DEMAND

DYNAMICS OF ENERGY, MOBILITY AND DEMAND

IF THE WALLS COULD TALK
CENTRAL HEATING COMES TO STEVENAGE

ESRC FESTIVAL OF SOCIAL SCIENCE

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Design by Janett Adler.

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This booklet gives a taste of the questions, images and ideas explored in Adapting Infrastructures for a Lower Carbon Society, a research project within the DEMAND Centre (Dynamics of Energy, Mobility and Demand) at Lancaster University, funded by the Research Councils UK Energy programme. The aim of the project was to understand how household energy demand has changed since the 1950s. We focused on different aspects: How have systems of home heating changed since 1950? How has this affected the way homes are used and lived in? How and why have daily and weekly routines changed over time? Are some routines and habits more important for energy use than others? How have designers, architects and planners influenced homes and daily life, and how can past experiences of planning inform adaptation in the future?

We investigated these questions by using archives and oral histories as a means of studying change from 1950-2000 in Stevenage New Town and Stocksbridge. This booklet presents findings from the Stevenage research.

CENTRAL HEATING COMES TO STEVENAGE

In 2013, heating UK homes accounted for 23% of national energy demand. Since the switch from town gas to North Sea Gas in the 1970s, central heating has become the predominant source of home heating in the UK. Ninety-five per cent of UK homes are heated by a boiler and 80% are connected to the gas grid. As a country we spend £32 billion on (domestic and non-domestic) heating per year, and heat accounts for a third of our greenhouse gas emissions. Delivering low carbon heat across the UK by 2050 is a policy challenge (DECC, The Future of Heating, 2013).

The Government currently has two proposals for decarbonising domestic heat. One is to use heat networks (sometimes called district heating systems) much more extensively. The other is to promote the adoption and use of heat pumps. Gas central heating might soon become a thing of the past, even though it has only just arrived.

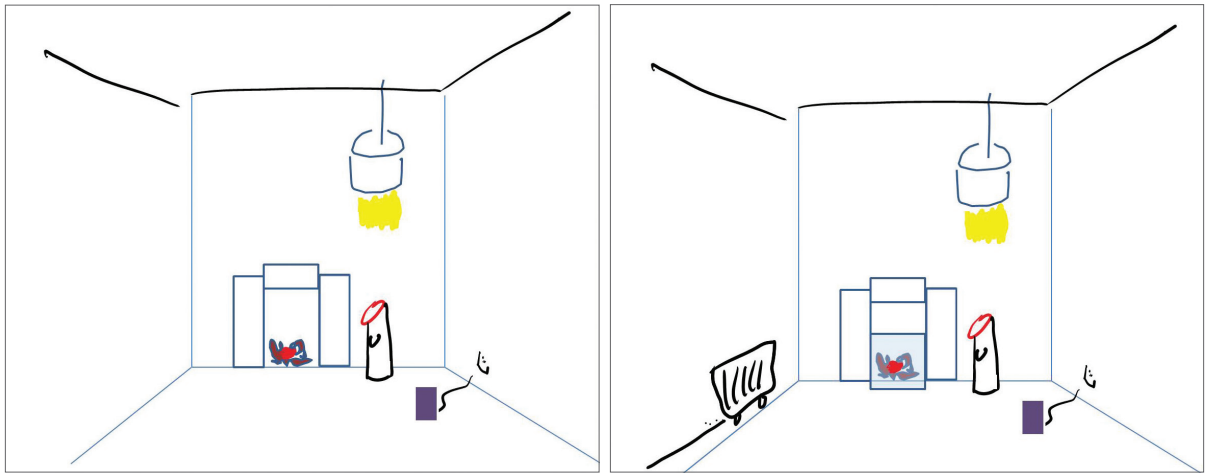
Not all heating is the same: different systems have different characteristics. Our reliance on gas central heating means that in the UK we commonly think of heat as being generated in individual homes where gas is burned in a boiler; distributed evenly to all the rooms of a house; controllable at the flick of a switch; and, providing the levels of warmth we want without additional materials or technologies. **New forms of heat might not be capable of providing exactly the same service. What will this mean for our homes and lives?**

