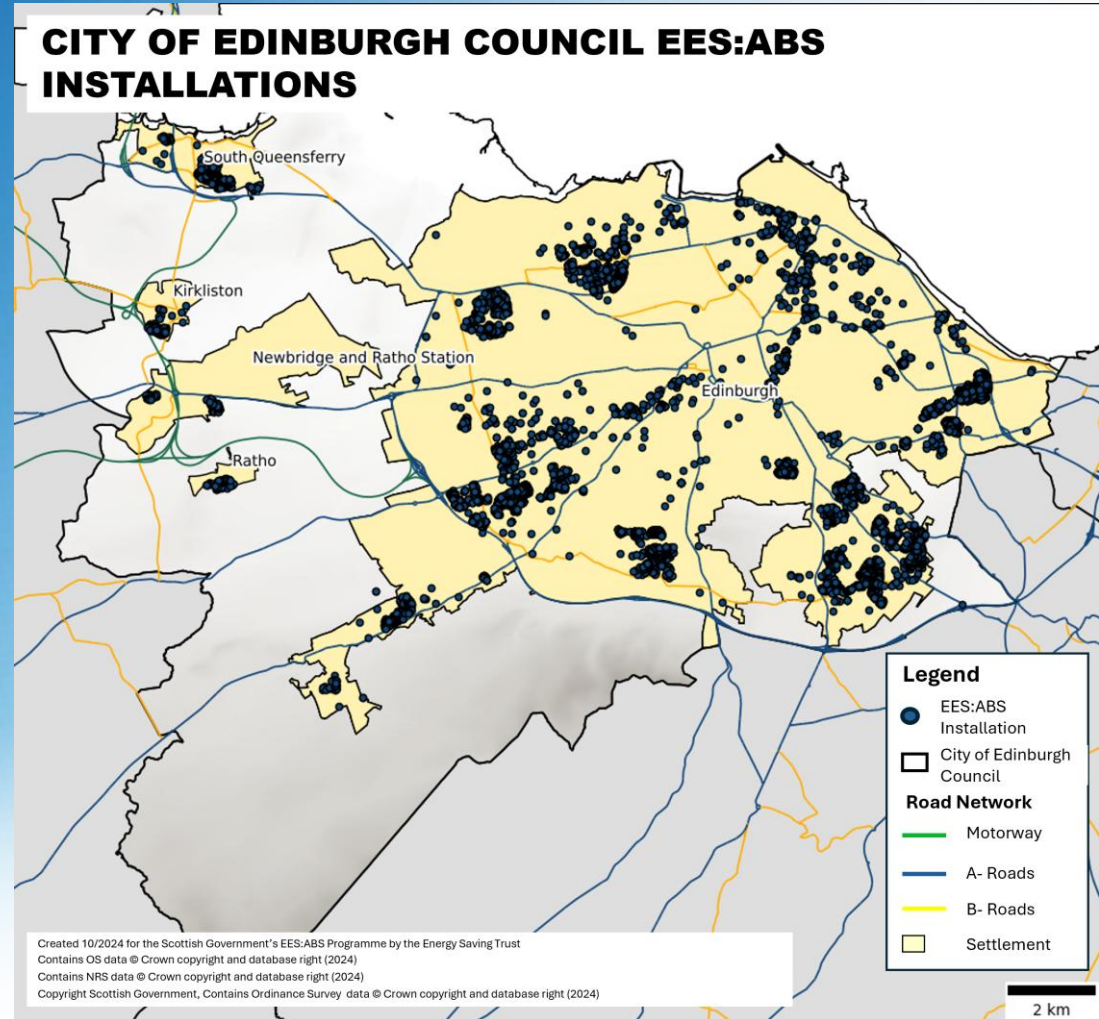


# The City of Edinburgh Council

## EES: ABS Case Study

energy  
saving  
trust

Energy Saving Trust  
October 2024



# Overview

The Scottish Government's EES: ABS\* team requested case studies to compare the available EES: ABS install data, alongside other energy efficiency related characteristics, with three goals in mind:

- To provide a more detailed breakdown of the installed measures data to date.
- To allow greater comparison between the different local authorities as well as across the duration of the EES: ABS programme.
- To provide a series of illustrations that the Scottish Government or local authorities can use to promote the work achieved under the EES: ABS programme.

This presentation contains the case study and illustration set for The City of Edinburgh Council EES: ABS activity reported to date (Sept 2024).\*\*

# The City of Edinburgh Council EES: ABS dataset

Financial Year	Number of records*	% of records
2013/14	1,355	12.27
2014/15	601	5.44
2015/16	2,123	19.22
2016/17	834	7.55
2017/18	961	8.70
2018/19	1,153	10.44
2019/20	573	5.19
2020/21	841	7.62
2021/22	734	6.65
2022/23	1,251	11.33
2023/24	617 <sup>1</sup>	5.59
<b>Total Installs</b>	<b>11,043</b>	<b>100.00</b>

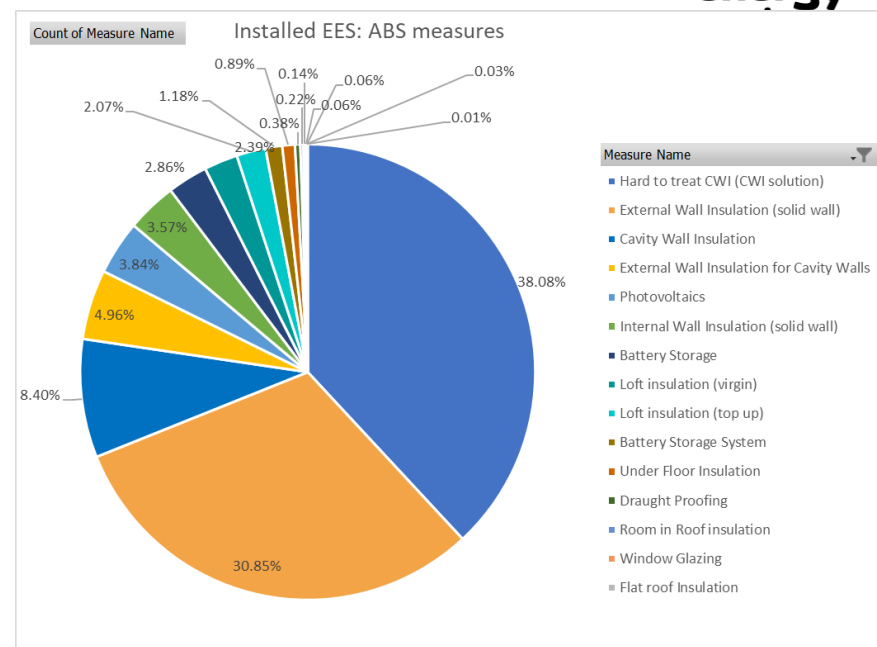
Reference numbers	Number of records	% of records
With pre-installation EPC	9,088	82.30
With post-installation EPC	3,172	28.73
With pre and post-installation EPC	3,019	27.34
With GDAR	0	0.00
With measure reference number	0	0.00

The City of Edinburgh Council has contributed 8.70% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

# Installed Measures

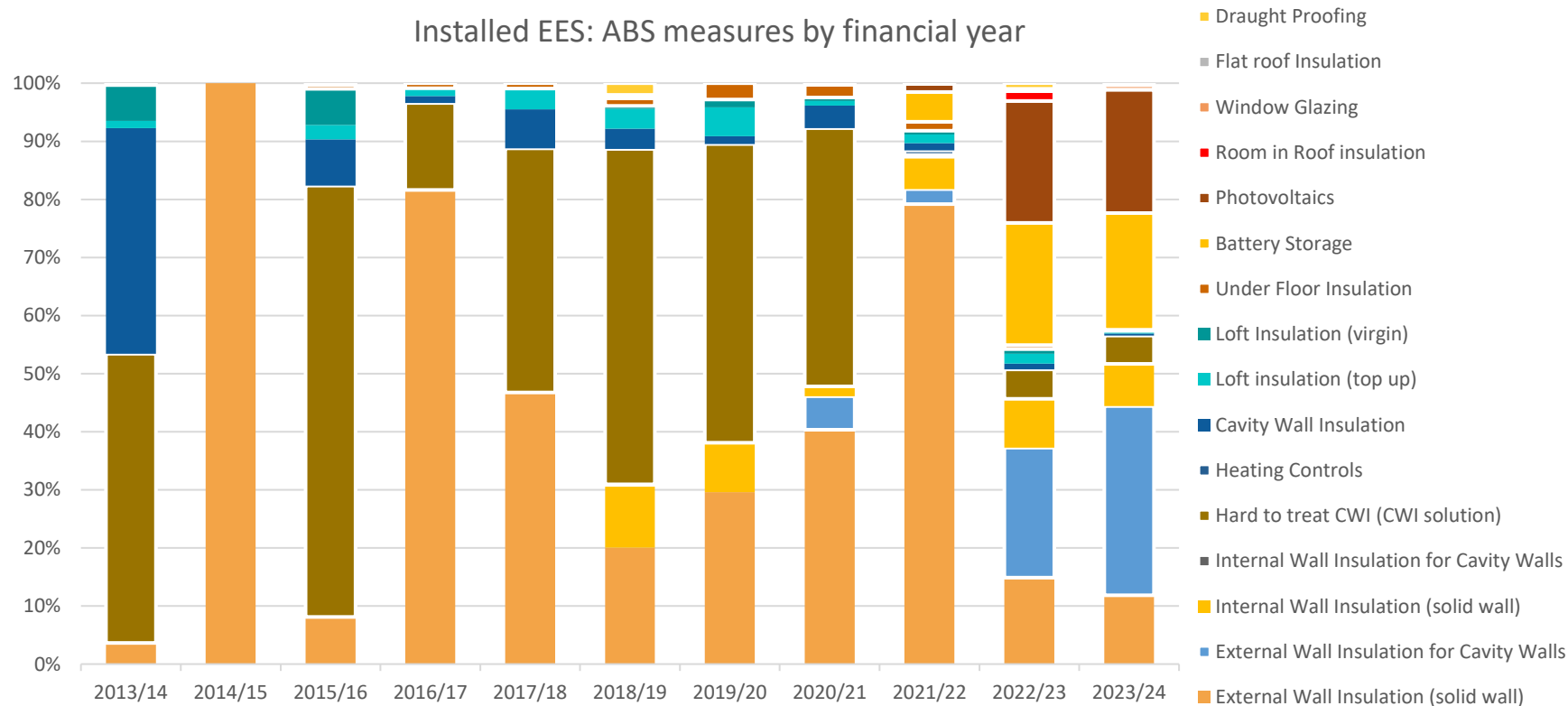
Measure name	Number of records*	% of records
Hard to treat CWI (CWI solution)	4,002	38.08%
External Wall Insulation (solid wall)	3,242	30.85%
Cavity Wall Insulation	883	8.40%
External Wall Insulation for Cavity Walls	521	4.96%
Photovoltaics	404	3.84%
Internal Wall Insulation (solid wall)	375	3.57%
Battery Storage	301	2.86%
Loft insulation (virgin)	251	2.39%
Loft insulation (top up)	218	2.07%
Battery Storage System	124	1.18%
Under Floor Insulation	94	0.89%
Draught Proofing	40	0.38%
Room in Roof insulation	23	0.22%
Window Glazing	15	0.14%
Flat roof Insulation	6	0.06%
Heating Controls	6	0.06%
Non-ECO funded measure	3	0.03%
Internal Wall Insulation for Cavity Walls	1	0.01%
<b>Total installs</b>	<b>10,509</b>	<b>100.00%</b>

\*As reported to Energy Saving Trust. Some data gaps may exist – to be submitted by the local authority.



