



# BIM & DIGITAL DEPARTMENT

Brochure

# The Department

The multidisciplinary BIM & Digital Services Department focuses on the management and optimization of design and delivery processes through the use of integrated three-dimensional digital models. Its core activities include the creation and management of BIM models that combine geometry, technical data, and information related to the entire life cycle of assets.

The Department supports integrated design by coordinating architecture, structural, civil, and MEP engineering, reducing conflicts and improving efficiency across all stakeholders. Key activities include 3D modelling, production of technical drawings, clash detection, 4D (time) and 5D (cost) planning, as well as construction monitoring and post-construction maintenance management. The BIM Department plays a central role in facilitating communication among project parties and ensuring compliance with regulatory and contractual requirements, contributing to more sustainable, accurate, and fully integrated design solutions.



# Services

## 02 Design

Creation and management of multidisciplinary digital models integrating geometry, technical data, and information to provide a coordinated representation of architecture, structures, and building systems. BIM enables advanced analyses—such as energy, structural, environmental, and operational assessments—enhancing design efficiency and reducing errors and costs during construction.

## 05 Construction

During construction and site supervision, BIM models provide significant advantages, including visual and digital site control, accurate activity management through 4D simulations, real-time clash verification, and centralized access to up-to-date information. This approach reduces errors, delays, and costs, while improving coordination among contractors, engineers, and suppliers.

## 01 Data Management and Computational Design

Within a BIM-based process, Data Management and Computational Design enable efficient and automated information handling. Data Management ensures consistency, accuracy, and accessibility of project data, while Computational Design leverages algorithms to generate and optimize complex design solutions, improving precision, timelines, and overall project sustainability.

## 03 Coordination and Collaboration

Use of the BIM model as a single, shared platform for communication among designers, contractors, and stakeholders. Collaborative workflows and interoperability reduce errors and delivery times, while model aggregation enables early detection of geometric clashes and information inconsistencies (clash detection) during the design phase.

## 06 Maintenance and Facility Management

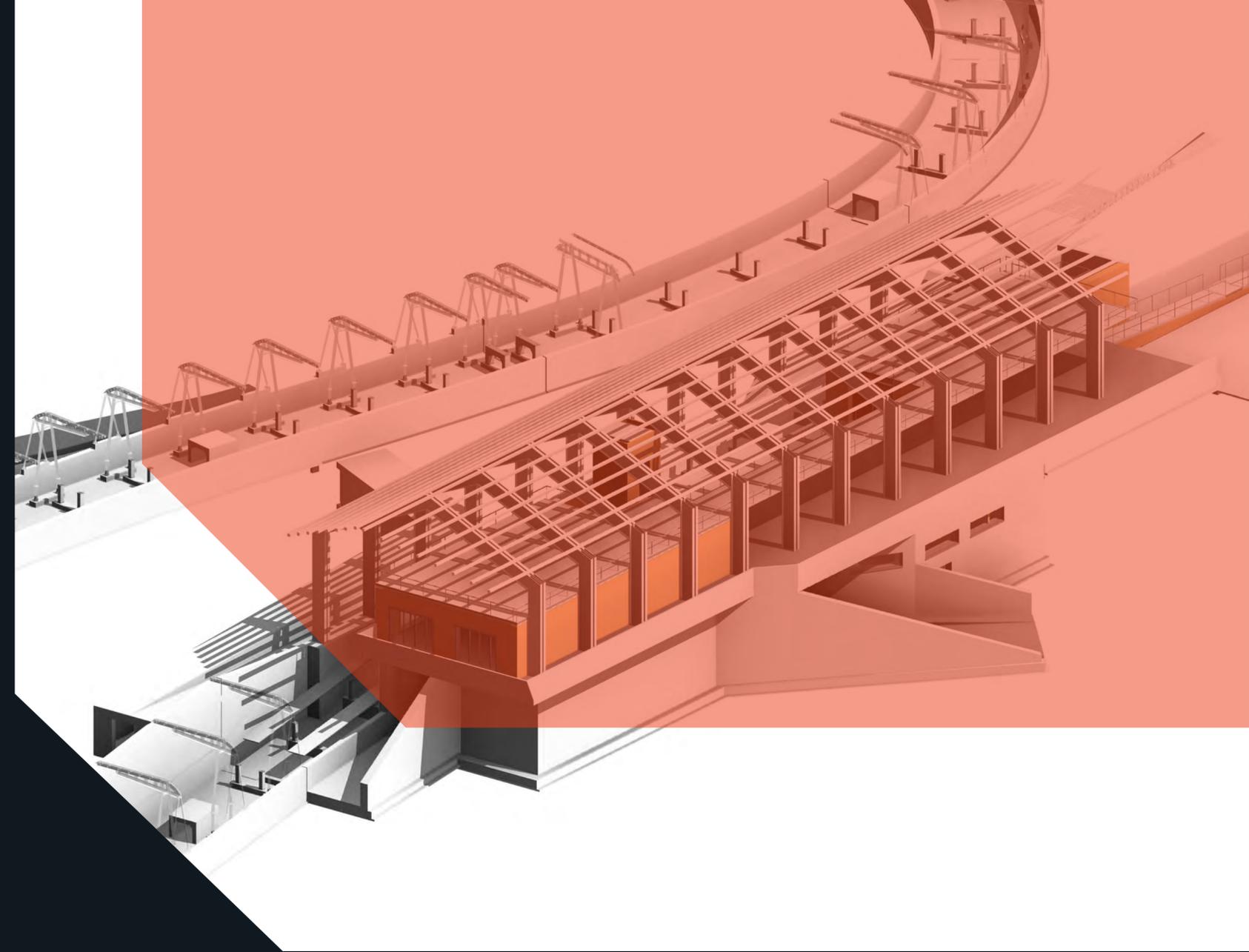
BIM-based Facility Management enables efficient long-term operation of buildings through an up-to-date digital model integrating data on systems, structures, and maintenance activities. Each component is traceable and linked to technical data sheets, deadlines, and scheduled interventions, improving monitoring, reducing operational costs, and extending the asset's life cycle.

## 04 4D–5D Planning and Cost Management

In BIM-based design, the 4D dimension integrates time into the 3D model, allowing simulation of construction phases and schedule control. The 5D dimension adds cost information, linking economic data to model elements. Together, 4D and 5D enhance planning accuracy, resource management, and monitoring of project timelines and budgets.

## 07 Demolition and Recycling

Through BIM-based design, demolition and recycling activities are managed more efficiently using an information-rich model that includes updated data on materials, components, and life cycles. Maintenance interventions, wear monitoring, and replacement or recycling planning can be carried out in advance, promoting sustainability, reducing waste and costs, and extending the useful life of construction resources.



# Our Projects

# Cortina Sliding Centre - Track

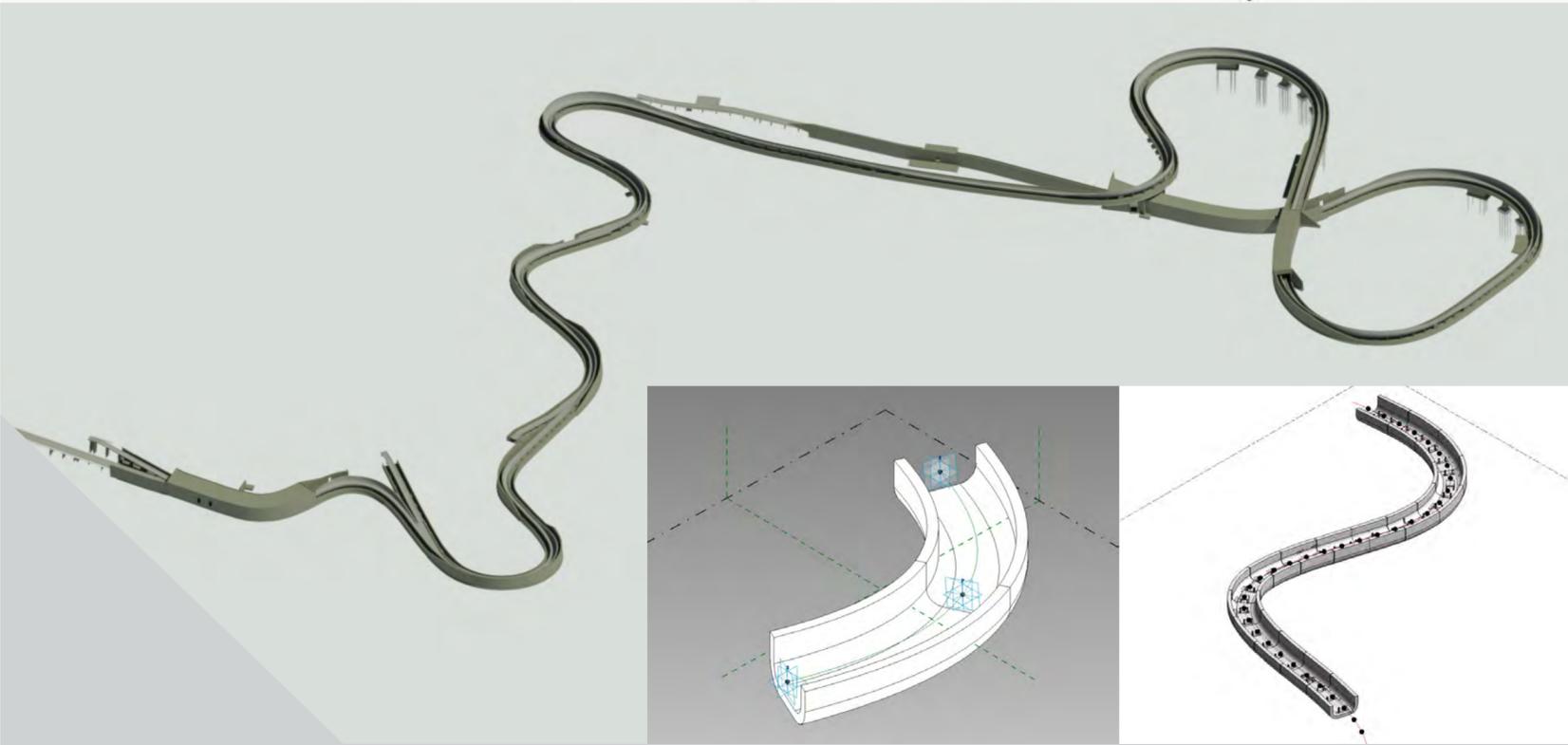
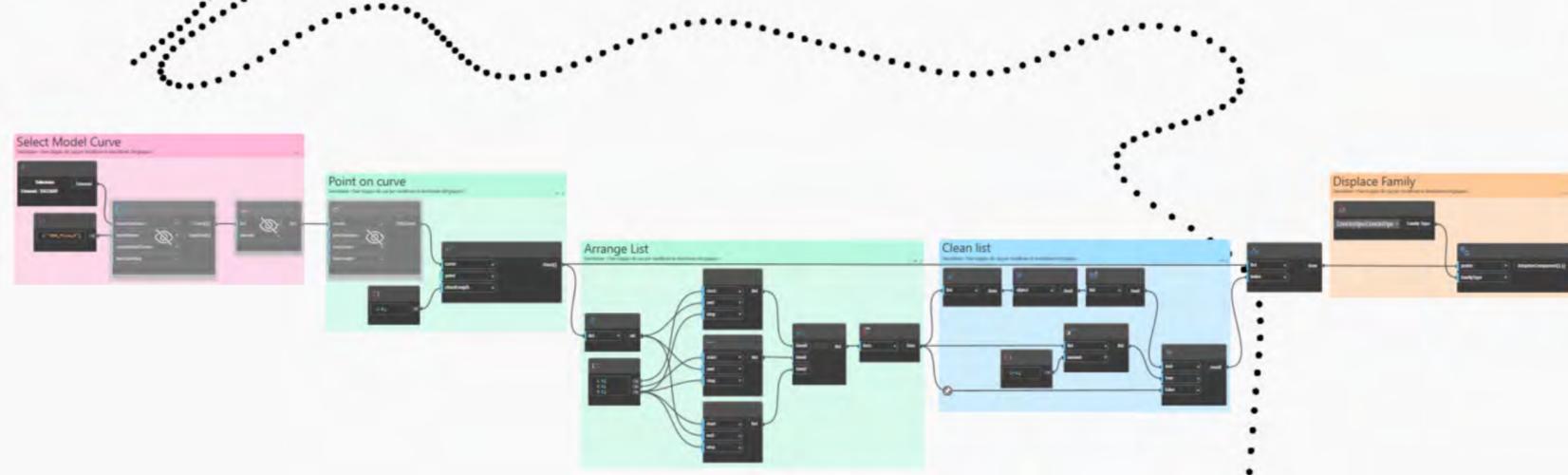
## Parametric modelling of the new bobsleigh, skeleton and luge track in Cortina d'Ampezzo

The service concerned the design of the substructures required for the construction of the track body of the Cortina Sliding Centre, a strategic infrastructure for the Milano Cortina 2026 Winter Olympic Games.

