# CASE STUDY – ROSE GREEN

**Rose Green, Chappel, Colchester**

## INTRODUCTION

Our retrofit programme in 2018, identified 56 properties in small rural communities, including Rose Green Cottages, Chappel, Essex, that had electrical storage heating systems. These were replaced with newer air source heat pump technology. Rose Green Cottages met the criteria of traditional build type, over twenty years of age and located in a rural community; they were also off gas grid homes. This current programme builds on the success of an earlier one completed in 2013, which upgraded 26 properties.

Electric storage heating systems have a running cost above the national level and are very inefficient. Residents on lower incomes, with substantial energy costs, cause them to fall below the poverty line, concerns at the fore of English Rurals Business and Asset Management Strategies.

A successful application to the Warm Home Fund (WHF) secured a financial grant contribution towards the high installation cost. Further funding was also available over seven years from the government Renewable Heat Incentive (RHI).

## THE SOLUTION

English Rural prides itself on its eco-credentials and use of renewable energy solutions. The association have previously installed ground source heat pumps and solar PV systems on rural sites. Over more recent years the consistent use of Air Source Heat Pumps (ASHP) has emerged as the preferred policy, on the basis that the experience of the association and residents identified ASHP systems best suit its property type, location and resident needs.

The decision was made to install Daikin manufactured systems; procured via an agreement with Low Carbon Exchange Ltd (LCX), a proven and reliable installer, with a renewable energy installation and maintenance package bespoke to social housing providers.

Good planning and communication were at the core of the approach adopted by English Rural and LCX. Both recognized that they would need to proactively engage with residents

if the project was to ultimately be successful. Both recognized the importance of this approach as air source heat pumps are not a traditional option for heating properties, and there are stigmas and training needs to overcome, to achieve performance and quality improvements.

Our approach for a successful installation can be broken down into four sections:

1. Before the work is started
   The properties are assessed and evaluated to understand the existing conditions and how installing a new, different system will be achieved. Key considerations can be understood in existing energy performance certification information, up to date asbestos surveys and stock condition data.

2. Planning the work and liaising with residents
   LCX complete an installation survey, an opportunity to understand the unique elements within the property and to plan pipe routes, radiator location, electrical alterations. Cylinder and heat pump positions demonstrate the vast differences in old and new system type. This provides the perfect opportunity to educate the residents on energy savings and quality improvements. 'energy training'' is carried out by the installer – LCX, and supported by the manufacturer, Daikin to ensure long term sustainability.

3. During the work
   The existing systems are removed and replaced. LCX require access to each room; the work can be intrusive and take several days to complete. The directly employed team of operatives must be professional, courteous and respectful to each resident's lifestyle. LCX provide a resident liaison person to answer any questions or concerns that may arise, giving flexibility to deal with added requirements and individual needs.

4. On completion
   A final inspection by LCX with a handover to residents is required to educate the user of the new heating system benefits at an early stage. A digital handover with English Rural gives an insight into before and after improvement, quality audits, benefits and the opportunity to update RHI scheme for future payments. Customer satisfaction and ongoing support are agreed to help support the ongoing lived experience of the resident. A seven-year manufacturer warranty is provided by Daikin for the heat pumps and LCX a one-year installer warranty.

Added measures are also included to raise the energy performance certification rating towards its maximum potential including, water saving packs, energy efficiency lightbulbs and loft insulation ''top ups'', providing further energy savings to the resident's annual bills. English Rural also provided residents with energy and tariff switching advice, to ensure they with a competitive energy provider.

## CONCLUSION

Renewable air source heat pump technology installations have immediate benefits for English Rural. The Warm Homes Funding grants and RHI payments ease the high installation expenses; the future maintenance and service cost are reduced sufficiently compared to the old, dilapidated systems. The improved SAP ratings reduce our housing stock carbon footprint, typically enabling the energy performance certification rating to increase to a rating of C and above. English Rural's agreed Business Strategy is to invest in homes to ensure that over 90% of our properties achieve a C rating or higher by 2024.

The real benefits are passed on to those fuel poverty households. The energy running costs are reduced, ensuring tenants can keep warm for less. The lifestyle quality within the home is improved due to having better control and being able to use heat as and when it is needed. The new systems have radiators in each living space, with thermostatic radiator valves installed on each radiator, to control temperature in each room, improving thermal comfort.

Due to the retrofit programme success, other areas with a low energy rating or future fuel poor risk within English Rural property portfolio, are being identified, and the results and experience can be shared amongst our peers.

Top Tips

- Engage with residents early and supply clear 'easy to read', details on new system
- Put in place continual advice and support for residents
- Nominate an accountable person to oversee the lifecycle of the project
- Source a reliable installation partner with the ability to design and install a suitable system
- Monitor outcomes and learn from experiences

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