



SUBJECT

# Retrofit and Local Authorities

Challenge, Roles and Delivery.

07 OCTOBER 2021





# Intro

- BRE – 100 Years
- The Retrofit Challenge
- Technology Silver Bullet?
- Role of Local Authorities
- BRE, here to help, stoke modelling, advice, training, strategy and detail.



# BRE – 100 years

BRE has been a key player in improving UK housing since 1921.

- In 1920s & 30s we contributed to “Homes for Heroes” council house building programme through innovative building materials and testing.
- In the 1940s and & 50s helped develop early experimental and prefabricated homes
- 1960s and 70 saw the start of the English Housing Condition Survey
- 1980s saw the start of our work around energy efficiency leading to the development of SAP in the 1990s.



Photo: The full staff complement at BRS Acton, 1921

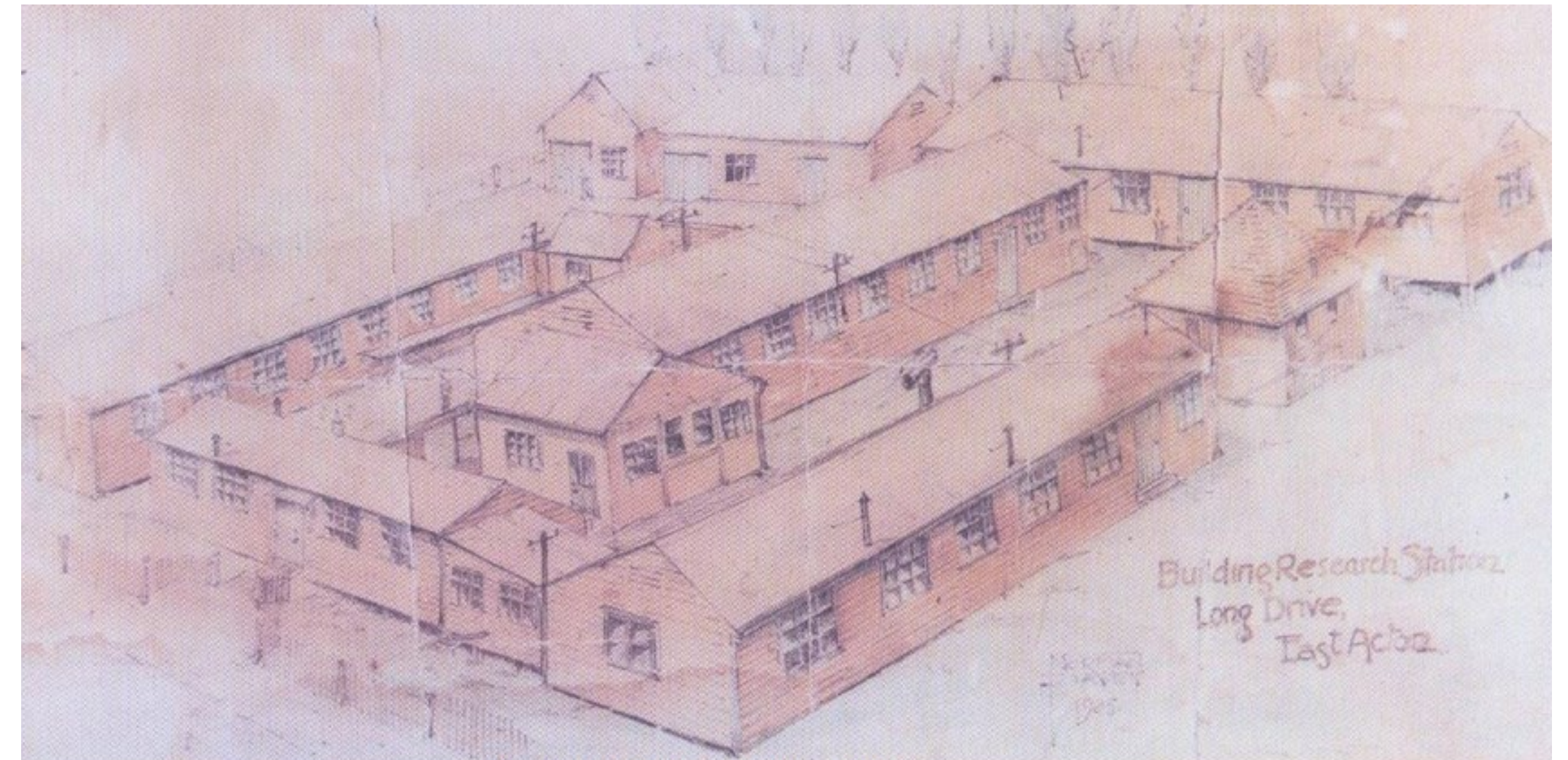


Photo: BRS East Acton 1921



# The challenge

- 30.5 Million Homes by end of 2022
- Energy use in UK homes accounts for 16% of total green house gas emissions
- Interim reduction target of 24% by 2030
- Net Zero by 2050
- UK stoke 52% Conjoined, 18% detached, 21% flats.
- Average English home is 94m2
- 26% of homes in Wales are over 100 years old.
- 25% of homes are socially rented in Scotland.





# A Long way still to go

Energy efficiency ratings (EER): existing and new domestic properties, England, April to June 2021