Given the high level of complexity of the intervention—related both to the terrain's morphology and the need for coordination among numerous design disciplines—an extensive use was made of the BIM methodology, fully exploiting its potential through integration with Computational Design tools.

This approach enabled effective management of design variables, ensuring rapid updates and continuous control over the project's evolution. The use of a dynamic, interoperable digital environment proved crucial for addressing potential changes during construction, minimizing time impacts and operational criticalities.

In parallel, dedicated algorithms were developed to automate technical analyses, quantity take-offs and the production of detailed drawings, supporting the entire design process.



<b>Location:</b>	Veneto, ITALY
<b>Client:</b>	Società Infrastrutture Milano Cortina 2020-2026
<b>Year:</b>	2022 - ongoing
<b>Work amount:</b>	€82,781,845.99
<b>Categories:</b>	S.03, S.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design and construction phase, works supervision

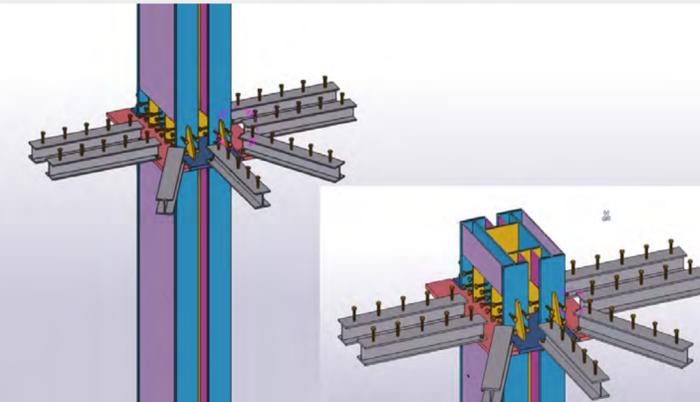
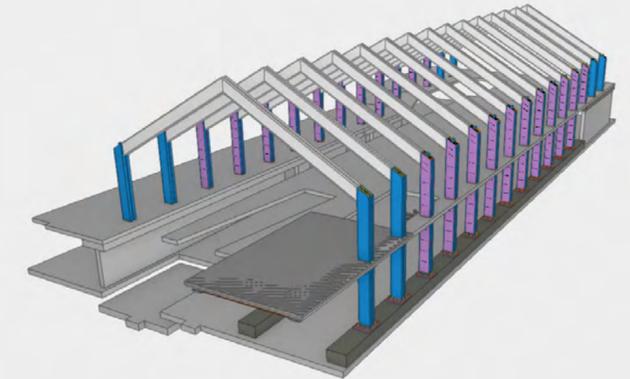
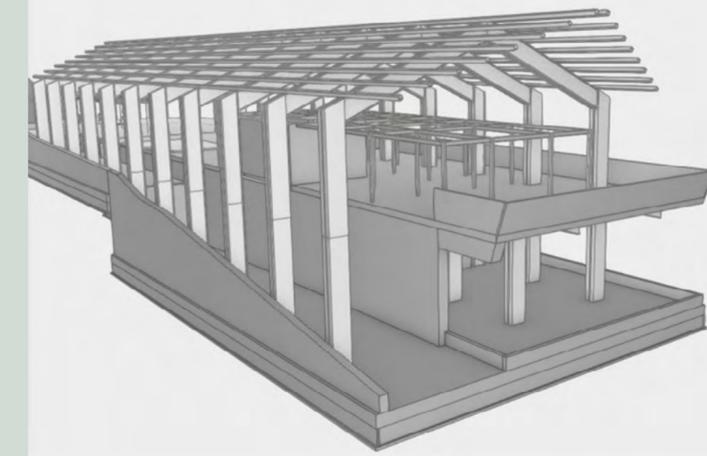
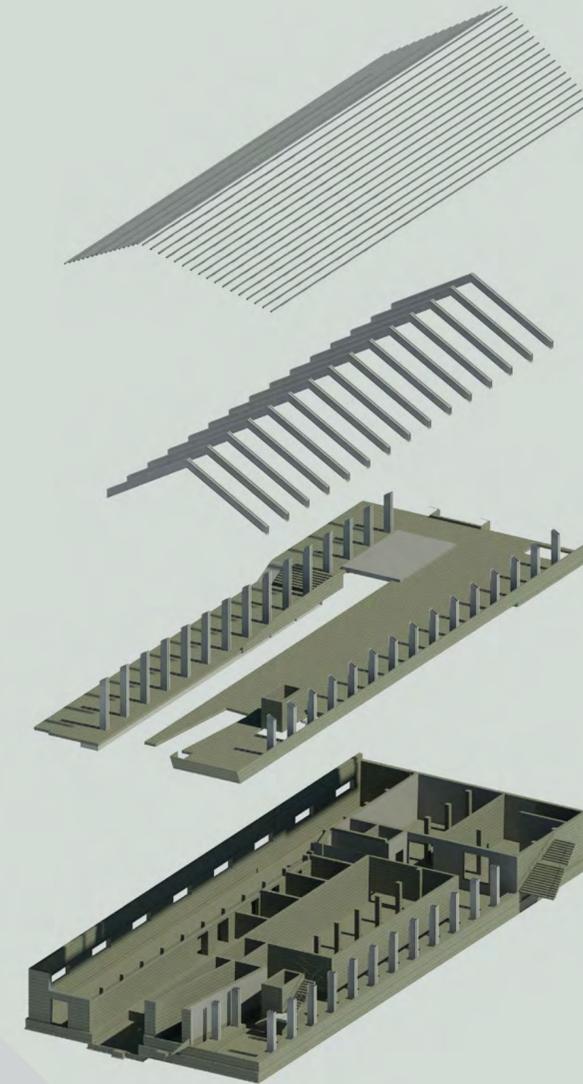
# Cortina Sliding Centre – Buildings

Detailed design of the start building, women's start building and finish building of the Cortina Sliding Centre – Cortina d'Ampezzo

Within the scope of the works related to the Cortina Sliding Centre for the Milano Cortina 2020-2026 Winter Olympic Games in Cortina d'Ampezzo, ITS was responsible for the detailed design of the buildings serving the sports facility. These buildings will host the start and finish areas for the Bobsleigh, Skeleton and Luge disciplines.

The adoption of a BIM methodology was essential for managing the complexity of the contract and ensuring continuous interdisciplinary coordination among architectural, structural, and MEP design.

BIM authoring and interdisciplinary coordination tools played a key role in identifying, managing, and resolving clashes in a complex project, in which the buildings had to adapt to a particularly sensitive environmental context and to infrastructure works already planned.



<b>Location:</b>	Veneto, ITALY
<b>Client:</b>	Società Infrastrutture Milano Cortina 2020-2026
<b>Year:</b>	2022 - ongoing
<b>Work amount:</b>	€82,781,845.99
<b>Categories:</b>	S.03, S.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design and construction phase, works supervision

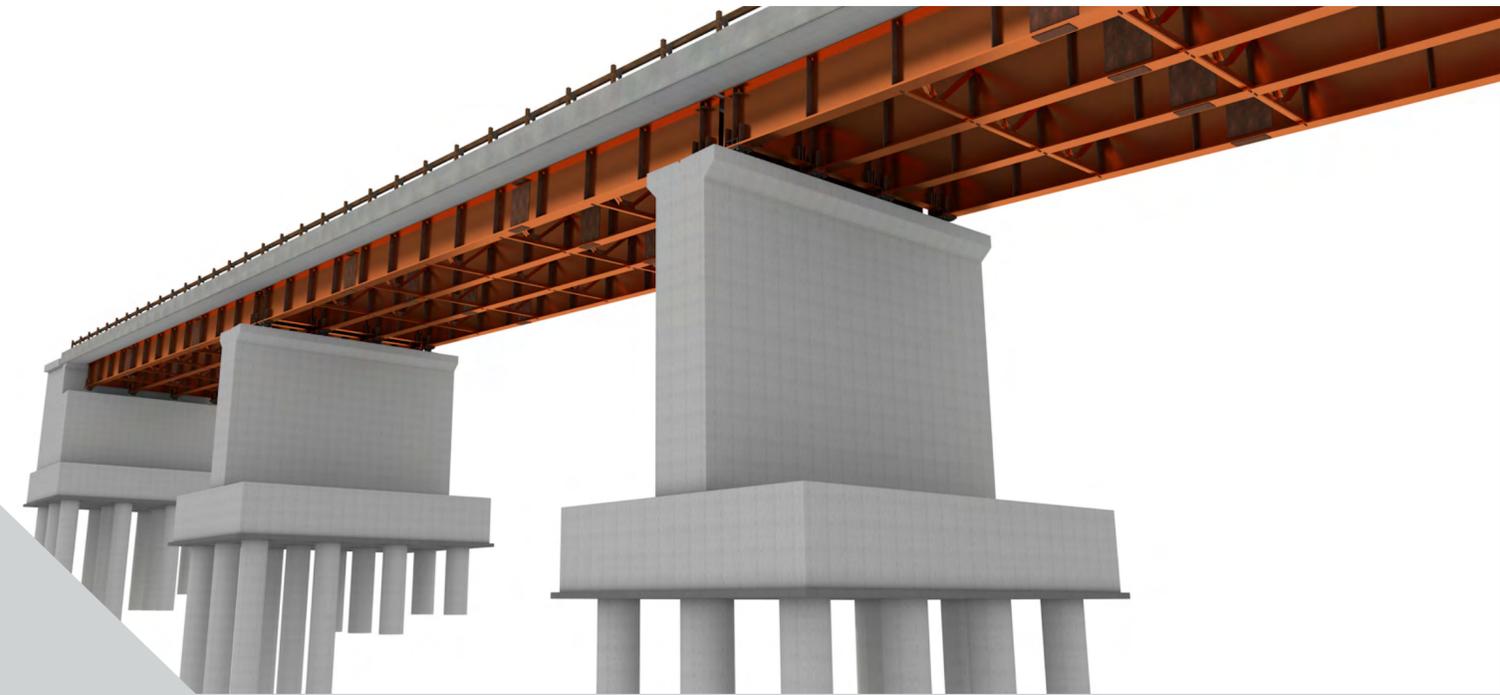
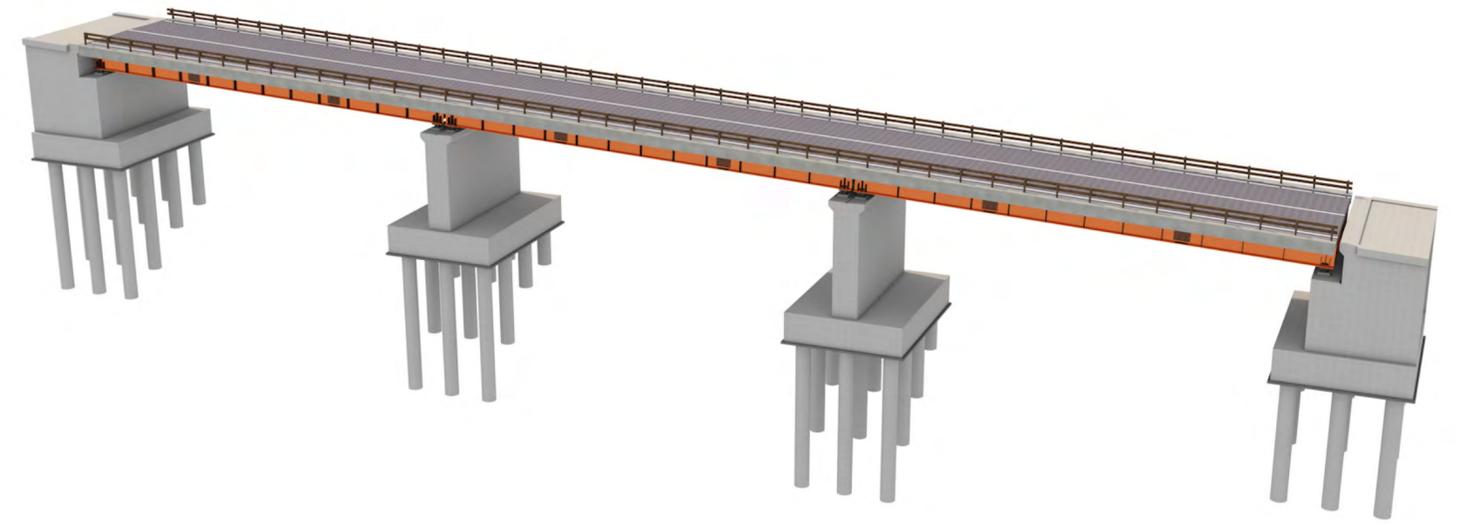
# Alemagna Road - Longarone

