The experience of the Second Level Master to be qualified as InfraBIManager

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Summary

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- drawingTOthefuture Lab
- Italian context
- Objectives
- Structure of the Master
- Key concepts
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- Project Work
- Results
- Conclusion
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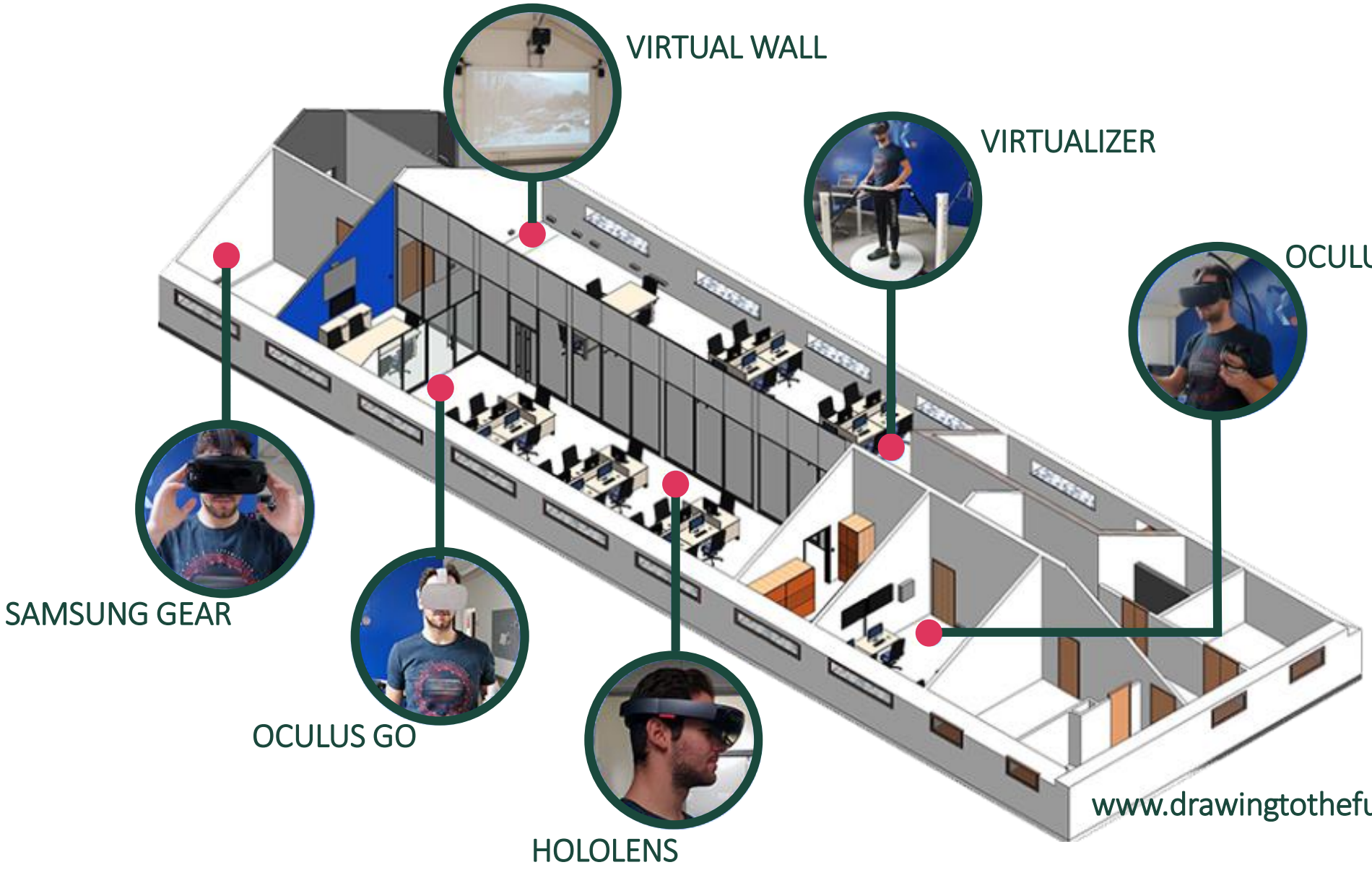
Introduction

- **InfraBIManager**, Second Level Master
- **drawingTOthefuture lab**
- Start: **January 24th 2019**
- **Politecnico di Torino**
- **26 participants**, mainly professionals who decided to invest in themselves to play a leading role in the new digital challenges of the AEC sector, showing great interests towards BIM-related topics.