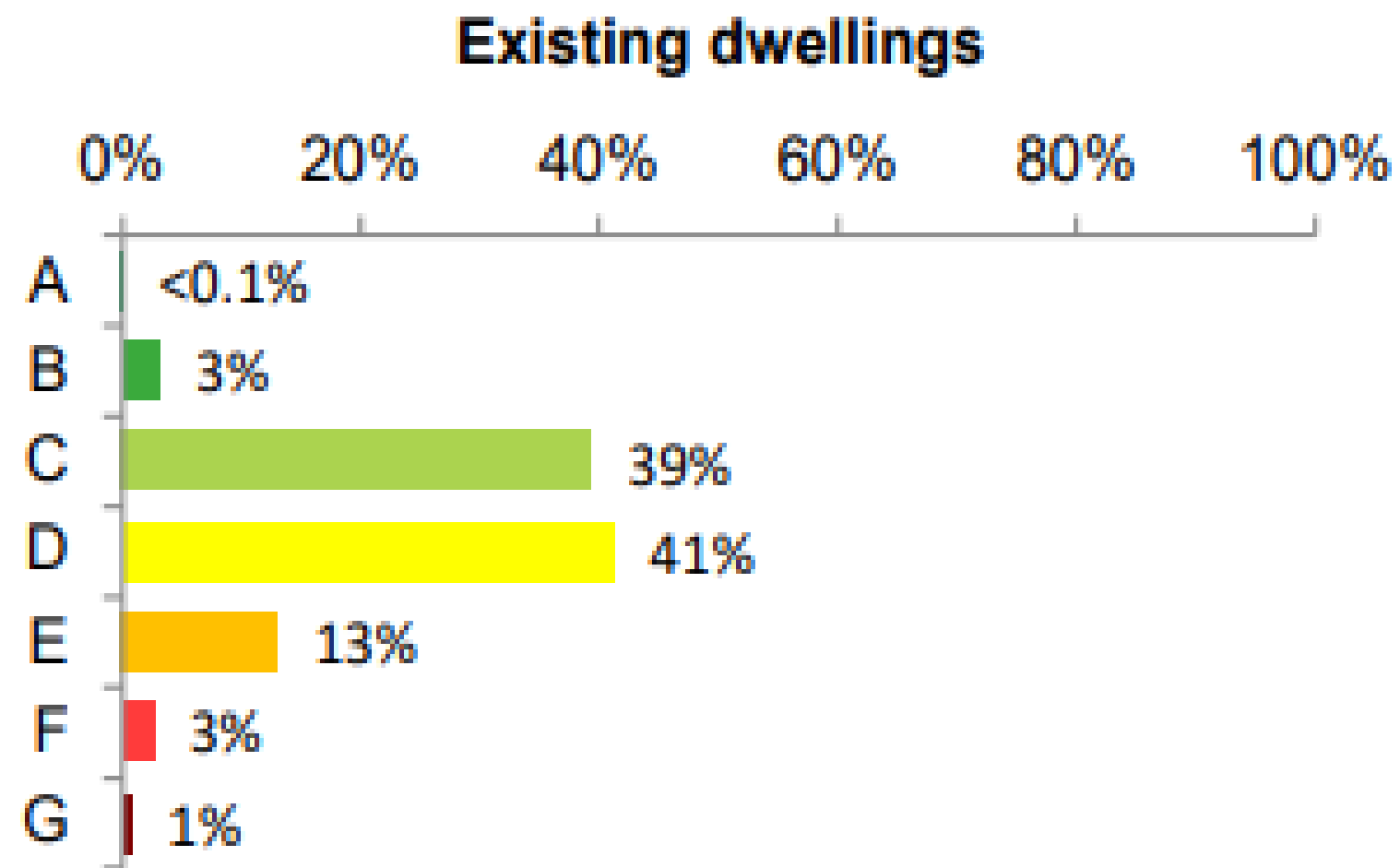
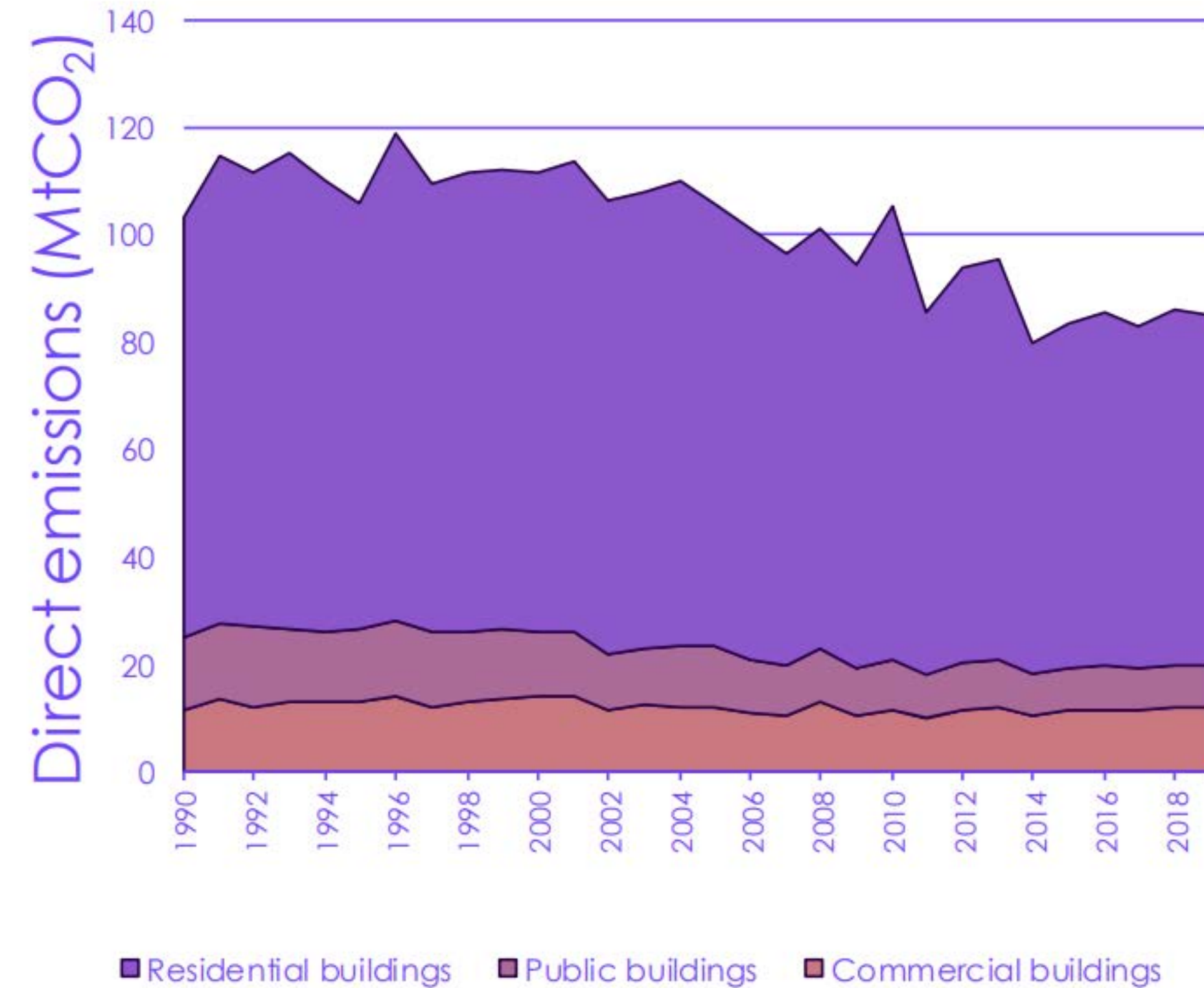
