

NIKOLIN BRAHO

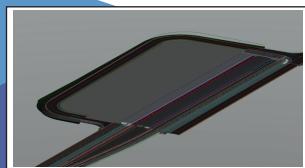
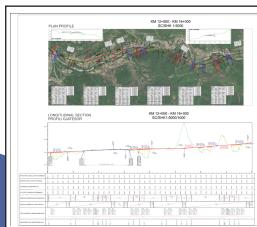
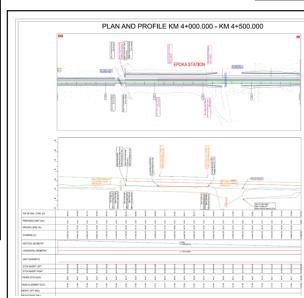
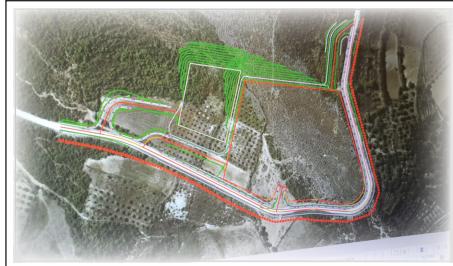
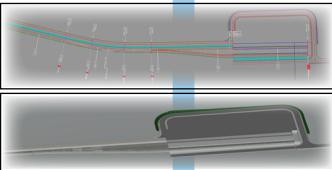
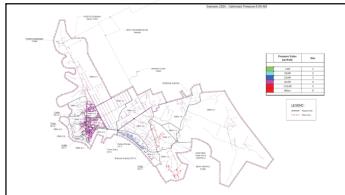
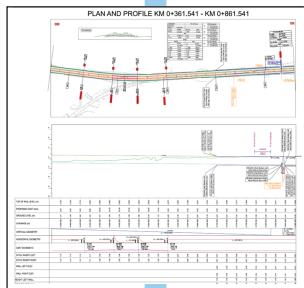
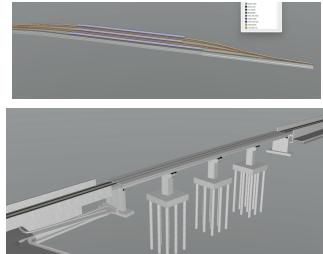
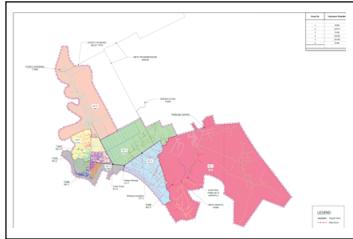
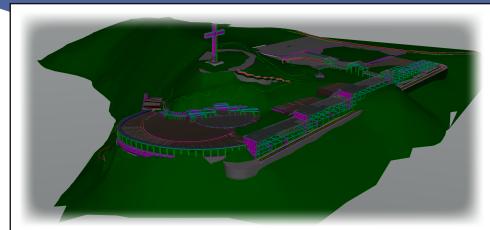
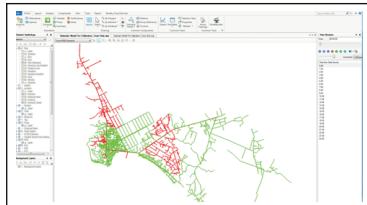
Civil Engineer

✉ nbraho@gmail.com

Infrastructure

Water & Railway Engineering

From Studies to Construction Design



NIKOLIN BRAHO

Civil Engineer – Transport Infrastructure, Railways & Roads

Independent Engineering Consultant

Tirana, Albania

PROFESSIONAL PROFILE

- Civil Engineer with solid experience in transport infrastructure projects, including **railways, roads, and water supply systems**, providing engineering consulting services from feasibility studies to detailed design and tender documentation.
- Experienced in cooperation with international engineering firms on complex infrastructure assignments, with a strong focus on **corridor review, alignment design (horizontal and vertical geometry), Digital Terrain Model (DTM) development, drainage and hydraulic systems**, and constructability-oriented solutions in line with international standards. Demonstrated ability to work independently while integrating effectively within multidisciplinary and international project teams.

CORE EXPERTISE

- Railway alignment design and optimization (horizontal & vertical geometry)
- Road alignment design and rehabilitation (urban & interurban)
- Transport corridor review and technical support
- Digital Terrain Model (DTM) development and data integration
- Drainage and hydraulic design for transport infrastructure
- Water supply systems and hydraulic modelling
- Preparation of technical documentation, BoQs, and specifications
- Design review, verification, and technical support

PROFESSIONAL ENDORSEMENTS

“ Nikolin Braho demonstrated a professional and structured approach during the ongoing project cooperation, providing technical input and support aligned with project requirements. His contribution facilitated smooth collaboration and effective progress of engineering activities.

