


# Net Zero retrofit



It's now clear that the world is facing a climate emergency. The continued rise in human generated CO2 is having a devastating effect on our planet and we have a limited timeline to avoid the consequences of climate change.

At United Infrastructure, our eyes are open to the crisis. We have committed to becoming a net zero carbon business by 2030 and we're already delivering a number of key initiatives to decarbonise our clients' assets.

To meet the UK's net zero carbon target by

2050 

300 

homes need to be retrofitted every hour



# UK Housing Context

Within the UK housing sector, we know that around 25% of all carbon emissions come from the properties we live in. We also know we have some of the least efficient homes in Europe.

Fuel poverty continues to be a major concern. Official statistics show that 3.2 million people were living in fuel poverty in 2020, and this figure is estimated to have more than doubled with the recent rise in energy costs. We need to act now. If we're to meet the UK's Net Zero Carbon target by 2050, around 300 homes need to be retrofitted every hour.

The good news is that the solutions are known and United Infrastructure has the experience to help you start your net zero journey.



# The Service

We can help you navigate your net zero journey using our comprehensive decarbonisation service.



## 1. Stock analysis and assessment

We'll help you assess your stock data and carry out property assessments to inform your retrofit journey. We will also help you align your decarbonisation works against existing work programmes to help identify synergies and cost savings.

### Pre-monitoring/smart sensors

We have experience conducting pre-monitoring to identify issues such as damp and mould, CO<sub>2</sub> emissions and humidity levels in the home — insights that support a more consistent and informed approach to retrofit projects.



## 2. Energy efficiency funding

We have experience in drawing down funding through some of the major schemes such as Social Housing Decarbonisation Fund (SHDF) and The Energy Company Obligation (ECO). We can help you administer the whole process and provide oversight of all compliance requirements.



## 3. Retrofit design

We are Trustmark Registered and our retrofit design partners are fully conversant in all PAS2035 requirements and can help you achieve your desired energy performance targets.



## 4. Construction works

United Infrastructure is PAS 2030:2019 accredited and has significant experience in delivering complicated construction works on time and on budget. Our Customer Excellence Team will develop a bespoke engagement programme to ensure your residents are fully informed throughout.



## 5. Resident engagement

We have experience delivering a customer-centric communications and engagement strategy, including white-labelled microsites with chatbot functionality and language translation, clear explanations of project workflows and milestones, printed resident booklets and 'Meet the Contractor' events.



## 6. Post-occupancy

We can develop a robust post-occupancy assessment programme to demonstrate energy improvements and provide valuable feedback to your residents.

# United Infrastructure Expertise

At United Infrastructure, we have invested heavily to develop our in-house decarbonisation expertise. We recognise the importance of a collaborative approach to tackling the climate emergency.

Our Decarbonisation Team has sector-leading experience of working collaboratively with clients and supply partners. We provide retrofit advice on strategy, funding, design & delivery for whole-house retrofit in order to achieve your net zero ambitions.

- Involved in the first three Energiesprong projects in the UK.
- Involved in the first EnerPHit compliant project in the UK.
- Delivered one of the first SHDF Demonstrator Projects.
- Secured over £10m of SHDF Wave 1 funding.
- Secured over £84m of SHDF Wave 2 funding.
- Experience of delivering ECO-funded energy efficiency projects.
- 177 properties lodged within the original funding timeframe
- Secured 100% of the allocated funding.
- Overall KPI score - 98% customer satisfaction.



# GTEC & Heatly

Part of United Infrastructure, GTEC Training Limited, a leading training specialist and Heatly, a digital tool that makes heat pump system design, surveying and installation easier.



## GTEC

GTEC training specialises in providing construction based and renewable energy training programs at state of the art training centres. United Infrastructure leverages this expertise to ensure that our workforce receives hands-on training that aligns with the latest industry standards, certification and best practices. This ensures that all our employees are fully accredited and are up to date with the latest technologies required to meet the demands of complex construction and retrofit projects.

Our workforce are trained to the highest standard, in skills that are immediately applicable to enhancing productivity and efficiencies to benefit our customers.



## Heatly

Heatly is set to revolutionise the accuracy, speed and efficiency of a range of decarbonisation, retrofit and digitalised property improvement and monitoring measures.

Heatly is a software-as-a-service platform delivered over a progressive web application. It was originally developed to facilitate the uptake of heat pumps as part of the drive to net zero. The incorporation of Heatly into United Infrastructure has made it possible to broaden the application of its technology to enrich United Infrastructure's capability to deliver best in class managed property services on behalf of its clients.

Heatly uses sophisticated AI-driven technology to produce volumetrically accurate digital twins of surveyed properties using a mobile phone's camera. Once captured, this data can be stored and used to inform a comprehensive set of targeted measures to fulfil client obligations on decarbonisation, retrofit upgrades and planned and predictive maintenance programmes. The digital twin concept ensures an accurate and dynamically updateable record can be kept for every property under management with a powerful analytics capability across discrete portfolios.

# Innovation initiatives

We're trialing several Innovation Initiatives currently at proof of concept stage. Early results are promising, with strong potential for wider rollout. These efforts reflect our commitment to forward-thinking solutions and continuous improvement.

## **SHDF micro-sites**

Bespoke project websites with translation options, AI Q&A, feedback forms and videos to keep all residents informed and involved. Currently at roadmap stage 2 with plans for wider rollout.

## **Resident engagement portal**

In proof of concept, this tool will let residents manage appointments, verify installers and access tailored information about their install.