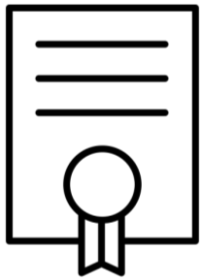
50% of students were professionals with **leading roles** in their Companies.

40% of students were professionals with more than **15 years of experience**

drawingTOthefuture Lab

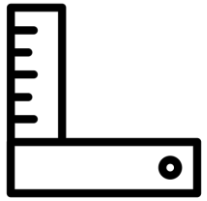


Italian context



Cogent rules → Legislative Decree 50/2016

Implementing Decree DM 560/2017



Technical,

non-cogent rule → UNI 11337

↓

ISO 19650!

Objectives

The Master aims at training a **professional figure** (InfraBIManager) **expert** both in the **building process** (from the design phase, to the construction phase, to the management and maintenance of the asset) and in **parametric digital modeling**, with particular reference to the theme of infrastructure, in accordance with the recent directives of Legislative Decree 50/2016 and the guidelines published by ANAC.

Structure of the Master

Lessons: 350 hours of lectures given by 50 speakers both from Universities and Companies (Engineering firms) already working with InfraBIM methodology, telling students their own experience and advices.

Internship: 375 hours of internship either in their company or somewhere else. **Individual.**

Project Work: 250 hours of project work during which they had to put into practice what they had learnt from lectures and exercises on a case study, defining specific objectives to achieve. **Teamwork.**

Structure of the Master

How can you ask people to be updated by using only old communication strategies?

Students could attend the lessons:

in **person**

by **videoconference**

Recorded lessons available for students **at any time**

Structure of the Master

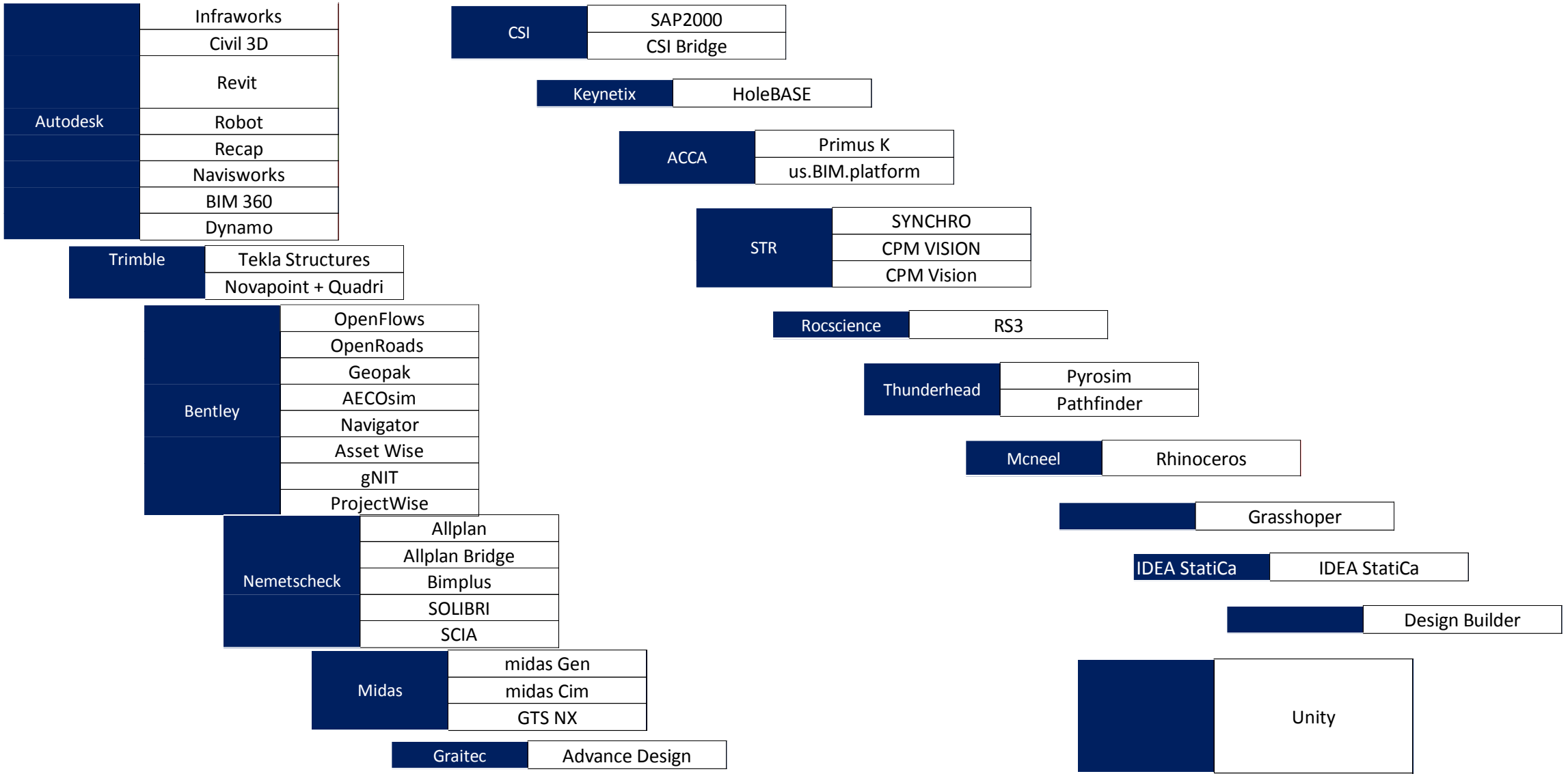
	TEACHING METHODS
Module 1: Project Management	Theory and practice
Module 2: Design and Realization of Infrastructures	Theory and a little practice
Module 3: Management and Maintenance of Infrastructures	Theory and a little practice
Module 4: Methods and Tools for BIM Data Management	A **little theory** and **A LOT** of **practice**

TRANSVERSAL COURSE (70h)

Key concepts in the Master structure

- Another reason that inspired the starting of such kind of Master was the chance to **present methodology** and **BIM-related tools** in an **unbiased way**, by presenting several software platforms, trying to define **pros** and **cons**, **benefits** and **weaknesses of all products**;
- The aim was to pass the message that **no matter the tools used**, some procedures and **processes** can work properly because of the premises and concepts behind;
- The structure of exercises and project teamwork aimed at **encouraging collaboration among students.** The experience showed that younger professionals better knew how to handle with BIM platforms and tools, but professionals had the necessary expertise deriving from years of work experience;
- Importance of **openBIM** was highlighted by presenting previous experiences of projects developed in such environment.