Friedrich PICHLER

General Manager

ARE – Austria Rail Engineering

“ Mr. Braho contributed effectively to railway corridor review and alignment-related engineering tasks, supporting the development and refinement of technical solutions within an international project team. His work was carried out with consistency, technical clarity, and reliability throughout the cooperation. ”

Istvan BALAZS

Senior Manager

ILF Consulting Engineers

“ During the Jala development project, Mr. Braho provided structured and technically sound engineering input for road infrastructure and site development works. His contribution supported effective coordination between disciplines and the translation of design concepts into practical, constructible solutions throughout the project.

George GIANNAKAS

Project Coordinator

“ Mr. Braho provided technical support within the framework of infrastructure-related engineering services, contributing to coordination activities and the timely development of project tasks. His cooperation was characterized by clarity, responsiveness, and consistency. ”

Ioannis I. DEMAGOS

Technical Director

DROMOS Consulting

“ Mr. Braho worked as Senior Designer on multiple railway projects related to the Tirana–Durrës Railway Line. His responsibilities included alignment retracing, preparation of corridor design documentation, hydraulic design of culverts and channels, and the production of plan, profile, and cross-section drawings for the railway line. He also contributed to station design activities and demonstrated solid technical expertise, effective handling of complex tasks, and reliable coordination within the project team. ”

Andrea REITANO

Technical Director

INC S.p.A.



Railway Projects:

- **Rrogozhinë – Fier – Vlorë** Railway Rehabilitation
- Feasibility study and Preliminary Design of **Durres - Prishtine** Railway
- **Tirana – Durrës** Railway and Airport Connection
- **Tirana Urban** Railway Section (Terminal – City Station)

Water Supply & Hydraulics:

- **Durres** Water Supply Network Optimization
- Hydraulic Verification of Main Pipelines – **Durres**
- Technical Support for **Durres WSIP**

Roads & Civil Infrastructure:

- **Qukës – Qafë Pllocë** Road Corridor
- **Muzak Topia** Road – **Berat**

Buildings & Special Projects:

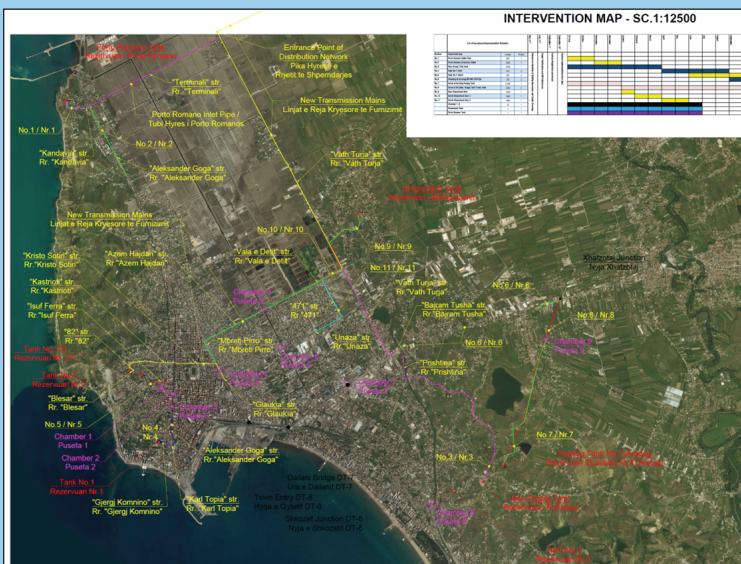
- **Shna Ndou Church** (Kisha e Laçit)
- **Shell Albania** – Drilling Sites Infrastructure
- **Jale Tourist & Residential Complex** (ongoing)

Selected experience only.

Full project list and detailed references are available upon request.