The council has particularly focused on providing wall insulation to tackle heat loss. 81.31% of measures were for solid wall, system built or hard to treat cavity wall properties. Only 8.40% was for insulating standard cavity wall properties, and 4.46% was for loft insulation. The three Non-ECO funded measures occurred in financial year 2015/16 and were Hard to treat CWI, Loft insulation (virgin) and Under Floor Insulation.

# Installed Measures by Financial year

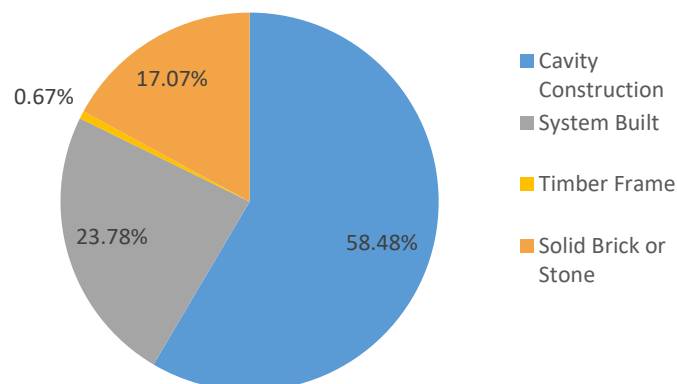


We can see how the measure type has changed over time. At the start of the programme the focus was cavity (standard and hard to treat) and loft insulation. Thereafter, the focus has switched to a mix of external wall insulation and hard to treat cavity solutions. In recent years, there has been an increase in internal wall insulation for solid walls, and most recently in photovoltaics and battery storage.

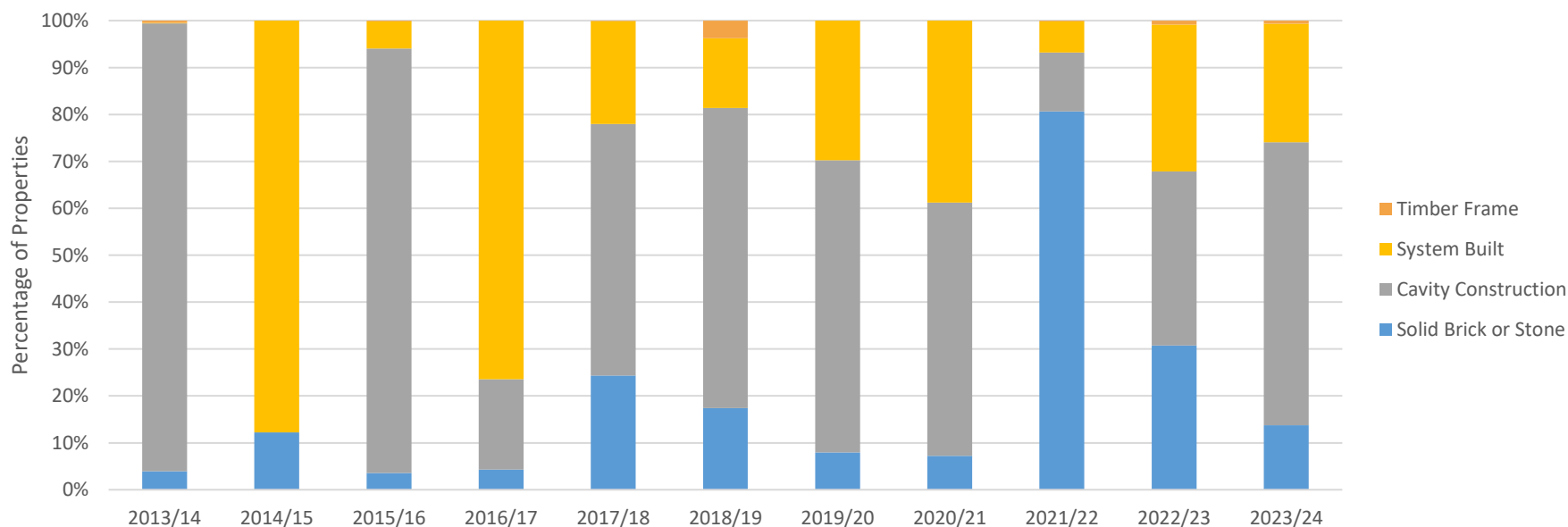
# Wall Type

The chart on the right shows the distribution of different wall types within the programme. Below you can see the division of these wall types throughout the years.

EES: ABS Properties by wall type

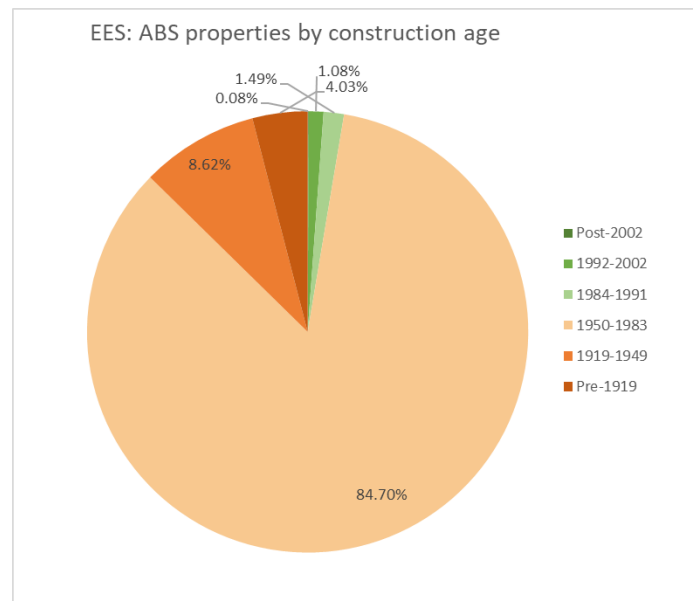


EES: ABS properties and construction type by financial year

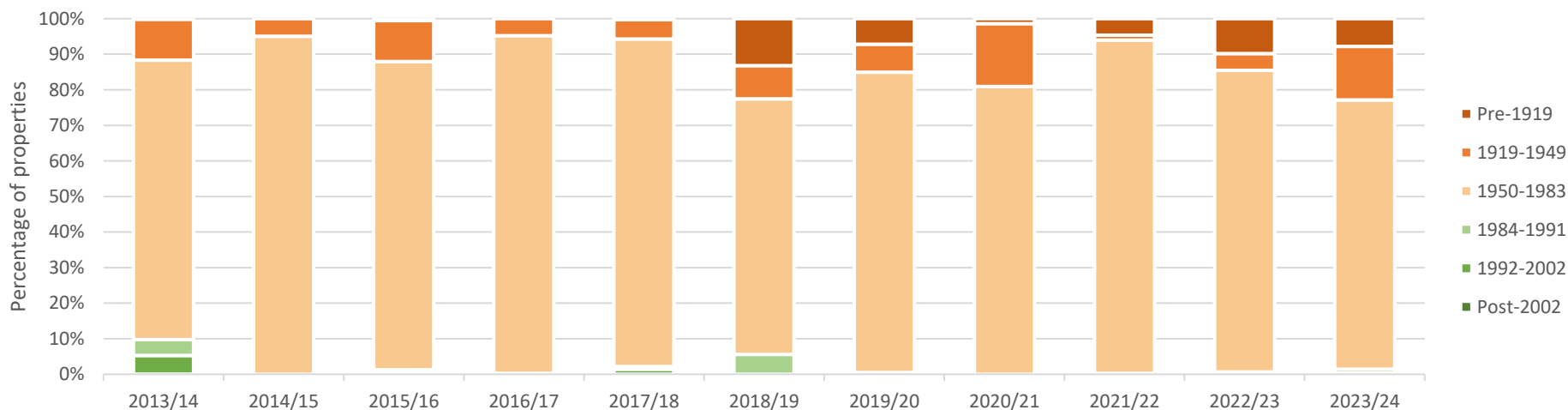


# Construction Age

The vast majority (84.7%) of properties treated were constructed sometime between 1950 and 1983. A portion of older properties constructed pre-1919 and between 1919 and 1949 (a total of 12.65%) was also included.



EES: ABS Properties and Construction Age by Financial Year

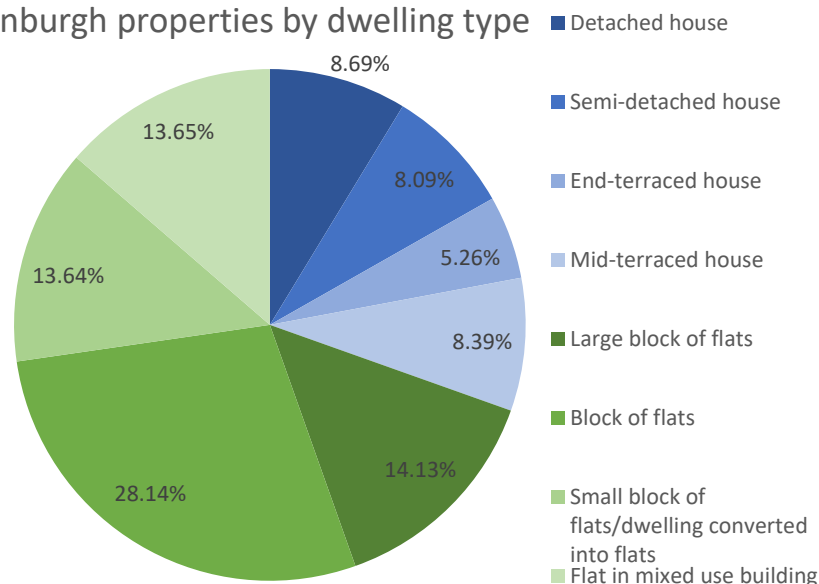




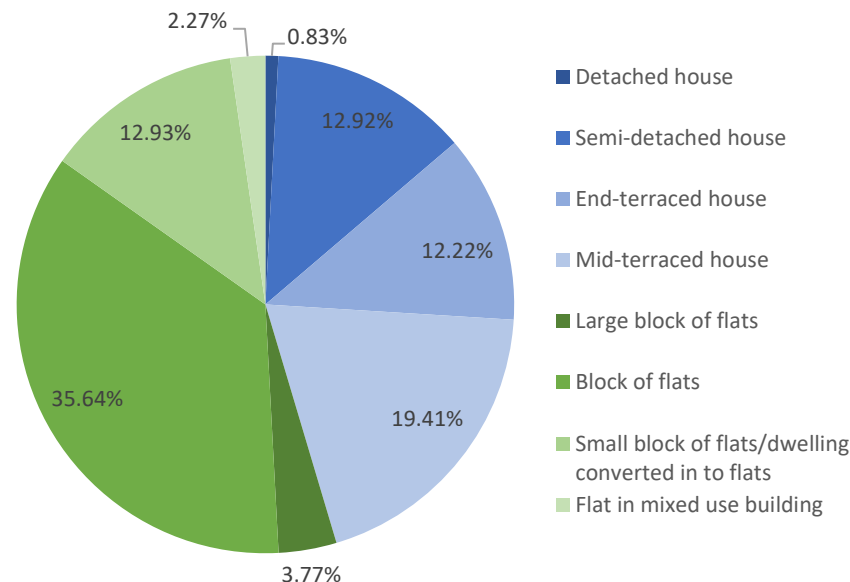
# Dwelling Type

The distribution of installs is broadly in line with the dwelling types in the City of Edinburgh Council. When comparing the two illustrations here, we can see that 54.6% of dwelling types in the programme are blocks of flats and 69.6% of Edinburgh Council's dwelling types consists of the same.

