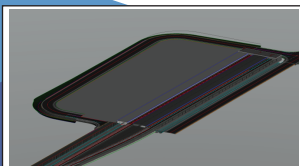
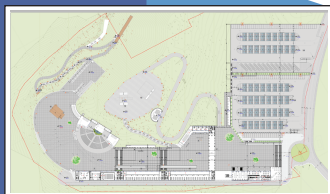
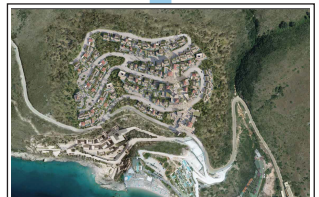
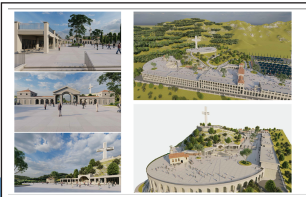
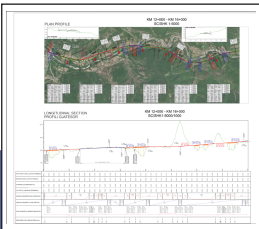
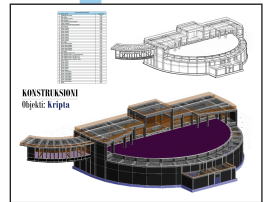
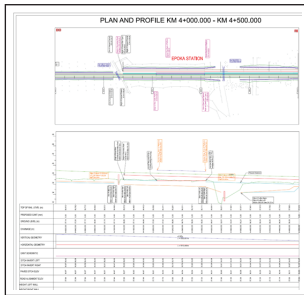
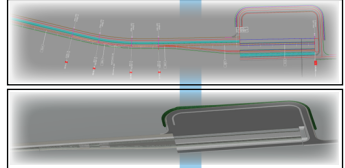
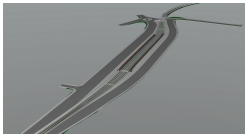
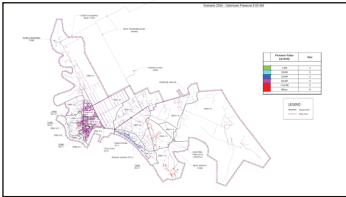
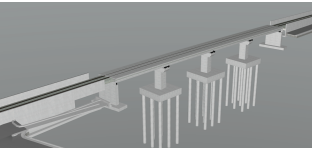
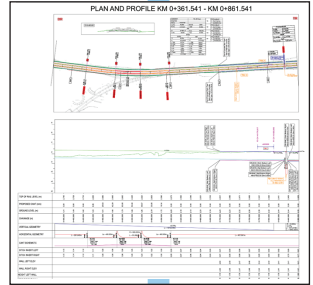
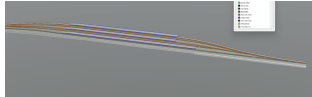
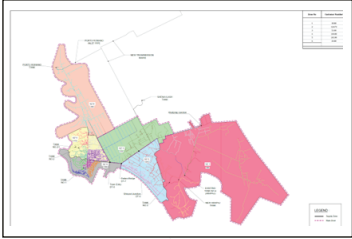
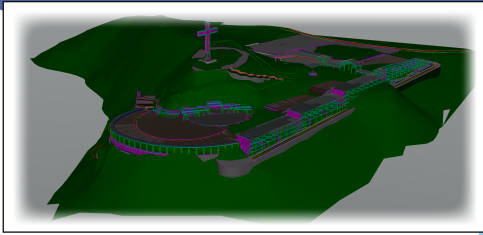
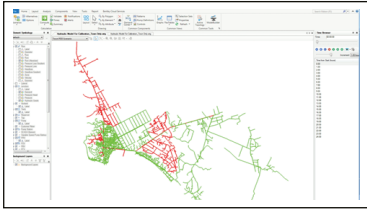


# Infrastructure

## Water & Railway Engineering

*From Studies to Construction Design*



# Who We Are

**NB Engineering Consulting** is an independent engineering consultancy providing specialized services in transport infrastructure, railway engineering, water supply systems, and civil works.

The company supports international and local clients through all project stages, from feasibility and hydraulic modelling to detailed design, tender documentation, and technical reviews, with a strong focus on constructability and compliance with international standards.

