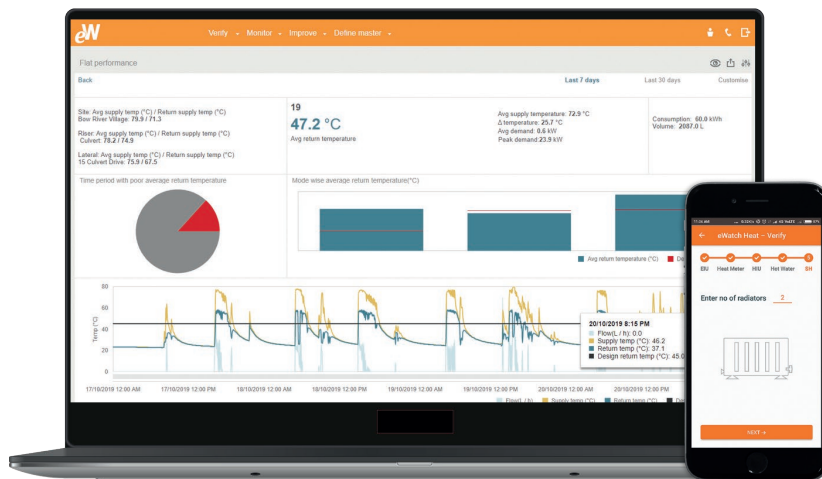


# eWatch Heat

## Performance management for Heat Networks



- ✓ Lower running costs
- ✓ Reduce carbon emissions
- ✓ Mitigate fuel poverty

# Hello, we are Sycous.



Providers of innovative metering, remote data collection and billing solutions.

We have industry leading knowledge in open protocol metering and data collection equipment, a skilled team of engineers for installation and maintenance, and an unrivalled back-office team for client and consumer support. Sycous are also the developers of the UK's first cloud based, remote data collection administration software for use in the district heating and communal energy market.



**Our product and solution experts are here to support you in getting the most out of your hardware and equipment. Starting with our first contact, we always aim to understand what your metering and billing needs are, so we can learn how to best support you!**

•  
•  
○ Contact our experts today at: [info@sycous.com](mailto:info@sycous.com)

## eWatch Heat

eWatch heat service captures and analyses data to generate graphical reports about individual HIUs and overall network performance. Poorly performing properties that need attention are identified easily.

The service considers three key aspects:

- » Verification of appropriate commission
- » Monitoring on-going performance;
- » Improving through proactive service and maintenance.

Ongoing monitoring of the network and follow-up action as required, helps keep costs low for both operator and resident, and ensures reliable, adequate heat supply reaches all those connected, including tenants vulnerable to fuel poverty.

# What are the drivers for optimising your heat network?

Heat networks can reduce energy costs for users and service providers and helps to mitigate fuel poverty.

More efficient heat networks can also significantly reduce the carbon footprint of urban centres. However, potential for inefficiency is inherent at multiple points in every heat network, and safeguards to prevent sub-optimal operation are recommended.

eWatch heat service is part of an integrated solution to optimise the efficiency of heat networks and reap maximum benefit for all.

With the pragmatic application of technology, eWatch Heat Service simplifies the task and helps lower the cost of delivering efficient, low-carbon heating to all those connected to your network.

