How to develop User Guidance for a Passivhaus building

Technical briefing document

December 2013
Contents

1. The Context......................................................................................................................................... 3
2. Why, how and who for? ..................................................................................................................... 4
3. User Guidance formats .................................................................................................................... 5
4. Contents and design .......................................................................................................................... 10
5. Examples of Good Practice for occupants ....................................................................................... 11
6. Examples of Good Practice for Facilities Managers ......................................................................... 15
Acknowledgements ............................................................................................................................. 16
How to develop User Guidance for a Passivhaus building

Passivhaus Trust Technical Briefing Document

1. The Context

This document provides guidance for the industry on how to produce effective User Guidance for Passivhaus buildings. This addresses information required for non-expert users of the building. While this guidance is focussed specifically on Passivhaus buildings, it also provides a useful resource for other low-energy buildings.

The Passivhaus Trust has some shared resources that can be used in the development of User Guidance for a Passivhaus building:

- Generic written content for each section, to be adapted for specific buildings eg. What is a Passivhaus, myth-busting, list of do’s and don’ts?
- Photos, diagrams and other visual material for use in explaining principles and how the building works.
- Content from PHT’s earlier published guides- ‘Passivhaus: an introduction’ and ‘Why choose Passivhaus’.

The Passivhaus Trust is also planning to develop some further resources that can be used in preparing User Guidance for a Passivhaus building:

- Template written guides for simple buildings, which can be adapted and edited as necessary.
- Template posters for MVHR, heating systems and controls etc, to allow system specific information and images to be inserted.
- Examples of best practice guides in different formats – written guides, laminated posters, technical manuals, videos, online support etc.

These resources will be available on the Trust’s website in 2014.
2. Why, how and who for?

A. The need for guidance

1. Different levels of understanding and information are needed by each audience – occupants, building managers, support and maintenance teams etc.

2. New occupants of any house/building should be provided with information about the property on at least three levels- Emergency, Maintaining comfort and How to get the most out of your property.

3. The varying reliance of building performance on occupant operation.

4. Lack of engagement of occupants with user guides – often lost or ignored.

5. The need for multiple handovers – people often don’t take things in on moving day so need further follow-ups, and possibly a helpline or online questions facility.

6. Timing – guides are often produced at the last minute, not allowing sufficient preparation.

   Need for information on Passivhaus to be combined with other requirements such as fire regs and Code for Sustainable Homes.

B. Occupant induction process

User Guidance is a component of an extended occupant induction process. Therefore how the guidance is presented to the intended audience will be crucial to how effective it is, and a staged process may be required, possibly to include:

1. Advance information or video, to prepare occupants for their new home

2. Moving in day – basic information provided, but unlikely to be taken in properly

3. Demonstration and reminder of information approx. 2 weeks later

4. Next season – reminder of how to use systems (heating or cooling)

5. Review of process etc for next people to move in

The Occupant Induction process is likely to include several of a number of components:

1. Group presentation of key features of the future property

2. One-to-one demonstration in the property of these features, encouraging hands-on, and requesting confirmation of understanding

3. Quick reference material

4. More detailed reference guide

This document focuses on the quick reference material and the guide.

Note that learning from the Occupant Induction process should be used to inform future builds. Design should be mindful of how occupants will get the best from the building, and how they will acquire the knowledge to achieve this.

C. The audiences for User Guidance

The guidance, be it in a written, graphical or video format should be presented in a manner that is accessible, engaging and useful for the specific audiences as identified below. Note that while there may be common
elements across the information for the different audiences it is unlikely that a single guide could be written to suit all audiences.

1. Occupants (domestic and non-domestic) - Information as far as possible should be presented audial/visually/ graphically. If using a written guide, then the text should be kept brief and simple. Laminated posters may be mounted next to controls or inside cupboard doors, describing how to operate and maintain key systems in the building, such as heating and ventilation.

2. Building managers- A written guide where responsibilities are clearly identified. This should be prepared in conjunction with the Building Log Book – see CIBSE TM31.

3. Support Team – Key points to be aware of should occupants phone for assistance- who to send for if maintenance is required.

4. Maintenance Teams- Specific manuals for visiting maintenance teams, such as plumbers (who may not have encountered a Passivhaus building before) – outlining what is different about this building etc.

3. User Guidance formats

The design and format of the guidance will be very important. Different medium can be used to meet the needs of different audiences. Listed below are examples of best practice across various media:

A. Written User Guidance/ Manual

The Scottish Sustainable Buildings’ guide How Your Low Carbon Home Works- see figure 1. Produced by Glasgow School of Art, this guide is not specifically for Passivhaus buildings, but provides a good example of design, with clear layouts, minimal text, simple diagrams and drawings linked to plans and photos of the house with colour coding.

B. Laminated posters

Bere Architects’ User Guide poster for Ranulf Road (Camden Passivhaus)- see figure 2. Again, photos of the systems linked to plans and section of the house, help the occupant to understand how they are intended to work.

C. Videos

Series of clear and succinct guidance videos for residents developed by Radian Housing Group and published on their YouTube channel- see figure 3.

1. How does my home work? Mechanical Ventilation and Heat Recovery
2. How does my home get maintained? When does Radian check the MVHR filers?
3. What if something goes wrong? How to report a repair?

D. Door hangers and stickers

Door Hangers and stickers for residents developed by Gentoo Group for the Passivhaus Racecourse Estate- see figure 4 and 5.