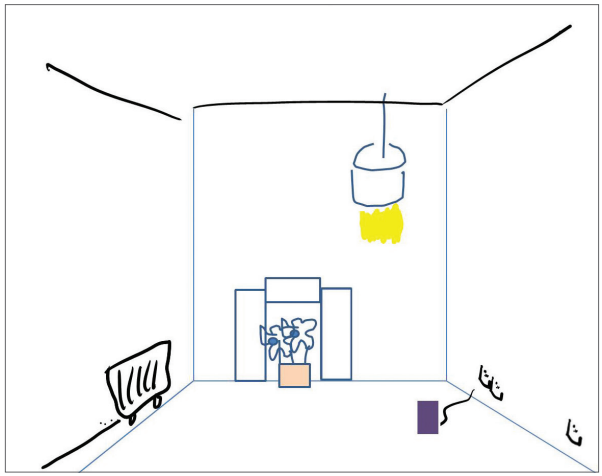
Exploring how gas central heating came to Stevenage provides some answers.
Our archival and oral history research has explored the following questions:

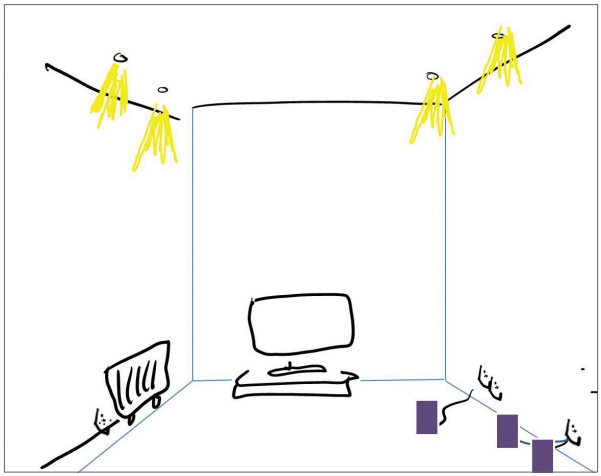
- How and why have homes been adapted since they were built in the 1950s and 60s?
- What kinds of home heating have Stevenage residents lived with during their lifetimes?
- How did Stevenage residents keep warm in winter with different kinds of home heat?
- How are types and uses of home heating related to changing domestic practices and routines?
- Do past changes in home heat provide clues for how future changes might come about?

Here's what we found...

Home heating technologies and fuels change over time.





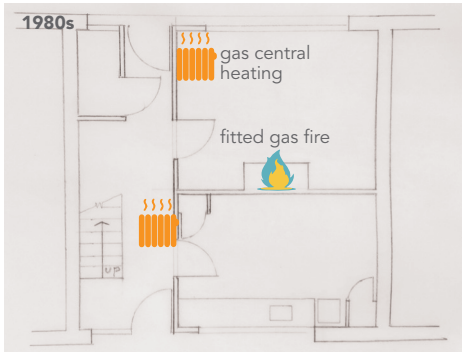


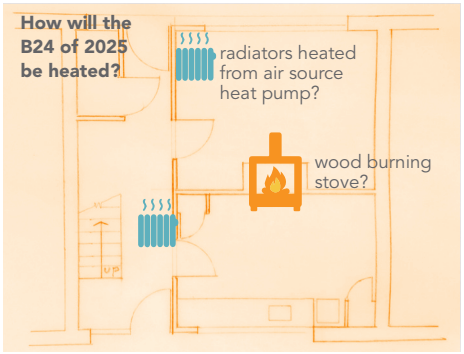
The heat provided by different fuels and technologies has different qualities and characteristics. We live with various forms of heat and do so in different ways.

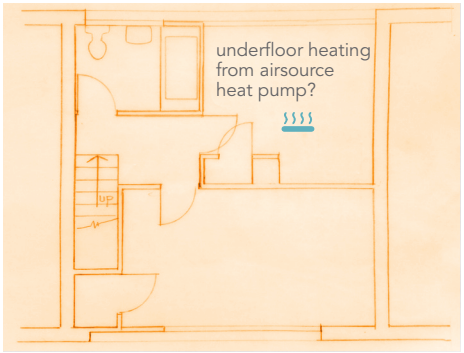
Although gas central heating has just arrived, government scenarios suggest that it may soon be a thing of the past. This will have implications for homes and lives.