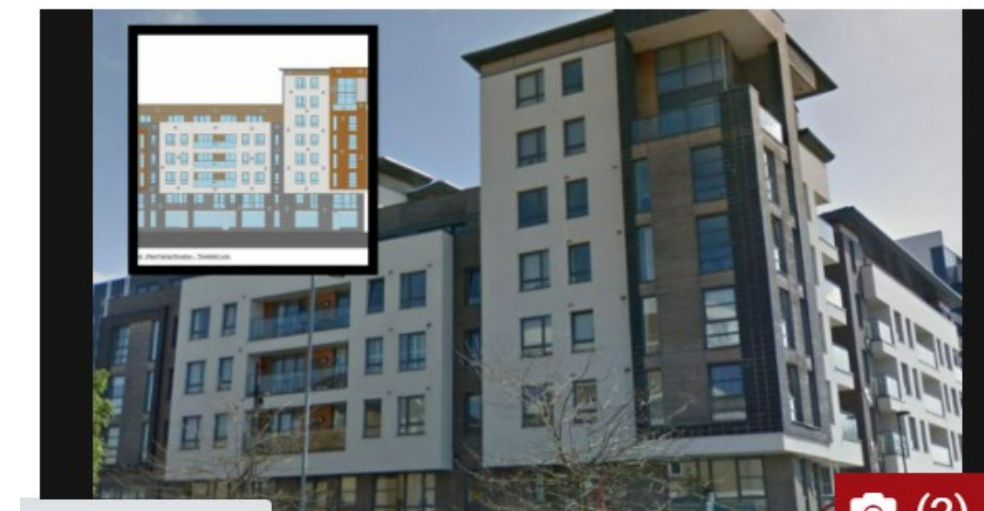
