

FOUNDATION OF SUCCESS

# Geotechnical Engineering

## ABOUT US

# Zemargeo LLC.

ZEMARGEO is an engineering firm operating in Georgia, specializing in geotechnical investigations, drilling, geophysics, retaining structures, and piling works.

The company offers comprehensive services including soil and rock laboratory testing, field testing, and technical reporting, ensuring the safety and stability of construction projects. With its experienced team, Zemargeo provides geotechnical solutions that help achieve successful outcomes in challenging ground conditions.



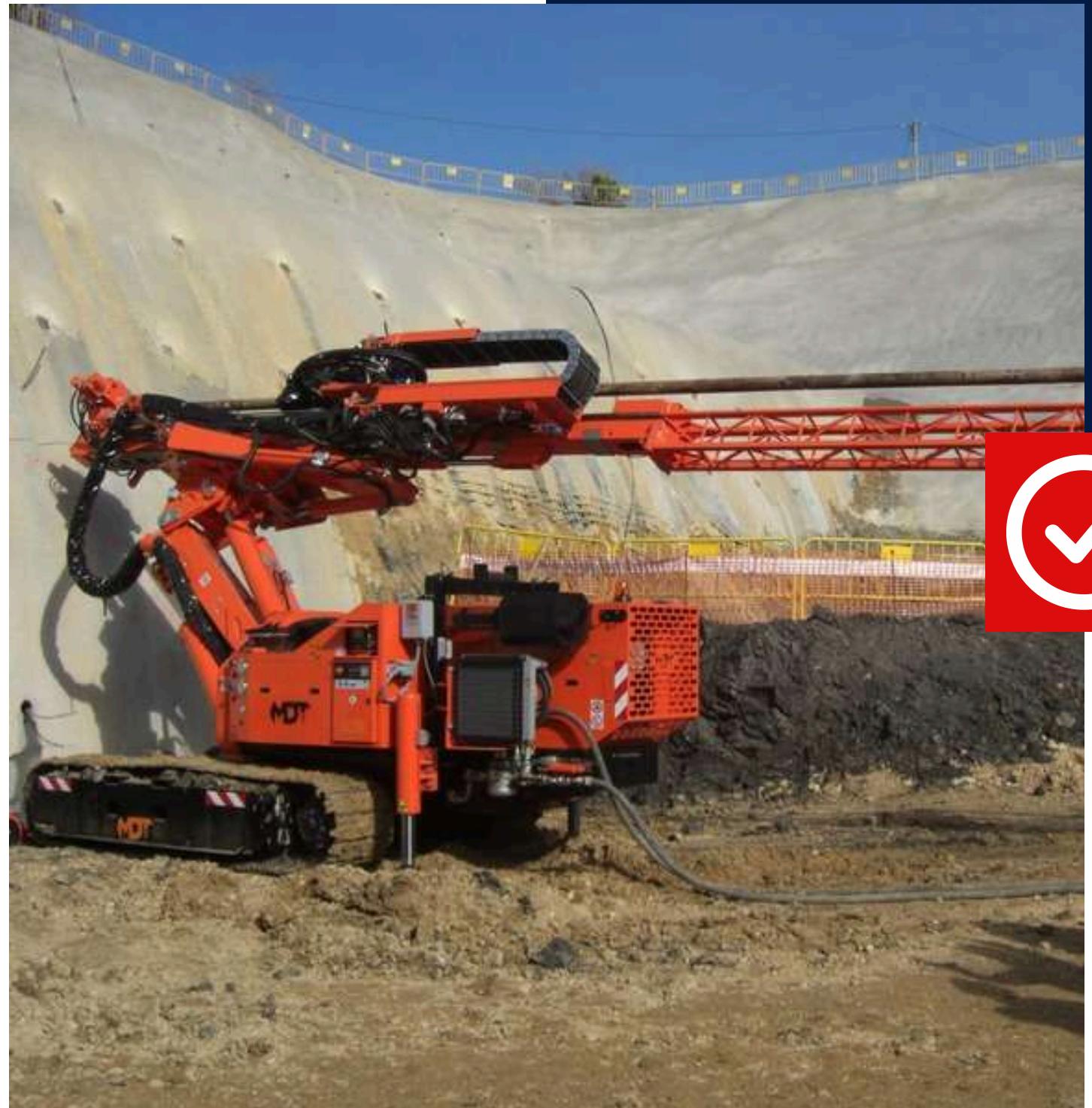
**For the best  
solutions...**



**WHY US?**

# We Provide The Best Solution

The first thing that will protect you from the biggest problems you may encounter in your construction projects in the future is to know the ground. We first learn the ground, and then we offer you the most suitable solution at the most affordable cost.



