

# Climatic advantages of the spread of timber constructions in peripheral regions - the case of southern Switzerland

**Stefano Miccoli**

*Università della Svizzera Italiana, Academy of Architecture, Mendrisio, Switzerland*

**Andrea Frangi**

*Swiss Federal Institute of Technology (ETH) Zurich, Switzerland*

Contact: [stefano.miccoli@usi.ch](mailto:stefano.miccoli@usi.ch)

## Abstract

The aim of this paper is to investigate the methods available for encouraging the spread of timber constructions in small, peripheral regions such as southern Switzerland. Since 2005, Switzerland has witnessed a major increase in the number of timber constructions, mainly due to the new fire prevention regulations and to the climate and energy goals that the country wants to meet in the near future. This growth has been less significant in southern Switzerland. Data given by the Federal Office for the Environment (FOEN) shows the climatic advantages of the spread of timber constructions. Therefore, the opportunities for increasing the growth of such constructions in southern Switzerland have been researched. In order to identify and take advantage of the unique features of the use of wood in this region, two recent timber buildings, the Nordic Ski Centre by Durisch & Noll, and the House in Ludiano by Tocchetti & Pessina, are analyzed and presented in this paper. The case of southern Switzerland can be a model for the spread of timber constructions in other similar regions.

**Keywords:** Timber structures, Climate advantages, CO<sub>2</sub> emissions, Sustainability

## 1 Introduction

Since 2005, and even more significantly since 2015, there has been a major increase in the number of timber constructions in Switzerland. This growth is mainly due to two factors:

- The new fire prevention regulations [1,2] are more favorable for the material than previous ones. They have made the construction of multi-storey timber buildings possible, which the previous regulations did not permit.

- The sustainability of this natural material that can store CO<sub>2</sub> makes it possible to significantly reduce CO<sub>2</sub> emissions from the construction process when compared to other construction materials, in particular concrete and steel. This is one of the main objectives of the "2000 Watt Society" [3], the climate and energy policy, signed by Switzerland in 2019, which aims to reduce energy consumption per inhabitant to 2000 W, to reduce greenhouse gas emissions from energy consumption to zero and to use only renewable energy by 2050.