



# WELSH TRADITIONAL BUILDINGS FORUM

## FFORWM ADEILADAU TRADDODIADOL CYMRU

Level 3 Award

Energy Efficiency Measures in Older  
and Traditional Buildings

Dyfarniad Lefel 3

Mesurau Effeithlonrwydd Ynni ar  
gyfer Adeiladau Hŷn a  
Thraddodiadol

CANOLFAN TYWI



TYWI CENTRE

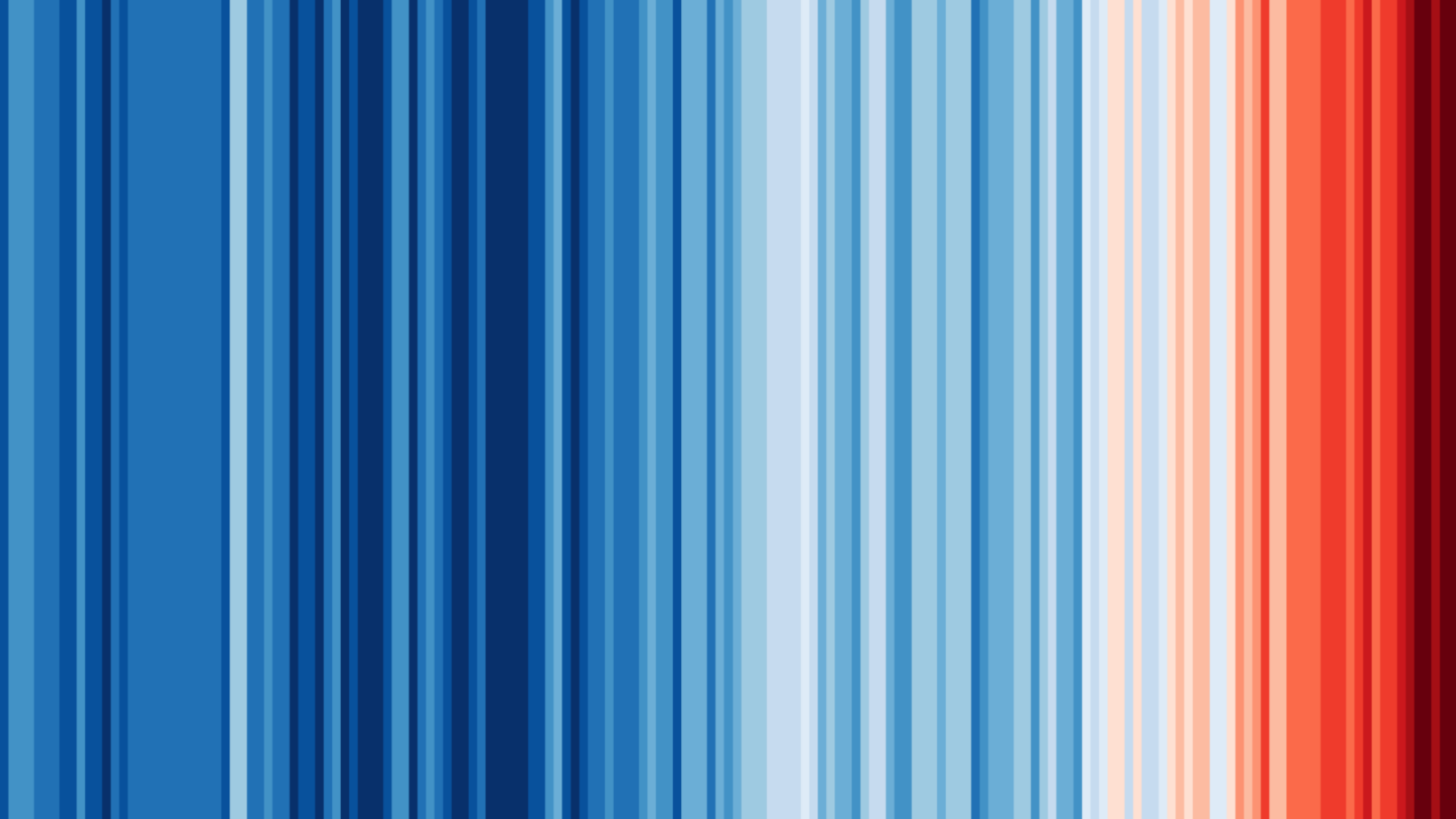


Delivered by the Tywi Centre

**THE BIG PICTURE:  
WHY DOES THIS COURSE EVEN EXIST?**

Global Warming  
+  
Built Heritage

Understanding the relationship between the two.