# What We Do

## ***Roads & Transport Infrastructure***

- Geometric design (horizontal and vertical alignment)
- Pavement design
- Drainage and cross-drainage systems
- Retaining walls and slope protection
- Tender drawings and Bills of Quantities

## ***Railway Engineering***

- Railway alignment design and optimization
- Urban and interurban railway sections
- Stations and platform areas
- Drainage systems and culverts
- Digital Terrain Model (DTM) development
- Tender and implementation design documentation

## ***Water Supply & Hydraulic Systems***

- Hydraulic modelling (WaterGEMS)
- Non-Revenue Water (NRW) analysis and strategies
- Transmission and distribution pipelines
- Pumping stations, reservoirs, break pressure tanks
- Fire protection systems
- Technical reports and tender documentation

## ***Buildings & Site Infrastructure***

- Structural design of buildings
- Internal roads and parking areas
- Water supply, sewerage and stormwater networks
- Integrated civil–structural coordination
- Construction drawings and technical specifications

## ***Typical Outputs***

- Technical reports and design notes
- Hydraulic models and calculation files
- Detailed design drawings (plans, profiles, sections)
- Bills of Quantities and cost estimates
- Tender and bid documentation
- Design review and verification reports





### ***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 Plllocë** Road Corridor
- **Muzak Topia** Road – **Berat**

### ***Buildings & Special Projects:***

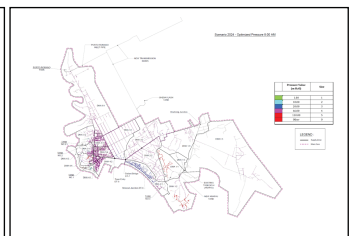
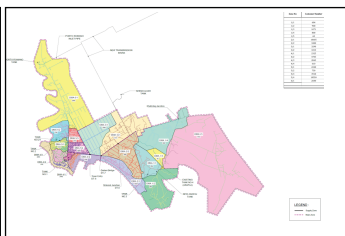
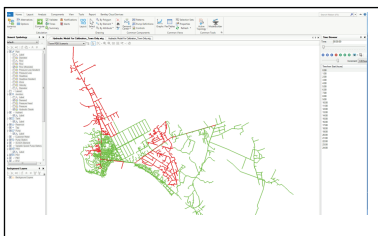
- **Shna Ndou Church** (Kisha e Laçit)
- **Shell Albania** – Drilling Sites Infrastructure
- **Jale Tourist & Residential Complex** (ongoing)

***Selected experience only.  
Full project list and detailed  
references are available upon request.***



## 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



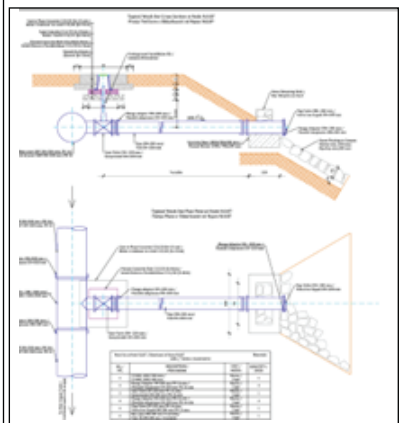
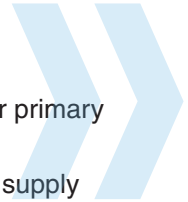
# Verification of hydraulic calculation and design for the main pipelines of Durres distribution network

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 Pillocë” -Tirana-Korça Road Corridor

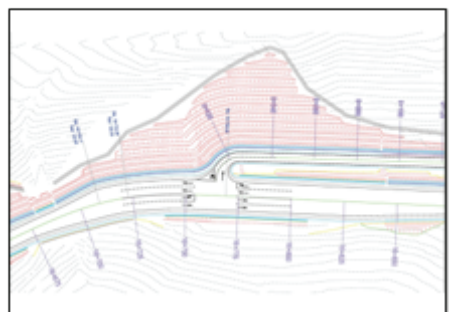
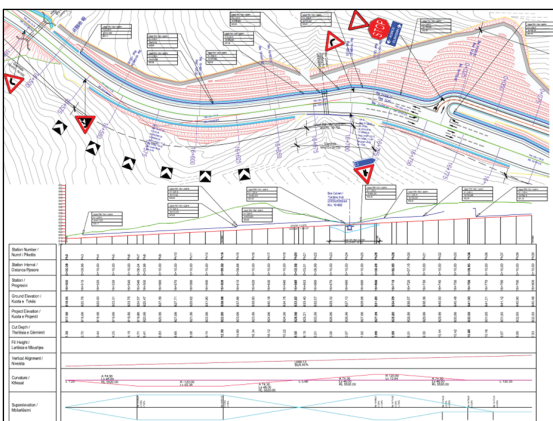
The scope of services includes  
the design of an approximately  
10 km road section