## **Green skills training**

In partnership with GTEC, we're developing training through our in-house centre for staff, installers and residents - boosting knowledge in retrofit and sustainability while adding social value.

## **Sustainable materials R&D**

We're working with the University of Manchester to develop new, practical materials for retrofit - an exciting step toward more sustainable construction.



## Wolverhampton Homes (£6M)

United Infrastructure has worked with Wolverhampton Homes (WH) via a Strategic Construction Partnership since 2008. This partnership delivers planned, cyclical building safety and improvement works to Wolverhampton Council's housing stock.

As part of this partnership, UI is retrofitting 200+ properties across the city to comply fully with PAS 2030/2035. The retrofit programme is part of Wolverhampton Council's 'greener homes & Warmer Residents through Property Retrofit' project. It aims to reduce residents' energy bills while decreasing the carbon emissions from its social housing stock, contributing to its net zero carbon goals.

### Tailored energy efficiency measures

The retrofit programme takes a whole-house, fabric-first approach. It includes the installation of external wall insulation (EWI), new loft insulation, energy-efficient windows and doors, keeping the homes warmer for longer, and reducing the energy needed to heat each property. New ventilation systems have also been fitted, helping air circulate, reducing the risk of dampness and mould, and improving air quality.

Our project teams are also busy getting properties 'heat pump ready' for Phase 2, which will align with the Social Housing Demonstrator Fund (SHDF) wave 2.2 funding stream so the properties can have low-carbon systems installed in the future. We have also secured another £1.1 m for an Energiesprung Heat Pump Ready scheme on the same properties, which will help keep homes healthy and energy efficient.

"This retrofit programme of works is helping to tackle the performance of our non-traditional housing stock and addressing the issues around damp, mould & condensation whilst working closely with our residents to help reduce demands for heating and reducing energy usage."

**Steve North, Commercial and Development Manager, Wolverhampton Homes**



## Moat (£8M)

UI is retrofitting 264 Moat properties with energy-efficiency upgrades, supported by SHDF Wave 2.2 funding, 264 properties are undergoing extensive energy efficiency upgrades.

Our team is upgrading all homes that are below EPC C to achieve a minimum EPC rating of C or above, resulting in reduced energy bills and increased comfort for residents. Our modelling strategy prioritises the fabric first approach, ensuring the building is well-insulated throughout. We then consider other measures to accompany this to ensure the property is fuel-efficient and able to maintain comfortable room temperatures. Residents are offered retrofit advice, including the best fuel tariffs and tips for adopting new living habits that will save them money.

### Investing in innovation

We have adopted an innovative strategy by integrating newly approved roofline systems with the installation of external wall insulation (EWI). These roofline closure systems enable the safeguarding of the EWI system through the use of metal trims, providing a durable and enduring solution without the need for extended rooflines.

Working at scale and upgrading properties scattered throughout the Essex region has presented a challenge. Nevertheless, we have tackled this by conducting thorough planning, meticulously mapping out locations and allocating tasks to our supply chain accordingly, all while minimising disruption to the local communities.

“Our collaboration with United Infrastructure aims to significantly reduce carbon emissions and create healthier homes. Through our joint efforts, we’ve revitalised our homes, enhanced energy efficiency and improved resident well-being.”

**Alan Mortimer, Investment Programme Manager, Moat**



## Clarion Housing Group (£2.4M)

UI supported Clarion and Tonbridge & Malling District Council's application for funding from the government's £50 million Social Housing Decarbonisation Fund (SHDF) Demonstrator scheme.

One of the critical requirements of the SHDF scheme was to reduce the energy demand of the properties from an existing 120 kWh/m<sup>2</sup> to a lower value of 50 kWh/m<sup>2</sup>. This requirement would promote using a "fabric first" approach and see the property's EPC rating improve from D to a mixture of C and B.

The energy efficiency measures delivered include a purple passive airtight wrap to the selected properties, new high-performance triple glazed windows and doors, loft insulation, roof improvements and heat & energy solutions.

### Cutting energy bills and improved energy performance

The energy efficiency measures delivered will ensure residents' satisfaction and improved building energy performance, drastically reducing residents' heating bills and providing warmer, healthier, more comfortable homes.

Clarion Housing Group will also benefit from the significant reduction in ongoing maintenance costs and increased ability of residents to pay their rent. Over the next 30 years, this will amount to over £2.3 million worth of savings for the residents involved in our project while helping Clarion Housing Group achieve its net zero ambitions.

"My experience of working with United Infrastructure on the Social Housing Decarbonisation Fund project has been refreshing and a real pleasure. The professional approach to planning and execution of the works is complemented well by their support and expertise, and they have worked collaboratively with us, along with our consultant partners and other partner contractors to deliver a complex programme of works in a relatively short delivery window."

**Paul Norman, Head of Asset Management, Clarion Housing Group**



# Accreditations

United Infrastructure is a market leader in energy efficiency and whole-house retrofit, following a ‘fabric first’ approach. We follow the quality framework set out under the PAS2035 specification for retrofit works.



We are members of the Retrofit Academy Centre of Excellence.



United Infrastructure is a PAS 2030: 2019 accredited and Trustmark registered company.



United Infrastructure is a member of the National Home Decarbonisation Group

# Procurement Routes

We have also secured places on some of the leading net zero procurement frameworks including, Fusion21, SEC, LHC, NHMF and the GLA Retrofit Accelerator for Homes.



# Together we achieve more



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For further information on how  
United Infrastructure can help please contact:

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