BIM tools matrix



Exercise

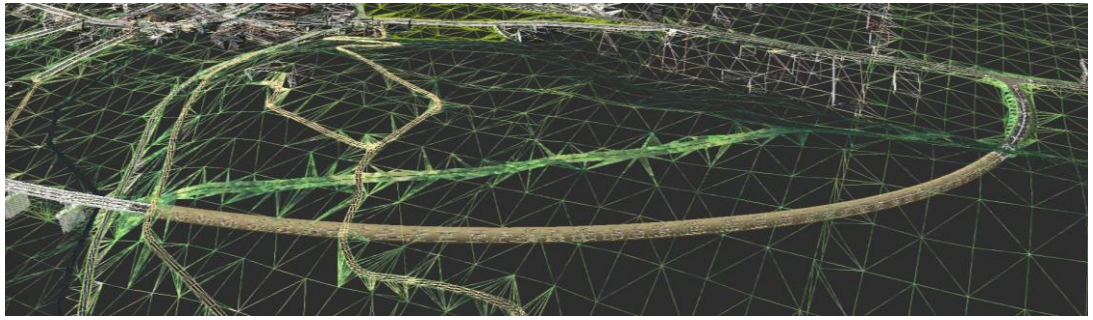
Provided by anas GRUPPO FS ITALIANE

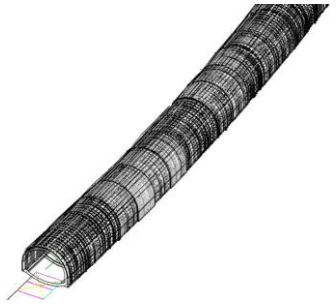
Road Project located in the *Stura di Demonte* Valley, Highway n.21
It includes: 2 viaducts, 1 tunnel, 1 roundabout