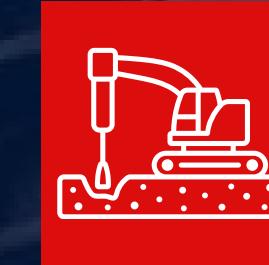
RELIABLE GROUND SOLUTIONS FOR STRONG STRUCTURES

# Our Services



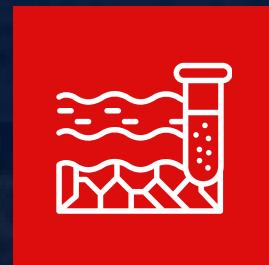
## Geotechnical Investigations

Drilling, Geophysical Test, Field Test, Reporting.



## Engineering Applications

Piling, Diaphragm Wall, Sheet Pile, Jet Grouting, Grouting, Anchorage



## Laboratory

Soil Mechanics, Rock Mechanics, Concrete, Asphalt Tests



## Quality Control

Field Tests, Laboratory Tests and Reporting



## Design

Soil Improvement and Support Systems, Deep Excavations and Geotechnical Stability Analyses, Foundation Structure



## Consulting

Technical Consultancy, Construction Process Consultancy, Development and Training



# Geotechnical Investigations



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## Drilling



Drilling operations are performed at various depths to determine the properties of subsoil layers.

## Geophysical Test



This method provides important data on soil properties, layer structure, groundwater levels and potential subsurface features.

## Field Test



These tests provide critical data for understanding the behavior of soil materials under various conditions.

## Reporting



A comprehensive report consolidates data, analysis, and recommendations, ensuring clarity and usability for stakeholders.



# Engineering Applications



## Piling



Systems used to increase soil bearing capacity or transfer structural loads to deep, stable layers.

## Diaphragm Wall



Underground retaining structures made of high-strength concrete or steel panels.

## Sheet Pile



Sheet pile refers to thin, durable panels made of steel, concrete, or wood that are interlocked side by side to create a piled retaining wall system.

## Jet Grouting



In-situ soil improvement using high-pressure mixtures.

## Grouting



Improving soil by injecting various materials (cement, chemicals).

## Anchorage



Support systems used to stabilize structures.



# Laboratory



## Soil Mechanics



Soil properties are analyzed to determine their behavior under various conditions, ensuring safe and efficient foundation designs.

## Rock Mechanics



Examination of rock properties to determine their strength, stability, and behavior under load for tunneling, mining, and slope stability.

## Concrete & Asphalt



Testing and evaluation of concrete and asphalt materials to ensure compliance with quality standards and durability requirements.

## Quality Control



Comprehensive quality assurance procedures are implemented to maintain high standards in all construction materials and processes.

## Chemical Tests



Analysis of chemical properties of soils, aggregates, and construction materials to assess contamination, pH levels, and reactivity.

## Aggrega & Balast



Physical and mechanical properties of aggregates and ballast are evaluated for use in concrete, asphalt, and railway applications.





# Quality Control



## Field Tests



Plate Load Test, Light Weight Deflectometer (LWD),  
Sand Cone Test, Pile Load Test (Uplift & Loading),  
Pile Integrity Test, Insitu CBR, Concrete  
Temperature, Slump, Spread Tests

## Laboratory Tests and Reporting



CBR (California Bearing Ratio), Standard Proctor,  
Modified Proctor, Permeability Test, Core Sampling  
and Strength Testing, Concrete Strength Test



# Design



## Soil Improvement and Support Systems Design



Methods include ground reinforcement techniques such as grouting, soil nailing, and dynamic compaction. The goal is to ensure safety, durability, and cost-effectiveness in challenging geotechnical conditions.

## Deep Excavations and Geotechnical Stability Analyses



It includes slope stability assessments, retaining wall design, and advanced numerical modeling. Proper planning ensures safety during excavation while mitigating risks like soil movement or collapse.

## Foundation and Underground Structure Design



It involves assessing soil and rock properties to select appropriate foundation types, such as shallow or deep foundations, ensuring stability, and longevity.



# Consulting



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## Technical Consultancy



Services include site investigations, design optimizations, and problem-solving for geotechnical complexities. The focus is on delivering customized, efficient, and reliable solutions for each project.

## Construction Process Consultancy



This includes guidance on excavation, soil improvement techniques, and foundation construction while ensuring adherence to geotechnical designs. The aim is to reduce risks and optimize project outcomes.

