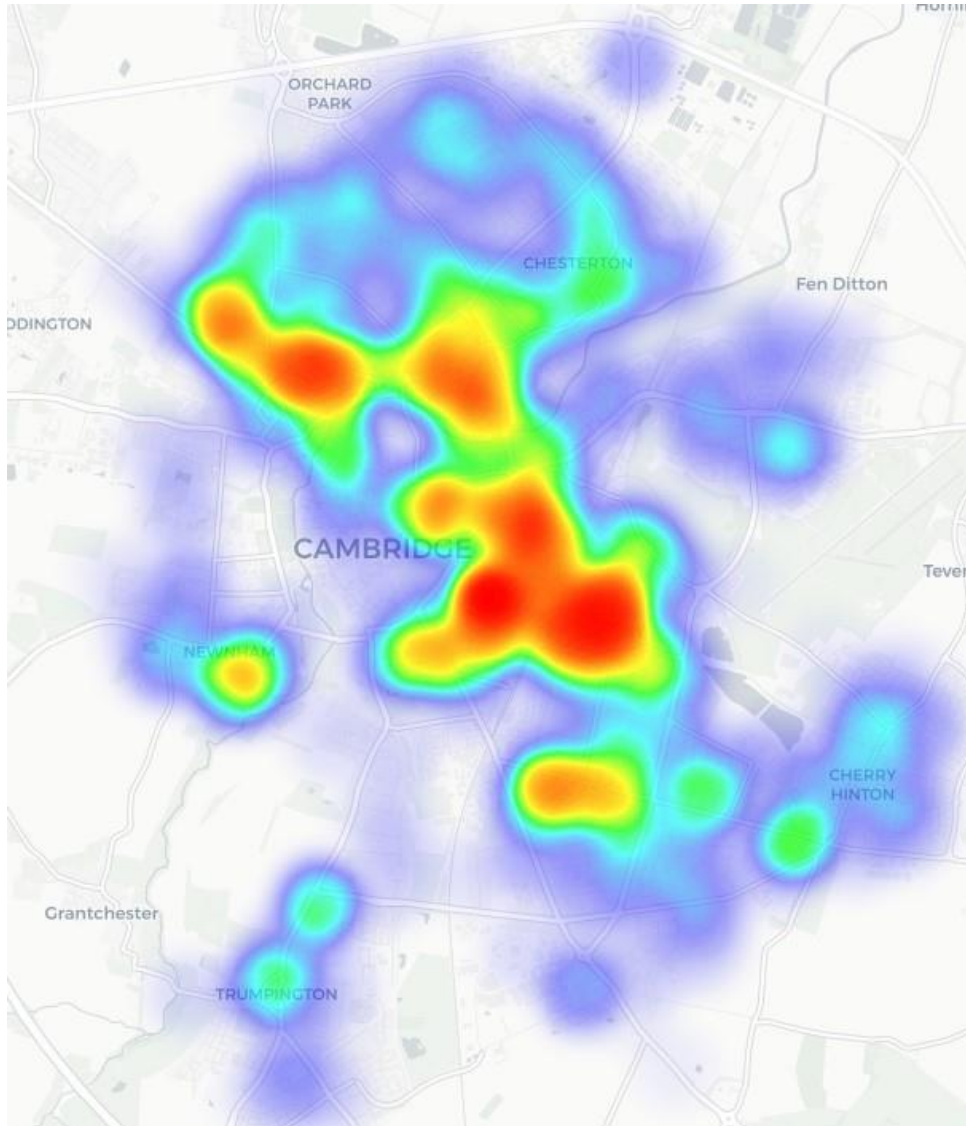


## Hot Numbers:

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An overview of Home Energy Upgrade opportunities in the Cambridgeshire and Peterborough Combined Authority



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Anne Miller  
David Earl

October 2020

## About the authors.

**[Carbon Neutral Cambridge](https://carbonneutralcambridge.org/)** is focussed on accelerating the transition to fair and healthy carbon neutrality within the Greater Cambridge region. <https://carbonneutralcambridge.org/>

**[Anne Miller](#)** is Chair of Carbon Neutral Cambridge. She is expert in innovation and creativity, and with over 35 years practical experience in technological innovation, organisational change and sustainability, she is particularly focussed on the low carbon transition.

**Maxime Rokoszak** is passionate about the environment and has always wanted to facilitate the transition to a low-carbon world. An Environmental Engineer, he started in the field of renewable energies, with a particular interest in thermal and photovoltaics energy and he has now more than 8 years of international work experience with 6+ years in project management roles. Maxime is currently working as a Project Manager for a PV Solar firm.

**[David Earl](#)** is a freelance designer and photographer. He designs web sites, especially those supported by a database and involving maps. He is a major contributor to [OpenStreetMap](#), a project to map the world.

## Acknowledgements

Postcodes located using [Ordnance Survey Code-Point Open](#)<sup>®</sup> at Feb 2020 – contains OS data © Crown Copyright 2020”.

## Table of Contents

About the authors.....	1
Acknowledgements.....	1
Introduction.....	3
1) Analysis of the existing housing stock.....	4
EPCs April 2010 – March 2015.....	5
EPCs April 2015 - March 2020.....	6
Are EPCs improving fast enough?.....	7
2) Easy and cost-effective measures.....	8
3) Roof insulation.....	9
Roof insulation April 2010 – March 2015.....	9
Roof insulation April 2015 - March 2020.....	10
Location of properties with inadequate roof insulation.....	12
4) Cavity wall insulation.....	13
Cavity wall insulation April 2010 – March 2015.....	13
Cavity wall insulation April 2015 - March 2020.....	14
Location of properties with inadequate cavity wall insulation.....	15
5) Conclusions.....	16
6) Data Tables.....	17
EPC Tables - April 2010 - March 2015.....	17
EPC Tables - April 2015 - March 2020.....	17
Roof insulation Tables - April 2010 - March 2015.....	18
Roof insulation Tables - April 2015 - March 2020.....	19
Cavity wall insulation Tables - April 2010 - March 2015.....	20
Cavity wall insulation Tables - April 2015 - March 2020.....	21
7) References.....	23

## Introduction

This report provides an overview of Home Energy Upgrade opportunities in the Cambridgeshire and Peterborough Combined Authority, in order to accelerate the rate of improvement and help optimise the use of the Green Homes Grant scheme in our area.

It is widely recognised that if we are to meet the legally binding obligation of the Climate Act to achieve Net Zero Carbon Emissions by 2050, we need to upgrade the energy efficiency of at least 1 Million homes a year across the UK. This will help avoid unacceptable climate change, improve health and reduce energy bills.

Many rightly criticise the 2050 target date as being inequitable and dangerously late, which it is. This only increases the need to take urgent action now, and this report aims to help.

Some of the simplest most cost-effective ways of upgrading the energy efficiency of homes are to ensure that all homes have good loft insulation and that cavity walls are insulated wherever feasible. However, as the Business, Energy and Industrial Strategy Committee has reported<sup>1</sup>, the rate of improvement of loft insulation and cavity wall insulation has declined by over 90% since the introduction of the failed Green Deal in 2012.

In August 2020, the long awaited successor: the Green Homes Grant<sup>2</sup> scheme was announced. This nominally offers up to £2 billion for domestic energy efficiency improvements, primarily aiming to support measures such as improving insulation or installing low carbon heating. It offers homeowners and landlords two-thirds of the cost of approved measures up to £5000, or for those in receipt of certain benefits) 100% funding up to £10,000. However, it is very concerning that the grant is only available for 6 months from the end of September 2020 to 31 March 2021, which is a ridiculously short period, particularly given the existing lack of capacity in the building industry. We suspect that it will result in much frustration.

£500 million of this funding will be delivered through Local Authorities to help low income households<sup>3</sup>. Councils will be allowed to spend the money over a slightly longer time period, so we urge all our councils to apply. We hope this report will provide evidence to help them do so.

To help optimise the use of the Green Homes Grants in our area, Carbon Neutral Cambridge volunteers decided to expand our earlier analyses of the local Energy Performance Certificate (EPC) dataset<sup>4 5</sup>.

Our aim in doing this is threefold:

- To track local progress in improving domestic energy efficiency across the 6 districts of the Cambridgeshire and Peterborough Combined Authority
- To help councils identify the most cost-effective local opportunities to improve the energy efficiency of existing homes
- To raise awareness amongst householders, communities, NGOs and local businesses of the large numbers and locations of areas with large numbers of homes that will benefit from two of the simplest and most cost effective measures that can be undertaken: loft insulation and cavity wall insulation.

## 1) Analysis of the existing housing stock

To analyse the existing housing stock in the six districts of the Combined Authority region, we used the Energy Performance Certificate (EPC) dataset available at <https://epc.opendatacommunities.org/> provided by the Ministry of Housing, Communities & Local Government<sup>6</sup>.

This gives researchers access to the Energy Performance of Buildings Data for all of England and Wales. It is updated every six months for new EPCs where the status of the EPC has changed. At the time of our analysis, the last entry on the website was made on 31<sup>st</sup> March 2020. The first entry was made on 1<sup>st</sup> October 2008. To allow us to compare progress across the Cambridgeshire and Peterborough Combined Authority region, we analysed the data for the six districts: Cambridge, East Cambridgeshire and South Cambridgeshire, Fenland, Huntingdonshire and Peterborough.

Getting the data from these six areas gave us 44,361 EPCs for Cambridge, 28,206 EPCs for East Cambridgeshire, 53,602 EPCs for South Cambridgeshire, 33,209 EPCs for Fenland, 55,511 EPCs for Huntingdonshire and 77,395 EPCs for Peterborough. It should be noted that EPCs currently are valid for 10 years. Some houses do not yet have an EPC at all, but the data may include an EPC of the same house more than once. This is because an EPC of the same house could be lodged again to reflect an improvement or meet grant funding requirements. Nevertheless, the EPC dataset is considered to give a very useful overview of the state of the housing stock.