Performance and functional upgrade works in view of the Milano Cortina 2026 Winter Olympic Games

A strategic intervention for mobility in the Dolomites, developed entirely within a BIM environment. The project involved upgrading and improving the functionality of State Road SS 51 “di Alemagna” between the Castellavazzo interchange and the Termine Tunnel, with the aim of enhancing safety, traffic flow, and accessibility to Cortina d’Ampezzo.

As part of the Extraordinary Plan for Accessibility to Cortina 2021, the intervention included realignment of the road, widening of the carriageway, construction of new viaducts, pedestrian underpasses, retaining structures, and protected cycle-pedestrian paths. Thanks to the Building Information Modeling approach, all design disciplines—architecture, structures, geology, systems and infrastructure—were integrated into a single digital model, capable of managing data, clashes and construction timelines in a coordinated manner. The combined use of LIDAR surveys, photogrammetry and advanced geotechnical analyses ensured high accuracy and reliability in 3D modelling, optimizing both design and construction phases. Special attention was paid to environmental and landscape protection through low-impact solutions and targeted interventions to improve slope safety and protect natural areas. The result is a modern, safe and sustainable infrastructure that enhances the territory and improves local mobility.

This project represents a concrete example of the digital evolution of public works: an integrated BIM-based design model that combines innovation, efficiency, and environmental responsibility.



<b>Location:</b>	Veneto, ITALY
<b>Client:</b>	ANAS S.p.A.
<b>Year:</b>	2019
<b>Work amount:</b>	€16,939,952.00
<b>Categories:</b>	S.03, S.04, S.05, V.02
<b>Service provided:</b>	Technical and economic feasibility study, executive design, safety coordination during the design phase

# Predil Tunnel

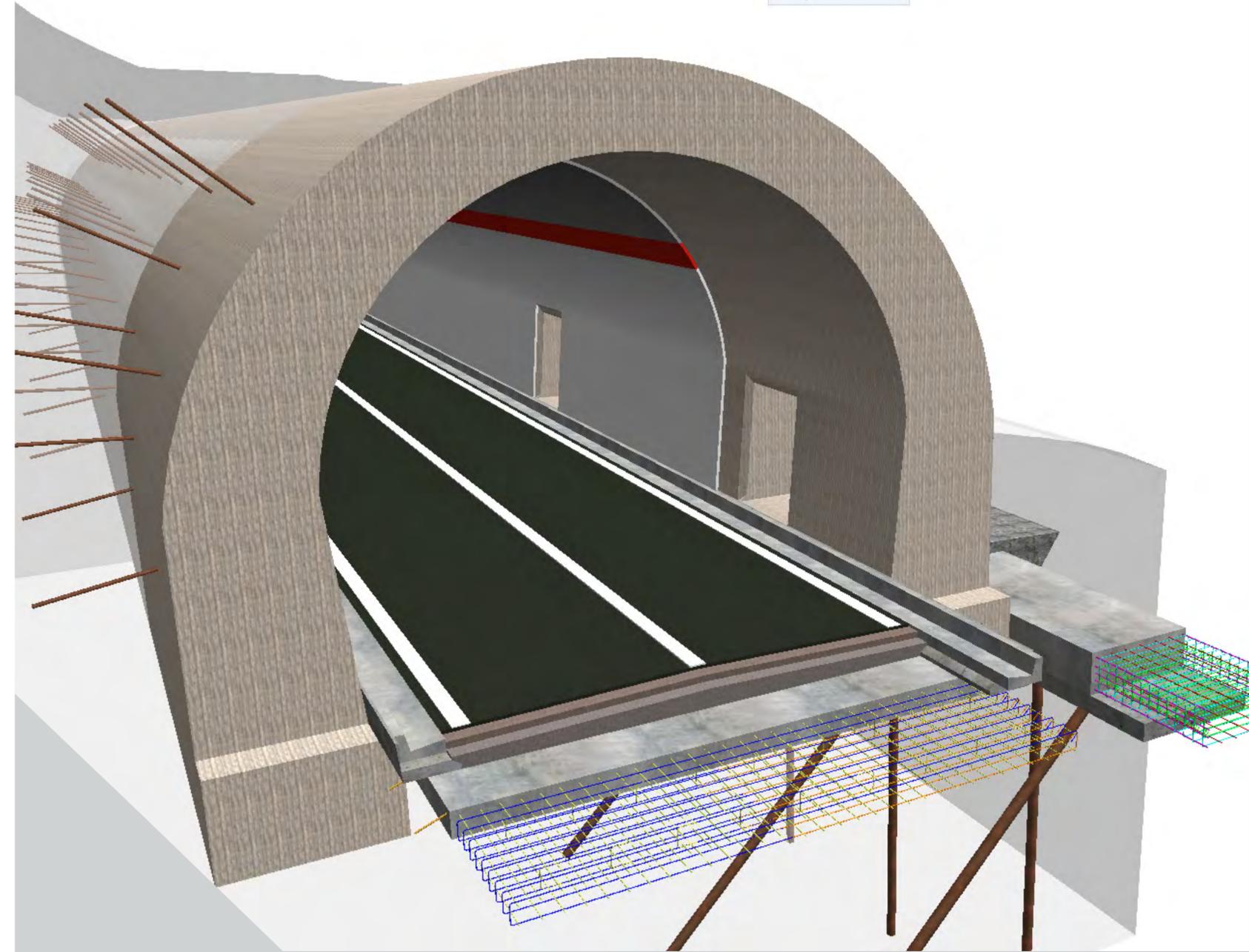
## Extraordinary maintenance works for the rehabilitation of the natural “Passo Predil” tunnel

Following several structural failures and instability issues, as well as insufficient structural capacity of the external sidewall, extraordinary maintenance works were required for the natural “Passo Predil” tunnel.

The interventions were aimed at securing the tunnel by stabilising the surrounding rock mass and reinforcing and rehabilitating the internal support and lining structures. Specifically, rock bolting works were carried out along the natural tunnel, together with the construction of a reinforced beam supported by micropile frames to stabilise the affected section.

The use of BIM methodology enabled the integration of as-built tunnel models into the design of new reinforcement solutions, ensuring full control of clashes throughout the design phase and preventing issues during subsequent construction stages.

The digital model of the designed elements reached a geometric Level of Detail (LOG D), also achieved through the parametric modelling of reinforcement bars.



<b>Location:</b>	Friuli-Venezia Giulia, ITALY
<b>Client:</b>	ANAS S.p.A.
<b>Year:</b>	2019 - 2020
<b>Work amount:</b>	€3,696,264.05
<b>Categories:</b>	V.02, S.03, S.05, D.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design phase

# Trivulzia Road

## Bypass of Provincial Road SP 2 “Trivulzia”

The detailed design of the bypass of Provincial Road SP 2 “Trivulzia” represents a strategic intervention to improve road safety and traffic flow in the Valchiavenna area. The project, approximately 2.8 km in length, provides a new road connection that bypasses the residential areas of Era and San Pietro, improving mobility quality and reducing through-traffic within urban centres.

The intervention includes the construction of two roundabouts, a new embankment road section, hydraulic regulation works, wildlife crossings and LED lighting infrastructure, with particular attention to safety and environmental sustainability.

The project was developed entirely using BIM methodology, allowing the integration of all technical disciplines—road infrastructure, structures, hydraulics, environmental aspects and systems—within a single coordinated information model. This approach enabled digital clash management, early detection of design conflicts and three-dimensional simulation of construction phases, improving efficiency and control.

Through information modelling, it was also possible to analyse the interaction of the infrastructure with the territorial and landscape context, ensuring compatibility with agricultural systems and the local hydrographic network.

The BIM model also serves as a valuable database for future maintenance and operational management of the infrastructure.

The integrated and digital approach adopted by ITS srl reflects the evolution of infrastructure design, combining technical accuracy, sustainability and territorial enhancement in line with the objectives of modernising mobility in Lombardy.



<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	Province of Sondrio
<b>Year:</b>	2019 - 2022
<b>Work amount:</b>	€5,220,244.03
<b>Categories:</b>	V.02, S.05, S.03, D.04, IA.03
<b>Service provided:</b>	Final and executive design, safety coordination during the design phase

# Lenzino Bridge

## Construction of the permanent bridge over the Trebbia River in the Municipality of Corte Brugnatella (PC)

Following the collapse of the Lenzino Bridge in October 2020 during an exceptional flood of the Trebbia River, it became necessary to proceed with the design and construction of a new bridge along State Road SS 45.

During the design phases, the use of BIM methodology played a key role in managing the complex geometries characterising the new bridge, which features a composite steel-concrete deck.