Edinburgh properties by dwelling type



EES: ABS properties by dwelling type

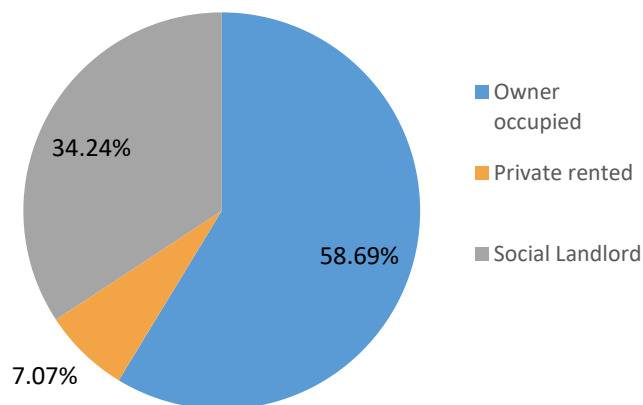


There is a slight over-representation of houses as these account for 30.4% of Edinburgh City's property types but comprise 45.4% of the EES: ABS work. Conversely, flats in mixed used buildings cover 13.6% of Edinburgh City's dwelling types but only 2.3% of the EES:ABS programme.

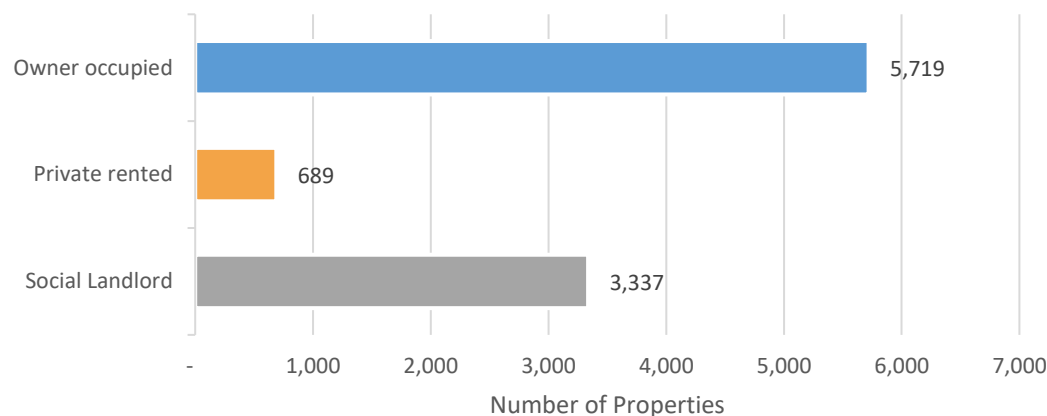


# Property Tenure

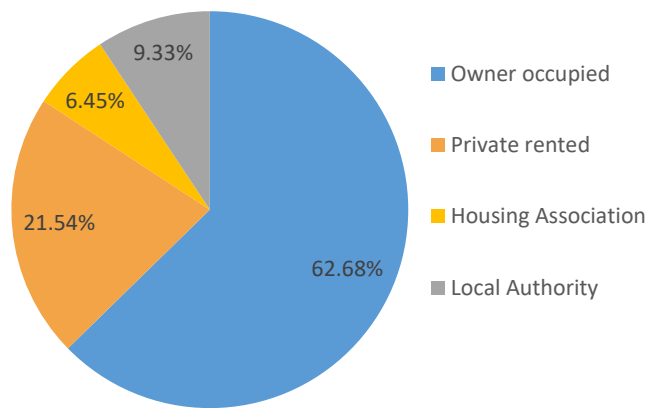
EES: ABS properties by tenure



EES: ABS properties by tenure



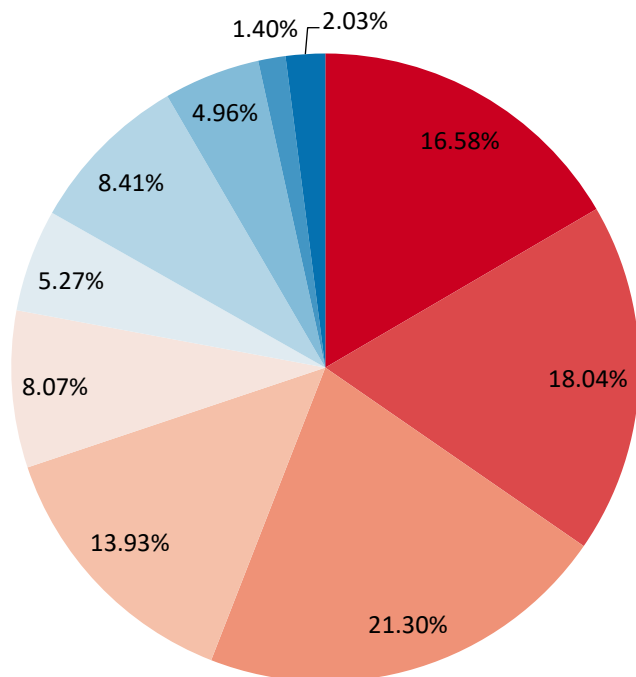
Edinburgh properties by tenure



The distribution of EES: ABS property tenures correlates closely with the owner-occupied sector within the City of Edinburgh Council area. Social let properties are well represented in the programme (34.2%) when compared to the 9.3% in Edinburgh as a whole. As expected with EES: ABS, private rented is notably low at only a third of the Edinburgh distribution.

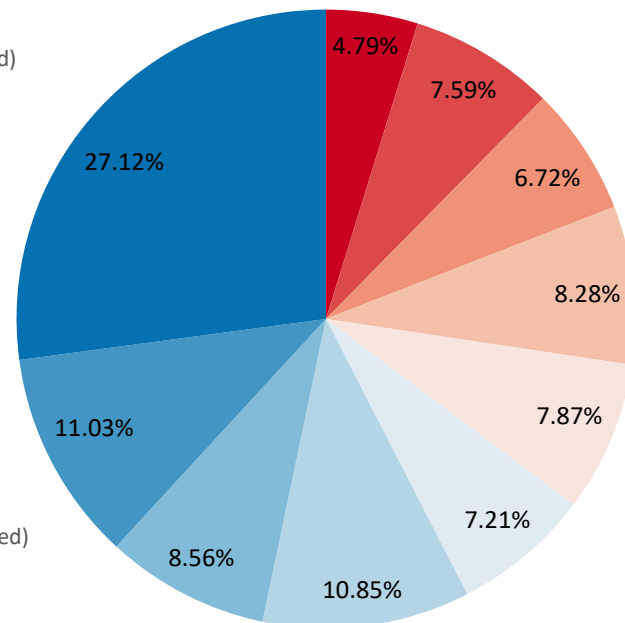
# Scottish Index of Multiple Deprivation (SIMD) I

EES: ABS properties by overall SIMD decile ranking



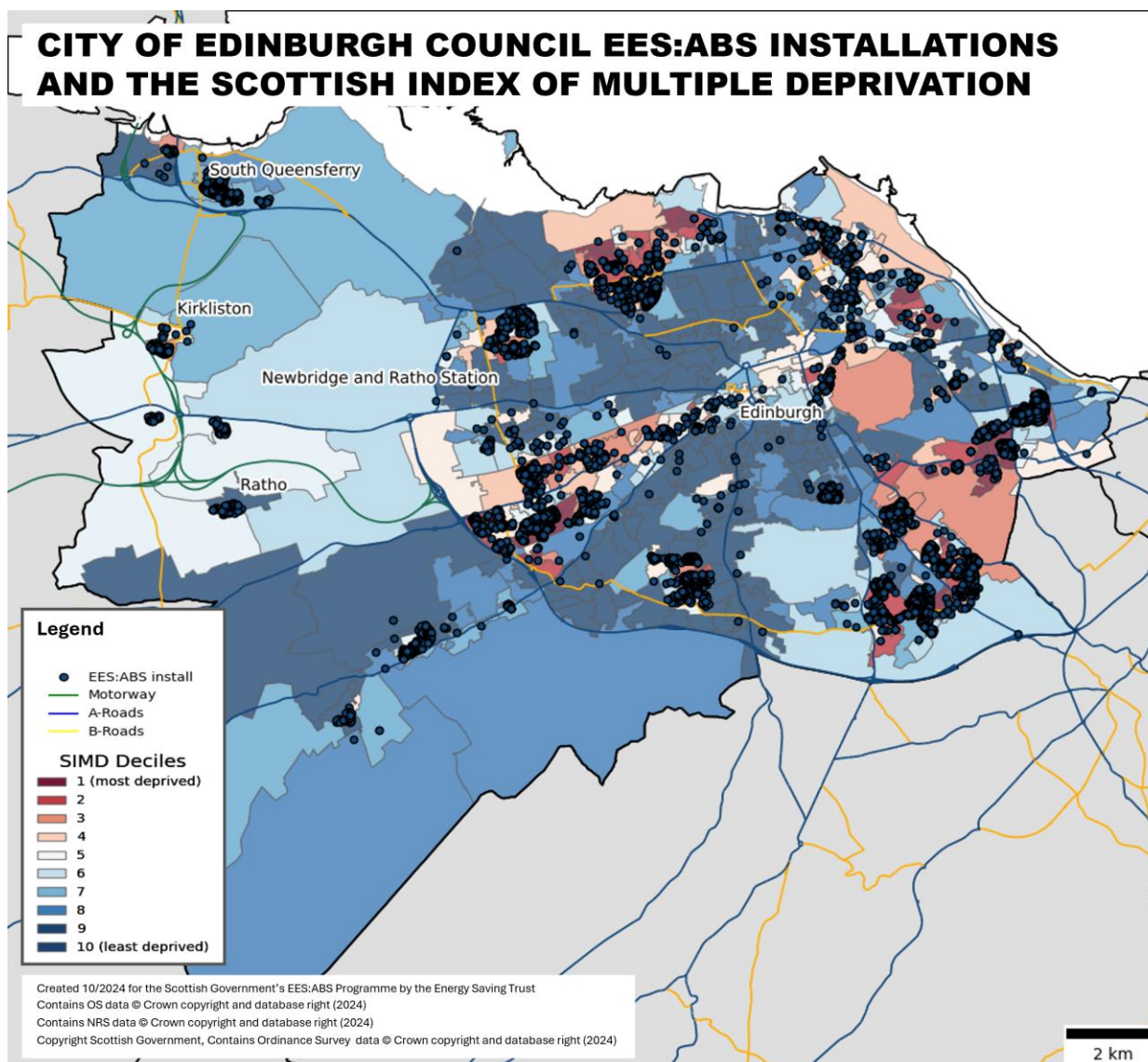
Edinburgh properties by overall SIMD decile ranking

- 1st (most deprived)
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th
- 10th (least deprived)

