



POLITECNICO
DI TORINO

Honor thesis

COURSE OF MASTER OF SCIENCE IN ARCHITECTURE
CONSTRUCTION CITY

Abstract

Stratigraphic Analysis: experimenting Information Technologies for multi-scalar and multi-dimensional representation. The case study of Montemagno, a medieval new town in Piedmont.

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This Master thesis aims to combine the scientific disciplinary sectors of Architectural representation and History of Architecture defining and testing a study methodology for small towns, especially for medieval new towns. Our work considers the case study of Montemagno Monferrato, its street “Vicolo V” and the Accornero House; it has been organised through a multiscalar approach, defining with more and more details the scale study, from landscape to architecture, paying initially more attention on non-built elements, such as the Marquis of Monferrato policies, the history of lands agricultural uses, the ways the territory had been turned over and the creation of castles. At the urban scale, the activities of surveying the historical centre of Montemagno, the analysis of ancient cadastral units, the observation of built architectures and archival research were fundamental steps of our investigation. At this scale the main object of our research was the structure of the marquis medieval new town, in order to define a chronology for the urban fabric main transformations. In this way, we were able to create the guidelines for the micro-urban scale studies; at this scale, besides a survey and archival research activities, a stratigraphic analysis involved the “Vicolo V” street. The main aim of this work was the definition of the architectural historical transformations of a little area, like a street, a block or a square; we did not resort to the use of Stratigraphic Wall Units, in order to consider the whole system of the area. At the architectural scale, stratigraphic analysis was the most important part of the study, as well as archival researches and cadastral units analysis.

Applying stratigraphic analysis principles on a small geographical area let us study in detail the urban fabric and observe hidden relationship in the built environment, keeping an overall view on the historical centre of Montemagno.

Our work has been using some features of Building Information Models in order to control the temporal dimension of the 3D model, together with archaeological methods and the traditional Harris diagram. The historical research was structured through data organisation and coordination of different design steps, from the project to the management. One of the main problems of Harris diagrams is their static nature: it has always to be created in every archaeological site (especially in bigger excavations) and constantly modified when new elements are discovered. Our approach is based on the control of temporal dimension by the creation of a multiscalar and multidimensional 3D model through which we were able to show the main changes of Montemagno, Vicolo V and Accornero House.

The use both of Building Information Models and stratigraphic analysis let us find a connection between two different disciplines, Architectural representation and History of Architecture. This bond has been realized through the 3D models of centre of Montemagno, buildings in Vicolo V and Accornero House that associated to control of time and stratigraphic analysis increase the knowledge of heritage.



- XV Century
- XVII Century
- XVIII Century
- XIX Century
- XX Century

Urban scale (representation realized with the software BIM Autodesk Revit)



Micro-urban scale (representation realized with the software BIM Autodesk Revit)



Architectural scale (representation realized with the software BIM Autodesk Revit)

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