



POLITECNICO
DI TORINO

Honors thesis

COURSE OF ARCHITECTURE HERITAGE
PRESERVATION AND ENHANCEMENT

Abstract

**The hydroelectric landscape of the Val d'Ossola.
Architecture and territory in the first three decades of the
XXth century: The plants system of Valle Antrona**

Tutor

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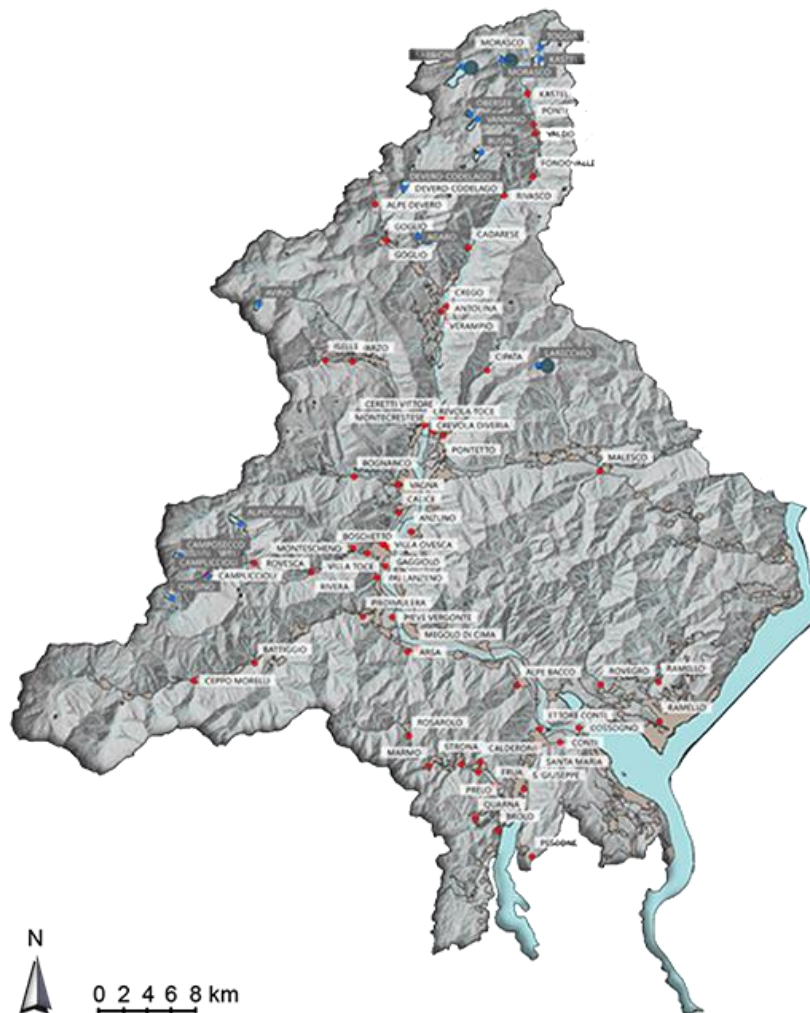
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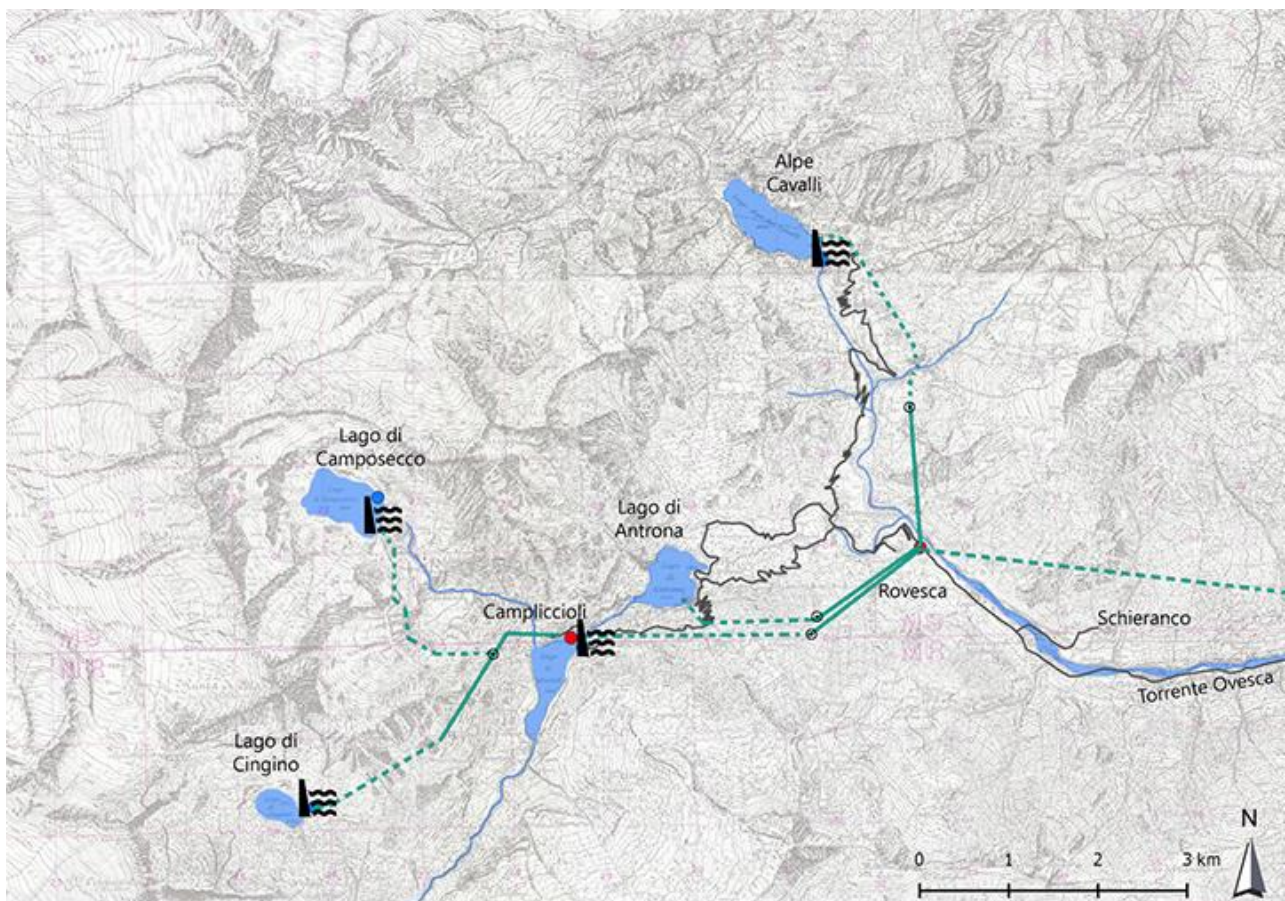
July 2015

