



POLITECNICO
DI TORINO

Honors thesis

MASTER COURSE OF ARCHITECTURE FOR
SUSTAINABLE PROJECT

Abstract

**BIM for project management in federated models:
The Trompone case study**

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This thesis goal is to develop and identify the right strategies to be adopted in a historical healthcare facility restitution and project in BIM environment. Operating in a constantly changing field like construction industry, BIM represent the last revolution, which is deeply changing the whole construction process, from the design phase to the facility manage during all the life cycle.

In this scenario was developed this thesis, operating in a sensible facility such as healthcare complex like Trompone, where BIM was applied, firstly to have a restitution of the facility through shaping the state of affairs based on a point cloud survey obtained by a laserscanner and photogrammetric survey. Creating a complex sharing strategy constituted by federated models and surveys files, aimed to organize many actors working at the same project, providing a common data environment following the British standard 1192:2007.

In this context the Winter Garden project has been developed, placed in a facility courtyard, creating a 4D and 5D model that represent the BIM strength, implementing the alphanumeric information degree applicable to the model in form of parameters. This result has reached through the creation of an activity code, composed by an WBS code aimed to have an univocal identification of all elements present in the model, a position code that identify the position of all items based on the structural grid and an work code based on the Piedmont price list. The use of this methodology allows a direct correspondence between the BIM model and the construction time schedule and a cost report, through the redaction of a Gantt chart, implemented by the addition of human and material resources. Obtaining a construction simulation through the use of a specify software that puts in relation the BIM model and the time schedule, useful to understand the possible interferences in the construction process. The results expected by the data implementation of the project, are to have a better management especially during the building site phase, for what concern costs and timing, detecting the project also during the construction phase that allows a complete knowledge and the possibility to modify some aspects during construction phase, which aim is the improvement of the whole process.

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