

Insure reuse of structural elements through traditional know-how and a preventive maintenance and monitoring contract

TMH (Travaux Monuments Historiques)



Image source:TMH

- **Context:** companies working in the fields of renovating heritage buildings have been practising reuse for a long time. Their know-how, their competence and their expertise often form the keys for judging whether second-hand materials and products can be reused. **TMH** is one of these traditional SMEs that contribute to the preservation of heritage buildings. It has implemented circular economy approaches for a long time.
- **The challenge:** develop a curative and preventive maintenance activity (inspection of roofing and masonry, cleaning, treatment and verification of seals) in order to guarantee that the refurbishment based on reuse elements and dedicated to heritage buildings, is sustainable.
- **Reclaimed materials:** dressed stone, framework and roofing elements.

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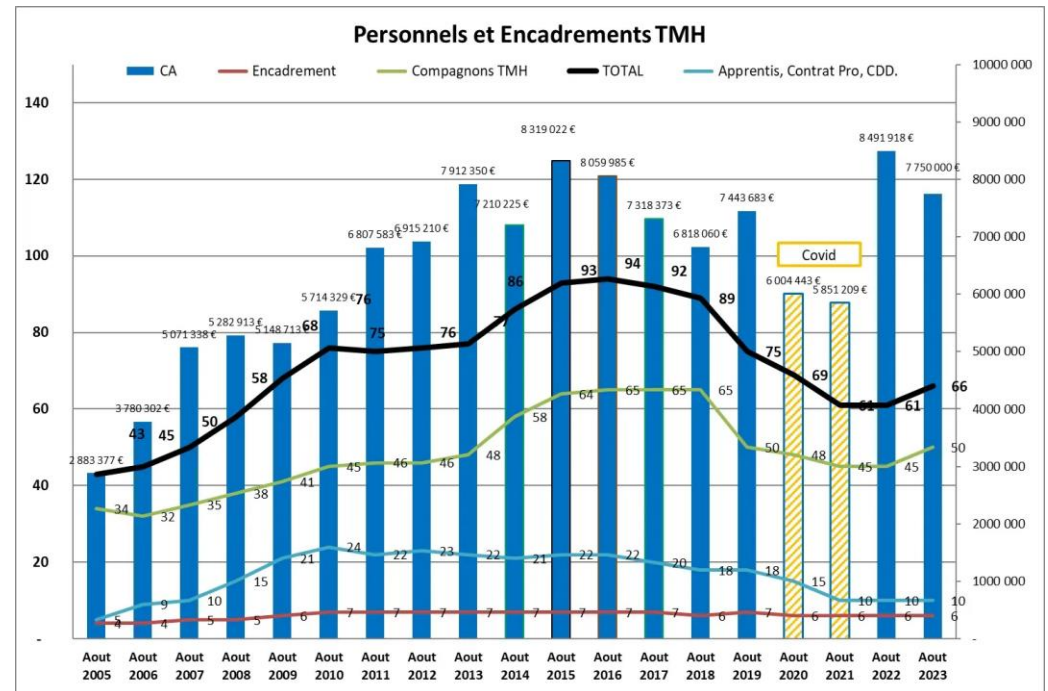
Image source: TMH

TMH, a traditional construction company qualified and recognised for its know-how

Created in the 1950's and specialised in restoring historical monuments and heritage buildings, TMH works with dressed stone, traditional masonry, framework, roofing and sheet metal work. It employs about 70 people. Qualified journeymen comprise more than two-thirds of its workforce.

The company is qualified (Qualibat) "high technicity" in "Historical monument restoration", "Framework and roofing of heritage buildings", "Roman tiles", "Slate", "Zinc, copper and lead roofing.

These qualifications, which are controlled every three years are based on the quality of the work performed, the technicality and the experience of the journeymen and the capacities of the company to innovate and transmit its know-how.



Source: TMH

The insurance approach specific to companies working on historical monuments.

