3. CONCLUSIONS

An automatic evaluation method, easily implemented on PC devices, which allows to measure the conservation degree of a metal bridge is here proposed. This method can be included in programs for automatic cataloguing of historical structures such as that already built by the author. This type of inventory can thus provide a basic point of reference for approaching restoration works and for making choices about how to exploit the historically more interesting structures. Such an archive is indispensable when examining the historical development of construction techniques and of theoretical approaches to the analysis of such important engineering structures from the point of view of the conservation of industrial archaeology heritage.
It is intended to further develop the inventory program, adding the possibility of inserting informations relating to the structural performances of the bridge. More specifically: 1) news about early static testing, traced through archive documents; 2) informations regarding diagnostic investigations carried out subsequently, particularly non-destructive tests on those bridges where episodic or periodic checks on the state of stress or deformation should be done; 3) data relating to monitoring deformations and stresses. It must be underlined that it is very important to collect periodically all the results of non-destructive tests, which are, in the final analysis, able to offer useful informations about the actual state of repair of the construction and of its structural elements, such as sonic, ultrasonic, X-ray tests and dynamic tests with free, ambient and forced vibrations.
Further possible improvements, which we are already working on, concern: 1) interfacing with automatic structural analysis programmes; 2) overall evaluation of the stress and strain state which result under actual loads; 3) extending the archive to cover stone and reinforced concrete bridges; 4) the introduction of automatic photogrammetric investigations.

Acknowledgements

A particular thank is due to Mestre-Adria Society, in particular to the technical director Francesco Babusci who made possible a large number of the survey analyses on railway metal bridges, and to Prof. Maurizio Soranzo, legal surveyor of the rehabilitation project.

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