

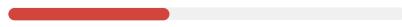
Restyling of Latina Scalo Railway Station Latina, Italy



60% Architecture



40% Engineering



Subcontractor: ETS S.r.l.

Contractor: Micos spa

Contracting Authority:

RFI Rete Ferroviaria Italiana

Works designed:

Restyling of Station Building and existing underpass, new underpass, raising of platforms, new canopies, upgrading of technology systems, outdoor areas, signage

Place of realisation of the works designed:

Rome-Naples Railway Line

Period of provision of the service:

2017-2018

Value of the works designed:

12,500,000

DESCRIPTION OF THE SERVICE PROVIDED

This technical description covers the works undertaken to restyle the Station Building and the outdoor areas and to construct a new pedestrian underpass with canopies and lifts at Latina Station on the Rome - Naples, via Formia railway line.

The project included a series of works as listed below:

- 1) Raising of platform to metropolitan standard (+ H 0.55 from top of rails).
- 2) Construction of a new multipurpose underpass with lifts to connect the station forecourt to the car park on the Sermoneta side.
- 3) Construction of new canopies on the first and second platforms adjoining the new lifts and stairs.
- 4) Construction of a new pedestrian access next to the old Goods Depot.
- 5) Expansion of the pedestrian areas at the front of the Station Building to serve as connecting square and restyling of drop-off zones.
- 6) Upgrading of the station toilets.
- 7) Refurbishment and upgrading of the existing underpass.
- 8) Restoration of the deteriorated brickwork and stonework facade decorations.
- 9) Upgrading of the utility systems
- 10) Design of station signage

The project overall formed part of an RFI programme undertaken to upgrade stations to the latest regulations with regards to accessibility and general safety and amenity standards.

RAISING OF PLATFORMS

The height of the existing platforms was increased to bring them into line with the new metropolitan railway standard, with platform height of +55 cm from top of rails. The platforms were raised in the areas next to the tracks, with no change to the floor heights inside the station building. This required the addition of a new system of steps and ramps to cover this new height difference.



RAISING OF PLATFORMS

The only existing form of connection between the first and second platforms was the station's original underpass, extended to the car park on the Sermoneta side in 2010. The existing underpass was accessed by steps and the conformation of the architectural context did not allow it to be upgraded to current regulations by adding lifts. Due to the need to ensure an unrestricted connection between the main station forecourt (Latina side) and the car park on the Sermoneta side, a new underpass complete with steps, lifts and new canopies was designed. In order to construct it, the problem of the ditch running along the railway area at the edge of the Sermoneta side car park had to be overcome.

NEW CANOPIES AND ACCESSORIES

The new canopies envisaged by the design met the need to roof the new system of steps and lifts leading to the new underpass. Their configuration was aligned with the outsides of the former goods depot, while the language of their architectural design was chosen so as not to conflict with the existing canopies and to ensure harmony between the existing and new structures. The new canopies were supported by a row of central pillars, aligned on the second platform with the line of the existing pillars. The total length of the new canopies was about 35 metres, with height of the intrados 4.38 metres above the platform.

CONSTRUCTION OF A NEW PEDESTRIAN ACCESS

Due to the need for a pedestrian link between the Latina and Sermoneta side car parks independent of the station building, it was necessary to find a new route and a new pedestrian access from the Latina side. It was decided to restyle the side entrance next to the former goods depot, redefining it by building a new travertine and brickwork wall to guide users towards the new walkway, fenced with expanded metal mesh.

