Alternative heating solutions

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Efficient low carbon heating systems

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THE DILEMNA

There are over 460,000 listed properties in the UK, most of which either use gas or oil central heating

These buildings suffer from mould and damp due to the warm air system and need to switch to a low carbon alternative

Heat pumps will not always suit as siting can be difficult and emitters need to be placed where space is difficult

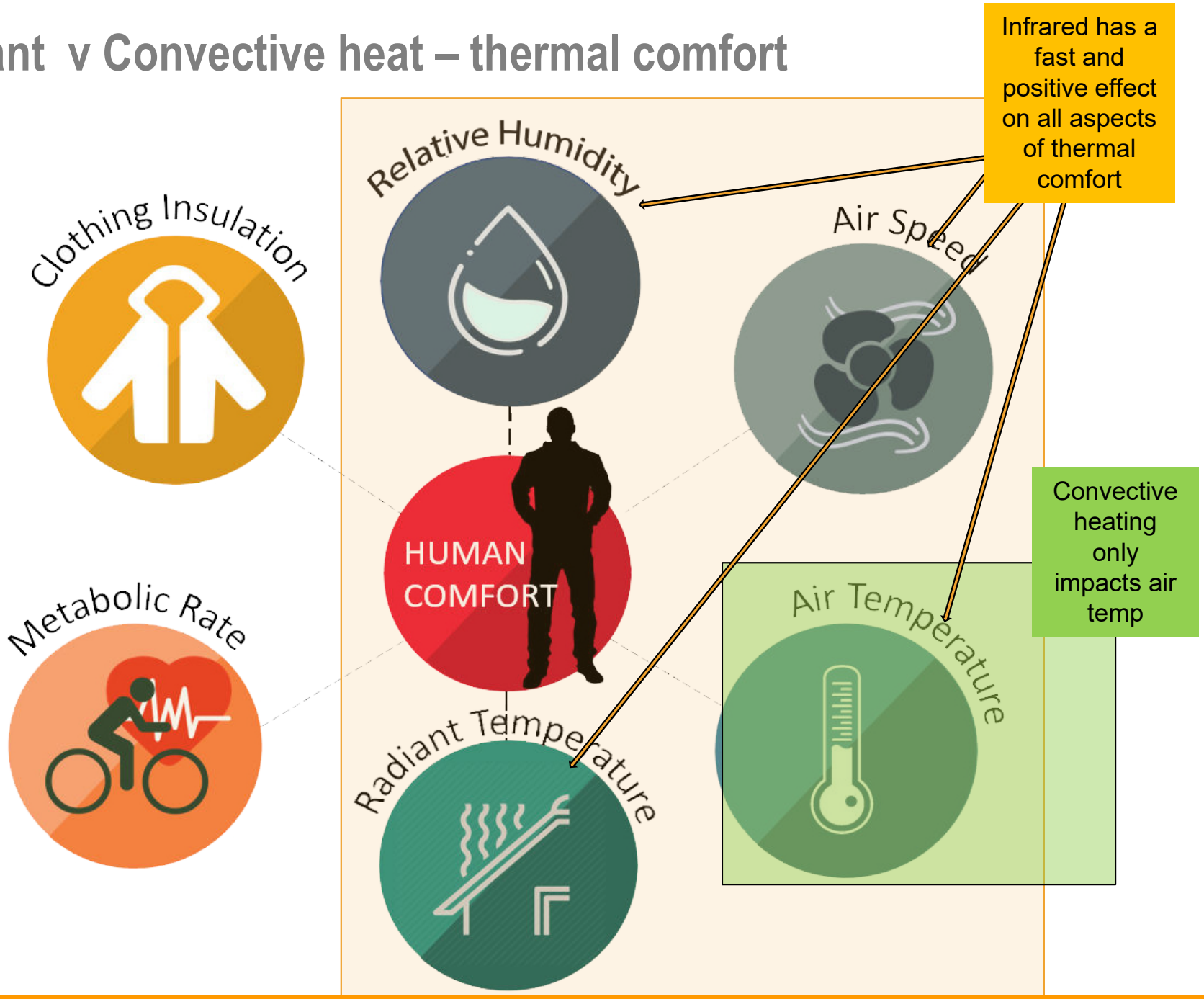
Current and proposed heating systems give little priority to occupant health and comfort nor to building protection

