Alfa – Beta consulting

From vision to structure
designing the future, together

ALFA – BETA CONSULTING

Alfa-Beta is an engineering consulting firm based in Southampton, United Kingdom (UK), jointly owned by INCOSER s.r.l. and Progesi Engineering.

Although the company is newly established, its expertise in civil and bridge engineering is deeply rooted in the experience of its two founding partners, who have played pivotal roles in the design of civil structures and major bridges in Italy and around the world.

We are proud of delivering outstanding service quality by leveraging innovation and cutting-edge technologies, made possible by collaborating with top talent from across the globe.





OUR EXPERTISE

Core Disciplines

- Structural Design and Analysis
- Seismic Engineering and Retrofitting
- Geotechnical Design
- Precast Construction
- Infrastructure Engineering
- Building & Industrial Design

Specialised Services

- Heritage Diagnostics and Restoration
- Advanced Digital Modeling (BIM & Simulations)
- Construction Supervision
- Technical Consultancy
- Research & Development

SELECTED PROJECTS

Geotechnics



Railway Facilities



Infrastructure



Bridge



Seismic Strengthening



Hotel



Mall



Renovation



Other Projects



In the AEC context, the company operates in different fields: infrastructure, precast constructions, building & industry, geotechnical design, cultural heritage preservation and enhancement.

Our main focus is the structural design and restoration of existing constructions, with particular emphasis on infrastructures.
We make considerable efforts to R&D both in house and through collaborations with external academic partners.

Since 2016 we have adopted and implemented digital transformation technolgies (BIM), integrating digital technology in all areas of the company, which contributes to add value to the engineering sector.

For its Project Management operations, the company collaborates with top-tier engineering firms renowned for their extensive international experience in large scale projects, particularly within the Gulf region.



OUR CREATIVE WORKS

Smart Solutions from the Big scale to the Smallest Detail

In every project we take on whether it’s a major engineering endeavour or a sensitive restoration there comes an unexpectedly tricky moment when the usual solutions just won’t cut it. It’s a moment that calls for ingenuity, speed, and creative problem-solving on site.

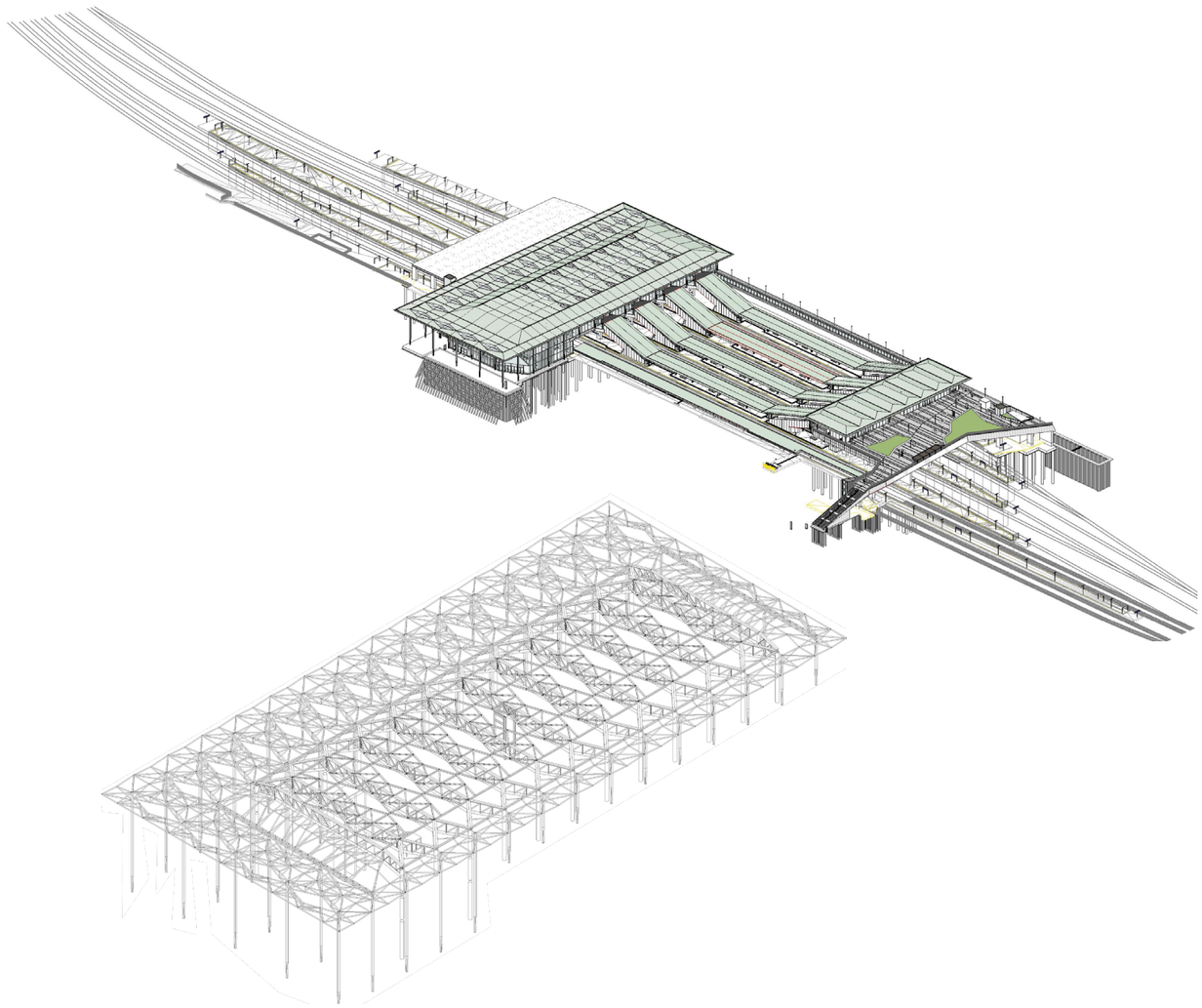
Our work isn’t merely about designing systems or structures; it’s about identifying that one pivotal detail the clever tweak or subtle adjustment that turns what might have been a setback into a triumph.Be it a bespoke connector, a reimagined joint, or an entirely new fix conceived in the moment, we firmly believe that outstanding engineering resides not only in the big vision but also in the smallest inspired idea.

