



**POLITECNICO
DI TORINO**

Honors thesis

COURSE OF
Architecture Construction City

Abstract

**Project Management
of shipbuilding works in industrial establishments using 4D
simulations with Navisworks software**

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The architecture industry is experiencing in recent years a period of profound changes. The same figure of the architect is no longer that which until twenty years ago saw him as a professional, distinguished and central, the design process of a work. The buildings are becoming more complex, the technologies are renewed and they progress year by year and the tools become more articulate and differentiated. The knowledge, that the practical construction demands, are nowadays divided and represented by a multiplicity of disciplines, each depth from a professional high specialization. There is no longer the *Architect*, but the designer, the BIM manager, project manager, environmental engineer, construction engineer and so on.



Evolution of the design process

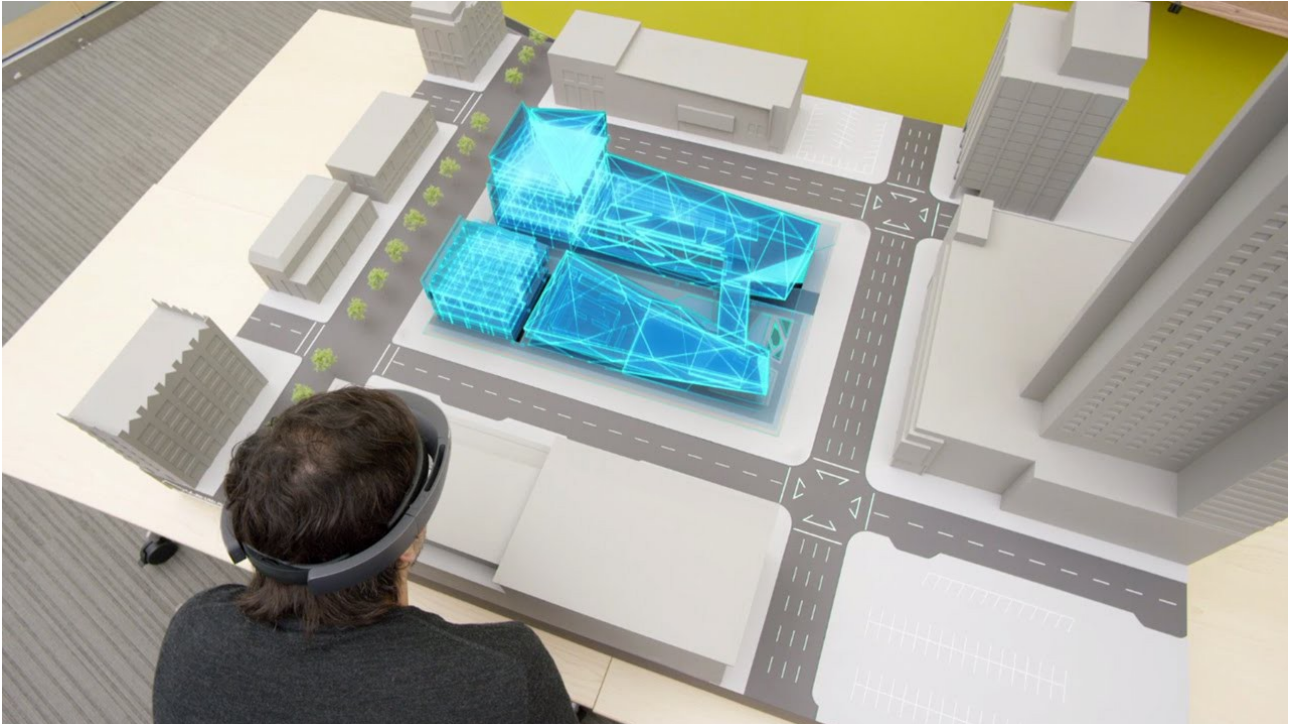
This thesis research aims to canvass the new building practices and study their changes according to what today identifies the world of architecture: the production of information and the ability to share them. These are the two key-aspects that, not only have changed the past of the profession, but it will affect the future use. By simulating an intervention in an industrial plant we will try to understand how new technologies can be applied to already established procedures.

Starting from the modeling of the building with the use of parametric software digital *Revit Buildings*, we will explore the capabilities of the new softwares to integrate the information to objects designed to permit sharing with all those who, through their own field, enter become part of the organizational work process. It then switches to define the new rules of project management, with the use of planning platforms, such as *MS Project*, increasingly interfaced to the new BIM method. Finally we will reach the fulcrum of this search: understand whether it is possible to relate the multitude of information, thanks to management software such as *Navisworks*, produced to create a *self-regulating BIM system* that is able to independently manage the entire process of building site.



Example of a unique ID number to call in real time any information relating to the object included in the project at every stage of the process

All this represents the future of the architectural profession, from ideation to modeling, from planning to execution in the construction site up to the possible future implementation of a building. These are the new frontiers and new challenges that we can see, the task of the architects and of this thesis will be to test the potential and discuss the limitations that still have, however, still having a vision open to the future world of architecture.



Example of future applications in the phase of testing of virtual and augmented reality associated with the design practice

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