Older buildings may have protected floors and wall make up (wattle and daub) and may have restricted space for large radiators

Space for plant rooms may be problematic

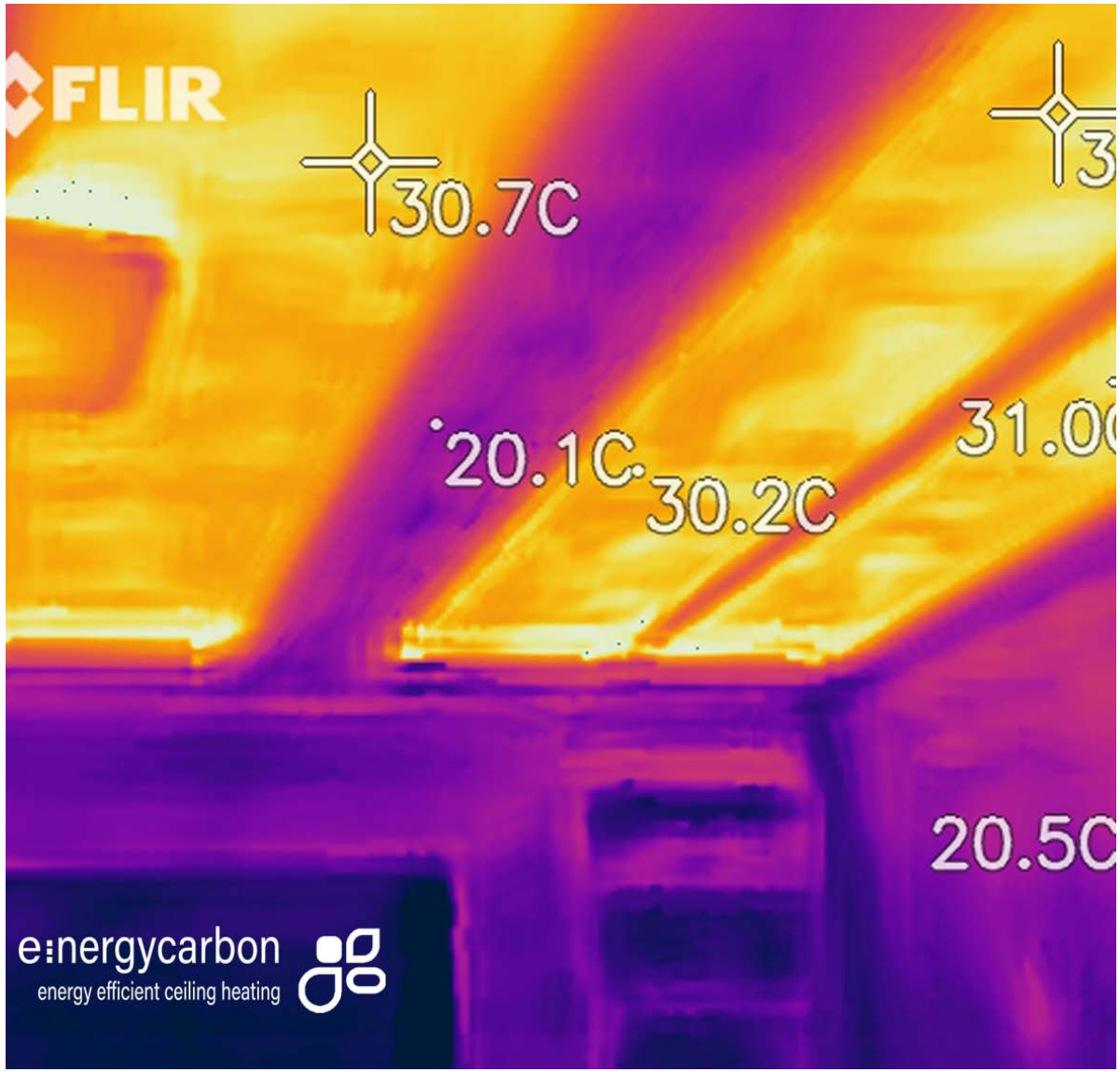
What is Far Infrared?

Radiant v Convective heat – thermal comfort



How do we reduce energy and costs?