Through BIM authoring tools, it was possible to dynamically and parametrically model all structural elements, particularly the reinforced concrete piers, which feature an ovoid cross-section and a twisted axis. These geometries were specifically designed to minimise interference with water flow at the base and to ensure improved load symmetry at the top.

Parametric modelling enabled iterative study and modification of pier geometries until the optimal configuration was achieved. Subsequently, additional algorithms were used to model reinforcement within the same geometries, ensuring full control over material quantities through automated schedules and bar lists.



<b>Location:</b>	Emilia-Romagna, ITALY
<b>Client:</b>	ANAS S.p.A.
<b>Year:</b>	2020 - 2023
<b>Work amount:</b>	€25,000,000.00
<b>Categories:</b>	D.02, S.05, S.04, V.02
<b>Service provided:</b>	Final and executive design

# Quistello Road

## Construction of the completion of the “Quistello Southern Bypass” system in the Province of Mantua

The final design for the construction of the third section of the Quistello Southern Bypass completes the mobility system of the southern Mantua area, improving connections between the provincial road network and the main regional transport corridors.

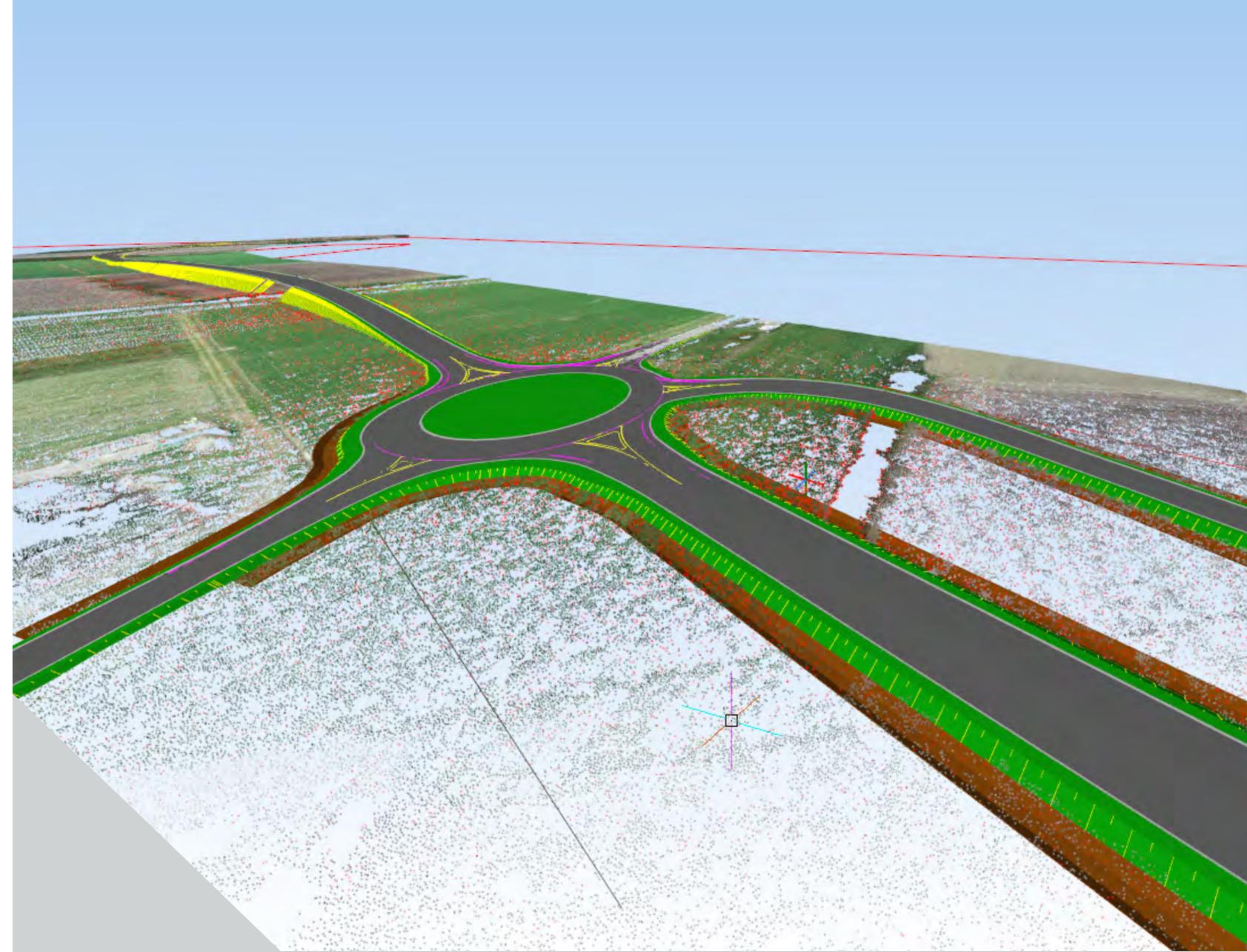
The intervention, approximately 2.3 km in length, includes the construction of three roundabouts, a bridge over the Sabbioncello Canal, agricultural underpasses, and hydraulic and land reclamation works, designed to ensure safety, territorial continuity and environmental sustainability.

The entire process was developed using BIM methodology, enabling integrated management of all disciplines—road infrastructure, structural, geological and MEP—within a shared digital model. Through three-dimensional information modelling, it was possible to analyse and resolve clashes, optimise the design of the works and improve coordination among the various project stakeholders.

The BIM model also supported geometric and functional simulations, allowing accurate planning of construction phases and precise control of costs and execution timelines. Particular attention was given to environmental and landscape aspects, with targeted solutions to reduce land consumption and protect the local hydraulic network.

The digital approach enhanced data traceability and future asset management, providing a comprehensive information base for operation and maintenance.

This project represents a clear example of advanced infrastructure design, where BIM serves as a tool for innovation, efficiency, and quality in service of the territory and the community.



<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	Province of Mantua
<b>Year:</b>	2021 - ongoing
<b>Work amount:</b>	€6.5 million
<b>Categories:</b>	V.02, S.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design phase. Geotechnical and seismic investigations

# Parma Pedemontana Road

Priority section of the Pedemontana road between SP 121R and SP 15 in the Municipalities of Felino, Sala Baganza and Collecchio

The new Parma Pedemontana road connects Provincial Road SP121R to SP15, crossing the municipalities of Felino, Sala Baganza and Collecchio. The intervention was conceived to improve east-west connectivity in the foothill area, reduce urban traffic in Sala Baganza and enhance safety and traffic flow along the provincial road network. The project includes viaduct sections, new bridges over the Baganza stream, and integrated drainage and hydraulic protection systems coordinated with the expansion basin currently under construction. The final design was developed through an interdisciplinary approach, coordinating infrastructure, structural, geotechnical, hydraulic and environmental aspects. Particular attention was given to compatibility with AIPo hydraulic works, landscape protection and respect for the rural context. BIM modelling of the entire project enabled the integration of all components into a single digital ecosystem, allowing optimisation of alignment, clash analysis, interdisciplinary coordination and consistency between design, territorial and environmental data. BIM was also used as a tool for controlling and validating construction solutions, improving design quality and collaboration among all involved parties. The digital approach supported more conscious and sustainable design choices, reducing land consumption, minimising environmental impacts and maximising efficiency in hydraulic crossing works. The project enhances the territory by promoting modern, safe and environmentally integrated mobility. The new Pedemontana road forms part of the regional infrastructure corridor “Nuovo Asse Pedemontano”, included in the Emilia-Romagna PRIT 2025. This project represents a concrete example of BIM applied to public infrastructure, where innovation, accuracy and sustainability combine to shape the mobility of the future.



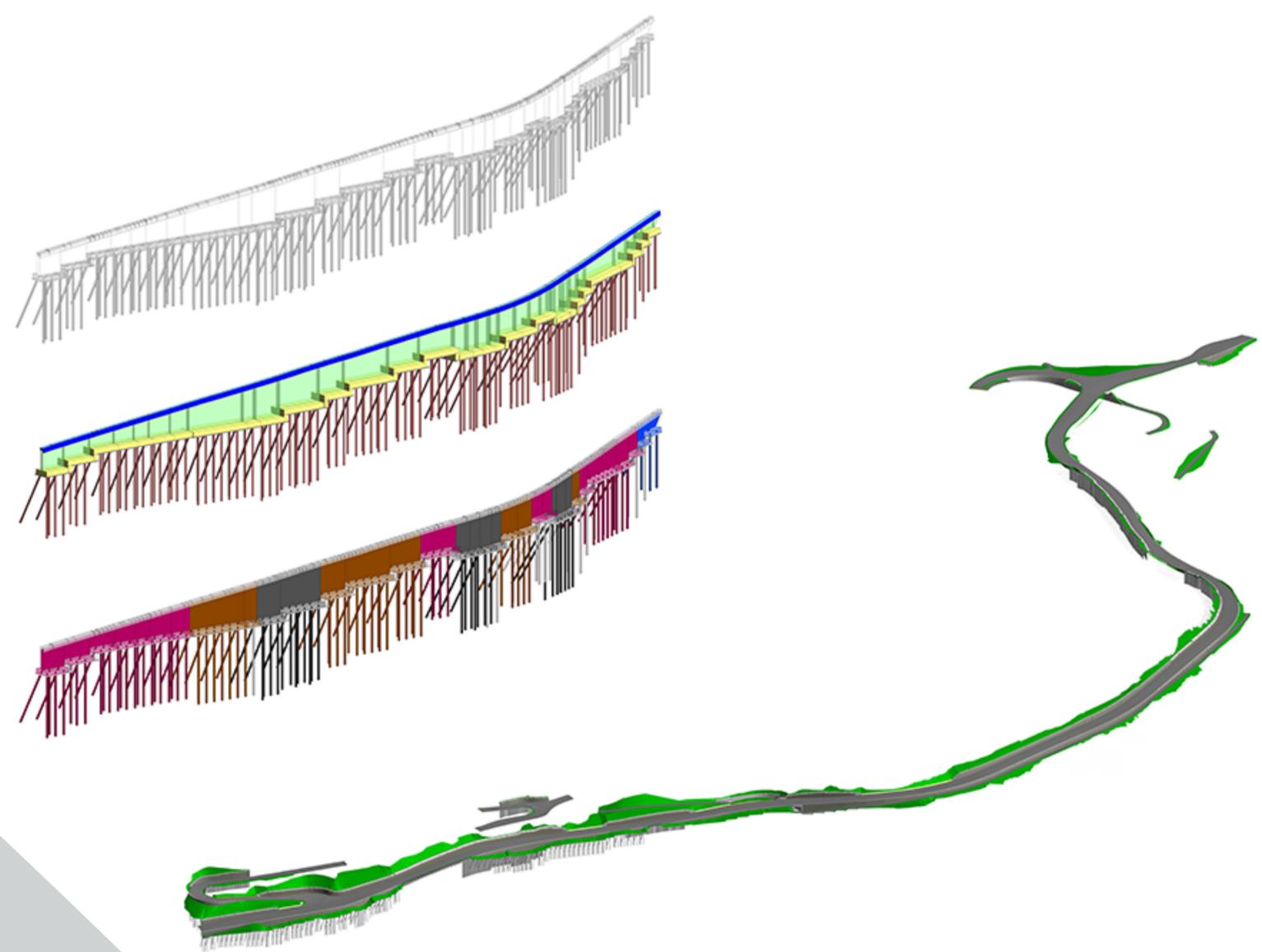
<b>Location:</b>	Emilia-Romagna, ITALY
<b>Client:</b>	Province of Parma
<b>Year:</b>	2022 - ongoing
<b>Work amount:</b>	€15,550,000.00
<b>Categories:</b>	S.04, V.02, S.05
<b>Service provided:</b>	Final and executive design, safety coordination during the design phase

# Motte di Oga Bypass

## Final and detailed design of a newly constructed road bypass

The improvement programme for Provincial Road No. 28 “Motte di Oga”, established through an agreement between the Municipality of Livigno and the Province of Sondrio in 2005, aims to create an alternative route bypassing the urban areas of Bormio and Premadio, reducing traffic congestion during peak tourist seasons.

