ROMA

Metropolitana di Roma - Linea C

HISTORY BUILDS THE FUTURE

ROMA METROPOLITANE

Venezia Station

A station in the heart of Rome

Venezia station is located in the **historic, cultural, tourist and political heart of Rome**, surrounded by unique monuments (the Vittoriano, Palazzo Venezia, the Palazzo delle Assicurazioni Generali, the Chiesa di Santa Maria di Loreto) in an area rich in archaeological finds.

Building a subway station in this area, digging deep while keeping the surrounding treasures intact and maintaining the role of central link to the Piazza, is a unique engineering challenge. At the same time it is an opportunity to reach depths never before explored and enhance the archaeological heritage.

The station is configured as a single work that is integrated with the urban context and the museums, an important junction in the capital's transport system. A new way to bring together culture, innovation and sustainability.

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Project numbers

The station

27
escalators

6
elevators

230 m
of platform doors

The construction

85 m
depth of the perimeter walls

66,000 m³
archaeological excavation

230,000 m
boreholes for consolidations

View of the platform

The new Museum Centre

Venezia station **will develop eight underground levels connected by 27 escalators, 6 lifts and 110-metre platforms**.

There will be three direct accesses to the square serving the three museum areas:

- **system for Palazzo Venezia** via two escalators, a fixed staircase and an elevator;
- **system for the Ateneo di Adriano and the Fori Imperiali**, via two escalators, a fixed staircase and a glass elevator;
- **system for the Vittoriano**, via an escalator and a fixed staircase.

Thanks to its strategic position, Venezia station will also be **a connection hub** between the surrounding museum complexes. Once they reach the first underground level, travellers will be able to directly access the museum areas of Palazzo Venezia, the remains of the Athenaeum of Hadrian, the Archaeological Park of the Imperial Forums and the Vittoriano.

Museum atrium and entrances

Archaeological finds at Piazza Venezia

The archaeological finds

The museum atrium on level -1 was designed in concert with the Superintendency of Archaeology, Fine Arts and Landscape. The aim is to reposition the various archaeological finds found during the excavation so that they are visible to passengers and tourists, while at the same time creating an integrated system with the surrounding museums.

The following will be repositioned along the original route of the Via Flaminia:

- the facade of a building with ***tabernae***, a place where commercial activities were carried out;
- the large rectangular halls that make up Hadrian's ***Auditoria***

These finds will be placed in **display areas and cases** accompanied by **wall inserts** where the story of the archaeological finds will be told.

The goal is to create a place where passengers and tourists can have a unique cultural experience.

Engineering in the service of culture

Innovative techniques were found to be able to dig to a depth of up to 45 metres and safeguard the surrounding monuments and ancient buildings at the same time, creating a benchmark for the realisation of similar works in highly complex and man-made contexts. These included:

- using **top-down archaeology**, a method of archaeological excavation up to 15 metres deep which involves the construction of sloping floors, minimising the impact on the surrounding elements and restoring surface activities while excavations continue;
- use of **sacrificial diaphragms**, used for the first time in Rome and in Italy, which allow excavation work to be carried out in complete safety, preserving the historical and artistic heritage of the city. In practice these are non-reinforced transversal walls, built to counterbalance the thrust of the excavation and stabilise the perimeter;
- the use of **freezing**, a soil sealing and consolidation technique for safe excavation in urban environments;
- the use of **compensation grouting**, which consists of injections of cement under the foundations of the buildings that need to be preserved to stabilise the structures in the excavation area.

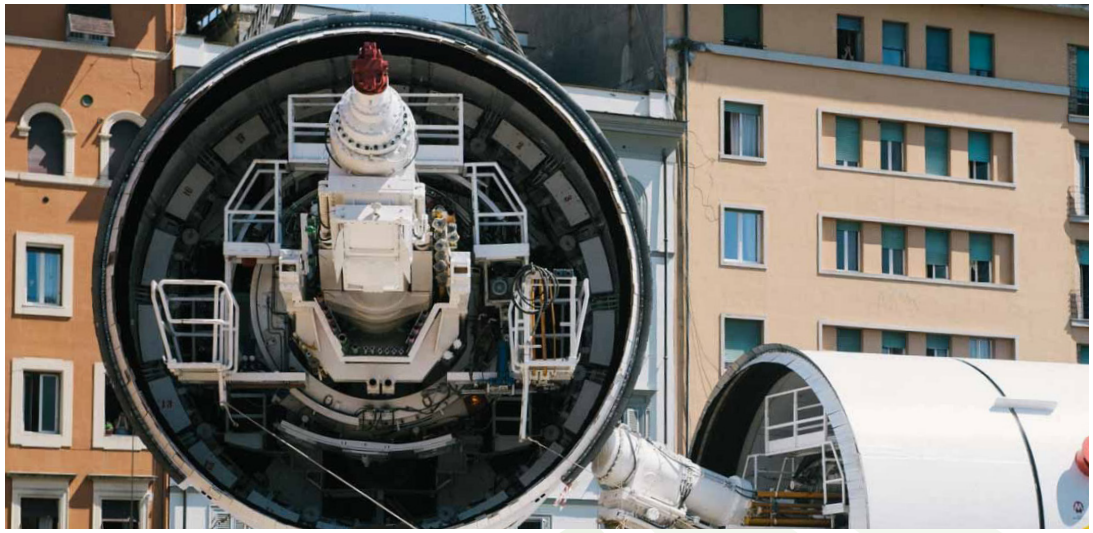
Launch of the TBM - Mechanical mole for excavating tunnels

The underground layout of Line C consists of two circular tunnels of 5.80 meters in diameter, flanked by a single track. The **Venezia station platform tunnel** will be 120 metres long and will have a larger diameter, created with traditional excavation using the freezing technique.