- **Musinet Project**
- **Gassino Loft Project**
- **Autoporto di susa Project**

RAILWAY FACILITIES

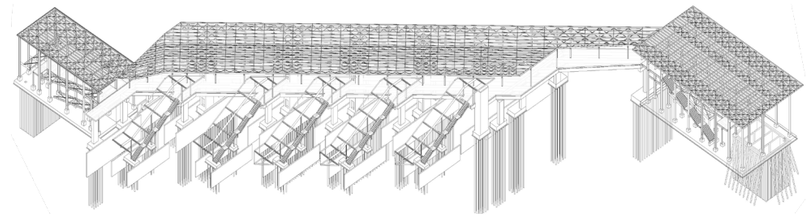
Bergamo Railway facilities

Consultancy for the structural design of the new Bergamo Railway facilities.
The building spans approximately 100,000 square meters and features a bridge like structure that crosses over the railway tracks. Above the tracks, a commercial level provides additional functional space. The design includes a continuous steel roof, specially conceived to incorporate construction joints at the track level, ensuring both structural integrity and aesthetic coherence. (Bergamo, Italy 2022)



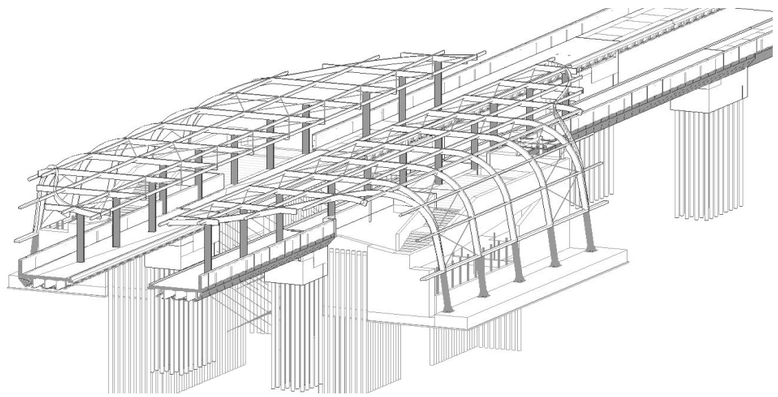
Padova Railway Facility

The company served as a structural design consultant for the new railway hub in Padova. The project draws on the same design principles as the Bergamo Hub, particularly in its bridge-like structure and integrated commercial spaces. (Padova, Italy 2023)



Firenze Guidoni Railway Facility

The new Guidoni Station in Florence presents a significant engineering challenge due to its integration with the existing railway line.
The project requires a range of complex works to be constructed from scratch, including deep excavations, a pedestrian footbridge, a box jacking tunnel to connect the service building, a large steel roof, and more. (Florence, Italy 2025)



GEOTECHNICS

Chiomonte Svincolo Maddalena

A 15-meter-deep excavation was required for the construction of a bridge pier.
The company was responsible for the design of the sheet pile walls and the earthworks for the final configuration of the area surrounding the pier foundation. (Chiomonte, Italy 2025)