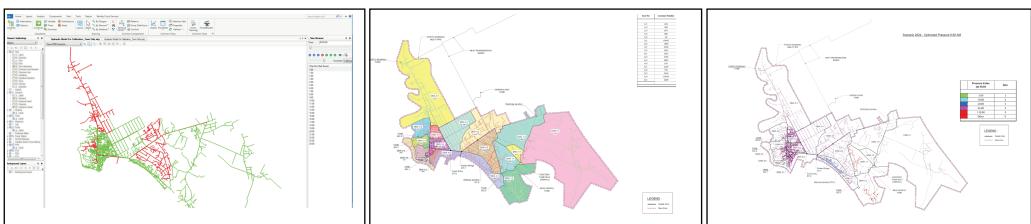
Consulting Services for “Durrës Water Supply Network Optimization”

Provision of hydraulic modelling, network optimization, and design services for the “Durres Water Supply Network Optimization” project



Including:

- Collection, review, and integration of existing data and studies related to the **Durres water supply system**
- Development and updating of the **hydraulic model of the distribution network** using field measurements and operational data
- **Calibration and validation of the hydraulic model** based on measured pressures, flows, and consumption data
- Analysis of system performance and identification of deficiencies related to **pressure, continuity, water quality, and losses**
- Development of a comprehensive **Non-Revenue Water (NRW) reduction strategy** and demand management measures
- Integration of NRW strategy, demand management strategy, and network rehabilitation measures into an **Optimized Action Plan**
- Optimization of intervention scenarios under **budget constraints (up to EUR 8 million)** to maximize service improvements
- **Detailed design of priority investment measures**, including pressure reducing valves, pumping facilities, reservoirs, and network rehabilitation works
- Preparation of **Bills of Quantities, cost estimates, and technical specifications**
- Preparation of **tender and bid packages** for the implementation of the action plan interventions
- Preparation of project deliverables, including:
 - **D-7: Optimized Action Plan Report**
 - **D-8: Detailed Design of Action Plan Interventions**
 - **D-9: Bid Packages for Action Plan Interventions**
- Participation in coordination meetings and close collaboration with the Lead Consultant and Client throughout the assignment



Verification of hydraulic calculation and design for the main pipelines of Durres distribution network

Verification and technical review of the hydraulic calculations and design solutions for the main water transmission and distribution pipelines of the Durrës water supply system



Including:

- **Review and verification of hydraulic calculations** for primary transmission and main distribution pipelines
 - **Re-design and technical optimization** of main water supply lines where required
 - Preparation of **detailed execution drawings**, including plan layouts and longitudinal profiles
 - Design and detailing of **manholes, chambers, and pipeline connections**
 - **Calculation and design of thrust blocks (anchorage blocks)** and any other structural elements required along the pipelines
 - Preparation of **geotechnical and structural calculations** for engineering measures along critical pipeline segments
 - Preparation of **technical specifications** and supporting documentation for construction
 - Coordination with the Contractor during design review and approval stages



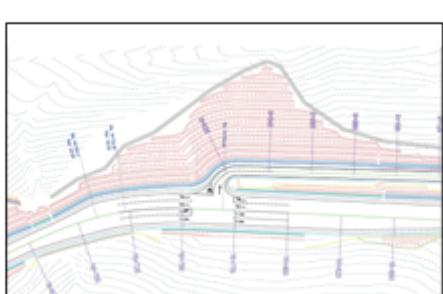
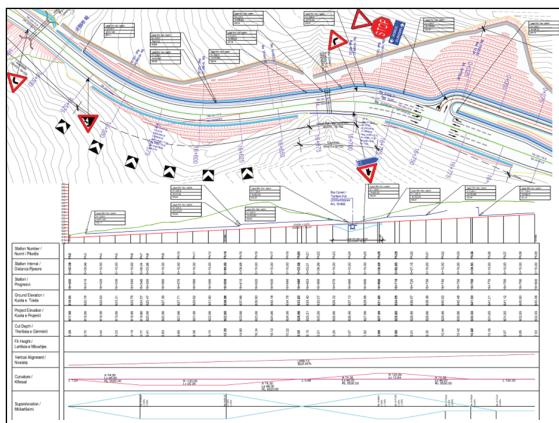
Construction of “Qukës-Qafë Pllocë” -Tirana-Korça Road Corridor

The scope of services includes
the design of an approximately
10 km road section



Comprising:

- The scope of services includes the **design of an approximately 10 km road section**, comprising:
- Development of the **horizontal and vertical alignment**, including geometric design in accordance with applicable design standards and site constraints
- Pavement design**, including traffic assumptions, pavement structure definition, and material specifications
- Hydrological and hydraulic calculations**, including runoff analysis and drainage capacity assessment
- Design of **culverts and cross-drainage structures**, including sizing, hydraulic verification, and structural concept
- Design of **retaining walls and slope protection structures**, including preliminary geotechnical assumptions and stability checks
- Preparation of **detailed plan and longitudinal profile drawings**, including typical cross-sections and construction details
- Coordination with existing and proposed **underground utilities and drainage networks**
- Preparation of **technical specifications**, quantities, and supporting design documentation required for construction



