THE PROBLEM

Buildings consume 70% of world's electricity.

Wasting a huge portion due to generation distribution, constructions, design and operational inefficiencies.

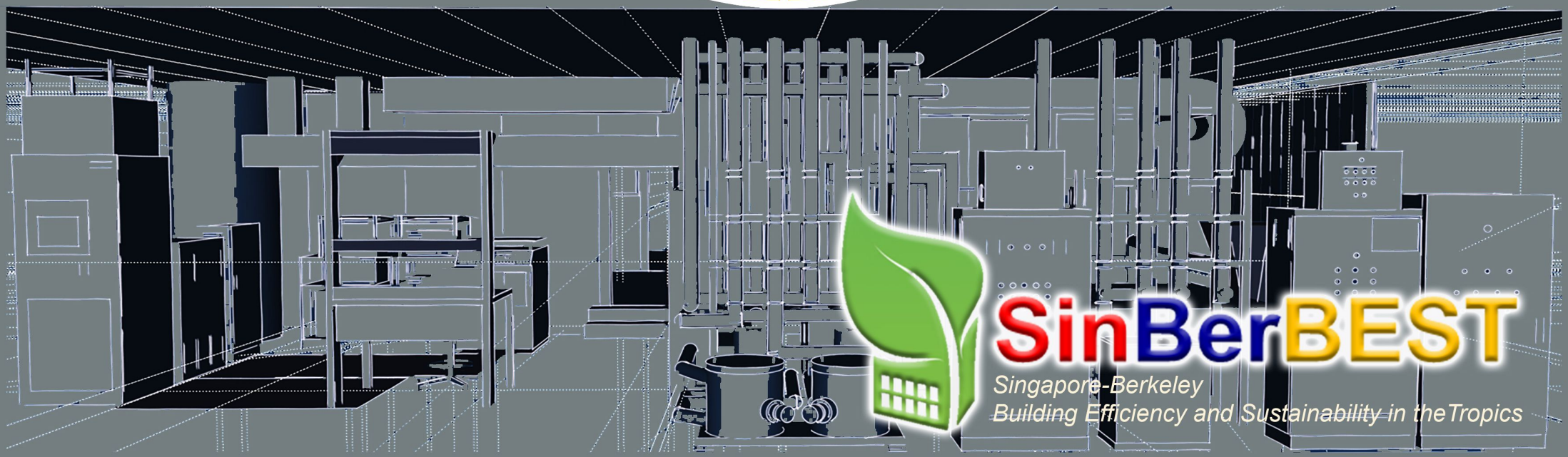
OUR VISION

A building is a state-of-the-art facility that manufactures optimal environments.

Streamlines the interaction between the grid, the building and its occupants.

Balances health, safety, productivity, energy, emissions and comfort.

sinberbest.berkeley.edu



SinBerBEST

Singapore-Berkeley Building Efficiency and Sustainability in the Tropics

Indoor Environmental Quality

- Study interconnected various aspects of Indoor Air Quality (IAQ) and thermal comfort.
- Study cost effective strategies that are energy efficient and improve indoor environmental quality.
- Study room air distribution.

Compact Artificial Sky

- To reproduce all types of skies with Tregenza subdivision (145 patches) in a scanning process.
- High efficiency sky patch and sun simulator with floor-support and wireless remote control.