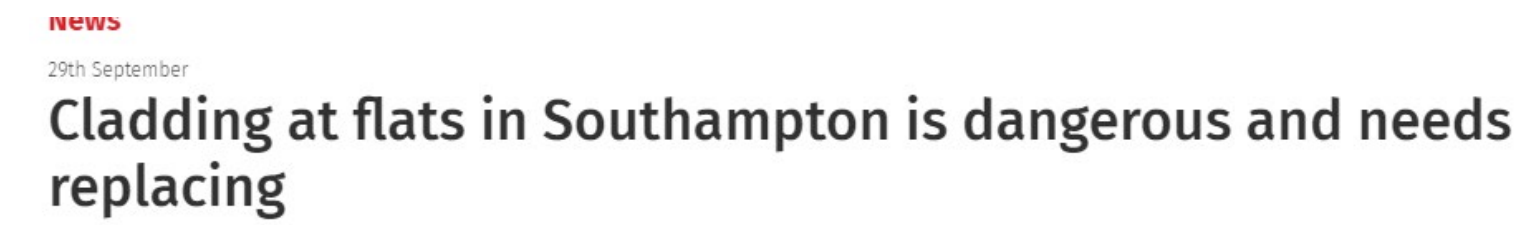
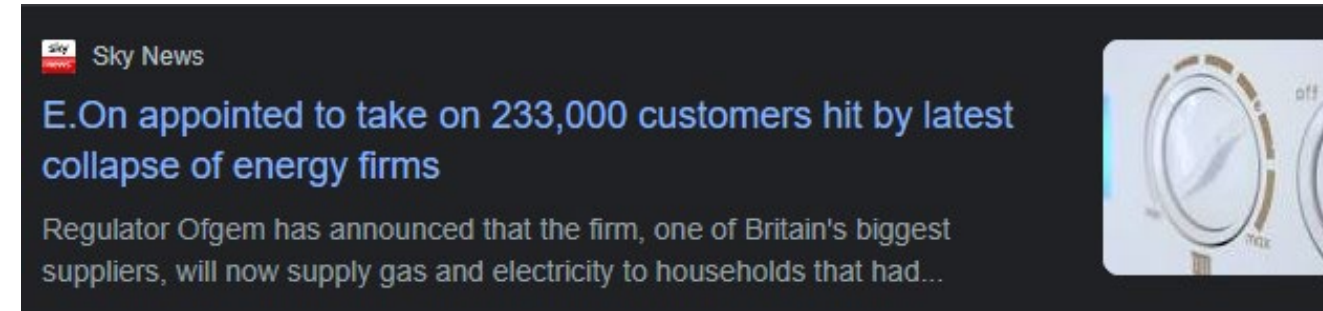