The transition to central heating was not simple. Homes were adapted in different decades and at different stages of a family's life.

Figure Information from Hertfordshire Archives and Local Studies combined with oral history data allows us to track the life of an individual house and reveal ongoing adaptation.







Key

- solid fuel fire
- gas fire
- radiator (gas central heating)
- radiator (air source heat pump)
- storage heater
- wood burning stove
- underfloor heating

Stevenage residents have lived with many kinds of home heating across their lives.

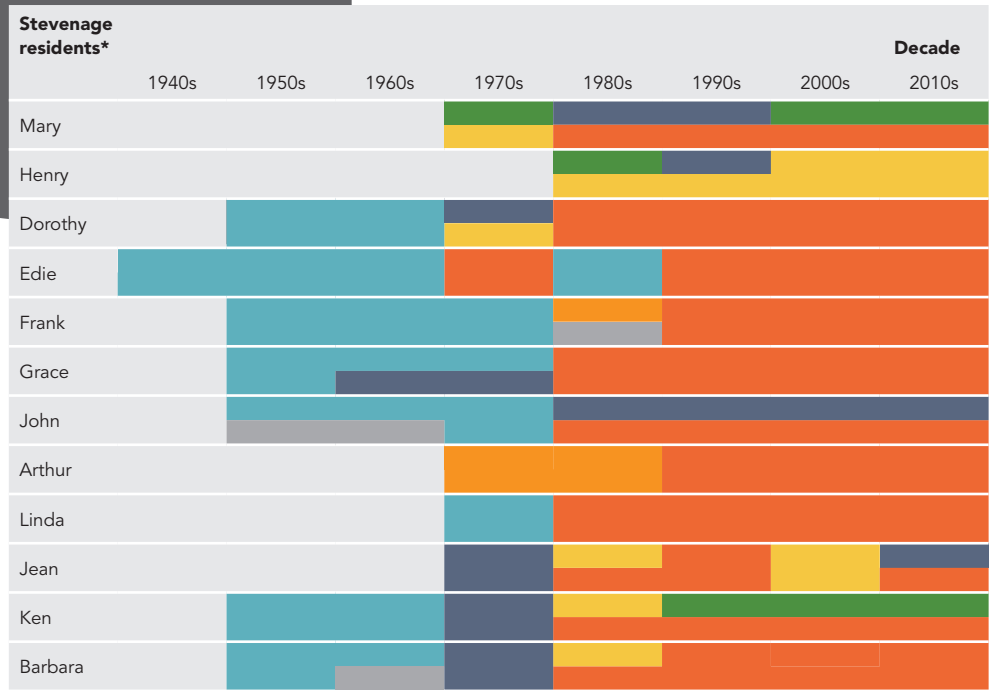


Figure Data from oral history interviews allows us to track the fuels and technologies that individuals have lived with over their lifetimes.

*Pseudonyms have been used.

Type of home heating

- Solid fuel fire
- Gas fire
- Electric fire
- Gas hot air heating
- Electric storage heaters
- Gas central heating
- Other e.g. paraffin

The type of fuel and technology affects how heating shapes and is shaped by daily routines.

"...when we both worked we always lit the fire when we got back. We would never light the fire in the morning – what's the point? – just coped in the cold. (1960s)

"My mum would get up in the morning to light the fire, but it would depend. If she was out cleaning someone's place then she wouldn't light it until she got home. (1940s)

"…when they were at school we would have been up about 7 o'clock. The heating was on this very old analogue timer and that would have come on about half an hour before we'd get up and then it would go off around 9 o'clock. There was no point having it warm when the kids weren't there. (1980s)

How homes are heated affects when rooms are used and what they are used for.

"We'd have the open fire in the living room, we had the fire guard obviously …when we were at home we spent time mainly in the lounge.

"Literally you'd only go upstairs to sleep in the winter because there was no heating up there… it just wasn't very pleasant.

"...I remember waking up being stiff with the cold and my mum having to warm us up downstairs.

With just one coal fire in the lounge the upstairs was another world.

"...I remember using hot water bottles and electric blankets, I remember the boys wouldn't go to bed until the hot water bottle had been in there for a while.

There were many methods and materials used to keep the downstairs warm, and to keep **people** warm.