Sensor Network + Geo-Fencing + Building-In-Briefcase

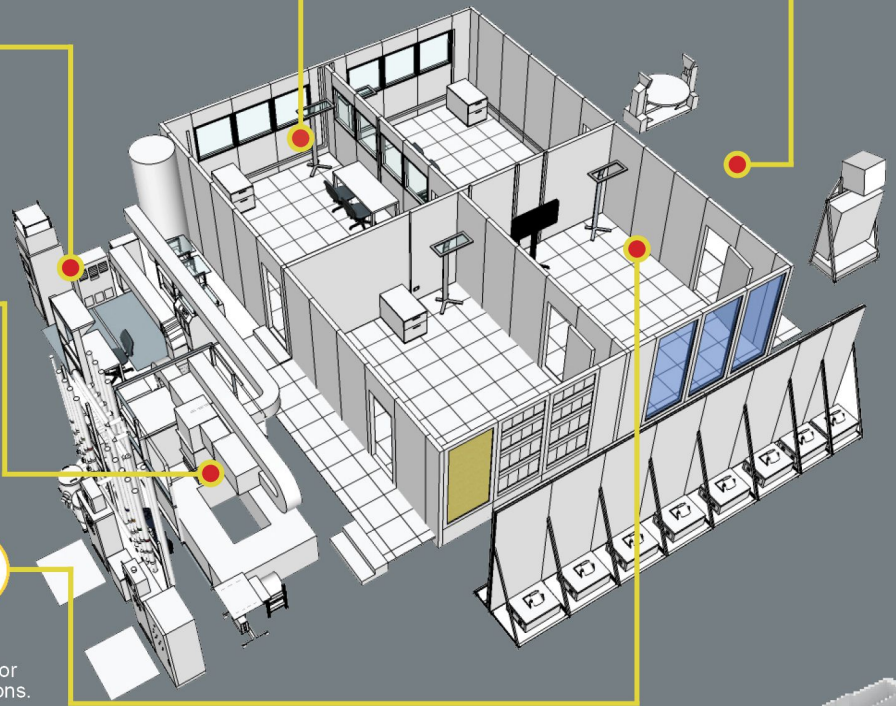
- Mine indoor environment data for analysis and adoption for building energy management strategies.
- Demonstrate energy saving via lighting optimization by real time location.
- Gather information on indoor and outdoor environment for comprehensive understanding of the building behavior and providing feedback to building control system.
- Graphical User Interface enabling users the ability to observe and achieve a better understanding of energy saving and environment interaction.
- Provide occupants in SinBerBEST an effective tool to view and interact with their living space.

Nanogrid

- Centralized monitoring system for the nanogrid.
- Mitigate power fluctuation of solar energy.

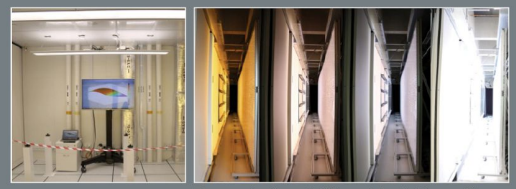
Air Conditioning

- Real-time monitoring and control of temperature, humidity, and CO_2 concentrations in the testbed.



Daylight Harnessing + Geo-Fencing

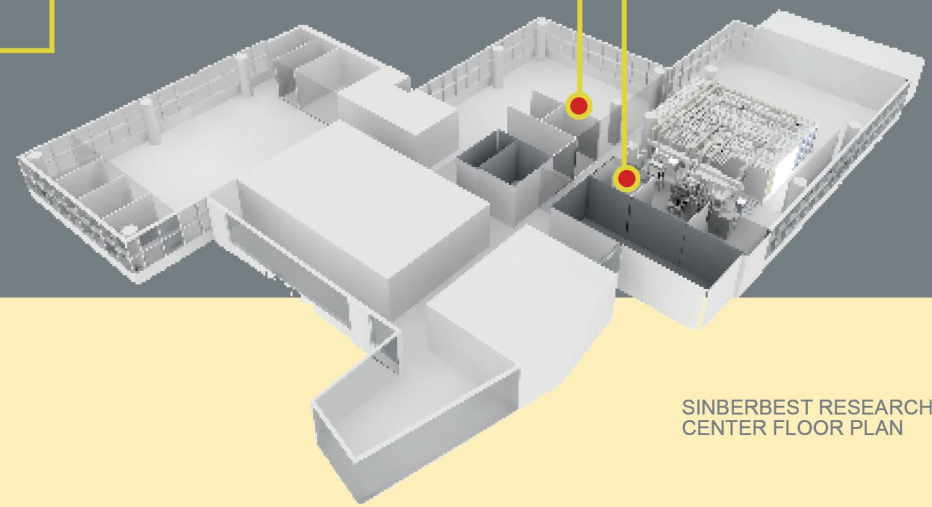
- First of its kind high performance daylight emulator with capability to portray varying weather conditions.
- Showcase the effect and performance of the Translucent Concrete Panels(TCP) and facade configuration.
- Advanced intelligent lighting management system, involving monitoring and control.
- Lighting control by real time location based technology.



Demonstration of different daylight conditions.

Testbed Building Management Service

- Monitor and control all devices/ sensors data across testbed.
- Provide comparable testing environment for sustainable technologies.



SINBERBEST RESEARCH CENTER FLOOR PLAN

SinBerBEST TESTBED

For any enquiries pertaining to the use of SinBerBEST Testbed, please contact SBB Lab Manager Edwin Goh (edwingoh@bears-berkeley.sg)