Figure M3.2 Direct CO<sub>2</sub> emissions from the buildings sector since 1990



Source: National Atmospheric Emissions Inventory (2020) Breakdown of UK GHG emissions by source and greenhouse gas.





Most read Commented

## Cost

- Fuel bills rising
- Many have employed issues
- Electric more expensive (unlike much of Europe)
- Materials, products, labour shortages.

## Health

- Ageing population
- Damp, Mould
- Overheating
- Building Safety



# Technology Silver Bullet?

Reduce first

Fabric first

Controlling Air Tightness

Ventilate

Heating

Hot Water

Renewables + technology.



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# Role of Local Authorities

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## 2.0



# Role of Local Authority

Understand the climate change challenge and the need to move to net zero.

Overall ambition and goal to draw together the multitude of different roles.

Local Intelligence, know you housing stock, heat options and circular economy.

Understand local **skills** and skills gaps

Local supply, buying power

Convening power

Access to funds

Leading by example

Planning – not baking in harder retrofit developments.

Be wary of PDR



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# Case Studies

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# 3.0



# Cornwall Whole House Retrofit

Whole House Retrofit' research and evaluation

- Technical evaluation of refurbishment performance (pre and post)
- Occupant Experiences (Post Occupancy Evaluation)
- Key part of the LA's climate emergency plans
- Informing retrofit strategies for a variety of construction types including hard to treat.
- Delivering benefits for residents (cost reduction, improved comfort)