# 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,



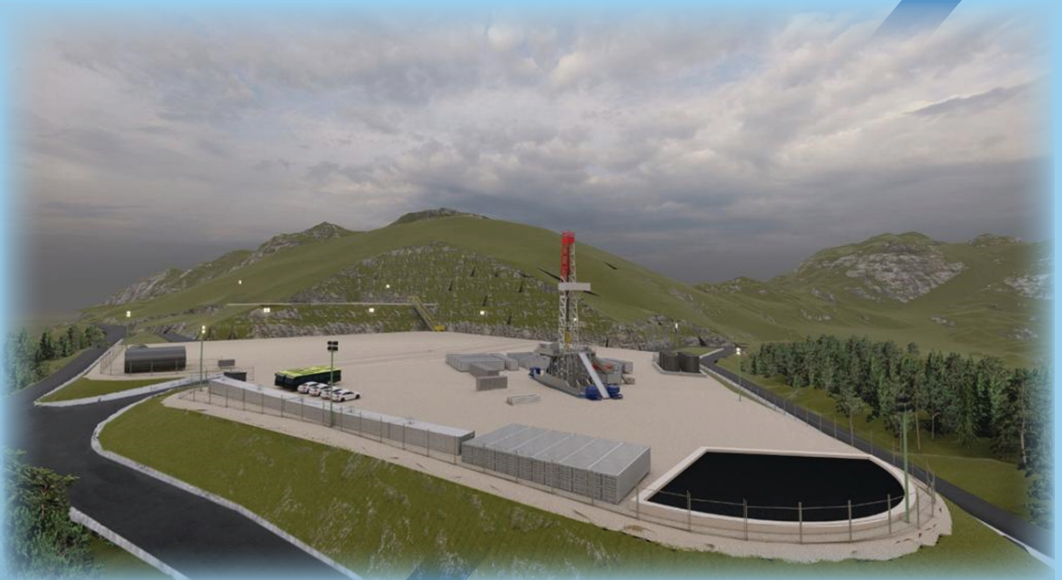
## Including:

- 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



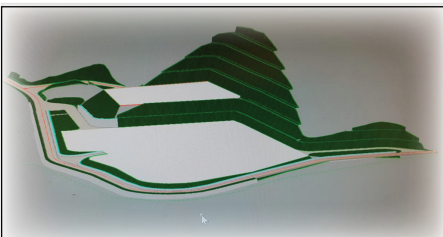
# Preparation of detailed design and permit package for drilling sites of Molisht & Shpirag (Shell Albania)

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



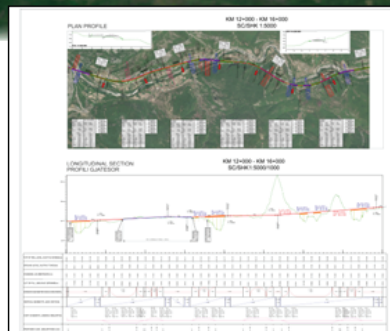
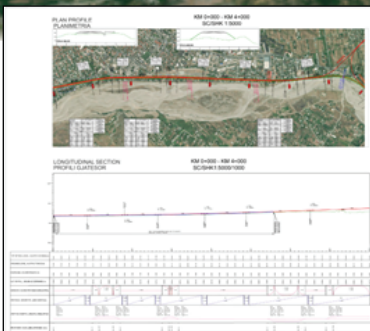
# Feasibility Study and Concept Design for the Durrës-Prishtina Railway Connection

