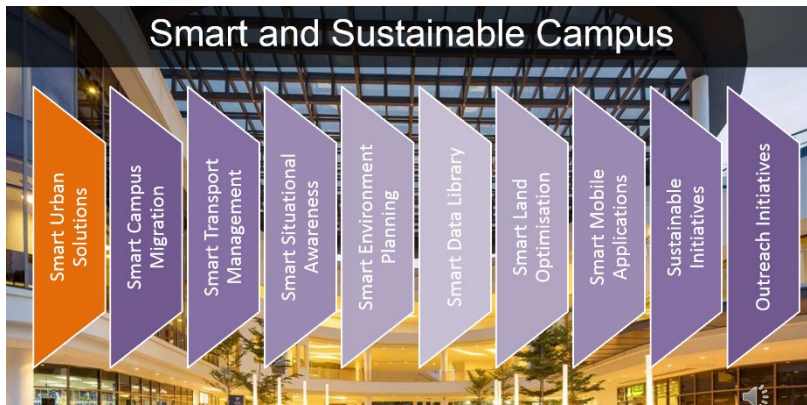# Smart and Sustainable Campus

University Campus Infrastructure (UCI) in collaboration with Department of Industrial Systems Engineering and Management (ISEM) exhibited its **UCI SMART initiatives** for a smart and sustainable campus, as part of the Launch of NUS new Vision, Mission and Values on 15 August 2018. These smart initiatives, adopted by the various UCI offices, will improve infrastructure efficiency, campus safety and security, transport management and facilities management.

By embracing various technologies, we are able to create a smart and sustainable campus through innovations to create a vibrant campus for the NUS community to work, live and play. Some of the innovations include:

- Smart Urban Solutions: a 3D Virtual NUS - digital twin of NUS campus coupled with Augmented Reality and Virtual Reality for visualisation that enabled innovations to meet planning and operation needs.

- Smart Campus Migration: to analyse crowd density to better understand ground activities, facilities utilisation:

- Smart Transport Management :to allow better travel planning and fleets monitoring across campus by using real time bus application, and use of Green transport solutions for reduction of carbon dioxide, noise reductions etc;

- Smart Situation Awareness: for better safety and security decision making using data analytics, remote sensing technologies.

- Smart Environment Planning : to study Computation Flow Dynamic and analyse heat maps to improve thermal comfort for more comfortable outdoor spaces;

- Smart Data Library: for more in-depth study on past projects cost trends and understand project cost through refined Data Analysis;

- Smart Land Optimisation: use of Geographical Information System (GIS) for land use planning, utilities mapping, assets tagging, energy consumption analysis etc

- Smart Mobile Application: such as NUSmart Dining Mobile App that allow communities to pre-order food thus reduce queueing time, cashless payment, etc;

- NUS Maps App: for better navigation around campus both outdoor and indoor.