



POLITECNICO
DI TORINO

Honors thesis

MASTER'S DEGREE IN ARCHITECTURE HERITAGE
PRESERVATION AND ENHANCEMENT

Abstract

**Use of Photogrammetry Techniques by Drone and
Terrestrial Laser Scanning in the Constructive Analysis
from a Late Medieval Period Tower at Valperga Castle**

Tutor

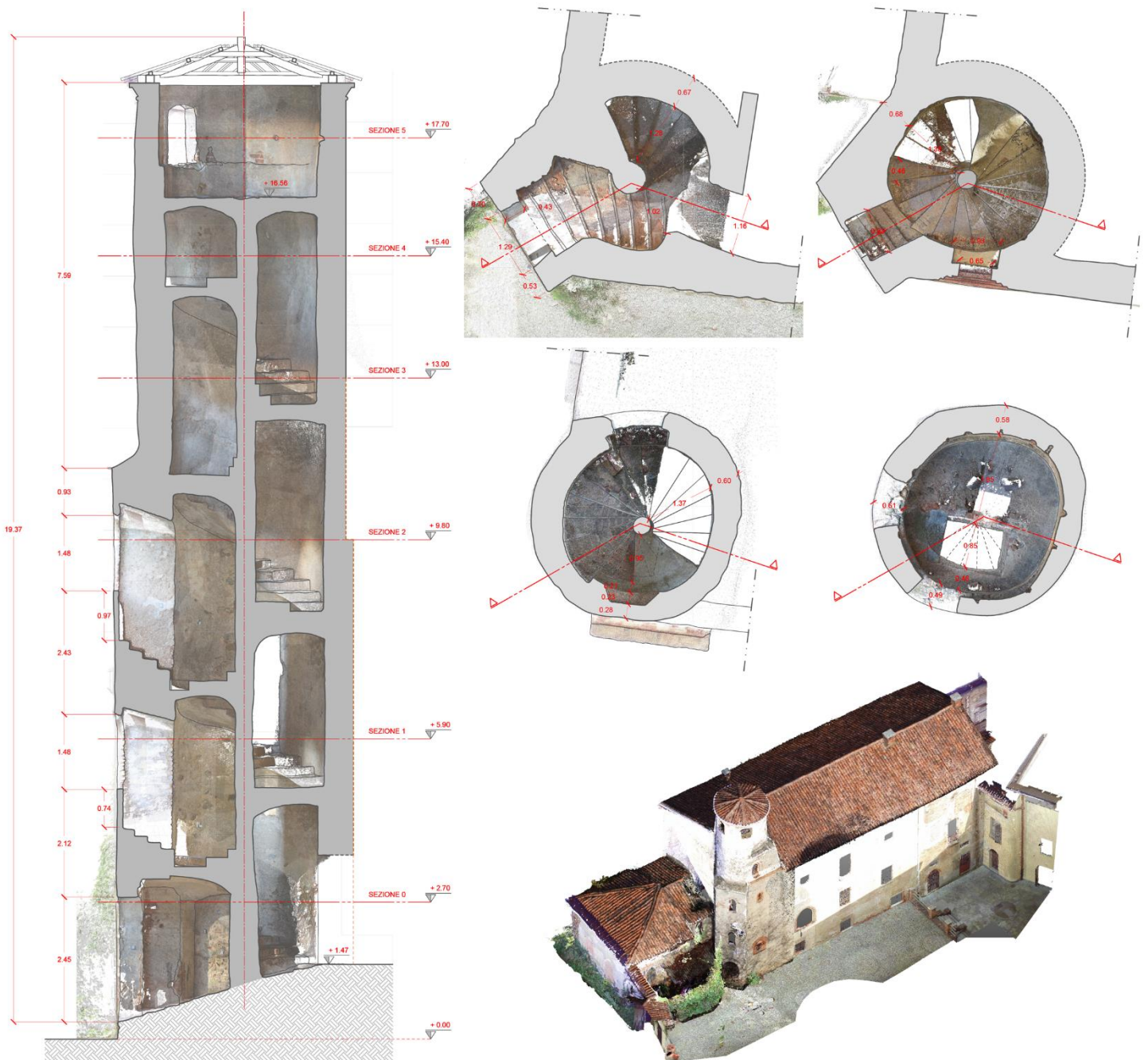
Antonia Spano'

