



<i>Project Title:</i>	iBEAM Unison – Data Unification Platform to Enhance The Integrity of Environmental and Sustainability Data in Design and Construction Processes
<i>Principal Investigator (PI):</i>	Mr. Tim Man Him LO
<i>Project ID:</i>	CICR/02/22
<i>Research Institution:</i>	BEAM Society Limited
<i>Subject Area:</i>	Construction Sustainability
<i>Duration:</i>	24 Months

Background

Key research agenda under the R&D Fund includes the development of automated building code compliance checking tools, carbon benchmarking by using CAT methodology and advanced software and tools to achieve green construction. In line with these key research agenda, BSL proposes an innovative data unification platform, dubbed as iBEAM Unison for the KPI Improvement Project Scheme under the R&D Fund. The platform builds on the foundation of BSL’s iBEAM automated assessment system and the existing BEAM Plus assessment framework. It will be developed by BSL in conjunction with the built environment experts in the industry.

The result will be a data unification platform that enables iBEAM to extract environmental and sustainability related attributes from building models and to replicate the extracted data onto iBEAM for the purpose of conducting BEAM Plus assessment, carbon benchmarking and other advanced environmental and sustainability data analytics. Such automation will greatly reduce the time and efforts in preparing and analysing the environmental and sustainability related data to comply with BEAM Plus, sustainable finance and similar assessments. Most importantly, it will enhance the integrity of environmental and sustainability related data throughout the construction processes.

Objectives

- To conduct research on data unification of various environmental and sustainability data attributes generated during the design and construction processes, such as project information data, embodied carbon, daylighting & artificial lighting, solar irradiation, greenery ratio, waste recycling sizing and site permeability ratio;
- To demonstrate the feasibility of the Common Data Environment (CDE) concept between green building assessments, sustainable finance certifications and statutory submissions and to evaluate the concept’s enhancement in productivity, data integrity and efficiency during the construction lifecycle;
- To design an innovative platform (i.e. iBEAM Unison, the “Platform”) on the existing iBEAM assessment system to enable direct importing of building modelling data into iBEAM for the submission of BEAM Plus assessment, green building analysis, CIC Carbon Assessment Tool (CAT) calculation and CIC Sustainable Finance Certification Scheme (SFCS) application;
- To establish a credible guideline and data standard that allows BEAM Professionals/Affiliates, CIC Certified BIM Managers/Coordinators and built environment professionals to prepare an appropriate building model for BEAM Plus assessment, green building analysis, calculation for CAT and application for SFCS;
- To testbed the robustness of the Platform with hypothetical building model built from design submitted previously for BEAM Plus assessment;
- To make refinement of the Platform based on the result from the testing;
- To provide the necessary trainings and capacity building exercises on the concept of environmental and sustainability data unification for BEAM Professionals/Affiliates, CIC Certified BIM Managers/ Coordinators, environmental and sustainability professionals and other built environment professionals specialising in data analytics;

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- To devise an application programming interface (API) between iBEAM, CAT and SFCS platforms to enable real-time sharing of environmental and sustainability data amongst the different assessment and certification platforms; and
- To compile findings into the final report and summary report, with promotional strategy of the iBEAM Unison, long-term maintenance and future updates of the Platform to ensure that the Platform could be applicable to a wider aspect of green building assessments.

Key Deliverables

- Centralised digital workspace for green building assessments;
- Data analytics;
- Industry capacity building and training;
- Data interface to relevant platforms under the CIC

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