Reconstruction of Road “Muzak Topia” - Berat

Road reconstruction design
for “Muzak Topia” Road in Berat,



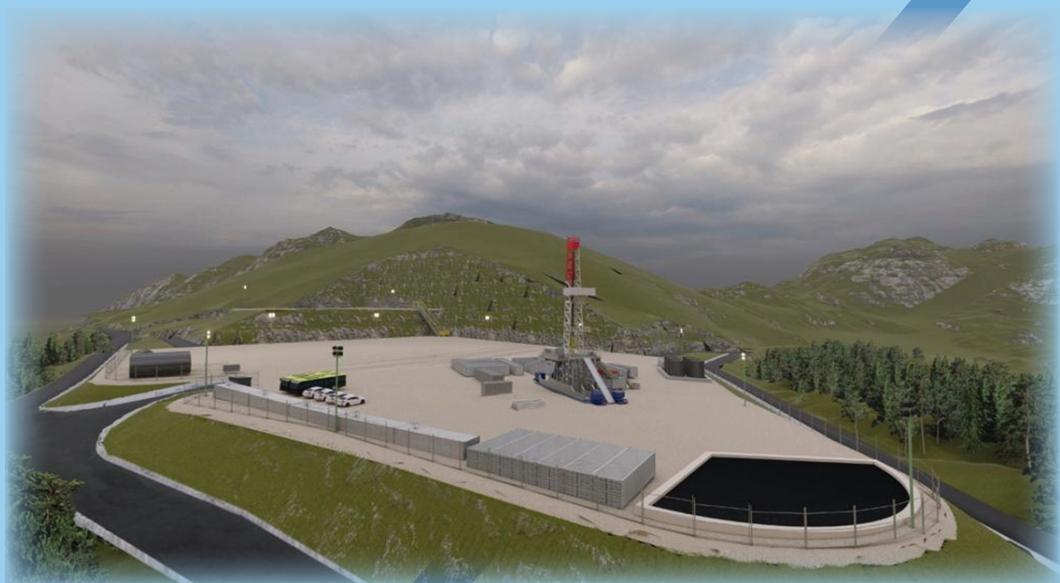
Including:

- Review of the existing road corridor and assessment of geometric and structural deficiencies
- **Optimization of horizontal and vertical alignment** to improve safety, ride quality, and compliance with applicable road design standards
- **Pavement design**, including traffic assessment, pavement structure definition, and material specifications
- **Hydraulic and drainage design**, including surface runoff management, roadside drainage, and cross-drainage systems
- Design of **culverts and cross-drainage structures**, including hydraulic sizing and structural concepts
- Design of **retaining walls and slope stabilization measures**, including earthworks optimization and preliminary stability checks
- Preparation of **plan, longitudinal profile, and cross-section drawings**, including typical sections and construction details
- Preparation of **technical specifications and supporting design documentation** required for tendering and construction



Preparation of detailed design and permit package for drilling sites of Molisht & Shpirag (Shell Albania)

Provision of engineering design and consultancy services for drilling site infrastructure



Including:

- **Identification and assessment of raw water sources**, including availability, sustainability, and suitability for operational and fire-fighting needs
- **Estimation of water demand** for drilling operations, auxiliary facilities, domestic use, and fire protection
- **Hydraulic design of raw water supply systems**, including abstraction works, transmission mains, and operational schemes
- Design of **transmission pipelines**, including hydraulic calculations, pipe sizing, alignment, and profiling
- Design of **break pressure tanks (BPTs)**, storage facilities, and associated appurtenances
- Design of **pumping stations**, including pump selection, duty/standby configuration, control philosophy, and pressure regulation
- **Fire protection system design**, including fire water storage, pumping arrangements, and distribution networks
- **Design of access roads**, including geometric layout, pavement structure, earthworks, and drainage
- **Supervision support for water supply works**, including technical assistance during construction and implementation
- Design of **PAD areas**, including site grading, hardstanding, internal circulation, and operational layouts
- **Design of raw oil pipelines** from drilling wells to the main storage and processing facilities, including routing, hydraulic considerations, and protection measures
- **Stormwater drainage design**, including surface runoff management, channels, culverts, and erosion control
- Consideration of **environmental impacts**, including mitigation measures related to water abstraction, drainage, and site development
- Preparation of **detailed drawings**, technical specifications, bills of quantities, and **full tender cumentation** required for procurement and construction



