



MEDIA FACTSHEET

1 August 2022

Additional \$66 million allocated to support Cities of Tomorrow Research & Development (R&D) Programme

At World Cities Summit on 1 August 2022, Minister for National Development Desmond Lee announced an additional \$66 million allocated to support the Cities of Tomorrow (CoT) Research & Development (R&D) Programme.

2 The additional funds will focus on research in three areas, as part of the key R&D topics to be pursued under CoT in the Research, Innovation and Enterprise 2025 Plan (RIE2025). The three research areas are as follows:

- a. \$13 million to enhance maintenance and maintainability of aging infrastructure through the development of advanced building inspection and repair systems, and advanced and durable building materials to address our ageing infrastructure challenges
- b. \$35 million to explore ways to create underground and sea space more cost-effectively, resiliently, and productively, so as to free up more land space to support live-work-play activities
- c. \$18 million to develop advanced multi-disciplinary urban planning solutions that incorporates urban sciences, data analytics and AI to help planners and policy makers deliver more targeted planning outcomes and services to meet people's needs

3 Details of the grant calls for RIE2025 will be shared at a later date.

4 This follows the announcement made at the MND's Committee of Supply debate 2022 of an additional \$110 million allocated to the CoT programme to support research related to enhancing liveability and sustainability through the BE, supporting a City in Nature and developing Advanced Construction and Facility Management.

National R&D Plan

5 The Research, Innovation and Enterprise 2025 Plan (RIE2025) is Singapore's national strategy to harness science and technology to build a more resilient, sustainable and digital Singapore, create new opportunities for Singaporeans, and emerge strong together in a COVID world. \$25 billion (or 1% of Singapore's GDP) has been set aside for this plan over 5 years from FY21-25.

6 RIE2025 has four prioritised technology domains and MND is closely involved in the "Urban Solutions & Sustainability" (USS) domain. USS's vision is to renew our city and our home to become the "City of Tomorrow" and seek to address existential challenges such as space creation & liveable environment, energy and water resilience, urban mobility, and closing the waste loop. For RIE2025, USS will also focus on (i) climate change, (ii) decarbonisation, (iii) healthy cities and (iv) transformation of our Built Environment sector, to address pressing national needs and challenges.

**The other three domains are Manufacturing, Trade and Connectivity (MTC), Human Health and Potential (HHP), and Smart Nation & Digital Economy (SNDE).*

MND's R&D Challenges and Opportunities

7 MND's R&D efforts are focused on addressing our key challenges to sustain Singapore's long-term success. Many of these challenges are not unique to Singapore, and include tightening resource constraints (space, manpower, water, energy), ageing buildings, stresses from climate change, and greater densification which could impact our continued ability to deliver a pleasant, inclusive, and green living environment.

8 Technology and innovation can be key differentiators to help us address these challenges in more intelligent, efficient, and cost-effective manners. Innovative urban solutions can also be commercialised and exported to larger markets, and allow us to grow our built environment sector into a leading industry.

Overview of the Cities of Tomorrow R&D Programme (CoT)

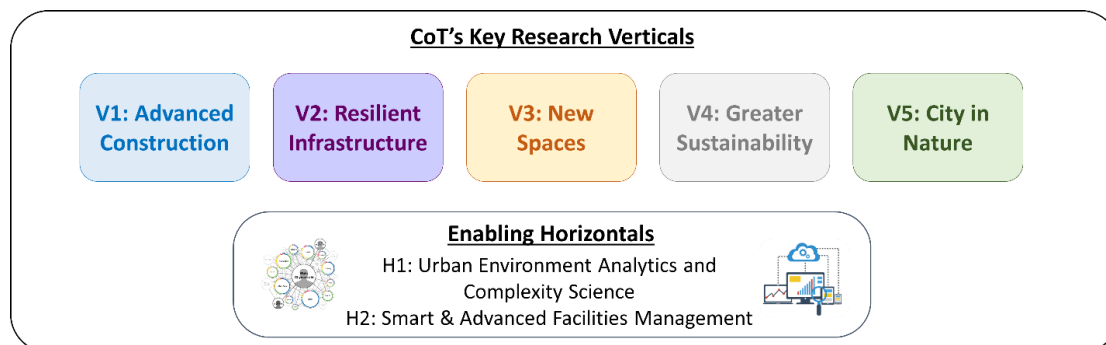
9 CoT is the flagship R&D programme under the Urban Solutions and Sustainability's (USS) Built Environment (BE) pillar. CoT was launched by then-Minister for National Development Lawrence Wong in June 2017, with a vision to establish Singapore as a highly liveable, sustainable, and resilient city of the future, and as a vibrant urban solutions hub.

