Summary

Making a sustainable community: Derwenthorpe, York, 2012-2018

Derwenthorpe is being developed by the Joseph Rowntree Housing Trust (JRHT) as an urban extension of more than 500 homes on the outskirts of York, England. This research involved an environmental survey and longitudinal qualitative interviews to document the resident experience from 2012 to 2018.

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Key message

Mainstream housing developers can successfully deliver sustainable homes and communities at scale that produce high-quality living environments. However, different levels of buy-in from residents mean that environmental and social measures need to be built into the model as far as possible from the outset.

Recommendations

- Greater emphasis on the design, space standards and the aesthetics of new developments should be incorporated into Government-level directives.
- Housing providers must work with resident groups to set up inclusive governance structures to promote the long-term social sustainability of communities.
- Architects and developers need to 'build-in' environmental interventions into new homes, rather than choosing technology that requires resident knowledge and operation. They also should consider how they can influence residents' overall carbon footprints.

The research
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Background

Derwenthorpe, a new urban extension of York, England, is being developed and managed by JRHT and built by David Wilson Homes. It is a mixed community of social housing, owner, and shared-ownership occupation that aims to create a socially and environmentally sustainable community 'fit for the 21st century'. Derwenthorpe offered a wide range of 'interventions' intended to enable and encourage residents to live sustainably.

This research interviewed residents and also used the Stockholm Environment Institute's online environmental calculator (REAP Petite) to calculate individual carbon footprints by asking residents for information on five key household areas:

- power (to heat homes)
- travel
- food
- shopping (clothes and other consumables)
- and activities (like going to the cinema, watching sport).

Key points

- There was high satisfaction with the design of the homes, particularly with regard to space standards and light from large windows, as well as the wider landscaping.
- It is possible to create a mixed, strong community with different types of property tenure mixed in together throughout the development, good stewardship and provision of community facilities.
- The environmental features of the housing resulted in lower 'power' carbon footprints than the UK average. Built-in measures were most effective; those that required developer installation expertise and/or user control were less effective.
- It proved much more difficult to influence wider environmental behaviour of residents across areas such as travel and food production/consumption.

Design as key to resident satisfaction

Much of the satisfaction with Derwenthorpe homes was influenced by good design, demonstrating the value of aesthetics in new developments. Most people were delighted to live in the striking houses with their white rendering, high ceilings, three floors (or potential for extending into the loft), excellent space standards (partly driven by Lifetime Homes standards), and large windows/lightness (driven by eco-design standards). Although some commented the houses themselves were overlooked by other properties, the landscaped green areas were much appreciated by most residents.

A major achievement of Derwenthorpe was adapting properties for people with disabilities or health conditions. The impact on the families that had moved to Derwenthorpe to meet the needs of their children or another household member with disabilities was life changing. JRHT, with the assistance of the developer, was able to adapt houses before people moved in, and were seen as very supportive within this process. Lifetime Homes also gave people opportunities to adapt properties later.

Satisfaction with the development was also influenced by the considerable communal areas and green space, including ponds, greens, courtyards and a playground. Derwenthorpe residents loved the open spaces in the development and, five years on, were particularly pleased with how the green spaces integrated with the housing. This provided opportunities for people to meet each other in pleasant surroundings and functional spaces.

Creating a mixed, strong community

Derwenthorpe was developed as a mixed-tenure development. Three in five (59%) homes were for sale across the development, with a quarter reserved for social renters and 15% for shared-ownership. In the main, Derwenthorpe was working well as a mixed community; virtually everyone supported this as an aim and applauded the scheme for mixing up the locations of the different types of tenures within the development, so no one area belonged to any one type of tenure. Also, that you could not tell the tenure type from the house exterior. However, some residents expressed concern that different tenure types were not mixing at social events. The research suggested there was a need for additional proactive work to ensure that tenants and shared-owners felt ownership of the development to the same extent as owners.

Overall, Derwenthorpe was functioning as a vibrant and supportive community. JRHT has a long-term stewardship role at Derwenthorpe, helping residents to establish governance and social groups, and managing the Super Sustainable Centre (SSC) that provided community space as well as housing the biomass boilers. Provision of a planned central community space was important for many residents and enabled a sense of community to develop across phases. A wide range of social activities had been established. The Derwenthorpe Residents' Association was well established, although there was concern that it had not succeeded in attracting members across tenure.