In order to process the large amount of data involved, we used the freeware programming language R. This has made it much easier for us to extract the information for this report.

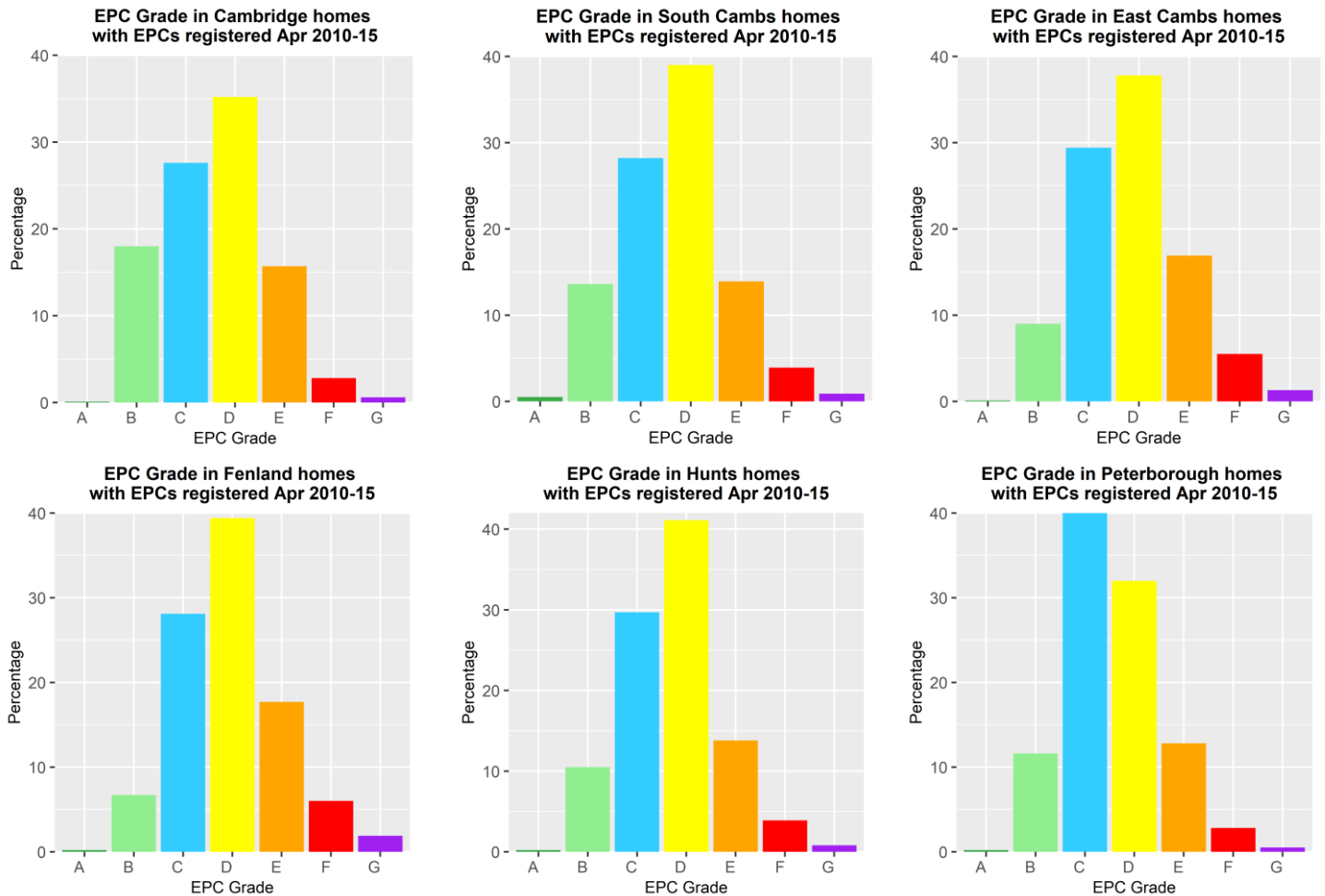
To help determine any trend over the past decade we looked at two periods: from April 2010 to March 2015 and from April 2015 to March 2020.

- First, we assessed the number and proportion of EPCs in each category from A (most efficient) to G (least efficient) in each district, and the trend over the last decade, comparing this to the target of having all homes EPC C by 2035
- Secondly, we looked at levels of roof insulation, to discover the numbers, proportions, locations and EPCs of homes with poor and very poor roof insulation.
- Thirdly, we looked at cavity wall insulation, to discover the numbers, proportions, locations and EPCs of homes with uninsulated or partially insulated cavity walls.

It should be noted that although EPCs use a standardised method, that is useful to get an overview of the energy efficiency of an individual property and an area - they don't always take into account specific characteristics of an individual property and don't consider the occupants at all. We therefore recommend householders take appropriately skilled advice before undertaking any retrofit works on individual properties.

The sections below discuss our findings. We have also tabulated the data in the tables of section 7 at the end of this report.

## EPCs April 2010 – March 2015



For the period from April 2010 to March 2015, the proportion of homes of EPC C or above was:

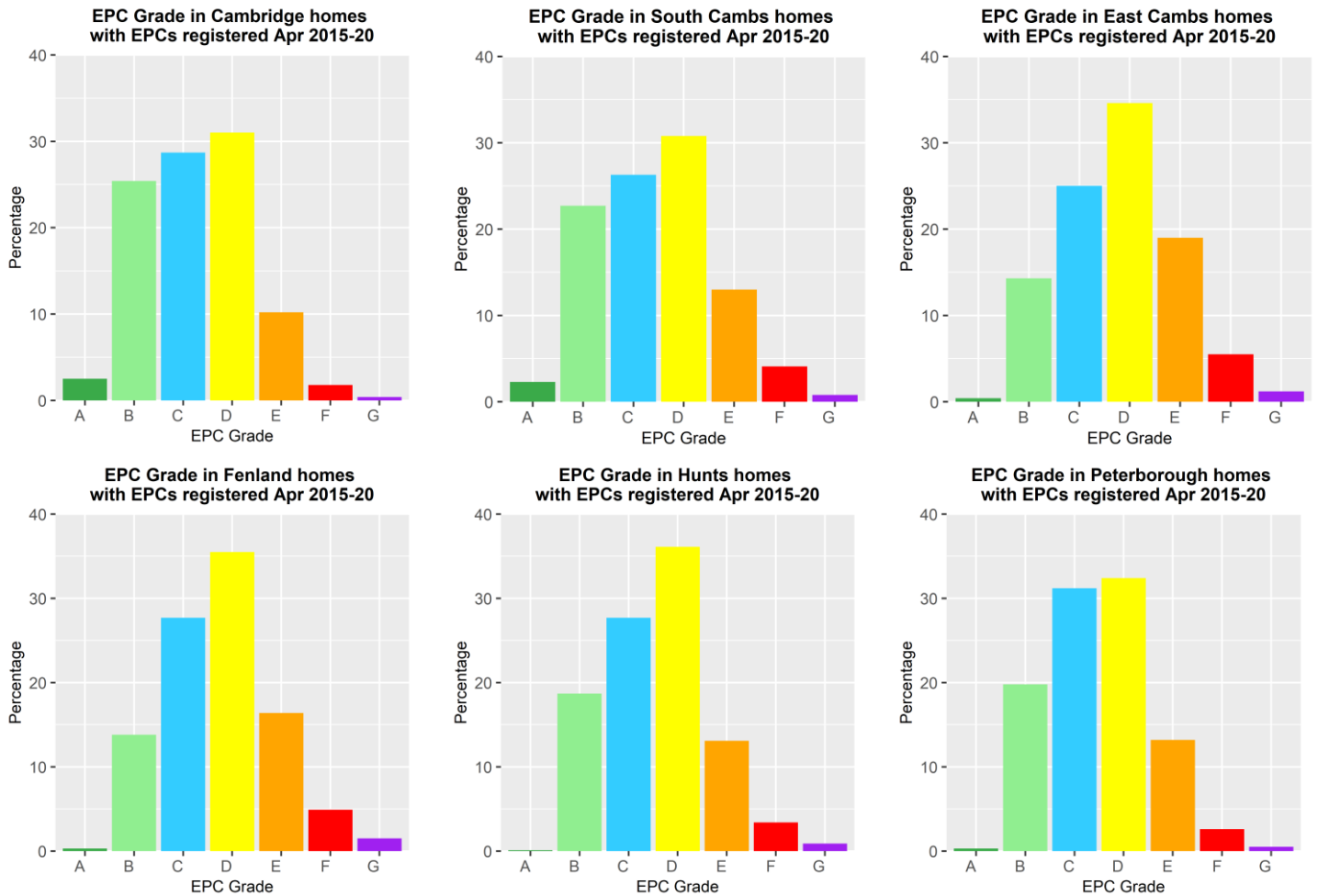
- 45.7% in Cambridge
- 42.3% in South Cambridgeshire
- 38.5% in East Cambridgeshire
- 35.0% in Fenland
- 40.4% in Huntingdonshire
- 51.8% in Peterborough

Looking at the distribution of EPC values, in most districts of the Combined Authority region, the most common EPC is level D. This will be typical of many Victorian terraced houses with single glazed sash windows and modest levels of loft insulation. Most of these can relatively easily be improved to EPC C.

In Peterborough however, the most common EPC is level C. This is probably because of the somewhat newer housing stock than in other districts.

Fenland has the highest proportion of homes with the worst EPCs, in band G. We speculate that this is possibly due to a higher proportion of low-income households.

