GHA 2023 WEBINAR SERIES

Good Homes Alliance

How to Design...
Good Homes

Homes that are low energy and perform as designed

Event #2 – Tuesday 4th July, 12:00-13:30, Online

About this event series

What makes a ‘good home’..?

Leading architects, designers and placemakers from within the GHA membership will answer this question by sharing their expertise in a 2-part webinar series. Find out more from the experts and hear top tips and lessons learned from the latest case studies.

- **Event #1 (June) - Healthy homes and placemaking (Members can catch-up on our Knowledge Base)**
- **Event #2 (July) – Low energy building design and Passivhaus; Building performance and quality assurance**

Programme

12:00 **Welcome from event chair and 'Designed to Perform'**
Tom Dollard, Board Member, Good Homes Alliance

12:10 **Passivhaus and AECB standard affordable housing case studies**
Jeremy Tyrrell, Director, T2 Architects

12:25 **Residential building performance evaluation (BPE)**
Brogan Watkins, Sustainability Consultant, Hoare Lea

12:40 **POE findings from Chobham Manor**
Mark Dowson, Associate Director, Buro Happold

12:55 **Lessons learned from the Nottingham City Homes 2050 Energiesprong project** – Richard Partington, Director and Suzanne Davenport, Associate, Studio Partington

13:10 **Q&A/panel discussion**

13:30 **Close**

About the Good Homes Alliance

- **Since 2007 we've promoted quality sustainable homes and communities for a healthier, low carbon future.**
- **Events, training, campaigns, guidance, lobbying, research and more.**
- **120+ members from across industry. Building Performance Network is now a programme of GHA.**

- **30+ members in our fast-growing local authority, housing association and private sector developer networks who collectively represent 350,000 existing homes and 120,000 new build homes to be developed in the next 10 years.**

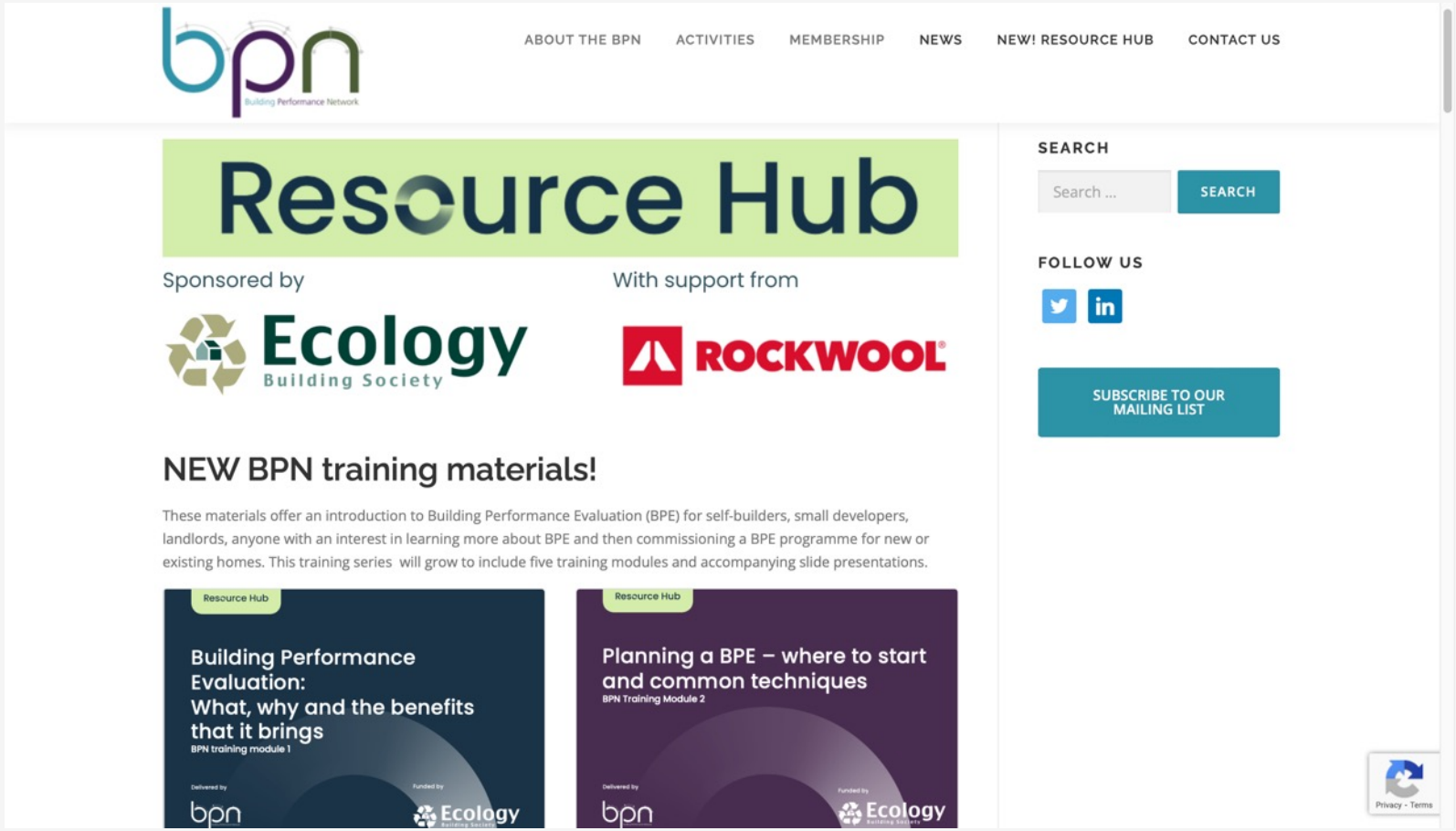
Free resources and guidance on our Knowledge Base