# SUSTAINABLE DEVELOPMENT GOALS

**1** NO POVERTY

**2** ZERO HUNGER

**3** GOOD HEALTH AND WELL-BEING

**4** QUALITY EDUCATION

**5** GENDER EQUALITY

**6** CLEAN WATER AND SANITATION

**7** AFFORDABLE AND CLEAN ENERGY

**8** DECENT WORK AND ECONOMIC GROWTH

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**10** REDUCED INEQUALITIES

**11** SUSTAINABLE CITIES AND COMMUNITIES

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**13** CLIMATE ACTION

**14** LIFE BELOW WATER

**15** LIFE ON LAND

**16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**17** PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS



PROPORTION OF NET GREENHOUSE GAS EMISSIONS  
IN EACH END USER SECTOR, UK 2017

# WHY ARE HISTORIC BUILDINGS SINGLED OUT?

**They can be massed together as a distinct group**

- Pre-1919 buildings behave differently to modern buildings in response to the weather
- They behave similarly to each other in terms of keeping water out and the inhabitants dry

# WHY ARE HISTORIC BUILDINGS SINGLED OUT?

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Solid Wall  
vs  
Cavity Wall

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# WHY ARE HISTORIC BUILDINGS SINGLED OUT?

## National Significance

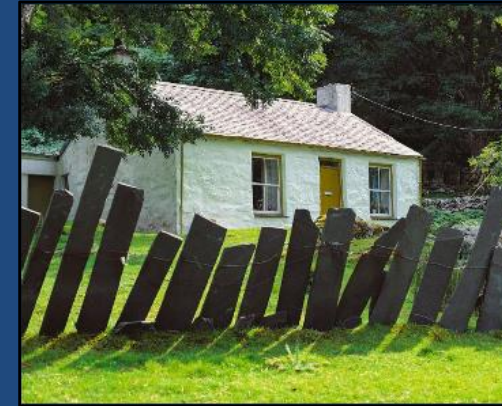
- They have economic importance: for tourism, or businesses where old buildings imbue a sense of solidity & durability
- They have cultural importance: some are protected by the nation for the benefit of the nation, others give us a sense of place and illustrate the story of our nation
- They are socially important: benefits stem from the feelings that historic buildings in themselves can convey. They add character to a place and illustrate a shared community feeling