Over time, several construction phases have been implemented in line with available funding and traffic requirements. Among these, the section “Bormio-Livigno Variant - Santa Lucia” introduced a roundabout, a viaduct over the Adda River and a 990-metre-long tunnel, significantly improving the alignment and reducing traffic through Bormio. The programme also included upgrading of the road cross-section and horizontal alignments along a large portion of the route. BIM-based design ensured coordinated development across structural, road, geotechnical and hydraulic disciplines, aligning activities and design decisions from the earliest stages and delivering a complete and consistent outcome. Through element modelling, all design drawings and quantity take-offs required for cost estimation were extracted directly from the model, achieving BIM Maturity Level 2.



<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	Province of Sondrio
<b>Year:</b>	2019 - 2022
<b>Work amount:</b>	€10,378,293.05
<b>Categories:</b>	S.03, S.04, V.02, V.03, D.02, D.04, P.03
<b>Service provided:</b>	Executive design, safety coordination during the design phase

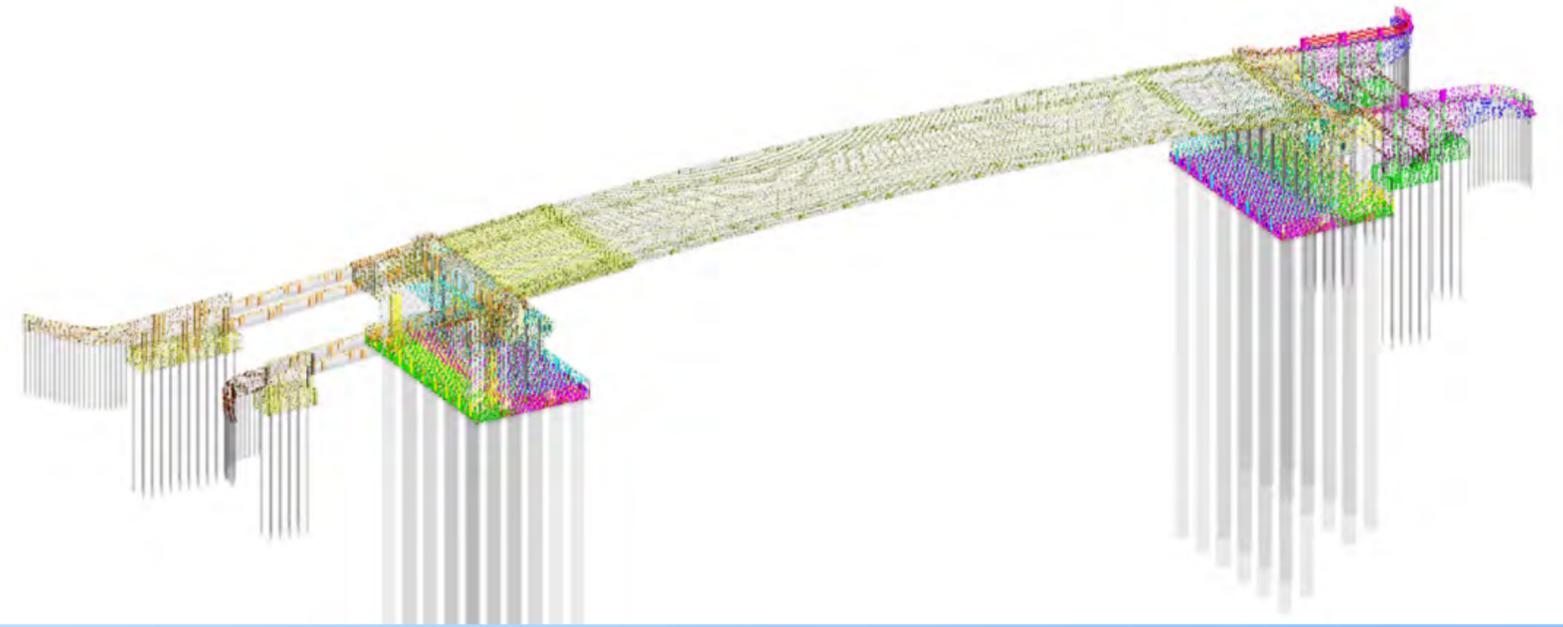
# Redigole Bridge

Demolition and construction of a new bridge over the Monticano River in the Municipality of Motta di Livenza

The intervention involved the demolition of the existing bridge, which presented several critical issues in its current condition (alternating one-way traffic, limited load capacity and consequent disruption to public transport services), followed by the construction of a new bridge on the same alignment, including the upgrading of the approach ramps. The structure designed as part of the service consists of a new 78-metre-long Langer-type steel arch-girder bridge with a straight horizontal alignment, and its longitudinal profile features a concave, symmetrical geometry.

Project management using a BIM methodology enabled synergistic control of both road and structural design, ensuring real-time design verification, clash detection, and rapid resolution of interferences.

Interferences with existing utilities were also managed during construction phases, ensuring uninterrupted road service throughout the duration of the works.



<b>Location:</b>	Veneto, ITALY
<b>Client:</b>	Province of Treviso
<b>Year:</b>	2022 - ongoing
<b>Work amount:</b>	€3,469,077.61
<b>Categories:</b>	S.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design and construction phases, works supervision

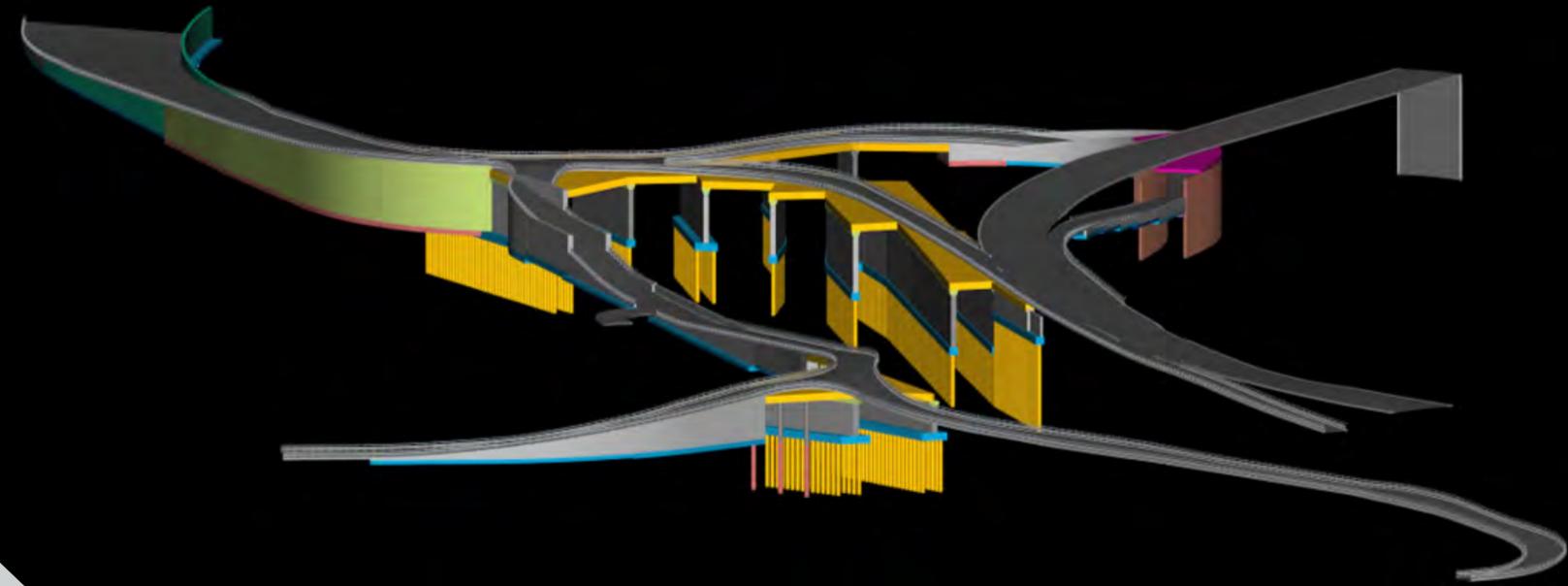
# Molo VIII - Trieste

## Extension of the common infrastructure for the development of the New Free Port area of the Port of Trieste

The expansion of Molo VIII represents a strategic intervention for the development of the Port of Trieste and the logistics system of the Upper Adriatic. The project includes new operational yards, quay structures and intermodal infrastructure, designed to increase handling capacity and improve the efficiency of maritime and land connections.

The entire design process was developed using BIM methodology, integrating all disciplines—structural, maritime, MEP, geotechnical and environmental—into a single shared information model. The infrastructure BIM model enabled real-time coordination of the various design phases, clash detection and optimisation of the complex geometries typical of port works. Through three-dimensional modelling and collaborative platforms, the project evolved into a true digital ecosystem, connecting designers, authorities and contractors. Integrated data management ensured control, transparency and consistency throughout the entire process, reducing time and risk during the execution phase. The digital approach enabled more informed planning, balancing environmental considerations with the port's operational requirements. Optimised construction solutions and detailed impact analyses contributed to a sustainable, efficient and durable intervention.

The Molo VIII project demonstrates how BIM-based infrastructure design is now key to delivering complex works in an innovative, accurate and collaborative manner, transforming design into an integrated, intelligent process that combines technology, quality and value for the territory.



<b>Location:</b>	Friuli-Venezia Giulia, ITALY
<b>Client:</b>	ADSpMAO
<b>Year:</b>	2022 - 2024
<b>Work amount:</b>	€19,622,746.96
<b>Categories:</b>	V.03
<b>Service provided:</b>	Technical and economic feasibility study

# CAL Project - Bormio

## Construction of a multi-storey car park and a cycle-pedestrian footbridge over the Frodolfo stream

The service involved the design of a multi-storey car park ("Parcheggio di Porta"), a cycle-pedestrian footbridge over the Frodolfo stream, a new roundabout at an existing junction and a new cycle-pedestrian connection in the Municipality of Bormio (SO).

BIM-based design covered the Authorisation-Technological phase of the information process. The Levels of Geometric Development (LOG) and Levels of Information (LOI) reached Level D for the final design and Level E for the detailed design phase.

The service included parametric design and modelling of the structural works, as well as interdisciplinary coordination among the different models.

Interoperability among all design teams was ensured through the sharing of models and information within a dedicated Common Data Environment (CDE), structured and managed in accordance with applicable standards and accessible to all stakeholders to enable coordinated interaction.

Coordination levels LC1, LC2 and LC3, and verification levels LV1 and LV2, were carried out on both individual and federated models.

The sharing of models and documentation throughout the entire design process, up to final delivery, was managed within the CDE, which was also accessible within dedicated areas to the Contracting Authority.