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



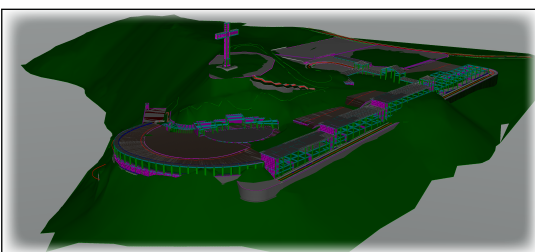
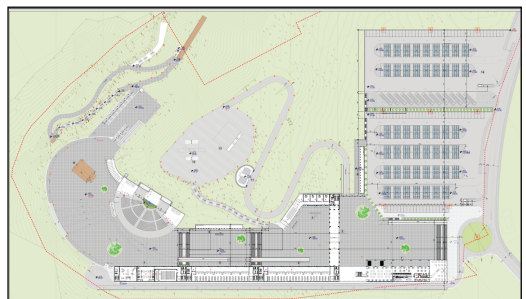
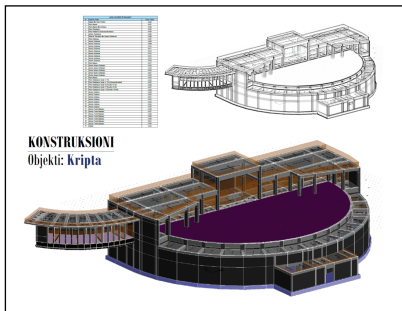
# Design of Shna Ndou Church (Kisha e Laçit)

Expanded Scope of Services  
The scope of services



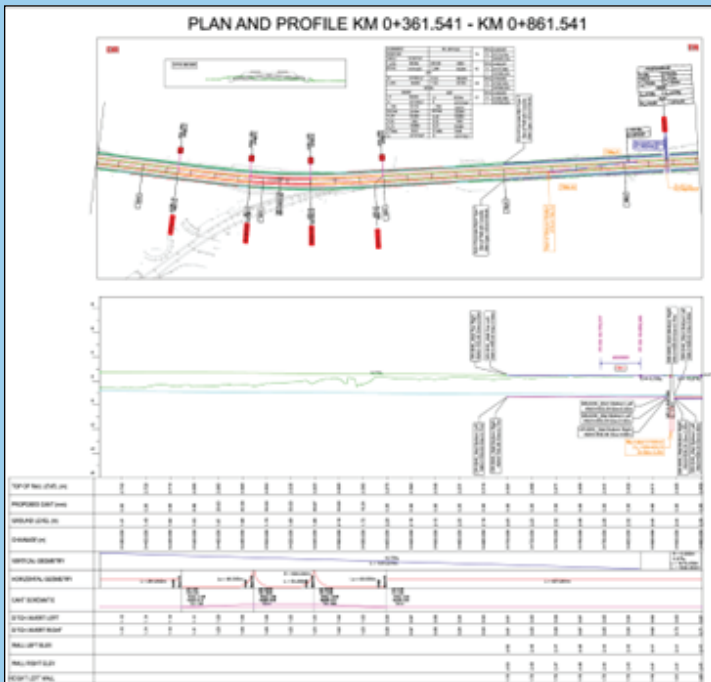
## Includes:

- **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

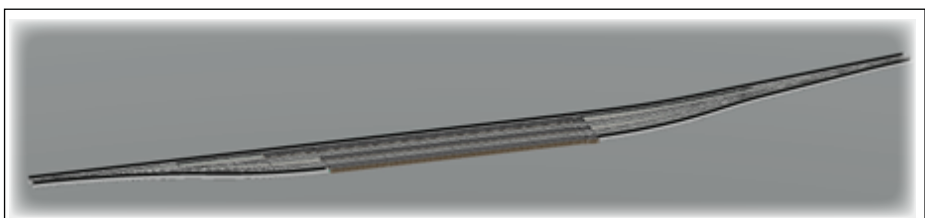
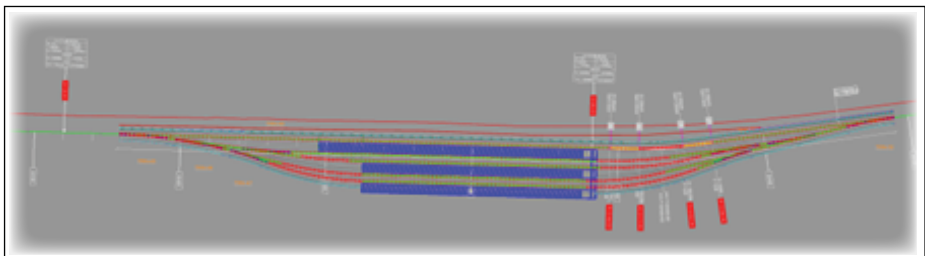