## Development and Training

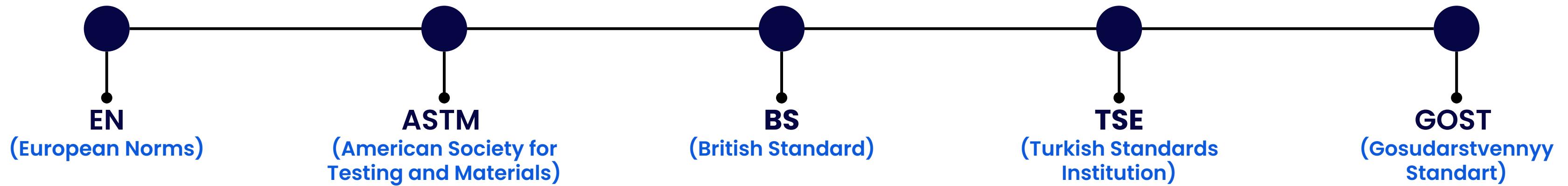


These include workshops and technical sessions on advanced geotechnical methods, software, and best practices. The goal is to enhance team expertise and stay updated with industry advancements.

LABORATORY

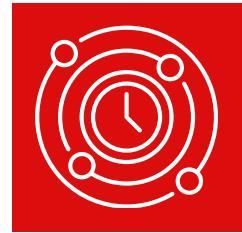
# Quality Assurance & Accreditation

Our laboratory performs its experiments in accordance with the following international standards and has the necessary **accreditations**:



**BUSINESS PARTNERSHIP**

# Client & Partner Relations



## Continuity in Collaboration

We provide comprehensive support from the tender preparation stage to the completion of the project and beyond, ensuring seamless and ongoing partnerships.



## Tailored Solutions

Understanding that every project is unique, we offer customized solutions to meet the specific needs of our clients.



## Trust and Transparency

We prioritize building long-term relationships based on mutual trust and clear communication with our clients and partners.



**SUSTAINABLE DEVELOPMENT**

# **Sustainability & CSR (Corporate Social Responsibility)**

*For a better future...*

As ZemarGeo, in addition to realizing your projects in the best way possible, we also make great efforts for sustainable development and protecting our world.

We are building a better future with our transformation to renewable energy, our efforts to minimize carbon emissions and the regular steps we take to protect the environment.



# Frequently Asked Questions (FAQs)



## **Can Zemargeo provide customized solutions for specific project needs?**

Absolutely! We tailor our services to meet the unique requirements of each project, offering flexible and innovative solutions based on your specification



## **How long does it take to complete a geotechnical investigation?**

The duration depends on the project size, location, and required tests. Typically, small-scale investigations take a few days, while larger projects may require several weeks.



## **Which industries do you serve?**

We serve a variety of industries, including construction, infrastructure, energy, mining, and environmental engineering for both public and private sector projects.



**CERTIFICATE OF ACREDITATION**

**“Accurate  
laboratory  
analyzes are  
the backbone  
of reliable  
engineering  
solutions.”**



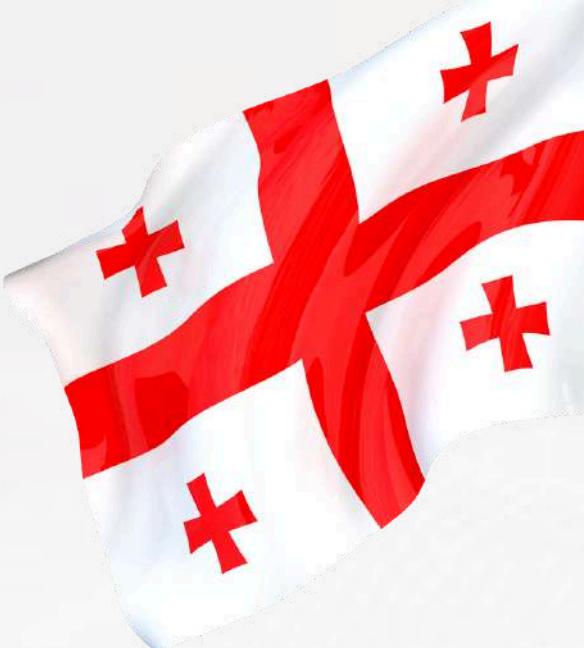
# Major Projects with Solution Partnerships in Georgia