- Companies that work on historical monuments do not always systematically align their interventions with existing standards (DTU). For example, when a stone flooring exceeds 5 cm in thickness, it falls outside the scope of the DTUs.
- To provide a satisfactory response to their clients' concerns, historical monument restoration companies, through their consortium that brings together around 200 of them, initiated discussions with insurance companies about fifteen years ago. An additional insurance provision, constituting an amendment for non-standard technical aspects, was established following these discussions.
- The recovered and reused materials are covered by this amendment, just like methods or construction processes not covered by existing standards.
- The amendment specifies that the specifications related to these operations, which would lead companies to deviate from common techniques, must be prepared by a heritage architect or a chief architect of historical monuments. Another option is to be assisted by a specialized heritage restoration consultancy firm.



Image source: TMH

Reuse at the core of the refurbishment of historical monuments and heritage buildings

"Casteja – République" refurbishment in Bordeaux in 2023

- TMH was the selected bidder of the "façade treatment" batch. This entailed 15,000 m² of façades and 6,500 m² of roofing.
- The roofing is in copper and made with Roman tiles.
- To renovate the 6,500 m² of roofing, TMH bought new tiles and used reclaimed tiles (20%) coming from the original construction project and its internal stocks. When its stocks are insufficient, it gets products from its business network. The challenge is to obtain homogeneous batches.
- It provided its 10-year warranty on this rehabilitation operation.
- Its insurance contract mentions this activity based on the reuse of materials. The company's know-how, its qualifications and the capacity of its employees to validate that reclaimed tiles are suitable for reuse, indicate that it perfectly controls the risks associated to the refurbishment process (from dismantling to re-installation). As such, the reuse of tiles deemed as compliant by professionals, is not riskier for insurance than the installation of new ones.

For more information

As mentioned by the FCRBE material sheet dedicated to terracotta tiles, "The reuse of a complete batch of re-claimed slates in good condition is no different from that of new slates. As long as they are not already perforated, they lend them-selves to the same variety of installation methods. They raise the same points for consideration, in particular: properties and condition of the frame and sub-roof, climatic and meteorological factors, overlap, minimum slope, fastening system, air and vapour tightness, roof ventilation system, thermal and acoustic insulation, drainage and rainwater collection, installation costs and times, specific maintenance, etc." ([Web access](#))

Beyond the expertise and the eye of a professional, additional tests limited to certain batches can be undertaken to test waterproofness, resistance to breakage, resistance to freezing.

The origins of a new concept of preventive maintenance and monitoring contracts for roofing and masonry

- In 2010, TMH worked on a church where the pinnacle collapsed (due to strong winds) damaging the roof, penetrating the attic and the stone vault of the nave. After an investigation, the lack of maintenance was singled out: steady rain degraded the stone joints, corroded and weakened the central axis of the small construction. The roofing and the wooden framework were weakened by many leaks and did not resist the impact.
- Moss on the roofs can retain water and undetected leaks can wet a building element and weaken it. In these cases, the roofing elements cannot age normally.
- These examples show that preserving heritage buildings is based not only on renovation but also on regular maintenance of existing structural elements. Major and costly rehabilitation works can be avoided if the building is properly maintained. The stakes are high since municipalities own 41% of historical monuments (buildings) and 44% are privately owned. (Source: *French Ministry of Culture, 2019*). These owners often do not have the financial resources to handle extensive renovation works which sometimes result from a lack of maintenance.