- Uses the themal mass of the building & night time tariffs - like a storage radiator
- We cover around 40% of the ceiling, requiring less energy than other electrical systems (85% underfloor)
- Bypassing the air reduces energy use
- Range of energy outputs means we can precisely match the energy requirements for a building
- Utilising precise zoning, scheduling and occupancy sensors reduces energy used
- No maintenance costs
- No replacement costs for 50+ years
- Easy fit using using plasterer and electrician with minimal skill uplift.
- Reduction of damp and mould due to warm air circulation



What makes our product unique?

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- Invisible – no need for radiators or digging up floors
- No plant room needed
- Low surface temperature –no plaster damage
- Recycled - low embodied carbon
- 36v AC using our intelligent transformer
- Ceiling, floor or wall installation
- Cut holes for lighting/fixings. Safe to screw through
- Zero maintenance
- 50+ year design life
- 3 minute warm up time
- 8 minutes to start warming floors from ceiling
- Can heat a room to up to 28
- Reduction in moisture and humidity levels°

Product range

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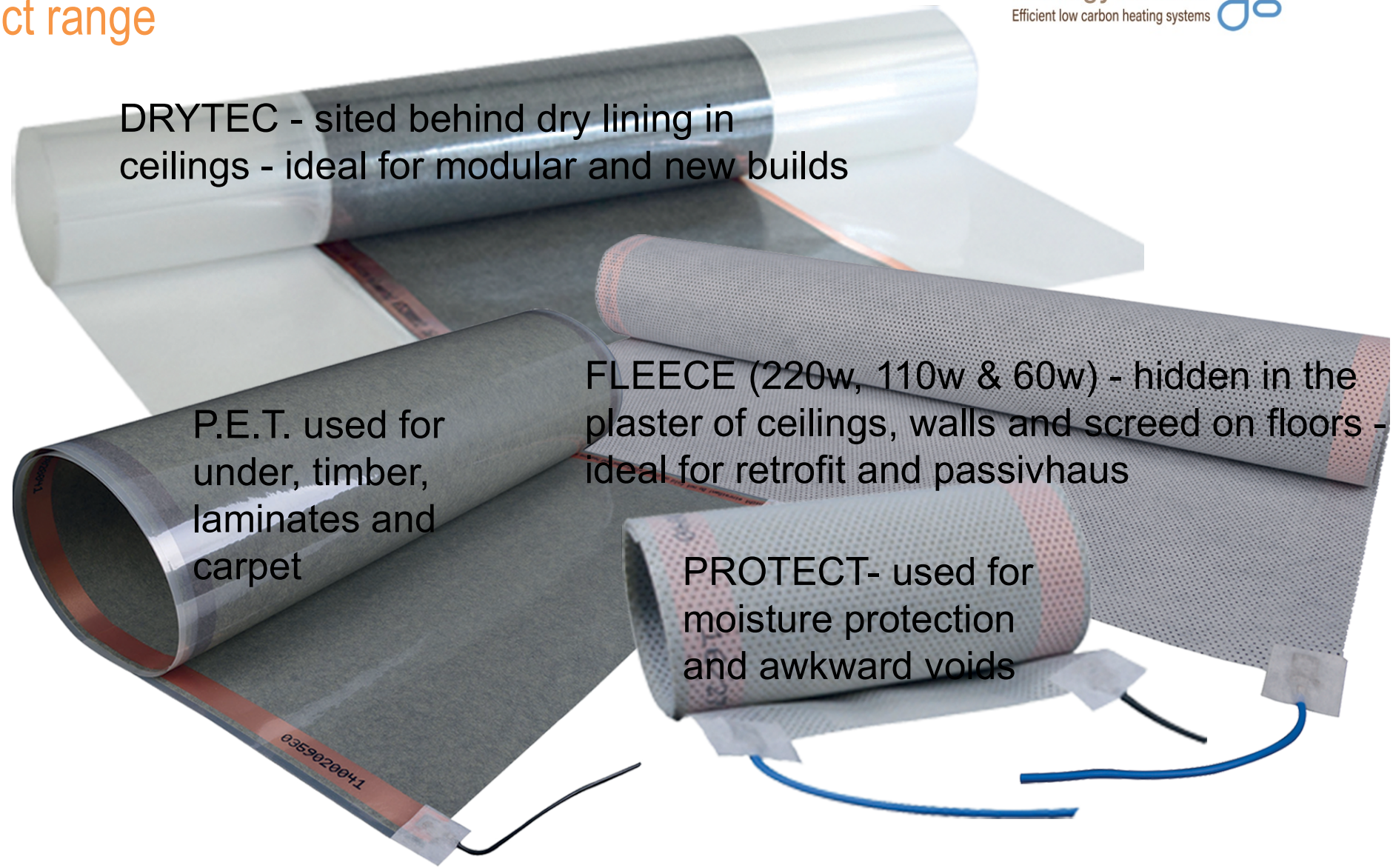