Coming soon!

Shading Guidance

Download for FREE on our Knowledge Base – kb.goodhomes.org.uk

New BPE Resource Hub



https://building-performance.network/resource-hub

Upcoming events

Event #3: Energy balancing and smart grids

Wednesday 12th July | 16:00-17:30 | Online

- An introduction to energy balancing and smart grids
- Community microgrids to help housing associations, cohousing communities and more deliver affordable net-zero homes
- Reducing cost, complexity and carbon through a next generation all-electric solution
- Plymouth new-build Energiesprong project

SNRG CEPRO Net zero energy communities

energiesprong uk PEC Plymouth Energy Community

Upcoming events

People and their data – ethics and engagement of building performance evaluation

11th July, 12:00-13:00, Online

A joint ‘Bitesize’ session with Building Performance Network and Good Homes Alliance on the ethics of data collection in building performance evaluation.

Webinar instructions

- **Throughout the webinar you can add questions to the ‘Q&A’ (not ‘Chat’).**
- **You can also ‘upvote’ and comment on other people’s questions.**
- **Please do not use the ‘Raise Hand’ option.**
- **We aim to unmute the audio of the relevant attendee so any questions can be asked verbally. If we are short on time, we’ll ask the question on your behalf.**
- **If you have a technical problem, please write a message to Richard Broad (GHA) using the ‘Chat’.**
- **We will be recording the webinar. If you would prefer your audio to not be recorded (or do not have a microphone) but would like to ask a question, please tick ‘Send anonymously’ when adding your question to the Q&A and the webinar host will ask it on your behalf.**