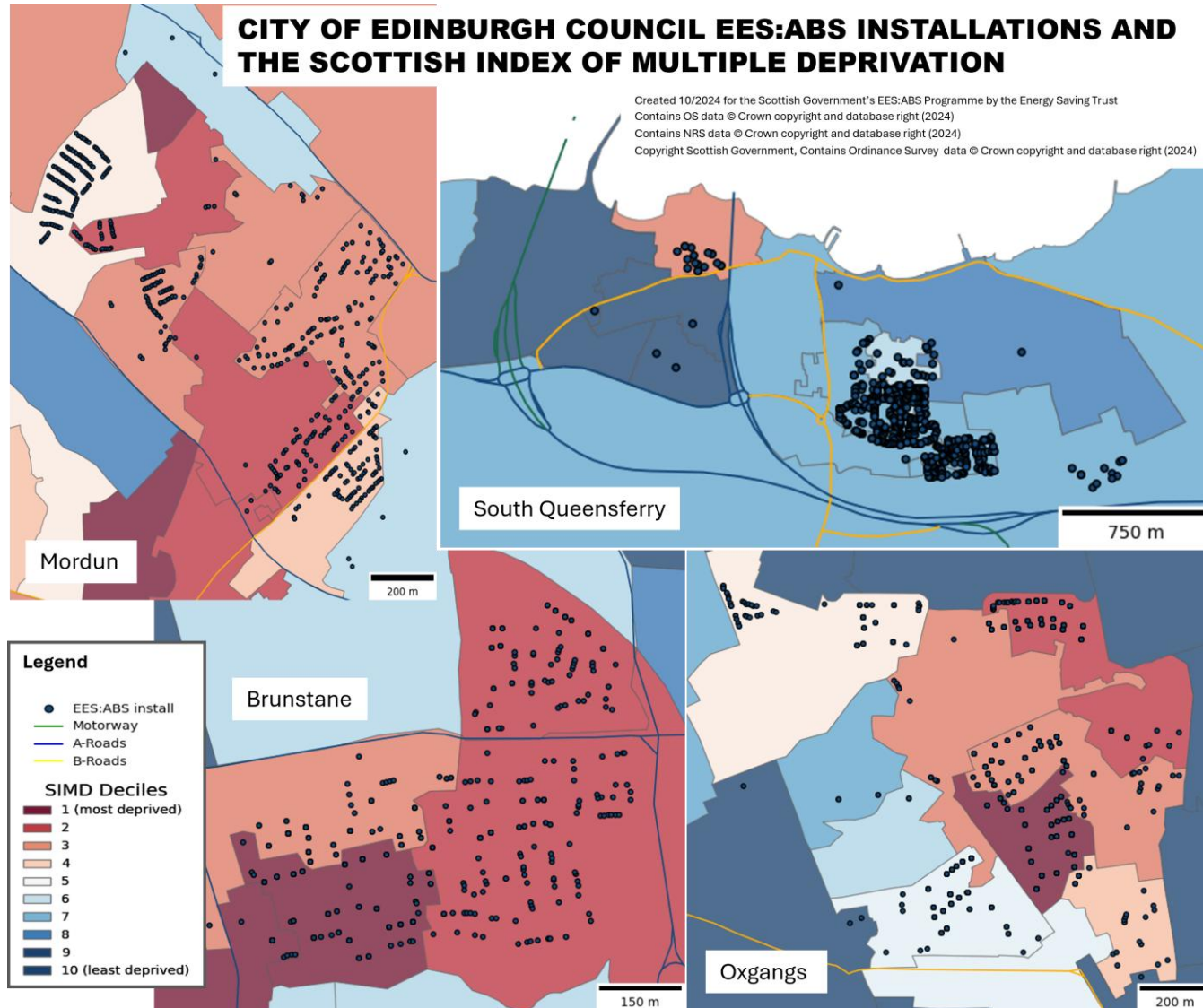


There is a clear correlation between the targeting of EES: ABS properties and SIMD deprivation in Edinburgh City. This pattern shows that the programme focuses on the most deprived areas of the city, as 77.93% of the installations occurred within the five lowest (most deprived) SIMD ranks. By comparison, the lowest five SIMD areas represents only 35.2% of Edinburgh's housing stock.

# Scottish Index of Multiple Deprivation (SIMD) II

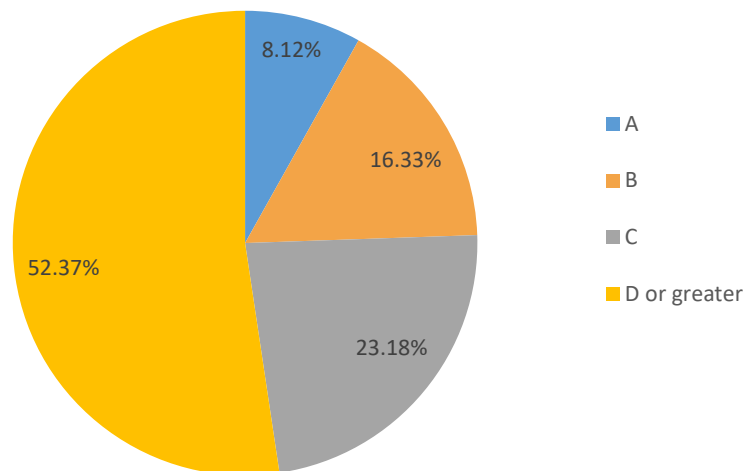


# Scottish Index of Multiple Deprivation (SIMD) III

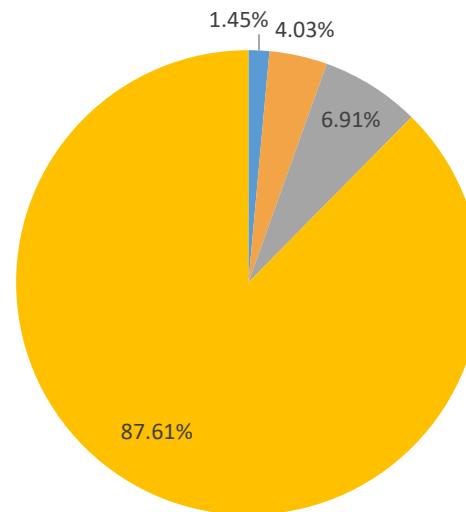


# EES: ABS Installs by Council Tax Band

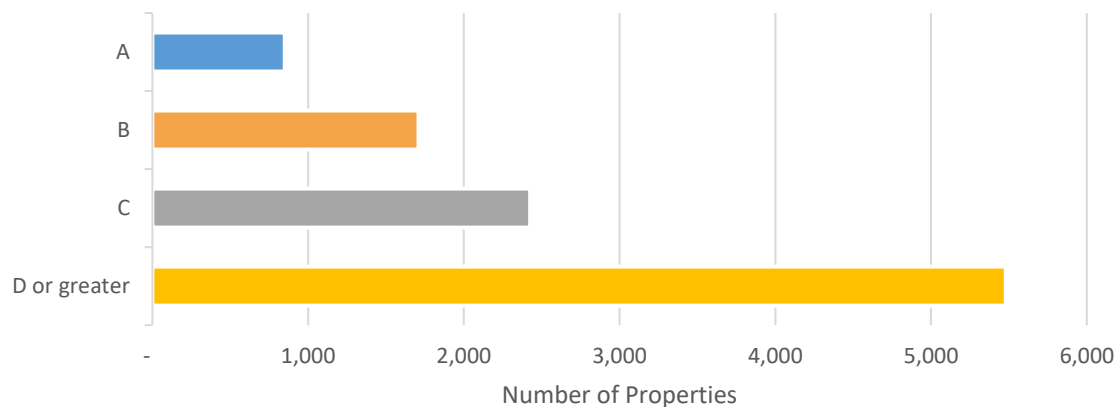
EES: ABS properties by council tax band



Edinburgh properties by council tax band

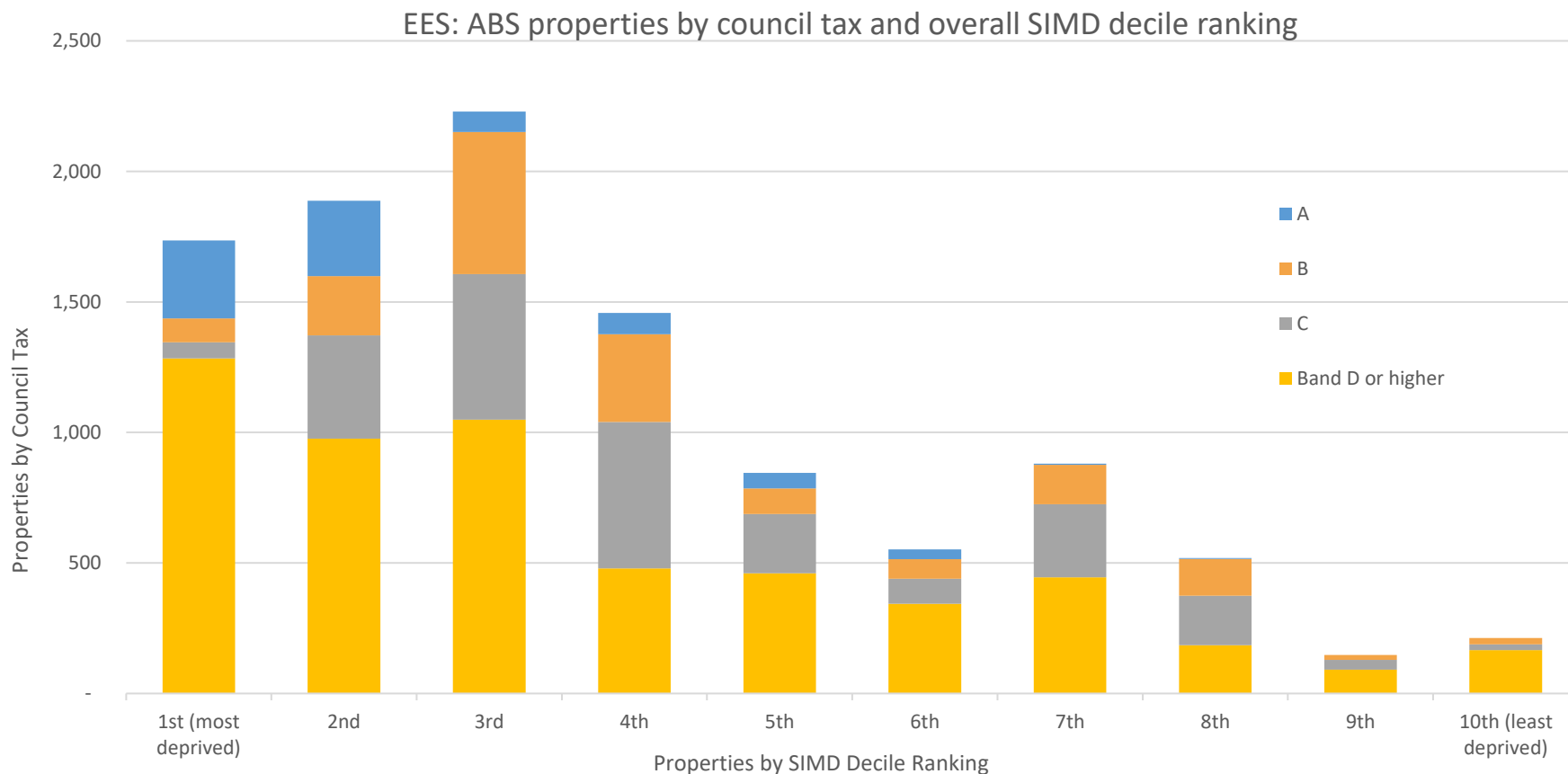


EES: ABS properties by council tax band



Just over 47.6% of properties receiving measures fall into council tax bands A, B and C. In line with the Edinburgh distribution, EES: ABS work has targeted a large proportion of band D properties (52.4%).