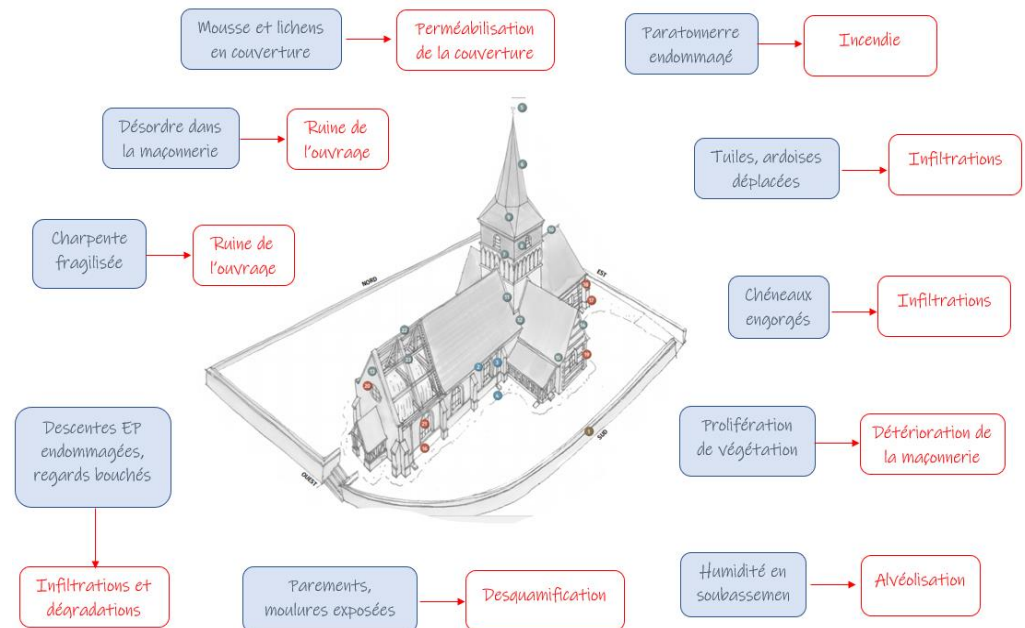


Moss on the roofs of poorly-maintained historical buildings
Source: TMH (<https://vigipatrimoine.fr/entretien>)

The VIGIPATRIMOINE service

- Preventive maintenance is essential to avoid incidents regardless of the origin of the used materials (new or reclaimed). TMH listed several sources of disorder linked to the absence of maintenance (see the graph).
- In the field of building roofing, maintenance is a client obligation. If the damage is due to a lack of maintenance, the client is responsible for the insurance, not the roofing contractor.
- When TMH renovates roofs with new or reclaimed tiles, it provides its ten-year guarantee.
- To avoid disorders which are a source of claims, and maintain the ten-year guarantee, TMH sometimes requires that the client takes out its preventive maintenance contract. This innovative service primarily includes:
 - An on-site diagnosis leading to a list of recommendations,
 - Two preventive interventions per year related to cleaning.

Potential deteriorations of an edifice due to a lack of preventive maintenance



Source: TMH (<https://vigipatrimoine.fr/entretien>)

Renovation, maintenance and ten-year guarantee

Renovation of the villa BELZA in Biarritz

- Built in 1880, Villa Belza sits upon a rocky spur facing the Atlantic. The ocean spray and the winds regularly damage the façades. The cement-based plasters linked to previous renovations were engorged with salts left by ocean waves. Thus, the stones of the structure and the ornamentations were highly deteriorated.
- TMH was in charge of the renovation. It removed all of the mortars, engorged with salt and replaced the door frames, the windows and the strips. New and reclaimed elements were used. The plasters were reworked.
- Following its renovation works, TMH provided its ten-year guarantee since the client took out a maintenance contract which guaranteed the sustainability of the structure facing inclement weather. Without this contract, it was impossible for TMH to commit since external factors were accelerating the deterioration of the building.



Villa BELZA
Source: TMH

Conclusion on good practices related to insurance

- As an enterprise specialised in restoring historical monuments and heritage buildings, TMH works most often on listed buildings. Its core business mainly covers dressed stone, traditional masonry, framework and roofing. For many years, it has been installing new materials as well as reclaimed materials. It also provides its customers with a ten-year guarantee. This reuse activity is recognised by the insurer :
 - After an agreement between the insurers and the Association of Enterprises specializing in the Restoration of Historical Monuments, guidelines were set for the integration of reclaimed materials in construction projects.
 - TMH benefits from a set of qualifications for its dressed stone, masonry, framework and roofing activities. These skills meet the insurers' expectations.
- However, this know-how which is common to many enterprises who restore heritage buildings is not always sufficient to provide a ten-year guarantee. Multiple disorders linked to a lack of maintenance of the building, can degrade a renovated building. TMH offers its clients a preventive maintenance contract which supplements its renovation business. This new service allows TMH to anticipate potential disorders and to provide its guarantee.
- The clients who sign up for the maintenance contract benefit from a deduction for the structural defects insurance (“dommage ouvrage”).
- This case confirms that facility managers are among the best qualified and in the best position to characterise the performances of construction products (new or reclaimed) and assess their aging conditions.

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