

## Submitted Abstract

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## Abstract

One of the main constraints in the transition to smart villages in mountain areas is the lack of adequate infrastructures and physical spaces that contain them. With a view to sustainability, it is fundamental to adopt technological innovations that could permit the reuse of abandoned or underdeveloped building heritage.

A series of structures and infrastructures have been built in the Alpine territory during the Modern Age. Today they represent an enormous building potential. Many of these have lost their original use and today require a morphological and functional rethinking. Architectural regeneration permits to have buildings that are technologically suitable for the smart transition fostered by the European Union. This process will also incentivize the creation of a system of services for new forms of living in the territory.

The current historical phase, characterized by the Covid-19 pandemic, has contributed substantially to a change of vision towards the mountain and marginal contexts, where it is possible to develop a smart and more sustainable living and housing model. Mountain areas should intercept these trends, using them as a driving force for the smartization of the territory. They can also contribute to the rediscovery of a productive dimension of the mountains, far from any rhetoric of tourist consumption of them.

This paper aims to investigate the possibilities of reusing this heritage, and what types of technological and social innovation can be brought in mountain areas by renewed architectural artifacts. The focus is on the case study of Valle d'Aosta, a region in the Italian western Alps. Here, the underutilized or neglected building heritage consists of abandoned or only seasonally-used hotels, former industrial structures, depopulated villages, former summer colonies, etc. Each of them with different characteristics and possible uses.

This paper is part of a research carried out by the IAM (Istituto di Architettura Montana) of the Polytechnic of Turin. The research consists of a census of abandoned or underused public structures and the lack of primary services in the territory, creating a grid with these two data, and declining the buildings according to their most functional destinations. The final scope of the research is to help public administrations intercept the inhabitants' needs and decide in which places should be fulfilled.