CASE STUDY

DOMESTIC ENERGY EFFICIENCY IMPROVEMENTS

Freebridge
COMMUNITY HOUSING

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CASE STUDY SNAPSHOT

ADDRESS

This case study will focus on the Freebridge Community Housing-owned property in West Norfolk.

THE CHALLENGE

A low-performing home, its EPC rating of F made it an obvious choice to be part of Freebridge's retrofitting programme. Emitting two tonnes of CO2 per annum, it was Freebridge's aim to completely revamp the ageing system in place at the property with a modern and energy-efficient one.

THE SOLUTION

A budget of £25,000 was committed to carry out a complete retrofit at this address. This was to replacing the old, inefficient electric storage heaters with an air source heat pump (ASHP), top up the loft insulation to 300mm, and install Solar PV (photovoltaic) panels. New extractor fans were also to be fitted, alongside low energy lighting.

THE RESULTS

Freebridge visited the customer in January to confirm the works, which were carried out by LivGreen in February. The home now only produces one tonne of CO2 per annum, while the EPC rating has risen to a B. The customer also reports that her monthly energy bill is now just £30 per month, down from £110 per month before the works took place.

BACKGROUND INFORMATION

The customer is 85 years-old and lives alone in her one-bedroom bungalow.

This home is on a Supported Scheme, meaning the area houses some of Freebridges's oldest and most vulnerable customers.

Please note, the customer requested that they not be pictured as part of this case study. They did, however, give us permission to be quoted throughout.

'IT WAS SO COLD'

The customer had the following to say about how their home felt to live in prior to the retofitting works:

"Before, the house was very cold. I had a very old-fashioned heaters in they'd come on in the middle of the night and then go off around the time I got up. If it was a cold day outside, it would be very cold in my home. I used to sit with a throw over me, because it was so cold."

WHAT IS RETROFITTING?

Retrofitting involves adding new technology or features to existing buildings to improve energy efficiency, reduce carbon emissions, and enhance comfort – such as upgrading insulation, heating systems, or installing solar panels. It is crucial for lowering energy bills and achieving net-zero targets by making homes warmer and less reliant on fossil fuels.

CHALLENGES AND PROBLEMS

LOW PERFORMANCE

As referenced on page three, this home was amongst Freebridge's lowest performers with an EPC rating of F.

Low EPC ratings dictate that a home is very poor why it comes to energy efficiency, which in turn creates inefficient high energy bills and low comfort, typically due to lack of insulation and outdated heating systems.

CUSTOMER HESITANCY

The customer, by their own admission, needed convincing to have these works undertaken at their home.

However, after meeting Freebridge's programme managers Jacob Medlock and Mathew Nellist in January 2026, they were provided with the necessary reassurance - as they describe in their own words:

"I was a little concerned when I was first contacted about the works. But I spoke to Freebridge and understood it was government-led, so thought I should give it a go. Jacob and Mathew from Freebridge came to see me and talked absolutely everything through with me, which was the deciding factor."

THE RESULTS

'WE HAVE A VERY HAPPY AND WARM TENANT!'

The verdict from LivGreen's Peter Bunting (picture above, left):

"When we originally did the EPC rating for this property, we found an F rating.

"We identified certain measures, one of which being an Air Source Heat Pump (ASHP) to help replace the existing (and very antiquated) storage heater system.

"We also installed a 5KW system with upright vertical radiators. These give a more ambient room temperature and they stay warm all day long, without being hot to touch.

"They also use less energy through not getting boiling hot, maintaining consistent heat throughout the day.

"We also improved ventilation throughout the house, which included door undercuts and a full wall-vented system. This gives constant ventilation and reduces the chance of mould growing.

"The wall vents have a boost system, which is wired into the lighting circuit. This means that, when the tenant walks into the kitchen and turns on the light, the system gets a boost and helps remove the fumes created by appliances.

"In order to help with electricity consumption, because they clearly do use more electricity, we also installed a six-panel 2.4KW solar system – which was done on the south-facing roof.

"We've managed to reduce the electricity consumption from approximately £110 per month down to about £1 per day, or £30 per month. We also have a very warm and happy tenant!"

'IT'S VERY CLEVER TECHNOLOGY'

LivGreen's Peter Bunting:

"The device we have installed here is the Rolls Royce of ASHP.

"It doesn't have to work as hard and therefore produces a better EPC rating. If we'd used a smaller one, it would perhaps be a C instead of a B.

"It runs all the time and is a very good system, working in conjunction with the solar – which is running all the time we have sunlight.

"To get the best results, the way the system is set-up is very important. It's also vital to give this knowledge to the customer, so they can get the best from it too.

"ASHP are built to run all of the time. They are the opposite of the old oil systems, that are on and off all of the time.

"It's very clever technology.

"We leave all tenants with a cheat sheet to make sure they know how best to use it."

THE KEY CALCULATION

At the retrofit assessment stage, there's a heat loss calculation that is done. This measures, for example, the amount of insulation in the loft, or the amount of heat which is lost through the windows.

From that it can can determine the EPC rating and what is needed to get it down to an EPC C or B. It is then assessed what is the best measure for each home.

IT'S ALL VERY COSY

The customer:

"My house is now very warm. Whenever the sun is out I can turn all of the radiators off!

"I feel very lucky to live here, it's so warm and cosy."

CONCLUSION

KEY FINDINGS

This study illustrates the transformative impact of targeted retrofitting on both property performance and customer wellbeing.

- The comprehensive retrofit delivered substantial environmental, financial, and social benefits.
- The property's EPC rating improved dramatically from an F to a B, while annual carbon emissions were halved. Energy costs have also reduced significantly, with monthly bills falling from approximately £110 to around £30.
- Alongside these measurable outcomes, the works resulted in a consistently warm, comfortable, and healthier home.
- For an 85-year-old customer living alone within a supported housing scheme, the retrofit has directly addressed issues of fuel poverty, cold living conditions, and inefficient legacy systems.
- The project also highlights the importance of effective customer engagement: The customer's initial hesitancy was overcome through clear communication, reassurance, and support from Freebridge and LivGreen colleagues, reinforcing trust and confidence in the programme.

LIVGREEN RETROFIT SPECIALISTS Freebridge COMMUNITY HOUSING

CUSTOMER TESTIMONIAL:

"What I have now is fantastic. I just love living here!"

"Before, the house was very cold. I had a very old-fashioned heaters in they'd come on in the middle of the night and then go off around the time I got up.

"If it was a cold day outside, it would be very cold in my home. I used to sit with a throw over me, because it was so cold.

"I was a little concerned when I was first contacted about the works. But I spoke to Freebridge and understood it was government-led, so thought I should give it a go.

"But what I've got now is fantastic!

"Jacob from Freebridge came to see me and talked absolutely everything through with me, which was the deciding factor.

"I'm already telling my neighbours about how good this change has been for me. I'd absolutely recommend it to anyone.

"I go to coffee mornings and other get togethers with neighbours I've been asked a lot of questions as they can see that I've had the works done.

"What I always say is that this change is the best thing I've had done.

"I've had neighbours over at my home and think seeing the upgrades in action has changed a few minds.

"Before I had the solar panels and the heat pump, I was paying around £110 per month with the old set-up. Now it's about £30 a month.

"My house is now very warm. Whenever the sun is out I can turn all of the radiators off! I feel very lucky to live here, it's so warm and cosy.

"I did say, why me? And I was told my home had an EPC rating of F. I'm told it has now been improved to a B, which is brilliant!

"I just love living here!"