



Llywodraeth Cymru  
Welsh Government

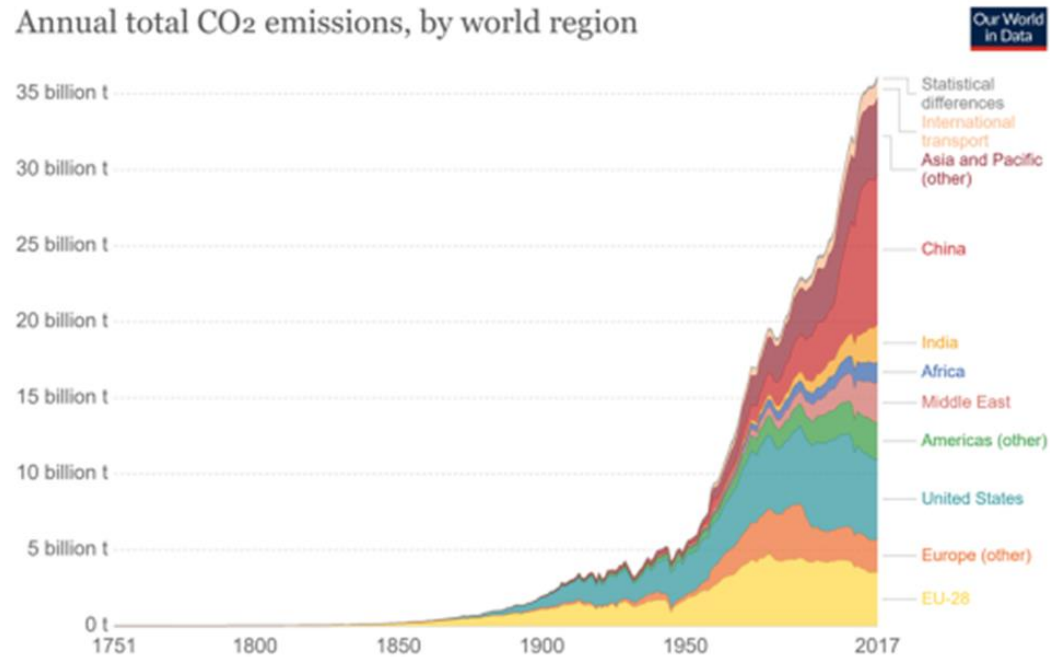
# Why the way we construct new homes has to change and the action Welsh Government is taking to support this transformation

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Presentation to Construction Excellence Wales

