

## Design and construction audit: review of design intent (element 1)

To evaluate documentation on how the building should have been constructed and how it is expected to perform.

### Level 4 Walkthrough with key stakeholders

<b>Cost:</b> ₹	<b>Time:</b> ⌚	<b>Skills:</b> 🙌 🙌
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#### Potential tools needed:

- Pen and paper for notes
- Camera
- Audio recorder

**How:** Design an interview to develop a deeper understanding of the building from the design team, owner, developer and or facility manager. The documents collected in level 1 may be used to enrich the conversation; however, **it is possible that the interview may be the only source of pre-gathered information on the building.** Ask specific questions, possibly breaking the building down into elements but ultimately question how the end result could be different from the intended design, why, and how this may affect the performance of the building.

Take photos or short video clips of anything that looks unusual, such as lights on in brightly daylight spaces, unlabelled controls, equipment left on, or occupants' unique solutions to resolving problems like glare or drafts. Always asking for permission first. You may, for example, be asked not to include images of children in school studies, or the content of computer screens in offices.

Get a feel for the control systems installed, both manual and automatic, including building management systems if fitted, and if occupants and management understand them. Be aware of things that are not easily confessed. Facilities managers and users may be embarrassed by and hide their lack of engagement with systems that they do not fully understand. Review operation and maintenance manuals and commissioning records, to help understand design intent and how well the building and its systems were working.

The interview walkthrough could be in two or more phases depending on the number of people to be interviewed and their availability. As an example, the designer may need to be interviewed over the phone and the following day you may be meeting with the facility manager to walkthrough the building. An open-ended, repetitive script to provide prompts regarding relevant issues and points of interest in relation to energy use and occupant behaviours is useful. Time should be given to the stakeholder to bring up their own issues. In a walkthrough 2-5 minutes should be spent in each room. It is recommended that notes are taken throughout the walkthrough, as well as pictures.

What to ask when speaking to the occupant/facilities manager:

- Ensure that you ask open-ended and non-leading questions during the walk-through. For example, ask, "How do you find the comfort levels in this room?", not "Is it too hot?"
- Ask how the building is used at different times of the year, especially when it is crowded or empty.
- Ask about different kinds of activity, especially in schools, e.g. contrasts between term time and holidays, and the changeover periods.

In a home, the walkthrough with the occupant is another way of recording the occupant's interaction, satisfaction and understanding of their home, as well as gather technical details. Ask them to comment on aspects as they walk. Such a method can help uncover 'forgotten' issues as well as help gain a better understanding of the home as a whole. The researcher will need at least a basic knowledge in construction and technical aspects of a dwelling.

**Timing:** As with the collection of design documents, this will be the first step to any BPE.



**Potential barriers:** No access to stakeholders; unwilling to be interviewed.

### **Walkthrough survey:**

#### **NEW BUILDING**

**When:** A full 12 months after handover of a new building, once users have been in the building a full summer and winter season.

**Benefit:** The survey will give an overview of the building's performance from the users perspective, in the first year of occupation. This can aid the delivery and management team in fine-tuning the building controls to improve environmental conditions and energy performance, address shortfalls in performance, and better understanding how the building is being used by the occupants.

#### **REFURBISHMENT or RETROFIT**

**When:** Preceding a refurbishment or extension, where the same users will be occupying the building (In addition, after the refurbishment the 'new building' process can be followed.

**Benefit:** The survey will aid in identifying issues which are affecting occupants productivity and effectiveness, which can aid in managing a brief for a refurbishment or extension to ensure that the works benefit the end-users as much as possible and resolve issues which are important to them. It can also aid in gaining buy-in from occupants for conducting the works.

### **Overview of the occupant survey**

An occupant survey will reveal what people think and feel about the building, especially with respect to their needs. Interviews can be used to follow on from questionnaires to explore topics that were emphasized by the respondents.

#### **How to Compose a Survey:**

- Keep questionnaires short: two A4 pages is good, more than three can be too long; causing boredom and disinterest.
- Give respondents lots of opportunities to comment but keep the comments short. If there is something important to them that you have missed out, they will soon tell you if they have the opportunity!
- Keep any additional questions to standard surveys as short and simple as possible and make sure that they follow the style and approach of the main questionnaire.

#### **THINGS TO AVOID:**

- Technical terms which the respondent might not understand ("What do you think of the trickle ventilators?")
- Questions where the respondent might speculate an answer, such as what they might like or might need.
- Questions about things that you already know the answer to or can find out for yourself, such as "Is the building energy efficient?"
- Questions about 'importance' such as, "How important to you is the ventilation?", which might prompt a facetious answer like: "I will die if it is not there!". Ensure that the questions are meaningful to the respondents. If a respondent encounters a question which they think is meaningless or impossible to answer sensibly, they are likely to stop answering anything else.
- 'Forcing' respondents to tick answers when they might not want to. Give them a 'no response' option, or an "Other" box so that they can add other observations.

#### **How to Conduct an Occupant Survey:**



- Let respondents know what you are doing and why you are doing it. Explain how they might benefit from participating in the interview – will adjustments be made to improve conditions in the building they tell you about? Or is the interview just to inform future practice?
- Ensure that the survey is conducted with the intention of making some improvements, as most people will expect that the results will inform some improvement to the conditions within the building.
- Ensure that the survey is being conducted by someone independent of the respondents' management chain, (i.e., Don't have a line manager or housing manager distributing and collecting the survey, as respondents will be more likely to give the responses they feel are expected of them).
- Distribute the survey by hand, encourage respondents to ask questions, and give them a specific time when you will return to collect it. It's often best to return later the same day, or the following day.
- Ensure to note in any report the relevant context of when the survey was conducted. Issues such as a recent round of redundancies in an office, or construction work on an adjacent floor or building can affect responses and influence the results.

