

EVALOC International conference on Energy & Communities

Researching & Evaluating low carbon communities

Derwenthorpe and the road to 2016

- a carbon love story in 4 parts

Nigel Ingram 12 September 2012

Part 1



1902 -2005

New Earswick -

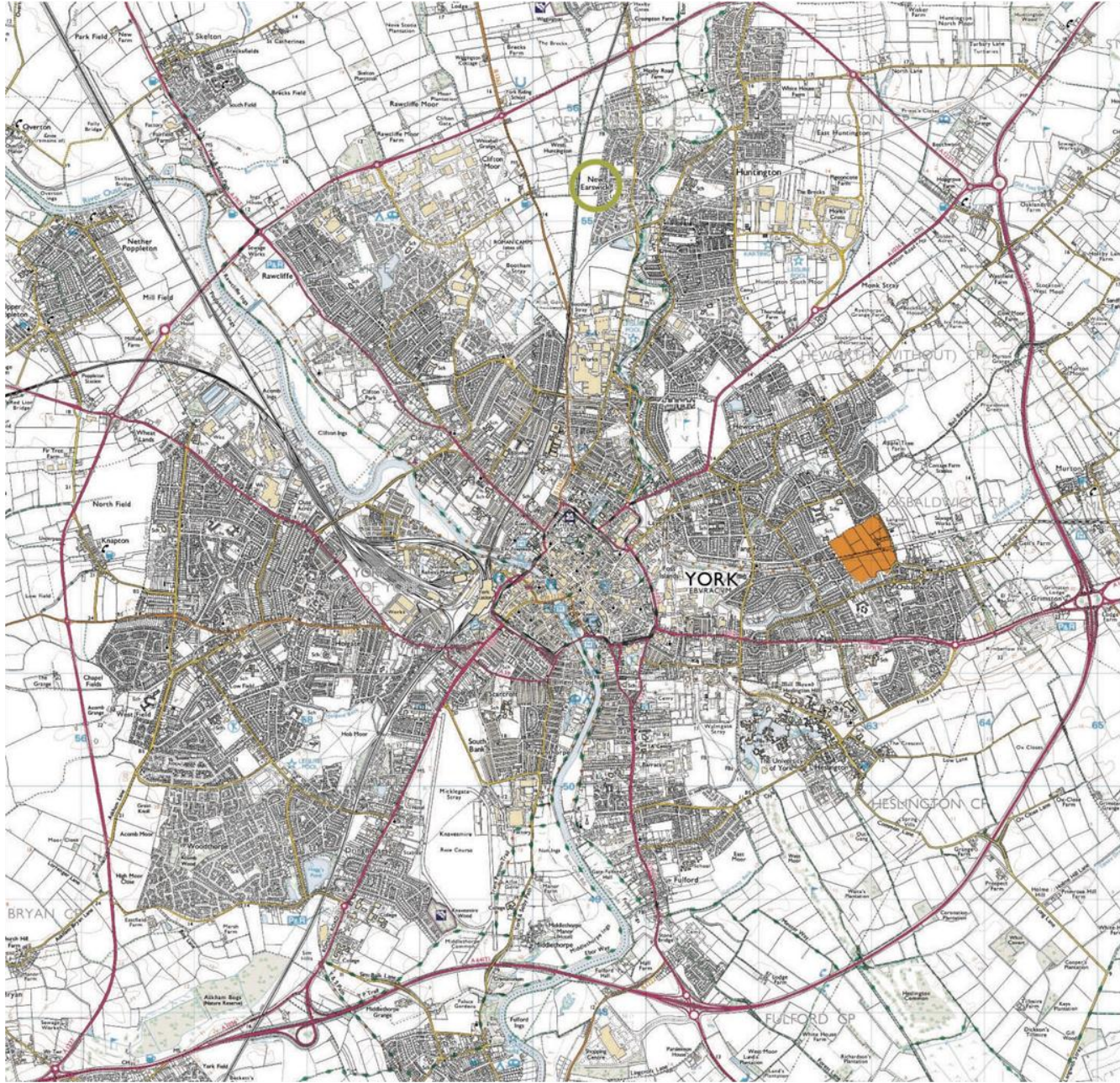
**An Economically
and Socially
Sustainable
(resilient &
durable) Mixed
Income (& tenure)
Community**