Derwenthorpe residents frequently talked about how friendly the development was, particularly in the first phase which was the smallest and had attracted a group of people who were passionate about community building. Friendships were most likely, however, to have been established between owners. Across the phases, residents commented of the value of being part of a new community, where everyone was new and often looking to make new connections.

'Building-in' environmental sustainability

All homes featured a number of environmental features, including high levels of airtightness/insulation, low-energy fittings, water restrictors, a mechanical ventilation system (MVHR in phase one), and heating from a communal heat and hot water system (powered by a combination of biomass and natural gas). There was also a successful Sustainable Urban Drainage Scheme (SUDS) and a range of transport interventions.

The majority of residents were satisfied with the energy efficiency of their home, however some reported that the homes did not heat up and/or hold their heat as they had hoped. There were considerable ongoing problems with the MHVR systems (including installation, operation and maintenance). There was a clear need for greater explanation and information on heating and ventilation systems for residents. Low levels of biomass had been burnt in recent years and some residents felt let down by this. Resident dissatisfaction that Derwenthorpe had not achieved as much as hoped also cautioned against over-selling exemplar housing.

Despite these problems, Derwenthorpe residents had achieved a significantly lower power component of their carbon footprint (1.39 tonnes per year), both than the UK sample (2.50 tonnes) and other respondents from York (2.76 tonnes). This indicated that the design of the homes and the community heating system were lowering footprints, albeit not as effectively as had been hoped, or as low as some other smaller Passivhaus developments.

Influencing wider environmental behaviour was more difficult

Whilst Derwenthorpe residents had a lower power carbon footprint, they had a significantly higher food component of their footprint, compared to the rest of the UK sample (2.15 compared to 2.3 tonnes). They also had a significantly higher travel component of their footprint (3.96 tonnes), compared to other York residents (3.52 tonnes) although not compared to the rest of the UK sample.

Derwenthorpe included a range of transport/travel interventions to promote sustainable lifestyles and support a reduction in car use, included siting by the Sustrans cycle way, provision of cycle vouchers, bus vouchers, and an on-site car club. Residents appreciated the cycle network and bus, and these were well-utilised, but the car club scheme was used much less. Parking was a key issue on the site, and the one car per household policy led to some tensions in the community. Location on the outskirts of York meant that people's commuting patterns were hard to change. Wider travel footprints, for example for holidays, were not impacted by the development.

In terms of food generation, a community garden and pop-up shop for organic bread and vegetables/fruit had been established. These were well-supported but had a marginal impact on people's overall food shopping habits. All residents were recycling, and many more than previously used their kitchen recycling bins although it was felt that Derwenthorpe could go further with recycling. In terms of shopping, new homes can lead to large amounts of purchases of new items of furniture, appliances and so on, leading to high shopping footprints. This could be reduced through promotion by housing providers of community recycling or reuse schemes.

Conclusion

Increasing the sustainability of housing is critical – in 2017 residential buildings accounted for 19% of all carbon emissions in the UK and 30% of all energy demand. New initiatives are required urgently, across all policy domains, to cut carbon emissions to keep us within the 1.5 degrees Celsius of warming identified by the recent Intergovernmental Panel on Climate Change. At present, the policy routes to achieving this across new and existing housing stock are uncertain, particularly in England and Northern Ireland.

In the area of power, Derwenthorpe residents achieved a lower than average carbon footprint, but it was found that developers need to build-in environmental interventions to new homes as far as possible. Green features of the wider environment can positively impact in areas such as flood defences, as well as promoting sustainable transport. However, it seems new ideas and initiatives are required at the national level to influence carbon footprints in the areas of travel, food and shopping.

The development of sustainable new homes and communities is also critical to meet the present shortfall in housing, including good quality social housing. Derwenthorpe demonstrates that it is possible to deliver socially sustainable mixed communities with high quality, aesthetically pleasing housing and neighbourhoods that are enjoyed equally across tenures. Strong communities can be supported through a proactive stewardship role, although extra efforts are required to ensure that all residents feel the same level of ownership in the community. National frameworks and regulatory mechanisms need to support mainstream developers in creating 'great place(s) to live'.

About the project

JRF commissioned the Centre for Housing Policy, University of York to examine resident experiences. The research involved longitudinal interviews with 43 residents (69 interviews in total) and an environmental survey (REAP Petite) for residents and three comparator communities in England.

For further information

The full report, **Making a sustainable community: Derwenthorpe, York, 2012-2018,** is published by the Joseph Rowntree Foundation. It is available as a free PDF at www.jrf.org.uk

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