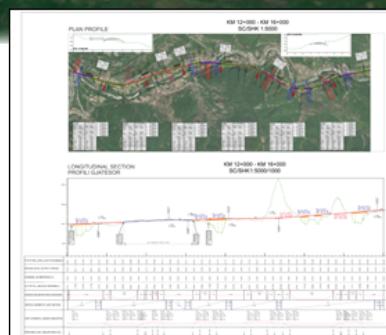
Feasibility Study and Concept Design for the Durres-Prishtina Railway Connection

Albania–Kosovo Railway (Durrës–Prishtina)
Feasibility Study & Concept Design



Including:

- Led technical input for the feasibility study and concept design of a new cross-border railway corridor connecting Durrës and Prishtina
- Reviewed corridor constraints and developed technically feasible route and alignment options
- Defined and assessed horizontal and vertical alignment concepts, including major structures and interfaces
- Contributed to multi-criteria evaluation of alternatives, integrating technical, operational, environmental, and economic considerations
- Supported decision-making through comparison of alignment options, constructability aspects, and cost implications
- Ensured technical consistency with EU interoperability requirements, TEN-T guidelines, and international railway engineering standards



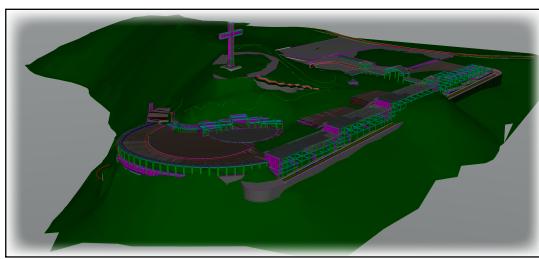
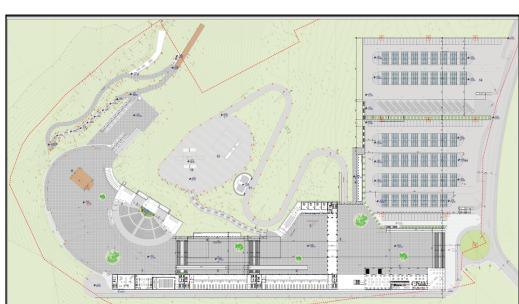
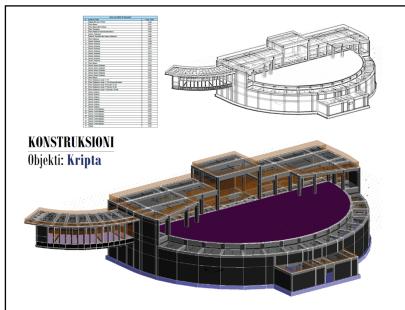
Design of Shna Ndou Church (Kisha e Laçit)

Expanded Scope of Services
The scope of services



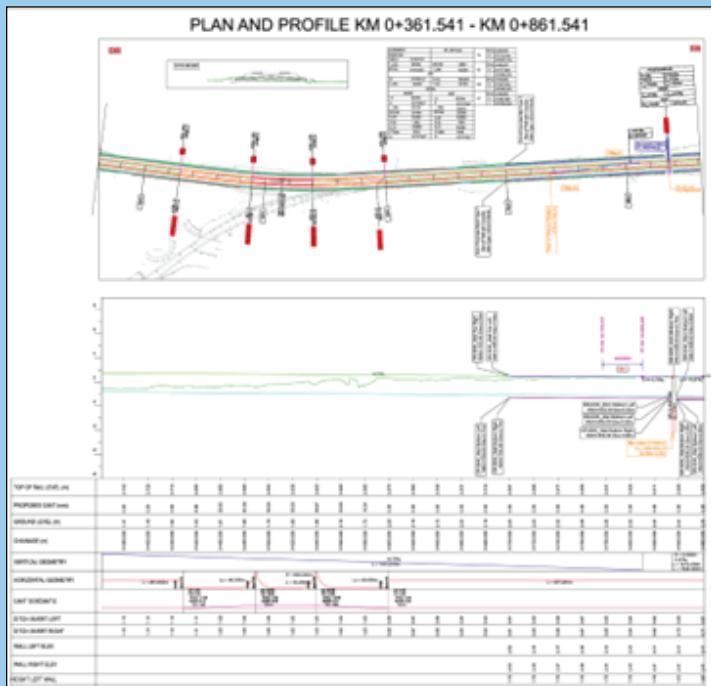
Includes:

- **Structural design of the church complex**, including the main building and associated ancillary structures, developed in accordance with applicable structural codes and design standards
- **Design of internal roads, parking areas, and site grading**, including geometric layout, pavement structure, and earthworks optimization
- **Hydraulic design of water supply, stormwater drainage, and sewerage networks**, including demand estimation, hydraulic calculations, network sizing, and system layout
- Design of **stormwater management measures**, including surface drainage and discharge solutions
- **Coordination between structural, civil, and hydraulic disciplines** to ensure an integrated and constructible design
- **Preparation of design drawings**, technical specifications, and **tender documentation**, including bills of quantities and all supporting materials required for procurement and construction



Detailed Design of Tirana - Durrës Railway Line

Expanded Scope
of Services – Railway Engineering
The scope of services



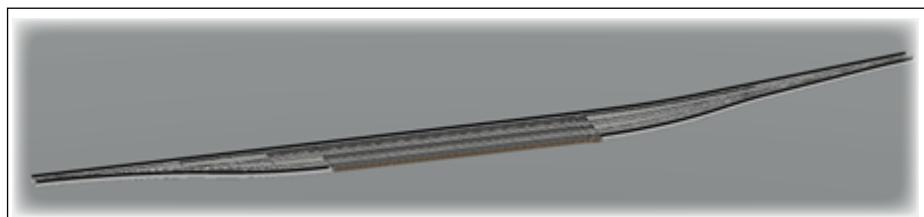
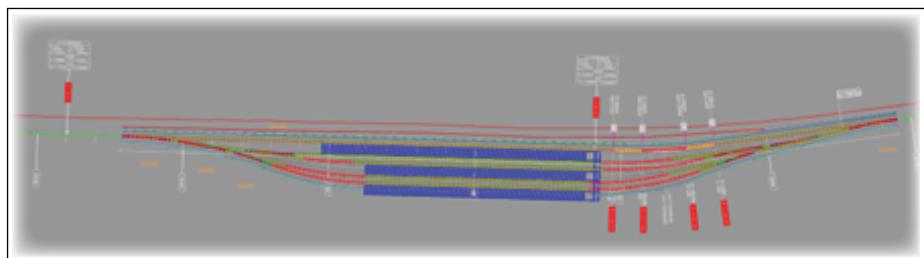
Includes:

- **Railway alignment design**, including horizontal and vertical alignment in accordance with applicable railway design standards and operational requirements
- **Hydraulic design of culverts and drainage channels**, including hydrological analysis, sizing, and verification of hydraulic capacity
- Preparation of **plan, longitudinal profile, and cross-section drawings**, including typical sections and construction details
- **Preparation of tender documentation**, including technical specifications, bills of quantities, and supporting drawings



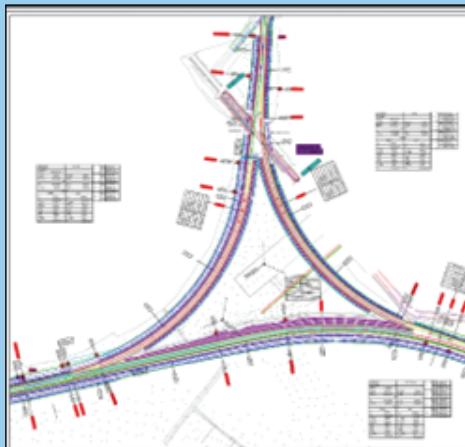
In addition, the scope includes:

- **Preliminary and detailed design of the railway connection to Tirana International Airport**, including alignment studies, longitudinal and transversal profiles, and associated drainage systems
- Coordination of railway geometry, drainage, and civil works to ensure constructability and compliance with applicable standards