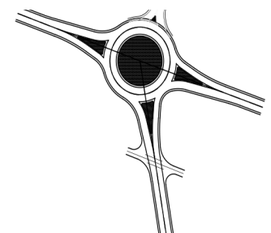
INFRASTRUCTURE

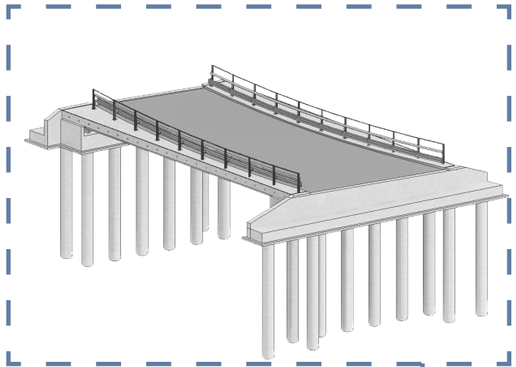
Autoporto di susa

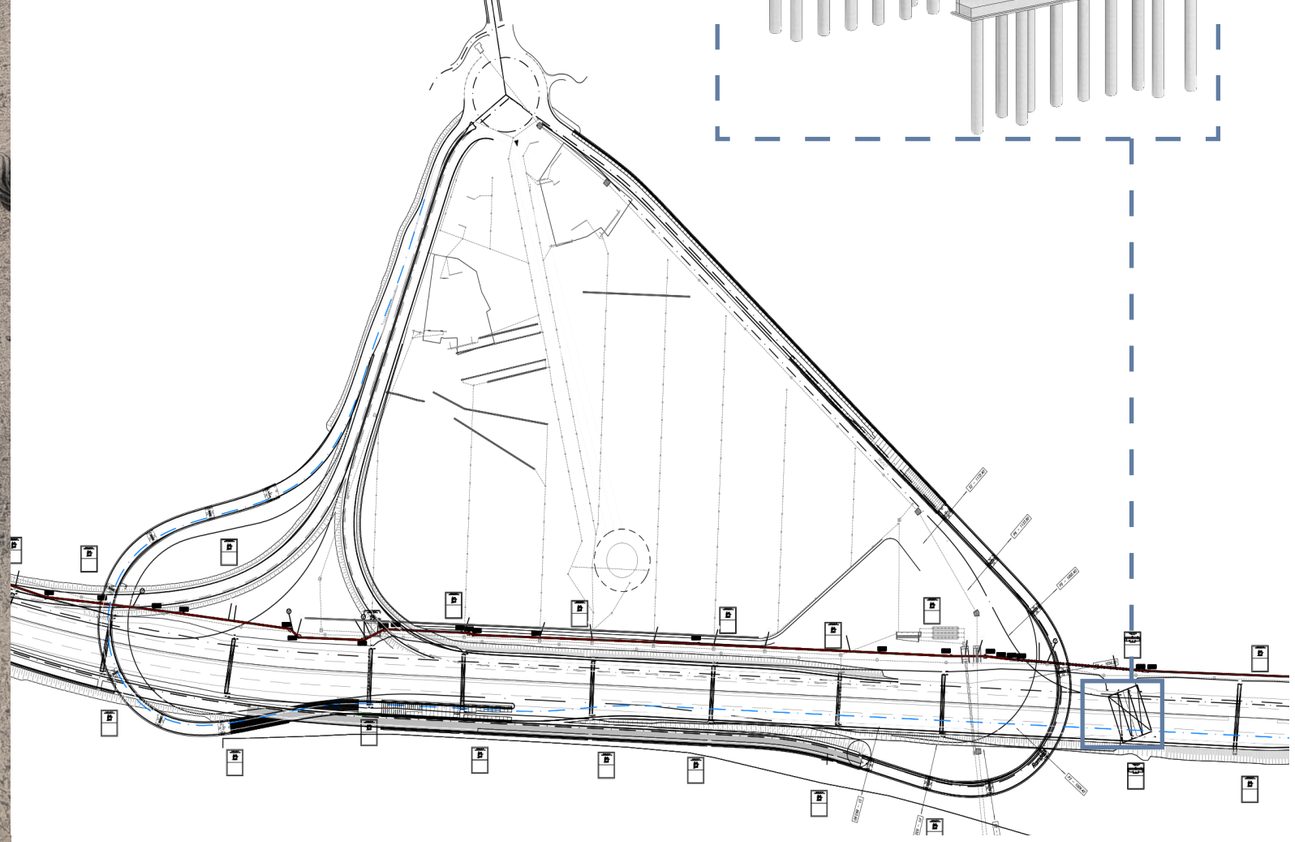
Autoporto di Susa was the first project in Italy approached using BIM technology.
It includes a wide range of structures:from the main bridge to buildings, from culverts to the retaining walls that support the embankments.

The company was responsible for the design of all culverts,
soil retaining structures, single span bridge elements, and hydraulic works. (San Didero, Italy 2016)

BIM modeling







INFRASTRUCTURE

Passante Ferroviario Torino (ASTALDI)

Since the 1990s, the Italian railway system began studying the burial of surface railway lines in downtown Turin. Our company was involved in the construction phase, working alongside the contractor on most of the cut-and-cover tunnel sections.

In particular, all the precast reinforced concrete (PRC) beams were designed by our founding engineers. These beams span from 15 to 32 meters and were designed to carry heavy loads of 50 kN/m. All construction drawings were developed during this phase.





BRIDGE

Monastero bridge – bormida (asti)

This project represents an example of the firm's support and consulting services provided to construction companies.

For this work, the company not only performed the structural verification calculations on behalf of the contractor but also assisted the client from a technical and administrative perspective throughout all phases of the project from the commencement of works to the final inspection and approval.

The firm's expertise in legislation related to public works guided the client through this complex project, ensuring its successful completion and the full satisfaction of both the commissioning contractor and the contracting public authority. (Asti, Italy 2004)







SEISMIC STRENGTHENING

Fleming Condominium



The Via Fleming Condominium, located in Turin, was built during the 1970s using mixed construction technology. The structural system consisted of one-way reinforced concrete (RC) frames for the ground floor, on which a system of precast RC bearing slab panels was installed. This system was conceived solely to resist gravity loads.
The building's seismic fragility stems from the combination of these two systems specifically, the presence of a soft story and the lack of proper connections between them. To address these issues, a dedicated connection system and a set of steel beams were installed. These interventions prevented free body motion and reduced out-of-plane bending of the ground-floor columns, thereby improving the building's seismic performance.
A new ventilated façade system was also added, which conceals the structural upgrades while enhancing the building's energy efficiency.

Pramollo Condominium

This was one of the most iconic seismic strengthening interventions in Italy. It consists of an exoskeleton installed on a 40 meter high building due to the absence of any lateral resisting system in one direction of a 60 year old reinforced concrete one way frame structure. The exoskeleton provides the necessary stiffness and strength to improve the building's resistance to wind and earthquakes, allowing the residents to continue living in their apartments during the intervention. Hilti identified this project as one of the most challenging jobs they undertook in Italy in 2023, recognising it as a significant case study.