## Includes:

- **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

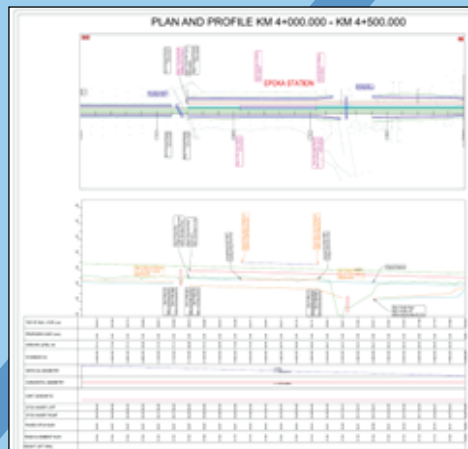
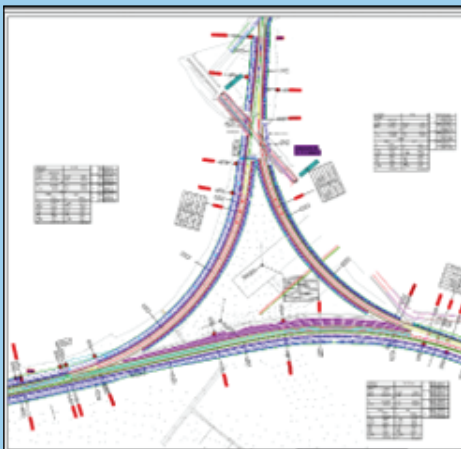
In addition, the scope includes:

- **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



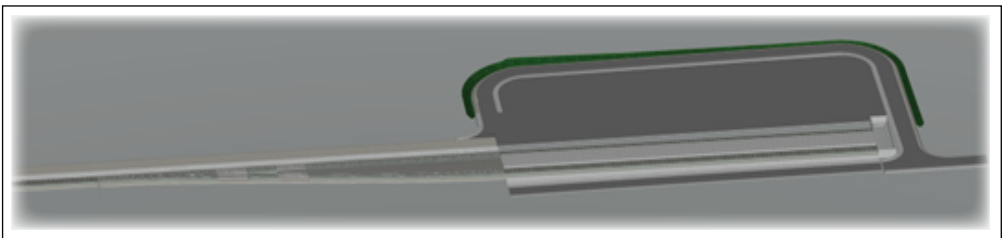
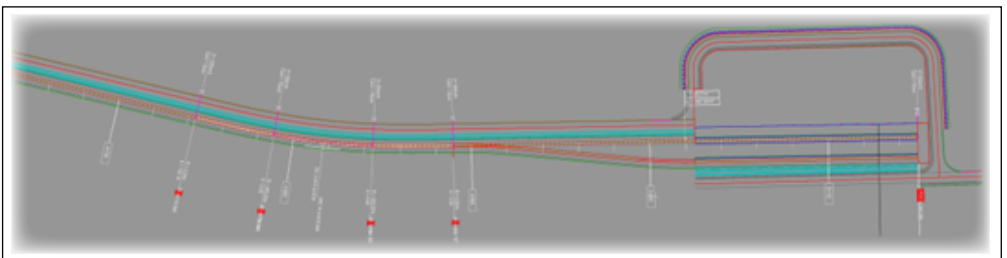
# Tirana–Durrës Railway – Tirana Airport Connection

