POLITECNICO DI TORINO SECOND SCHOOL OF ARCHITECTURE Master of Science in Architecture <u>Honors theses</u>

Strategy for Energy Conservation at District Level. An european demonstrative project at Alessandria

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I developed a research about "CONCERTO-AL Piano", a project located in the city of Alessandria and supported by the European Commission.

"CONCERTO" supports concrete initiatives of local communities working of towards a completely integrated energy policy and harmonizing a substantial use of RES with innovative technologies and systems to minimize the energy consumption.

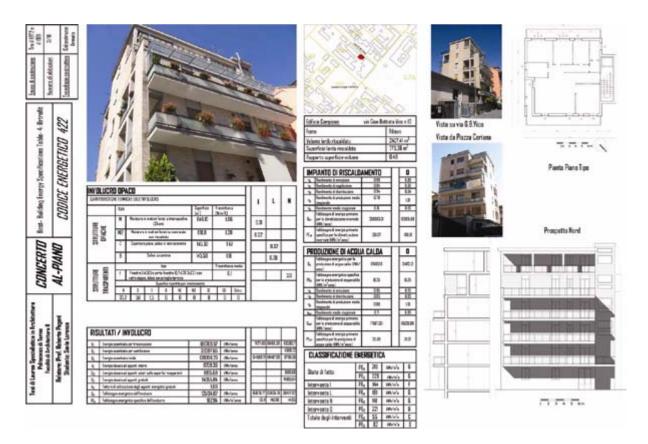
"CONCERTO-AL Piano" an urban pilot project at the local or 'neighbourhood level', the first stage of the design has already been completed and is expected to be finalised in 2009. It involves an area already involved in a project for sustainable urban transformation trough the "Contratto di Quartiere II", adding more ambitious goals in energy use and innovative technologies.

I focused my attention in two specific "work packages" of CONCERTO-AL Piano programme: "Retrofit" and "Renew".

"Retrofit" is a energy retrofitting project of the district level to mobilise the investments for conserving energy in conjunction with building renovation and maintenance. For "Retrofit" I set up a building energy audit finalized to be the first step of an energy

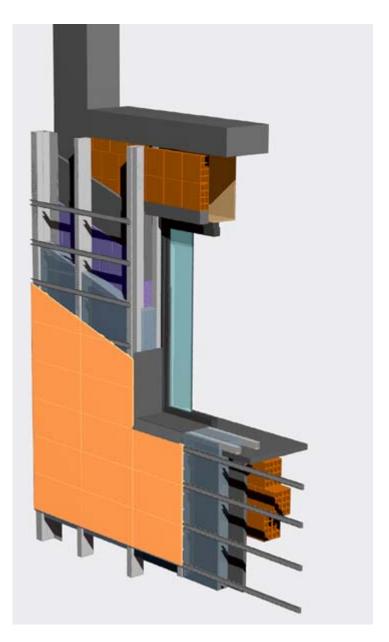
conservation programme witch will accompany future building renovation programmes.

Starting from census data I classified all the buildings of the area in 30 groups, than I selected a sample building for each group and rated its energy performances, simulating also some energy saving interventions with high replicability.



Energy performances of one of the 30 sample buildings

"Renew" is a building and energy renewal of 299 dwellings belonging to Alessandria Social Housing Association to improve the energy standards. For "Renew" I developed a project for energy efficiency with the refurbishment of the building façade, retrofitted with external insulation and ventilated façade and the addiction of greenhouses and a new windows system.



The new ventilated façade with the external insulation

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