvement of the engineering consultants and building contractor so that the engineers and contractors can provide feedback on areas which may require refinement to the design before the actual construction work. Some public agencies already do this. For example, they pre-qualify contractors and bring them in and get their inputs. We want to get more public sector agencies to do this and we will encourage private sector developers to also adopt similar practices.
23. **Second**, in line with this idea of bringing in contractors and consultants earlier, we want to promote more collaborative contracting models.
24. Most of our current contractual arrangements follow our work process because it is linear, so the risks are passed down from owner/developer to architect, to engineer, to contractor and then to sub-contractor. The contractual arrangements follow the work processes that we do.

25. We have studied what other countries do. It is very interesting because other countries are similarly grappling with this challenge and they are trying out different contracting models.
26. For example, Hong Kong has implemented a collaborative contracting framework called the New Engineering Contract (NEC) where the project owner works collaboratively with the private sector to deliver the project.
27. In America, we see many examples of what they call Integrated Project Delivery. From day one of the project, all the different parties - the owner, architect, engineer, contractor and sub-contractors – will come together to conceptualise the project, and seek to reduce errors and wastage, and minimize re-design problems. All the team members, bound together contractually, share risks and rewards based on achievement of the goals.
28. These are very interesting and innovative new models of contracting with one another. We will like to pilot some of these collaborative contracting models in our public sector projects. Hopefully, this will also encourage the private sector owners to follow suit and work out amongst themselves how they can adopt some of these best practices.
29. **Third, we will** use the Building Information Modelling (BIM) process as a tool and platform to facilitate collaboration. All of you know that BCA has been promoting the use of BIM for several years now. In fact, we have made it mandatory for bigger projects, and we have set up a BIM Fund to defray the costs of BIM adoption – so far, more than 700 firms have benefited from more than \$20 million in subsidies.
30. We have made progress in BIM. Many firms I speak to, big and small, already use it. But I am fully aware that there are still a lot of coordination and operational issues when it comes to BIM, particularly in a handover from one party to another – from architect to engineer, from engineer to contractor. Contractors sometimes do not even pass these to sub-contractors because the sub-contractors may not have the capabilities.

31. These handover issues are non-trivial because they lead to duplication of effort and inefficiencies. We know that these issues exist. We hear many anecdotes of such inefficiencies.
32. We have a BIM Steering Committee, which is chaired by Er. Lee Chuan Seng, with representation from all professions and regulatory agencies.
33. I have tasked the committee to look into these operational issues. They will work with stakeholders to see how these operational issues can be resolved so that we can make collaborative BIM more effective.
34. I hope through forums like this, we can continue to discuss, exchange views and feedback and fine-tune our implementation plans. What I have shared so far are still preliminary. We are still working at these ideas. I am sharing these ideas with you in advance so that you get to understand our way of thinking and you can also give us feedback so that we can continue to fine tune and improve our plans.
35. We know that these are challenging times for the industry, and the consultancy sector, in particular, is coming under some stress.
36. I want to assure all of you that the Government understands your concerns, and we will work with you to overcome the challenges and develop a stronger Singaporean core of architecture and engineering firms.

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37. This is not the first time we have gone through a down-cycle in the property market, and neither will it be the last time. We have overcome previous down-cycles and I am sure and confident we can do it again, and emerge stronger from this process with firms that have more capabilities, with firms that are more productive, and with firms with the abilities to even export our solutions to the region. I think there is demand in the region for such capabilities, because many countries in Southeast Asia are rapidly building new infrastructure. In Singapore, we have advanced capabilities

and we can develop solutions around digital design, data analytics, smart cities, design for the tropics and design for an ageing population. These are competencies that we should develop and anchor in Singapore, and our firms should be able to then export them overseas.

38. Let us continue to work together to build our future city, to develop new innovative urban solutions and make tomorrow's Singapore even better than what it is today.
39. On that note, I thank all of you and I wish all of you a very fruitful conference ahead. Thank you very much.

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