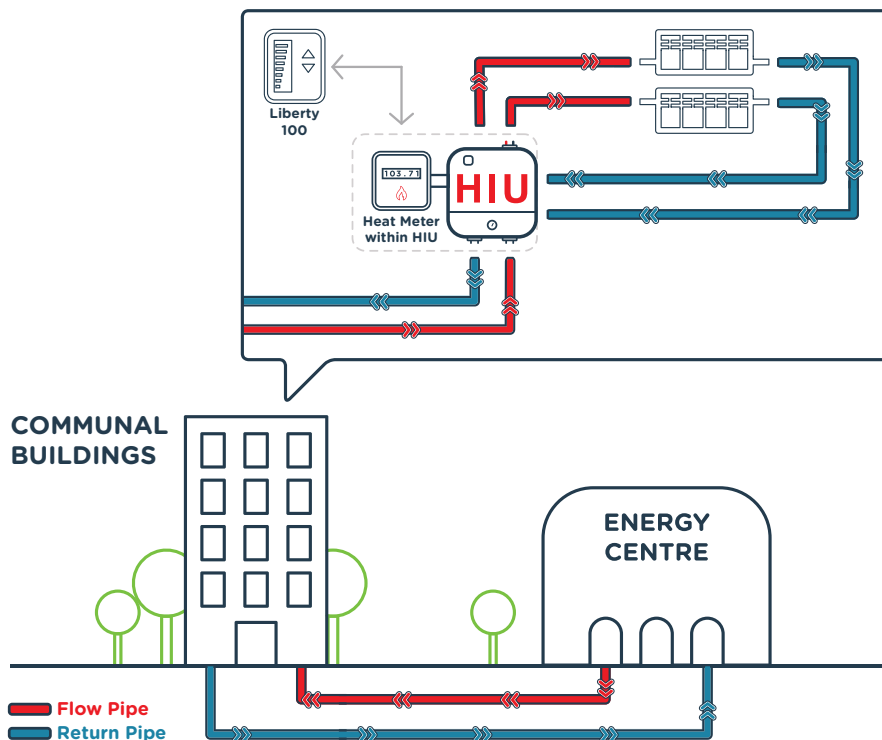
Government regulations and funding\* support the establishment and maintenance of heat networks that optimise energy use and serve customers.

eWatch heat service makes compliance with government legislation easy and helps you achieve Competition and Market Authority recommendations.

\*The Heat Metering and Billing Regulation 2014; CIBSE 1.2 code of practice for the construction and commissioning of new buildings; The Heat Networks Investment Project (HNIP) is a government funding programme providing £320 million 'gap funding' for heat network projects in England and Wales. By 2021, it's expected to support up to 200 projects and "to lever in up to £2 billion of wider investment, reducing bills, cutting carbon and forming a key part of wider urban regeneration".



# What is an optimal heat network?



Heat Networks provide buildings with heating and hot water. These systems also known as district or communal heating networks, use a large, shared energy centre as a heat source rather than an individual heat source, for example, a gas boiler.

**Watch our Sycous: What is a Heat Network? video**

[www.youtube.com/watch?v=aZtdfRy4dKM](https://www.youtube.com/watch?v=aZtdfRy4dKM)



For optimal efficiency, we need to achieve the maximum temperature difference between heat supplied to each household and the return temperatures ( $\Delta T$  or Delta T).

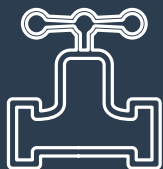
- » Inefficient heat networks are typified by high return temperatures to the energy centre.
- » If hot water comes back to the energy centre only 1-2°C cooler, energy is being wasted producing and pumping it.

# How can Heat Networks be optimised?



## Appropriate Heat Interface Unit commissioning

It is essential that guidelines during commissioning are easy to follow and prevent inappropriate flow rates within properties that lead to high return temperatures and supply interruptions.



## Bypasses in the network

Bypass valves help meet the demand, whilst keeping the whole network at minimum temperature levels, but sometimes they are the source of inappropriate flow rates that cause significant inefficiencies.



## Balanced radiators

Optimising efficiency rests on the premise that multiple tertiary networks are being operated appropriately. Customers need to be well-informed about how to maintain appropriately balanced radiators in their premise.



## Well-designed networks

Appropriately sized pipes and pumps, running at capacity, along with adequate insulation and control are critical. Networks lacking this focus have observed heat losses of 50% (and higher).

# eWatch Heat service: optimise your heat network



Design, install  
and commission  
appropriately



Measure and review  
performance data



Service and  
maintain  
proactively

Using remote technology and data analysis, the solution gives service providers peace of mind that all their customers are being served and government regulations\* whilst lowering their operating and maintenance costs.

## **Design, install and commission appropriately:**

- » By following a series of simple steps, all properties can be verified to the same standard; commissioning and verification reports confirm each property is connected appropriately.