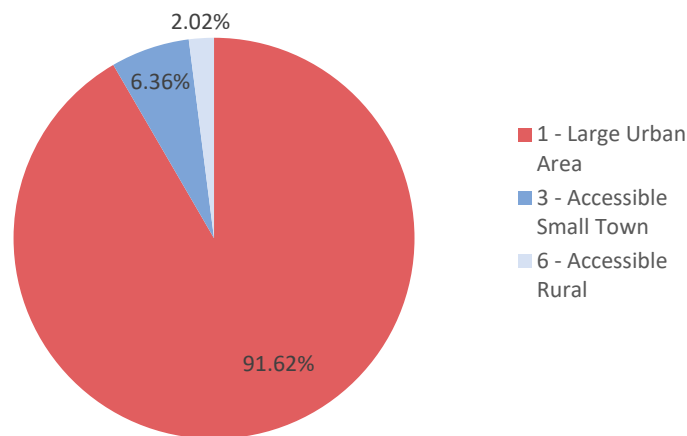
# EES: ABS Installs by Council Tax Band and SIMD



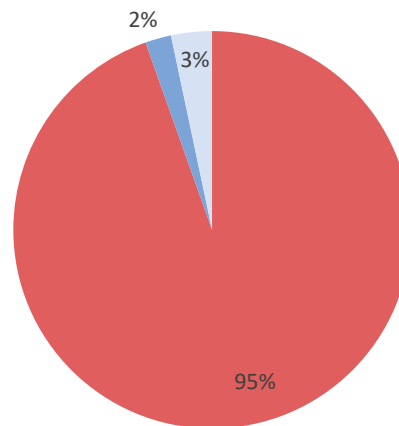


# Urban Rural Classification

EES: ABS properties by urban rural classification

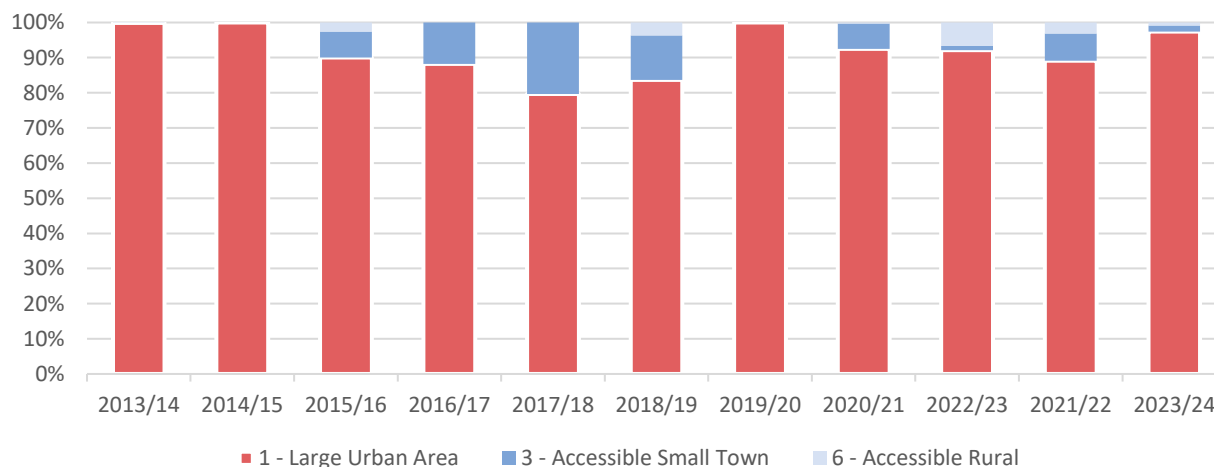


Edinburgh properties by urban rural classification



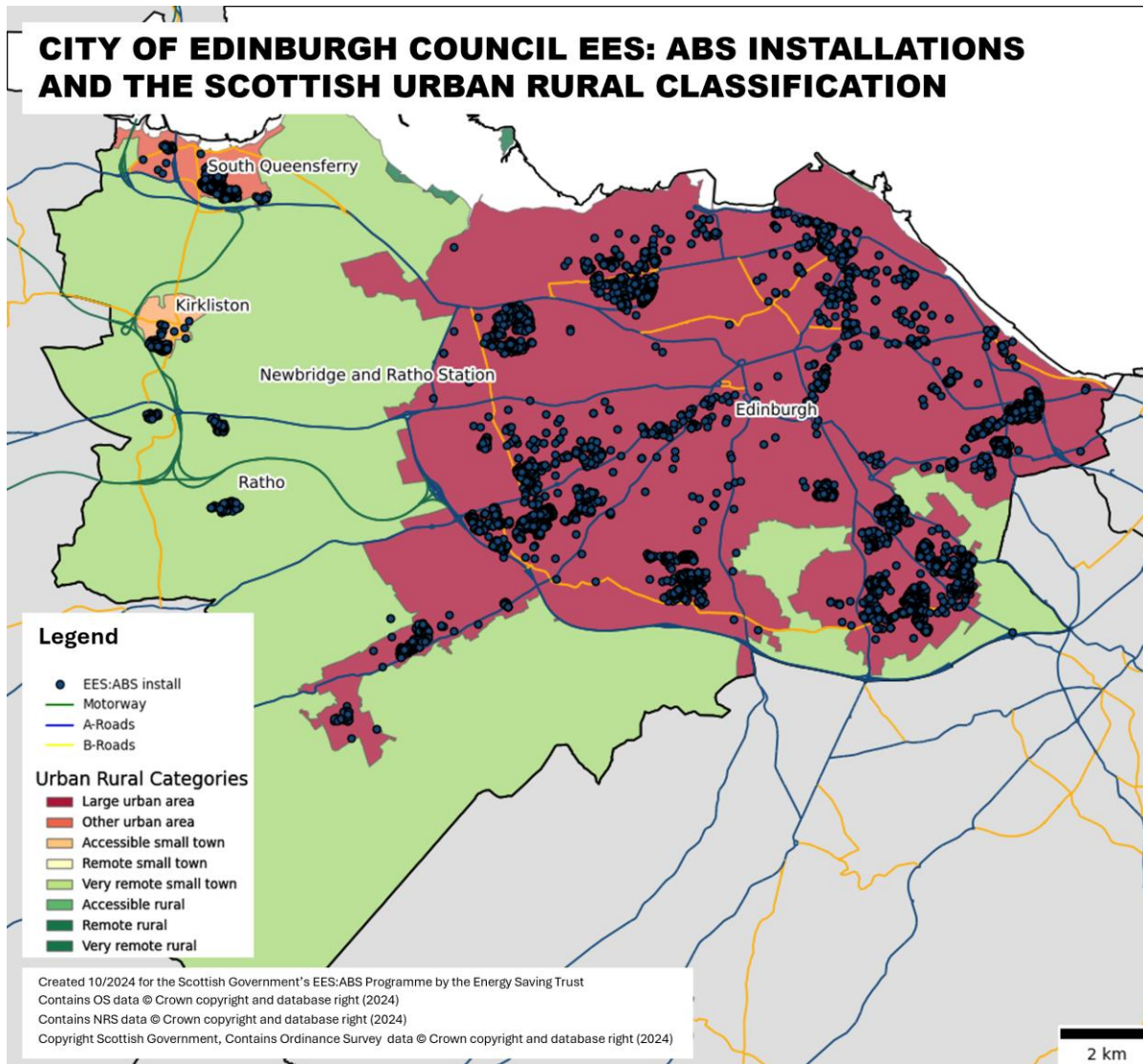
Most of The City of Edinburgh Council's area is classified as Large Urban Area, with a small portion of Accessible Small Towns and Accessible Rural. Work in accessible small towns occurred in South Queensferry and Kirkliston and was introduced in 2015/16 having the first two years focused almost entirely on Edinburgh city itself. The work completed outside of the city during the programme occurred in accessible rural areas such as Kirkliston, Musselburgh, Newbridge and Ratho.

EES: ABS properties by urban rural classification





# Urban Rural Classification



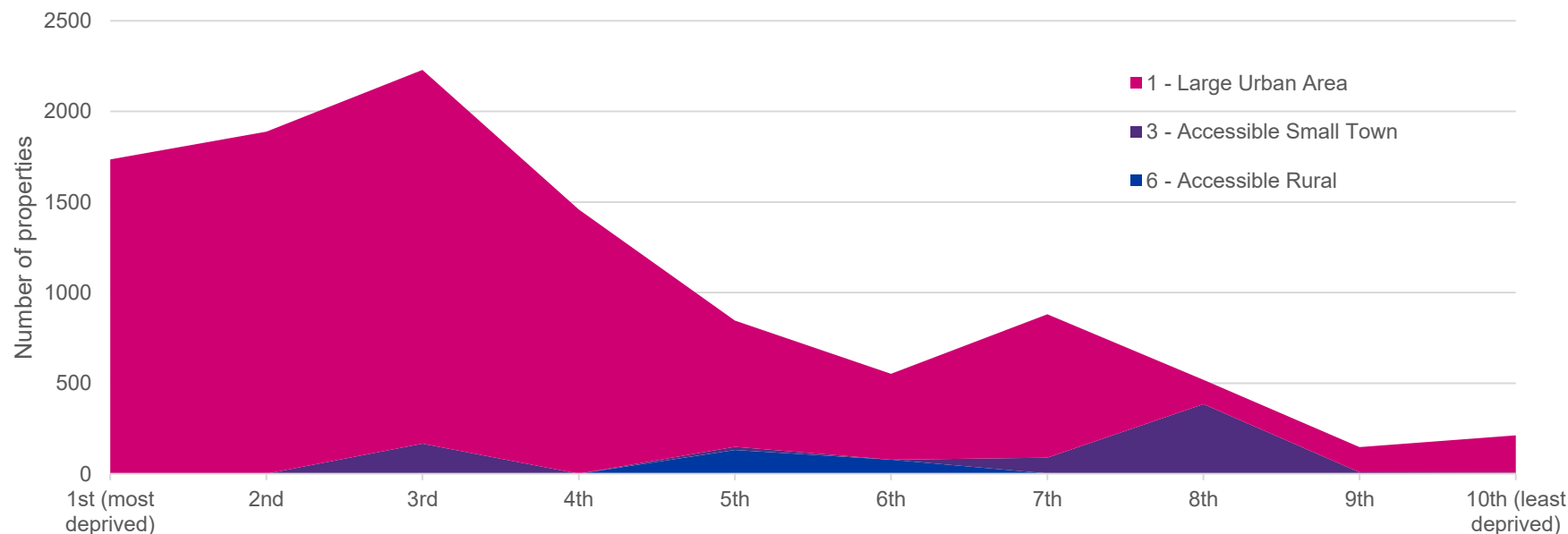
The work in accessible rural areas was completed in Newbridge and Ratho.

Since 2015/16, the installs have focused in the city area and accessible small towns only.