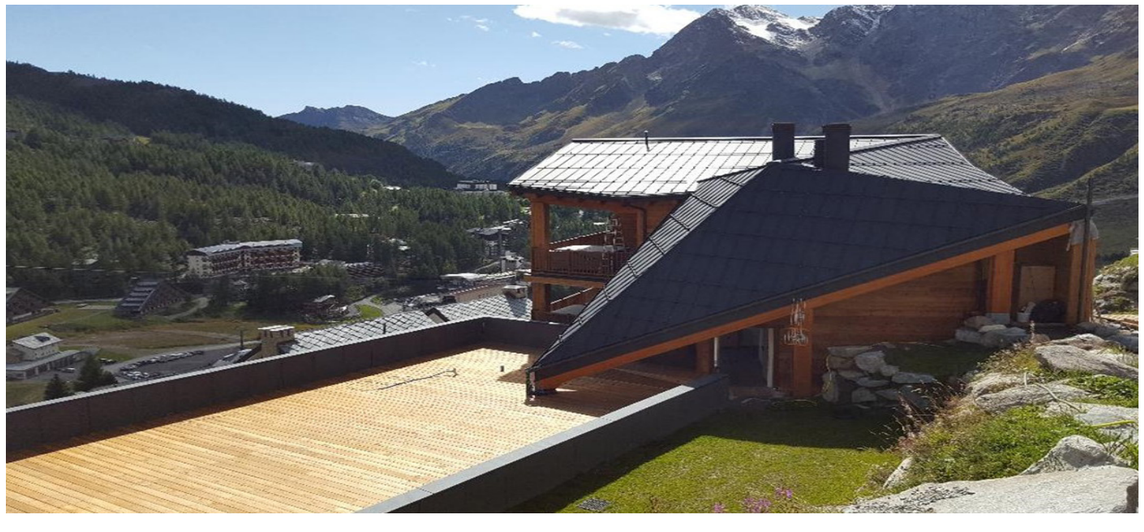


HOTEL

Hotel Principe delle nevi

The company was responsible for the complete structural execution within the site management, including the foundation, the reinforced of the concrete slabs, columns, and other structural elements.
The work required high precision formwork and a close coordination to meet both architectural and structural requirements.

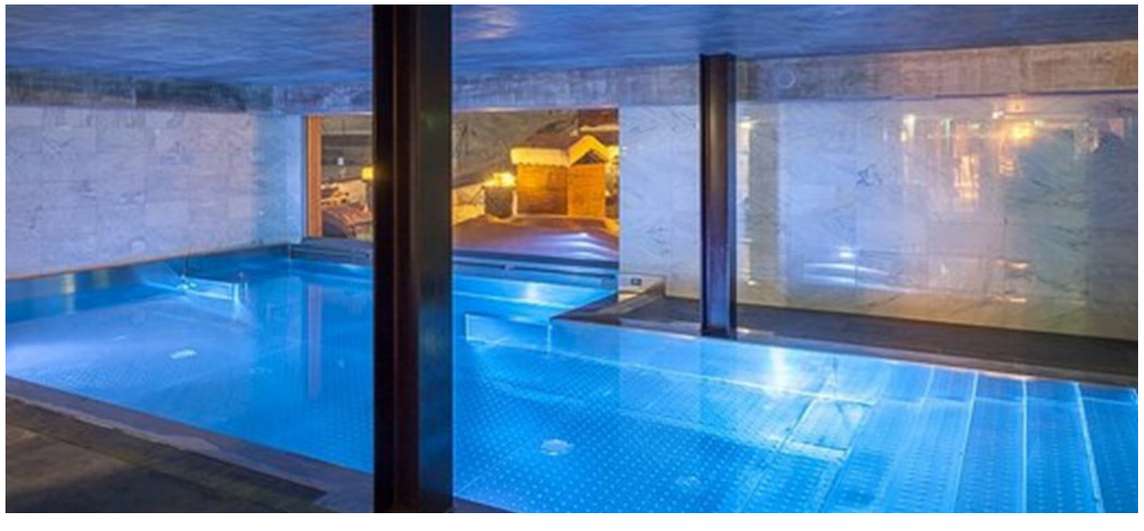




Hotel aux pieds du roi



In this hotel project, we led the full structural execution on site, managing every phase from the foundation to the structural elements.
One of the most challenging aspects was meeting the client’s request for timber wall stands without any supporting columns. To address this, we designed and built a reinforced concrete slab above the swimming pool area without columns successfully realising the architectural vision while ensuring structural stability.



MALL

I PORTALI Mall

In both the design and construction of the “I PORTALI” commercial park, the challenge of building complex geometrical steel roofs entirely with welded joints was successfully addressed and resolved.

This endeavor required close collaboration among the several project stakeholders, as well as a highly detailed design for each structural component. 9,000 m² of steel without a single bolt.

The imposing dome rising 5 meters above the intersecting gallery roofs was constructed by shaping and stacking toroidal-profiled elements. The galleries were built using two hinged arch systems, each with a span of 16.40 meters and a rise of 4 meters.



The firm was responsible for the executive structural design, including detailed profiles and workshop drawings.

The structure was erected using a telescopic system, allowing the team to meet both architectural requirements and the need for fully welded, seamless joints.







RENOVATION

API Headquarter Project

The API Headquarters is part of a historical compound that also includes a 14th century castle once used by the Italian Royal Family.
The area was the site of a brutal battle happened in 1706 between the army of the house of Savoy and Napolean’s troops

The API building has a gross area of approximately 4,000 square meters and is used as office space. A deep renovation was carried out to modernise and improve the building’s efficiency.

A BIM model was developed to manage all design phases, including detailed construction drawings for the tender phase and site surveys.

