





Beckford's Tower: Eco-refurbishment of iconic Bath building



Overview

Age/Period:	1827
Type:	Museum and Tower
Years in residence:	50
Fabric:	Bath stone, slimline double glazing
Area:	Lansdown

Key Features

-  Solar PV
-  Air Source Heat Pumps
-  Slimline double glazing
-  Energy efficient LED lighting

Introduction

Beckford's Tower, a Grade I listed building, stands prominently atop the Lansdown escarpment, visible from across Bath. Built in 1827 for the controversial slave trader William Beckford as a retreat from Bath, it has been operated as a museum since the 1970s, offering insight into Beckford's life and Georgian Bath. Now owned by the Bath Preservation Trust, the tower was recently placed on Historic England's Heritage at Risk Register due to its deteriorating condition. However, after a £3.9 million refurbishment aimed at halting structural decline and significantly reducing the building's carbon emissions, the tower is expected to be removed from the register. Before the refurbishment, the building faced serious issues with dampness, as rainwater seeped through the belvedere and roof, accelerating its deterioration and leading to its identification as Heritage at Risk. The recent restoration work has addressed these problems and is anticipated to secure the building's future.

The Bath Preservation Trust has been committed to improving the environmental sustainability of historic buildings in Bath. This effort began in 2011 with the publication of the ["Warmer Bath: A guide to improving the energy efficiency of traditional homes in the city of Bath"](#). The refurbishment of Beckford's Tower is the first of four projects aimed at reducing carbon emissions across their properties, with future work planned for No.1 Royal Crescent, the Countess of Huntingdon Chapel (Building of Bath Museum), and 19 New King Street (Herschel Museum of Astronomy).

Features

Refurbishment of the fabric in the face of climate change

The Bath Preservation Trust's top priority was to stabilize the building's structure and prevent further deterioration, particularly in light of climate change. Increased rainfall had weakened the lime mortar holding the Bath stone exterior together, overwhelmed the rainwater drainage system, caused leaks in the roof, and led to the deterioration of the wooden panelling near the top of the tower. All these issues have now been addressed, including the installation of Accoya wood panelling at the tower's top, which is expected to offer much greater durability and lower maintenance than the previous wood panels.

Heat Pumps

Two air source heat pumps, new central heating pipework and radiators have been installed replacing the building's previous oil-fired boilers.

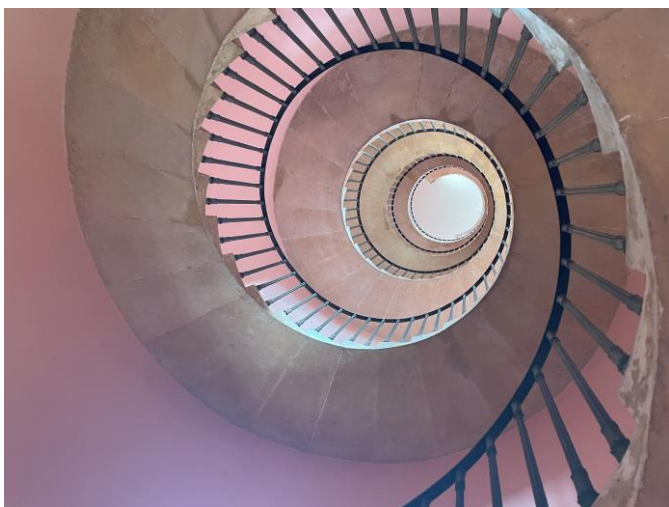
The heat pumps should reduce the museum's emissions by more than 80% and more as the UK national electricity grid decarbonises. They are located north of the building and required a new electricity

supply from the electricity grid.

To run the heat pumps efficiently new pipework have been installed as heat pumps generally require greater flow of water than gas or oil boilers. The capacity of the radiators has also been increased as 'larger' radiators allow the heat pumps to run efficiently at lower temperatures. Fan convector radiators were installed, as these allow high output, at low flow temperatures but with a small footprint.



A bespoke fan heater powered by the heat pumps has been installed at the base of the tower to preserve the fabric of the tower:



Solar PV

Due to limited outdoor space, solar panels have been installed on the museum's insulated flat roof. These panels are carefully positioned to be out of sight from the ground



Slimline double glazing

To reduce heat demand and increase the efficiency of the heat pumps slimline double glazing has also been installed.



It's difficult to distinguish from single glazing but halves the heat loss through the windows.

Conclusion

As the refurbishment was just completed in the summer of 2024, the Bath Preservation Trust has not yet assessed the impact of the work on the building's carbon emissions.

Recommended installers

Emery Brothers Ltd