

VIEW FROM THE TOP

Paul Bennett is the executive chairman of BSSEC



Close the performance gap

How do you repair the construction and operation value chain? **Paul Bennett** has examined what goes wrong and proposes some solutions to get our new buildings performing as they should

Any chain is useless with a gap or missing link. But that is exactly what we have in the value chain between building designers/builders and building users/operators. It matters because this broken chain causes value to be lost to the building occupiers, operators and owners. In almost every building that I observe being handed over, there is a large gap between how the building is designed, constructed and how well it performs for the facilities management teams and building users.

In theory, buildings are designed to be efficient, low-energy, promote productivity and occupant health. In reality, buildings rarely operate well with common problems manifesting in poor thermal comfort, poor acoustics, poor energy efficiency, troublesome maintenance and complaints by users. The root of the problem is how the UK construction industry operates. On one side, we have building designers and contractors who have been commissioned to design and build a building and on the other side we have the building occupiers and operators including FM teams. The two sides only meet briefly at handover. The issues are numerous but some of the most significant are:

- incorrect design assumptions made about how the building should operate;
- incomplete energy modelling being carried out as Part L of the building regulations does not include user equipment and processes;
- poor build quality;
- underperforming BMS controls systems;
- commissioning which is only partially carried out and without due diligence;
- poor information being handed from designer/constructor to operator and little time being given to this activity;
- building users and operators misusing the building and its systems.

Construction and operation professionals give the following causes:

- “designers and contractors are simply not appointed correctly – clients do not require involvement beyond practical completion and retention period. There are no penalties nor consequences”

- “there is not enough time at the commissioning and handover stage of the project to do a proper job”;

- “the RIBA Plan of work 2013 operators and users inclusion is only suggested in its key tasks and they are therefore not followed”

- “building regulations do not police compliance on energy performance in operation”

- “BMS controls specifications are weak and rely on the controls specialist to get it right”

- “there is little fee allocated to witness testing and commissioning and as such it is left to the contractor to get it right”;

- “there is no clerk of works appointed” and

- “design and construction teams too quickly move onto the next project without checking how the building performs”

It would seem that the Australian Construction Industry has this area well under control through their ‘design for performance’ approach where very energy-efficient buildings are routinely achieved using its NABERS scheme.

The UK mirrors this approach through the BSRIA Soft Landings Process or by offering BREEAM post-occupancy evaluations. Guidance is provided by CIBSE in its TM31 Building Log Book Toolkit and Commissioning Management Code M. What is troubling is that, despite all this guidance and potential support, many clients are not taking it up.

While it would be good to see legislation and the Building Regulations get tough on post-occupancy performance, I think it is going to be a long time before this happens. We should, as an industry, lobby government for change and, in the meantime, show leadership.

I would like to propose the following ‘Leadership in Appointment’ process:

- the client

should ensure that operational requirements are built into the design consultant’s forms of appointment, ensuring that the performance gap is to be managed. This should include incentives and penalties. Ideally a three-year post-occupancy evaluation term should be included with retentions held and released appropriately;

- engineers should simulate the compliance energy model to Part L and the entire occupied building including people and equipment.

- engineers should be required to properly design the BMS controls system. No more performance specifications.

Then, a ‘Leadership in Process’ should take place:

- the operator and occupier should be made part of both the design and handover process and the sign-off, as the RIBA Plan of Work suggests, in key support tasks at Stages 1 to 7. Consider the BSRIA soft landings (or a similar model) to implement the five suggested stages as (1) inception and briefing, (2) design development and review, (3) pre-handover, (4) initial aftercare, (5) one to three years extended aftercare and post-occupancy evaluation;

- employ an independent clerk of the works and commissioning verifier;

- during commissioning, make sure that both the consultant and FM team witnesses the commissioning;

- documentation. Make sure that the documentation is fit for purpose and that it adopts best practice of CIBSE TM31: Building Logbook Toolkit;

- ensure that the proper time and attention is given to the commissioning stage and user/operator training;

- make sure the FM contractor is correctly appointed and provides maintenance in accordance with CIBSE Guide M: Maintenance engineering and management and SFG20 (the standard for planned maintenance);

- carry out post-occupancy reviews and audits every quarter in the first year and annually for the following two years; and

- following this period, adopt a best practice standard such as ISO50001. ■

