

BUILDINGS & ASSETS

Scale of the challenge...

Carbon emissions from Dorset's buildings currently account for about 60% of the county's footprint; with around **1 million tonnes of CO₂e** emitted every year to heat and power Dorset's residential, commercial and public-sector properties.

To reach national carbon-reduction targets these emissions will need to be eliminated and **all** energy used to maintain a comfortable indoor environment will need to be generated from renewable sources.

This will require a significant switch away from existing gas and oil central heating systems (which currently make up 82% of all Dorset's domestic heating systems) to heat pumps, biomass or hydrogen (when available). As well as substantial improvements to the energy efficiency of buildings to reduce overall energy demand.

To achieve this in Dorset a huge retrofit programme will be needed to address all of the county's building stock, on top of a sizeable increase in renewable energy generation to meet the residual demand.

The high proportion of properties in Dorset connected to mains gas will pose a particular challenge, and decisions on whether to wait for developing hydrogen technologies or risk not meeting peak electricity demand through over adoption of heat-pumps will be very hard.

In addition, it is predicted that a further 18,000 houses will be built in Dorset in the next decade. These will need to be zero-carbon in design and build if they are to avoid adding to the county's emissions further.





Dorset Council's own buildings and assets currently account for around 70% of its footprint. In order to reach net zero the council will need to focus on improving energy efficiency, transitioning away from

fossil fuels and sourcing energy from renewable sources.

An asset review of the new unitary authority is currently underway and an Asset Management Plan is in development.

Significant new building projects led by Dorset Council, including the Weymouth Peninsula and Building Better Lives programme, will provide an opportunity to create true net zero carbon homes and commercial properties. If this opportunity is not taken now, or in the near future, these developments will increase Dorset's footprint further.

Dorset's progress so far...

-  40% reduction in Dorset's building emissions since 2005 (in line with national figures, and mostly due to grid decarbonisation)
-  150 homes a year benefitting from improved heating systems and reduced fuel poverty through Dorset Council's Healthy Homes Scheme
-  Over 100 organisations have benefited from £2.5m of grant funding and free technical support for energy efficiency and renewable energy projects through Dorset Council's Low Carbon Dorset programme
-  47% reduction in electricity used for streetlighting since 2008 as a result of energy efficiency measures



Hear more about Dorset Council's buildings and assets and the role they have to play in tackling the climate emergency from our [Technical Services Manager for Assets & Property...](#)



Key Issues...

- Nationally**
- Lack of national strategy for heat** resulting in uncertainty for investment decisions
 - Current standards & potential future homes standards for new developments** are not high enough to deliver on national carbon-reduction targets
 - Retrofitting current housing stock is a very significant challenge** and will require action from different organisations, government and individuals
 - Lack of legal requirement to retrofit buildings**, combined with the relative cost of retrofit measures and average energy costs
 - Fitting gas boilers is currently the most cost-effective way of addressing fuel poverty** but maintains reliance on fossil fuels
- In Dorset**
- Dorset Council is currently undertaking an asset review** and therefore it is unclear which buildings will be retained
 - Lack of historic emissions data for Dorset Council** as the new authority only formed in 2019
 - Rural nature of Dorset** results in a relatively high proportion of older, detached, hard-to-treat and off-gas-grid buildings
 - Lack of renewable energy capacity in Dorset** means the demand of buildings cannot be met from local renewable energy sources
 - Higher build specifications to address the climate emergency may increase build costs** and conflict with the need for more affordable housing
 - Commercial and industrial emissions are less dependent on gas** - with a higher proportion of this sector's emissions coming from electricity and other fuels

Key Opportunities...






- Upgrading the quality of Dorset's housing stock** to make homes healthier, more comfortable and safer from impacts of climate change
- Reducing energy bills for residents** and helping tackle fuel poverty in Dorset
- Improving quality of commercial premises** - creating better working environments, reduced energy bills, and increased productivity and competitiveness for businesses
- Chance to design out energy use and design in climate resilience** in Dorset's new builds
- Opportunity for Dorset Council to lead by example** by de-carbonising own estate
- Scope to expand Dorset Council's proven energy efficiency and behaviour change programmes** to provide additional support and funding to residents (Dorset Healthy Homes) and organisations (Low Carbon Dorset)







Areas for Action...

