

The Role of Conservation in a Sustainable Future

By Mackenzie Barrall

In our current climate crisis, energy consumption in all areas of life is being rethought, including the built environment. Even though the United Kingdom and United States are in different areas of the world, according to the UK Green Building Council¹ and the US Energy Information Administration², building maintenance, energy, and construction make up 40% of our countries' carbon emissions. Within the heritage sector, our countries have nearly identical efforts and initiatives to showcase the sustainable value of historic properties as well as conserving their historic features. However, there are a few key differences in their applications of these efforts. Throughout this exploration, we will look at the different ways in which they approach sustainable historic properties, and why these approaches exist.

When looking at the “official guidelines” for making historic buildings energy efficient, we first need to determine what buildings are affected by these guidelines. In England and Wales, historic properties can be designated through the listing system, which currently holds about 400,000 listed buildings of Grade I, II*, and II.³ For the purpose of this project, we will only look at the process for these listed buildings, as the hundreds of thousands of unlisted buildings face even larger struggles to become more sustainable while being conscious of the historic fabric. Owners of listed buildings must submit applications to local authorities should they want to make any changes which involve the demolition of historic features. These applications can then be objected to by Historic England and by the National Amenity Societies (for instance HB&P) if they prove to be detrimental to the historic fabric. The local authority then ultimately decides if the application is accepted, taking all comments into account.⁴ In a similar fashion, if an unlisted building is part of the 10,000 conservation areas throughout England, which are designated areas of particular historic character or importance that make up 2.2% of the country, it must pass through similar applications where the local planning authority has the final decision.⁵ While this system assists in the avoidance of large damages to historic communities, there still can be decisions which are detrimental to the historic fabric of individual buildings. Therefore, there are some strengthened legal opportunities to advocate for the built heritage, but in the final analysis, these comments and objections can still be overridden.

In contrast, it is only the heritage of certain historic districts, or special locally designated properties that is protected in a similar way in the US. These local historic districts only encompass a few blocks, and although they are all around the US, there are only about 2,300 in all. This accounts for a tiny portion of historic buildings, even combined with local landmarks. Like England and Wales, a vast majority of properties receive no protections, even from local authorities, unless community members can rally support to combat developers. However, this is a rare occurrence, and much of the time and energy of heritage organizations in the US is spent saving buildings from total demolition and neglect rather than making them more sustainable. The protections offered to historic buildings also vary from state to state and locality to locality,

¹ “Climate Change”, *UKGBC*

² “How much energy is consumed in US buildings?”, *EIA*, 2021

³ “Listed Buildings Identification and Extent”, *Historic England*

⁴ “Amenity Societies and Other Voluntary Bodies”, *Historic England*

⁵ “Conservation Areas”, *Historic England*; “Living in a Conservation Area”, *Historic England*

so what may be the case in California could be completely different in New York State. Thus, properties that are not designated on a local level, which is most of the built heritage, are not obligated to follow the national guidelines when making retrofits and therefore often lose more historic fabric.

In England and Wales, these guidelines are championed by large organizations like Historic England and are incredibly in depth, while in the US the national legal guidelines we are looking at are written by the Secretary of the Interior.⁶ There are other organizations which offer in-depth suggestions for sustainable retrofits in the US, such as Historic New England, but these are very regional organizations.⁷ The real difference comes in what these organizations are fighting for. As mentioned earlier, the US unfortunately often fights to stop whole building demolitions, while in England and Wales, smaller demolitions of parts of listed buildings are much more frequent. However, neither of these outcomes are ideal, especially not in terms of sustainability.

Focusing on the guidelines themselves, the suggestions for the conservation of heritage regarding sustainable retrofits are extremely similar in both countries: to conserve as much of the original fabric as possible. When approaching sustainability within conservation, both express the delicate nature of increasing the energy efficiency of historic buildings, but even without this increase the “most sustainable building may be one that already exists.”⁸ Therefore, before looking at the technology involved, a common stress is placed on the importance of using traditional features of the buildings, like shutters, thick curtains, awnings, and other existing modes of conserving energy, rather than adding extra technologies to battle these discomforts. Through energy consumption research, it has been found that buildings built before 1920 are more energy efficient than those built between 1920 and 2000 due to the need to use their older traditional methods for heating and cooling rather than electric systems for heating, ventilation, or air-conditioning.⁹ This combined with the conscious consumption of energy, such as using timed lights, heating pumps, and other personal lifestyle changes to conserve water and energy, produces a decrease in consumption without major changes to the heritage structure itself.

One of the biggest misconceptions of retrofitting a historic building that both discuss, is the repair of historic windows rather than replacement. According to the US Department of Energy, windows only account for about 10% of air loss, and so the premise that replacement windows are the main energy savers in a retrofit is simply not true.¹⁰ The results of how historic windows are part of a rehabilitated building, however, is one large discrepancy between the

⁶ Grimmer, Anne E., and Hensley, Jo Ellen, “The Secretary of the Interior’s Standards for Rehabilitation and Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings”, *National Park Service*

⁷ For a look at Historic New England’s Case Studies, take a look here:

“Property Care White Papers Weatherization Case Study: Exterior Storm Windows”; “Property Care White Papers Weatherization Case Study: Interior Storm Windows”.

⁸ Jo Ellen Hensley and Antonio Aguilar, “Improving Energy Efficiency in Historic Buildings”, *National Park Service*

⁹ U.S. Green Building Council, “LEED for Neighborhood Development and Historic Preservation”, *USBG*, 2013, 6

¹⁰ “Improving Energy Efficiency in Historic Buildings”

approaches of the US and the UK. The US has been much quicker to approve the use of methods such as double glazing, and even going as far as suggesting the use of storm windows, either interior to conserve the historic exterior of the building, or exterior to conserve the state of the historic window itself.¹¹ As mentioned before, only England and Wales have the option to formally object to projects which do not follow these guidelines, and therefore the push to conserve details like the original historic windows is much more encouraged than in the US, where owners are able to do whatever they please regarding the sustainability of historic buildings. Though changes are often made which put historic fabric at risk, particularly with the replacement of historic windows, this is not to say that the integrity of the heritage of these buildings is completely compromised. There are programs to encourage the retrofitting and reuse of historic buildings, like the LEED certification program, which certifies sustainable buildings, and gives extra points to those which are conscious of both conservation and sustainability.¹² Thus, in the US, it is more common to see adaptive reuse projects which intertwine contemporary and historic elements hailed for their conservation of historic fabric in a way that remains functional to the community.

What can be learned from looking at the approaches of both the US and England and Wales, is that when there is a guarantee that historic buildings are protected, there are many more opportunities to create sustainable and conscious retrofits of historic buildings. It becomes an uphill battle when conservation efforts are spent rallying to save places rather than make them more comfortable, sustainable, and viable in today's world. Successful retrofits like these can be much more easily and quickly achieved when the public, particularly owners of historic property, are educated in the best practices of making traditional buildings energy efficient. The retrofitting of historic buildings is an incredibly sustainable practice and is one in which new technologies are being explored and those which exist should continue to be updated. With progress continuing all the time, particularly with major developments like COP26 and sector discussions on sustainability topics, the question remains of what new, energy efficient technologies will help to create a more sustainable future? What is not a question, however, is that heritage conservation, at heart a sustainable practice, will be a part of that future.

¹¹ "White Papers, Energy Efficiency Topics", *Historic New England*, 2012.

¹² U.S. Green Building Council, "LEED for Neighborhood Development and Historic Preservation", *USBG*, 2013, 6