# Essex County Council



Develop Net Zero Training

For staff and members

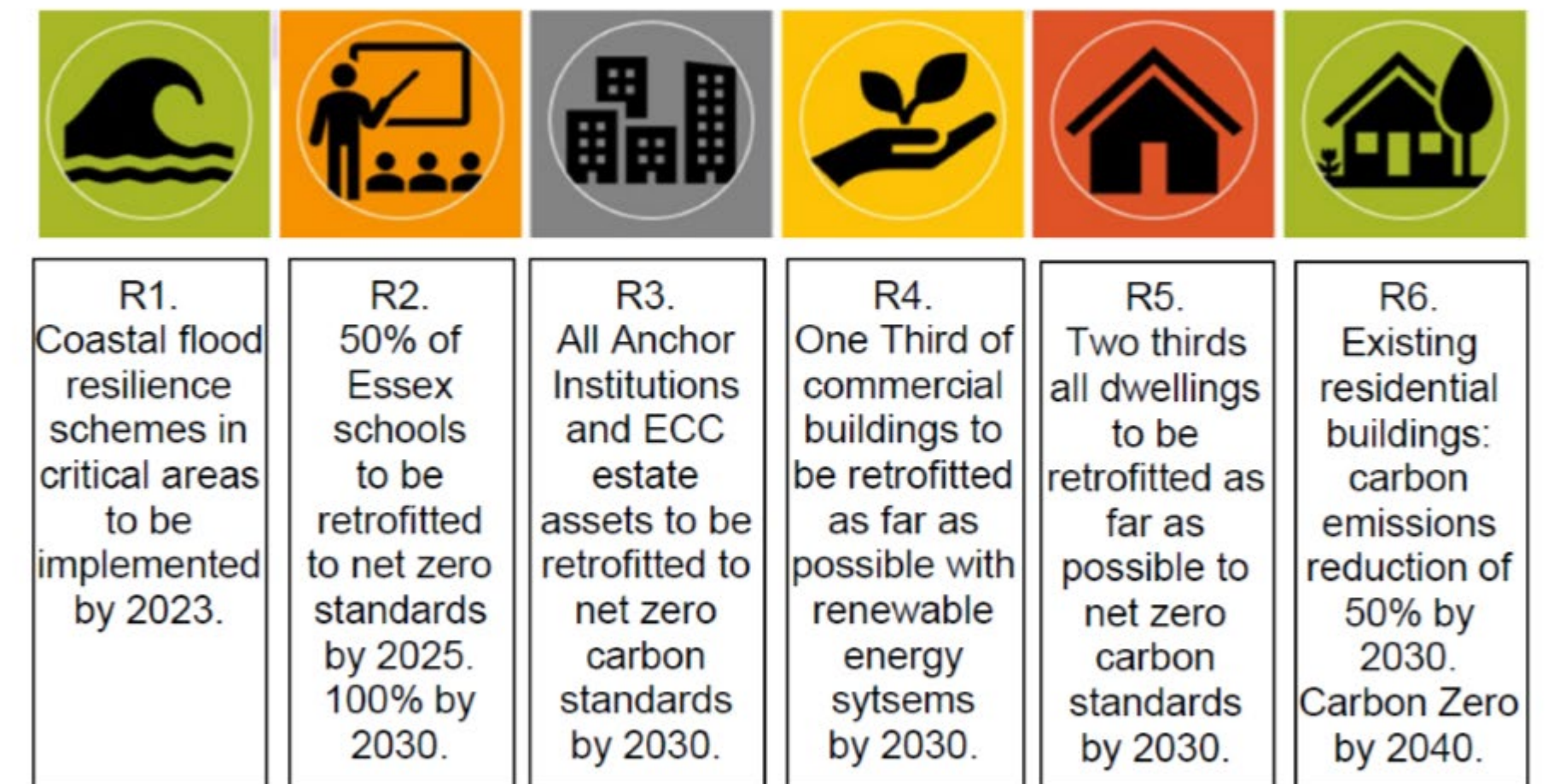
Identify standards frameworks

Vision development and policy steps

Embodied Carbon

Challenges, quick wins, no regrets.

Figure 3: Retrofit. Headline Aspirational Targets from Commissioners





# Great Places Pathway to Net Zero

BRE has been commissioned by Great Places Housing Group to create a bespoke 'zero carbon ready' vision, roadmap and action plan which will help the organisation achieve its zero carbon ambitions.

The work provides Great Places with the knowledge and evidence base to make the best decisions when developing new homes. It will take into account national policy, regional and local requirements, as well as emerging and developing trends in housing and finance sectors.

It will define what zero carbon means in the context of Great Places, as well as provide a technical assessment and review of zero carbon across housing typologies, with use of multi-criteria decision support tools to give Great Places the ability to compare scenarios and make informed choices.

A route map and action plan will allow for effective and staged implementation to achieve zero carbon ambitions.



# BRE Housing



**1968 - Present**  
UK Housing  
Survey Analysis  
and Indicators



**1997 – Present**  
Influence  
Government  
Policy



**2006 – Present**



**2017**  
Influence the  
financial sector



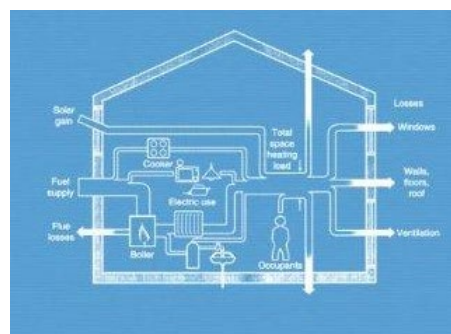
**2018**



**2018**

**1921 – Present**  
Research &  
Development  
programme

**1992 - Present**  
SAP + EPC +  
BREDEM



**2005 – Present**  
BRE Innovation Park  
20k visitors a year



**2013**  
AIM C4 project



**2016**  
Brazil social  
housing



**2018**  
HomeWorks

**2019**



**2020/21**  
Homes  
England





1/2

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