RENOVATION

API Headquarter Building

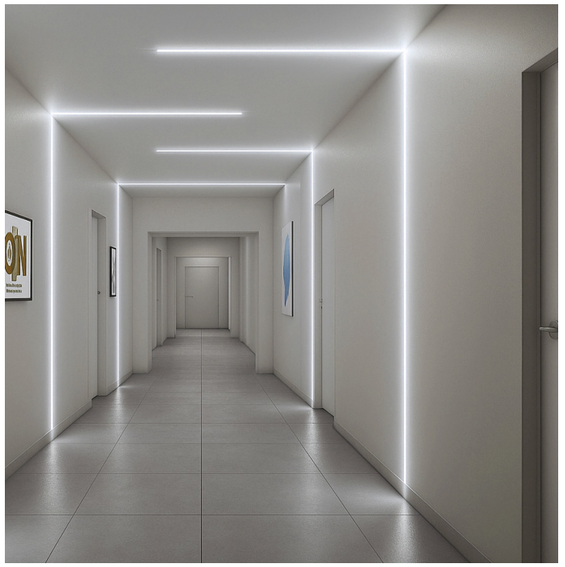
As part of our interior renovation work, we introduced thoughtful design interventions in key areas such as the reception, the conference rooms, the meeting rooms, and a corridor.

Our approach combined functionality with creativity, responding to the client requirements while respecting the building’s existing character and cultural context.

Modern touches including strategic use of color, updated materials, and refined finishes, were integrated to enhance comfort and bring a fresh, contemporary feel without compromising the original identity of the space.