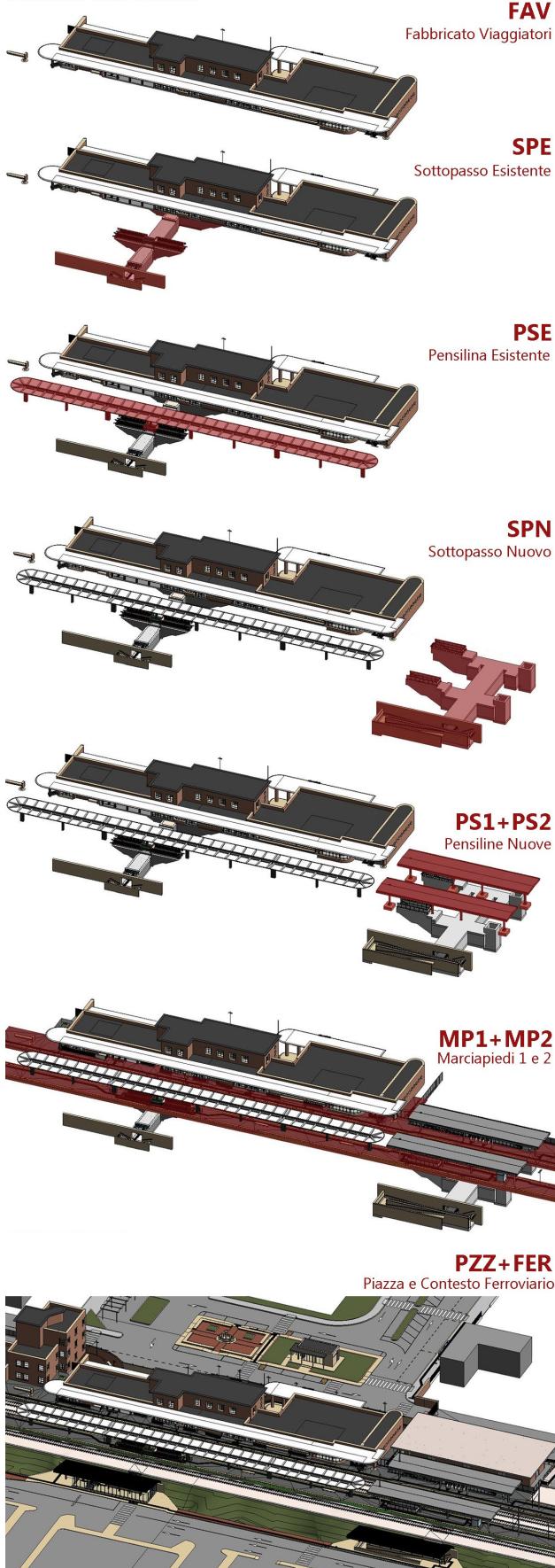
EXPANSION OF THE PEDESTRIAN AREAS AT THE FRONT OF THE STATION BUILDING TO SERVE AS FORECOURT.

In response to the need to remove the obstructions from the area at the front of the Station Building to provide users with a transitional space between the railway and urban areas, it was decided to create a large connecting pedestrian area. The architectural language adopted harmonised with the existing structures through a use of materials that would ensure a sense of continuity with the history of the building: earthenware bricks and anti-slip travertine slabs, with travertine benches and flowerbeds. Other measures were the addition of a drop-off zone, the transfer of the disabled parking spaces to the other side of the station, the elimination of all the short-stay parking spaces which were crowding the front of the station with vehicles, and the transfer of the taxi rank to the other side. Obstacle-free paths and LVE system tactile paving paths were introduced.





Blocchi funzionali



NEW UNDERPASS

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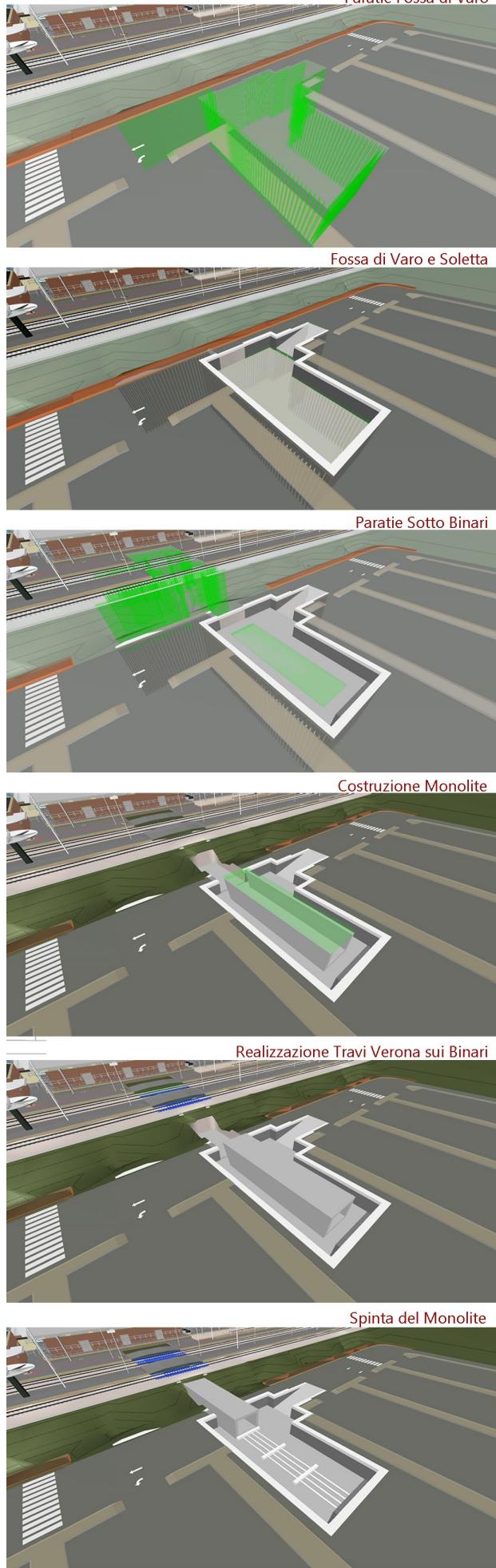
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4D DESIGN