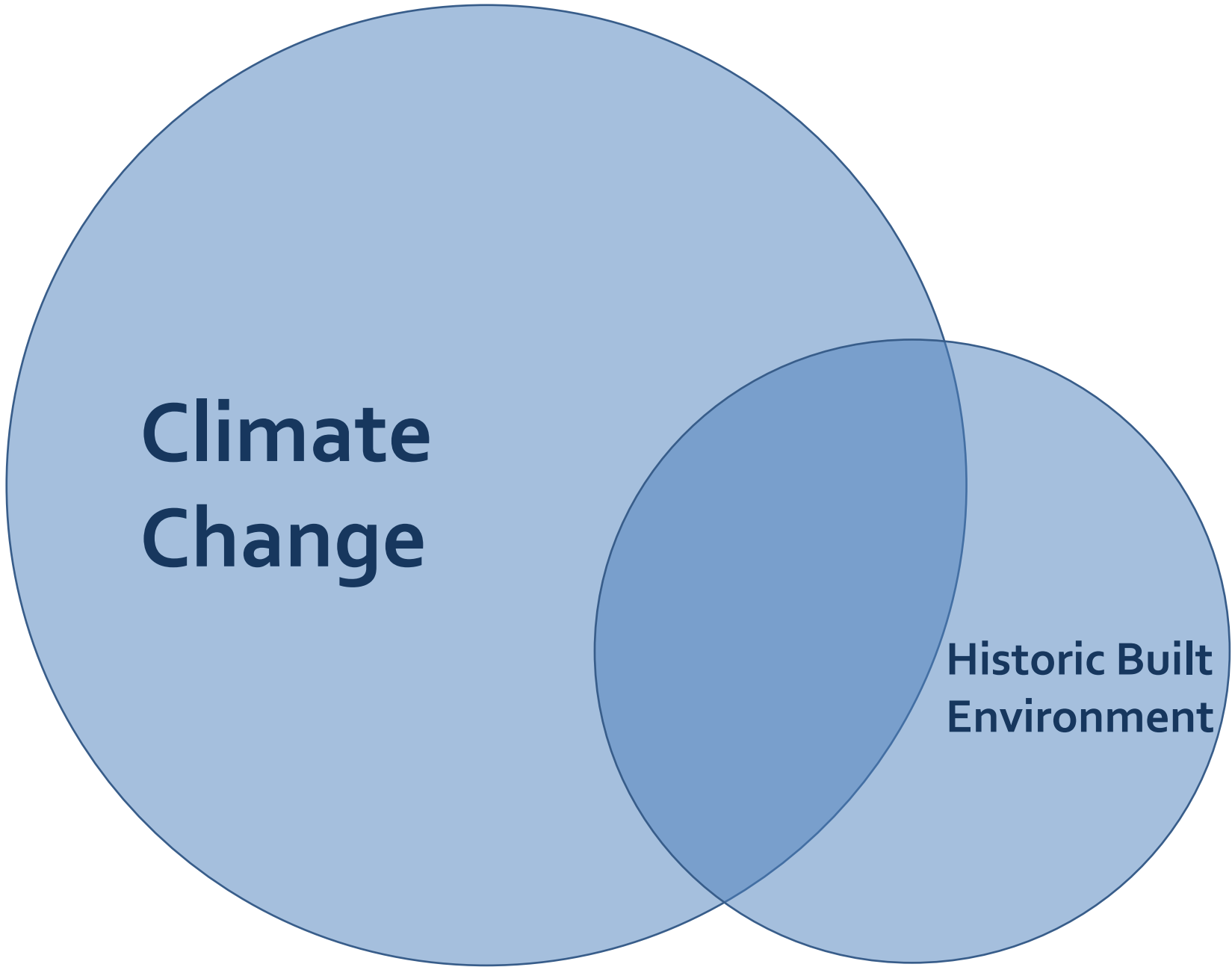


# WHY ARE HISTORIC BUILDINGS SINGLED OUT?

## Personal Importance

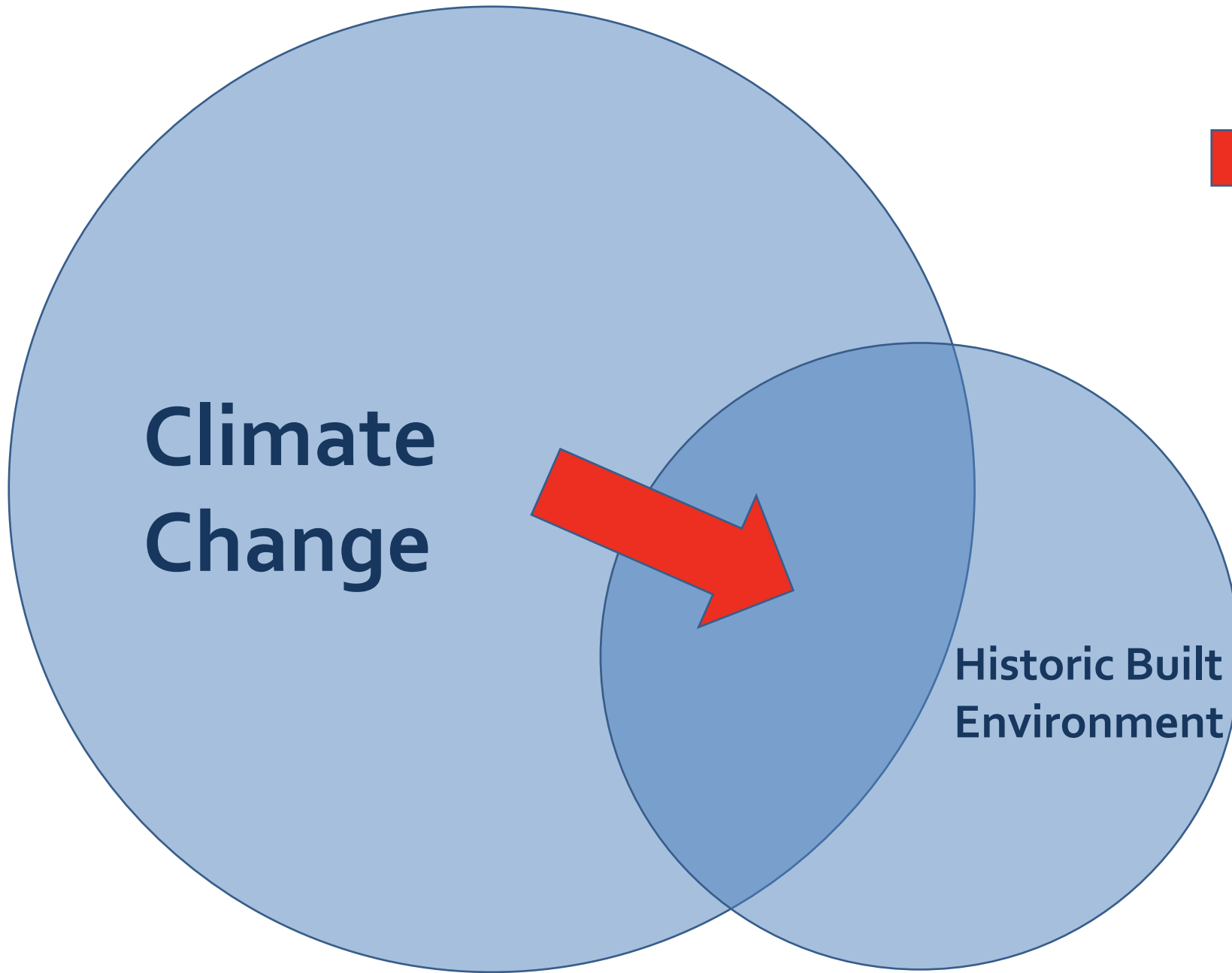
- They are unique: Each one is a product of their locality and their history
- They are our homes: Probably the most valuable asset people own.
- There are lots of them: In Wales 500,000 domestic homes are 'historic'
  - Wales – 33%
  - England – 22%
  - Scotland – 20%
  - Northern Ireland – 16%





**Climate  
Change**

**Historic Built  
Environment**



The negative effect of Climate Change on the Historic Built Environment is likely to be a large.

