Normalising Energy Consumption for Different Climatic Conditions

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Energy costs are on the rise, and so is the demand for energy. As a result, reducing the energy consumption of bricks and mortar is becoming a no-brainer for any business. Buildings consume 40% of the world's energy of which approximately 50% is wasted due to inefficient use.

The first step towards managing energy is by measuring energy efficiency. As James Harington, a British philosopher and author, aptly said, "Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it."

The level of energy efficiency in a building is measured by dividing energy consumed with the floor area of the building commonly referred to as Energy Use Intensity (EUI). Essentially, EUI represents a building's energy use as a function of its size or other characteristics and has become the standard of energy efficiency measurement over the past decade.

However, as versatile as this approach is, it presents an incomplete picture. Energy consumption in heated or cooled buildings tends to depend on the ambient air temperature - the cooler the outside air temperature, the more energy it takes to heat a building and the warmer the outside air, the more energy it takes to cool a building. EUI does not account for this influence of outside air temperature rendering it inadequate.

The energy consumption of a building year-on-year or between two or more buildings can be accurately compared by having a common baseline to gauge energy consumption from different periods or places with different weather conditions. 'Normalising' for weather or 'correcting' for it allows adjusting energy-consumption figures to factor out the variations in outside air temperature so it can then be compared to the normalised data fairly.

Normalising for weather gives a more precise representation of energy efficiency of a building. It allows identifying energy wastage and benchmarking building's performance by period or against another building. Discounting the impact of weather on the building's energy consumption is a recipe for failure in energy savings. The energy savings plan is only effective as it is comprehensive. ▲