## EPCs April 2015 - March 2020



For the period from April 2015 to March 2020, the proportion of homes of EPC C or above was:

- 56.6% in Cambridge
- 51.3% in South Cambridgeshire
- 39.7% in East Cambridgeshire
- 41.8% in Fenland
- 46.5% in Huntingdonshire
- 51.3% in Peterborough

There has been variable progress between April 2010 to March 2015 and April 2015 to March 2020:

- +10.9% in Cambridge
- +9.0% in South Cambridgeshire
- +1.2% in East Cambridgeshire
- +6.8% in Fenland
- +6.1% in Huntingdonshire
- -0.5% in Peterborough

While the proportion of homes being registered with EPC C or above in Cambridge, South Cambridgeshire, Fenland and Huntingdonshire has probably improved slightly over the last decade, East Cambridgeshire and Peterborough have basically made no progress at all. Note that the proportion of EPC B homes has increased in all districts, because most (but distressingly not all) new homes will be EPC A or B.

## Are EPCs improving fast enough?

Across the Combined Authority region, 43% to 65% of the homes have an EPC of D, E, F or G. This equates to around 18,000 homes in Cambridge alone, 25,000 in South Cambridgeshire, 14,000 in East Cambridgeshire, 17,000 in Fenland, 26,000 in Huntingdonshire and 31,000 in Peterborough.

In order to decide whether this rate of progress is adequate or not, we considered the target given in the BEIS Clean Growth Strategy<sup>7</sup>. This states that:

*“As many homes as possible to be EPC band C by 2035 where practical, cost-effective and affordable. All fuel-poor homes to be upgraded to Energy Performance Certificate (EPC) band C by 2030.”*

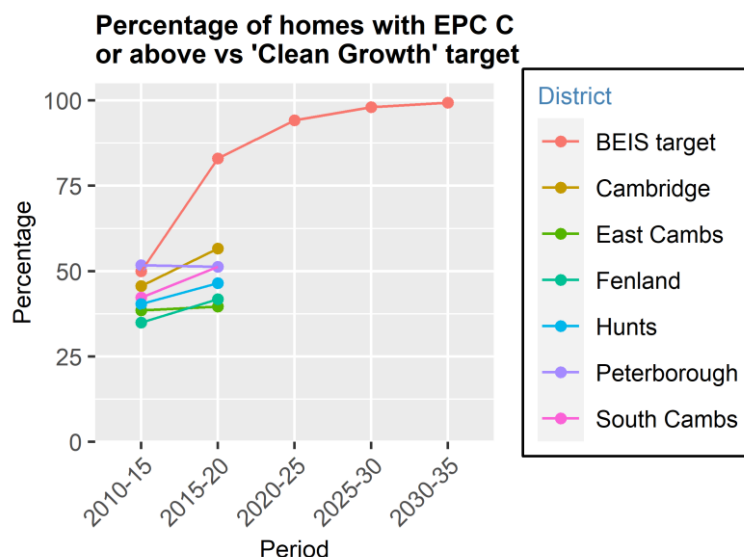
The vast majority of homes can be improved to EPC band C at a cost that is significantly less than the cost of catastrophic climate change. We believe that householders shouldn’t necessarily have to bear the full cost of this, so, for example retrofitting “hard to treat” and historic homes could and should be supported by public funds. This implies that the exclusions in the BEIS target are unnecessary, and so we have simplified it to say that:

*“At least 99% of homes should be EPC C or above by 2035”*

We think this would be an appropriate target for the Combined Authority and local councils to adopt.

Assuming that the easiest “quick wins” will be done first, and that it may not be appropriate for some historic and traditional buildings, the number of homes with EPC worse than band C should be reducing by two-thirds every five years, as shown on the figure below.

The graph also shows the performance of the six districts against this target: none are making adequate progress, but Cambridge has replaced Peterborough in top place, while East Cambridgeshire has fallen to the bottom of the ranking, and is now performing worse than Fenland.



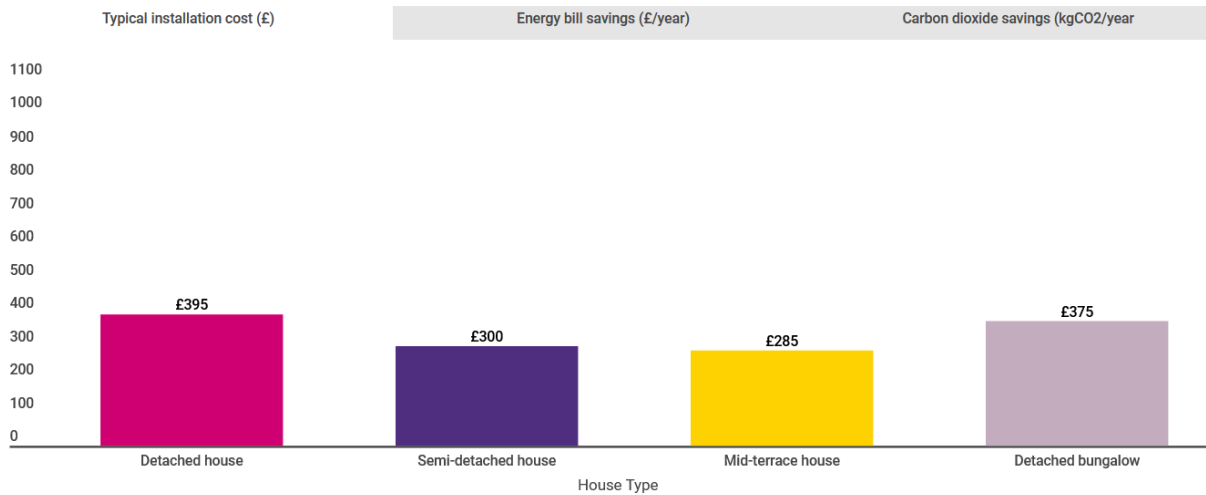
Across the Combined Authority area, around 130,000 homes need to be improved to EPC C to meet the 2035 target



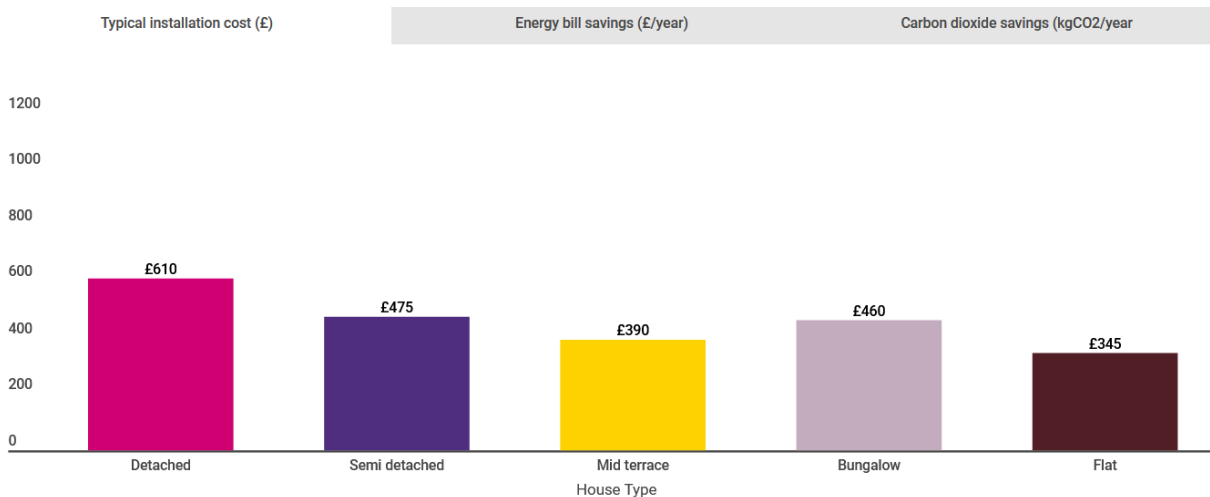
## 2) Easy and cost-effective measures

The Green Homes Grant is rightly focussed on improving insulation and installing certain low carbon heating measures. The most cost-effective and low disruption ways to improve insulation are often to increase the level of insulation in an inadequately insulated loft and/or to install cavity wall insulation in suitable uninsulated cavities.

For example, the Energy Saving Trust estimates<sup>8</sup> that installing the equivalent of 270 mm of mineral wool insulation in the loft of a typical mid terraced home would cost just £285 and save £130pa. That is a payback time of just over 2 years, while the savings would continue for at least 30 years.



The Energy Saving Trust estimates<sup>9</sup> that insulating the cavity wall in a typical mid terraced home would cost just £390, save £105pa. That is a payback time of less than 4 years, while the saving would continue for at least 30 years.



These measures can often be carried out in less than a day.