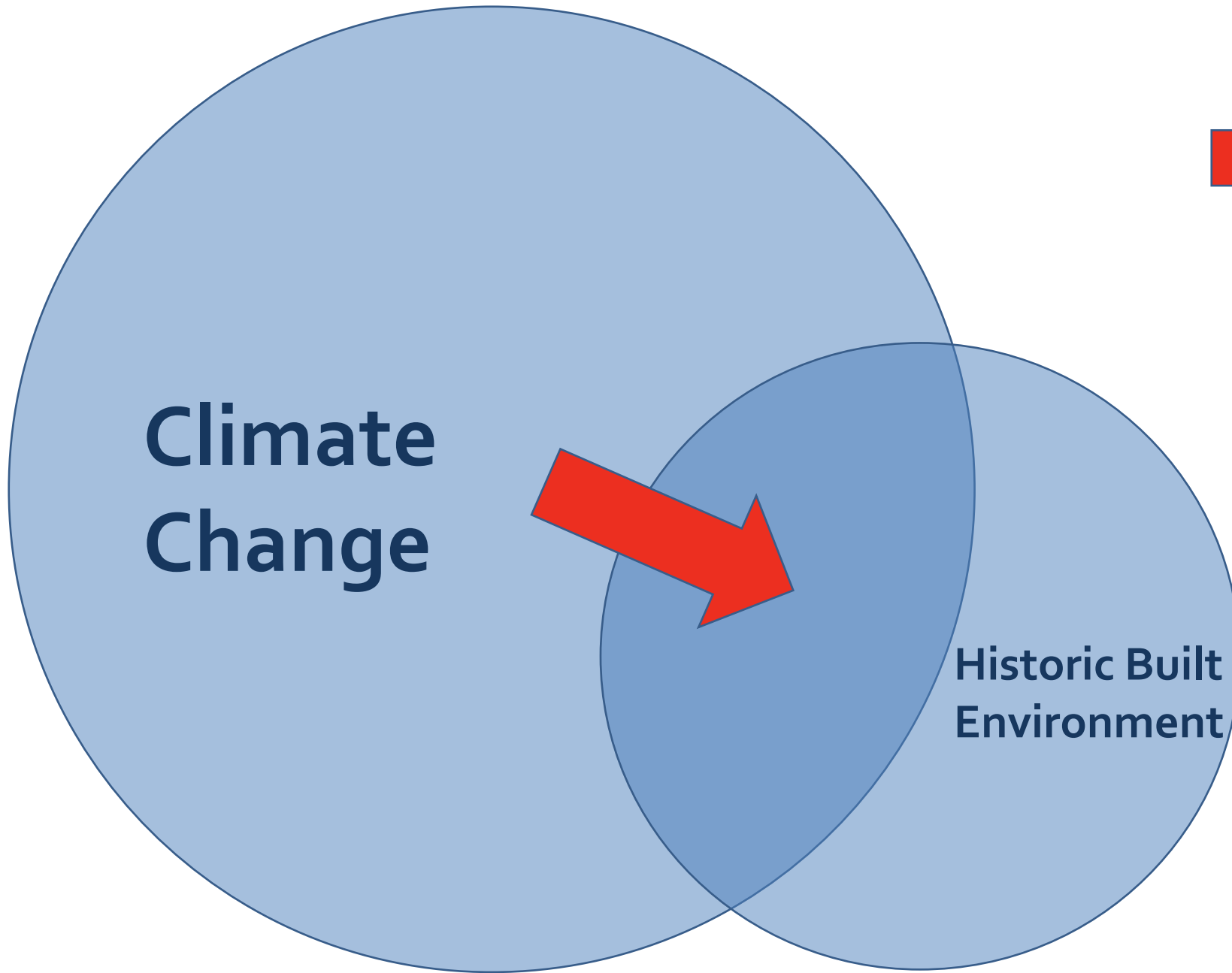
# CLIMATE CHANGE EFFECT ON THE HISTORIC ENVIRONMENT

