

Derwenthorpe



Confection, conviction and community



A sustainable legacy created by Joseph Rowntree over a century ago lives on – just down the road. **ROGER HUNT** reports from York.

Envisaged as one of the first large-scale low carbon communities in northern England, Derwenthorpe is a pioneering 540-home development on the eastern outskirts of York that has been more than a decade in the making.

What makes Derwenthorpe – a partnership between the Joseph Rowntree Housing Trust (JRHT) and David Wilson Homes –

unusual is that it emulates the aims of a much earlier community and has grown out of a vision of sustainability born at the start of the 20th century, long before the word came into common parlance.

In 1901 a study of the living conditions of the working classes in York revealed appalling statistics of dark, overcrowded and insanitary housing. With the conviction that it must be

possible to provide better housing for people on low incomes, the chocolate maker and philanthropist Joseph Rowntree acquired 150 acres of land near the village of Earswick, two and a half miles to the north of York.

Rowntree commissioned Barry Parker and Raymond Unwin – who would later design Letchworth and Welwyn Garden City – as masterplanners and architects to produce a 'garden village'. The result was New Earswick, an attempt to create a balanced village community where rents were kept low while still creating a modest commercial return on the capital invested.

At Joseph Rowntree's insistence, most homes had south or west facing living rooms and all had gardens with fruit trees and enough ground to

grow vegetables. Generous open green space was safeguarded and the grass verges were planted with trees.

Careful detailing, good materials and imaginative planning are the hallmarks of New Earswick. With a density of ten houses per acre of development area, the village has a human scale with a community centre, the now listed Folk Hall, at its heart.

Surprisingly, the final phase of the masterplan was not completed until 2000. Today, with some 1,600 homes within the village, accommodation includes housing for families and single people, sheltered housing and care for older people, bungalows and studio flats.

For JRHT, an aging housing stock has brought its challenges: around 250 of the early homes are now listed, most are of solid wall construction and had no internal bathrooms or toilets, while coal was used for heating. Consequently, an extensive modernisation programme began in the 1960s and, more recently, retrofitting for energy efficiency.

Innovation has continued under the JRHT, which is both a registered charity and social housing provider with responsibility for the housing operations of both itself and sister charity, the Joseph Rowntree Foundation (JRF). The special link with JRF enables 'research to inform practice and practice to inform research'.

In the 1970s, new concepts in underfloor heating and double glazing were brought from Sweden and used in the construction of the so-called ►



Station Avenue, New Earswick in 1913

THIS PAGE

- BELOW:** Derwenthorpe interiors
- BELOW RIGHT:** Poplar Grove, New Earswick, c1907
- BELOW RIGHT BOTTOM:** Derwenthorpe
- OPPOSITE PAGE LEFT:** Derwenthorpe
- BOTTOM LEFT:** Folk Hall, New Earswick, c1907
- RIGHT:** Derwenthorpe energy centre
- TOP RIGHT:** An early photo of Chestnut Grove, New Earswick

'Swedish flats'. More recently, Hemcrete was used to build six 'environmentally friendly' homes. In 2005 a scheme known as Elm Tree Mews was conceived as an exemplar for '21st century suburban homes'. This resulted in an exercise in understanding issues surrounding the performance gap with the associated research project demonstrating many of the problems that needed to be tackled to achieve zero carbon goals.

All of this has been hugely influential in the way JRHT has tackled the creation of Derwenthorpe. The aesthetics and feel of the completed first phase spring directly from New Earswick with the 64 homes having large, steeply pitched roofs, painted brickwork and striking dormer windows which combine to create a distinctive sense of place.

That said, there is nothing old fashioned about the design or the thinking; the homes at Derwenthorpe are very much of and for the 21st century and offer

a variety of housing opportunities, including shared ownership, fully owner-occupied and rented homes.

Owen Daggett, JRHT's sustainability manager, sees Derwenthorpe as a modern interpretation of New Earswick. "New Earswick is socially and economically sustainable in terms of mixed tenure, mixed opportunities and the communities that have developed. The one thing that it isn't is environmentally sustainable due to the age of construction. What we've tried to do at Derwenthorpe is plug that third element of sustainability."