**– but a very large
Carbon footprint ?**



Elm Tree Mews – New Earswick : 2005-2008





Derwenthorpe: a 21st Century Urban Extension 1999-2008



Part 2

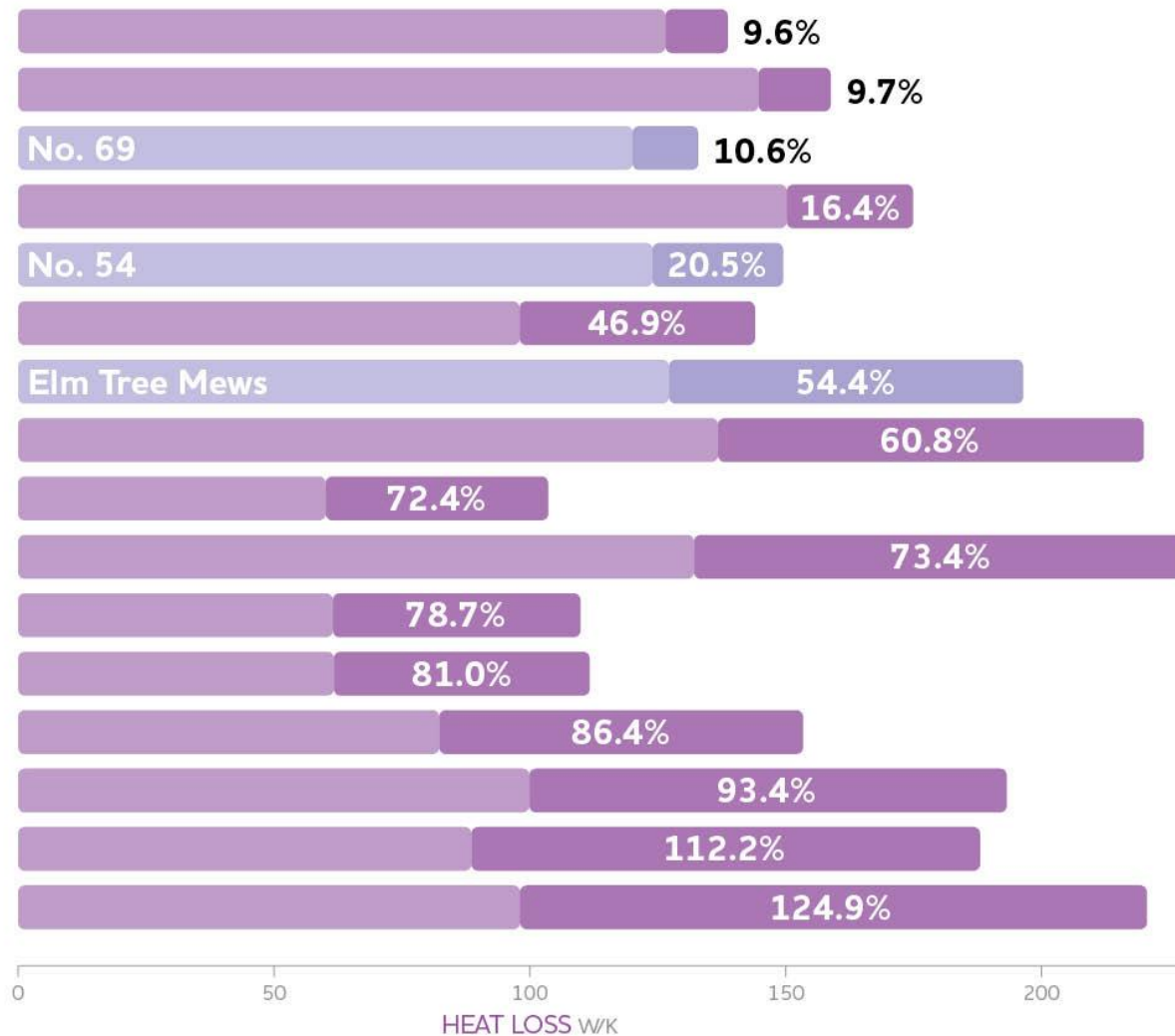
Derwenthorpe: a 21st Century Urban Extension - Temple Ave Project 2008-2009



TEMPLE AVENUE PROJECT THIRD DRAFT COPY 10.02.2012

ENVIRONMENTALLY SUSTAINABLE HOMES
FOR THE 21ST CENTURY





Increase in 'as-built' heat losses (shown by the darker colours) as a percentage of predicted values

This diagram is adapted from Leeds Met's technical report (Miles-Shenton et al. 2012, p. 19). The sample of sixteen dwellings is measured using Leeds Met's coheating test method. All of the houses have a greater measured heat loss than predicted. Numbers 69 and 54 have the third and fifth smallest increases out of the sixteen dwellings. The smallest increases were recorded for two timber-frame dwellings built as part of a development of eight houses to 2006 standards. The sample comprises a mix of house types and sizes and direct comparisons between the absolute heat losses should not be attempted.

