

# [A in a building for one year in](https://assignbuster.com/a-in-a-building-for-one-year-in/)

A measurable energy efficiency goalis important in reducing energy consumption. Building Energy Index (BEI) iscalculated as the total energy consumed in a building for one year inkilowatthours divided by building gross floor area (GFA) in square metre (Chan, 2009: Monts and Blissett, 1982) and it is expressed in kWh/m2/year.

TheBEI values of a good energy management system must range between 90 kWh/m2/yearto 150 kWh/m2/year, with interval of 10 kWh/m2/year.(GBI, 2015) Code of Practice on Energy Efficiency and Use of Renewable Energyfor Non-Residential Building MS 1525 Guideline has outlined that 150 kWh/m2/yearis the maximum BEI value. (Department of Standards Malaysia 2007)2.

4. 1. 2Facility ManagementFacility management is defined as asystem for managing the facilities and energy usage of an organization whereeach organization has one or more operating devices that consume energy. (JohnW. Woolard, Dale M. Fong, Patrick L, Dell’Era & Keith E. Gipson, 2001) Itgathers the information of the energy consumption and the operation of eachdevice. Besides, it also converts the data gathered into standard format.

According to GBI 2015, organizationsshould ensure the designated building maintenance office is fully equipped withfacilities. There are two ways in achieving successful equipment strategies, either by installing more energy efficient devices or reducing the amount ofinstalled equipment. (Priya Gandhi & Gail S. Brager, 2016) A facility team should be establishedto allow building occupants to communicate on building problems.

(Lehrer, DavidD. Vasudex, Janani Kaam & Soazig, 2014) A smart complaint reportingapproach is used to inform users if a certain issue has already been reportedto the facility team. Proactive help desk allows the facility team to deal withcomplaints immediately (Leaman and Bordass, 2001). Building energymanagement system (EMS) should be implemented in larger workplaces to monitorand track energy consumption in buildings. (Ben Bedwell, Caroline Leygue, Murray Goulden, Derek McAuley, James Colley, Eamonn Ferguson, Nick Banks & Alexa Spence, 2014) The processof evaluating the energy performance can be simplified by collecting the datafrom sub-metres.

Hence, facility management team is able tomanage energy consumption more effectively. In addition, energy waste can be identified by implementinga good energy management system as it can gather the necessary energy data. (EnergyStar Guidelines for Energy Management, 2013) Energy efficiency programs andpolicies can also help the organizations to improve energy performance as theyidentify, implement and measure energy savings.

Testing, commissioningand updating of energy schedule is one of the important facility managementstrategies. It is necessary to update the building operating plan regularly toidentify any changes in the occupancy schedule, equipment runtime schedule, design set points and lighting levels. (GBI, 2015) This strategy is importantand mainly used for all HVAC equipment and lighting levels. One of theapproaches is turning off the HVAC equipment at least one hour before the endof the working day. (EECA, 2011) Regular update of energy schedule can ensurethe system is operative because the data and information are contemporary.

(EnergyStar Guidelines for Energy Management, 2013) Organizations are advised toupdate their energy schedule weekly or monthly to obtain the latest energyinformation. Antecedent tools (eg: information posters and reminder labels) and consequent tools (eg: feedback orcomparative feedback on energy consumption) is one of the facility managementstrategies used to conduct intervention studies. (W. Abrahamse, L. Steg, C. Vlek & T. Rothengatter, 2005) Energy labelling is useful in informingbuilding occupants about the energy performance of various equipment andpromoting energy savings and energy efficiency.

(Luis Perez-Lombard, JoseOrtiza, Rocio Gonzalez, Ismael R. Maestre, 2009) Energy feedback should bedirected directly to energy managers rather than employees. (Foster et al. 2012) Feedback can be categorized into direct feedback and indirect feedback. Directfeedback is the immediate data from the metre while indirect feedback is theprocessed data before sending to energy users.

(Sarah Darby, 2006)According to Energy StarGuidelines for Energy Management (2013), staff or employee can be motivated toparticipate in achieving energy efficiency goals by always reminding them onenergy efficiency information. Staff and employees are the major energy users. Therefore, the energy performance will be below average if they are not awareof energy efficiency information.