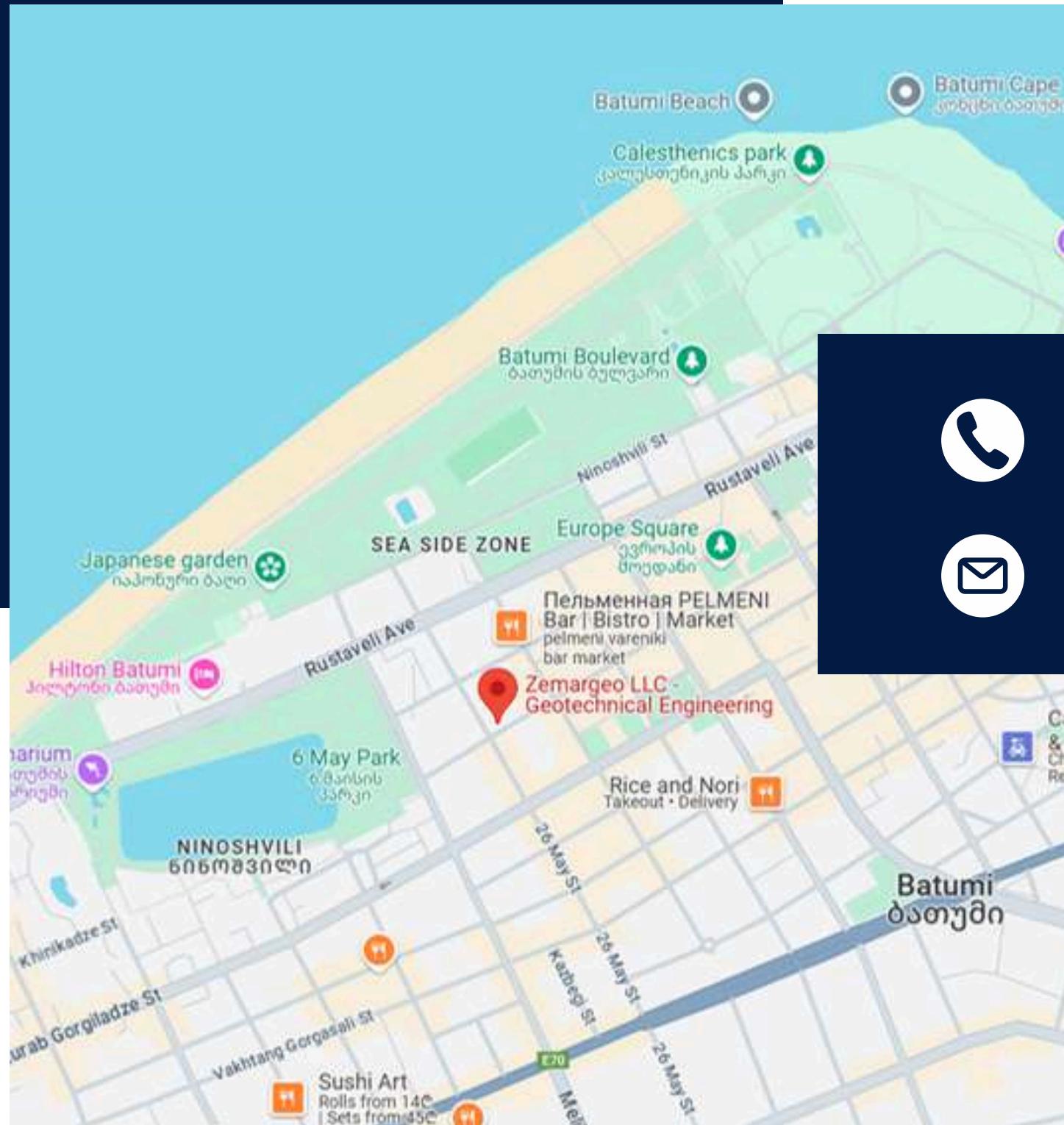
- 01** **BATUMI GTEM ARENA**  
GTEM BUILDING
- 02** **BATUMI BYPASS ROAD CONSTRUCTION**  
POLATYOL – ARAVET LTD.
- 03** **BATUMI ORBI CONTINENTAL**  
ELBA GROUP PROJECT MANAGEMENT LTD.CO
- 04** **CONSTRUCTION OF SAMTREDIA – GRIGOLETI ROAD**  
**SECTION OF E-60 HIGHWAY (LOT 3: KM 30+000 – KM: 42+000)**  
HUNAN ROAD AND BRIDGE CONSTRUCTION GROUP COMPANY LTD-BRANCH IN GEORGIA



# Major Projects with Solution Partnerships in Georgia

- 05 PRESTIGE KOSTOVA TBILISI  
KEN CONSTRUCTION
- 06 KUTAISI 100KW LINE ROAD  
MITAS ENERGY
- 07 ABASTUMANI MAIN ROAD LOT 1 KM:0+000-KM 7+075  
MAQRO CONSTRUCTION
- 08 SAGAREJO- BADIAURI BYPASS LOT-3 ROAD  
PROJECT SECTION KM:35+500 – KM:52+540  
GOCHA AND MAQRO JV





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For detailed information and details,  
please visit our website:

**www.zemargeo.com**



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# THANK YOU

For All Your Attention

END SLIDE →