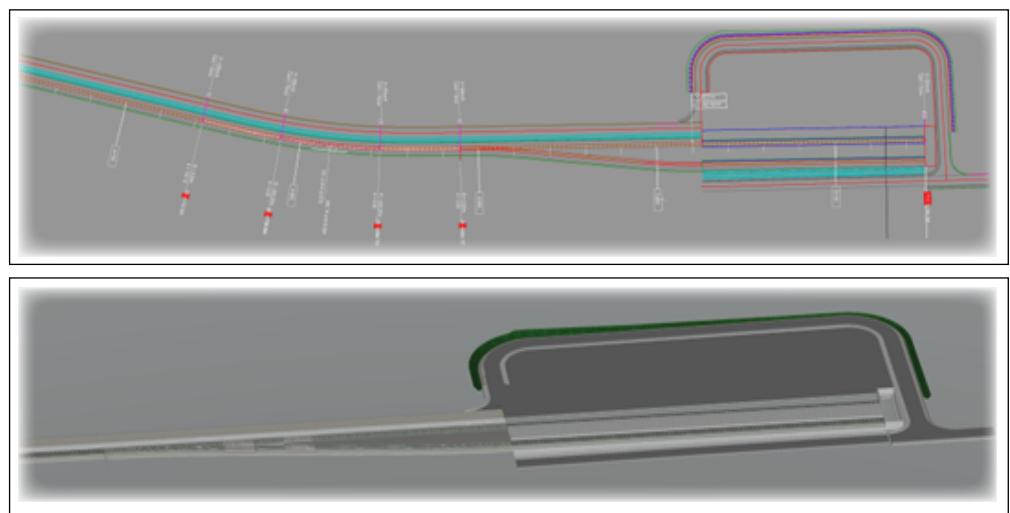
Tirana–Durres Railway – Tirana Airport Connection

Preliminary and detailed design of the railway connection between the Tirana–Durrës Railway and Tirana International Airport



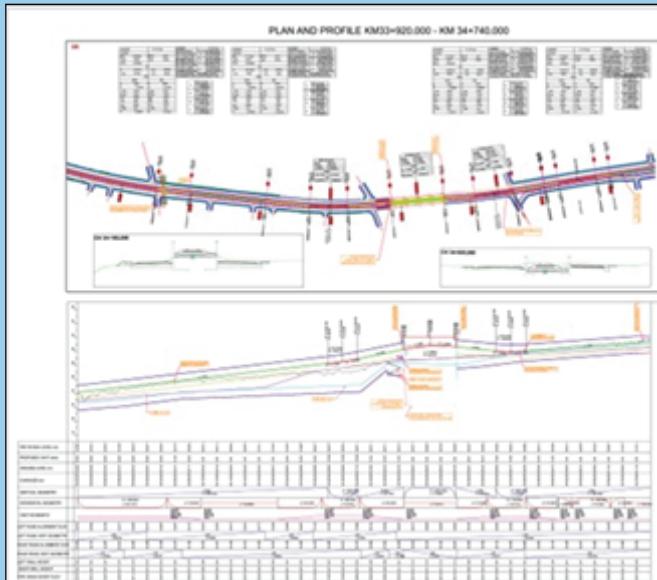
Including:

- Development of **horizontal and vertical railway alignment**, in compliance with applicable railway standards and operational requirements
 - Preparation of **longitudinal profiles and cross-sections**, including typical sections and clearance checks
 - **Drainage and hydraulic design**, including surface water management, culverts, and drainage channels along the railway corridor
 - Coordination with existing railway infrastructure, road crossings, utilities, and airport-related constraints
 - Preparation of **preliminary design documentation** and **detailed design for execution**, suitable for permitting, tendering, and construction
 - Production of **technical drawings**, specifications, and supporting design documentation
 - Contribution to **tender documentation**, including technical specifications and quantities related to the railway and drainage works



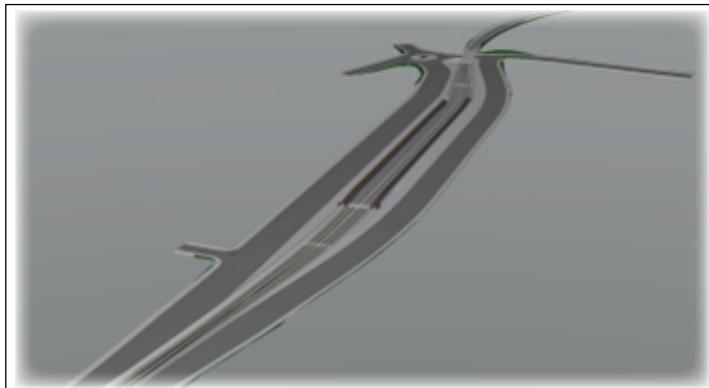
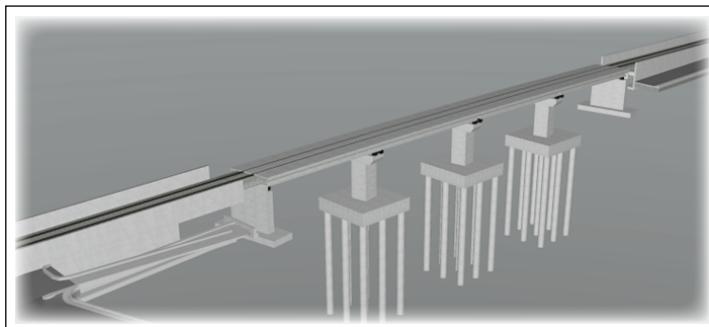
Railway Section: Tirana Terminal Station - Tirana City Station

