

WEEK DIDA RESEARCH



UNIVERSITÀ
DEGLI STUDI
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Ri:SE

Integrated retrofitting of existing buildings: Structural and Energetic

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Partnership
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UNIFI | Dipartimento di ingegneria civile e ambientale DICEA
Municipality of Pistoia | U.O. Edilizia Pubblica e Patrimonio

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73.000 €

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2

Keywords
Integrated retrofitting, seismic improvement, energy saving, sustainable school

Research wants to integrate energetic and seismic refurbishment of existing buildings, especially for schools. Starting from schools energetic and seismic assessment, research aims to investigate the different possible actions in order to simplify design decision making and buildings construction. Main research goal is to create tools for public administrations which are able to integrate structural and energetic strategies, reducing timing and costs from construction assessment. Central research project consist in the analysis and validation of a case study: the Secondary School Raffaello on Pistoia Municipality.

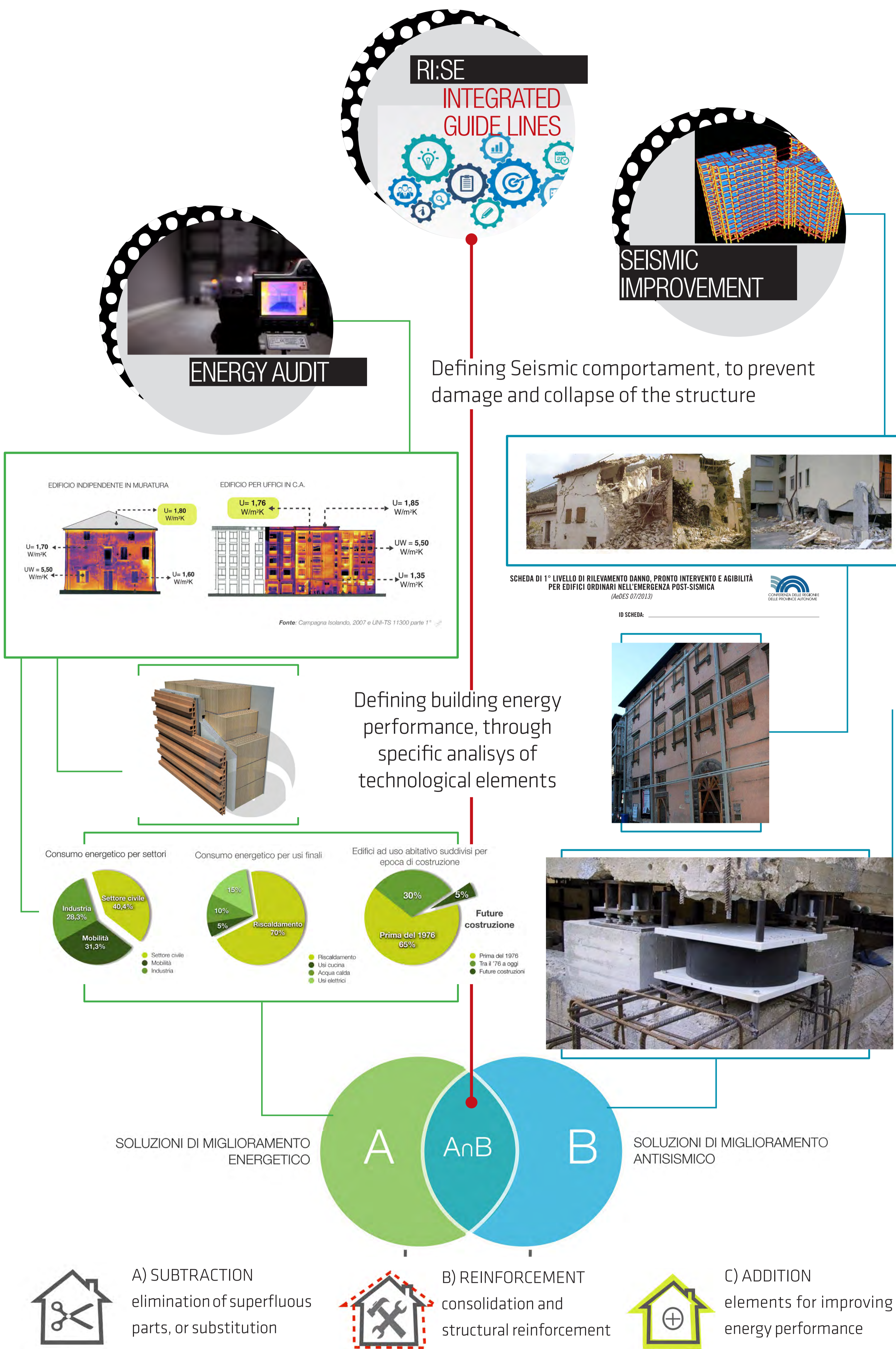
Objetvives and research product

First research objective aims to develop a tool that allows you to easily integrate the energetic and structural approaches in refurbishment buildings process, with particular attention to educational buildings. Therefore research product is a practical tool, aimed to simplify the process of redevelopment of existing buildings, with particular attention to school buildings. Research can be divided in two parts: the first concerns direct analysis on buildings affected by a refurbishment program. Thanks to analysis results, it's possible to define its performance and critical issues in terms of energy and structural behaviour on which we are going to adopt specific building interventions: the second parts connects these critical issues with building types and the set. refurbishment target Therefore it's possible to define building interventions inside the technical data sheets provided by tool instrument. At this stage we want provide to PA and designers with several possibilities of refurbishment, in accordance with major critical points already analysed under the performance and economic profile. Main goal is to collaborate in retrofitting reduction costs and times process.

Secondary objective is to provide a tool: application, in this case the aim is tool validation and diagnostic system through comparison between benefits achieved and standard design process, also providing an integrated refurbishment project on study case. This actions can be useful in the post-project phase: with an integrate project on a scholastic building study funded by Tuscan Region or by the national government within state Agrarian Institute. Scope is to show how the same prototype is adapted each time on different characters of urban farming: when focus will be the creation of new social enterprises in food production and selling, with the involvement of local cooperative, attention will be especially stressed on the productive area; When focus will be enhancing social participation, inclusion and education, attention will be especially stressed on common vegetable garden space, and the dissemination of rural culture.

Temporary urban farming will be used to re-define a new role for the three mentioned areas, to reduce local decay increasing their added value.

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Case Study: Raffaello middle school

The application of the integrated guide lines aims to prove, inside a real case, to define a specific refurbishment scenario, without develop a double analysis of buildings.



19 - 23 FEBBRAIO

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