ABSTRACT

In old city centers, the majority of these buildings were mainly designed as load-bearing masonry structures (stone or ceramic bricks), with timber structured floors and roofs. As consequence of aging, loading (sometimes accidental), alteration of use, moisture content, lack of maintenance and repairing actions, amongst others, these buildings have slowly decayed, particularly timber elements of floor structures and roofing systems more susceptible to the degradation of the load bearing capacity and sensible to excessive moisture problems at the connection areas with masonry walls, aggravating stress levels of the timber resisting elements, even in cases when subjected to seismic action.

This paper, intends to deepen existing studies, by proposing strategy definition for retrofitting and strengthening of timber floors, taking into account that wood is considered a noble material, with excellent structural properties, ecological and sustainable. So, taking into consideration specific limitations of old buildings and preventing the loss of authenticity of the original materials, it is suggested the use of similar materials, assuring the safety and durability of structures, as well as the improvement of the serviceability conditions of buildings.

To consider the presented solutions in terms of execution, it is necessary to resource to strategy definition tools to complement the inspection tasks and defect identification, as well as compatibility of performance levels (thermal, acoustic and structural), or definition of eventual non destructive “in situ” testing if needed.

Key words: Timber Structures, Strategy, Retrofitting and Strengthening.