

# High Performance Homes: Overview of GHA monitoring programme

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# GHA Monitoring work - Update



**Stage 1** completed—support from Energy Saving Trust

- GHA technical monitoring group
- GHA protocol
- Costed monitoring plans for each developer

**Stage 2 – May 2009 - 2011**

Proposal to Energy Saving Trust and DCLG for match funding support for monitoring GHA portfolio 2009-2011



# GHA Monitoring – The Portfolio



- 400 units
- Range of house types
- Urban ,semi rural and rural
- Range of building systems
- Range of standards – EcoHomes to Passivhaus
- Range of technologies – including gsh, district heating



**Fired Clay Solid Walls**

# Lincoln Grove, Bladon, Oxon



# The Old Apple Store, Stawell, Somerset: CSH 5





# One Brighton, Sussex

one brighton

one planet | one address



# GHA Monitoring – The Protocol



## 3 levels

1) Basic: metered data - applies to >50%.

2) Good practice: 10% of build programme

3) Best practice: >10% of build programme  
+ additional data collection

# GHA Monitoring – The Protocol



3 sections

**Fabric** – learning for the developer

**Services** – improving efficiencies,  
reducing unwanted gains

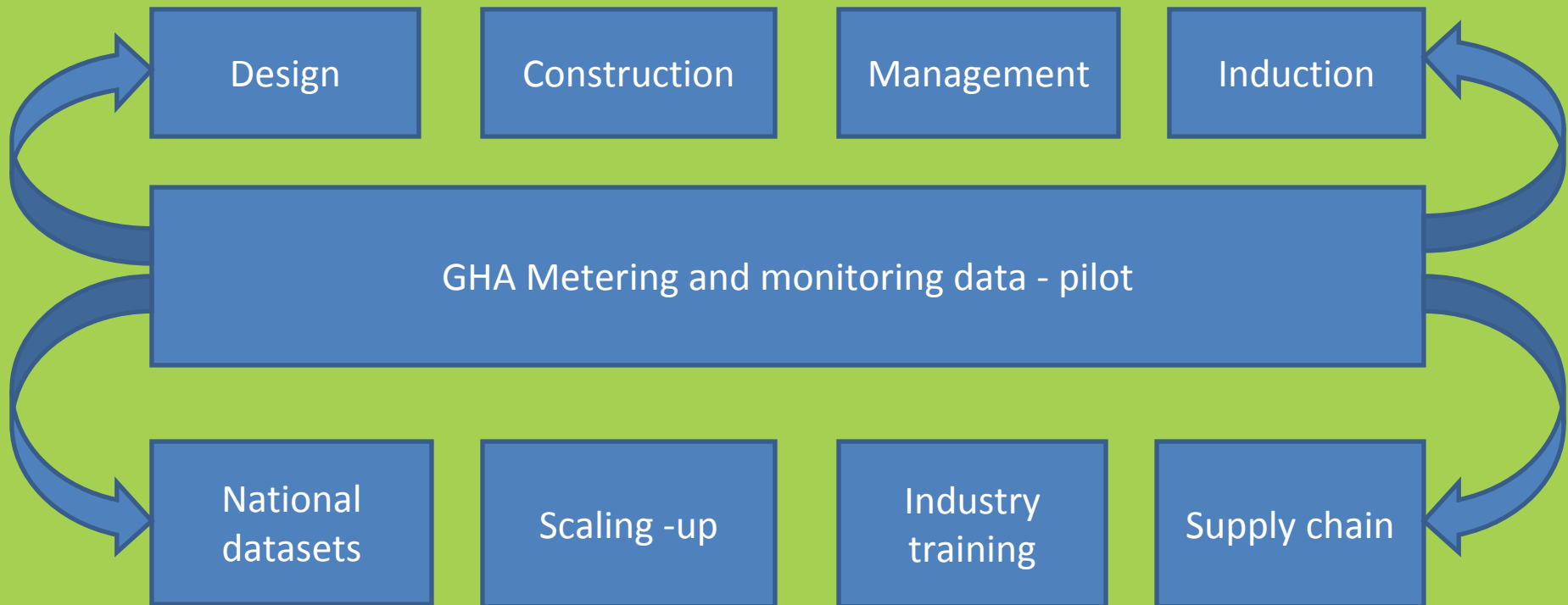
**Resident behaviour** – explaining anomalies and  
the understanding the experience of living  
in low carbon homes

# GHA Monitoring – The Protocol



Fabric	Services	Resident behaviour
Co-heating	Delivered energy, water,	Induction
Blower testing	LZC	Questionnaires
Thermographic	temperature, humidity, air quality – CO2	Interviews

# GHA – Stage 2



# Overview of Stage 2

1. To assist GHA developers in understanding how their buildings and the services within it are performing.
2. Our knowledge and regulation have meant that building envelope knowledge is gradually improving but the services are less well understood and an significant cause of energy excess
3. Where anomalies arise then conduct more detailed testing.
4. Data will inform government and agencies. Addressing the paucity of datasets.
5. To inform the process towards national datasets

# Overview of Stage 2

## Year 1 - Broad

1. To gather detailed utilities metered data from 50% of the portfolio – approx 200 units. Check against design predictions
2. To conduct a co – heating test on at least one unit on each development.

## Year 2 - Detailed

1. Anomalies – detailed intensive monitoring including log books and questionnaires – expected 25%
2. Forensic testing – to include interviews – expected 5-10%

# Technology Strategy Board

## Monitoring of demonstrator buildings

*will enable companies constructing demonstrator buildings to apply for funding to monitor building performance, enabling comparison with predicted performance.*

The Technology Strategy Board is set to invest £10 million in the competition.

- Call for papers delayed: August/September 2009
- GHA has had an early meeting: positive response

# What else is going on?

Ofgem - Energy Demand research project

- Billing and info – 12,000 units
- Clip on visual displays – 8,500 units
- Energy efficiency advice
- Smart meters with a variety of displays – 15,000
- Consumption
- Little or no change to consumption totals

Architype

Carbonbuzz

Lewisham - library

# GHA – lifestyle changes



**This programme is not about encouraging lifestyle change.**

**Do we have all the tools we need to do this?**

**Can we make energy visible?**

**Are we communicating global warming?**

**•Google power meter – [www.google.org/powermeter](http://www.google.org/powermeter)**

**•[www.thecarbonaccount.com](http://www.thecarbonaccount.com)**

**– easy way of taking meter readings**

# GHA – communicating CO<sub>2</sub>

- One balloon of CO<sub>2</sub> = 5g
- Average person responsible for 5,500 balloons/day
- Assuming 1kWh electricity = 500g = 100 balloons
- So turning off one low energy light for one hour = 1 balloon
- So 1m of dead leg = 60w/m = 6 balloons
- 1 km in average car = 160g = 32 balloons

# GHA – Next events

- Health and well being – 17/18 June 2009
- Site visits – Sept 2009
- Our thanks to the Energy Saving Trust and DCLG
- Thanks also to the exhibitors
- Please join us downstairs for a glass of wine
- Please consider membership of the GHA

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