- Macro scale impacts
- Micro scale impacts
- Adaptation challenges

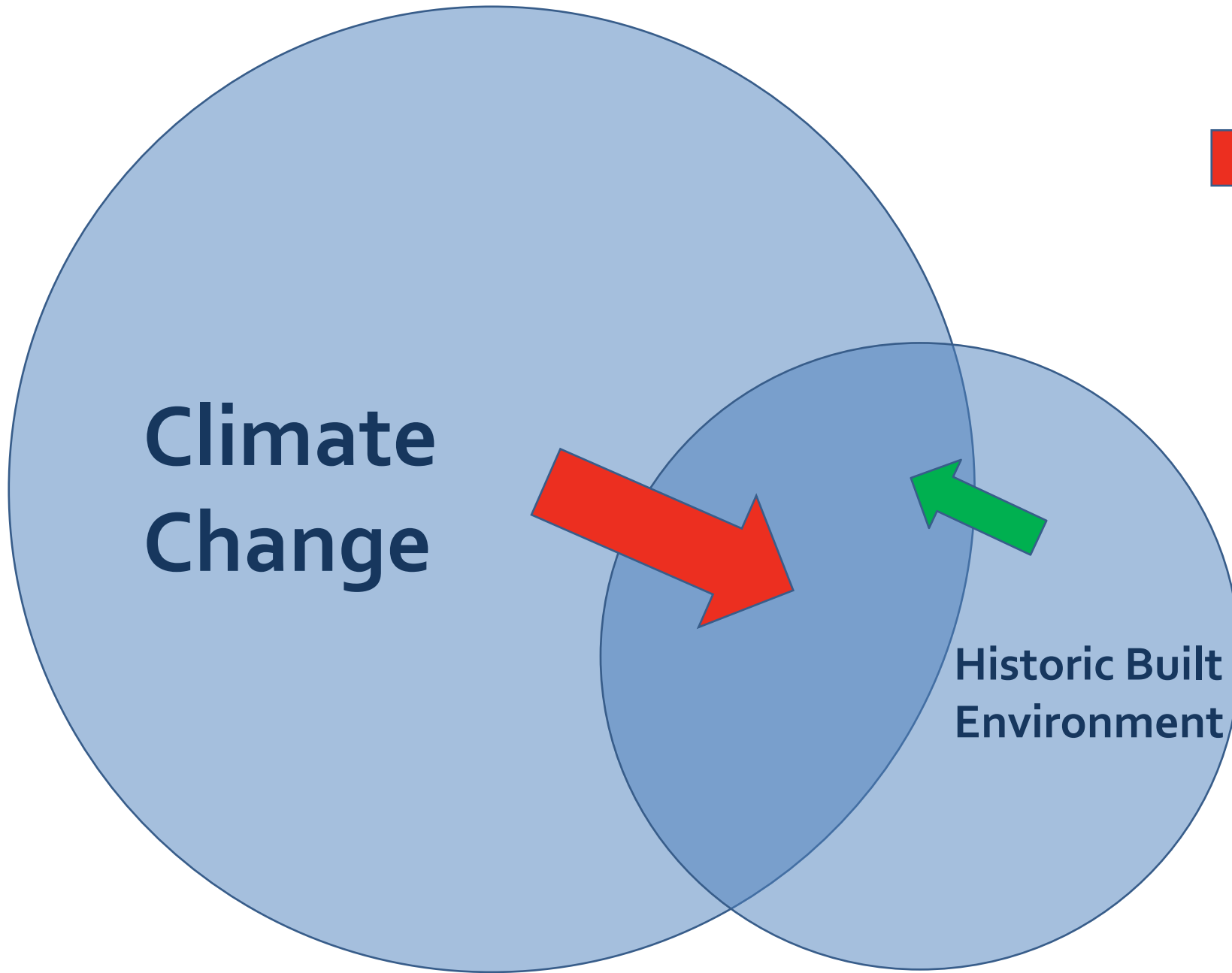








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Retain or Replace?  
Retaining historic buildings has a net positive effect on carbon emissions compared to replacing historic buildings.



# RETAIN OR REPLACE?

Life Cycle Analysis: energy is consumed at every stage of a building's life cycle – Sunk Carbon

- Extraction of raw materials
- Manufacture of building products
- Construction
- Repair and maintenance
- Retrofit or extension
- Operation eg heating, lighting & cooking
- Demolition & disposal