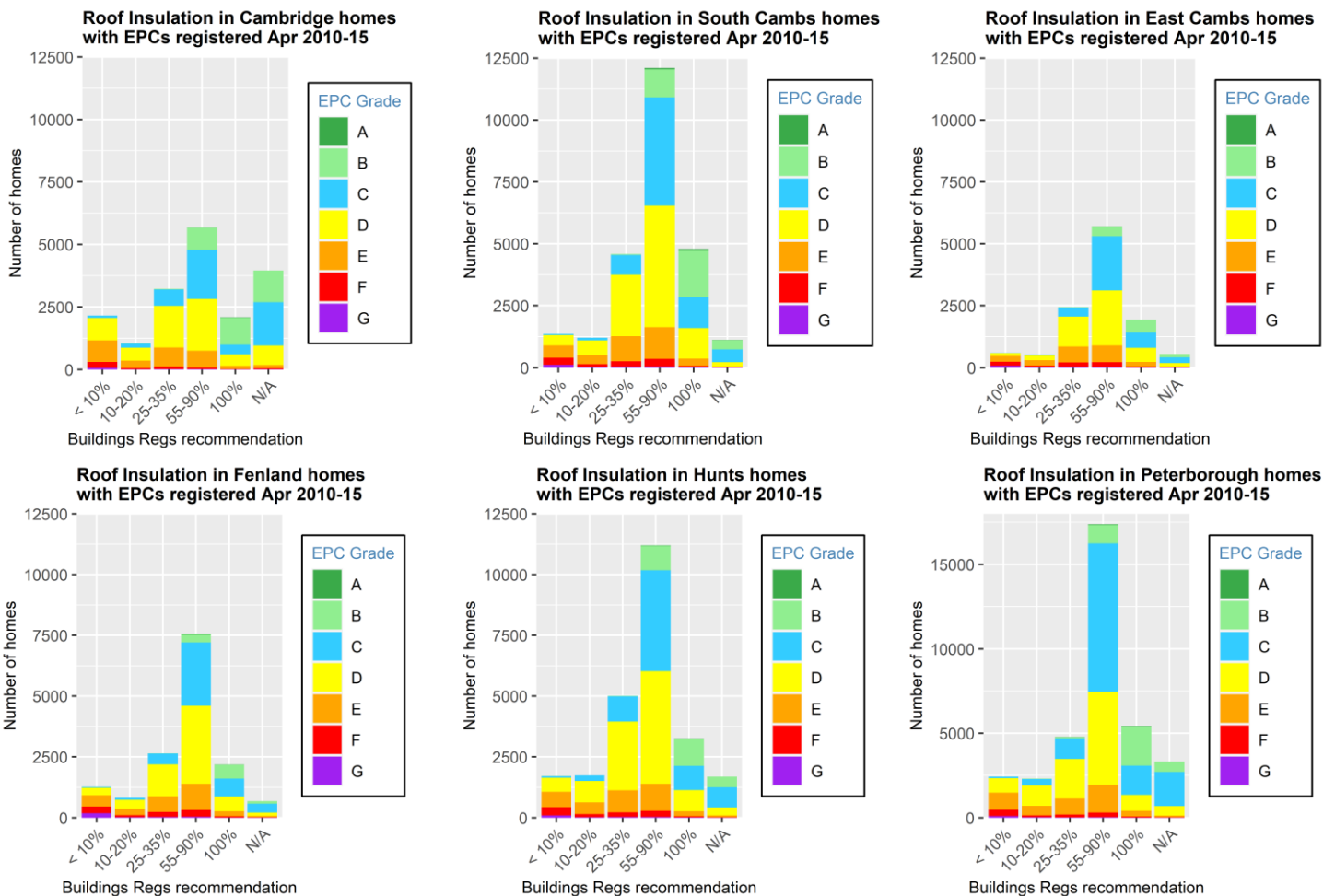
The following sections explore the numbers and proportions of homes that need these measures.

### 3) Roof insulation

Since 2003, Building Regulations have required roof insulation equivalent to 270 mm of mineral wool insulation. As insulating the roof is in general cheap and by far the most cost effective means of reducing a home’s energy consumption and carbon emissions, we analysed the EPC dataset to find out how many homes had inadequate levels of roof insulation. We also explored how this related to the registered EPCs, and the changes over the last decade to see what progress has been made.

Note that “roof insulation” includes a variety of situations. Often there is a loft space under a pitched roof. These are often easy and cheap to insulate, although the loft space may need de-cluttering, or the owner may need to find a ladder to enable access. It is more tricky where there is a flat roof or an attic room. Note that in the figures below, homes with an EPC roof insulation rating of “very poor” are shown as typically <10% of the recommended roof insulation, while a rating of “poor” is shown as 10-20% of the recommended level. The value N/A refers to properties when roof insulation is not needed, mainly for flats/apartments.

#### Roof insulation April 2010 – March 2015



For the period from April 2010 to March 2015, the proportion of homes rated as “very poor” or “poor” (ie with typically less than 20% of the recommended equivalent of 270 mm of mineral wool insulation) was:

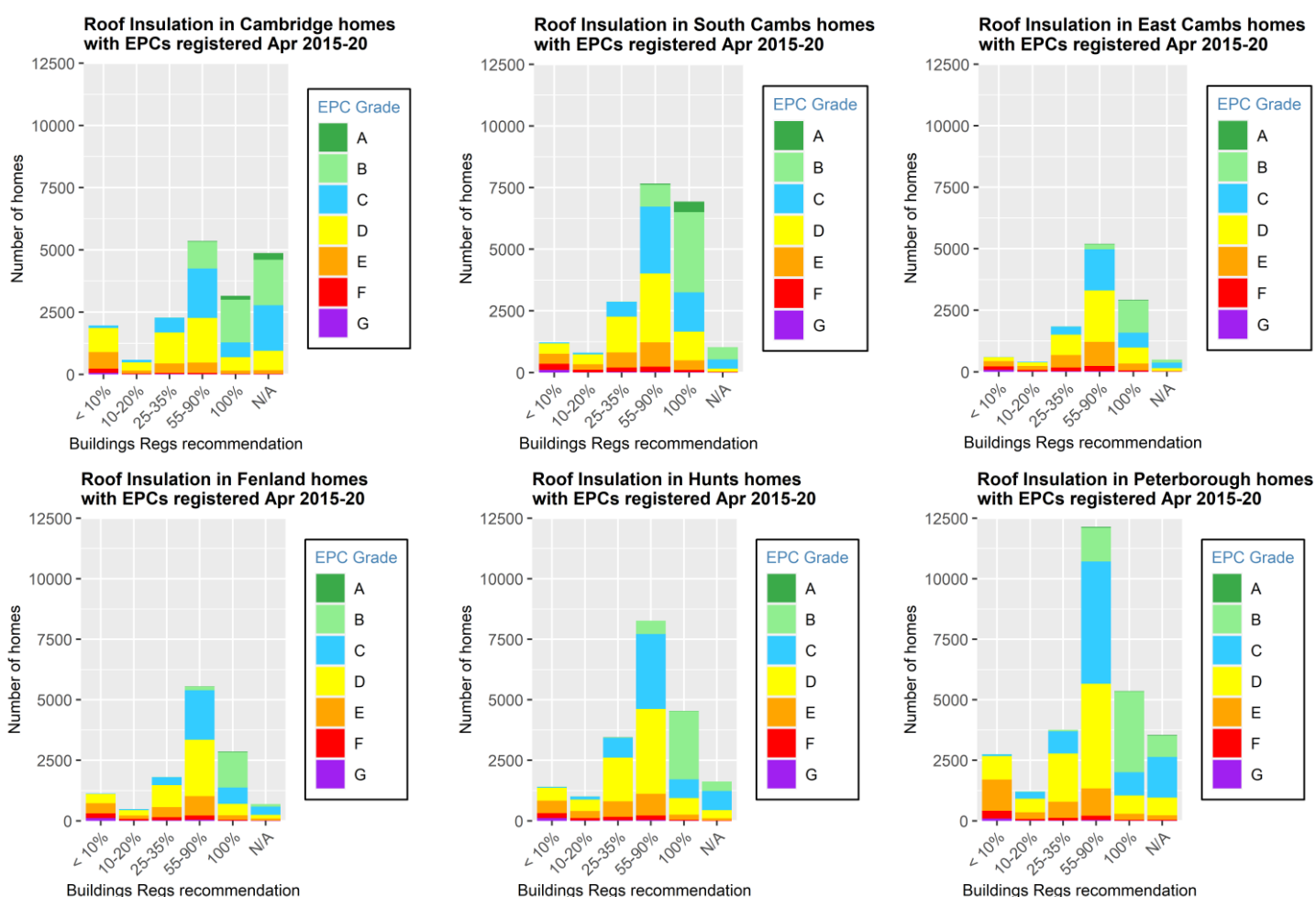
- 17.6% in Cambridge
- 10.2% in South Cambridgeshire
- 9.5% in East Cambridgeshire
- 13.8% in Fenland
- 14.0% in Huntingdonshire
- 13.3% in Peterborough

For the period from April 2010 to March 2015, the proportion of homes with more than 20% (but still less than) the recommended equivalent of 270 mm of mineral wool insulation was:

- 49.1% in Cambridge
- 66.3% in South Cambridgeshire
- 69.4% in East Cambridgeshire
- 67.3% in Fenland
- 65.9% in Huntingdonshire
- 62.1% in Peterborough

### Roof insulation April 2015 - March 2020

To explore progress since the 2010-2015 period, we also assessed the data for homes with EPCs registered between 2015 and 2020.



For the period from April 2015 to March 2020, the proportion of homes rated as “very poor” or “poor” (ie with typically less than 20% of the recommended equivalent of 270 mm of mineral wool insulation) was:

- 14.0% in Cambridge
- 9.9% in South Cambridgeshire
- 8.7% in East Cambridgeshire
- 12.9% in Fenland
- 11.9% in Huntingdonshire
- 13.8% in Peterborough

For the period from April 2015 to March 2020, the proportion of homes with more than 20% (but still less than) the recommended equivalent of 270 mm of mineral wool insulation was:

- 41.9% in Cambridge
- 51.3% in South Cambridgeshire
- 61.5% in East Cambridgeshire
- 58.8% in Fenland
- 57.7% in Huntingdonshire
- 55.3% in Peterborough

There has been disgracefully little progress between April 2010 to March 2015 and April 2015 to March 2020 for the proportion of homes rated as “very poor” or “poor” (ie with typically less than 20% of the recommended equivalent of 270 mm of mineral wool insulation) is:

- -3.6% in Cambridge
- -0.3% in South Cambridgeshire
- -0.8% in East Cambridgeshire
- -0.9% in Fenland
- -2.1% in Huntingdonshire
- +0.5% in Peterborough

There has been a little progress between April 2010 to March 2015 and April 2015 to March 2020 for the proportion of homes with more than 20% (but still less than) the recommended equivalent of 270 mm of mineral wool insulation is:

- -7.2% in Cambridge
- -15% in South Cambridgeshire
- -7.9% in East Cambridgeshire
- -8.5% in Fenland
- -8.2% in Huntingdonshire
- -6.8% in Peterborough

As shown by the above figures, a disgraceful proportion of homes still have poor or very poor roof insulation. Over the 2015-2020 period, Cambridge is worst with 14% of homes, closely followed by Peterborough. East Cambridgeshire scores best with only 8.7% poor or very poor. Distressingly, there has been virtually no progress on improving the proportion of these homes over the last decade.

