

Preserving the Past, Powering the Future

3 years ago



Retrofitting heritage buildings to achieve net-zero is a complex and challenging task. These buildings often have unique historical features that must be preserved while making significant energy efficiency upgrades.

Achieving net-zero energy consumption in these buildings requires overcoming challenges related to cost, limited space for upgrades, building regulations, availability of skilled workers, and building performance monitoring.

Preserving Historical Features:

Heritage buildings often have unique historical features, such as original facades, windows, and ornamental details. Retrofitting these buildings to achieve energy efficiency without compromising their historical features can be a challenge. One solution is to use reversible retrofitting techniques that do not damage the building's structure or appearance. For example, installing window inserts can help preserve the original windows while improving energy efficiency. Another solution is to use materials and design elements that complement the building's original features.

Limited Space for Upgrades:

Heritage buildings often have limited space for upgrades, and some upgrades may require changes to the building's structure or layout. One option is to prioritise upgrades that provide the most significant energy savings, such as insulation, HVAC upgrades, and renewable energy systems. Another solution is to use innovative technologies that take up less space, such as radiant heating and cooling systems or mini-split HVAC systems.

Cost:

Retrofitting heritage buildings can be expensive, as it often involves preserving the building's original features while making significant energy efficiency upgrades. However, there are several ways to reduce costs. One way is to prioritise upgrades that provide the most significant energy savings and have the shortest payback period. Another option is to take advantage of government grants and incentives for energy efficiency upgrades.

Building Regulations:

Retrofitting heritage buildings to achieve net-zero energy consumption may require changes to the building's structure or appearance, which can conflict with building regulations and local planning laws. This can make it difficult to obtain necessary permits and approvals. One solution is to work closely with local authorities and historic preservation organisations to find solutions that meet both energy efficiency goals and preservation requirements.

Availability of Skilled Workers:

Retrofitting heritage buildings requires specialised knowledge and skills, and finding skilled workers can be a serious challenge. Research has identified a need for over 200,000 workers to focus solely on retrofitting historic buildings every year from now until 2050 to meet the UK's net zero targets. This current gap in skilled availability can increase the cost and time required to complete the retrofitting work, however meeting this challenge head on does provide significant wider benefits.

Read a great article here about how this is being tackled:

<https://www.grosvenor.com/property/property-uk/environmental-leadership-88d2ccc23f1cc6a16f5f8b43d36faf68/heritage-and-carbon>

Building Performance Monitoring:

After retrofitting a heritage building to achieve net-zero energy consumption, it is essential to monitor the building's performance regularly. However, this can be difficult in heritage buildings due to limited access and the need to preserve the building's historical features. One solution is to use remote monitoring technologies that do not require physical access to the building, such as sensor technology. Another solution is to use non-destructive testing techniques that can detect energy loss without damaging the building's structure or appearance.

Retrofitting heritage buildings to achieve net-zero energy consumption is a challenging task that requires a holistic and innovative approach. Preserving historical features, limited space for upgrades, costs, building regulations, availability of skilled workers, and building performance monitoring are all challenges that must be overcome. However, by working closely with local authorities, historic preservation organisations, and specialised contractors and tradespeople, it is possible to achieve energy efficiency goals while preserving the unique historical features of heritage buildings.

Talk to us at Neutral Carbon Zone about what options are available and appropriate for your building. Every building deserves a unique approach, but it can be done.

Alan Stenson, CEO

gozero@neutralcarbonzone.com