UPGRADING OF THE STATION TOILETS

The station toilets were upgraded to comply with the new regulations regarding access and the elimination of architectural barriers. The changes involved modifications of the internal partitions, but no variations to the external elevations. The new configuration included a disabled block with independent access, a baby-changing module accessible to both men and women, and a small room for the cleaning and maintenance service.

REFURBISHMENT AND UPGRADING OF THE EXISTING UNDERPASS

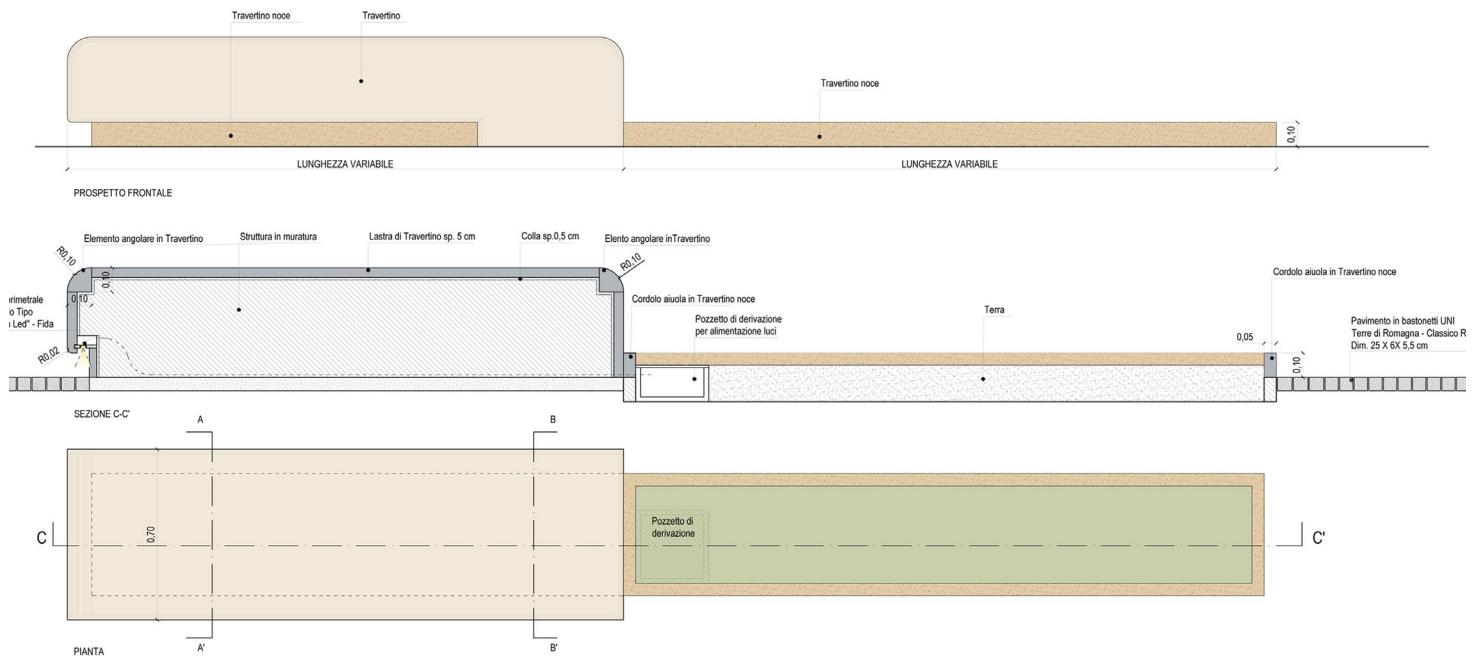
The walls and ceiling of the existing underpass were tiled with powder pink Ligurian ceramic tiles, which had been covered with a layer of white tiles; it was paved with compressed asphalt tiles. The initial design of the underpass had therefore obviously wished to provide a sharp contrast between the light-coloured walls and ceilings and the dark paving. For the refurbishment, it was decided to replace the existing paving with dark grey porcelain stoneware and to restore the pink Ligurian ceramic wall and ceiling tiles. The lighting system would be restyled with LED strip lights enclosed in new casings of suitable design for the context.

