



Construction and the Built Environment – Unit 1

1.6 Sustainable construction methods (1 of 2)

SUSTAINABLE CONSTRUCTION

Sustainable construction is focused on improving the well-being of everyone involved in built environment projects, including construction workers, nearby residents, and the end-occupiers of the buildings.

The **financial benefits** of sustainable construction:

- **Minimising waste** created during construction projects.
- **Using sustainable materials**, such as recycled metals and reclaimed bricks.
- **Reducing energy consumption** through insulation, replacing air-conditioning with natural ventilation systems, and introducing intelligent heating and lighting systems.
- **Improving water efficiency** by using water-efficient construction materials, monitoring consumption, minimising leakage, collecting rainwater, using storage devices, and incorporating “grey” (recycled) water systems.
- **Reducing operating costs** by using renewable energy, which is more cost-effective in the long term.
- **Optimising the life cycle of buildings** by constructing them to the highest standard and ensuring they are built to last.

The **cultural and social benefits** of sustainable construction methods:

- **Protecting the environment**, creating a healthy and aesthetically pleasing space for living or working.
- **Reducing pressure on local infrastructure**, alleviating traffic congestion, and improving the efficiency of transport networks.
- **Improving householders’ comfort** through the introduction of intelligent heating, lighting and ventilation systems.
- **Improving air quality** during the construction phase and providing clean energy solutions for occupied buildings.
- **Boosting workforce productivity** by fostering a pleasant and healthy work environment, offering fair salaries, and providing job benefits—leading to increased productivity.

PREVENTATIVE MEASURES TO PREVENT POLLUTION

- Minimising land disturbance and leaving maximum vegetation cover to prevent erosion.
- Dust control by using mesh screens and fine water sprays to dampen down the site area.
- Covering stores of cement, sand and other powders, and locating them where they will not be washed into waterways or drainage areas, using non-toxic paints, solvents and other hazardous materials.
- Monitoring toxic substances to prevent spills and site contamination.
- Collecting any wastewater generated from site activities in settlement tanks and disposing according to environmental regulations.
- Avoiding any burning of materials on site.
- Reducing noise pollution through careful handling of materials and the use of modern, quiet power tools, equipment, and generators.

MEASURES TO PRESERVE NATURAL HABITATS

Developers are required to make special provision for wildlife disturbed by construction work. For instance, by building tunnels under roads for newts to use, or creating new roosts for bats.

Protected areas of the United Kingdom, such as the Lake District, have been designated as protected areas because of their environmental, historical, or cultural value to the nation.

Strategies that aim to combat the over-production of carbon

It has been estimated that around 10% of the UK’s carbon dioxide emissions are caused by construction work. Here are some steps being taken to control this:

- The use of less polluting building materials.
- Managing waste sustainably.
- Using more energy-efficient transport systems.
- Designing buildings that consume less energy.
- Using renewable energy.