These clear and graphical door hangers and stickers located next to the systems and outside rooms help to remind the occupant on how the system works and how best to use them.
Figure 1 ‘How Your Low Carbon Home Works’ by Scottish Building Standards for occupants
Figure 2 User Guide poster for Ranulf Road by bere:architects for occupants
Figure 3  Radian Group’s YouTube channel featuring occupant guidance videos
Figure 4 Door Hangers at Gentoo’s Passivhaus Racecourse Estate

Figure 5 Wall Stickers at Gentoo’s Passivhaus Racecourse Estate
4. Contents and design

A. Design

Whichever format is used, the design of the guides will be very important, and the information should be presented to be as engaging as possible. By using visual material, and clear succinct text, information can be presented in a way that is accessible and appropriate for the intended audience. Visual material also helps transcend language barriers and makes it easier to have versions of the guidance to suit non-English speaking audiences. Gender and techno-phobia/philia must also be taken into consideration.

B. Contents of a written User Guide

Written content should be presented from the view of the building occupant or user. e.g. “your energy bills will be very low because …”; “the air in your home is kept fresh by …”; “your home is kept warm by …”

Contents should include the following:

1. Introduction – brief description of what is different about this building and how to live in / use / manage this home / building (e.g. smoking, variations in occupancy, window opening etc.)
2. How to look after your home / this building – description of how this building is designed to work, key systems, what maintenance is required, how often, who is responsible (if not you) and how to contact them.
3. What to do if …? – FAQ type section describing what to check and what to do if it’s a bit cool, or too warm, or stuffy etc.
4. How to fix things – details of what to do and/or who to contact if things aren’t working (e.g. changing the MVHR filters, contacts for the housing maintenance team etc)

Potential table of contents for a sample written user guide:

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Good Practice guide</th>
<th>Maintaining comfort</th>
<th>How to get the most out of your property?</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Myth busting</td>
<td>2. Should mention other systems e.g. PV, solar thermal etc</td>
<td>2. Windows (and blinds)</td>
<td>1. It’s too hot or cold</td>
<td></td>
</tr>
<tr>
<td>3. Recording/ Calculating your energy use</td>
<td>3. Air barrier and fabric</td>
<td>3. The bills are too high</td>
<td>2. It’s stuffy or draughty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Heating system</td>
<td>4. The air feels dry or damp</td>
<td></td>
<td>3. The bills are too high</td>
</tr>
<tr>
<td></td>
<td>5. Seasonal changes</td>
<td>5. It’s noisy</td>
<td></td>
<td>4. The air feels dry or damp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. We have lots of people round or we go away for a while</td>
<td></td>
<td>5. It’s noisy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. We want to open the windows</td>
<td></td>
<td>6. We have lots of people round or we go away for a while</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7. We want to open the windows</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. Emergency actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Checklist help and support</td>
</tr>
</tbody>
</table>
5. Examples of Good Practice for occupants

A. About your home

Figure 6 ‘How Your Low Carbon Home Works’ by Scottish Building Standards for occupants

Figure 7 ‘How Your Low Carbon Home Works’ by Scottish Building Standards for occupants

© Passivhaus Trust 2013
B. How to look after your home / this building

Figure 8 ‘Building user guide: Inverdee House’ for occupants
C. What to do if …?

FAQ type section describing what to check and what to do if it’s a bit cool, or too warm, or stuffy etc.

Figure 9 'How Your Low Carbon Home Works' by Scottish Building Standards for occupants

Figure 10 ‘Your easi guide to Passivhaus’ by Gentoo for occupants

© Passivhaus Trust 2013
D. How to fix things

How your home works:

**Keeping it working**

Your house requires regular maintenance to ensure it continues to work well for many years. Poorly maintained systems tend to be more inefficient and cost more to run.

**Every Month**
- Wash filters in the ventilation system
- Clean sunspace windows

**Every Year**
- Boiler check by Registered Gas Safe Engineer
- Replace the filters in the ventilation system (insert type and manufacturer)

![Image]

**Figure 11** 'How Your Low Carbon Home Works' by Scottish Building Standards for occupants

---

**Resources**

Your welcome pack contains the manuals for the following equipment.

- **Heating**
  - Programmer: See Manufacturer's website at: (Website here)
  - Boiler: See Manufacturer's website at: (Website here)

- **Ventilation**
  - See Manufacturer's website at: (Website here)

- **Hot Water**
  - Programmer: See Manufacturer's website at: (Website here)
  - Boiler: See Manufacturer's website at: (Website here)

![Image]

**Figure 12** 'How Your Low Carbon Home Works' by Scottish Building Standards for occupants

© Passivhaus Trust 2013
6. Examples of Good Practice for Facilities Managers

Figure 13 ‘Inverclyde Academy Building User Guide’ by Max Fordham for occupants and Facilities Managers

Figure 14 ‘Inverclyde Academy Building User Guide’ by Max Fordham for occupants and Facilities Managers
Acknowledgements

This paper was written by Melissa Taylor and Tanisha Raffiuddin for the Passivhaus Trust, with input from the Trust’s ‘User Guidance’ Technical Working Group. The Trust would like to thank the members of the Working Group which includes Junko Suetake (Suetake Studio 2 and Anne Thorne Architects), Mark Lumley (Architype), Nick Grant (Elemental Solutions), Helen Brown (Encraft), Dominic Danner (Durkan), Mark Siddall (LEAP), Martin Ingham (Adapt, UEA) and Jon Bootland (Passivhaus Trust).