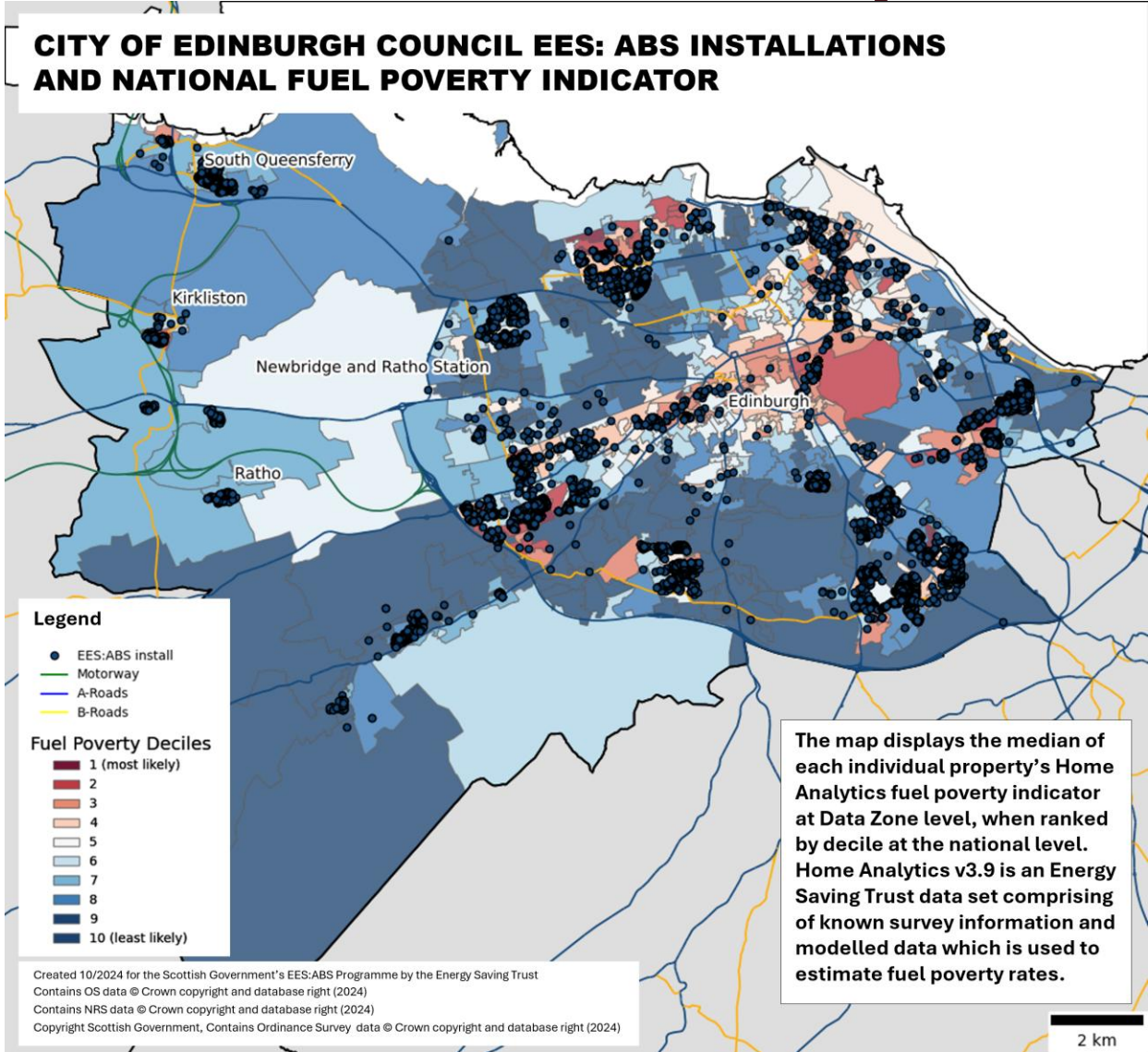
# Urban Rural Classification and SIMD

This illustration shows that most of the installation work in Edinburgh (in red) is focused on more deprived areas. The area targeted in South Queensferry and Kirkliston (in blue) on average has been less deprived. Accessible rural areas (Ratho and Newbridge) are seen in the middle of the scale.

EES: ABS Properties by Urban Rural Classification and SIMD Overall Decile Ranking



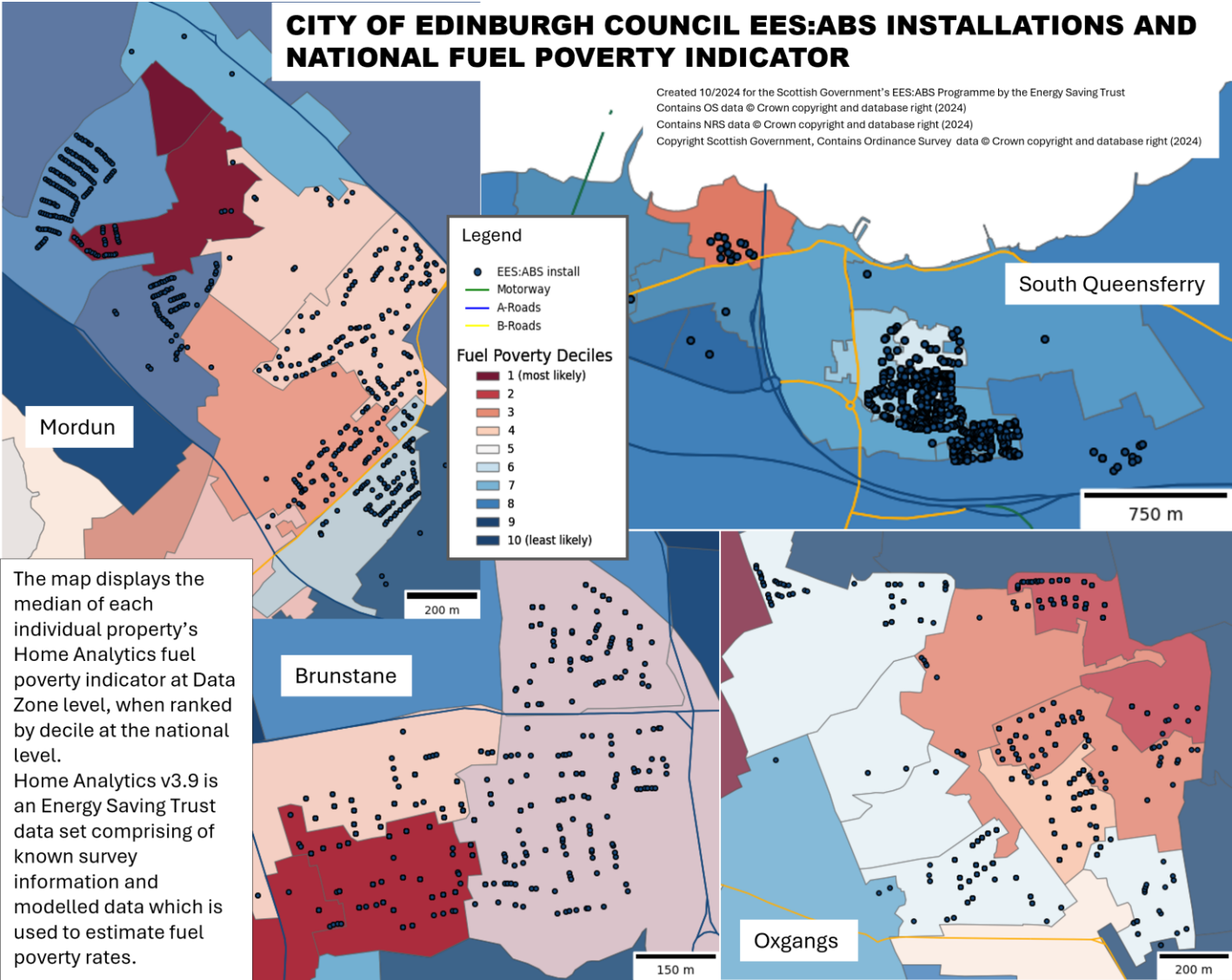
# National Scottish Fuel Poverty Indicator I



This map compares the state of fuel poverty in Edinburgh to the rest of Scotland. The blue areas have lowest fuel poverty rates on a national scale when fuel poverty by data zone is ranked for all local authorities in Scotland. The Scottish Housing Condition Survey (SHCS) states that the average fuel poverty rate in Edinburgh is around 20% of all homes in the area. This is 11 percent lower than the Scottish national average (31%) and places the City of Edinburgh Council as the best ranked local authority in the country. The high prevalence of mains



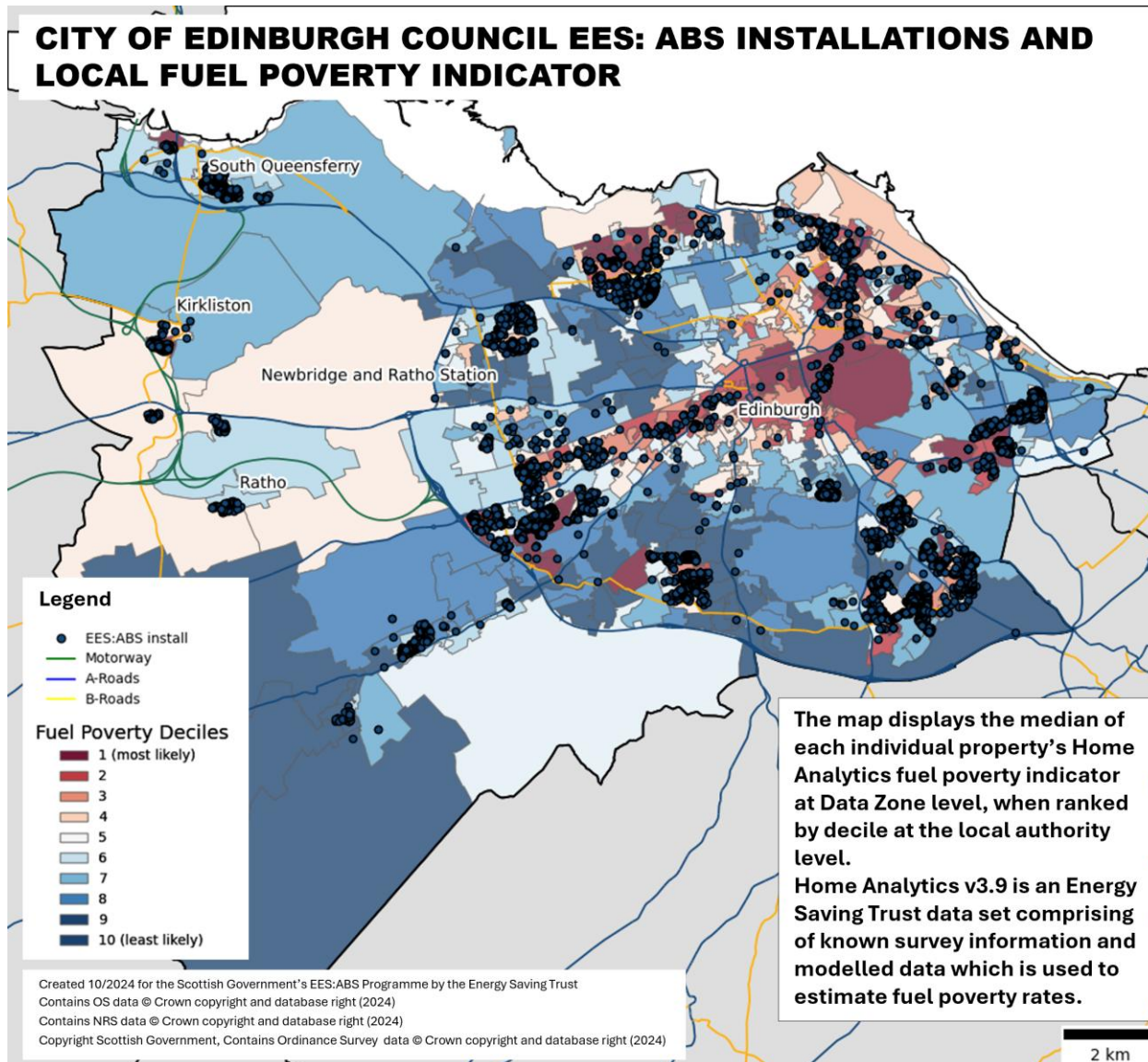
# National Scottish Fuel Poverty Indicator II



The map displays the median of each individual property's Home Analytics fuel poverty indicator at Data Zone level, when ranked by decile at the national level. Home Analytics v3.9 is an Energy Saving Trust data set comprising of known survey information and modelled data which is used to estimate fuel poverty rates.