Design of the urban railway section between
Tirana Terminal Station and Tirana City Station
(approximately 5 km)



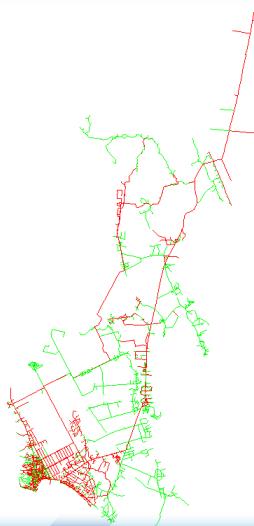
Including:

- Review and optimization of the existing **urban railway corridor** under dense city constraints
- Development of **horizontal and vertical railway alignment**, compliant with operational and safety requirements
- Design of **station areas**, including track layout, platforms, and integration with the surrounding urban fabric
- **Hydraulic and drainage design**, including surface water management, culverts, and urban drainage connections
- Coordination with existing **roads, utilities, structures, and buildings** along the corridor
- Preparation of **plan, longitudinal profile, and cross-section drawings**, including typical sections and construction details
- Preparation of **technical specifications, bills of quantities, and the full tender documentation package** required for procurement and construction



Short-term Technical Support/Design Review (Infrastructure)

Provision of hydraulic modelling and water supply design services for the Durrës Water Supply and Sanitation Improvement Project



Including:

- Provision and use of all available data from previous **water network modelling and zoning studies** (LOTTI, 2018 – World Bank financed)
- **Assessment and establishment of actual water demand** for the updated hydraulic model
- **Preparation, update, and setup of the hydraulic model** for the water distribution network of **Durrës city and surrounding villages**
- Hydraulic modelling of **bulk water supply systems**, including **Fushë Kuqe, Fushë Milot, and Fushë Kruja** transmission systems
- Use of **WaterGEMS software** for hydraulic modelling, analysis, and scenario development
- Technical support to the Project Manager / Team Leader during model development and validation
- Participation in project-related field activities and coordination meetings as required

Rrogoszhinë - Fier - Vlorë Railway Rehabilitation and Upgrade (ONGOING)

Corridor review and engineering support
for the rehabilitation and upgrade of the
Rrogoszhinë – Fier – Vlorë railway line



Including:

- Review of the existing railway corridor and infrastructure
- Development and refinement of the **Digital Terrain Model (DTM)** based on survey data, ASIG datasets, and orthophotos
- **Retracing, adjustment, and optimization of the existing horizontal and vertical alignment**, including alignment improvement options
- Development of **railway alignment options**, including connection options to **Vlora Airport**, and contribution to multi-criteria alignment selection
- Preparation of **horizontal and vertical alignment drawings**, overview layouts, and typical cross-sections
- Assistance in the assessment and design development of **major and minor structures**, including bridges, culverts, stations, and level crossings
- **Hydraulic and drainage considerations** integrated within the corridor and alignment design
- Preparation of **preliminary and final idea design documentation**, drawings, and reports
- Preparation of **Bills of Quantities and cost estimates** for railway-related disciplines
- Ensuring compliance with **TSI requirements**, Albanian railway standards, and applicable technical regulations



Tourist, residential and services complex Phase I, II, III, IV with frontage in Jale, Himara Municipality"

The scope includes the preparation of road infrastructure designs and related technical documentation, developed in two distinct



Scope and responsibilities-Jala Project:

- The assignment included **technical responsibility and coordination** for infrastructure works across **Nucleus 1, Nucleus 2, Nucleus 3, and Nucleus 4**, as well as additional lots in accordance with the approved Masterplan.
- Key responsibilities comprised:
- Verification and coordination of **topographic and survey data**, including **survey checks and consistency control**
- Preparation and management of the **Digital Terrain Model (DTM)** and **georeferencing of buildings, roads, and infrastructure elements**
- **Design and coordination of road and infrastructure works**, including geometric layout and grading
- **Design of water supply, stormwater drainage, and sewerage networks** for all nuclei
- Preparation of **excavation and earthworks plans** for buildings and infrastructure structures
- Definition of **infrastructure construction details** and interfaces with architectural and structural elements
- **Technical coordination and guidance of the construction team** for infrastructure-related works, ensuring design intent and constructability on site