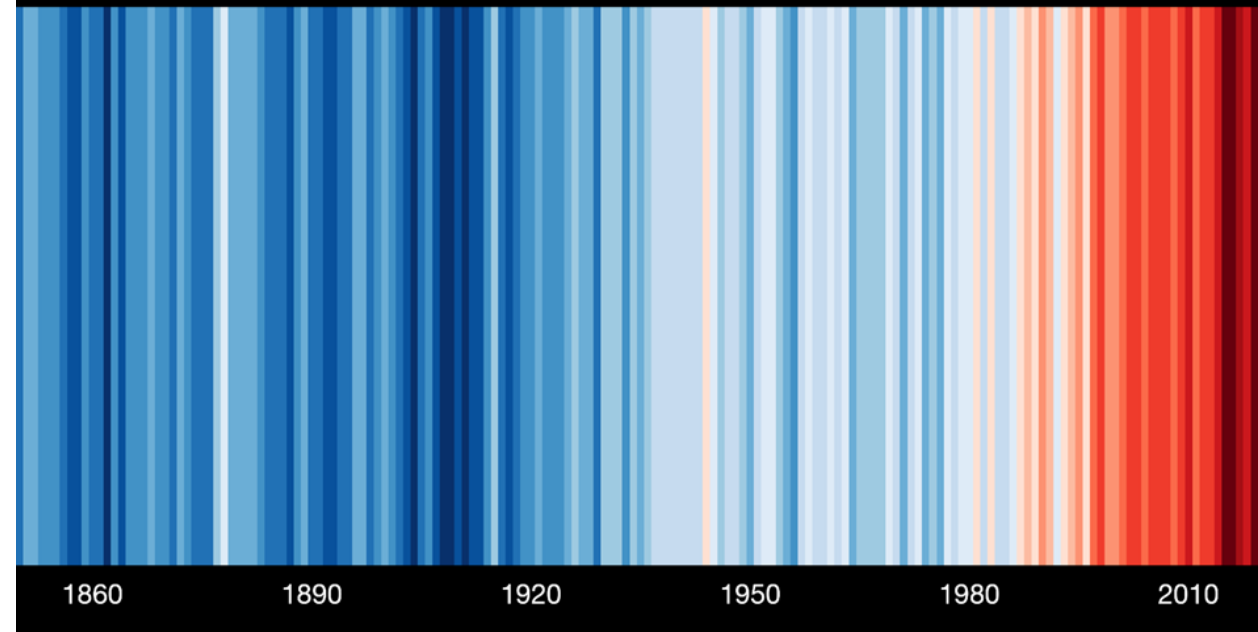
9<sup>th</sup> March 2021

# Why we need to change the way we build homes



Source: Carbon Dioxide Information Analysis Center (CDIAC); Global Carbon Project (GCP)  
Note: The difference between the global estimate and the sum of national totals is labeled "Statistical differences".  
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Global temperature change (1850-2019)



## Welsh Government action

- Innovative Housing Programme (IHP)
- The adoption of new standards for social housing construction
- Changes to grant conditions
  - Encourage and then require LCA's
  - Limit upfront carbon in construction
  - Encourage and then require post completion performance evaluation studies
- Work with 11 councils to design a system for the delivery of net zero carbon timber frame homes

## Background

- Idea follows survey of 11 councils and builds on work undertaken in Home Grown Homes project and developed in discussion with 11 councils
- Proposal
  - Collaborate in design of zero carbon timber frame home
  - Collaborative approach to procurement (buyers club)
  - Upskill DSO's or partner SME's to safely erect and fit out homes
- Powys County Council (PCC) made successful application for Innovation Funding to support Stage 1 of the project

## Stage 1 - Progress to Date

- Architect and design team appointed
- Design Sub Group established
  - Met on 4 occasions
- Outcome of stage 1:
  - Design of a short terrace of 2 bed 4 person houses to RIBA stage 4
  - Ultra low carbon but achieve zero carbon by offsetting
  - Identified fabric solution (advanced panel system)
  - Detailing to eliminate cold bridging
  - Stage 1 complete by end of March 2021

## Stage 2

- Design of additional property types
    - 1 bed 2 person flats, 2 bed 3 person flats, 3 bed 5 person houses
  - Proto-typing and testing the build system
    - fire, structural stability and buildability
  - Achieving warranties for the build system
  - Whole life carbon modelling
  - Development of a manual for the manufacture and assembly of homes
  - Achieving QA accreditation for the manual
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- Most effective way forward is to establish and seek partners to form an Innovation Partnership (both designers and manufacturers)

## Next Steps

- Development of brief for Innovation Partnership
- Advertise opportunity on Sell2Wales (Late Spring 2021)
- Appoint supply partner(s) (Summer 2021)
- At conclusion of Innovation Partnership let contract to supply homes (Late Summer 2022) (Stage 3 of project)
- Support work with Wales based timber framers to form collaboration to win both the IP and the supply contract (13 manufacturers)
- Identify volume of homes to be supplied via contract
- Work with council DSO's and/or partner SME's to ensure skills in place to erect and fit out homes

## Why is this project important

- Addresses climate emergency
- Will produce a high quality, high performing build system with low levels of upfront carbon
- Scale of potential orders should allow economies of scale and affordable price
- Benefits the foundational economies of all regions of Wales
- Creates opportunities for DSO's and/or partner SME's to grow
- Demonstrates the benefits of collaboration



## Contact Details

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