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Results of acoustical treatments in existing classrooms

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In 2001, 2002 and 2005, the Department of Energetics of the Politecnico di Torino has carried out in-field objective and subjective surveys with the aim of evaluating the acoustical quality in secondary-school classrooms of the Province of Turin (Italy). From the results the following main problems emerged: high reverberation times, high background noise levels caused mainly by low sound insulation between classrooms and corridors and between adjacent classrooms, low façade sound insulation, excessive teachers' vocal efforts. In this work results of acoustical treatments in some of these existing classrooms are reported. Measurements are made before and after the restorations. The case studies are chosen with reference to different building typologies and urban contexts, and consisted of improvements in sound absorption, sound insulation of internal partitions, doors and façades, and acoustic bridges elimination. They are divided in "light" and "heavy" types. The first, less expensive, with the aim to obtain good acoustical conditions, the latter, more expansive, focused to obtain optimal conditions. In fact, mainly in restoration of public schools, a good level of acoustical quality with contained costs is requested. The treatments are carried out with the aim to constitute a repertory of solutions to apply primarily in school restoration.