UPGRADING OF THE UTILITY SYSTEMS

The project envisaged the modernisation of the lighting systems with conversion to LED lighting and the upgrading of the general public address, CCTV and communication systems, all enclosed in new copper colour aluminium casings to harmonise with the station building colour schemes.

BIM DESIGN

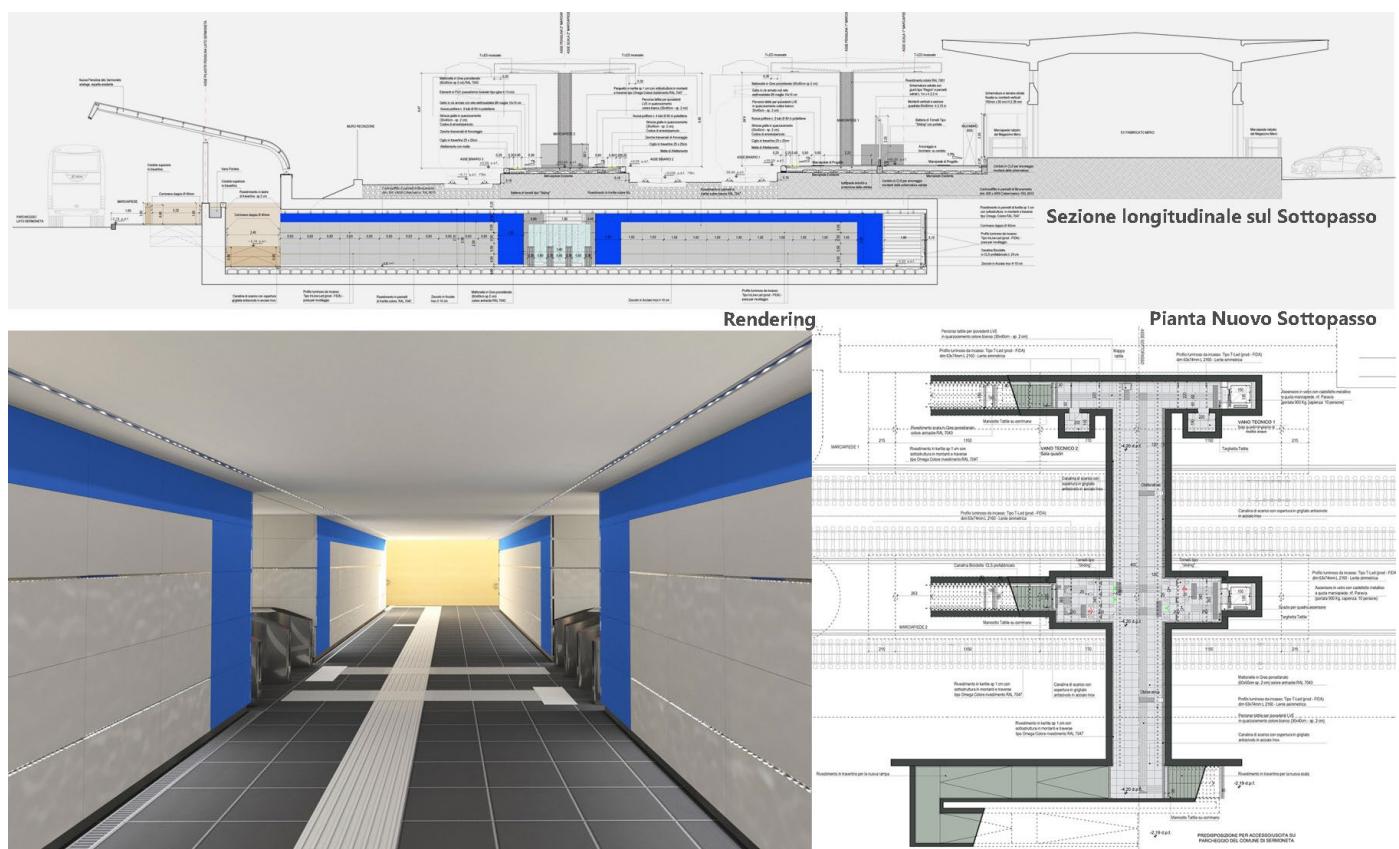
The chosen design strategies were supported by the use of the BIM method, which proved to offer exciting potentials when applied to a project involving an existing building, and above all one of historic and cultural interest. The Territorial Coordination IT model was produced using a design structure subdivided into several models for the two phases considered, the Current Condition (CC) and the Design Condition (DC). The design structure comprised the following functional blocks: Station Building, Forecourt, existing Platforms and Canopies, existing Pedestrian Underpass, new Pedestrian Underpass, New Canopies. The project, digitally designed right from surveying via access of a georeferenced point cloud using 3D Laser Scanner technology, facilitated geometric modelling first of the architecture and then of the structural and system engineering. The first step towards the production of the BIM models was the issue of a strategic document containing the aims, contents and operating workflow, together with the specification of the LOD adopted, 200 for the CC and 350 for the DC. A parametric library containing railway-specific features such as signage, tactile paths or turnstiles was also created. Through interoperability with other software packages, 4D design then became possible, with chronological representation of the execution phases on site, such as the construction of the new underpass, from the excavation of the launch trench to the driving of the monolith into position.