Good
Homes
Alliance
Join our alliance today at
goodhomes.org.uk/join-the-gha
www.goodhomes.org.uk
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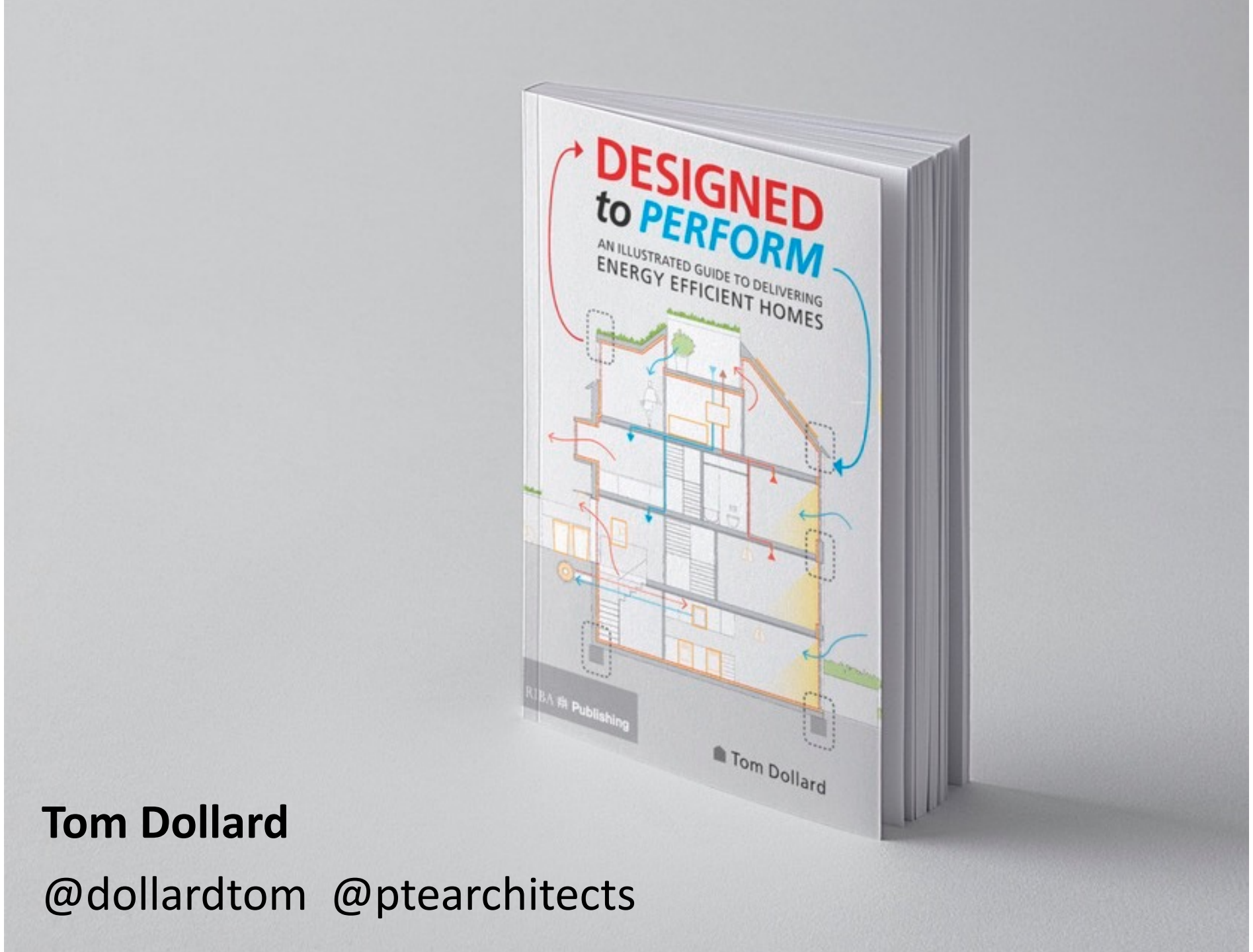
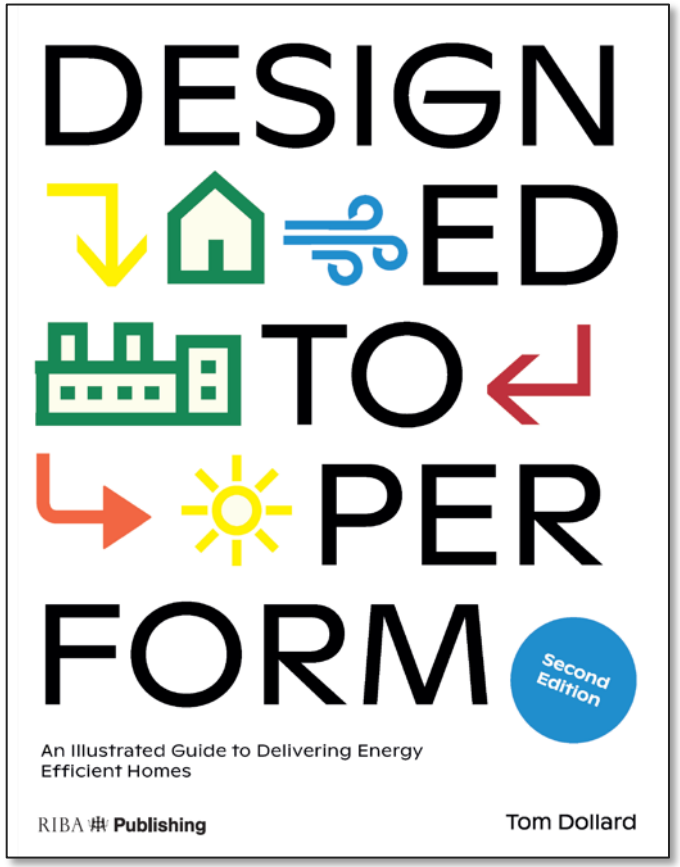
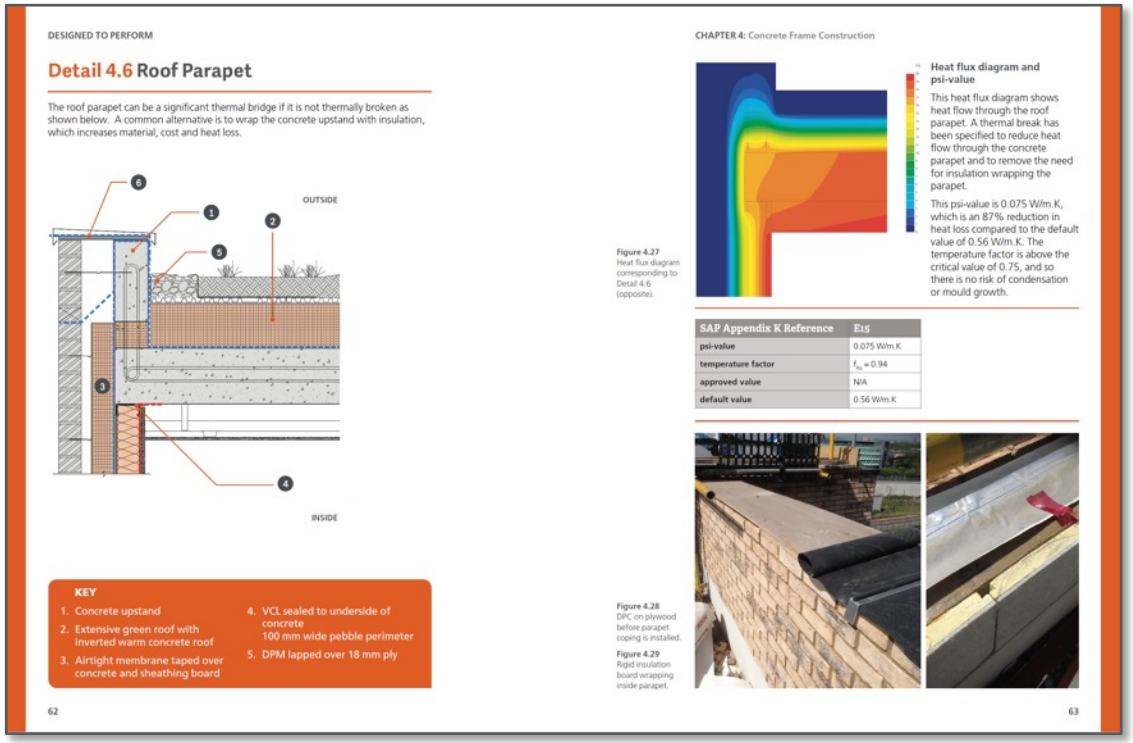