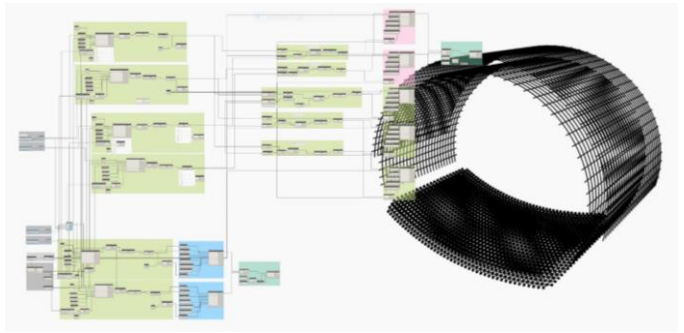
Exercise

Provided by anas GRUPPO FS ITALIANE

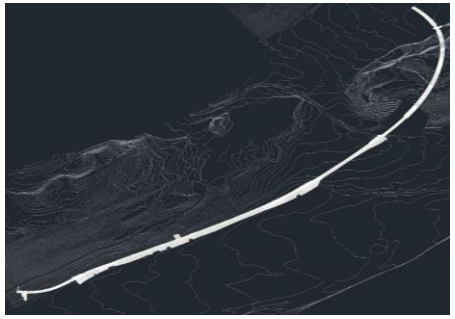
Demonte Tunnel L = 638m

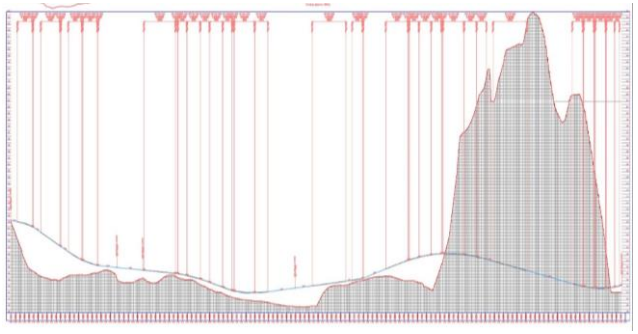


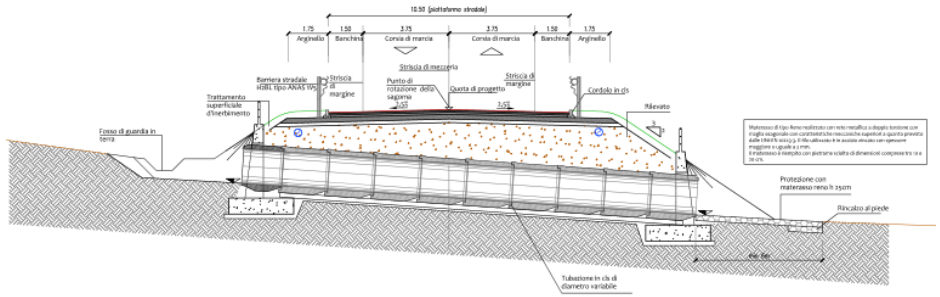




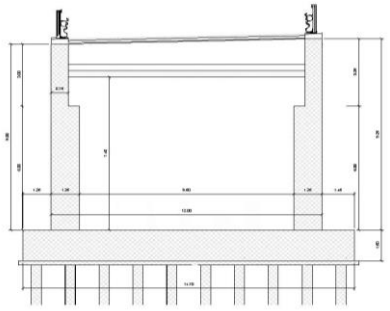
Route 2.7 Km





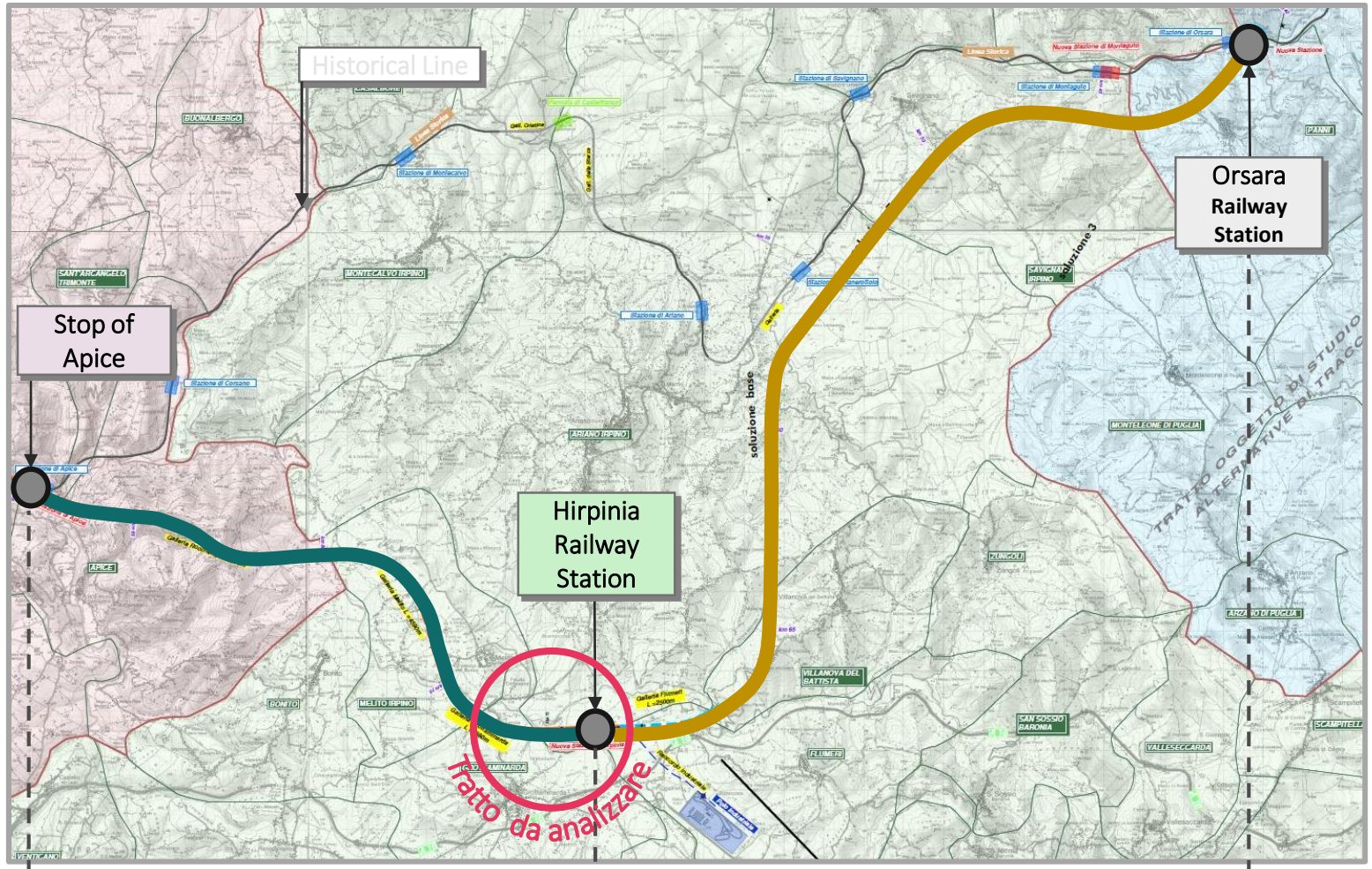


Cant Viaduct L = 135 m



Project Work