<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	C.A.L. S.p.A.
<b>Year:</b>	2023 - 2024
<b>Work amount:</b>	€5,326,000.00
<b>Categories:</b>	IA.03, IA.01, S.03, V.02, S.04
<b>Service provided:</b>	Final and executive design, safety coordination during the design phase, operational site management

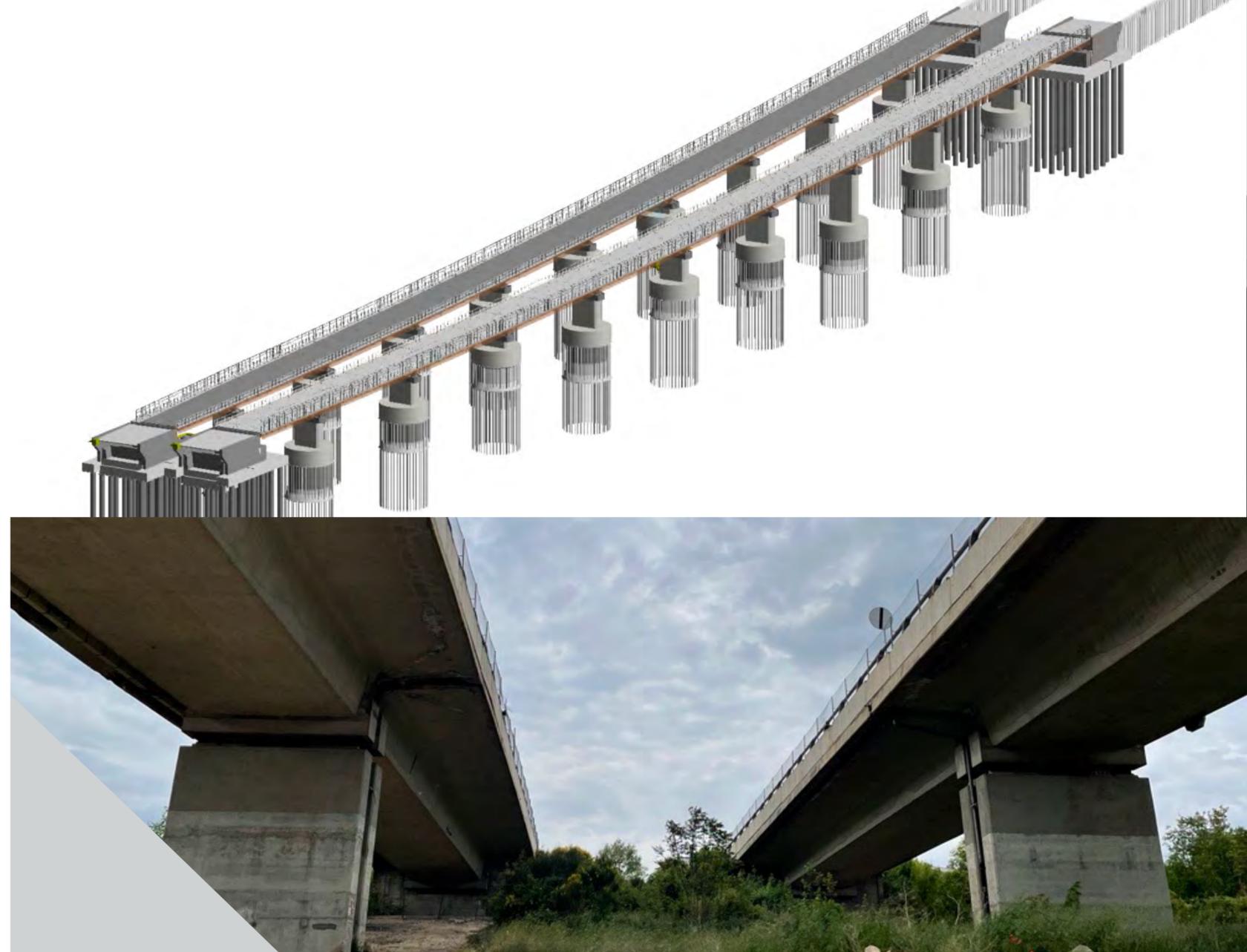
# A24 and A25 Motorways – Section VI

Progettazione ed esecuzione dei lavori di adeguamento strutturale per la messa in sicurezza sismica di n.12 viadotti

The intervention concerns the technical and economic feasibility study, the detailed design, and the execution of upgrading works on viaducts along the A24 and A25 motorways. The Autostrada dei Parchi, consisting of these two routes, connects Rome with the main urban centres of the Abruzzo region—including L'Aquila, Teramo, Chieti and Pescara—over a total length of 281.4 km.

Due to the complex morphology of the territory crossed, the motorway features numerous viaducts and tunnels, enabling it to cross the valleys and mountainous areas of the Apennines. Given its geographical position, the infrastructure serves as a key link between the Tyrrhenian and Adriatic coasts and is classified as a strategic asset under Civil Protection criteria. The objective of the intervention is to ensure the seismic safety of the A24 and A25 motorways, which include a significant number of engineering structures due to the orographic complexity of the Apennines. The project involves demolition of the existing decks and replacement with new continuous composite steel-concrete decks. Existing piers will be reused, following surface restoration and strengthening of the shafts. Caisson foundations will be reinforced by installing micropile crowns, while abutments will be newly constructed.

The adoption of BIM methodology significantly simplified the complex multidisciplinary coordination among the various models across the different design phases, enabling continuous information exchange and timely updates, essential for the development of the works.



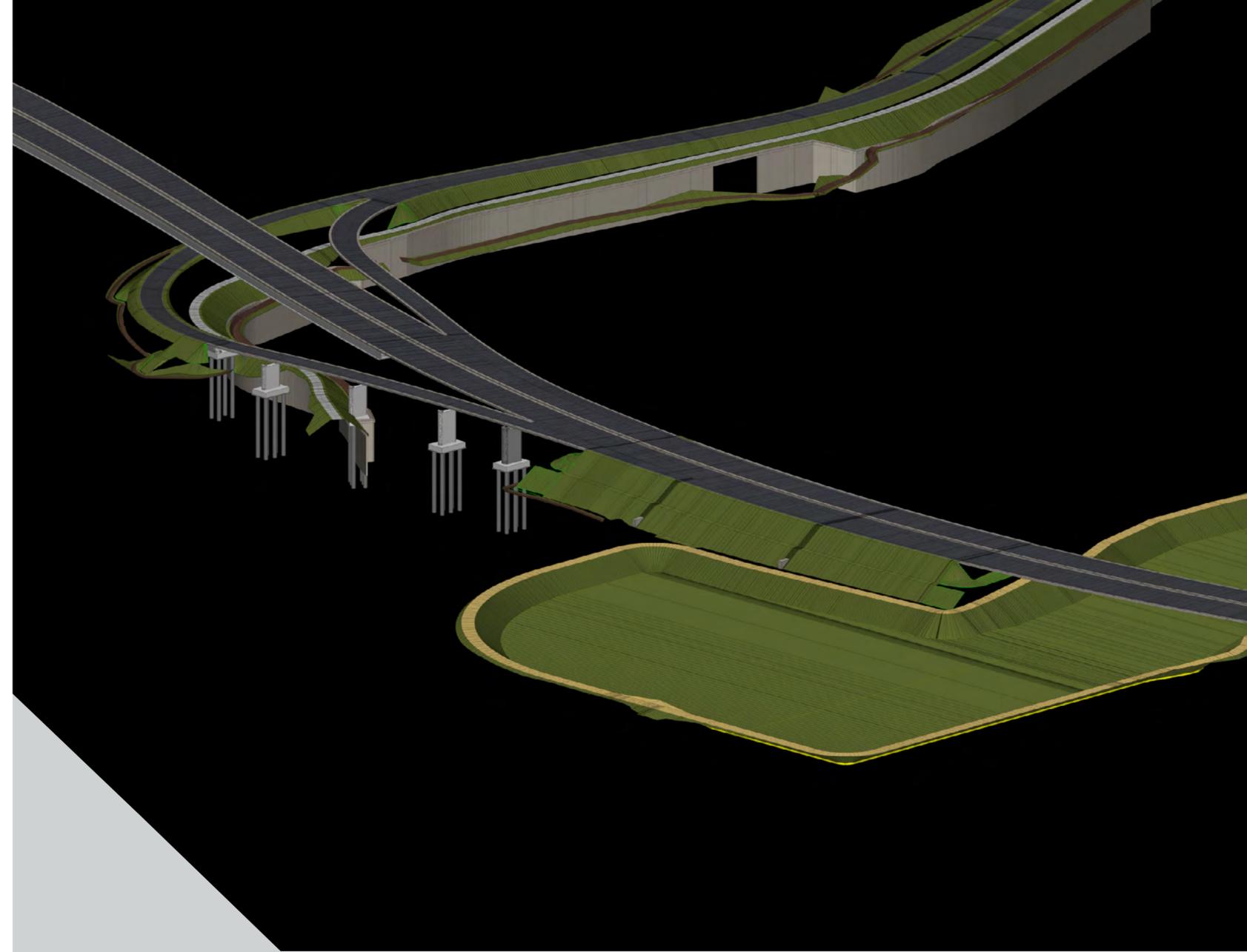
<b>Location:</b>	ITALY
<b>Client:</b>	Consorzio Stabile MEDIL Società Consortile
<b>Year:</b>	2024 - ongoing
<b>Work amount:</b>	€86 million
<b>Categories:</b>	-
<b>Service provided:</b>	Technical and economic feasibility study, executive design

# Gallaratese Road

## New SS 341 “Gallaratese” – Section from Samarate to the border with the Province of Novara

The construction of the Gallarate Link Road, the final section of the new SS 341 “Gallaratese”, represents a strategic node within the road network of north-western Lombardy. Developed between the SS336 Nord interchange and the A8 motorway, the project improves connectivity between Malpensa Airport, the Lombardy Pedemontana and the main regional corridors, optimising traffic flows and supporting sustainable mobility. The project was developed through an innovative process of digital surveying, modelling and validation, aimed at creating a reliable and integrated As-Built BIM model. Using topographic and laser scanner data acquisition, the three-dimensional model accurately represents all infrastructure components, including alignments, structures, interchanges, drainage systems and installations. The adoption of infrastructure BIM enabled the synergistic management of complex geometries, design updates, and construction data, ensuring consistency and traceability between execution and future operations. The information model acts as a true digital twin of the infrastructure, supporting maintenance, monitoring and lifecycle planning. BIM methodology ensured advanced clash detection and geometric consistency control, integrating civil, structural, MEP and geotechnical disciplines within a single collaborative platform. All information—from materials to technical datasheets—is stored within an updatable database, enhancing efficiency and sustainability in asset management. With the delivery of the As-Built model, the Gallarate Link Road becomes an “intelligent” infrastructure, ready to interface with future asset management systems.

A concrete example of how BIM design and modelling are transforming the construction and management of public works, laying the foundations for a safer, more digital and interconnected road network.