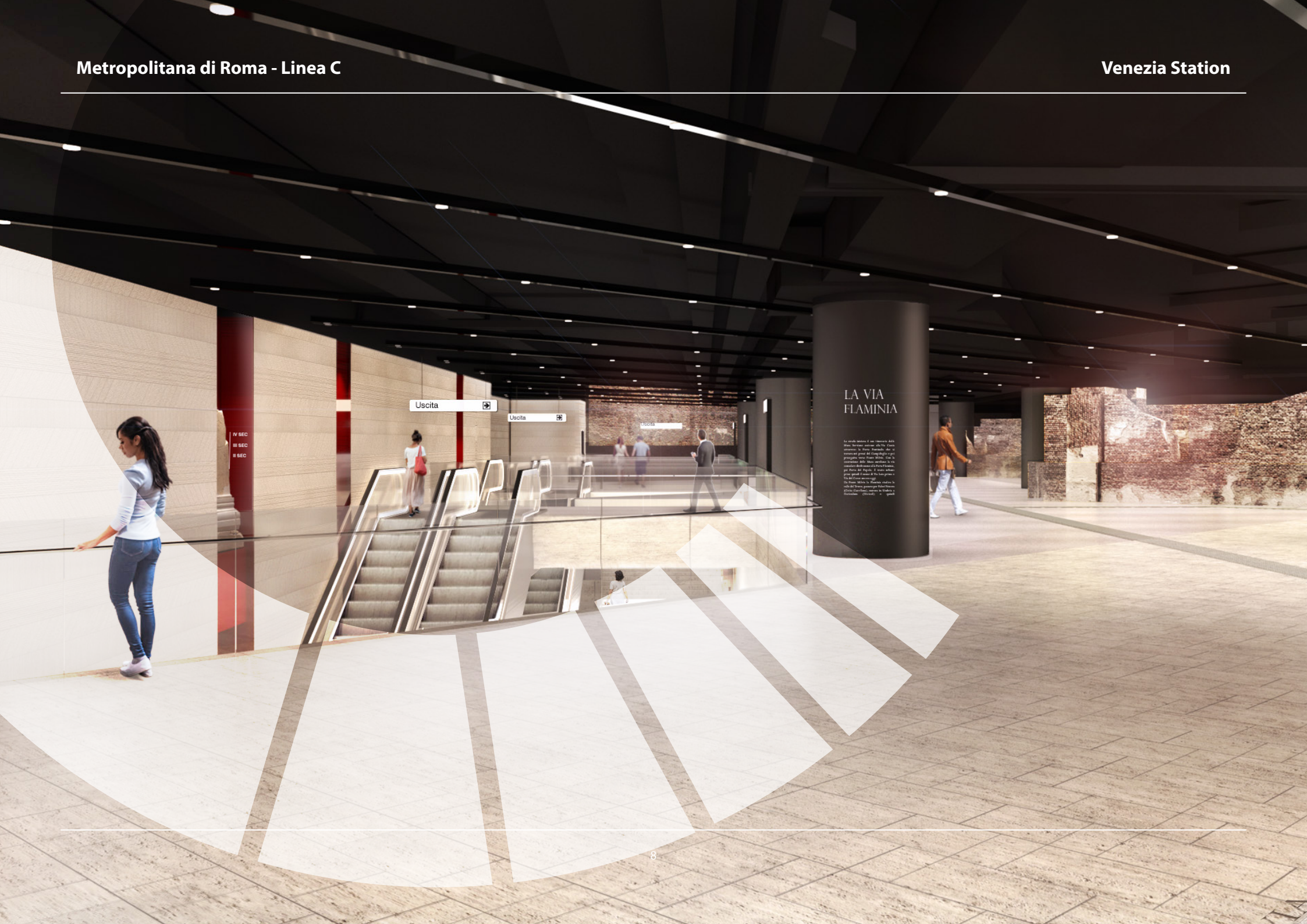
For the construction of the tunnels that connect the Colosseo - Fori Imperiali station to the Venezia station, **2 TBMs (Tunnel Boring Machines)** were used, which support the excavation face and line the tunnel as they advance into the ground. The two mechanical moles, which dug to a depth of about 35 m, completed the excavation of the tunnels in August 2020 and were secured in the centre of Piazza Venezia so that they could then be extracted during the construction of the station.

Adjacent to the Vittoriano, on the side of the Imperial Forums, a **Fire Department access shaft** with a diameter of 12m will be built with an excavation of approximately 38m, which will be connected to the tunnel of the even track via a shaft made with traditional excavation.

Archaeological investigations in Piazza Venezia



The TBM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