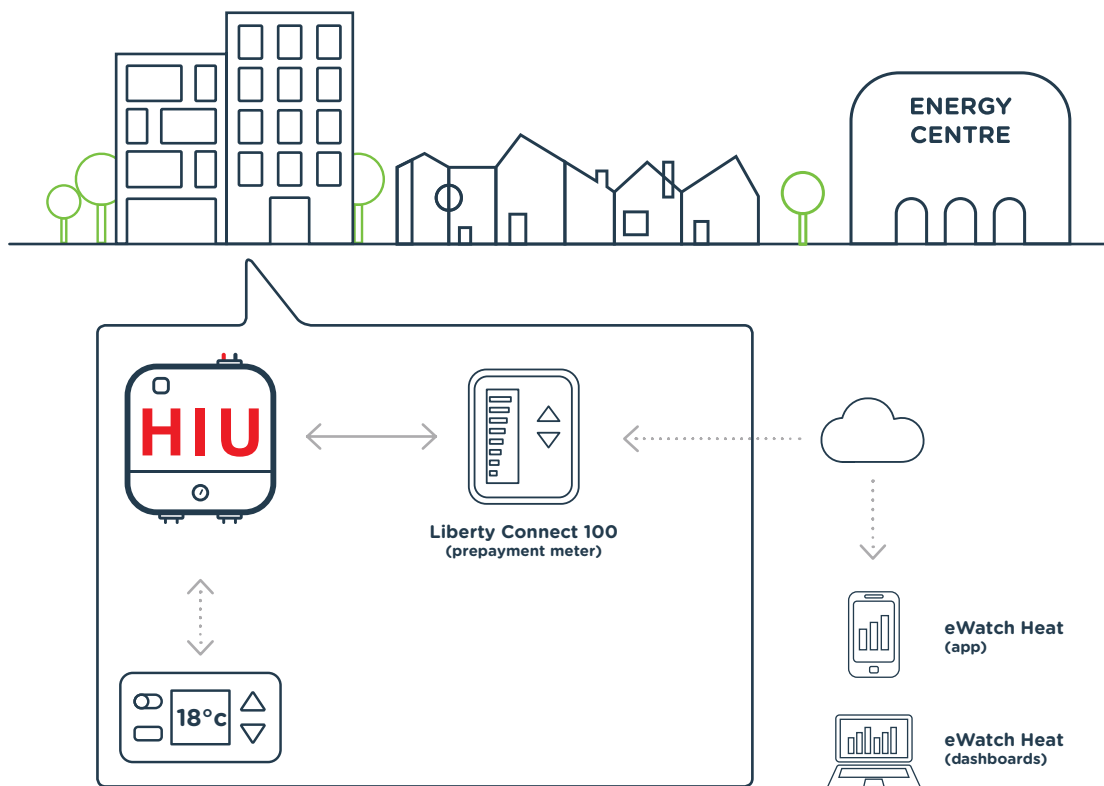
## **Measure and review performance:**

- » By monitoring individual HIUs, risers and plant rooms regularly, the solution highlights any persistent inefficiencies

## **Act on the data and address inefficiencies proactively:**

- » With a suitably scoped service and maintenance regime, performance can be maximised, whilst operating costs can be lowered.

\*Conform to heat network regulations (COP, CMA & Heat Trust). HNIP funding is dependent on COP compliance.



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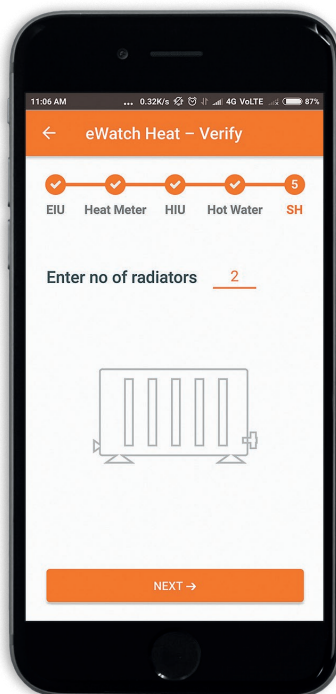
# Verify system performance

User-friendly app verifies network system performance. With automated collection of designed parameters, each property within a network can be verified by following a series of simple steps.