These homes should be a priority for using the Green Homes Grant to increase the level of roof insulation to the recommended level.

Shockingly, nearly 2,500 of these homes with poor or very poor roof insulation have an EPC A, B or C: 476 are in Cambridge, 274 in South Cambridgeshire, 77 in East Cambridgeshire, 172 in Fenland, 481 in Huntingdonshire, 889 in Peterborough. This shows that retrofit measures should not just be focussed on the worst EPCs: there may be “quick wins” to be had, even in homes with reasonable EPCs.

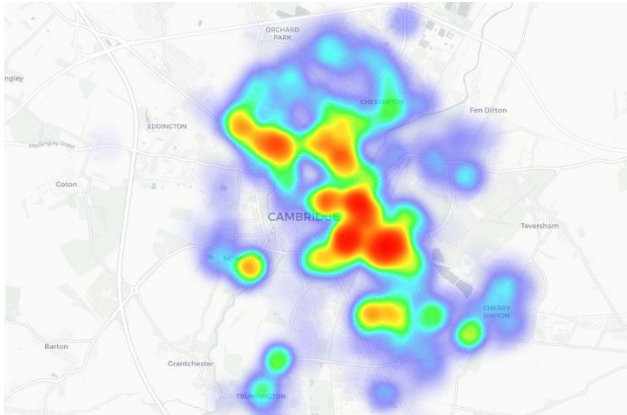
Overall, from 56% to as much as 81% of the homes in the Combined Authority area still have below the Building Regulations recommendation for roof insulation. This equates to around 22,000 homes in Cambridge alone, 32,000 in South Cambridgeshire, 17,000 in East Cambridgeshire, 21,000 in Fenland, 34,000 in Huntingdonshire and 47,000 in Peterborough with less than the Building Regulations recommendation. Many of these inadequately insulated homes have an EPC A, B or C: around 8,000 are in Cambridge, 11,000 in South Cambridgeshire, 5,000 in East Cambridgeshire, 6,000 in Fenland, 11,000 in Huntingdonshire and 20,000 in Peterborough.

There is a big opportunity here as across the Combined Authority area, around 175,000 homes need to improve their roof insulation, and of these 31,000 have poor or very poor roof insulation.

## Location of properties with inadequate roof insulation

We have created online dynamic maps showing the approximate locations of homes with poor or very poor roof insulation, based on the latest EPC registered between April 2010 and March 2020. These are available for all 6 districts within the Combined Authority [here](https://carbonneutralcambridge.org/insulation-maps/) <https://carbonneutralcambridge.org/insulation-maps/>

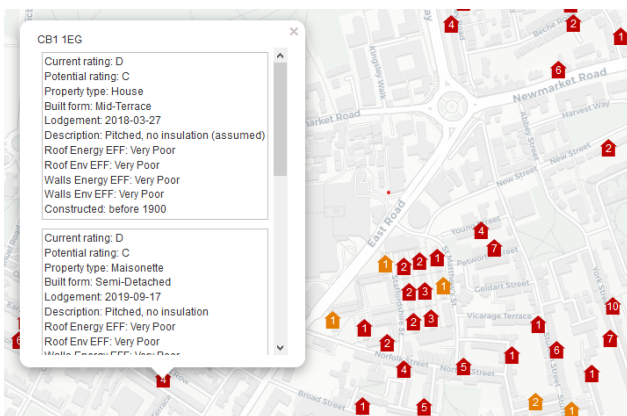
Each district has 2 maps



The “heat map”, as shown here for Cambridge, gives a general overview. The map shows red where there are lots of homes with very poor roof insulation, and orange where homes merely have poor roof insulation.

The online map can also be zoomed into, to show the situation on individual streets, although it should be noted that the locations shown are based on postcodes rather than indicating precise properties.

[Leaflet](#) | Base map | Base map [© OpenStreetMap](#) contributors [© CartoDB](#), CartoDB [attribution](#)



The postcode map shows the number of homes with poor (orange symbol ) or very poor (red symbol) roof insulation at each postcode. Clicking on the house symbol brings up the key EPC data for the properties at a particular postcode.

[Leaflet](#) | Base map | Base map [© OpenStreetMap](#) contributors [© CartoDB](#), CartoDB [attribution](#)

As [exploring the maps](#) makes clear, there are many inadequately insulated roofs in Victorian terraces, but there are also some very poorly insulated roofs in more recently built districts, particularly in homes built before the 1970s

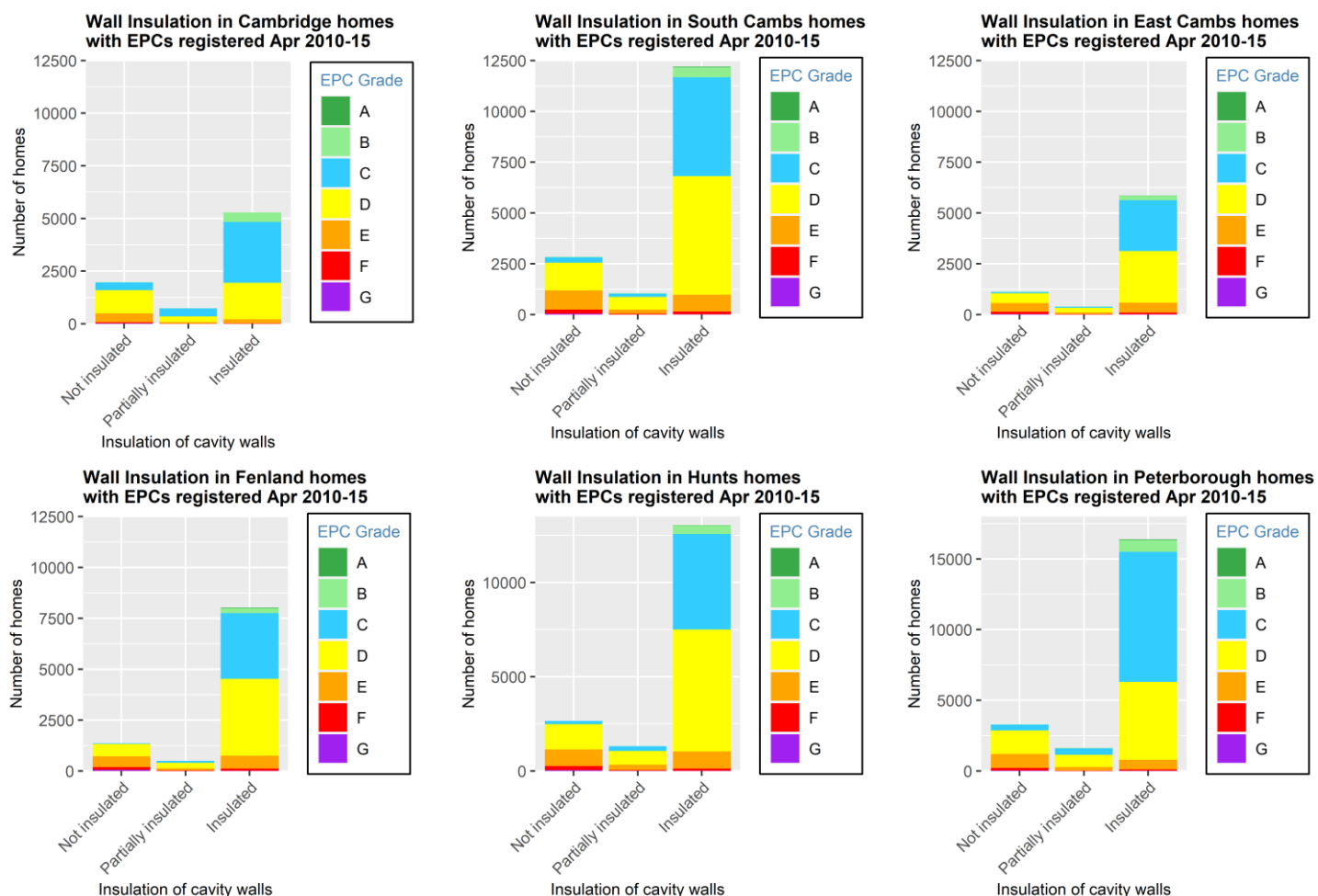
## 4) Cavity wall insulation

Homes built after the 1920s are likely to have cavity walls. This is made up of two walls with a gap in between; the outer leaf is usually made of brick, and the inner layer of brick or block. Because cavity wall insulation is effective and cheap, it became normal to insulate cavities in the 1970s and compulsory in the 1990s. But if a home/extension was built between the 1920s and the 1990s, it may not have any cavity wall insulation at all.

Although cavity wall insulation needs to be installed by a professional (and will not be possible in some homes), in general it is easy to do, involves minimal or no disruption and is very cost effective.

We analysed the dataset to see how many homes in the Greater Cambridge region have uninsulated or partially insulated cavity walls. As with the previous section on roof insulation, we also explored the relationship between cavity wall insulation and the EPC, looked at changes over the last decade, and the location of homes. These homes are an obvious initial target for improvement using the Green Homes Grant.

