Energy Efficient Design

Services Perspective

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Agenda

- Background
- Business case difficulties
- ISO 50001 Drivers
- Case Studies
- Key takeaway points
Background

Who Am I?
Business Case Difficulties?

- Use LCC for project decisions
- Best practice
- Better understanding of drivers
- It is required by the EnMS
- Energy Efficient Design
- Perceived non value add?
- I am paying the design team...
- Lack of investor knowledge
- Project team will do this
4.5.6 Design

The organization shall consider energy performance improvement opportunities and operational control in the design of new, modified and renovated facilities, equipment, systems and processes that can have a significant impact on its energy performance.

The results of the energy performance evaluation shall be incorporated where appropriate into the specification, design and procurement activities of the relevant project(s).

The results of the design activity shall be recorded.
Case Study 1

Building retrofit with new process and HVAC equipment, (existing utilities)
Activity carried out at concept design
Projected Energy cost €650K per year based on energy balance.
Opportunity to reduce by 62%

1. Air change reduction to best practice
2. Fresh Air Unit
3. Installation of VSD’s on process pumps
4. Removal of a cooling step in the process (process engineer)

Issues:
1. Project team focused on project delivery
2. No follow-up on the ideas through the project
3. No one responsible for lifecycle energy performance in the project
4. Why is our energy bill after rising?
Case Study 2

Pharmaceutical project, cleanroom construction and associated utilities
Activity carried out at the start of detailed design
Projected Energy savings of €1M per year through:
1. Air change reduction to best practice
2. Changes to humidity controls
3. Commissioning protocols for setback
4. Reduction of utility service requirements LPHW and Chilled water

Issues:
1. Corporate Design Specifications on ACPH,
2. Late in the process to get major change without cost and schedule implications
3. Lot of resistance from project team
4. Lot of resistance from the client (new flagship project will do energy efficiency later)
Case Study 3

Brownfield site
Activity carried out from basis design throughout the project
Project team completed good EED work at concept stage
16 Opportunities highlighted from the Initial review
1. Change energy source from electric to steam
2. Minimal air change rates
3. Central heating system
4. Metering
5. Focus on Design for Energy Management and operational control
Challenges:
1. Resistance to Independent consultant reviewing project design
2. Fear of schedule delays and cost overruns (build confidence through the construction and commissioning to see the opportunities through)
Takeaway points

- Engage as early as possible
- Build confidence with the design team
- EED is not “Are you smarter than the design engineer”
- Ensure EED Owner is senior in organisation and can say “No This is what we want”
- Engage an EED expert where necessary
- Quantify the savings from the opportunity
- The greatest value in the process is implementation

“You will never reach your destination if you stop and throw stones at every dog that barks”

Winston Churchill
Questions?

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