Perfect, easy fit solutions to suit all low energy heating requirements in most property types

The 36v Intelligent transformer (psu)

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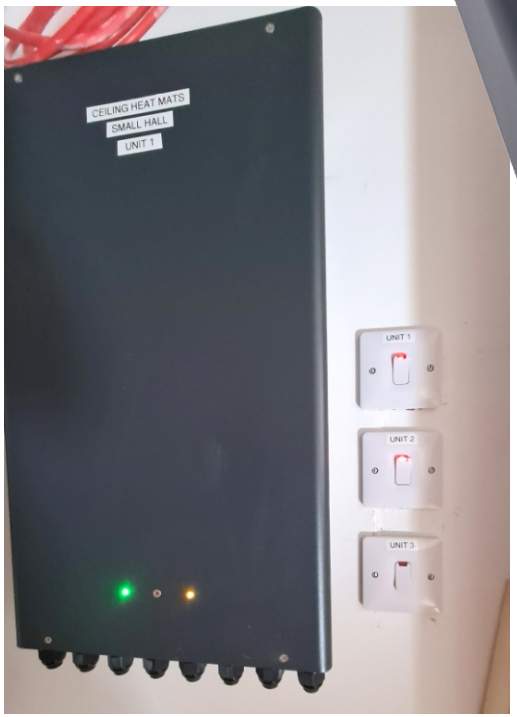
Our transformers range from the 400w unit running 1 zone through to our 3.2kw psu running up to 10 zones. Each unit has external signalling indicating ‘live’, ‘heat call’ and ‘fault’ as well as blade fusing and easy push connectors.

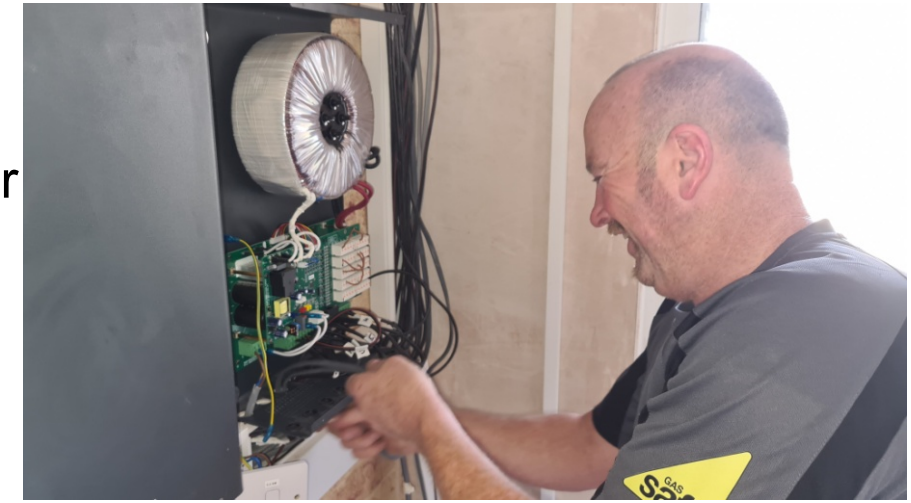


Installation

Once bonded into the surface, all products run on the same 36v AC system utilising a relevant transformer

FLEECE

36v transformer



Approved installer network

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Recognising the need for trained installers, Energy Carbon are working alongside prestigious colleges around the UK and have developed an NOCN accredited qualification for our approved installers.

In addition, we have a large library of training videos and also offer on-site training.