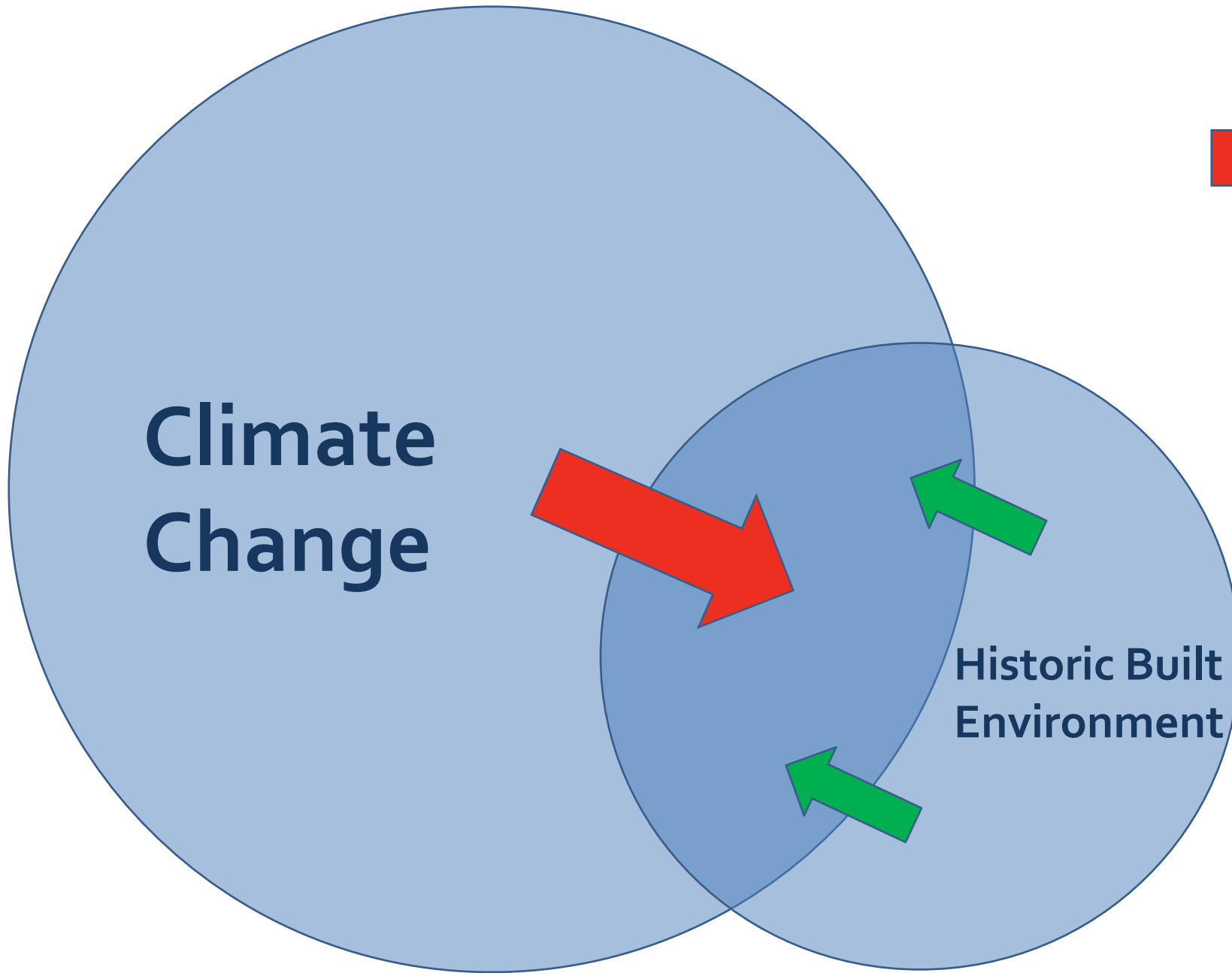
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**Embodied Energy**



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Embodied energy & retrofit  
The way we insulate and live in our buildings can have a positive impact on reducing carbon emissions

# EMBODIED ENERGY

Carbon Cost



Durability



Longevity

# COURSE STRUCTURE:

1. Recognise the age, nature and characteristics of older and traditional buildings: Age, Nature and Characteristics
2. Evaluate the appropriate options for introducing energy efficiency measures to older and traditional buildings
3. Make recommendations and give advice on introducing energy efficiency measures to older and traditional buildings



FABRIC

SERVICES



PEOPLE

CONTEXT

# WELSH TRADITIONAL BUILDINGS FORUM

## FFORWM ADEILADAU TRADDODIADOL CYMRU

The Welsh Traditional Buildings Forum promotes the development of traditional building skills and sustainability issues relating to all old buildings across Wales.

Thank you to the CITB for funding the Heritage Construction in Wales project, and the Wales Cultural Recovery Fund for funding the final stages of the project. This funding enabled this information to be made available to all those wishing to learn about the appropriate energy efficiency measures for older and traditional buildings.

For further information contact:

<https://www.wtbf.co.uk/>

Mae Fforwm Adeiladau Traddodiadol Cymru yn hyrwyddo datblygiad sgiliau adeiladu traddodiadol a materion cynaliadwyedd sy'n ymwneud â phob hen adeilad ledled Cymru.

Diolch i'r CITB am ariannu'r prosiect Adeiladu Treftadaeth yng Nghymru, a Chronfa Adfer Diwylliannol Cymru am ariannu camau olaf y prosiect. Fe wnaeth yr arian hwn alluogi'r wybodaeth hon i fod ar gael i bawb sy'n dymuno dysgu am y mesurau effeithlonrwydd ynni priodol ar gyfer adeiladau hŷn a thraddodiadol.

Am wybodaeth bellach cysylltwch â:

<https://www.wtbf.co.uk/>