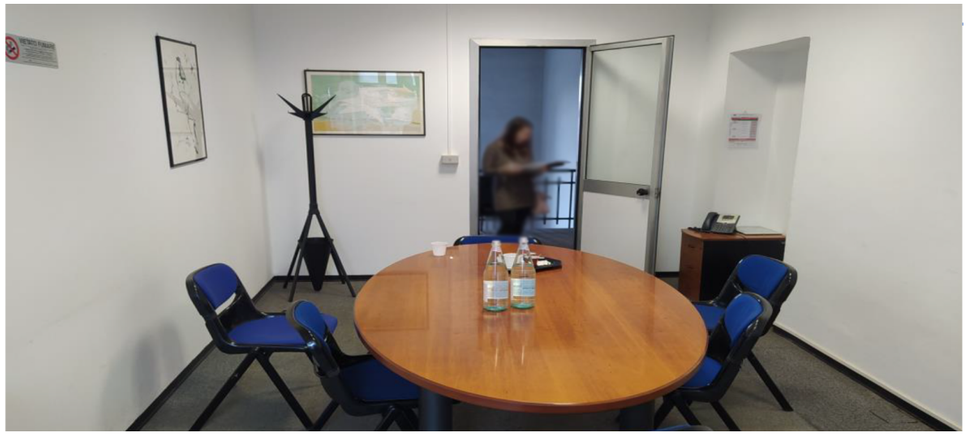
RENOVATION

API Headquarter Building

Pre-renovation







Suggested intervention











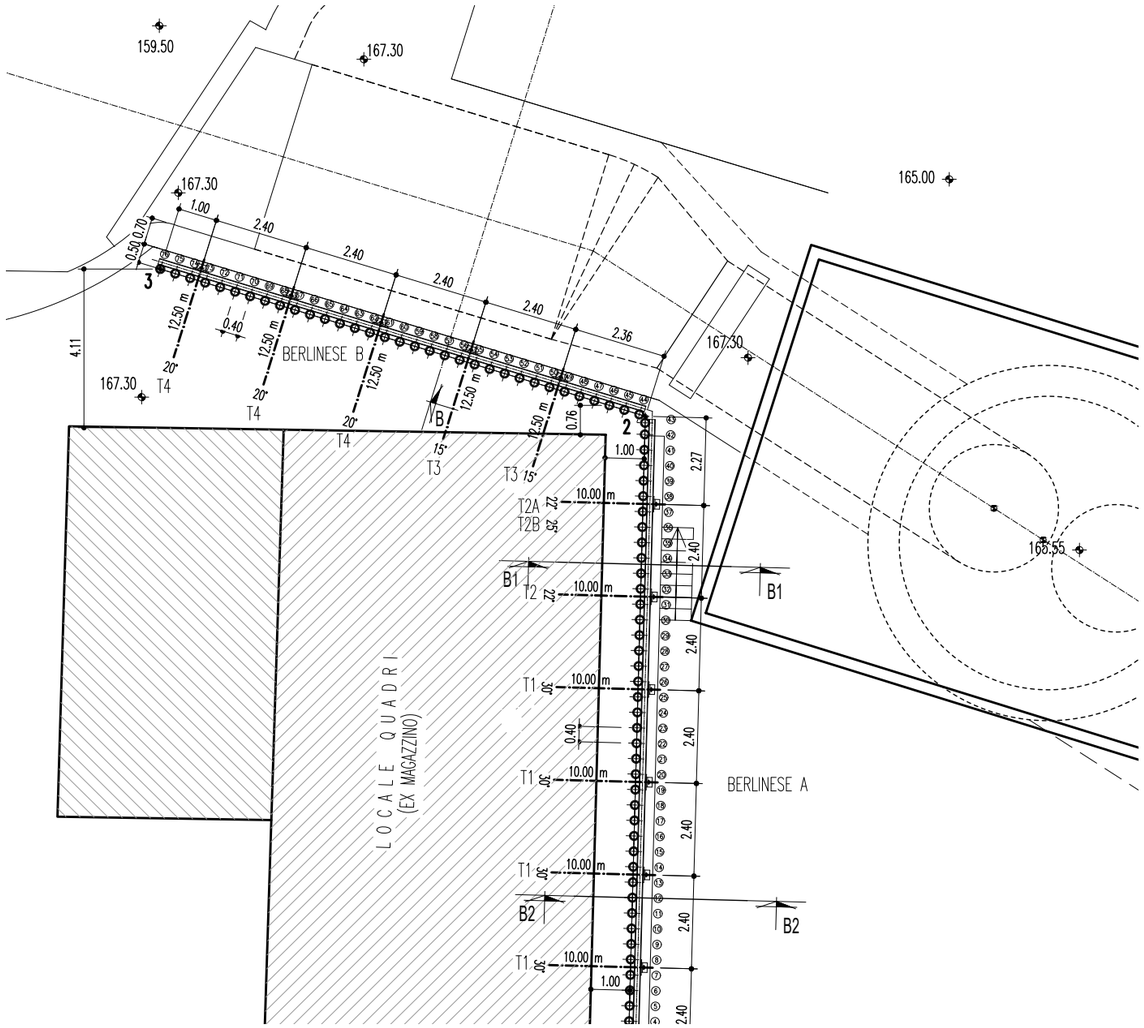


OTHER PROJECTS

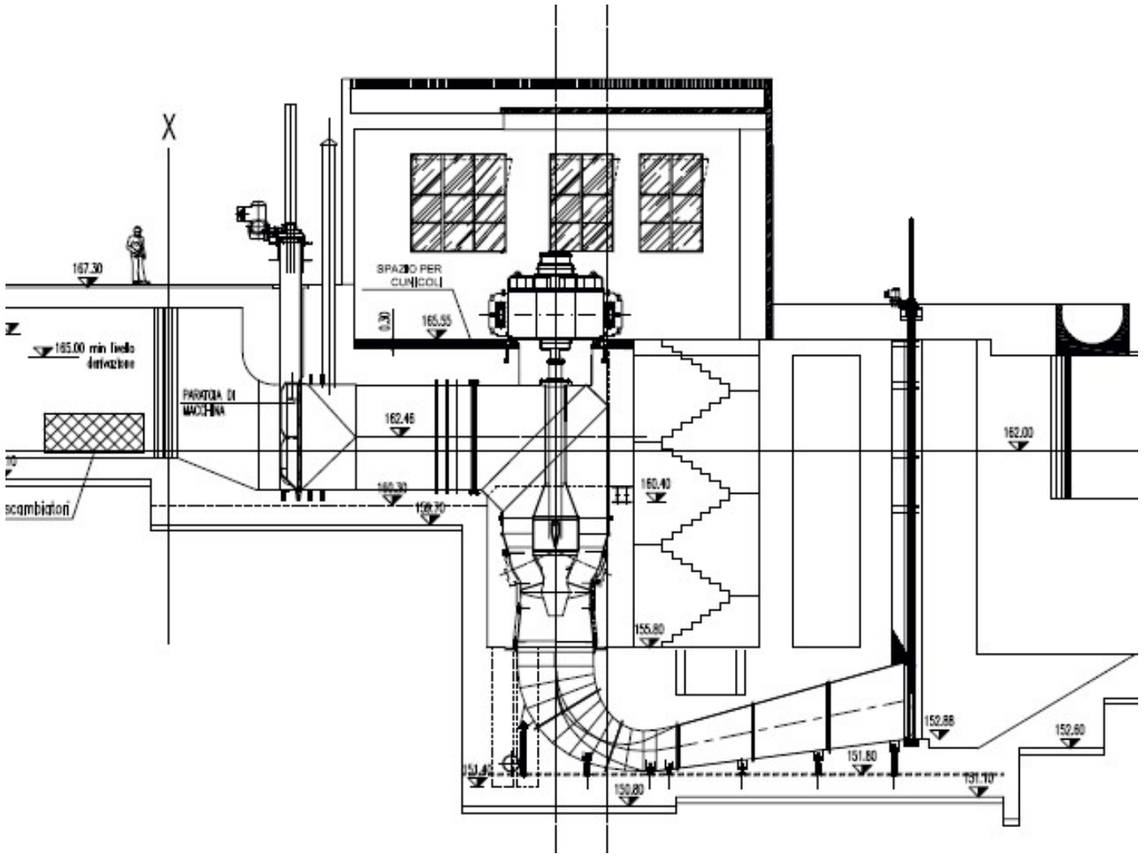
Hydro Power Plant Project

As a structural engineering company, we have been involved in several specialised projects. One of the most interesting was the structural design of two hydroelectric power plants (HPPs) on the Adige River in Trentino (TN), northeastern Italy, commissioned by ENEL GEM.

We were responsible for the design of all temporary works, the main reinforced concrete (RC) structures for the turbine wells, the bearing slabs for the alternators, as well as all primary and secondary powerhouse structures.









OUR CREATIVE WORKS

Gassino Loft Project

This is another example of our creative work.
The client requested a loft inside a private flat, without interfering with the open space entrance.

The solution was to create a suspending steel loft from the load-bearing wall.
This was achieved using a pair of Vierendeel beams that also served as the loft's parapets functional elements that also acted as structural components.