COLLEGE OF NORTH WEST LONDON

GRŴP COLEGAU NPTC GROUP OF COLLEGES

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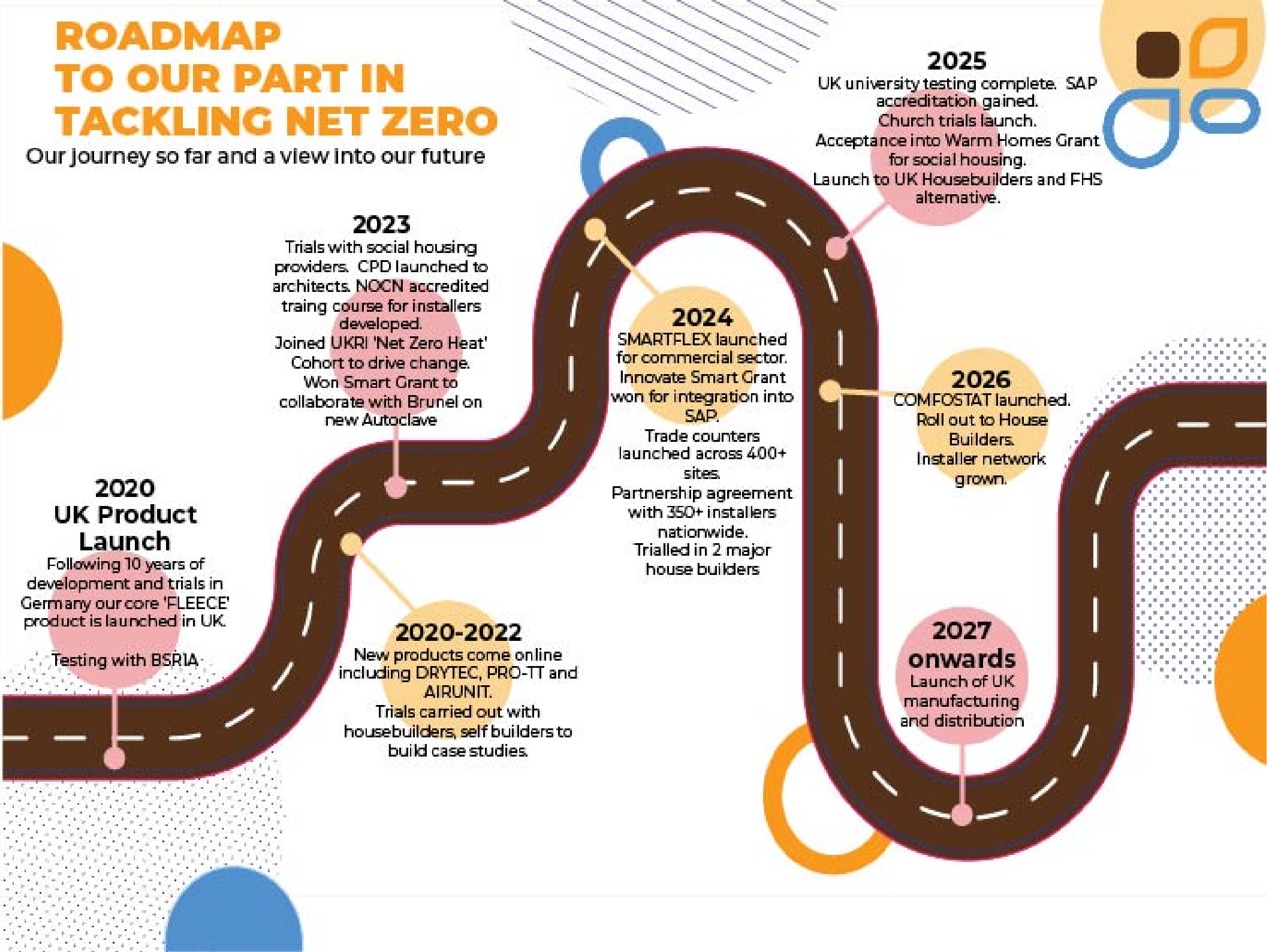
ROADMAP TO OUR PART IN TACKLING NET ZERO