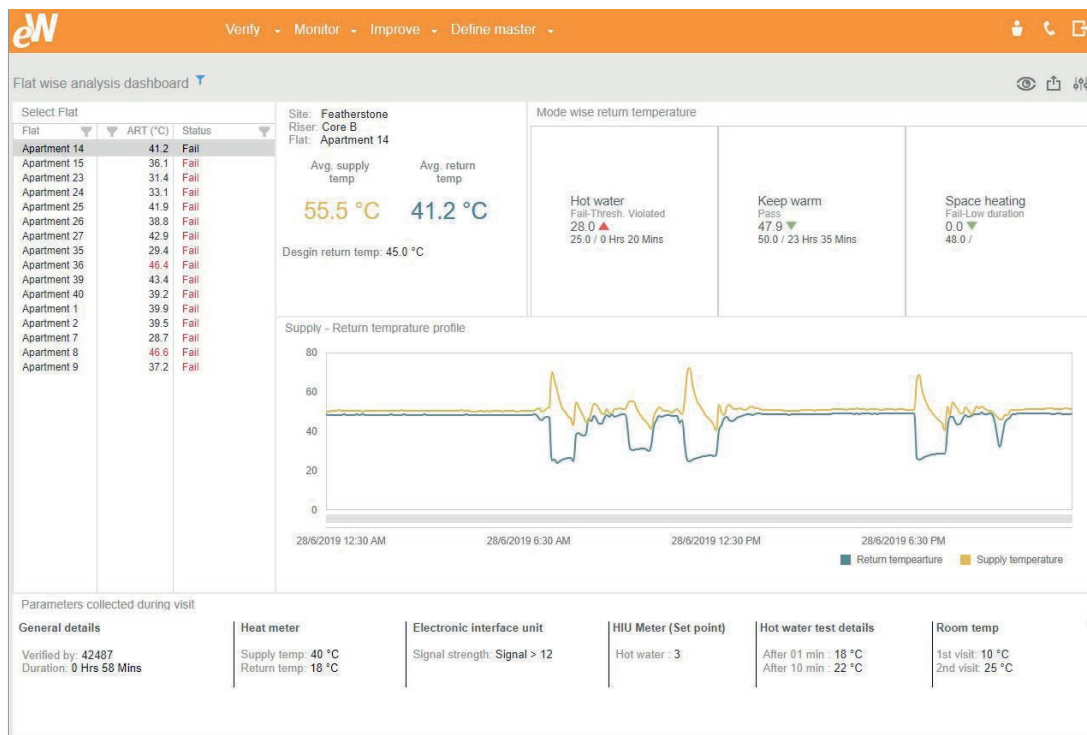
Comprehensive reports ensure conformance to heat network regulations, and that the proving period is carried out under controlled conditions.

## Key features

- » Mobile app to guide engineers with on-site verification.
- » Asset register verification reports.
- » Properties passed or failed based on design parameters.
- » Energy centre proving period, post verification.







eWatchHeat Dashboard

## Benefits

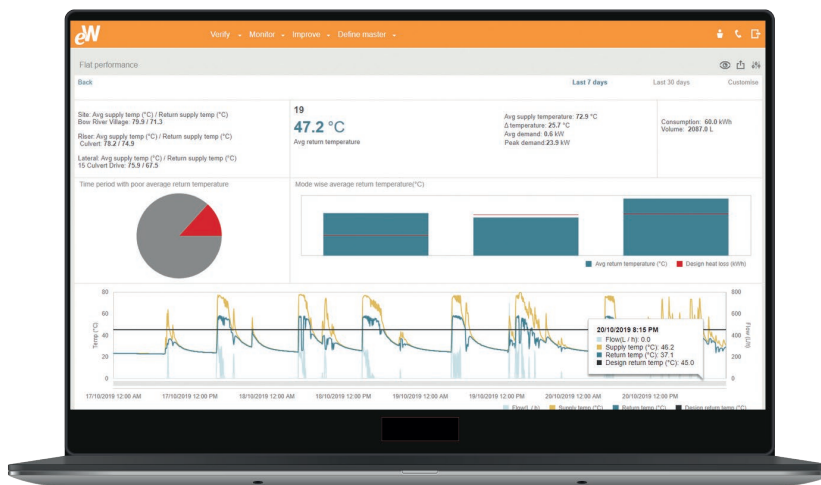
- » Onsite verification ensures comimisioning is carried out correctly.
- » Comprehensive reports provides evidence of correct verification and avoids the need for a commissioning verification expert to perform acceptance testing during handover from contractors.
- » Design specifications delivered or improved upon.
- » Avoids high heat-loss due to poorly commissioned network.
- » Remote assurance of adequate heating and hot water.
- » Useful tool for Housing Associations, property developers and consultants for data analysis, to target future improvements.

