# Unit 302: Working in the construction sector in Wales.

# Learning Outcomes 1: Understand the built environment in Wales.

**Learner Task Criteria 1.1**

This worksheet provides the learner with an overall understanding of the built environment in Wales, and how materials and working practices have changed relating to the building stock.

Research and answer the following questions relating to this topic area. Use the links listed below to help you and any other relevant web links.

1. Although no longer running, explain what the Welsh Government Warm Homes **(ARBED)** initiative was for and how it brought buildings up to current regulatory standards.

2. Explore the Warm Wales website and list past projects and The Green Deal initiatives (see suggested resources).

3. Since the discontinuation of **ARBED**, explain how the **NEST** initiative or **Arbed Am Byth** have taken over the role to provide support to people to improve the energy efficiency of their homes.

4. Describe what is meant by the terms listed below in relation to houses, attached and detached pre-1919 including:

* solid stone
* solid brick
* traditional timber frame.
* cavity wall; brick and block,
* modern timber frame and timber with block outer
* prefabrication and mass housing booms; post WWII war housing (including short term pre-fabricated designs), off-site modern prefabrication, flats, and high-rise apartments.

5. What were the reasons behind pre-fabrication construction?

6. What are the main aspects of The Building Stock in Wales?

7. Describe the differences between attached and detached properties and identify the differences in insulation and environmental properties pre-1919 and post-1919.

8. Why is there a need for energy efficient housing and highlight the quality assurance process required including:

* retrofit
* natural materials
* Building Research Establishment’s Environmental Assessment Method **(BREEAM)** and Passivhaus
* the need for compliance with Building Regulations.

9. What is the importance of energy efficiency and meeting the zero-carbon target which is now required in construction projects.

10. Research and list the main points of the **‘WELL’** Building Standard.

11. What are the main requirements to meet energy saving targets for industrial units and factories including:

* historic factories and warehouses
* 20th century
* modern industrial units including shopping centres.

12. What does the reuse of existing buildings and building materials include and what types of building are available for multiple/adaptable purposes?

13. Why is it important to support the sustainability and carbon saving value relating to maintaining and repairing the current housing stock compared to replacing existing 20th century buildings with new buildings.

14. Explain what benefits have been developed since the standardisation of materials and what effect this has had on the construction industry?

15. What role has standardisation had in relation to safety in the industry and the availability of materials for quality and performance, particularly with the development and manufacture of new materials and their use in modern construction.

16. How have materials such as cement, glass and steel played in the industry in your own trade, and the effect that material innovations have had on the scale and speed of construction.

17. Explain why Damp Proof Membranes (DPM) and Damp-Proof Course (DPC) are included post-1919 build and are not suitable for solid walled structures.

18. Identify the characteristics, quality, uses, sustainability, and limitations associated with DPC and DPM and the defects that can occur by wrong selection.

19. Explain the correct positioning of damp proof membranes (DPM), horizontal and vertical damp proof courses (DPC).

Suggested website links:

[Get help with energy efficiency (households) | GOV.WALES](https://www.gov.wales/get-help-energy-efficiency-households)

[Arbed am Byth | Warm Homes Scheme](https://arbedambyth.wales/eng/home.html)

[Evaluation of Welsh Government Warm Homes Arbed (householder survey): privacy notice [HTML] | GOV.WALES](https://www.gov.wales/evaluation-welsh-government-warm-homes-arbed-householder-survey-privacy-notice-html)

[Arbed Scheme in Penrhiwceiber takes aim at Fuel Poverty and Carbon Emissions (rctcbc.gov.uk)](https://www.rctcbc.gov.uk/EN/Newsroom/PressReleases/2021/October/ArbedSchemeinPenrhiwceibertakesaimatFuelPovertyandCarbonEmissions.aspx)

[The Green Deal Government Scheme: Energy Saving For Your Home - Which?](https://www.which.co.uk/reviews/home-grants/article/the-green-deal-afMJp3S8hrgc)

[What is BREEAM (buildenergy.co.uk)](https://www.buildenergy.co.uk/services/breeam/what-is-breeam/)

[Passivhaus Institut (passivehouse.com)](https://passivehouse.com/)

[Dwelling stock estimates: as at 31 March 2020 | GOV.WALES](https://www.gov.wales/dwelling-stock-estimates-31-march-2020)

[WELL Building Standard® | WELL Standard (wellcertified.com)](https://standard.wellcertified.com/well)

[Countdown to zero: how can the UK meet its 2050 carbon targets? | Features | Building](https://www.building.co.uk/focus/countdown-to-zero-how-can-the-uk-meet-its-2050-carbon-targets/5109420.article)

[Installation of Physical Damp Proof Membrane - YouTube](https://www.youtube.com/watch?v=2JaqEKJx5qA)

[Install a remedial physical damp proof course - YouTube](https://www.youtube.com/watch?v=kIfW3NwXykk)