Our journey so far and a view into our future



Layouts

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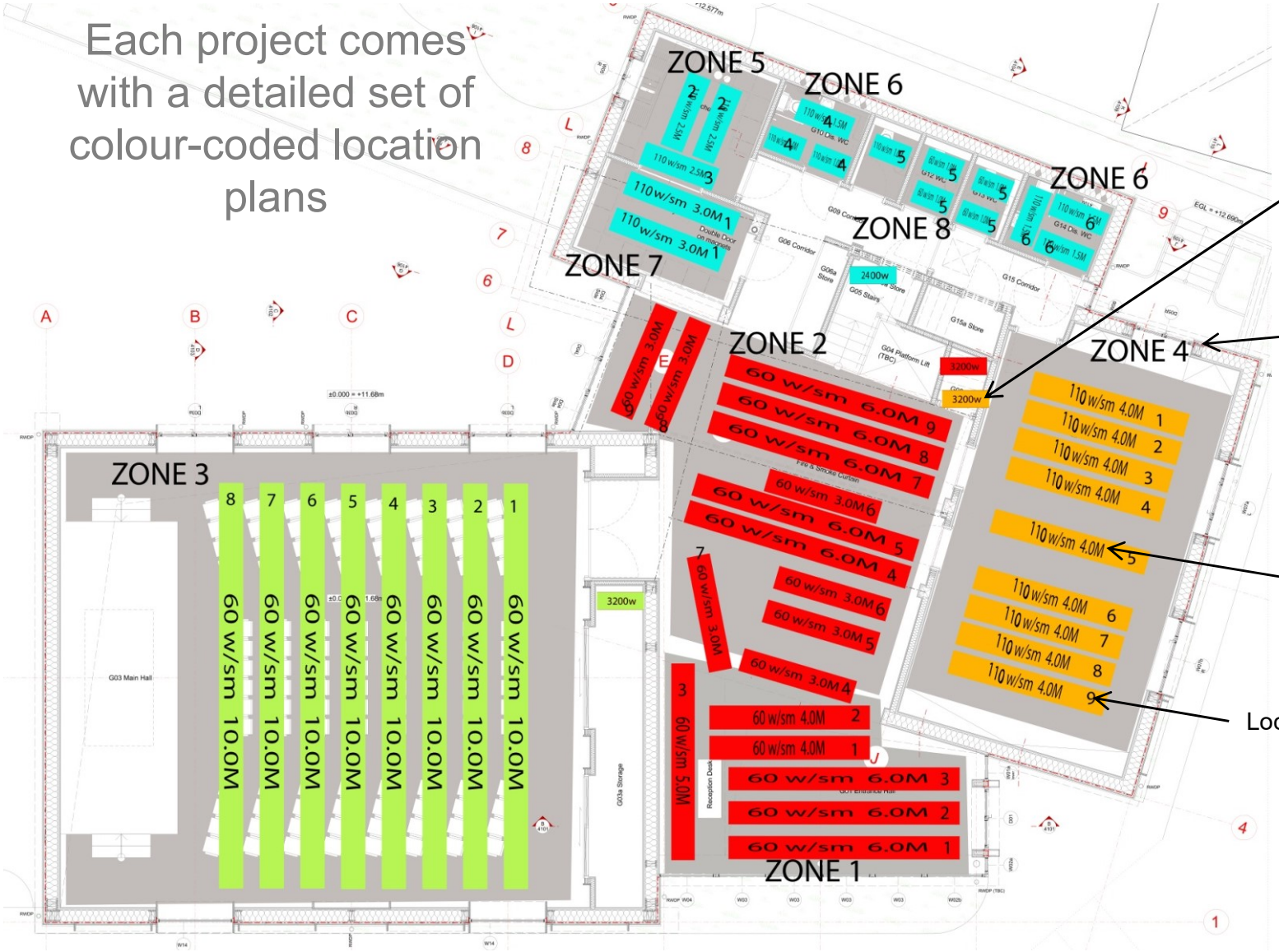
Each project comes with a detailed set of colour-coded location plans



Case Studies

- **Client** – Bron Afon Housing Association
- **Project type** – 1960's whole house deep retrofit
- **Heat loss** – 60wm2
- **Size** – 83m2
- **Total heat load** - 5.3 kws **Cost -** £5,900
- **Product used** - FLEECE. 110w placed in ceilings
- **Control system** – Energy Carbon
- **Brief**:

3 Bedroom Void property owned by Welsh HA. EWI/IWI throughout, double glazed with trickle vents 4kw PV array, 10kwh battery and inverter, HEATA hot water

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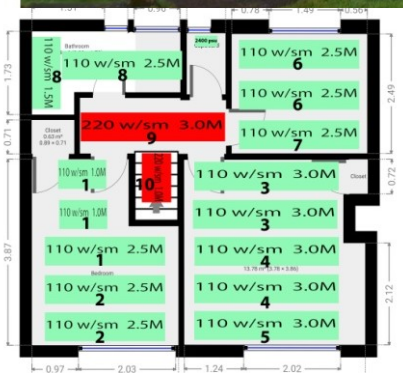

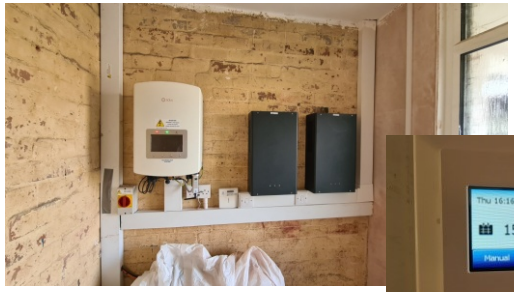

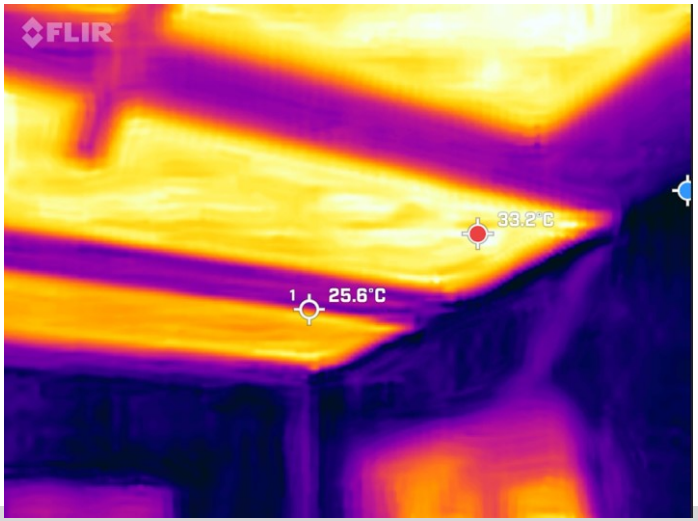

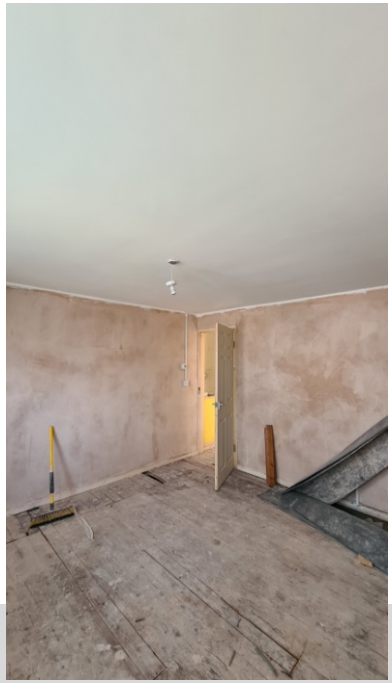

Case Studies

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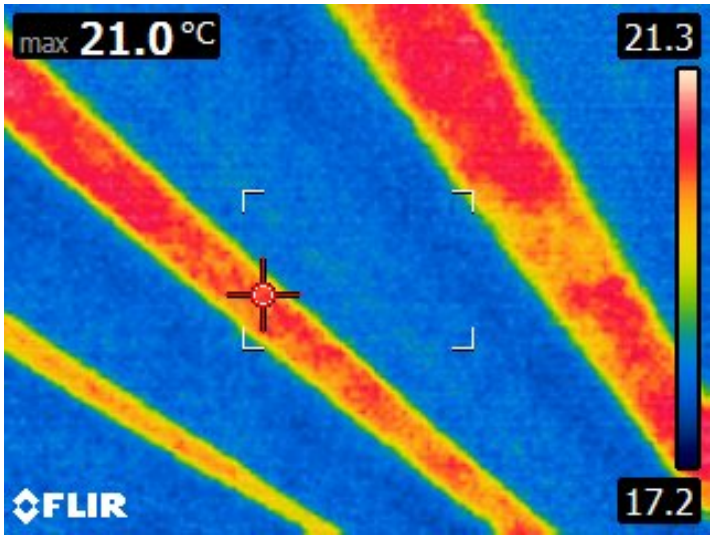
- **Client** – Kingston Cottage