10 CoT expands on the Land and Liveability National Innovation Challenge (L2 NIC), launched in RIE2015, and aims to address the key challenges of tightening resource constraints (space, manpower, water, and energy), ageing buildings, climate change, and greater densification.

Focus Areas

11 In RIE2025, CoT comprises five vertical thrusts, and two supporting horizontal enablers (See **Figure 1**):

Figure 1. Focus areas under the Cities of Tomorrow R&D programme.



12 Some of the key R&D topics to be pursued under CoT in RIE2025 include:

| CoT Thrusts | Vision and focus areas |
|---|---|
| Vertical 1: Advanced Construction | <p>Vision: To achieve a highly productive, integrated, and technologically advanced construction sector that can build faster and with fewer manpower resources.</p> <p>Examples of focus areas: Additive manufacturing; Advanced robotics and automation; Cost-effective, sustainable, and safe construction materials and techniques.</p> |
| Vertical 2: Resilient Infrastructure | <p>Vision: To achieve a robust, flexible and well-maintained city, to ensure our ageing infrastructure remain well-maintained and effective throughout their lifespan.</p> <p>Examples of focus areas: Advanced building and repair materials to improve maintenance and durability; Automated and real-time solutions for building monitoring, inspection and maintenance.</p> |
| Vertical 3: New Spaces | <p>Vision: To ensure sufficient space capacity to support Singapore's continued economic and population growth, while maintaining a liveable environment.</p> <p>Examples of focus areas: Advanced reclamation materials and methods; Innovative mooring solutions for sea space creation; Cost-effective underground construction and maintenance.</p> |

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|---|---|
| <p><u>Vertical 4:</u> Greater Sustainability</p> | <p>Vision: To achieve a high-quality and sustainable living environment that is inclusive, resource-efficient and adaptive to climate change.</p> <p>Examples of focus areas: Urban Heat Island adaptation/mitigation specific to the Built Environment; enhancing liveability, as well as health and well-being; People-centric urban design; Designing social environment for community bonding.</p> |
| <p><u>Vertical 5: City in Nature</u> <i>(new in RIE2025)</i></p> | <p>Vision: To support our national ambition to create a ‘City in Nature’ through enhancing and leveraging natural capital to meet sustainability goals.</p> <p>Examples of focus areas: Resilient, sustainable, and multi-functional greenery; Biodiversity monitoring to support habitat restoration and species recovery; Managing human-nature relationships; Nature-based solutions for inland climate change adaptation.</p> |
| <p><u>Horizontal 1:</u> Urban Environment Analytics and Complexity Science</p> | <p>Vision: To apply urban analytics and complexity science to understand issues on the ground and their interdependence, so as to support more data-driven urban planning processes.</p> <p>Examples of focus areas: Data analytics, modelling and simulation; Elucidate relationships between factors and designs contributing to a liveable, inclusive, resilient and healthy city, to inform infrastructure and planning.</p> |
| <p><u>Horizontal 2:</u> Smart & Advanced Facilities Management (FM)</p> | <p>Vision: To achieve a high-quality built environment through facilities management which integrates across disciplines, aggregates demand, and drives execution in an efficient manner.</p> <p>Examples of focus areas: Centralised network intelligence for optimal FM operation; Coordinated deployment of FM robotics.</p> |