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Sommario/riassunto

This open access book presents a methodology for the assessment of
 structural building details, taking into account the contemporary
 guidelines for earthquake-resistant and energy-efficient buildings. A
 review of structural details for energy-efficient buildings revealed that
 in some cases the structural system is interrupted, leading to solutions
 which are not suitable for earthquake-prone regions. Such typical
 examples would be the use of thermal insulation under the building

foundation and reduction of the load-bearing elements' dimensions – also at the potential locations of plastic hinges which are crucial for the dissipation of seismic energy. The proposed methodology of assessment favours a collaboration of architects, engineers, contractors and investors in the early stage of building design. By this the methodology enables efficient decision-making and contributes to a selection of optimal building structural details. The book starts by presenting the typical structural details of the thermal envelope of energy-efficient buildings together with the scientific background required for understanding the process of detail development from all the relevant aspects. Over 20 examples of most frequent details are described and analysed to raise awareness of the importance of earthquake resistance, sustainability, energy-efficiency and thermal comfort for users.
