

ACOUSTICS2008/2053

Buildings thermal and acoustics insulation: friends or enemies

Jacques Roland

Centre Scientifique et Technique du Bâtiment, 24 rue Joseph Fourier, 38400 Saint Martin d'Hères, France

The increasing concern on climate changes and greenhouse gas accumulation has urged most of countries to enforce new thermal regulation to improve the energy efficiency of existing and new buildings. This improvement shall not at least induce a reduction of the acoustic comfort, and possibly increase it by a careful choice of products and a relevant design.

The new products and technologies involve the building envelop insulation, the thermal bridges suppression, the improvement of air conditioning efficiency, and the renewable energy sources attached to the building. The author will review these new products and technologies and show what are the expected benefit or threat for the acoustic performance of buildings.

This will include triple glazing, bulk insulating materials, natural fibrous materials, vacuum insulation panels, phase change materials, thermal bridge isolators, integrated photovoltaic cells, light weight construction, passive house concept, heat pumps, and air conditioning with heat exchangers.