



*University of*  
**HUDDERSFIELD**  
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## **A FAIR, JUST AND SAFE TRANSITION**

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Overview of the decarbonisation challenge within housing

02

The scale of the challenge

03

The importance of foregrounding people and vulnerability

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OVERVIEW

- The UK government estimates that heating homes and buildings accounts for 23% of the UK's greenhouse gas emissions (17% from residential homes, 4% from commercial properties and 2% from public buildings)
- Cutting these emissions will require us to use less energy and to switch to clean energy:
  - Fix leaky homes
  - Switch to low-carbon heating sources (without causing harm or hardship)
  - Change behaviour (carefully consider which, and whose, behaviours need to change)
  - Build efficient new homes now
- Reaching net zero by 2050 is the single greatest challenge of our time. For housing, in the UK the proposals are to:
  - Accelerate the roll-out of energy efficiency measures (insulation)
  - Target to end the sale of gas boilers by 2035
  - Bring down costs of low-carbon heating sources like heat pumps
  - Bring as many homes as possible to EPC Band C or higher by 2035.
  - Upgrade all fuel-poor homes to energy performance certificate (EPC) Band C or higher by 2030

- The scale of the challenge is huge.
  - There are 25 million dwellings in England alone, of which 58%, or 14.5 million currently have an Energy Performance Certificate of D or below.
  - 1 in 10 are already living in fuel poverty
  - In recent years, energy prices have doubled – the situation could get worse still with increasing global insecurity
- National Energy Action – Worst first, fabric first!
- Ensuring the fabric of housing is as efficient as possible is a critical foundation. It's not shiny or sexy but it's insulation, insulation, insulation
  - To meet the net zero 2050 target we need to retrofit homes at a rate of 20,000 per week. We are currently achieving 20,000 per year
- Low-carbon tech?
  - UK Gov aims to replace 1.7m gas boilers a year; in 2021, just 67,000 heat pumps were installed
  - Electrification of heat not wholly the solution. The energy crisis and the cost to households.
  - Heat pumps without insulation could raise bills and demand (the CCC estimate that each home needs £3,000 of insulation and draught proofing to make installing a heat pump energy efficient).
- New homes
  - 212k new homes built in 2022/23
  - Homes still being built to inadequate standards - Future Homes Standard not due to come into force until 2025

- **Socio-technical** – what we already know about tech and what we still need to learn about people
- **Health** – the impacts of doing nothing and the opportunities of acting now
- **Behavioural** – which behaviours, whose behaviours

- The technology exists, we know how it works, it is getting better
- We can design, build and install highly efficient homes and energy systems
- Psychologists and social scientists know how people engage with the material world
- These need to be integrated better
- Angela's story...

- There are 3.6m people in the UK with a medical condition or disability in fuel poverty
- Last year 4,000 people died from living in a cold home
- Fuel poverty is directly linked to poor mental health, respiratory illness, cardiovascular disease.
- The cost of poor housing to the NHS is estimated to be around £1.4billion (wider societal costs £18.6billion – lost education and employment opportunities)
  - Health care having to discharge people back to homes that made them sick
  - Warmth on prescription
  - Virtual wards

- Behavioural change as a solution – who should we be targeting?
- Work is calling for a stronger focus on high consumers
- Reality is...the poorest/most vulnerable have for a long time not been using enough energy
- **Changing the behaviour of the behaviour changers** – policy makers, marketeers, public servants



- The UK Gov Net Zero Strategy Review
- Net Zero is referred to as an ‘historic opportunity’
- What are the issues?
  - Recent revisions on policy and targets
  - lack of policy clarity
  - insufficient capital, infrastructure and planning risks
  - skills shortages!

- Decarbonisation should focus **all** our minds
- It is critical that decarbonisation does not just focus on technology. **It is fundamentally a people issue**
- Energy justice and decarbonisation need to be **understood together**
- There are huge opportunities to **rethink and redesign the system**
- We cannot afford to create **new inequalities**
- Warm, safe and affordable housing **should be a right**

- Healthy Housing Initiative (HHI)...
- Together Housing – reducing the refusals for retrofit across 30,000 homes
- East Marsh United – developing an ambitious community-led housing organisation
- Working closely with the West Yorkshire ICS and Housing Partnership
- Briefings, reports and a podcast series
- <https://healthy-housing.uk/>



# The SALFORD low-energy house:

## Learning from our past

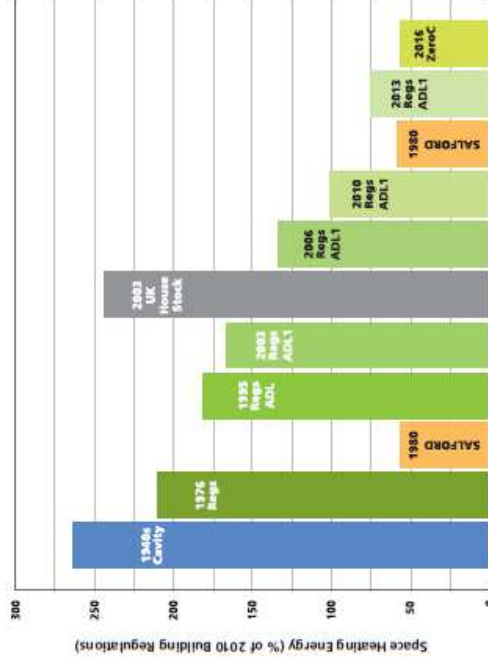


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Dr Maria E Burke  
Gareth Morris  
Professor Peter J Webster

Funded by the  
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City of Salford 2010

“The potential national energy savings that would result from an adoption of the SALFORD, or an equivalent efficient design, are immense. Conversely, failure to build to the SALFORD standard will impose a massive unnecessary burden on national energy resources that will be carried forward well into the next century.”

“The SALFORD low-energy house”  
Energy Efficiency Office, Report No. ED 179/59, 1987



Space heating energy required for UK housing 1976-2016 relative to 2010 Regulations

In the UK the Domestic sector uses nearly 20% of national energy for Space Heating. The SALFORD houses, designed in 1976 for Salford City Council, and extensively monitored in 1980, consume about 25% of that of the general UK housing stock, and less than 60% of current, 2010, Building Regulations.

Thirty years on this survey shows that the SALFORD design is still leading and is one of very few that will be able economically to meet, in both urban and rural locations, the near-zero Carbon ‘Code for Sustainable Homes’ that is to become mandatory in 2016.

**THANK YOU FOR  
LISTENING**

**ANY QUESTIONS?**

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