Provided by ITALFERR

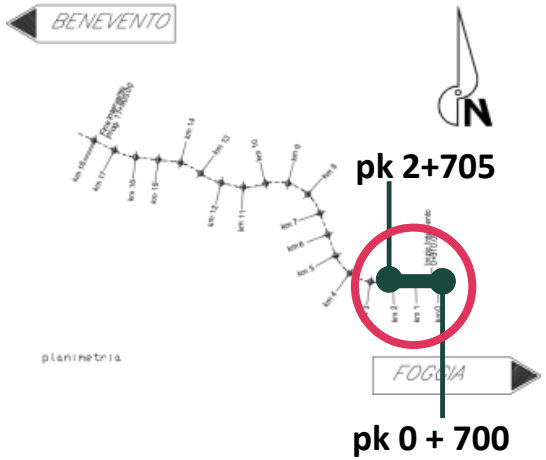


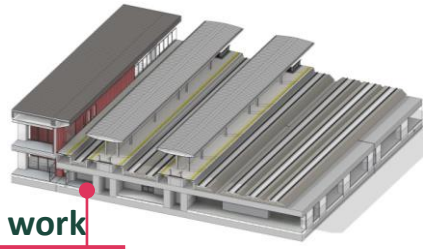
Route Naples – Bari, Doubling Railway

Apice – Orsara: I Functional Lot Apice – Hirpinia

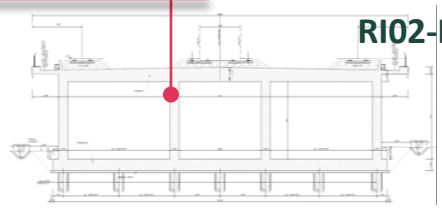
Project Work

Provided by ITALFERR





Box type work

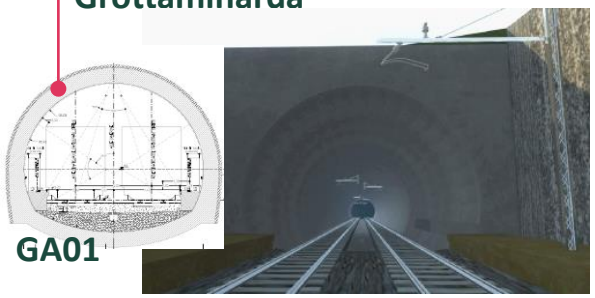


RI02-RI03

Ralway station Hirpinia