Part L 2010 – where to start:

An introduction for house builders and designers



Part 3

Derwenthorpe: a 21st Century Urban Extension

2008-2012

Type A Prototypes

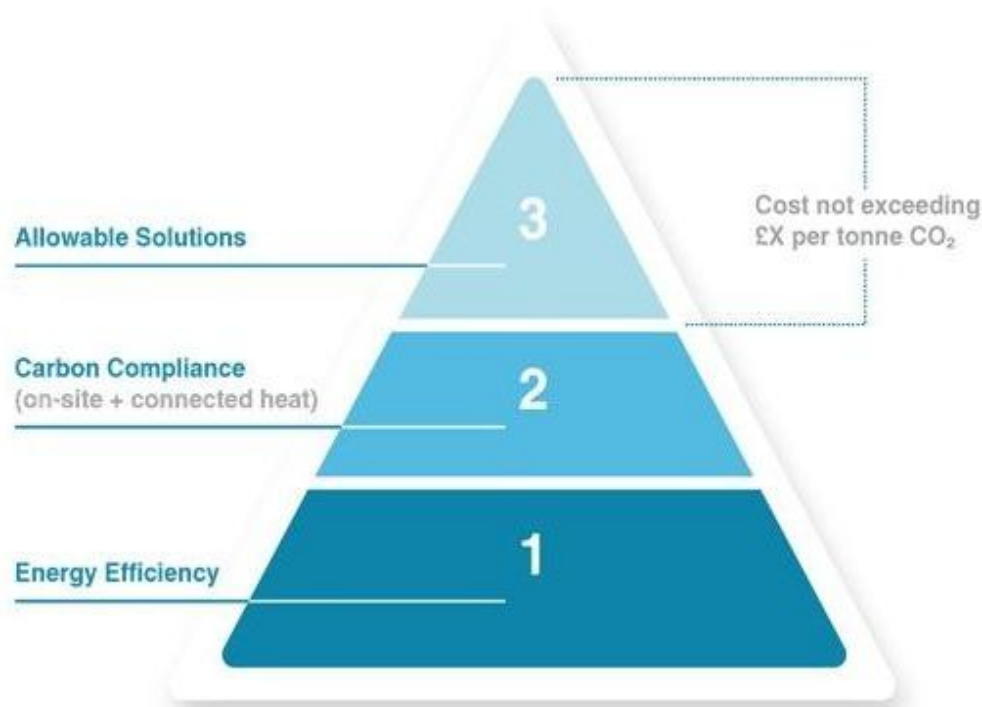


On site provision



Derwenthorpe opportunities

What does it offer?



Development programme through to 2016
No commitment to heating solutions for phase 3 & 4
Surrounding existing communities

Biomass district heating- phase 1 & 2
Renewables potential to achieve Code 5

Design vs. as built
Hybrid construction techniques
Code 4 minimum requirement

The JRHT Research Approach

“The Test of the Tests”

Research Testing

As pioneered by LMU, 2 to 4 week testing with full forensic analysis.

Reduced (Industry) Testing

Testing reduced to 5 to 7 days, with reduced forensic analysis.

Is there a correlation between the results?

INVESTIGATIONS

DERWENTHORPE: DESIGN, BEHAVIOUR AND INCLUSION

Start date: March 2012

This programme will explore three themes:

- **Theme 1 – Environmental performance**

Take our next step in researching the performance gap between environmental design and use, and find practical solutions to support the delivery of zero carbon homes.

- **Theme 2 – Environmental behaviours**

Develop our understanding of how we can encourage and support more sustainable lifestyles by evaluating which behaviour change interventions are most effective in practice.

- **Theme 3 – Digital inclusion and social media**

Explore how the barriers to digital inclusion in the area can be addressed and the role social media plays in supporting community development.

What do we want to achieve?

Environmental performance

- shaping of the broader zero carbon agenda to 2016;
- an industry standard performance test for household carbon emissions.

Environmental behaviours

- ways to encourage people to lead more environmentally sustainable lifestyles;
- practical solutions replicable in other communities.

Digital inclusion and social media

- a better understanding of the impact of ICT literacy and digital exclusion on poverty and social exclusion;
- a digital inclusion and social media strategy that contributes to achieving social cohesion and integration with existing communities;
- increased levels of ICT literacy and local digital capacity.

Part 4

Derwenthorpe: a 21st Century Urban Extension 2016



National Research Activity

Life beyond Derwenthorpe

- Zero Carbon Hub
 - Lead responsibility for delivering 2016 zero carbon homes
 - *Mechanical Ventilation with heat recovery in New Homes* (with the NHBC Foundation)
- Technology Strategy Board
 - Final round of domestic Building Performance Evaluation
- Good Homes Alliance
 - Studies on MVHR and Indoor Air Quality
- HCA
 - ERDF funding bid for domestic BIM project
- NHBC Foundation
 - *Todays attitudes to low and zero carbon homes*
- BRE , Leeds Met University



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