Tom Dollard

@dollardtom @ptearchitects

7 construction methods

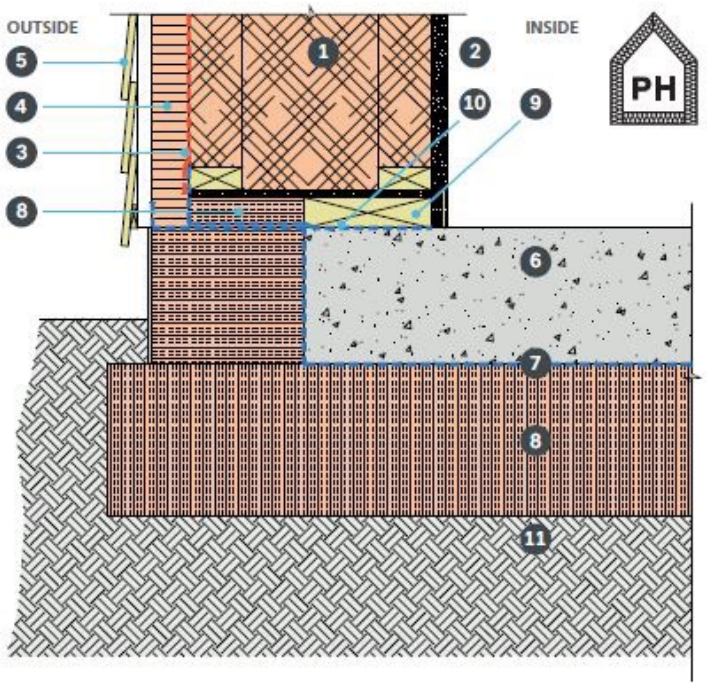




www.designedtoperform.co.uk

Detail 8.1 Ground floor/wall

A straw panel is fixed to the reinforced concrete insulated raft providing continuous insulation at the base junction. An airtight membrane should be lapped to the DPC, and the DPC taped to the concrete slab. Insulated raft detail is dependent on ground conditions.



