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HISTORICAL MONUMENT RESTORATION: WHAT ECOLOGICAL IMPACT?

Restoring a historical monument is a vastly different undertaking compared to restoring a piece of art. It demands more resources, larger quantities of materials to extract and transport, and produces more waste. How energy expenditures are controlled in this process?

Historical buildings hold a unique status when it comes to restoration practices. They are central to concerns of preventive conservation and restoration. Integral to a country's landscape and distinctive character, architectural heritage often has both historical and artistic significance that needs protection. However, is it possible to balance the preservation of sometimes centuries-old buildings with modern environmental concerns? Do current monument renovations always incorporate sustainable practices? The ecological focus seems to vary depending on the building's purpose and restoration objectives.

Origins of monument preservation

In the realm of artistic restoration, monuments hold a special place. They are subject to varying legislations and protections depending on their location and country. Generally in Europe, the concept of "historical monuments" emerged in the 19th century, with a focus on restoring the original styles of medieval monuments. In France, the position of General Inspector of Historical Monuments was established in 1830, followed by the Commission of Historical Monuments in 1837. From then on, restoration works on buildings deemed of artistic or historical interest were regulated.

Throughout the 20th century, the boundaries of monument restoration became clearer, thanks to International Congresses of Architects and Technicians of Historical Monuments — in 1931 in Athens, 1964 in Venice, and 2000 in Krakow. The primary goal was to find the best means to preserve a building's identity, often incurring

substantial costs in manpower, materials, and finances.

Expensive projects?

In 2019, Notre-Dame de Paris suffered a fire, destroying its spire and timber framework. The subsequent restoration project spanned across France. New vaults were made from stones extracted in Oise; the spire and transept from wood sourced from a thousand oaks sent to 45 different sawmills. The scale of the project was unprecedented. By 2022, the Cour des comptes revealed a budget of €151 million for building conservation and an additional €552 million for the overall restoration.

From material extraction to assembly, from facade cleaning to interior work, this "rescue" showcased the vast scale of monument restoration, far surpassing that of any art pieces. On a smaller scale, such restorations often involve multiple companies and workshops, as well as various trades. However, restorers tend to prefer traditional, local materials, reducing transport costs and

promoting specialised skills and jobs, aligning with principles of ecological sustainability.

Ecological benefits

Compared to building demolition, restoration is more eco-friendly. Replacing a building consumes energy and produces waste, while restoration allows for material recovery and preservation of their original “substance” — a requirement for historical monuments. Preferring preservation and original materials, natural substances like stone and wood are more suitable and environmentally sustainable.

Wood, in particular, is apt for renovating historical monuments and older buildings. In terms of heritage preservation, using wood also maintains a building’s identity since many older structures primarily used this material. From an ecological standpoint, wood absorbs CO₂, offsetting the energy used in its harvesting and processing. However, modern materials, like concrete, are sometimes preferred for their manageability, impermeability, and strength, even though their environmental impact is often greater than wood’s.

Monitoring and sustainable architecture

In France, any renovation of a classified historical monument requires approval from the Ministry of Culture, with the Regional Directorate of Cultural Affairs (DRAC) overseeing the process, often with public subsidies. While these projects are strictly regulated, tracking their energy costs only recently became a focus with the “Climate and Resilience” law from 22 August 2021. This law introduced two definitions in the construction code: “high-performance energy renovation” and “comprehensive high-performance energy renovation”.

However, there are exceptions for historical monuments, as the Energy Performance Diagnosis (DPE) is deemed unsuitable for older buildings, not accounting for their original materials and ecosystem. While there’s a genuine ambition to improve ecological impact in construction, heritage preservation and ecological transition sometimes seem contradictory.

Preserving historical monuments can be challenging, especially as many are tourist attractions. Their restoration, however, remains essential. Unlike art pieces, the materials used for their restoration can be natural and are often preferred over modern alternatives, which are less polluting due to their lower energy production costs. Despite the scale and costs of these projects, the practice can be sustainable. Yet, this doesn’t seem to be a priority for heritage buildings. The focus is more on preserving their history, identity, and culture. Exempt from modern ecological standards and energy measurement tools, they require in-depth studies and solutions tailored to their unique characteristics. In terms of restoration, the challenge remains: how to incorporate equipment aligned with ecological sustainability principles while preserving their identity?





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