"We'd have draft excluders, we'd put blankets at the doors to stop the drafts and these foam strips you'd put down the inside of the doors.

"I'd just keep busy to keep warm, or I would sit in the living room with the gas fire on.

"I had two paraffin heaters, one in the living room and one in the hallway, because that's where the kids used to play. If you were short of money that's what you did…

"...we used to wear vests. I forgot about them, I mean we don't wear vests nowadays. Yeah we used to wear vests of course.

In homes with two reception rooms, the television meant that heat began to spread around the downstairs.

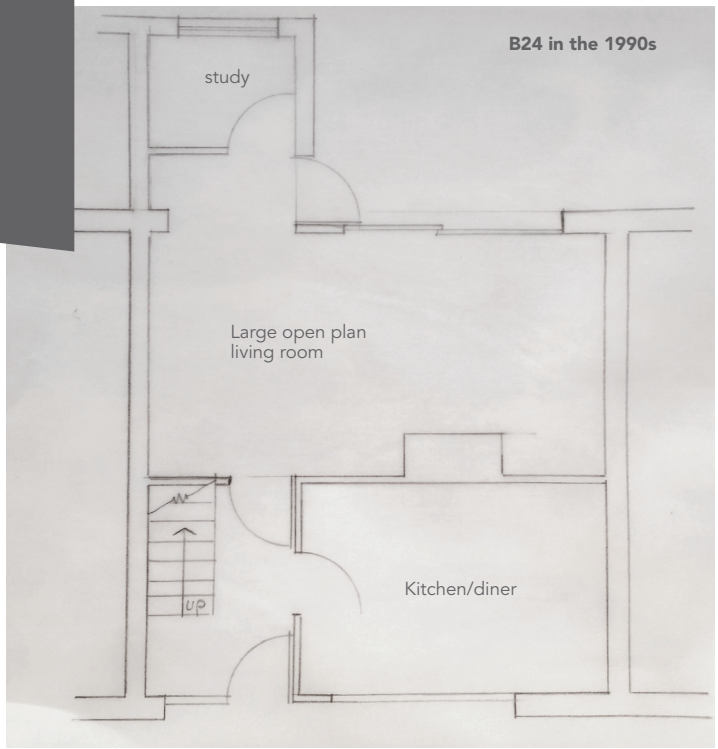
Gas central heating made the upstairs warm too. Activities previously done in the living room spread around the home.

"...we started to use the hallway as a sort of office. We had the phone out there and a little desk, all the paper work like bills and insurance and stuff.

"...if I got bored with the television I'd go off into the dining room on the computer, or upstairs reading, or maybe even in the kitchen reading.

"Once we had the central heating I'd spend more time up in my room, the boys would definitely spend more time up in their bedroom. It was like a playroom up there, and they'd spend much more time up there.

Rooms were wired up, redecorated, divided and knocked through, normalising new spaces, new ways of living and new heating demands.



How will future homes and lives change with new fuels and technologies of home heating?

Stevenage male born 2015

Grew up in Stevenage, in a B24, with **gas central heating** that was first installed in 1974.

Lived in rented accommodation and has experience of all manner of heating systems.

Spent 5 years in Birmingham in a flat that had **district heating**.

Now back in a house with **gas central heating** – defying the predictions.

Quite fancies moving to a place in the country with an **ordinary wood burning stove**.

This booklet gives a taste of the ideas emerging from our work in Stevenage in relation to the future of domestic heating in the UK. Our work shows that different fuels and technologies provide heat with different qualities and characteristics that have implications for homes and lives. A future based on heat networks aims for a form of heat comparable to gas central heating. A future based on heat pumps offers a lower background heat that might need other methods and materials for keeping warm. Exploiting the variety of ways of living with heat that we have explored opens up more possibilities for the future of home heating than are currently on the table.

Thank you to Stevenage Museum, to Hertfordshire Archives and Local Studies, and to all the Stevenage residents who took part in the research.

If you are interested in finding out more about these and other ideas, visit our website **www.demand.ac.uk**

DEMAND is one of six Centres funded by the Research Councils UK to address 'End Use Energy Demand Reduction'. DEMAND also has funding from ECLEER (EDF R&D), Transport for London and the International Energy Agency.

www.demand.ac.uk