KEY

1. Straw bale panel
2. Clay plaster
3. Airtight vapour open membrane
4. Wood fibre insulation
5. Timber cladding
6. Concrete slab
7. DPM
8. EPS insulation
9. Timber sole plate
10. DPC
11. Crushed aggregate

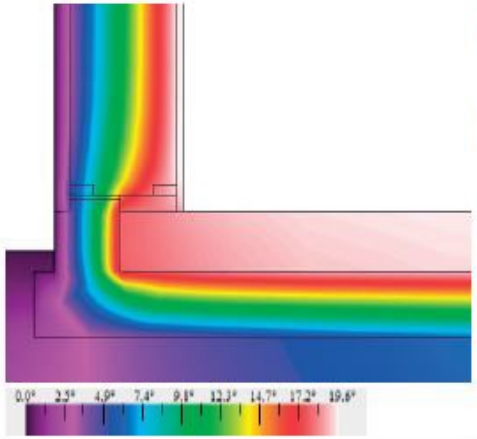


Figure 8.22
Ground-floor heat flux diagram corresponding to Detail 8.1 (opposite).

Heat flux diagram and psi-value

This heat flux diagram models the heat loss through the ground floor and external wall construction. The junction has a psi-value of 0.104 W/m. K, which is a 67% improvement compared to the default value of 0.32 W/m.K. The temperature factor is above the critical value of 0.75 and so there is no risk of condensation or mould growth.

SAP Appendix K Reference	E5
psi-value	0.104 W/m.K
temperature factor	$f_{Rsi} = 0.94$
approved value	0.16 W/m.K
default value	0.32 W/m.K

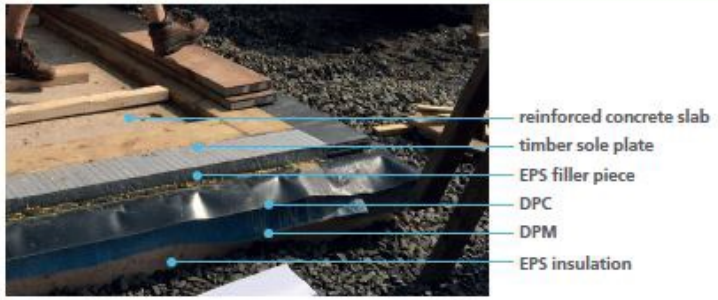


Figure 8.23
Perimeter sole plate fixed to the concrete slab and EPS filler on top of the edge insulation piece (top).

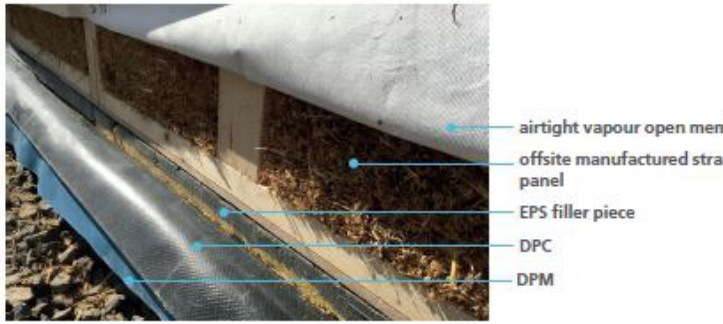


Figure 8.24
Straw bale panel installed with the airtight vapour open membrane ready to seal to the DPC (bottom)

Design for performance?

Designing for performance requires rigour in the specification and design process. It requires the project team to challenge typical assumptions and investigate the difficult details. It needs design teams to engage with the specialists at the right stages with an iterative modelling and design process that is followed to its conclusion.

This book has shown a number of common problems and performance issues when designing and constructing new homes. The details illustrated are an aid for designers to improve their own specific drawn information for new homes. They should help draw, write and test production information that is based on the realities of the building site to improve performance. In addition to making use of the good practice details in this book, designers need to challenge the way they currently work and enact the following:

1. Engage with suppliers, sub-contractors and site manager to ensure detailing is sympathetic to build process, systems and the as-built performance of materials.
2. Stop 'insulating by Autocad' which creates difficult or impossible operations for the site worker, leading to poor performance. Consider more robust methods and products that offer increased performance with easier installation processes.
3. Engage with the difficult detail, instead of just drawing the typical details that do not deal with the odd corner, junction or special case. These decisions can't be made on site, with contractors having to 'make it work', leading to poor performance.
4. Challenge the standard assumptions and use realistic values e.g. thermal conductivity of materials if wet and installed with realistic tolerance.
5. Engage with the construction stage and quality assurance on site. Designers should have an active role throughout the construction, assisting the contractor and client to improve quality of construction.
6. Engage with specialists at the right time to test the design and provide feedback e.g. overheating model at Stage 2 and thermal bridge calculations at Stage 4.

Programme

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