Research and development has been hugely important in achieving this believes Daggett. "Just assuming you can design a building of high thermal insulation and high airtightness with a range of technologies installed doesn't mean you get that when it's completed, let alone when it's occupied."

At Derwenthorpe, JRHT undertook extensive R&D and invested heavily in infrastructure

at the very start of the development process. This helped the organisation understand the importance of quality and examine ways to reduce the complexity of housebuilding.

As part of the development of the house types it built two prototypes using two different construction methods – thin-bed masonry and timber frame (SIPs) – in the end opting for a hybrid of the two to blend performance with buildability.

These prototypes were critical says Daggett. "We wanted to ensure that we knew what would work before committing to a further 500 homes. They were monitored during construction and post occupancy."

The development of the 52-acre site is being undertaken in four phases, all designed by Richards Partington Architects, and will include 18 acres of communal space. The first phase, has been built to Code for Sustainable Homes Levels 4 and 5; subsequent phases will be Code 3, although Code 4 for energy.

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challenges at Derwenthorpe was getting a private developer on board who could understand the principles of what it sought to achieve while being able to deliver the quality and long-term legacy that the trust would ultimately be responsible for. "Appointing David Wilson Homes was a great success for us," says Daggett.

The aim is for the homes to contribute to not just the environmental but the social sustainability of the area, creating an opportunity for social cohesion to occur.

Nearly a third of the site is designated for open space, including wildflower meadows, play areas and parkland with existing hedgerows and trees retained.

Water habitat, including ponds, has been created through the extensive SuDS scheme needed to alleviate the risk of flooding. 'Home zones', consisting of single surface streets with no kerbs and limited car access and speeds, have resulted in pedestrian friendly spaces. Walking and cycling routes are an integral part

of the scheme and link into the Sustrans network, while an on site car club has been introduced and a regular bus service is to follow.

A key infrastructure project has been the laying of ten kilometres of pipework for the district heating system. The boilers for this are housed in an energy centre at the heart of the development which will also be a hub for the community, acting as a meeting place for residents, schools and local groups.

The energy centre and district heating system are seen as key to delivering the low-carbon component, both for the development and JRHT, explains Daggett. "With energy there are two drivers for us. The JRHT trustees have committed to a 20% reduction in emissions right across the organisation by the year 2020, based on a 2010 baseline, so it's quite a challenging target. The other factor is the link between carbon and energy bills; lower carbon usually means lower bills and for us, as a housing trust, the main



driver is to be an anti poverty landlord. The big aspect of poverty is clearly fuel poverty as well as income so, if we can reduce fuel poverty by ensuring that we build airtight, well insulated, well heated homes, we are going some way to reducing costs while also reducing emissions."

Both gas and biomass boilers have been installed in the energy centre to ensure space heating and hot water needs can always be met. The preferred biofuel is woodchip composed of virgin wood from trimmings harvested within 60 miles of the development.

All the homes are Lifetime Homes standard. The main living spaces are dual aspect, bringing natural light deep into the plan and allowing cross ventilation, while a ceiling height of 2.7m contributes to the overall sense of light and space. These ceiling heights have proved so popular that David Wilson Homes has used them on other schemes.

Some ideas have been dropped.

Although photovoltaic (PV) panels were installed on five properties in the development's first phase, the benefits are not seen as sufficient for more. Similarly, mechanical ventilation with heat recovery (MVHR) was employed but this has proved problematic and, in the second phase, mechanical extract ventilation (MEV) has been installed. As a result, a study of the ventilation used is being undertaken with the BRE.

Separate research projects are looking at energy, digital inclusion and lifestyles. Indeed, ongoing research is seen as key to the continued development of Derwenthorpe and increasing knowledge across the industry. ^{sh}

CONTACT

Joseph Rowntree Foundation
www.jrf.org.uk

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www.huntwriter.com and follow him on Twitter @huntwriter