# Monitor system performance

The eWatch heat monitoring service simply and swiftly identifies problems requiring attention and supports remote fault diagnosis.

## Key features

- » Comprehensively monitors network efficiency.
- » Performance dashboards analyse every stage of the system - compare weekly, monthly and seasonal data.
- » Yearly and seasonal benchmarking.
- » Granular data drills down to every metering point (riser, apartment and plant room).





Flat performance dashboard

## Benefits

- » Monitoring dashboards support proactive service and maintenance regime.
- » Proactive system maintenance helps fulfil maintenance contracts.
- » Save time on site by visiting properties with known issues.
- » Performance dashboards aid fault analysis and identify site performance patterns.
- » Benchmarking helps improve long-term efficiencies in your heat network.
- » Call-out support provides back-up to resolve customer complaints quickly.

# Improving system performance

The eWatch Heat service offers owners and operators of heat networks improved visibility of consumption and generation. The service helps to set fairer tariffs based on precise performance data.

## Key features

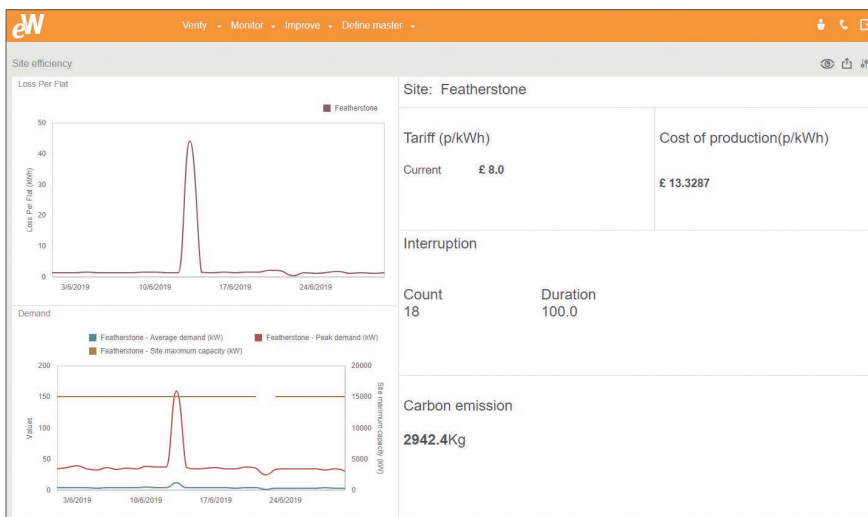
- » Multi-site performance dashboards.
- » Benchmarking between sites.
- » Carbon emission reports.

**Site handover report**

From: 01-May-19 to: 30-Jun-19  
Site name: Featherstone  
Report type: Handover

Site No.	Site Name	Handover Date	Handover Time	Handover Status	Handover Type	Handover Reason	Handover Action	Handover Result	Handover Comment
1	Featherstone 01	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
2	Featherstone 02	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
3	Featherstone 03	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
4	Featherstone 04	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
5	Featherstone 05	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
6	Featherstone 06	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
7	Featherstone 07	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
8	Featherstone 08	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
9	Featherstone 09	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
10	Featherstone 10	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
11	Featherstone 11	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
12	Featherstone 12	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
13	Featherstone 13	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
14	Featherstone 14	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
15	Featherstone 15	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
16	Featherstone 16	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
17	Featherstone 17	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
18	Featherstone 18	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
19	Featherstone 19	01-May-19	10:00	Success	Full	Standard	Full	100%	100%
20	Featherstone 20	01-May-19	10:00	Success	Full	Standard	Full	100%	100%

01 December 2019



Site efficiency dashboard

## Benefits

- » Better visibility of demand supports consistent provision of heat and hot water.
- » Using precise performance data and setting-fairer tariffs supports savings for consumers.
- » Better visibility of cost for maintaining similar sites.
- » Provides quality data for business reporting.

