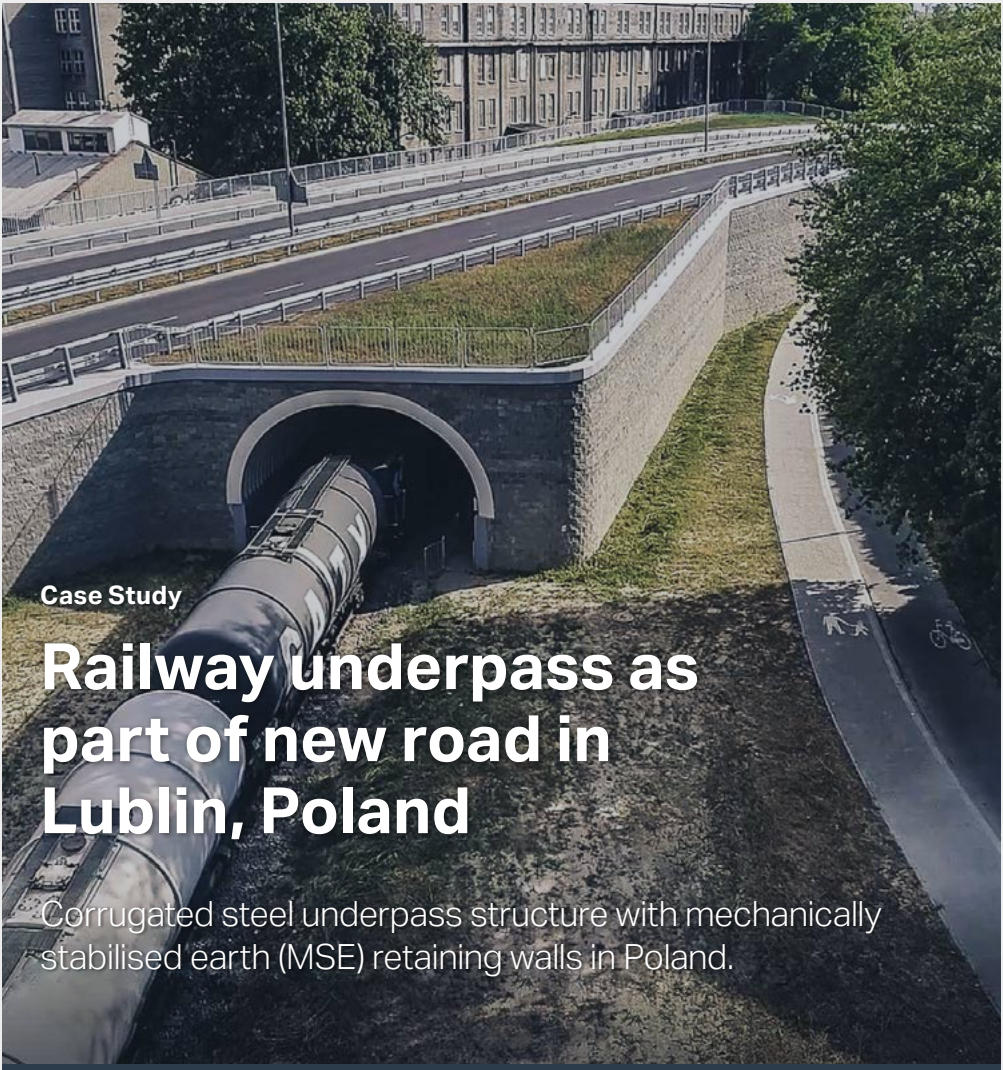

Case Study

Railway underpass as part of new road in Lublin, Poland

Corrugated steel underpass structure with mechanically stabilised earth (MSE) retaining walls in Poland.

The Challenge

Construction of a new section of roadway connecting Kunickiego Street with Wrotkowska Street in Lublin, Poland, including a grade-separated railway crossing, required a railway underpass structure.

To deliver the project within the designated timeframe and budget, the contractor conducted an analysis of available technical solutions, considering various technological alternatives.

The Solution

As part of the overall roadway infrastructure investment, a railway underpass was constructed using a corrugated steel structure, along with mechanically stabilised earth (MSE) retaining walls using the ViaBlock Type 2 system.

The steel structure was directly founded on reinforced concrete footings. Technical walkways were provided on both sides of the track. The steel components were hot-dip galvanized in accordance with PN-EN ISO 1461 and subsequently coated with an epoxy-polyurethane paint system with a total coating thickness of 150 µm. In areas lacking sufficient space for ground reinforcement, reinforced concrete walls were used and clad with concrete blocks to ensure visual consistency. The blocks feature a split-face texture, removing the need for additional surface treatment. They were installed using the dry-stacking method (without mortar), which significantly accelerated assembly.

The ViaCon advantage

ViaCon's ViaBlock retaining wall system technology offered many advantages, including:

- Wall face texture that requires no further painting or finishing, available in multiple colours and shapes
- Ability to construct vertical walls, including concave and convex curves, eliminating the need for block cutting or expansion joints
- Quick and easy installation
- Low construction costs compared to alternatives
- Durability estimated at 100 years minimum

Key technical specification

Corrugated steel structure:

- Span: 7.99 m
- Height: 3.59 m
- Length (bottom/top): 119.57 m
- Plate thickness: 5.5 mm
- Corrugation profile: 381 × 140 mm

Mechanically stabilized earth (MSE) retaining wall:

- Total surface area of both walls: 2,323 m²
- Maximum height: 8.5 m
- Convex wall – minimum radius: 2 m
- Retaining wall blocks made of C30/37 concrete
- Block dimensions: 40 × 20 × 24 cm

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