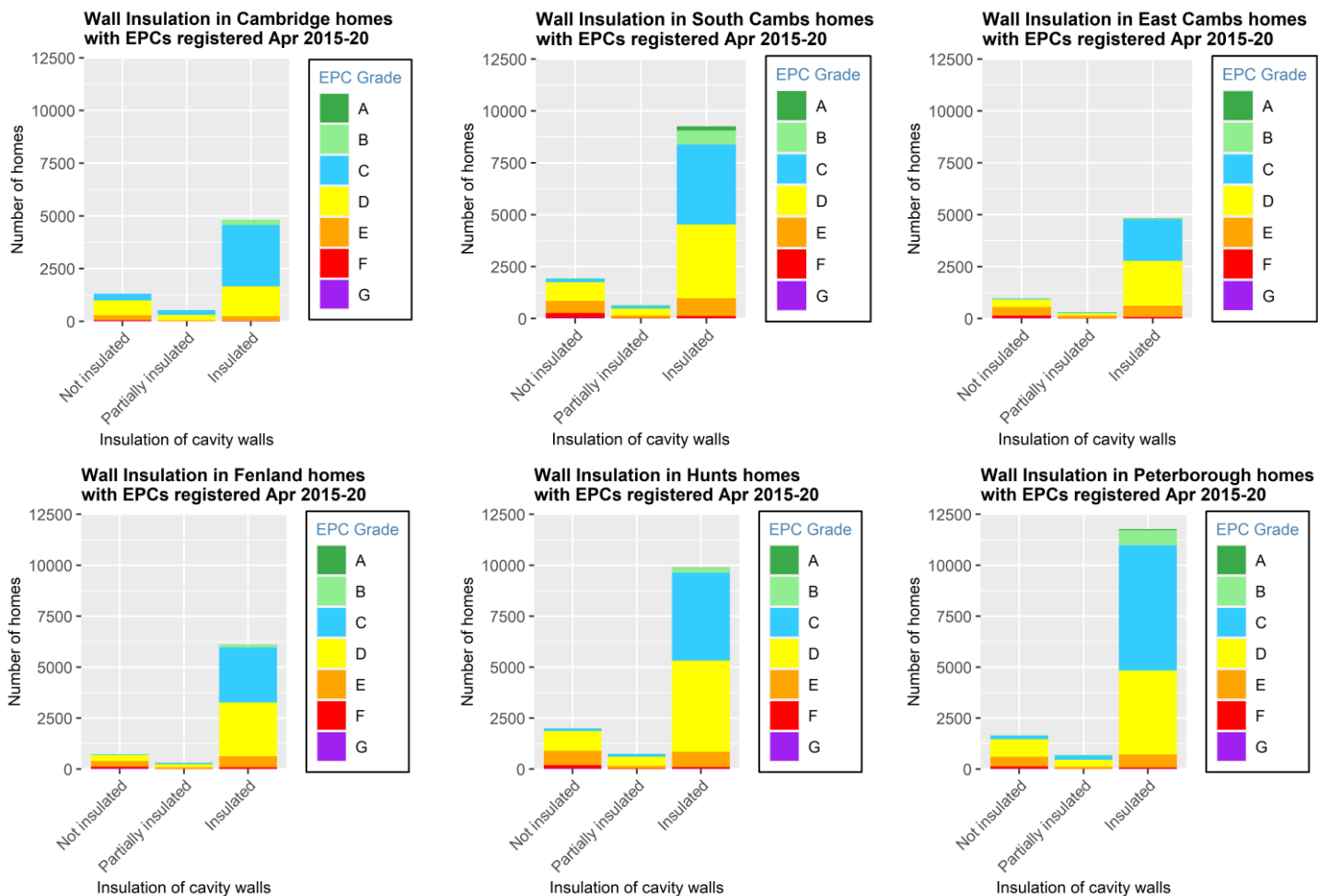
### Cavity wall insulation April 2010 – March 2015



For the period from April 2010 to March 2015, the proportion of homes with cavity walls that were uninsulated or only partially insulated was:

- 33.9% in Cambridge
- 24.1% in South Cambridgeshire
- 20.5% in East Cambridgeshire
- 18.9% in Fenland
- 23.4% in Huntingdonshire
- 23.1% in Peterborough

## Cavity wall insulation April 2015 - March 2020



For the period from April 2015 to March 2020, the proportion of homes with cavity walls that were uninsulated or only partially insulated was:

- 27.6% in Cambridge
- 21.9% in South Cambridgeshire
- 20.9% in East Cambridgeshire
- 14.5% in Fenland
- 21.6% in Huntingdonshire
- 16.7% in Peterborough

There has been a slight improvement between April 2010 to March 2015 and April 2015 to March 2020 is:

- -6.3% in Cambridge
- -2.2% in South Cambridgeshire
- +0.4% in East Cambridgeshire
- -4.4% in Fenland
- -1.8% in Huntingdonshire
- -6.4% in Peterborough

While there has been a slight improvement in Peterborough and Cambridge over the last decade, overall, the rate of improvement has been much slower than for the roof insulation.

Shockingly, of these homes, around 1,500 in Cambridge, 1,000 in South Cambridgeshire, 200 in East Cambridgeshire, 200 in Fenland, 700 in Huntingdonshire and 1,500 in Peterborough are EPC A, B or C!

Once again, this means that a simple cost-effective measure such as cavity wall insulation may be required, even if a home has a reasonable EPC.

As the figures above show, from 15% to 34% of the homes with cavity walls are not properly insulated. This equates to around 4,500 homes in Cambridge, 6,500 in South Cambridgeshire, 3,000 in East Cambridgeshire, 3,000 in Fenland, 6,500 in Huntingdonshire and 7,500 in Peterborough. Some of these may be unsuitable for cavity wall insulation, but most are probably easy and cheap to insulate.

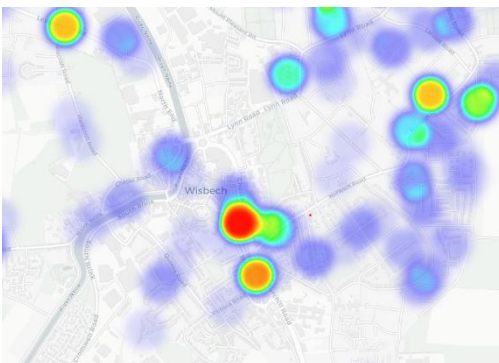
Across the Combined Authority area, around 31,000 homes need to improve their cavity wall insulation and 22,000 have completely uninsulated cavity walls.

### Location of properties with inadequate cavity wall insulation

We have created online dynamic maps showing the approximate locations of homes that have uninsulated or partially insulated cavity walls, based on the latest EPC registered between April 2010 and March 2020. These are available for all 6 districts within the Combined Authority [here](#):

<https://carbonneutralcambridge.org/insulation-maps/>

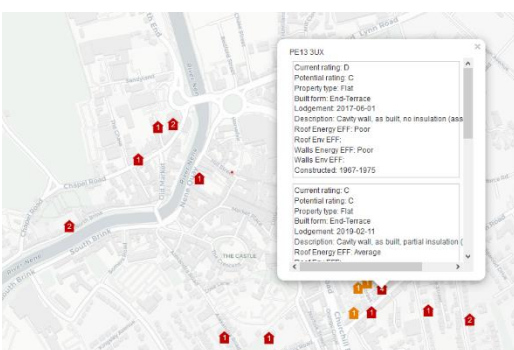
Each district has 2 maps



The “heat map”, as shown here for part of Wisbech in Fenland District, gives a general overview. The map shows red where there are lots of homes with uninsulated cavity wall, and orange where homes merely have partially insulated cavity walls.

It can also be zoomed into, to show the situation on individual streets, although it should be noted that the locations shown are based on postcodes rather than indicating precise properties.

[Leaflet](#) | Base map | Base map [© OpenStreetMap](#) contributors [© CartoDB](#), CartoDB [attribution](#)



The postcode map shows the number of homes with partially insulated (orange) or uninsulated (red) cavity walls. Clicking on the house symbol brings up the key EPC data for the properties at a particular postcode.

[Leaflet](#) | Base map | Base map [© OpenStreetMap](#) contributors [© CartoDB](#), CartoDB [attribution](#)

As exploring the [online maps](#) makes clear, there are many homes with uninsulated or partially insulated cavity walls, particularly those built between the 1920s and the 1970s.



## 5) Conclusions

We want to see a dramatic improvement in the proportion of homes with EPC C or above, aiming for at least 99% to be EPC C or above by 2035. This is in accordance with our proposed simplification of the BEIS Clean Growth Strategy. This should be achieved by focussing improving existing homes EPCs, particularly those occupied by people in fuel poverty. Clearly, it cannot be achieved simply by building new homes, even if those were required to have the highest possible standards of insulation (as they should be).

As the analysis in this report has shown, to get on track to achieve the target of 99% of homes with EPC level C or above by 2035, roughly 130,000 homes need to be lifted to level C in the next 15 years. In some cases, such as the 85,000 homes that are EPC band D, this should be easy. In other homes it will be more challenging and in a few it will be inappropriate. But that's no excuse for inaction.

A clear focus is the roughly 31,000 homes in the Combined Authority region with poor or very poor roof insulation. In many cases, this may be a cluttered loft with just a couple of inches of aging mineral wool loft insulation, rather than the equivalent of 270 mm that is required by current building regulations. Upgrading these lofts should often be extremely cost effective, with a payback of just over 2 years, even without the Green Homes Grant. In other cases, the roof space will be harder to access, so the payback time will increase, but upgrading the roof insulation is still likely to be very cost effective. Shockingly the proportion of EPC rated homes with "poor" or "very poor" roof insulation, ranges from 8.7% of homes in East Cambridgeshire to a 14% of homes in Cambridge City.

