

Pietro Bologna | Project Manager



Profession

Civil Engineer

Current Position

Associate

Joined Arup

2007

Years of Experience

12

Nationality

Italian

Qualifications

MSt Construction Engineering
(Cambridge, UK)

MSc Civil Engineering
(Politecnico di Torino e Milano,
Italy)

Professional Associations

Chartered Engineer, Member of
the ICE

Register of Ground Engineering
Professionals, Specialist

Ordine degli Ingegneri della
Provincia di Torino (Italian charter
of engineers)

Publications

Devriendt M, Corbo J, Kemp M,
Bologna P, and Bourton S. 'Data
analytics to support monitoring for
underground construction projects'
XVI ECSMGE conference, 2015

Pietro is a driven leader and collaborative team member, bringing 12 years' experience in tunnel, civil and geotechnical engineering through design and construction phases. He has held key technical roles and led civils and tunnel design teams on major railway and underground projects in the UK and overseas, including Crossrail and Crossrail 2, the Northern Line Extension and Tideway. He brings extensive experience of working closely with third parties and stakeholders including London Underground, Network Rail, local councils, Thames Water and National Grid.

Pietro specialises in the design coordination of complex infrastructure urban projects, from scheme to detailed design, and has a track-record of successful collaborations with multiple stakeholders. During the construction of Crossrail Farringdon Station, Pietro led a team of design engineers for two years and supervised the implementation of tunnel and station design on this complex site interfacing with existing operational rail stations. He was responsible for the safe operation of third party assets, including the Thameslink line and LU Circle line, as well as critical utilities and residential buildings, during the excavation of the station boxes and mined tunnels.

Pietro is a keen implementer of new technologies and brought big data techniques in use for the management of ground movement at Crossrail Farringdon Station, resulting in significant savings and risk reduction at a critical site of the Crossrail project.

Pietro brings an in-depth understanding of rail and tunnelling schemes in London. He is detail-focused and delivers robust and innovative design solutions to meet client objectives.

Crossrail 2, London, UK

Pietro is the Project Manager and Design Coordinator for the multidisciplinary design of the tunnels and railway systems for the Crossrail 2 project. In 2017, Arup was appointed by TfL to develop the Crossrail 2 design through the Hybrid Bill phase. Arup has since assisted TfL and the DfT in updating and improving the Schematic Outline Business Case and Safeguarding Directions. Ideas developed by Arup, including the Intermediate Shafts strategy and a transformative redesign of Wimbledon Station, have substantially reduced risks and improved the affordability of the project.

Thames Tideway Tunnel Cat 3 Check, London, UK

Arup, in joint venture with Atkins, won the appointment as independent checker for all of the three Tideway main contractors (£4.2bn capital cost). Pietro headed the Arup Atkins JV team for the independent check of the civil works design. He has led the multidisciplinary team to successfully deliver the project for

25km of tunnels, 15 deep shafts and dozens of complex connections to the existing sewers network and new river walls.

Elizabeth House LU Ventilation, London, UK

Pietro was the Design Coordinator and Geotechnical Design Lead for the reconstruction of London Underground ventilation structures at Waterloo Station, to be moved outside the footprint of the Elizabeth House development. The scheme included the construction of a new concrete box at 10m depth to house ventilation equipment, connecting to the existing station shaft and ventilation system. The box was threaded within a multitude of obstacles including the LU station and tube lines, the Network Rail Waterloo Station and the existing Elizabeth House foundations.

10 Fenchurch Avenue, London, UK

Pietro led the geotechnical design of the permanent works from scheme design to coordination with contractor's temporary works and site support for an office development in the City of London. Pietro developed an optimised basement excavation and piled raft solution which significantly reduced the number of piles required to support the superstructure, and minimised temporary propping. The project won the Ground Engineering 2017 Geotechnical Project of the Year Award (UK project over £3m category, Arup Geotechnics and SRM Design Group).

Northern Line Extension Cat 3 Check, London, UK

As Arup Project Manager and Geotechnical Lead, Pietro was responsible for the independent check of the design of the £1bn construction of the Northern Line Extension. This required multidisciplinary design of two underground stations, two shafts and 2.5km of running tunnels, as well as the interface with existing LU assets.

St Giles Circus Value Engineering, London, UK

As Design Coordinator, Pietro led the review of the construction sequence for the deep basement above the Crossrail tunnel. His innovative proposal for simplification in the temporary works requirements reduced the programme by 5 months and reduced the cost for the construction of the basement by £8m, achieving approval in principle from Crossrail in a matter of weeks.

Crossrail, London (site), UK

Pietro was Lead Design Engineer in the Client's construction team, responsible for all aspects of the design of the TBM tunnels and station interface and the protection of third party assets during the construction of a new £400m underground station at Farringdon, central London. Pietro developed the interface between the running tunnels and station structures, and undertook the impact assessments on third party assets and designed the mitigation measures, including compensation grouting and structural strengthening. He then supervised the monitoring and ground treatment on site during construction of the station, and the integration of the running tunnels and station contractors. He led liaison with third parties including Network Rail, London Underground, local councils and statutory undertakers. Pietro

worked closely and collaboratively with the client as Client's advisor for contract administration and risk management.

Crossrail, London (design), UK

Pietro was the Design Manager for the Arup-Atkins multi-disciplinary team for the 12km running tunnels of Contract C305 and Whitechapel and Farringdon Stations. He was responsible for the assessment of railway assets and buildings, including condition surveys, ground movement calculations, damage calculations, risk assessment and design of intrusive structural mitigation, compensation grouting and monitoring.