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



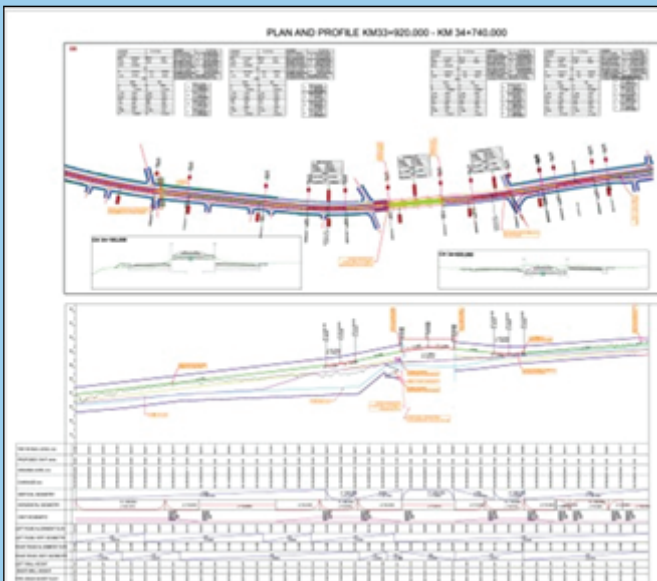
## Including:

- 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



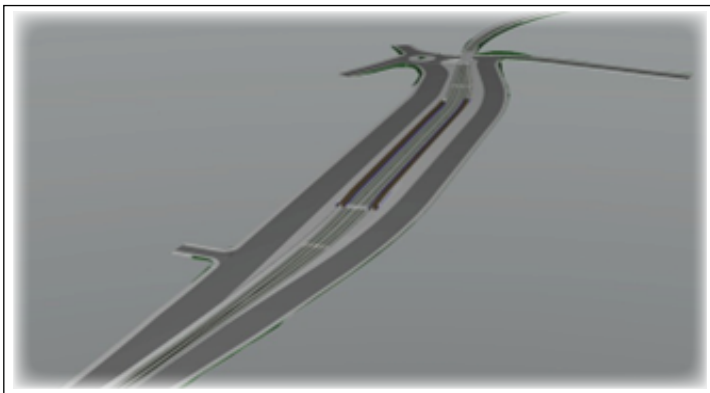
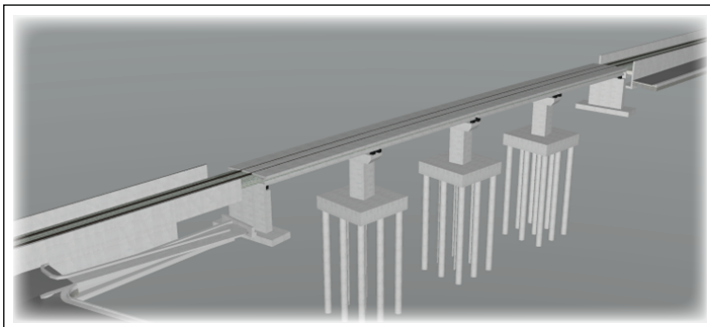
# Railway Section: Tirana Terminal Station - Tirana City Station

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



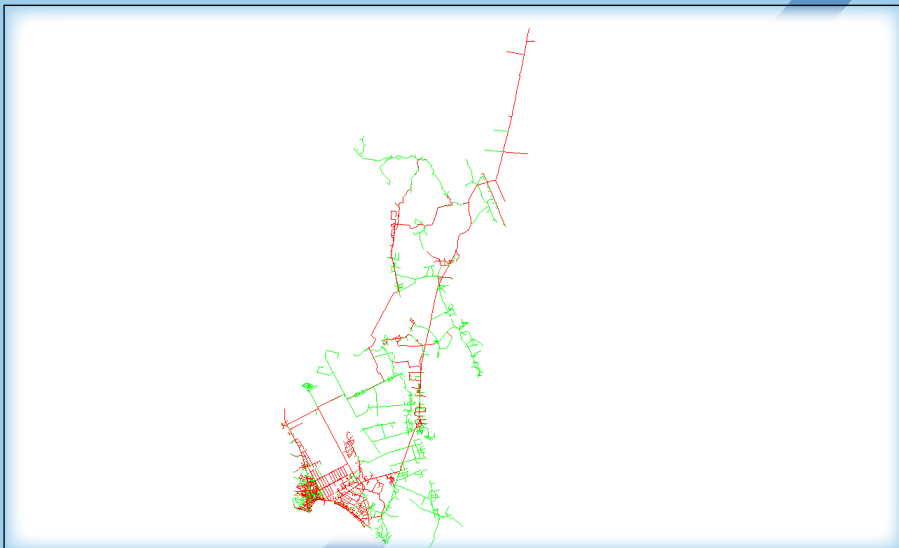
## Including:

- 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



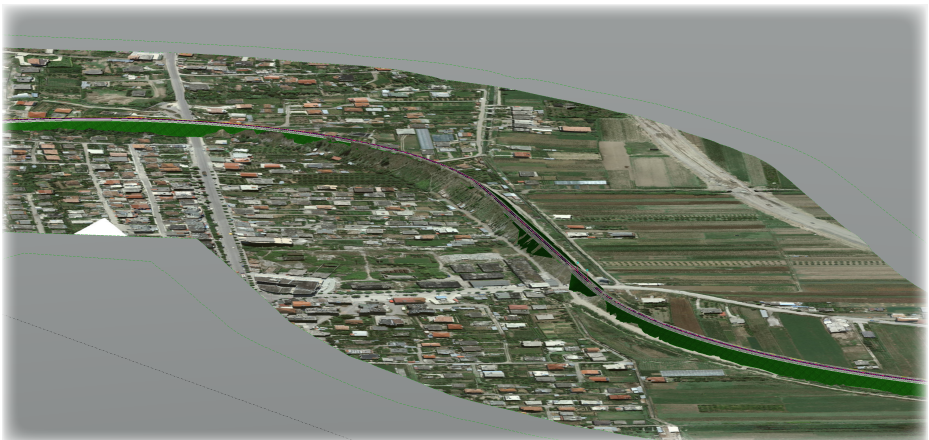
# Rrogozhinë - Fier - Vlorë Railway Rehabilitation and Upgrade (ONGOING)

Corridor review and engineering support  
for the rehabilitation and upgrade of the  
Rrogozhinë – 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



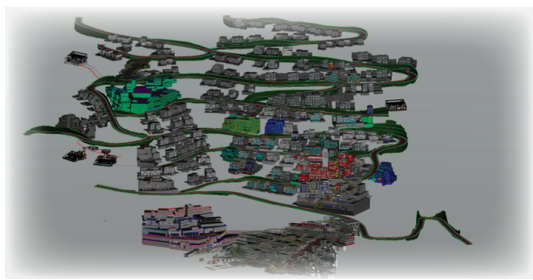
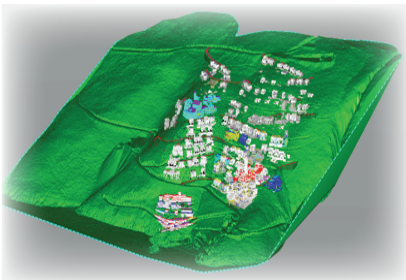
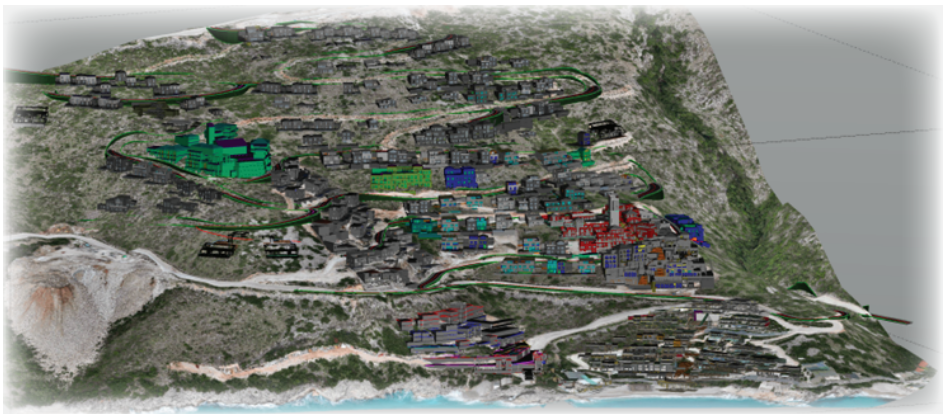
# Tourist, residential and services complex Phase I, II, III, IV with frontage in Jale, Himara Municipality"

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



1

*Roads  
& Transport  
Infrastructure*

2

*Railway  
Engineering*

3

*Water Supply  
&  
Hydraulic Systems*

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