- **Project type** – 19th century hillside farm workers cottage – full restoration.
- **Heat loss** – 45wm2
- **Size** – 204m2
- **Total heat load** - 9.1kws
- **Cost -** £13,000
- **Product used** - FLEECE. 220w & placed into ceilings and FLEECE COMFORT
- between beams
  Control system – Energy Carbon
- **Brief**: Full refurb including siting of ceiling heating between revealed beams



Case Studies

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- **Client** – Charlie Luxton Architects – The Moors
- **Project type** – 1960's whole house deep retrofit
- **Heat loss** – 24wm2
- **Size** – 430m2
- **Total heat load** - 18.2 kws
- **Cost -** £28,000
- **Product used** - FLEECE. 110w & 60w, FLEECE PROTECT placed in ceilings. FLEECE 110wm2 in floor
- **Control system** – Energy Carbon
- **Brief**:
  5 bedroom renovation of existing farm house circa 18th century to modern living standards.

Case Studies

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- **Client** – Warksburn Church
- **Project type** – 1875 Presbyterian Church deep retrofit to Passive Standard
- **Heat loss** – 8wm2
- **Size** – 174m2
- **Total heat load** - 4.8kws
- **Cost -** £7,500
- **Product used** - FLEECE. 110w & 60w, placed in ceilings.
  FLEECE 110wm2 in floor
- **Control system** – Energy Carbon
- **Brief**:
  Abandoned church converted for use as Airbnb – featured on TV.

Case Studies

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- **Client** – Pastor Hus
- **Project type** – 1535, half timbered house renovation.
- **Heat loss** – 120wm2
- **Size** – 50m2
- **Total heat load** - 6.0kws
- **Cost -** £11,000
- **Product used** - FLEECE. 110w & placed in boards screwed to walls and ceilings
- And plastered with clay plaster.

  Control system – Energy Carbon
- **Brief**:

  The oldest 'one room, Pastor House' in the region, relocated and repurposed as a museum and vistor centre

Case Studies

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- **Client** – St. Nicolai Winter Church- Bavaria

- **Project type** – 1438, restored to remove 50 year old boiler.
- **Heat loss** – 120wm2
- **Size** – 366m2
- **Total heat load** - 2.7kws
- **Cost -** £7000
- **Product used** - FLEECE. 110w & placed under seating

  Control system – Energy Carbon
- **Brief**:

  Winter church originally built in 1438, heating upgraded to provide building protection and fast comfort heating during cold periods

Case Studies

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- **Client** – Zweibrucker Castle, Germany

- **Project type** – 18th century stair tower.
- **Heat loss** – ?
- **Size** – 21m2
- **Total heat load** - n/k
- **Cost -** £nk
- **Product used** - FLEECE. 220w & placed into wall and triggered with dew point sensors
  Control system – Energy Carbon
- **Brief**: In the unheated stair tower, the warm and humid air from the apartments condensed on the cold walls and led to a mould problem

Case Studies

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- **Client** – Cranleigh Cottage Hospital

- **Project type** – 15th Century hospital Monopolies Commission funded
- **Heat loss** – Currently estimated 170wm2 – target 100wm2
- **Size** – 133m2
- **Total heat load** - 13kw's background / 6kws operational
- **Cost –** Ongoing – projected £19k
- **Product used** – FLEECE 110w fitted under floor for background and protection/ FLEECE. 220w & placed into walls and ceilings triggered by presence sensors
  Control system – Energy Carbon/KNX
- **Brief**: Englands first cottage hospital now abandonded. No heating.
- Protect building envelope whilst empty. Fast reaction warm up when occupied

GROUND PROPOSED

FIRST PROPOSED

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FIRST PROPOSED

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Thank you for reading this presentation.

For further information please contact us below

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