Unit 202: Changing practices over time (tutor)

# Worksheet 2: 20th century construction techniques

**Task 1:** Answer the following questions in relation to transport and building prestige.

1. How did evolution of modern transport links lower construction costs for post-1919 buildings?

The revolution of modern transport links played a crucial role in lowering construction costs for post-1919 buildings. By enabling more efficient transportation, it reduced the expenses associated with sourcing and delivering construction materials. This cost reduction made construction more affordable and contributed to the increased pace of building development during that era.

1. What impact did the availability of construction materials have on post-1919 buildings?

The availability of construction materials had a significant impact on post-1919 buildings. It allowed architects and builders to experiment with new materials and construction techniques, resulting in innovative and unique structures. The increased availability also helped meet the growing demand for construction projects during the post-war period.

1. Explain how traditional buildings such as churches and government buildings demonstrated their prestige.

The types of materials used such as stained glass showed the people of the local area that the building is important. The quality of craftmanship is also important. Prestigious buildings are usually ornate or have decorative features. Also, materials of higher value or more expensive materials tended to be used for these types of building.

1. Why was imported iron and steel used in the Welsh construction industry during the Industrial Revolution?

Possible answer: Imported iron and steel were used in the Welsh construction industry during the Industrial Revolution to meet the growing demand for structural materials. Wales imported iron and steel from regions like England to support the development of heavy industries, including the construction of bridges, railway infrastructure and industrial buildings.

**Task 2:** Answer the following questions in relation to material innovations in post-1919 construction.

1. How have advancements in materials facilitated the construction of larger and taller structures?

The combination of steel frameworks, reinforced concrete and glass facades has enabled the creation of skyscrapers, stadiums, bridges and other monumental projects.

1. How have cement, steel and glass contributed to faster construction processes?

Prefabricated steel components, reinforced concrete and modular glass panels can be manufactured off-site, reducing on-site construction time and allowing for faster project completion.

1. How have these materials contributed to cost-effective construction practices?

Cement's affordability, steel's strength and versatility, reducing the need for additional structural elements and faster construction speeds have all helped keep construction costs relatively low.

1. How do cement, steel and glass enhance the durability of structures?

Reinforced concrete ensures long-term structural integrity, steel's high strength makes buildings resilient against heavy loads and external forces and properly engineered glass provides thermal insulation and resistance to breakage.

1. How have material innovations contributed to sustainability in construction?

Cement manufacturers have focused on reducing carbon emissions, energy-efficient glass improves thermal performance and steel's recyclability allows for the reuse of components, promoting sustainability in the industry.

**Task 3:** Complete the paragraph below using the words provided.

DPCs are primarily used in walls to prevent rising damp. They are typically made of impermeable materials, such as polyethylene or bitumen, and are installed horizontally at ground level or below. By creating a physical barrier, DPCs prevent moisture from seeping into the walls and causing damage to the building's structure and finishes. DPMs, on the other hand, are used in floors to inhibit moisture penetration from the ground. They are often made of polyethylene or other waterproof materials and are installed beneath the floor, acting as a barrier against dampness. DPMs prevent the movement of moisture vapor from the ground, which can lead to damp and unhealthy living conditions. The inclusion of DPCs and DPMs in post-1919 buildings in the UK became standard practice to pre-1919 construction methods that did not effectively stop rising damp. These membranes play a crucial role in maintaining a dry and habitable environment within the building, protecting its structural integrity, and preserving its aesthetics. Additionally, by preventing moisture build up, DPCs and DPMs help to prevent the growth of mould and the associated health hazards that can arise from long term exposure to damp conditions in buildings.