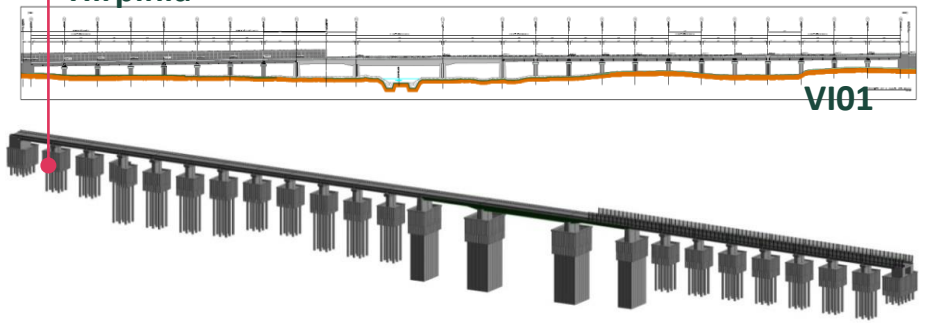
FV01

Tunnel Grottaminarda



GA01

Viaduct Ufita Hirpinia



VI01

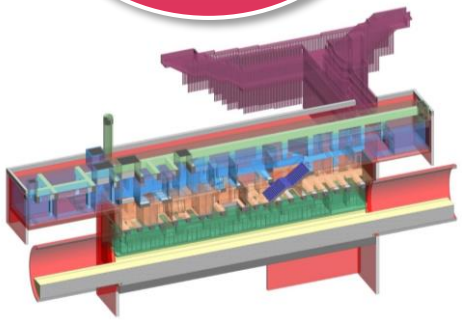
ITALFERR *Parts of work for WBS under study*

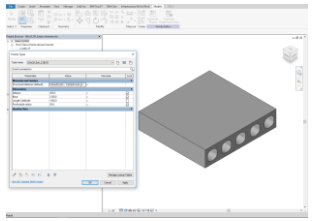
Railway infrastructure from Hirpinia Railway Station to the entrance of the Grottaminarda Tunnel

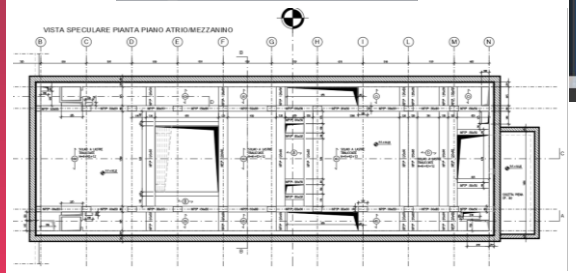
Results (Internship)