Render 1



3D View



Render of Interiors

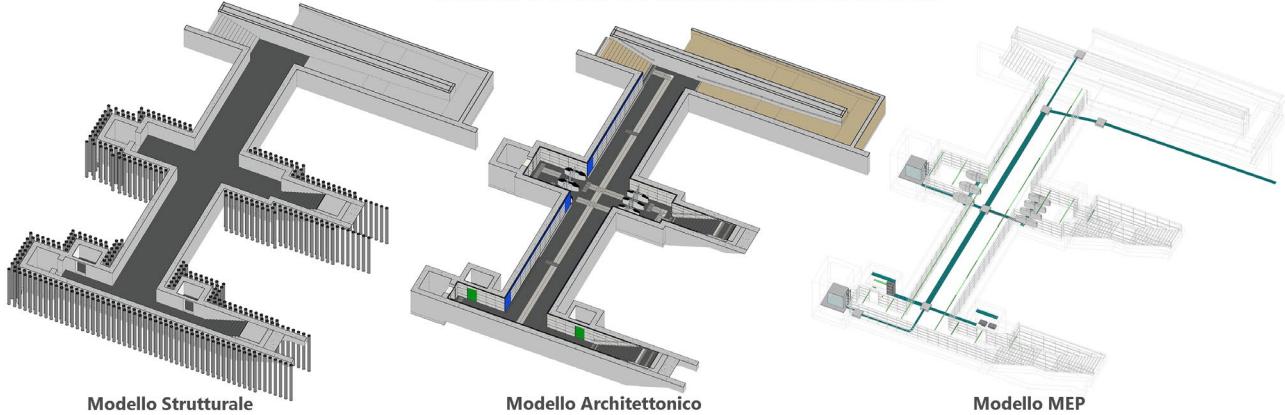


Building 3. Club offices and logistics



Building 3. Club offices and logistics

IL MODELLO DEL NUOVO SOTTOPASSO NELLE 3 DISCIPLINE



Building 3. Club offices and logistics



PROJECT TECHNICAL SPECIFICATIONS

"Restyling of Latina Scalo Railway Station", Latina, Italy

PROJECT DATA:

Contractor: Micos S.p.A.
Contracting Authority: RFI – Rete Ferroviaria Italiana
Place: Latina, Italy
Type of Project: Transport, Retail, Restyling
Award: 2016 Tender
Design: 2017/2018
Status: Completed
Area of Site: 55,000 m² approx.
Buildings: 600 m²

PROJECT MANAGEMENT:

Project Manager: Marco Terracciano
Architectural Design: Marco Terracciano, Francesco Marafini
Design of Structures: Francesco Marafini
System Design: Ornella Squerzante
Electric Traction Design: Domenico Chiaino
BIM Manager: Salvatore Collura
Design Safety Coordinator: Marco Terracciano

PROJECT TEAM:

Arch. Floriana Papa
Ing. Salvatore Collura
Ing. Stefano Sarrecchia
Ing. Luca Terrile



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