Dorset Council is extremely limited in the powers it has to achieve the aforementioned objectives. However, we do have control of our own current buildings and any future buildings that are constructed on our land. We are also able to influence and stimulate action with partners to facilitate change.






Direct

-  Lead by example by ensuring Dorset Council's estate becomes zero carbon by 2040
-  Ensure climate change is a central consideration throughout the asset review, and in the development of Dorset Council's Asset Management plan
-  Develop and promote case studies and examples of best practice on our own estate to encourage replication by others
-  Establish policies to ensure that any of the Council's new build projects are designed to be zero carbon from the outset.
-  Continue upgrade of all Dorset streetlights to LEDs

Indirect (through services)

-  Encourage designs and layouts which lend themselves to low-carbon energy solutions, and provide guidance and advice for developers to achieve zero carbon standards
-  Ensure the Dorset Housing Strategy incorporates the reduction of carbon emissions and increased risk to climate impacts
-  Develop local plan policies to ensure climate risks are identified and avoided in new developments, such as flood risks and overheating
-  Secure funding to expand and extend the Low Carbon Dorset Programme. If this is successful, seek funding to extend it further, both in time and scope

Influence & Partnership

-  Lobby government for clarity on national strategy for heat and national policy framework
-  Work in partnership to deliver programmes to improve energy efficiency of housing stock (e.g further expand Healthy Homes Scheme)
-  Decarbonise heating by investigating largescale installation of low carbon heating and undertaking heat mapping to identify opportunities
-  Educate residential and non-residential sectors on low carbon technologies, energy efficiency, and sources of funding to encourage behaviour change & greater uptake of low-carbon technology
-  Work with partners to increase climate change resilience of communities & buildings by understanding the future climate risks within Dorset

Case Study: Dorset History Centre

Dorset History Centre is the archives service and local studies library for Bournemouth, Christchurch, Dorset and Poole.

In 2019 the History Centre was awarded a grant of £75k from Dorset Council's Low Carbon Dorset programme to help them become one of the first institutions of their kind to move to a largely passive air-handling system for its historic archives.

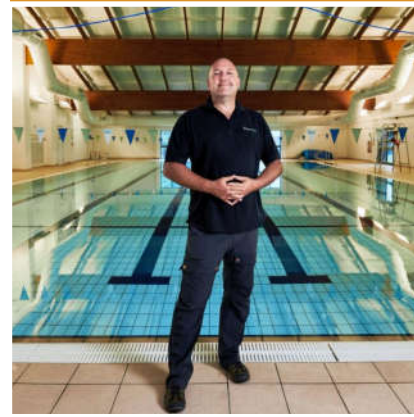
This project will facilitate near passive control by improving the air tightness of the structure of the building and by replacing existing air handling and heating systems with much simpler smaller scale systems better suited to minimal heating and humidity control.

It is expected that this project will save the centre around 90 tonnes of CO₂ and £20k in energy costs each year, reducing their overall energy consumption by 55%.



Case Study: Riversmeet

Riversmeet is a community run leisure centre in Gillingham.



And like most leisure centres requires a lot of energy to run. As a not-for-profit social enterprise the centre were keen to reduce their energy demand, and the associated costs, as much as possible. Leaving a much more environmentally friendly, sustainable community asset to be enjoyed by generations to come.

With help from Low Carbon Dorset, they completely redesigned their pool heating and ventilation to be much more energy efficient using a novel heat pump system. And installed LED lights and water and energy saving aerated shower heads. Combined these measures will save around 195 tonnes of CO₂ a year and reduce their electricity costs by over 50%, saving around £48k a year.

This is only the second site in Dorset where this novel approach to energy management is being trialled, and hopefully these centres will demonstrate the savings that can be made both in carbon and in costs.