The research delineates the study of the Piedmont province of Verbania as an important example of the process of territorial transformation that the areas subject to the water management for energy production, have suffered in the first three decades of the twentieth century. The topic of hydropower has been explained through a territorial approach using digital tools and different disciplines such as Geomatic and 3D modeling software. It was created a census of hydropower plants existing in Valle Ossola using the Geographical Information System (GIS), to work on a database system containing information from sources of archive, bibliography and web documentation: as spatial coordinates, plant name, municipality, year of planning and implementation, designer, principal contractors, constraints, sources used. The aid given by the process of 3D modeling, as a tool for digital display, it was important to understand the processes of transformation concerning the system of hydroelectric plants in Vall Antrona. This kind of approach has allowed to translate the information obtained from historical research in digital form and the opportunity to transfer and to make available the study's results.



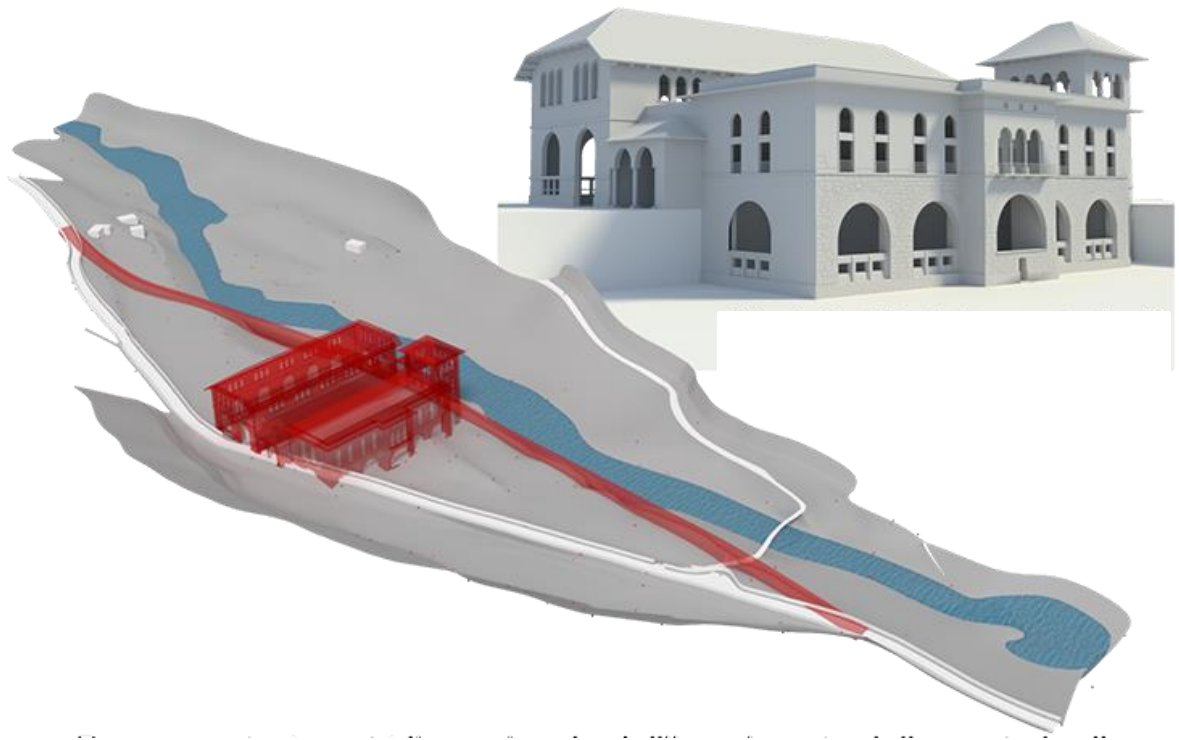
Map of verbanio-cusio-ossola territory in which are located all the plants (red point) and reservoirs (blue point). Realized using Gis System.

The facility of hydroelectric plants on Ovesca River, in Valle Antrona, is a representative case because it is the first example of regional system for the production and transport of electricity generated by the connection of plants. This kind of system has allowed to study how these water, roads and electrics networks, have been included in the nature of Valle Ossola in a historic period that for the first time sees the culture of protection concerning the defense of the landscape. In order to support the issue of territorial changes brought by the hydroelectric system in Valle Antrona, it was created a three-dimensional representation of Rovesca waterworks and the surrounding area before and after the construction of the plant, in order to underline the issues relating to the uptake of these new systems in relation to the existing landscape. To support the subject of study relating to the description of the Ossola hydroelectric territory, it was made a brief introduction on the history of the electricity industry in Italy at the end of nineteenth century, deepening the role that Edison Company has played in the development of hydropower and in the transformation that has defined the Valley as electric landscape. The research points out that the relationship between plant and environment is solved thanks to enlightened entrepreneurs of energy companies, which call some of the most active architects of the time, as Piero Portaluppi and Gaetano Moretti, in order to underline not only the hydroelectric production but also its aesthetic value within a natural landscape almost unchanged.



1960 IGM map: Representation of the facility of hydroelectric plants on Ovesca River, in Valle Antrona

The aim of the thesis is to understand the implication that these large waterworks, made up of plants, dams, water mains and artificial reservoirs, have on different aspects: the architectural, economic, environmental and social; concluding that the works of humanization discussed at the time of their realization are now an integral part of Valle Ossola, constituting a real architectural and environmental heritage to be known, protected and enhanced.



3D model of the central Rovesca and three-dimensional representation of the insertion of Rovesca and the resulting displacement of the road.

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