Work made by:
Alessandro Marchi
Cecilia Signorile

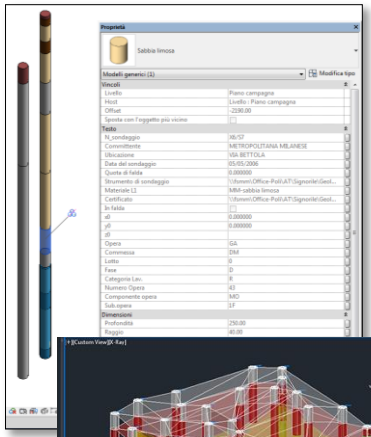
MM BIM
Bim models & Structural drawings

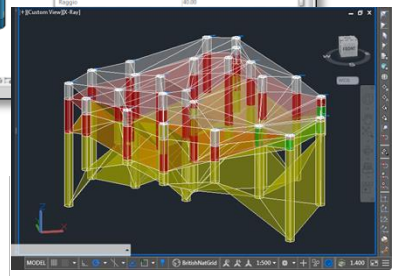




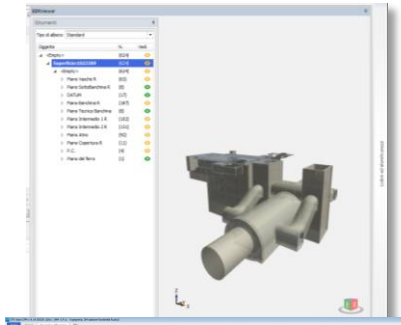


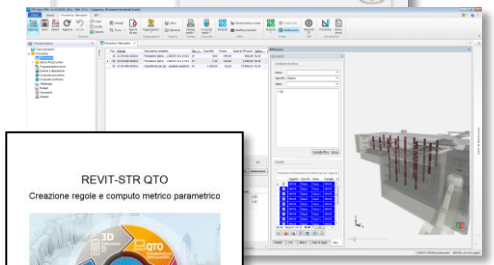
MM BIM
Geology & Terrain digital model



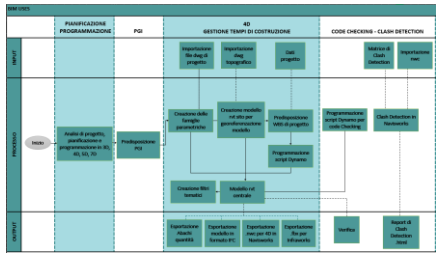


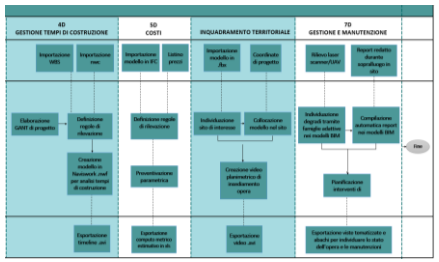
MM BIM
Quantity Take off





MM BIM
Bim Uses Workflow





MM BIM
Bim Guides for Underground lines

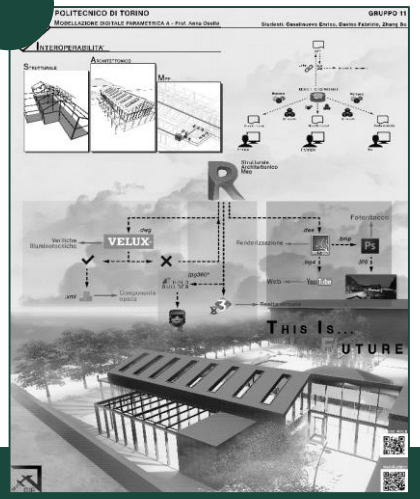
Results (Project Work)

Work made by:
Danilo Vercellino
Michele Schiavo
Nunzio Flavio Leo

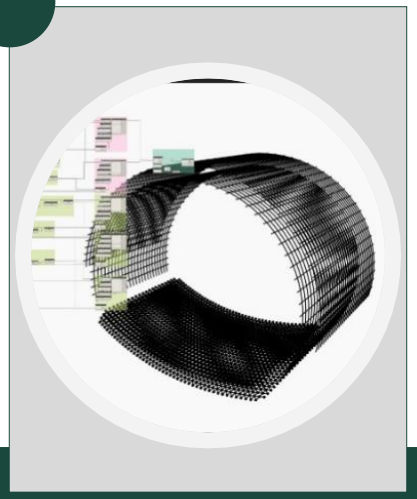
Conclusions

L

LM



PhD



Master

InfraBIManager

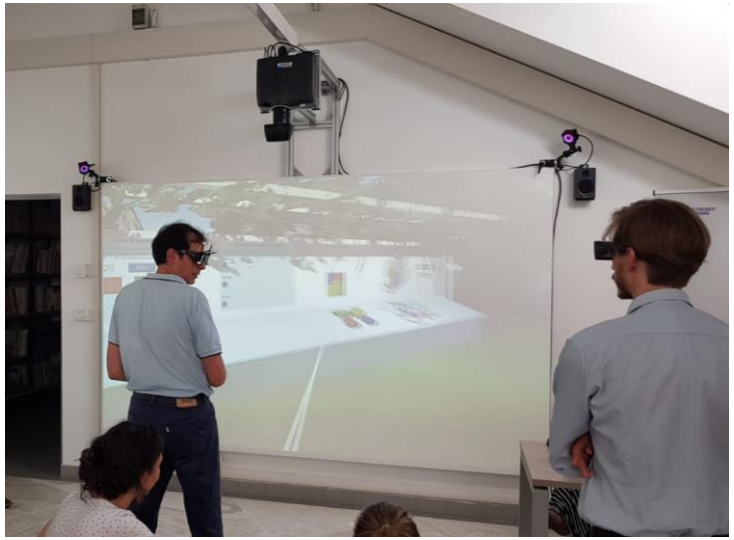
University

BIM + GIS + … = Interoperability

Work

A decisive step in this direction can only come if businesses, politics, schools and institutions join forces and go together, because the **digital gap** is transversal

Conclusions



«A Master **CAN** make a difference»

Future works

Get ready for the next edition from January 2021!

Picture made by:
Danilo Vercellino

Thank you for the attention!

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Role: PhD Student
Email: arianna.fonsati@polito.it

infraBIMOPEN

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