Completed phase



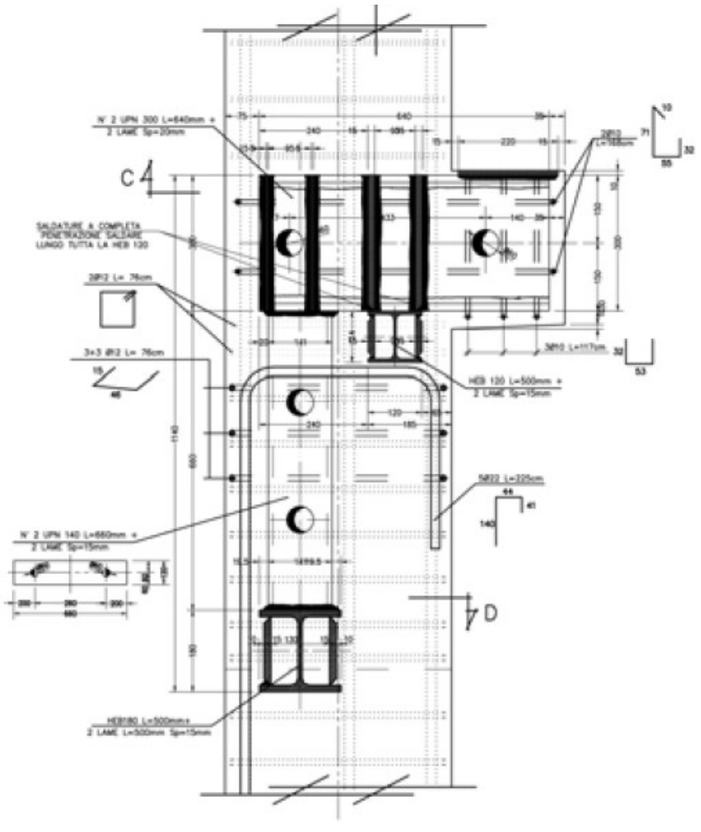


Musinet Project

A large ski facility was built in one of the most charming locations in the Italian Alps: Courmayeur. The building is nestled into the hillside, buried under several meters of soil and snow. The car park features a very low story height so low that no additional height could be allocated for traditional column corbels to support the massive roof beams.

To face this challenge, a steel-encased corbel was conceptually developed and then structurally designed to withstand a vertical load of 120 tons. This small but crucial element allowed the heavy roof to be supported by the columns. The design was particularly demanding due to the extremely tight spatial constraints. Numerous local resistance mechanisms were analysed in detail to fully understand the behavior of this unique structural component under such a concentrated load.



