

FACTSHEET ON MEDIA RELEASE – BCA PARTNERS INDUSTRY TO PILOT FIRST-OF-ITS-KIND RESEARCH AND INNOVATION SOLUTIONS TO ENHANCE EFFICIENCY OF COOLING SYSTEMS IN BUILDINGS

Annex A – Factsheet on Green Buildings Innovation Cluster (GBIC) 2.0

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1 Established in 2014, GBIC is intended as a one-stop research, development, and demonstration programme for technologies and innovations that lead to highly energy efficient buildings. To date, the Government has committed \$117 million to GBIC, and the programme has supported the development and demonstration of more than 80 innovative technologies from more than 70 firms. The GBIC programme comprises four initiatives:

- a. GBIC Research & Development (GBIC-R&D): GBIC R&D aims to build deep R&I capabilities for the industry and academia. It supports research projects that are nascent but lead to significant improvements in energy efficiency with high potential for adoption.
- b. GBIC Prototyping: GBIC's Product Prototyping scheme supports the development of market-ready prototypes that are applicable to our local context. GBIC also has a Design Prototyping Scheme that helps developers and building owners conduct design studies and simulations to test-bed new technologies.
- c. GBIC Demonstration (GBIC-Demo). GBIC Demo is a scheme that facilitates the demonstration of innovative technologies in operational buildings. This allows the technologies to be validated prior to wider deployment and commercialisation.

- d. GBIC Super Low Energy Building (SLEB) Smart Hub. SLEB Smart Hub is a national database for technologies and solutions that improve energy efficiency. Its online portal and embedded resource tools allow for the creation and dissemination of actionable knowledge to the industry and research community.

2 To further push the boundaries of energy efficiency, the enhanced programme (GBIC 2.0) focuses on three key areas. These areas were identified through technology scans and industry consultations to have high potential to generate significant energy savings:

- a. **Innovative Cooling Technologies:** Air conditioning accounts for 40-60% of a building's energy consumption. GBIC 2.0 will fund research and innovation (R&I) in novel cooling technologies that can be adapted to Singapore's tropical climate and yield at least 25-30% improvement over the GM Platinum standards. Research areas include evaporative cooling and reducing the use of hydrofluorocarbon refrigerants.
- b. **Data-Driven Smart Building Solutions:** There is significant potential to improve building energy performance through the use of Internet of Things devices and the data they generate. GBIC 2.0 will look into solutions to integrate across different smart building systems, and to manage a building's energy demand in response to input from the electrical grid and renewable energy sources.
- c. **Advanced Building Ventilation Technologies:** GBIC 2.0 will increase emphasis on ventilation technologies that can improve energy efficiency and contribute to better public health outcomes. This includes R&I on aerodynamic fans, building facades that improve the quantity and quality of fresh air, and ventilation systems that are calibrated according to building occupancy patterns.