# Edinburgh City Fuel Poverty Indicator I

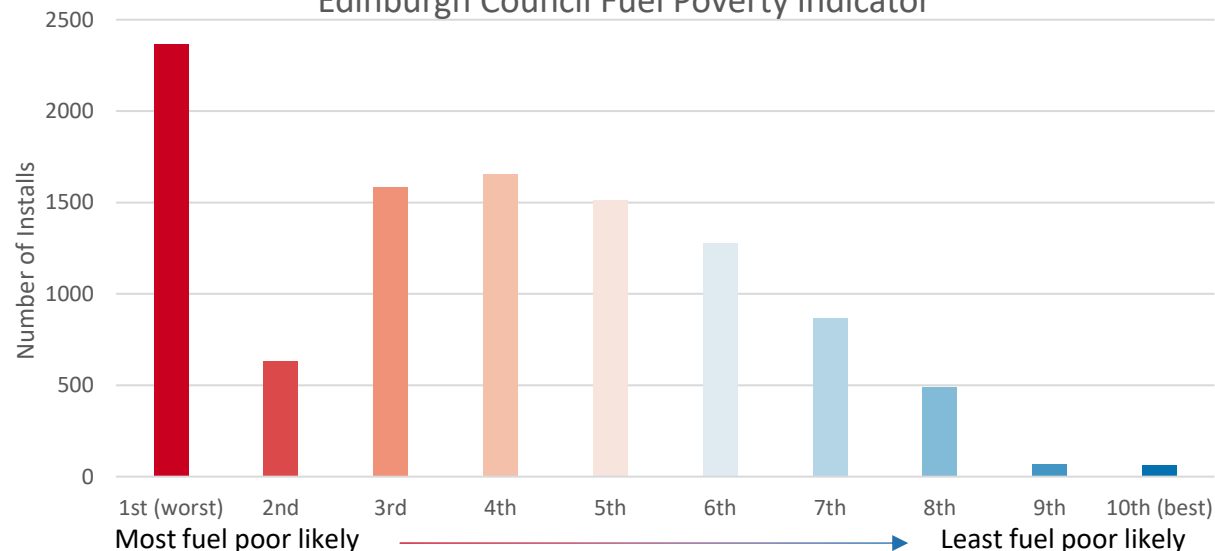
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This map shows the probability of fuel poverty by data zone ranked on a local authority level for Edinburgh council only. Highest fuel poverty areas within the council are shown here in red colour. Note that the fuel poverty indicator used here is a snapshot of the situation and therefore in some cases the work completed by energy efficiency programmes, such as EES: ABS, will have already had a positive impact on the fuel poverty rating in the region.

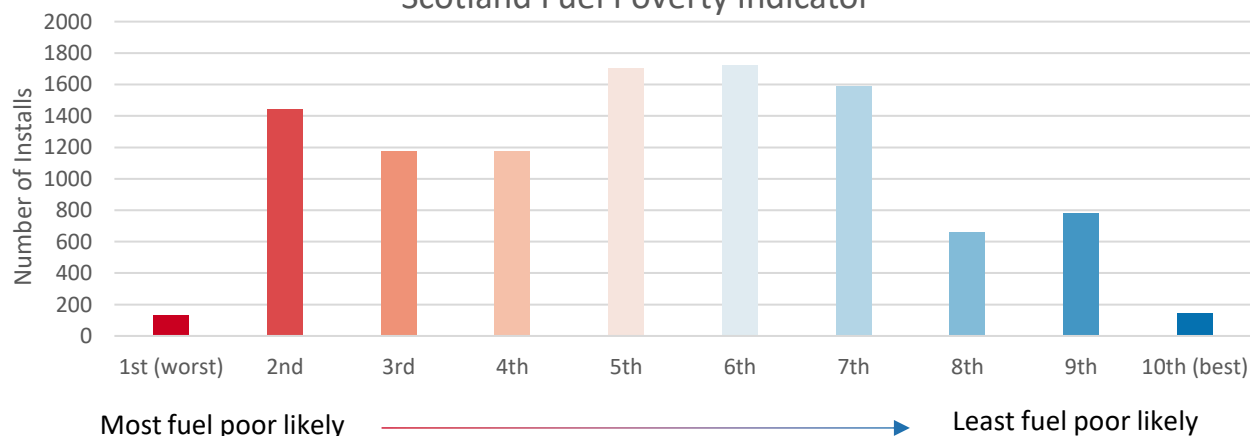
# Edinburgh City Fuel Poverty Indicator II

Edinburgh Council Fuel Poverty Indicator



A total of 43.58% of all EES: ABS installs took place within the three most fuel poor ranked data zones when looking at the local authority specific fuel poverty indicator for the City of Edinburgh Council. 73.74% occur within the five most fuel poor ranked data zones.

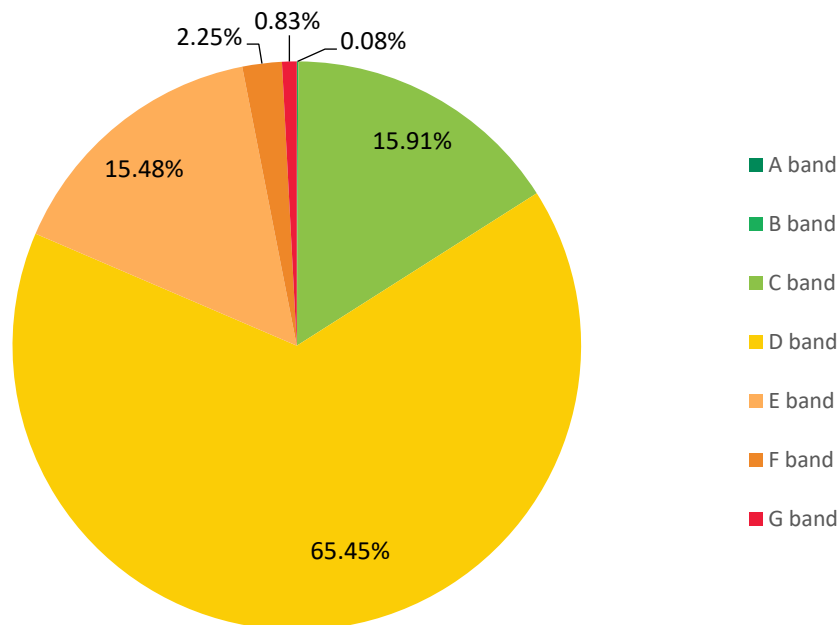
Scotland Fuel Poverty Indicator



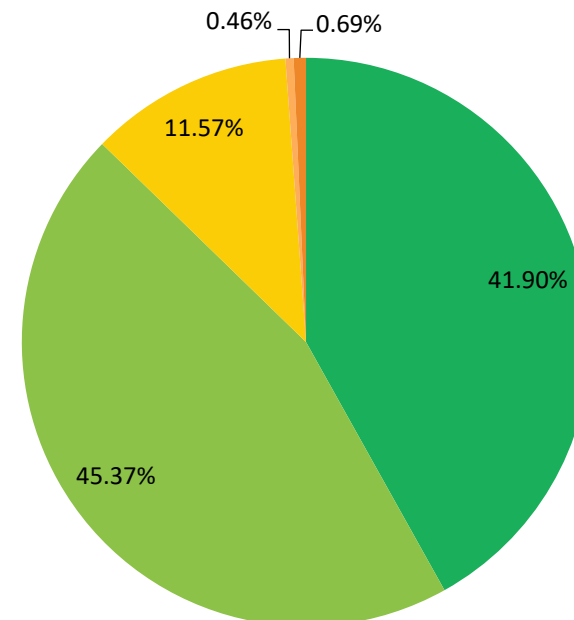
The bottom chart shows the difference when the installs are looked at on Scotland's national scale. 53.48% of the installs are within the five most fuel poor ranks when compared to the national figures.

# EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



EES: ABS properties by post-installation EPC banding



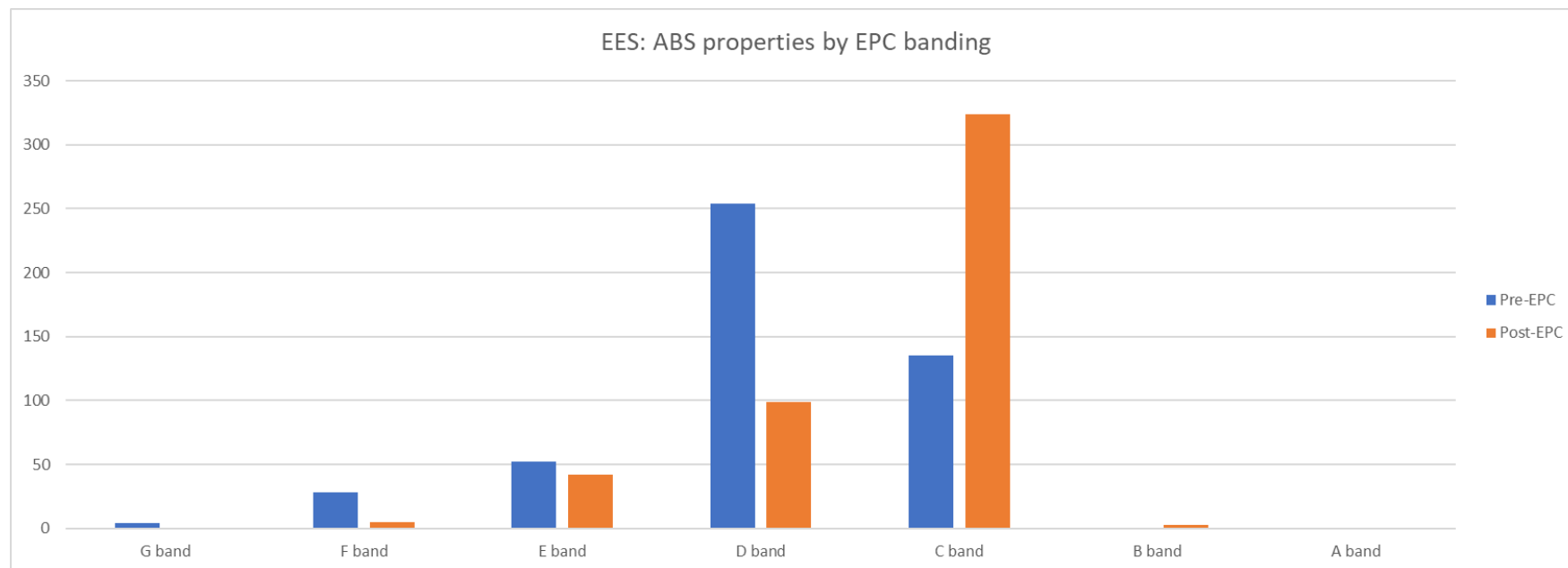
A valid pre-installation EPC was provided for 7,216 properties participating in the programme. Most of these, 84.01%, were within the national band D average or lower.

A total of 432 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, most of these properties (98.84%) are in the D band or above.



# EES: ABS SAP Band Analysis II

Out of the 7,216 properties with valid pre-EPCs, a total of only 396 had a valid pre- and post-installation EPC and could be used for further analysis. 86.1% of these 396 properties had a starting SAP band of D or lower. The Post-EPC's show that after the completion of installs, 42.7% of the properties have reached band C and 44.2% reached band D. 13.1% of the properties remain with a post-installation EPC band of E or F, despite of the impact of the EES: ABS treatment.

