

Flying blind?



You want a low energy, low carbon building...
but how can you be sure that's what you'll get?



“How much energy do my buildings use? I don't know, no-one's ever asked me that question before.”

MAJOR HOUSING DEVELOPER



A guide for **CLIENTS** – Delivering the Low Energy Low Carbon Vision

No. 1 of 4 guides for clients, designers, builders and building occupants/operators

AECB CarbonLite Programme

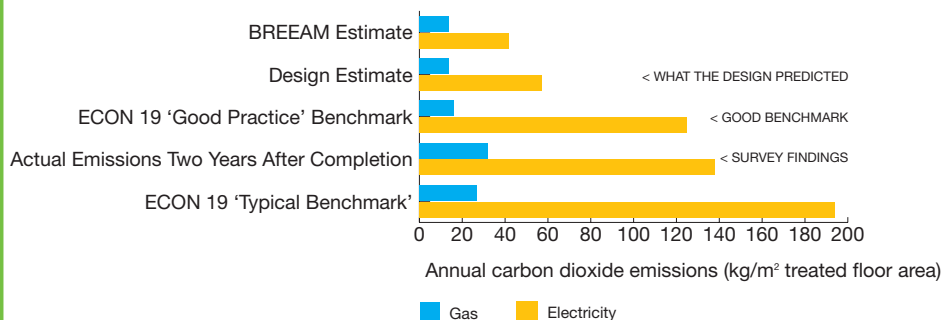
Delivering buildings with excellent energy and CO₂ performance

What happens if you don't have a clear energy target?



Too many clients specify a desire for a low energy, low carbon building, but are disappointed in the result. The graph shows the estimated CO₂ emissions from an office building which was supposed to be a low carbon exemplar. The design predicted CO₂ emissions of around 50 kg/m².yr. The actual emissions were nearly triple that.

Annual carbon dioxide emissions from operational energy use in an environmental award-winning head office building complex in England



“ If we are to achieve low energy and low carbon buildings, the client, design and construction team, users and managers all need to be willing and active collaborators ”

BILL BORDASS, USABLE BUILDINGS TRUST



What goes wrong?

- Buildings' energy and emissions have been largely invisible because we don't regularly measure energy use and emissions or tell people how we're doing
- We have too few benchmarks to compare building energy performance... how do you know if your building is better or worse than average?
- We don't understand energy in buildings, that they work as an energy system with inputs and outputs, so clients need expert help to design in an integrated way
- The energy target is not defined - if you don't know where you're going, how can you get there?
- Clients procure buildings without taking into account how they will be used and managed
- The average design team is neither energy- nor carbon-literate
- It's no-one's job to ensure that the energy target is met so seemingly minor design team decisions can undermine intent
- Controls may be badly designed or incorrectly installed
- The building isn't managed properly because no-one knows what the energy target is or whether what is being achieved is good or bad.

Achieving a building with excellent energy performance and low carbon emissions is possible. But it involves putting energy and carbon at the heart of the project. Requiring everyone to learn the basics of energy and carbon. And giving one person the job of driving the vision through.

Just follow these five steps

How to do it right

1. Appoint a low carbon champion
2. Employ an experienced energy consultant
3. Establish your low energy, low carbon vision
4. Think about how the building will be used
5. Learn how to manage your building efficiently

The five steps

1. Appoint a low carbon champion

- The low carbon champion – acting with the client's authority – will work with the project team to define project outcomes and veto decisions that dilute the vision

2. Employ an experienced energy or M&E consultant

- Who has been involved in a low energy design project – that works!
- Is capable of seeing through challenging energy and CO₂ targets
- Understands how to help you how to deliver them and measure the results

Employing an experienced energy consultant is a crucial and worthwhile investment

3. Define your low energy, low carbon vision

- With your carbon champion energy consultant, set your energy and CO₂ target in terms of kWh/m² .yr and kg/m².yr of CO₂
- Develop a robust energy brief
- Appoint a design team with experience of low energy design and identify possible construction contractors at this stage
- Engage the whole project team in the vision (including your in-house client team and design and construction team) and provide the education and training required to ensure the team understands energy and carbon and the low energy, low carbon approach
- Define responsibilities and milestones for the energy and CO₂ targets

How much energy does your building use? How much should it use? How little could it use?

4. Think about how the building will be used

- The appliances and equipment installed will have a major impact on the building's energy use and emissions – failing to understand how the building will be operated or the wrong procurement decisions can undermine the vision
- Human behaviour – taking care of how the building's occupants use energy – can also have a major impact

5. Learn now to manage your building efficiently

- Spend the first year monitoring your building's energy use and CO₂ emissions
- Share the results with your tenants/ staff
- Close the feedback loop



More information is available at:
www.carbonlite.org.uk