



**2. INNOVATIVE /
PERFORMANCE ENHANCEMENT
TECHNOLOGIES
APPROVED FOR PREVIOUS
EB & BI PROJECTS
(*EB BI Nov 24*)**

Publication date: Nov 2024

Introduction

- (1) These slides contain innovative / performance enhancement technologies that have been approved in previous BEAM Plus EB & BI projects.
- (2) The approval years are given in the slides.
- (3) Users are reminded that technologies approved as IA points for a past project do not necessarily mean that they would attain the same IA scores for other projects. Project assessment will take into account individual circumstances.

Existing Buildings (EB)



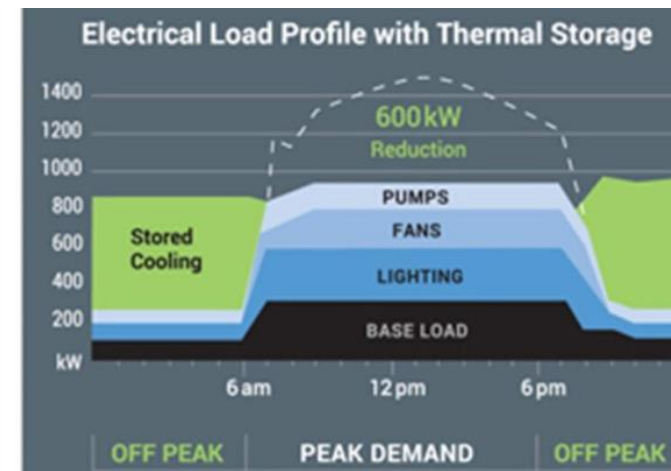
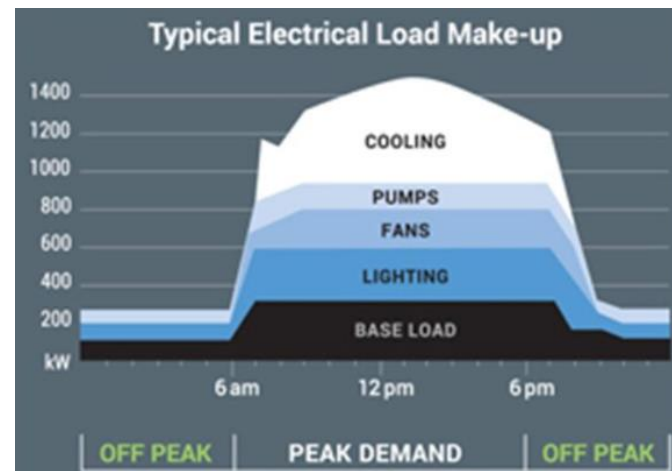
IA 1 - Innovative Techniques

IA 1b - Chilled Water Battery

The Applicant submitted chilled water battery system which is to “charge-up” chilled water pipe by low temperature chilled water so as to discharge the cooling when chillers are not in operation. As per the cooling load prediction, chilled water temperature prediction and COP prediction, it improves the chiller plant efficiency so as to achieve projected annual saving in 7% of total chilled water plant energy. Methodology, operational performance and narrative were also submitted for substantiation. 1 bonus is granted.



Chilled Water Piping



Approval year: 2024

Interiors v1.0

IV 1 - Innovative Techniques



IV - Human Centric Lighting System

The Applicant provide Human Centric Lighting for artificial light controlled in such a way to match the needs of human biological cycles or circadian rhythms. Improving circadian rhythm will have dramatically positive effects in well being.



Approval year: 2024

Interiors v1.0

IV 1 - Innovative Techniques



IV 1 – Application of Smart Toilet

(i) Occupancy sensor with LED control at toilet cubicles. LED indicator is placed outside each toilet cubicle to inform the users about the occupancy status. White light represents vacant cubicle while red light signifies occupied cubicle. It allows users to identify the available cubicles more easily.

(ii) Occupancy information will be reflected real-time on a large dashboard installed outside the toilets. It notifies users of the occupancy status and available washrooms nearby, which reduces the waiting time and facilitates the diversion of users. It may prevent crowded people and maintain social distancing in toilet area.

(iii) Paper roll sensor is available for monitoring the usage level of toilet paper. It alerts cleaning staff when the toilet paper needs to be replenished. It allows timely replenishment of consumables and saves manpower by eliminating unnecessary duty rounds by cleaning staff.

(iv) Touchless door is available for visitor toilets. This touchless door sensor reduces contact of visitors and door surface which can act as a medium for disease spreading. Therefore, this can reduce the chance of infection especially during the pandemic.



Approval Year: 2023

Interiors v1.0

IV 1 - Innovative Techniques



IV Odor Sensing System

Indoor Air Quality and Hydrogen Sulfide (IoT) Sensors to be installed at toilet cubicles for bad air quality detection such as Hydrogen Sulfide. Those sensors to be connected with the iBMS system for automatically control the fan exhaustion power/ fan speed when concentration of pollutant gases reach certain preset level. Collected gases data will also be displayed on both iBMS and BIM-FM system for daily monitoring, operation and maintenance use. Drawing with sensor installation, control logic, screen capture of BMS for toilet odor sensing and control are submitted.



Approval year: 2024

Interiors v1.0

IV 1 - Innovative Techniques



IV - Real Time IEQ Monitoring

The Applicant stated that 1 innovation point should be awarded as real time IEQ display is installed in the entrance for staff /user to monitor their IEQ status. Layouts showing a number of IEQ sensors are installed in the project. Catalogues of IEQ sensors and BMS data logs are also submitted.

<https://pureaircontrols.com/building-sciences/iaq-guard-remote-monitoring/>



Approval year: 2024

Remarks about IA1 / IV1

- (1) The assessment body will consider the **kind of technology** and the **extent of application** to judge whether it is an innovation worthy of a bonus (IA1) point. Typically, this would require newer kind of technology and a significant installation rather than a small trial.
- (2) As time goes by, some of the above features may be adopted by more and more projects. There is a possibility that the features will **no longer** be counted as innovations due to their prevailing popularity.



IV 2 - Performance Enhancement

Waste (Ink Cartridge) Recycle Facilities

The Applicant submitted the report with on-site photos and layout plan showing the provisions of recycling facilities (i.e. ink cartridge), agreement of 'May Luen Cleaning and Recycle Limited', confirmation email for ink cartridge recycling to demonstrate the compliance.



Approval Year: 2023

Remark about IV2

The above list is not exhaustive. IA2 also includes initiatives where the quantitative achievements are significantly higher than those specified in the BEAM Plus Manual. For simplicity sake, these are not included in the slides.