Another opportunity is the roughly 22,000 homes in the Combined Authority region with uninsulated cavity walls. Although some will be unsuitable, the majority will be an obvious "no brainer" target for action, with an estimated payback time of less than 4 years.

Our online maps show where these properties are <https://carbonneutralcambridge.org/insulation-maps/>

The Green Homes Grant offers a real opportunity to access government funding to help upgrade homes across the Combined Authority Region in order to substantially reduce carbon emissions, improve health and reduce fuel poverty. £1.5Billion is available to homeowners direct until 31 March 2021, and £0.5Billion through local councils, probably over a slightly longer timescale. The Green Homes Grant can reduce the cost of these measures by two-thirds (or by 100% for those in receipt of many benefits) but the measures are so cost effective, they are worth doing even if it proves impossible to access the grant before the deadline.

We call on our local councils to raise awareness of this opportunity and to apply for funding under the next stage of the Green Homes Grant to enable them to deliver the scheme locally, particularly to households on low incomes and in fuel poverty.

As the areas with poor or very poor roof insulation or uninsulated cavity walls, are often very localised, Parish Councils, Church groups and other community groups could do a lot to help their communities upgrade. This would have many benefits, including reducing their Parish's carbon emissions, reducing their residents' energy bills, and improving people's health. Community groups could help homeowners check their loft insulation and show them how to check for any uninsulated cavity walls (which can often be done quite simply by inspecting the brickwork).

As the main problem in accessing the grant is likely to be a lack of local capacity to deliver, we urge local businesses to recruit and train new staff so they can help homeowners upgrade their homes. Some of this work, such as cavity wall insulation, requires specialist equipment. On the other hand, installing loft insulation needs little or no specialist equipment. It does however require care, particularly to ensure adequate ventilation. Homeowners may also need help with decluttering, which may require tact. However, given suitable training and the right motivation, this could offer interesting new employment opportunities.

## 6) Data Tables

### EPC Tables - April 2010 - March 2015

City of Cambridge		
EPC Grade	Number	Percentage
A	26	0.1
B	3254	18
C	5005	27.6
D	6380	35.2
E	2841	15.7
F	506	2.8
G	108	0.6
<b>Total sum</b>	<b>18120</b>	<b>100</b>

South Cambridgeshire		
EPC Grade	Number	Percentage
A	123	0.5
B	3422	13.6
C	7089	28.2
D	9816	39
E	3489	13.9
F	985	3.9
G	230	0.9
<b>Total sum</b>	<b>25154</b>	<b>100</b>

East Cambridgeshire		
EPC Grade	Number	Percentage
A	10	0.1
B	1052	9
C	3448	29.4
D	4441	37.8
E	1987	16.9
F	646	5.5
G	152	1.3
<b>Total sum</b>	<b>11736</b>	<b>100</b>

Fenland		
EPC Grade	Number	Percentage
A	35	0.2
B	1016	6.7
C	4262	28.1
D	5965	39.4
E	2686	17.7
F	903	6
G	288	1.9
<b>Total sum</b>	<b>15155</b>	<b>100</b>

Huntingdonshire		
EPC Grade	Number	Percentage
A	41	0.2
B	2571	10.5
C	7308	29.7
D	10120	41.1
E	3404	13.8
F	962	3.9
G	196	0.8
<b>Total sum</b>	<b>24602</b>	<b>100</b>

Peterborough		
EPC Grade	Number	Percentage
A	76	0.2
B	4132	11.6
C	14252	40
D	11421	32
E	4580	12.8
F	1007	2.8
G	190	0.5
<b>Total sum</b>	<b>35658</b>	<b>100</b>

### EPC Tables - April 2015 - March 2020

City of Cambridge		
EPC Grade	Number	Percentage
A	451	2.5
B	4626	25.4
C	5218	28.7
D	5638	31
E	1856	10.2
F	331	1.8
G	81	0.4
<b>Total sum</b>	<b>18201</b>	<b>100</b>

South Cambridgeshire		
EPC Grade	Number	Percentage
A	469	2.3
B	4667	22.7
C	5391	26.3
D	6326	30.8
E	2670	13
F	842	4.1
G	165	0.8
<b>Total sum</b>	<b>20530</b>	<b>100</b>

East Cambridgeshire		
EPC Grade	Number	Percentage
A	50	0.4
B	1639	14.3
C	2869	25
D	3965	34.6
E	2177	19
F	625	5.5
G	140	1.2
<b>Total sum</b>	<b>11465</b>	<b>100</b>

Fenland		
EPC Grade	Number	Percentage
A	35	0.3
B	1731	13.8
C	3468	27.7
D	4449	35.5
E	2050	16.4
F	609	4.9
G	191	1.5
<b>Total sum</b>	<b>12533</b>	<b>100</b>

Huntingdonshire		
EPC Grade	Number	Percentage
A	25	0.1
B	3797	18.7
C	5634	27.7
D	7338	36.1
E	2650	13.1
F	681	3.4
G	181	0.9
<b>Total sum</b>	<b>20306</b>	<b>100</b>

Peterborough		
EPC Grade	Number	Percentage
A	81	0.3
B	5705	19.8
C	8962	31.2
D	9331	32.4
E	3788	13.2
F	745	2.6
G	154	0.5
<b>Total sum</b>	<b>28766</b>	<b>100</b>

Roof insulation Tables - April 2010 - March 2015

City of Cambridge									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	1	89	901	863	232	65	2151	11.9
10-20%	0	7	166	512	295	50	8	1038	5.7
25-35%	0	20	658	1668	756	109	10	3221	17.8
55-90%	6	889	1964	2070	671	61	14	5675	31.3
100%	19	1074	391	454	125	15	4	2082	11.5
N/A	1	1263	1737	775	131	39	7	3953	21.8
<b>Total sum</b>	<b>26</b>	<b>3254</b>	<b>5005</b>	<b>6380</b>	<b>2841</b>	<b>506</b>	<b>108</b>	<b>18120</b>	<b>100</b>

South Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	2	0	43	419	503	283	109	1359	5.4
10-20%	0	4	102	590	373	115	24	1208	4.8
25-35%	3	34	801	2486	1009	215	39	4587	18.2
55-90%	48	1131	4380	4907	1277	307	46	12096	48.1
100%	66	1880	1246	1239	292	55	11	4789	19
N/A	4	373	517	175	35	10	1	1115	4.4
<b>Total sum</b>	<b>123</b>	<b>3422</b>	<b>7089</b>	<b>9816</b>	<b>3489</b>	<b>985</b>	<b>230</b>	<b>25154</b>	<b>100</b>

East Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	0	12	113	230	160	79	594	5.1
10-20%	0	0	27	199	220	64	12	522	4.4
25-35%	0	17	364	1214	640	176	30	2441	20.8
55-90%	5	390	2192	2217	680	193	24	5701	48.6
100%	5	510	616	565	185	41	5	1927	16.4
N/A	0	135	237	133	32	12	2	551	4.7
<b>Total sum</b>	<b>10</b>	<b>1052</b>	<b>3448</b>	<b>4441</b>	<b>1987</b>	<b>646</b>	<b>152</b>	<b>11736</b>	<b>100</b>

Fenland									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	2	32	314	465	276	181	1270	8.4
10-20%	0	2	75	373	260	82	23	815	5.4
25-35%	0	9	446	1320	641	200	34	2650	17.5
55-90%	22	326	2605	3211	1075	274	40	7553	49.8
100%	13	568	736	607	200	53	6	2183	14.4
N/A	0	109	368	140	45	18	4	684	4.5
<b>Total sum</b>	<b>35</b>	<b>1016</b>	<b>4262</b>	<b>5965</b>	<b>2686</b>	<b>903</b>	<b>288</b>	<b>15155</b>	<b>100</b>

Huntingdonshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	6	65	578	631	334	94	1708	6.9
10-20%	0	4	229	881	479	123	24	1740	7.1

25-35%	0	22	1036	2831	906	188	32	5015	20.4
55-90%	13	1004	4158	4630	1116	242	34	11197	45.5
100%	28	1101	995	868	204	50	11	3257	13.2
N/A	0	434	825	332	68	25	1	1685	6.8
<b>Total sum</b>	<b>41</b>	<b>2571</b>	<b>7308</b>	<b>10120</b>	<b>3404</b>	<b>962</b>	<b>196</b>	<b>24602</b>	<b>100</b>

Peterborough									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	4	95	849	1018	371	93	2430	6.8
10-20%	0	21	385	1202	568	110	26	2312	6.5
25-35%	7	62	1227	2354	938	166	24	4778	13.4
55-90%	39	1103	8786	5520	1633	271	28	17380	48.7
100%	30	2327	1733	942	332	62	9	5435	15.2
N/A	0	615	2026	554	91	27	10	3323	9.3
<b>Total sum</b>	<b>76</b>	<b>4132</b>	<b>14252</b>	<b>11421</b>	<b>4580</b>	<b>1007</b>	<b>190</b>	<b>35658</b>	<b>100</b>

#### Roof insulation Tables - April 2015 - March 2020

City of Cambridge									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	2	104	969	657	178	54	1964	10.8
10-20%	0	0	107	324	125	21	6	583	3.2
25-35%	1	5	596	1241	383	42	12	2280	12.5
55-90%	26	1073	1991	1788	414	55	5	5352	29.4
100%	154	1719	591	541	127	18	2	3152	17.3
N/A	270	1827	1829	775	150	17	2	4870	26.8
<b>Total sum</b>	<b>451</b>	<b>4626</b>	<b>5218</b>	<b>5638</b>	<b>1856</b>	<b>331</b>	<b>81</b>	<b>18201</b>	<b>100</b>

South Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	8	45	411	414	247	102	1227	6
10-20%	0	4	66	400	224	107	6	807	3.9
25-35%	1	15	603	1446	618	175	23	2881	14
55-90%	46	886	2715	2789	991	210	22	7659	37.3
100%	422	3259	1589	1164	389	95	10	6928	33.7
N/A	0	495	373	116	34	8	2	1028	5
<b>Total sum</b>	<b>469</b>	<b>4667</b>	<b>5391</b>	<b>6326</b>	<b>2670</b>	<b>842</b>	<b>165</b>	<b>20530</b>	<b>100</b>

East Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	0	12	154	216	143	75	600	5.2
10-20%	0	1	25	145	157	68	11	407	3.5
25-35%	1	5	329	825	511	149	22	1842	16.1
55-90%	17	207	1676	2082	984	210	24	5200	45.4
100%	28	1303	608	652	273	51	6	2921	25.5
N/A	4	123	219	107	36	4	2	495	4.3
<b>Total sum</b>	<b>50</b>	<b>1639</b>	<b>2869</b>	<b>3965</b>	<b>2177</b>	<b>625</b>	<b>140</b>	<b>11465</b>	<b>100</b>

Fenland									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	0	13	383	420	194	114	1124	9
10-20%	0	2	46	217	142	66	12	485	3.9
25-35%	0	8	334	906	422	122	21	1813	14.5
55-90%	9	155	2048	2324	806	178	37	5557	44.3
100%	26	1457	684	471	184	33	6	2861	22.8
N/A	0	109	343	148	76	16	1	693	5.5
<b>Total sum</b>	<b>35</b>	<b>1731</b>	<b>3468</b>	<b>4449</b>	<b>2050</b>	<b>609</b>	<b>191</b>	<b>12533</b>	<b>100</b>

Huntingdonshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	1	4	37	534	515	209	107	1407	6.9
10-20%	0	6	129	471	294	99	11	1010	5
25-35%	3	19	820	1809	640	139	22	3452	17
55-90%	7	552	3092	3503	896	186	33	8269	40.7
100%	14	2818	770	684	213	34	8	4541	22.4
N/A	0	398	786	337	92	14	0	1627	8
<b>Total sum</b>	<b>25</b>	<b>3797</b>	<b>5634</b>	<b>7338</b>	<b>2650</b>	<b>681</b>	<b>181</b>	<b>20306</b>	<b>100</b>

Peterborough									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
< 10%	0	11	76	963	1288	327	90	2755	9.6
10-20%	2	18	277	565	276	62	12	1212	4.2
25-35%	3	64	917	1993	666	104	13	3760	13.1
55-90%	38	1396	5047	4327	1127	177	31	12143	42.2
100%	12	3335	965	754	249	35	6	5356	18.6
N/A	26	881	1680	729	182	40	2	3540	12.3
<b>Total sum</b>	<b>81</b>	<b>5705</b>	<b>8962</b>	<b>9331</b>	<b>3788</b>	<b>745</b>	<b>154</b>	<b>28766</b>	<b>100</b>

#### Cavity wall insulation Tables - April 2010 - March 2015

City of Cambridge									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	5	372	1103	416	60	15	1971	24.7
Partially insulated	0	8	386	267	66	8	3	738	9.2
Insulated	4	445	2895	1729	190	21	1	5285	66.1
<b>Total sum</b>	<b>4</b>	<b>458</b>	<b>3653</b>	<b>3099</b>	<b>672</b>	<b>89</b>	<b>19</b>	<b>7994</b>	<b>100</b>

South Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	21	263	1367	942	206	37	2836	17.6
Partially insulated	0	12	166	622	203	38	3	1044	6.5
Insulated	24	503	4860	5832	825	142	11	12197	75.9
<b>Total sum</b>	<b>24</b>	<b>536</b>	<b>5289</b>	<b>7821</b>	<b>1970</b>	<b>386</b>	<b>51</b>	<b>16077</b>	<b>100</b>

East Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	5	67	489	425	114	18	1118	15.2
Partially insulated	0	2	59	226	84	13	4	388	5.3
Insulated	6	220	2499	2549	485	80	14	5853	79.5
<b>Total sum</b>	<b>6</b>	<b>227</b>	<b>2625</b>	<b>3264</b>	<b>994</b>	<b>207</b>	<b>36</b>	<b>7359</b>	<b>100</b>

Fenland									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	1	3	37	595	530	145	49	1360	13.8
Partially insulated	2	1	100	269	96	30	4	502	5.1
Insulated	25	239	3231	3774	634	102	11	8016	81.2
<b>Total sum</b>	<b>28</b>	<b>243</b>	<b>3368</b>	<b>4638</b>	<b>1260</b>	<b>277</b>	<b>64</b>	<b>9878</b>	<b>100</b>

Huntingdonshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	7	170	1340	881	210	48	2656	15.6
Partially insulated	0	4	257	728	286	36	8	1319	7.8
Insulated	13	460	5069	6457	914	117	12	13042	76.6
<b>Total sum</b>	<b>13</b>	<b>471</b>	<b>5496</b>	<b>8525</b>	<b>2081</b>	<b>363</b>	<b>68</b>	<b>17017</b>	<b>100</b>

Peterborough									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	1	15	410	1668	995	172	35	3296	15.5
Partially insulated	0	25	456	873	249	22	3	1628	7.6
Insulated	35	840	9204	5507	685	95	10	16376	76.9
<b>Total sum</b>	<b>36</b>	<b>880</b>	<b>10070</b>	<b>8048</b>	<b>1929</b>	<b>289</b>	<b>48</b>	<b>21300</b>	<b>100</b>

#### Cavity wall insulation Tables - April 2015 - March 2020

City of Cambridge									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	5	312	712	231	42	8	1310	19.6
Partially insulated	0	4	229	248	49	2	2	534	8
Insulated	5	255	2916	1410	218	17	5	4826	72.4
<b>Total sum</b>	<b>5</b>	<b>264</b>	<b>3457</b>	<b>2370</b>	<b>498</b>	<b>61</b>	<b>15</b>	<b>6670</b>	<b>100</b>

South Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	4	21	172	897	586	224	36	1940	16.4
Partially insulated	9	31	130	330	123	21	2	646	5.5
Insulated	201	674	3859	3543	864	108	7	9256	78.2
<b>Total sum</b>	<b>214</b>	<b>726</b>	<b>4161</b>	<b>4770</b>	<b>1573</b>	<b>353</b>	<b>45</b>	<b>11842</b>	<b>100</b>

East Cambridgeshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	3	44	373	412	120	19	971	15.9
Partially insulated	0	2	47	126	115	16	1	307	5
Insulated	4	58	1998	2160	548	62	7	4837	79.1
<b>Total sum</b>	<b>4</b>	<b>63</b>	<b>2089</b>	<b>2659</b>	<b>1075</b>	<b>198</b>	<b>27</b>	<b>6115</b>	<b>100</b>

Fenland									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	0	3	40	288	275	91	30	727	10.2
Partially insulated	0	3	68	152	77	7	1	308	4.3
Insulated	9	111	2702	2637	547	78	2	6086	85.5
<b>Total sum</b>	<b>9</b>	<b>117</b>	<b>2810</b>	<b>3077</b>	<b>899</b>	<b>176</b>	<b>33</b>	<b>7121</b>	<b>100</b>

Huntingdonshire									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	2	6	116	959	714	158	32	1987	15.7
Partially insulated	0	1	141	448	125	30	1	746	5.9
Insulated	10	257	4314	4469	745	88	10	9893	78.4
<b>Total sum</b>	<b>12</b>	<b>264</b>	<b>4571</b>	<b>5876</b>	<b>1584</b>	<b>276</b>	<b>43</b>	<b>12626</b>	<b>100</b>

Peterborough									
Description	EPC A	EPC B	EPC C	EPC D	EPC E	EPC F	EPC G	Total sum	Percentage
Not insulated	3	7	179	863	480	102	20	1654	11.7
Partially insulated	1	31	214	337	109	11	0	703	5
Insulated	44	751	6142	4118	632	70	6	11763	83.3
<b>Total sum</b>	<b>48</b>	<b>789</b>	<b>6535</b>	<b>5318</b>	<b>1221</b>	<b>183</b>	<b>26</b>	<b>14120</b>	<b>100</b>

## 7) References

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- <sup>1</sup> 'Energy efficiency: building towards net zero' published on 9 July 2019
- <sup>2</sup> <https://www.gov.uk/guidance/apply-for-the-green-homes-grant-scheme>
- <sup>3</sup> <https://www.gov.uk/government/publications/green-homes-grant-local-authority-delivery-scheme-entering-a-bid>
- <sup>4</sup> Analysis of rented properties in Cambridge with EPC F&G <https://carbonneutralcambridge.org/epc-data/>
- <sup>5</sup> Analysis of loft insulation in Cambridge <https://carbonneutralcambridge.org/improving-loft-insulation-a-no-brainer/>
- <sup>6</sup> Ministry of Housing, Communities & Local Government: Energy Performance of Buildings Data - England and Wales <https://epc.opendatacommunities.org/login>
- <sup>7</sup> <https://www.theccc.org.uk/publication/independent-assessment-uks-clean-growth-strategy-ambition-action/>
- <sup>8</sup> Average price of roof insulation in England, Scotland and Wales <https://energysavingtrust.org.uk/home-insulation/roof-and-loft>
- <sup>9</sup> Advice about installing cavity wall insulation in England, Scotland and Wales <https://energysavingtrust.org.uk/home-insulation/cavity-wall>