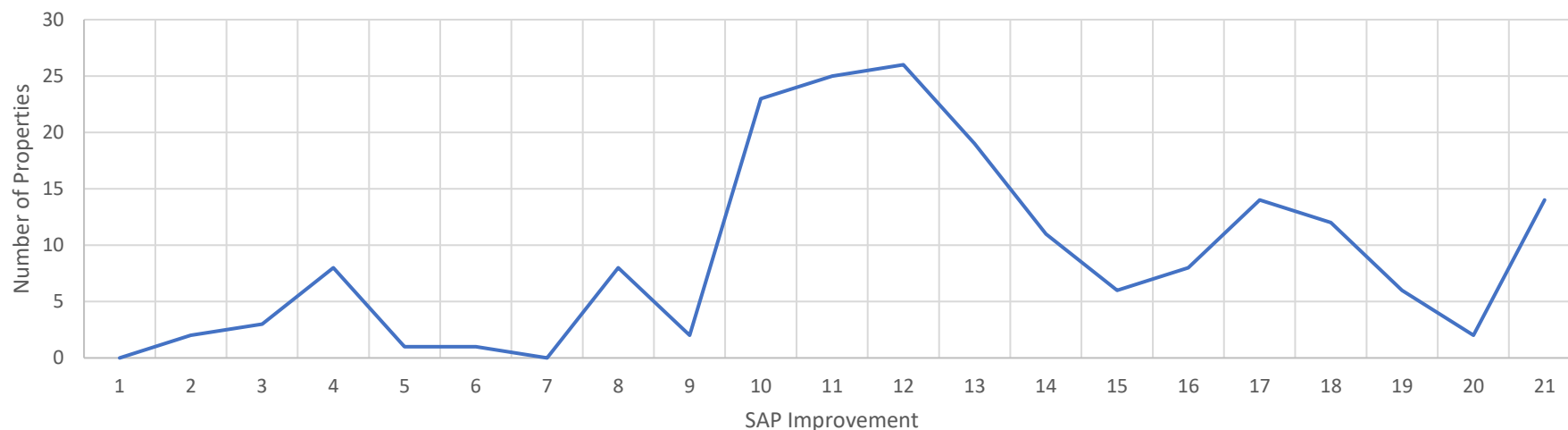


# EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within the City of Edinburgh Council was for a property to increase in SAP score for around 10 to 14 points (35.99% of properties where the EPC's were valid to use for further analysis).

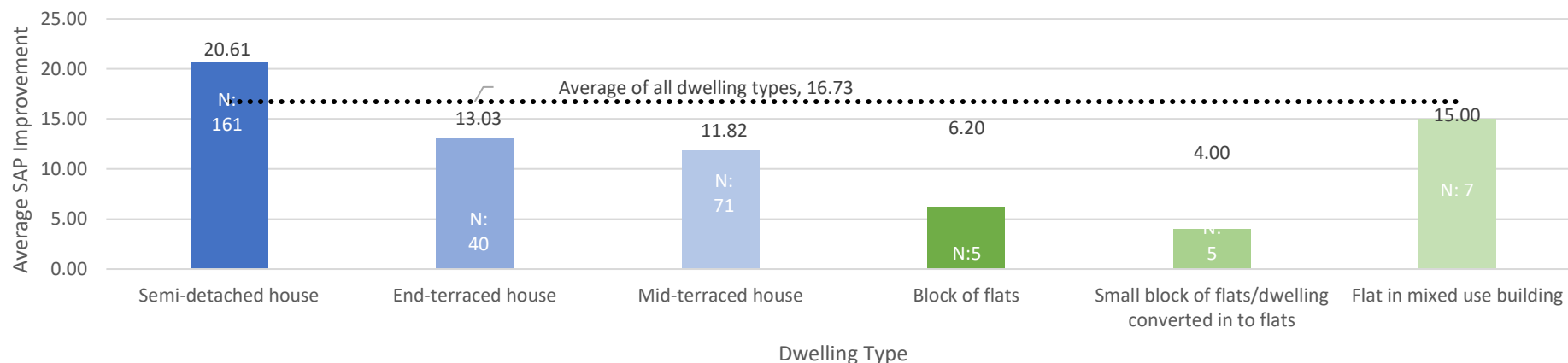
The larger SAP increases (10 to 21 points) included in this case study were due to installation of external wall insulation for solid walls and hard to treat CWI solutions within end-terraced houses and small blocks of flats/dwelling converted in to flats.

EES: ABS Property Count by SAP Improvement

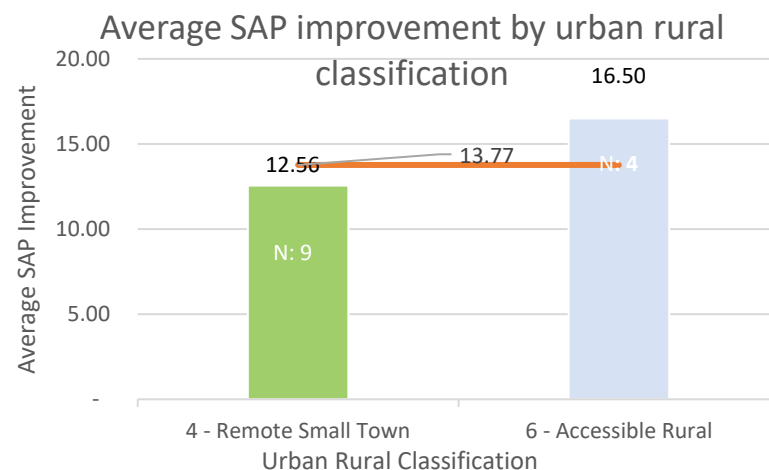


# EES: ABS SAP Band Analysis IV

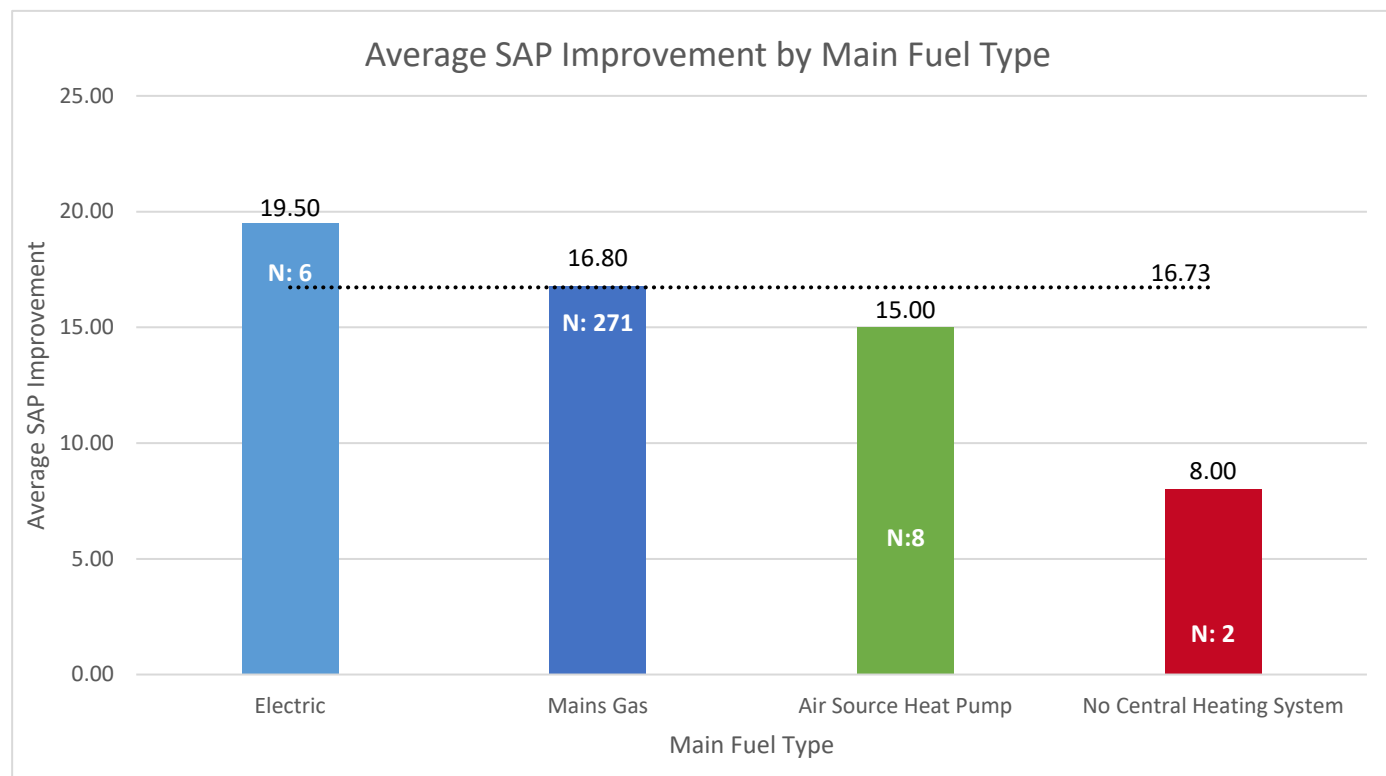
Average SAP improvement by dwelling type



Accessible small towns resulted in the largest SAP improvements with the average of 16.50. It should be noted that the sample size is only four properties. These were system-built houses and this type of dwelling benefits from a higher increase on average due to a larger surface area being treated. Fuel type was mains gas, construction age between 1950-83 and measure external wall insulation for solid walls.



# EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all main fuel types was 16.73. The biggest sample size available was for mains gas properties where the average improvement was 16.80. Properties with electric heating improved by their SAP rating the most by 19.50 on average, and ASHP properties by 15.0. However, the sample sizes for these were very low (16 and 8 records respectively).

# Conclusions and notes

Overall, The City of Edinburgh Council's EES: ABS programme achieves several points:

- The main types targeted were hard to treat cavity wall and standard cavity wall, as well as system-built properties. There was a large percentage in the owner-occupied sector (58.9%) and the majority were constructed between 1950-83 (84.7%).
- The majority of the installs focused on the most deprived SIMD areas.
- 73.7% of installs occurred within the 5 most fuel poor ranked data zones.
- The majority of properties started the programme with an average SAP banding of D and reached band C post installation.
- The programme had a positive impact on the participating properties, as most increased their SAP score by around 10 to 14 points.

# Sources

Variable	Source	Notes
HEEPS: ABS Measure, Address and Tenure	Local Authority	Held on behalf of the Scottish Government's HEEPS: ABS programme by EST.
Dwelling Type, Construction Age, Council Tax Band, Fuel Poverty Probability	Home Analytics	Combination of EPC and modelled data created by EST. Typically not for publication.
Main heating fuel type, EPC SAP scores and SAP bands	Scottish EPC register	Obtained by cross referencing EPC Report Reference Numbers provided by the local authority with Scottish EPC register extracts
Scottish Housing Condition Survey	Scottish Government	Available online. SHCS 2017-19 used.
SIMD	Scottish Government	Available online. SIMD 2020 used.
Urban Rural Classification	Scottish Government	Available Online. 8-Fold classification (2020) used.

Special thanks to Alex Blyth, the Senior Housing Development Officer in the City of Edinburgh Council, for providing insight and assistance towards the completion of this case study.

# Contacts

## **Energy Saving Trust HEEPS: ABS Contact:**

Christiana Osuolale

Data Management Officer

[est\\_eesabs.reporting@est.org.uk](mailto:est_eesabs.reporting@est.org.uk)

## **Scottish Government EES: ABS Contact:**

[SGareabasedschemes@gov.scot](mailto:SGareabasedschemes@gov.scot)

Jonathan Cairney

Delivery Manager - Area Based Schemes

[jonathan.cairney@gov.scot](mailto:jonathan.cairney@gov.scot)

Josh Kumar

Delivery Manager | Area Based Schemes

[Josh.Kumar@gov.scot](mailto:Josh.Kumar@gov.scot)

## **The City of Edinburgh Council HEEPS: ABS Contact:**

Michael Kellett

Programme Manager – Capital Programme Existing Homes

[Michael.Kellett@edinburgh.gov.uk](mailto:Michael.Kellett@edinburgh.gov.uk)