# Responding to recommendations

Sycous offer solutions for a proactive response to network efficiency recommendations raised by the eWatch heat monitoring service.

Our Data and Product Support team and Technical Services team will ensure that when issues are discovered, an engineer can be called out to investigate with the knowledge required to keep your heat network to keep performing to optimal efficiency.



## Data and Product Support Team

Our experts monitor all our data loggers, the data collected and set up the devices. This knowledge allows the team to highlight abnormalities and troubleshoot where an issue is located on the network. The use of eWatch Heat matched with our extensive product knowledge means we can give detailed knowledge to an engineer before they've even entered a property to investigate.



## Technical Services Team

Our HIU Service Technical team provides training, installation, commissioning, and maintenance services, covering all the products and solutions that we supply and support. Our planned and responsive maintenance solutions are designed to respond effectively to issues, maximising the useful life of assets, as well as complying with best practice and regulatory requirements.



We provide a flexible solution for 24/7 repair and maintenance across the UK, covering all heat networks and private utility networks. This includes meters, AMR and data collection maintenance, through to HIU, property and other infrastructure.

# Case Study:

## Remote problem detection

### Time-scale

05/21 - 08/22

### Properties

55

### Location

Central London

### Solutions

Liberty Connect 100, eWatchHeat

### Background

Newly built communal heating site in central London with 55 apartments, some remained empty.

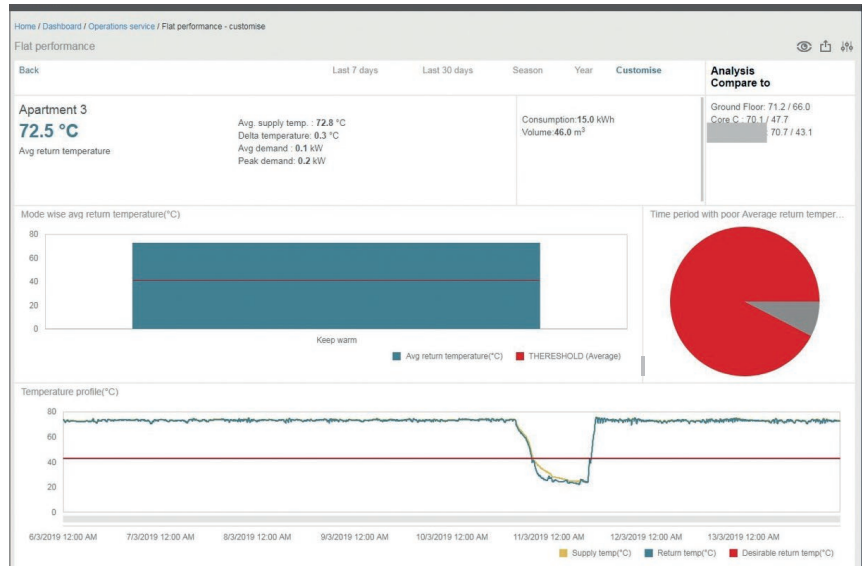
Liberty Connect 100 meters commissioned in all properties. Three bulk riser meters and the energy centre also metered with Liberty Connect 100.

The site represented one of the better heat networks, probably the best for the housing association concerned. During our study period heat loss at the site was in the range of 30-35%.





## Problem located in apartment 3



Dashboard highlighting above average return temperature in a void property

## What we found?

- » The eWatch dashboard for the property flagged up an empty apartment showing a constantly high return temperature. A site visit uncovered that a UFH pump was permanently running and also a high volume of flow within the riser meter to which it was attached.
- » After remedial work, the flow and the high return temperature dropped. The efficiency of the whole site improved.

## Results

Based on the site tariffs, each household made an annual saving of £45 Representing a total saving of nearly £2.5k for the building, on an already efficient site.

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