<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	Rizzani de Eccher
<b>Year:</b>	2024 - ongoing
<b>Work amount:</b>	€107,265,717.75
<b>Categories:</b>	V.03, S.03, S.04, S.05, IA.02, D.02
<b>Service provided:</b>	Executive design

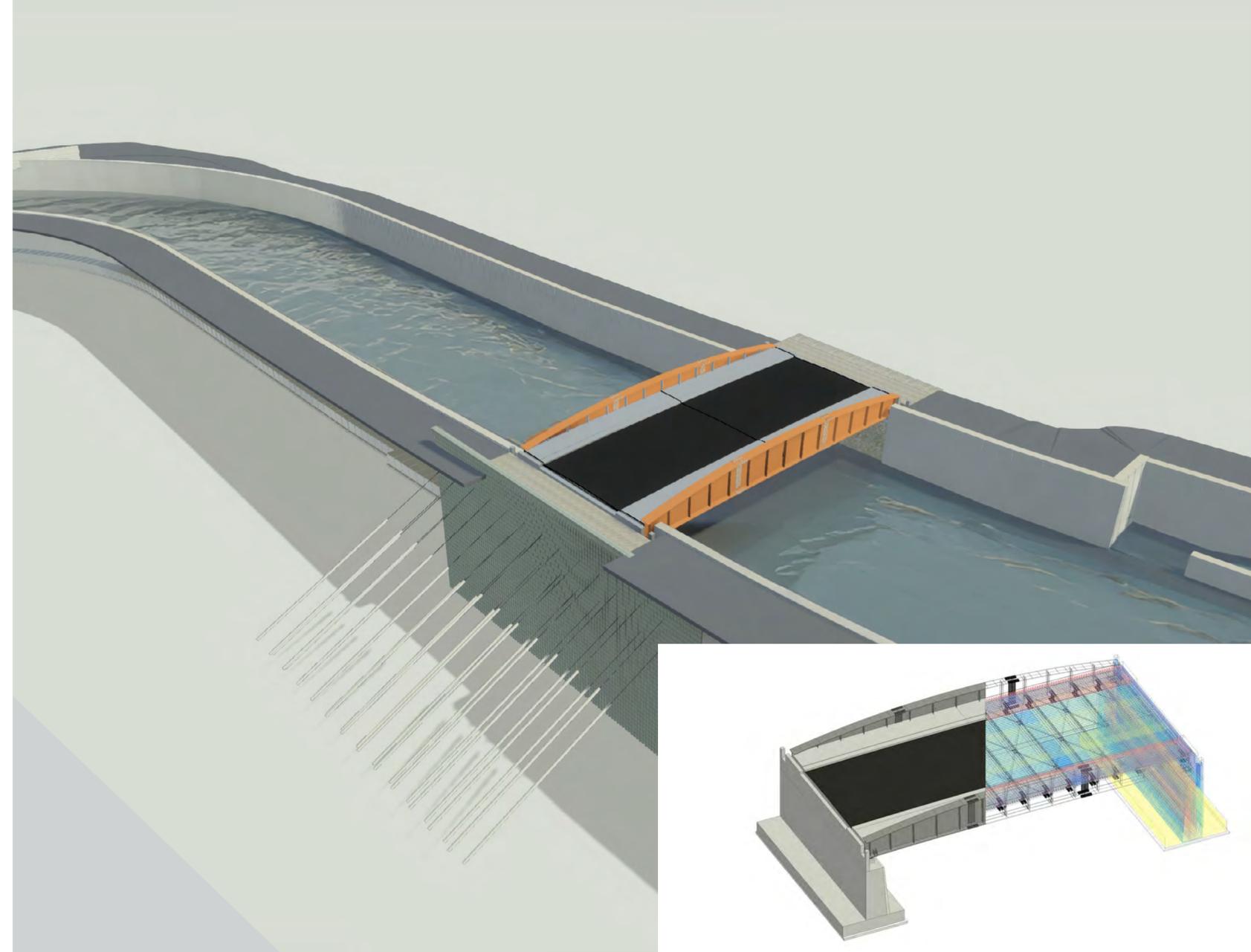
# Re-Cobello Stream

## Hydraulic regulation of the Re-Cobello Stream in the Municipalities of Braone, Ceto and Niardo

In July 2022, a severe flood event struck the Valcamonica area, particularly affecting the municipalities of Niardo, Braone and Ceto, caused by the overflow of the Re and Cobello streams. The event resulted in extensive damage: over 200,000 m<sup>3</sup> of debris were transported downstream, destroying infrastructure, buildings and sections of the Brescia-Iseo-Edolo railway line. Approximately 40 people were evacuated, three injuries were reported and dozens of vehicles were swept away.

Following the emergency, the Province of Brescia and the Valle Camonica Mountain Community launched an extraordinary intervention plan worth more than €100 million. The planned works include widening of riverbeds, demolition of buildings to facilitate flow, construction of new check dams and debris retention basins to contain debris flows. To enhance prevention and risk management, a hydrogeological monitoring network was installed, including rain gauges, radar systems, geophones, cameras and warning sirens, managed through the HMS-WEB system. Safety works are currently ongoing, with completion scheduled by 2027. The adoption of BIM methodology enabled effective interdisciplinary coordination among structural, road, geotechnical and hydraulic disciplines. Through integrated modelling, project information was centrally managed, reducing interferences and inconsistencies while optimising planning, scheduling and cost control.

Three-dimensional simulations supported the analysis of complex scenarios, improving the prediction of hydraulic and structural behaviour and ensuring compliance with the Client's objectives.



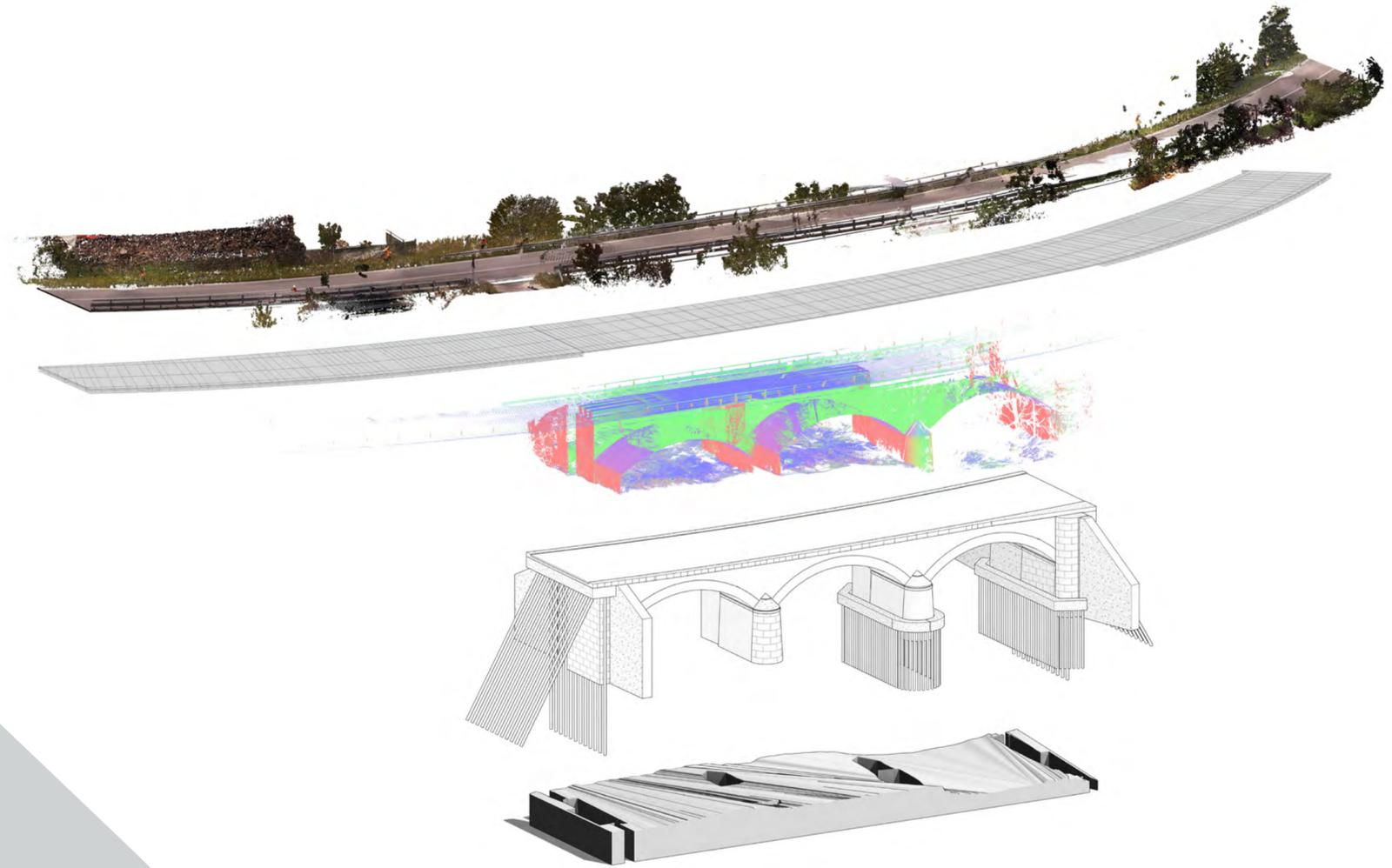
<b>Location:</b>	Lombardy, ITALY
<b>Client:</b>	Province of Brescia
<b>Year:</b>	2024
<b>Work amount:</b>	€12,773,993.96
<b>Categories:</b>	S.04
<b>Service provided:</b>	Executive design, safety coordination during the design phase

# Apecchiese Bridge

## Technical and Economic Feasibility Study and Detailed Design

The bridge involved in the intervention crosses the Biscubio Stream and has its piers located within two municipalities of the Province of Pesaro and Urbino, separated by the watercourse that forms the natural boundary between their territories. On the left hydraulic bank, the bridge lies within the Municipality of Piobbico, while on the right bank it falls under the Municipality of Apecchio. The primary objective of the intervention is to increase the overall safety level of the infrastructure, ensuring at least the achievement of structural upgrading as a minimum performance requirement. Based on an in-depth Level 4 assessment, the minimum recommended interventions include structural strengthening of the girders, which is essential to restoring the bridge to full operational condition. From a medium- to long-term perspective, a comprehensive refurbishment of the abutments, piers and reinforced concrete deck is also envisaged, including passivation of exposed reinforcement and restoration of concrete cover. These actions, integrated into a coherent intervention plan, aim not only to restore the bridge's functionality but also to extend its service life, while ensuring user safety and safeguarding the local infrastructure heritage. Following a high-precision geometric survey carried out through laser scanner acquisition and point cloud generation, digital modelling was performed using the Scan-to-BIM methodology. This process enabled the development of a parametric three-dimensional model with detailed deck geometry, which is essential for accurately defining the structural characteristics.

The resulting information model formed the basis for the design of the consolidation and rehabilitation works, aimed at securing the bridge and ensuring compliance with current regulatory requirements.