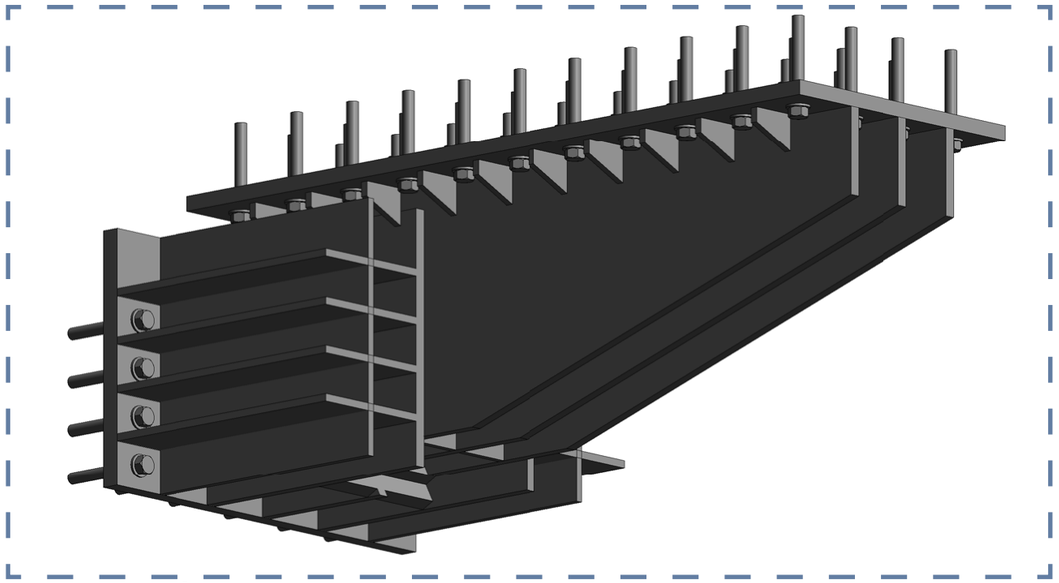


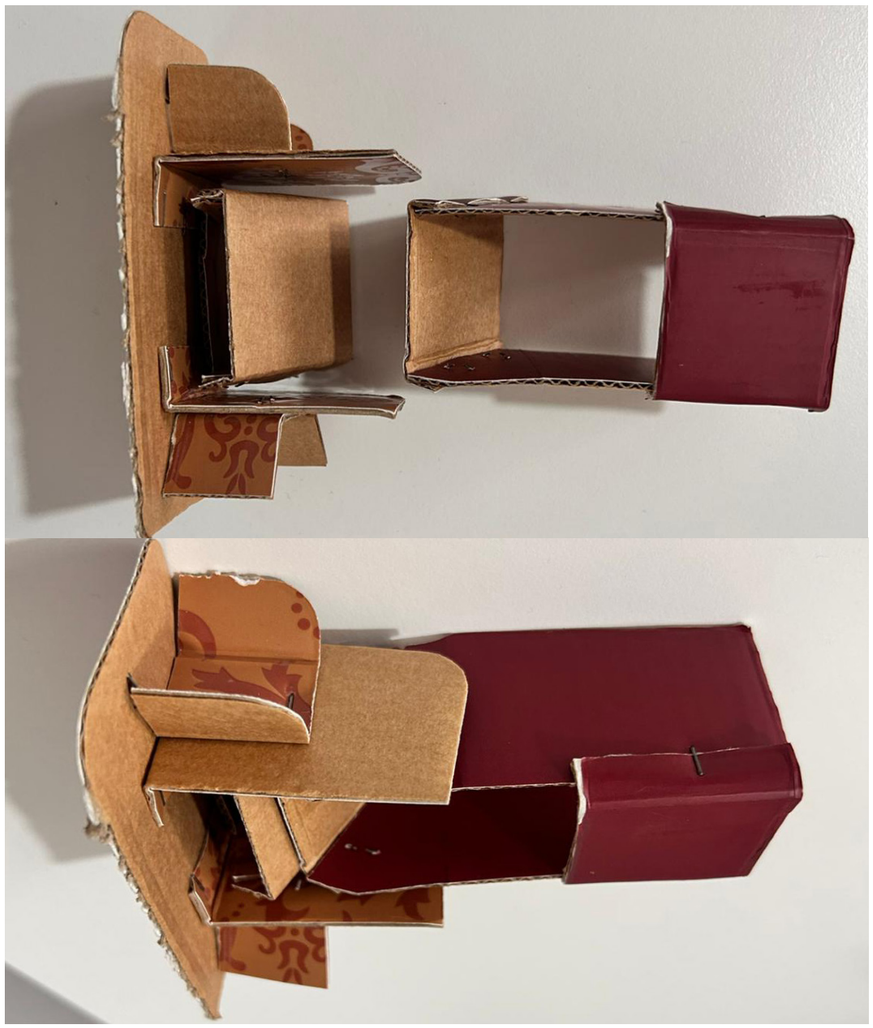


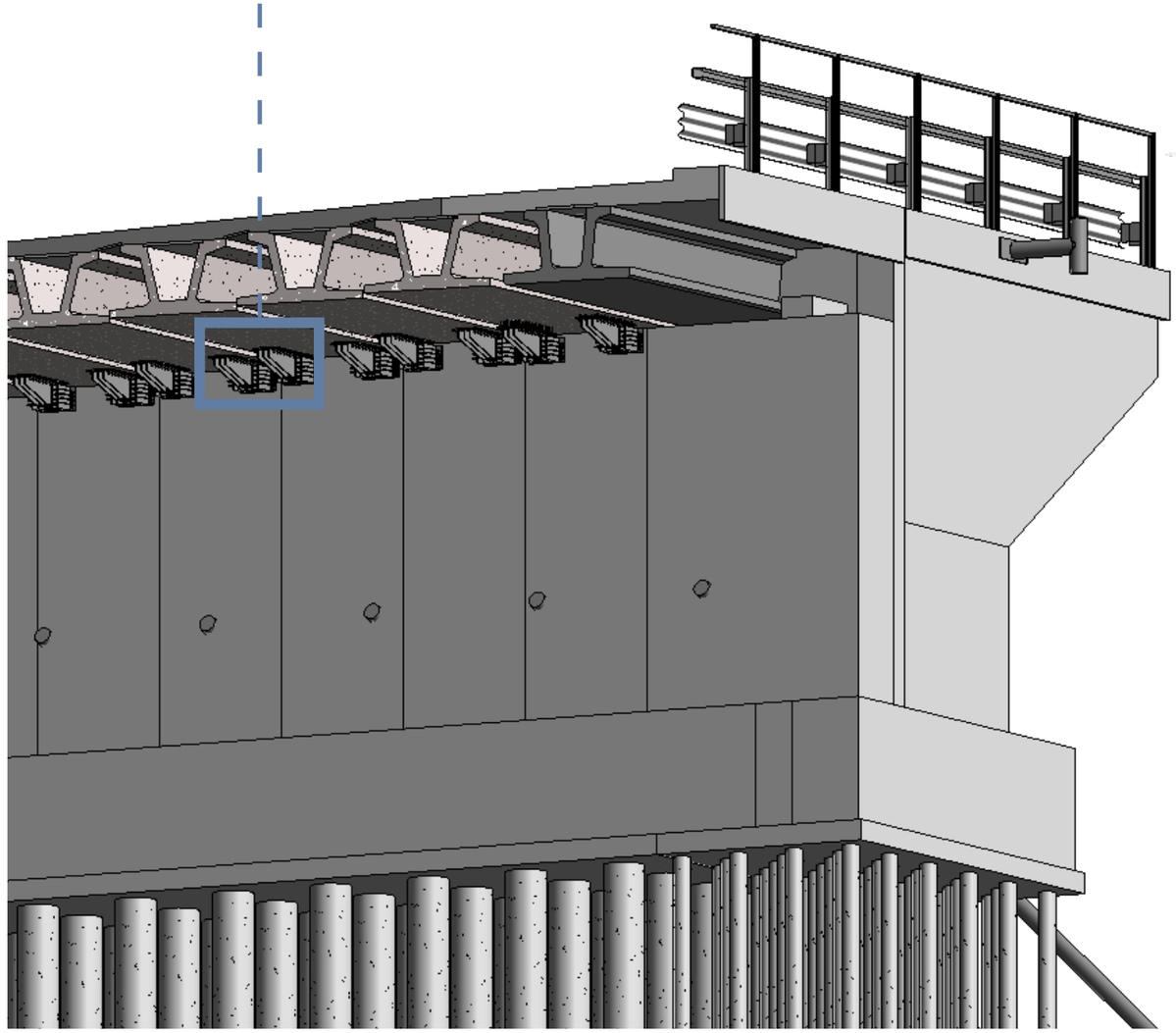


Autoporto di Susa

A small detail for a large project: a custom bridge retaining system for seismic strengthening was first conceptualised using a “paper and glue” mock-up.
It was then modeled in 3D using the Autodesk Inventor CAD system, and finally, a stress analysis was performed to produce the final construction drawings.







Alfa – Beta consulting

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