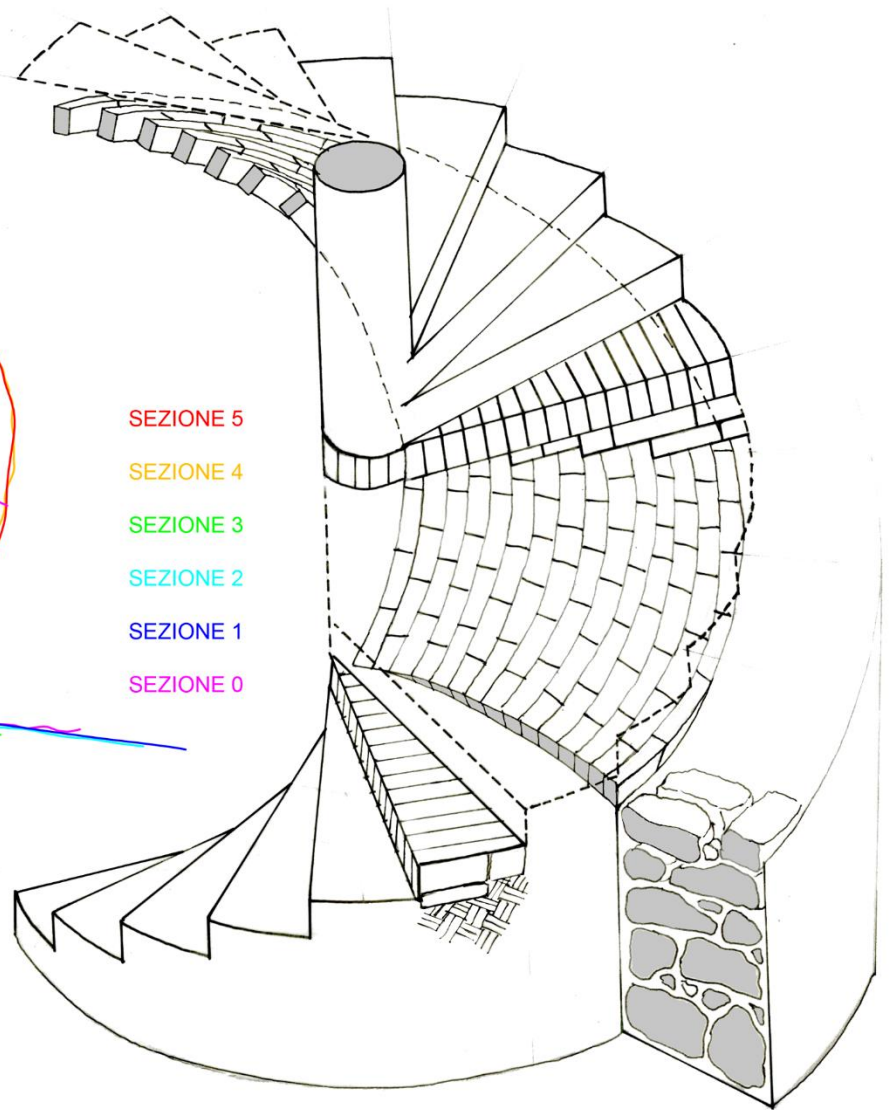
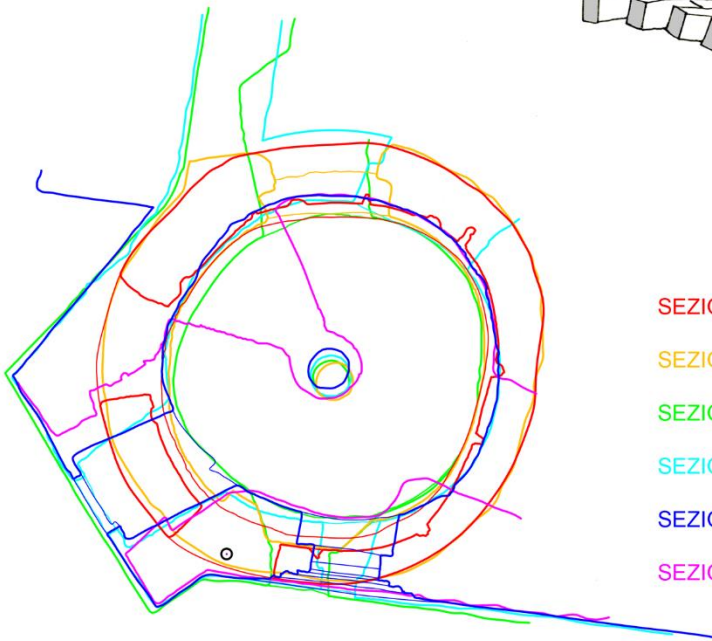
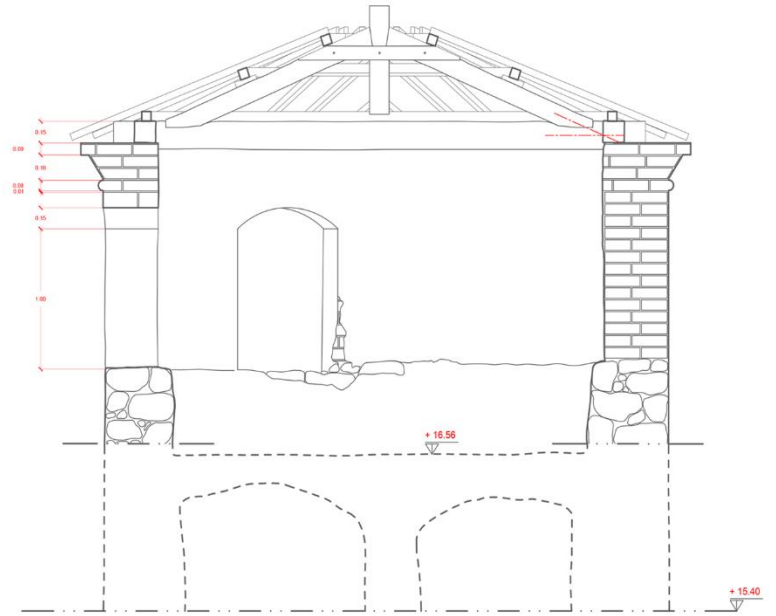
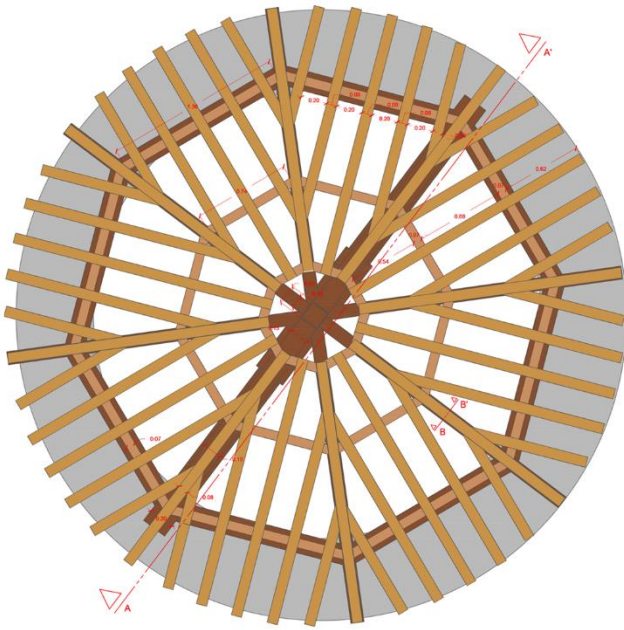
by

Julian Chavez

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The aim of the research was to develop methods of collaboration between different techniques and experimental survey instruments for the analysis of the cultural landscape and architectural heritage. We talk about metric 3D survey techniques, with active and passive sensors (both in aerial and terrestrial mode). The results of these techniques are complement with the study and interpretation of documentary sources, cartography and historical iconography. The study case is a late-medieval tower at the castle of Valperga (TO). The first phase of the study was the acquisition by photogrammetry with camera, aerial photogrammetry by drone flight and finally laser scanning. Thanks to the use of these techniques, it was possible to make a more accurate analysis of the object geometry and its constructive features. The elaborates allow us to understand the true geometry of the tower and then deepen the construction technique of the spiral staircase made of clay brickwork.





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