<b>Location:</b>	Marche, ITALY
<b>Client:</b>	Regione Marche
<b>Year:</b>	2025
<b>Work amount:</b>	€1.2 million
<b>Categories:</b>	S.03, S.04, V.02
<b>Service provided:</b>	Technical and economic feasibility study, executive design

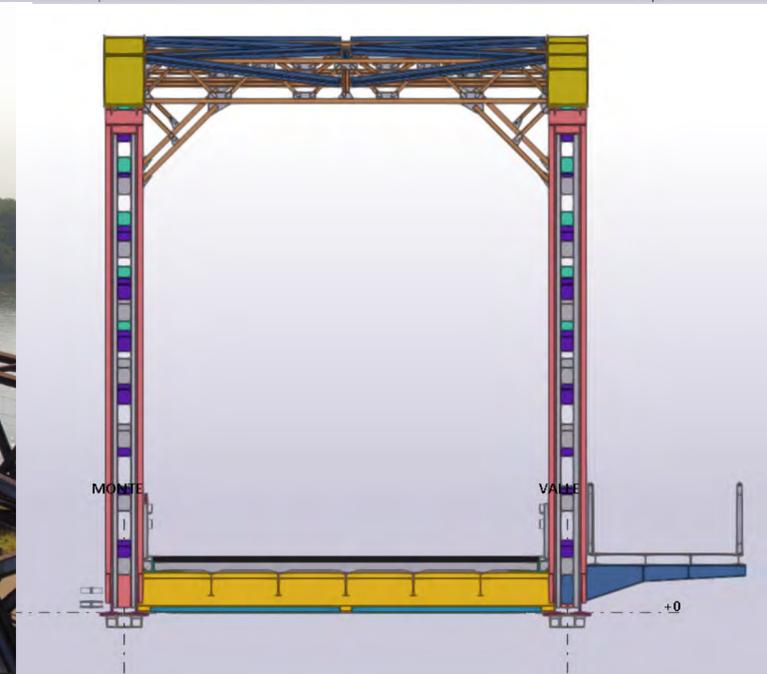
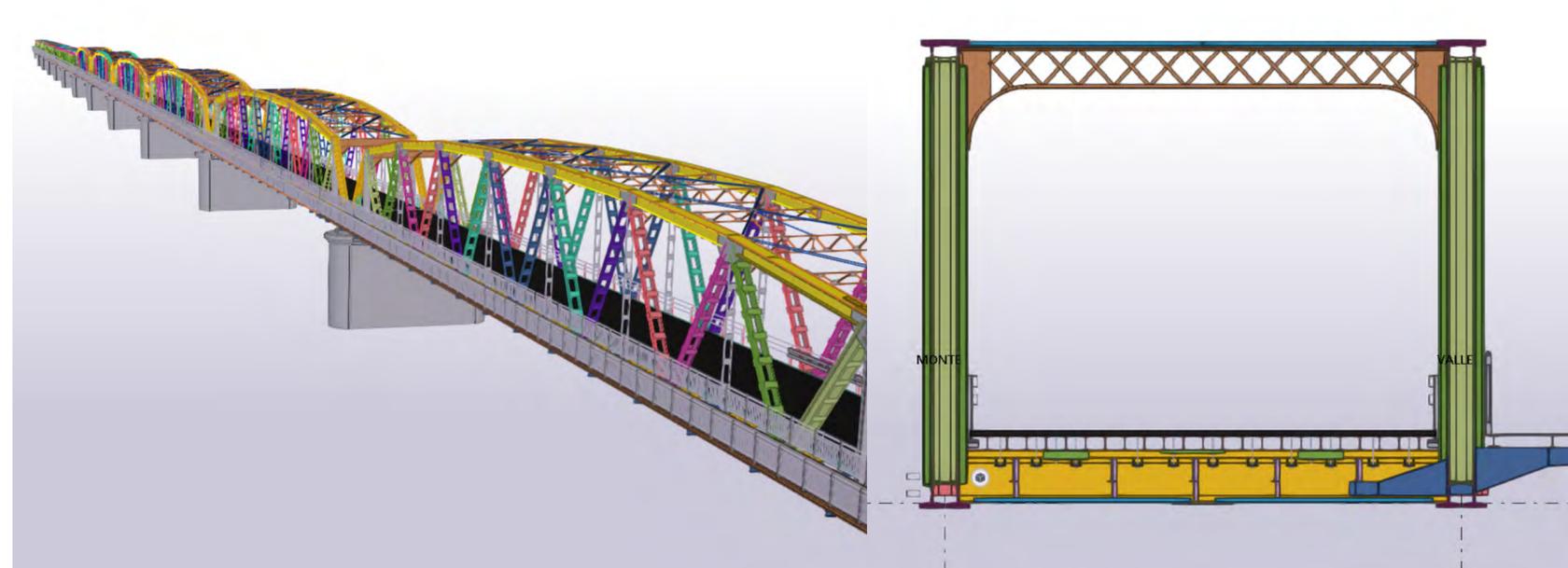
# Po River Bridge - Castelvetro

## Extraordinary maintenance works on the bridge over the Po River in the Municipality of Castelvetro Piacentino

The Iron Bridge over the Po River, located in the Municipality of Castelvetro Piacentino, is a historic infrastructure connecting the provinces of Piacenza and Cremona. Considered one of the longest iron bridges in Europe, it extends for over 960 m, with 12 spans and a width of 7.2 m. Its construction represented a major engineering achievement for its time.

The project was presented in February 1886 by the Civil Engineering Office of Cremona, with the aim of building a dual-purpose viaduct for both road and railway traffic, located approximately 400 m upstream from the former pontoon bridge. The contract was awarded to the Società Nazionale delle Officine di Savigliano (SNOS), and construction works began in April 1887. The bridge originally consisted of a roadway with one lane in each direction, a railway girder, and a pedestrian walkway. During the Second World War, the bridge suffered severe damage as a result of bombing. Reconstruction works began in 1946, involving the removal of debris and the recovery of iron elements, which were remelted at the ILVA plant in Marghera. The new sections were assembled on land and transported into position using floating barges. The nineteenth-century portion of the bridge is still visible on the Castelvetro side, while the section towards Cremona dates back to the post-war reconstruction. Starting from a highly accurate survey campaign carried out using point cloud acquisition, a Scan-to-BIM process was implemented to reproduce the detailed geometry of the entire deck system.

The resulting highly detailed model enabled the structural design of all interventions required for the bridge's rehabilitation and safety upgrades.



<b>Location:</b>	Emilia-Romagna, ITALY
<b>Client:</b>	ANAS S.p.A.
<b>Year:</b>	2025
<b>Work amount:</b>	€7.5 million
<b>Categories:</b>	S.03, S.04, V.02
<b>Service provided:</b>	Executive design and safety coordination during the design phase

# Scagliarini

## Private Residential Building

The service provided concerns the structural design of a residential building for a private client, located in the prestigious area of Cortina d'Ampezzo.

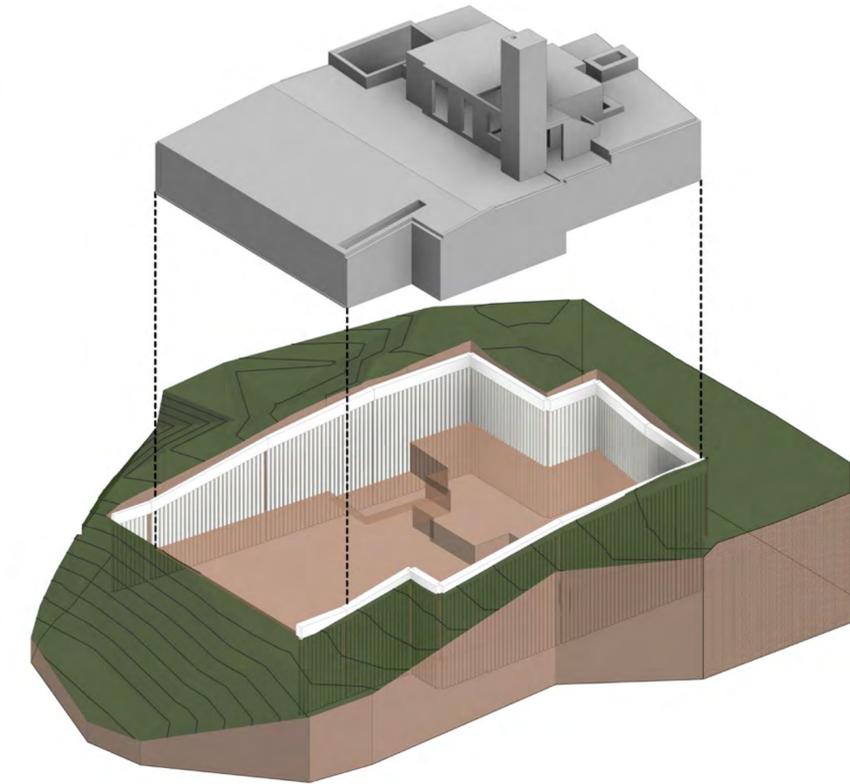
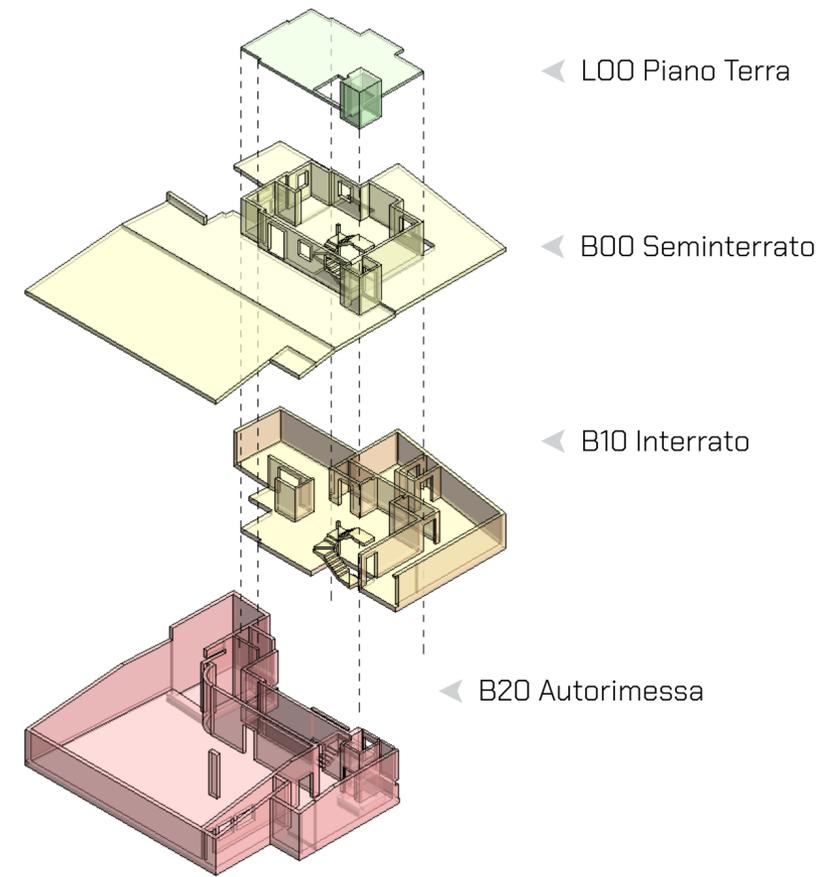
The intervention involved detailed analysis and modelling of both underground and above-ground reinforced concrete structures, as well as special foundations and associated geotechnical works.

Particular attention was devoted to coordination with the reference architectural model and the analytical structural model, ensuring full integration among the different design disciplines.

An advanced BIM model was developed for project management, enabling the accurate production of two- and three-dimensional drawings, as well as quantity take-offs for materials and construction activities required for the cost estimate.

At the end of the design process, a high-quality and highly detailed structural model was delivered, corresponding to LOD 350 and including reinforcement modelling.

This approach enabled the real-time generation of reinforcement schedules and related quantity calculations, dynamically and continuously updated, optimising the entire workflow and ensuring a high level of reliability and control throughout the project.



**Location:** Cortina d'Ampezzo, ITALY  
**Client:** Private Client  
**Year:** 2024  
**Work amount:** €47,000.00  
**Categories:** -  
**Service provided:** Executive design





#### Operational offices

##### Italy

Venice (VE)

Padua (PD)

Cortina d'Ampezzo (BL)

Bolzano (BZ)

Catania (CT)

Rome (RM)

Verona (VR)

##### Abroad

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