



Top Tips on Strategies for an Energy Efficient Building

Between my current role as energy manager for BAM FM Ltd and through a variety of positions previously held within the Marks and Spencer energy team, I have been involved in ensuring buildings are running as efficiently as possible for the last 10 years. During this time I have been extremely lucky to have been part of some fantastic teams littered with passionate and dedicated people and have helped to achieve some fantastic milestones along the way.

Like all of you I have encountered many challenges during my journey; be them financial, behavioural, technological and so on. Consequently, without looking for particularly long you will always be able to find a list of reasons not to undertake efficiency measures. Moreover, we are all also guilty of feeling that the obstacles in our path put us in a more difficult position than our peers but in reality every building has its own set of unique problems to overcome.

In addition, buildings are becoming "smarter", more sophisticated and are able to provide more data than ever before. It is easy to sometimes feel overwhelmed or tempted to be over ambitious and fall before you really begin.

However, no matter the complexity I firmly believe that every energy efficiency journey should begin with the same few simple steps giving you

the solid foundation from which to build upon.

1. Understand

For me, understanding how, when and why energy is used within your building should be the first thing on every energy managers' to-do list. Only then will you be in pole position to decide what, why and who you can target to promote efficiencies. Will energy efficiency strategies need to be passive or will building users have time and the desire to take part? Is anything out of bounds and too risky to tinker with or are you free to target all areas? Are certain times of the day likely to yield greater benefits?



Without fully understanding your building's energy flows, efficiency strategies are likely to be flawed. For example, installing inadequate lighting for building use may mean money wasted in rectifying; implementing a strict temperature regime may result in users overriding equipment and circumventing policy in rebellion. Once a building's purpose is fully understood potential efficiencies should become

immediately apparent and you can start to calculate the size of the prize.

2. Analyse

Once the building is understood, next on the list should be analysing whatever energy data is available and more importantly what can be learned from it. If only billing data is available, does your consumption rise and fall appropriately in heating and cooling seasons? If you have access to more detailed information, does your energy profile tie in with your building's occupancy? If you look after an estate, is it possible to find a commonality between buildings to compare and benchmark – looking for anomalies both good and bad?

Do you require more information to develop energy efficiency strategies? AMR to replace manual readings perhaps or sub-metering to capture specific areas or processes? When do you use energy and how do you pay for it? Do you pay peak demand charges, if so could these be offset by either altering existing control methods or utilising any site generation? Could

on site generation be utilised in a smarter way? Is energy storage or demand response viable for your portfolio?

3. Target

Following this, it is time to set some achievable goals. Often energy targets are arbitrarily set without any real consideration to what is achievable. Numbers like 10%, 20% or even 50% might sound great or tie



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in with other business goals but are they achievable? Before concluding target setting there are a number of things to consider including; what has been achieved before; what is your current spend; do you have any capital; how efficient is your current building or estate? Target setting should also be made in collaboration with all relevant stakeholders with future business plans firmly in mind, for example, is the business looking to expand? Finally, what target style would best suit your organisation's goals? Are you primarily interested in the sustainability angle and looking at a simple kWh or CO₂ reduction or is cost reduction the principle focus? Each target type will have long and lasting implications on what kinds of efficiency measures will ultimately yield the greatest benefit.

4. Change

Focus energy efficiency measures on existing equipment, maintenance and behavioural change first, before spending big on things like increased control or renewables. Often these yield the best returns on investment with very low initial outlays. A state

of the art BMS controlling a HVAC system riddled with holes and leaks is still going to be inefficient. A new PV system may be a good photo op but if the T12 lights inside are still burning 24 hours a day unnecessarily, then is this really the best use of time and money?

Often viewed as a hindrance to energy managers, don't overlook what could be your biggest asset in reducing consumption - the buildings' users. Everyone has a vested interest in energy; they often just don't know it yet! It's the energy manager's responsibility to find out how to interest all members in the organisation in promoting efficiencies. Some will react to the sustainability benefits and green credentials, others to reduced maintenance associations or improved working environments, others will purely be interested in the financial benefits, maybe some may be motivated by competition; building vs building, floor vs floor. There is always an engagement avenue open.

5. Collaborate

Many energy managers do not have the luxury of a budget, and if they do it never quite seems to be enough. Is collaboration an option? The chances are that you might not have enough money to replace a boiler system ahead of its perceived lifespan, but when the time comes can you sway the maintenance department to plump for the most efficient model available? This could be achieved either through a convincing argument on how it will reduce maintenance or increase efficiencies. Alternatively and even better, can the energy department part fund the project to ensure the best fit for all parties? Finally, when a new building is being designed, could you get involved to ensure that a holistic view is taken to services installed, running costs and systems deployed?

6. Verify

Make sure you can prove the savings you make, and make sure everyone knows about it!!!