

ETGAR A. ENGINEERING

**The Soil, Rock and
Water Experts**

Company Profile

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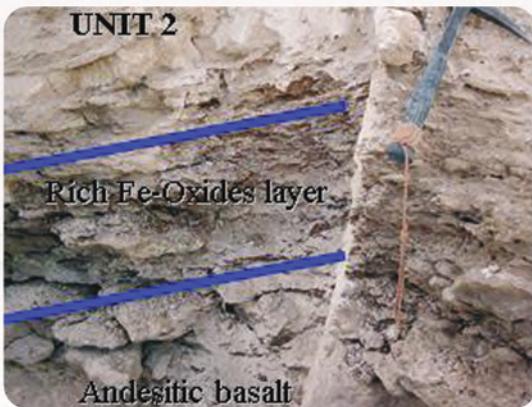
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 info@etgar-eng.com

Our Expertise

- ✓ Geology, Geotechnics and Geophysics
- ✓ Hydrogeology
- ✓ Surface Hydrology and Soil Conservation
- ✓ Well Engineering
- ✓ Soil and Water Contamination Assessment and Remediation



- ◀ Etgar offers professional and creative solutions to engineering problems in the fields of rock, soil and groundwater that stand the test of time.
- ◀ Quality, professionalism and reliability are our core principles.



About Etgar A. Engineering

Etgar A. Engineering was established in 1984 by a group of seasoned engineers headed by Eng. Gil Brender (M.Sc.). Today, Mr. Brender serves as the CEO and chief engineer of the company.

Etgar A. Engineering is a leading provider of reliable and efficient top quality **geological, geotechnical and hydrological solutions**. Our company has amassed extensive experience over the years in providing creative solutions that stand the test of time in an untold variety of settings.

Our clients include the Israeli Ministry of Defense, Ministry of Infrastructure, Ministry of Agriculture, local authorities, municipalities, private companies and more. Our familiarity with the demands and requirements of each project enable us to help guide our clients through the process and handle bureaucracy swiftly.

Our staff aspires to maximize our added value to our clients by **providing reliable service and ingenuity**; all while implementing environmentally sustainable solutions to a variety of engineering challenges.



- ◀ Our expert staff combine professionalism and a strong working knowledge of the most advanced and effective technological solutions on the market.
- ◀ The 'Soil, Water and the Environment' division operates under strict supervision and Etgar A. Engineering holds ourselves to high quality standards.

Etgar A. Engineering is certified under ISO/IES 17025 and operates according to its standards.

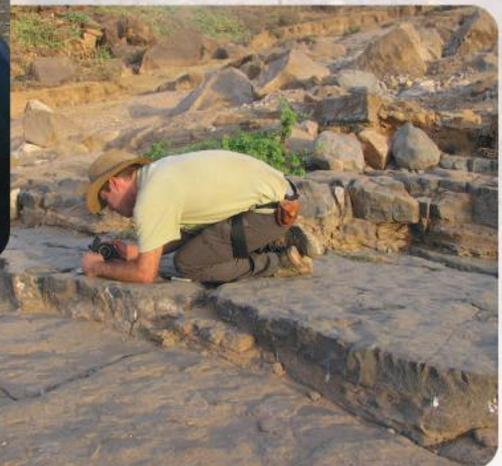


Leadership

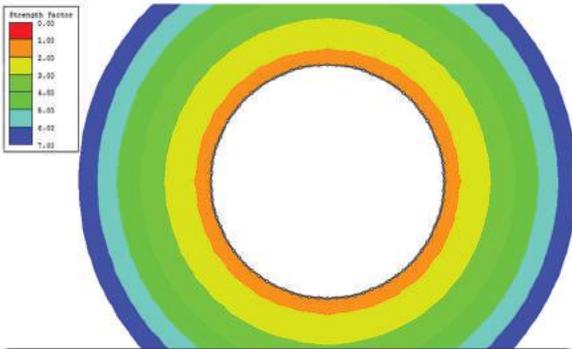
Noam Z. Dvory (COO), stands at the forefront of all our work. Noam is an experienced geologist and hydrologist and well-versed in the demands of project implementation, including projects- small and large, simple and intricate, in both the public and private sectors. He specializes in implementation of projects out in the field and analysis of sub surface data.

Our staff is comprised of skilled professionals, all of which undergo specialized training before beginning a project. Our team drives project success by putting an emphasis on the details, quality control, constantly ensuring proper procedure, workmanship quality and providing alternative solutions when needed.

Our expertise and work ethic ensure a quality end result and added value for our clients.



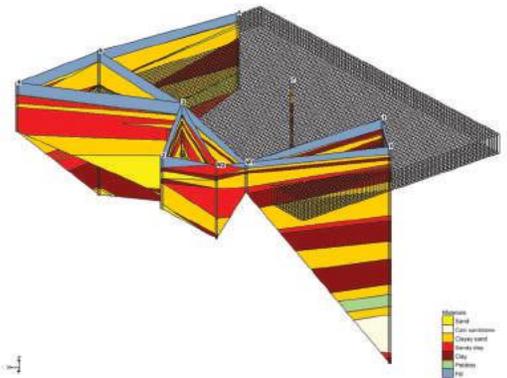
Geology, Geotechnics and Geophysics



Geologically complex sites present unique engineering demands. Proper execution requires an intimate knowledge of geology, engineering and the influence of environmental conditions. It is our belief that each project demands a thorough understanding of the small details, and at same time, the larger picture of the project's needs and goals.

Our expertise includes:

- ▶ Geotechnical survey planning, drilling supervision and testing during drilling (Israeli Standard 5826).
- ▶ Tunneling project supervision and consulting: Cut & Cover, TBM, and NATM.
- ▶ RMR and Q classification.
- ▶ Numerical modeling for underground cavity/tunnel characterization.
- ▶ Soil/Rock sampling (undisturbed and disturbed).
- ▶ Continuous coring supervision (wire-line) and RQD classification.
- ▶ Installation of monitoring and measurement systems.
- ▶ Geological surveys, geological mapping and geological reports.
- ▶ Structure and Fault system mapping.
- ▶ Designing and carrying-out geophysical surveys.
- ▶ Geophysical log interpretation and spatial correlation.



The Soil, Rock and Water Experts

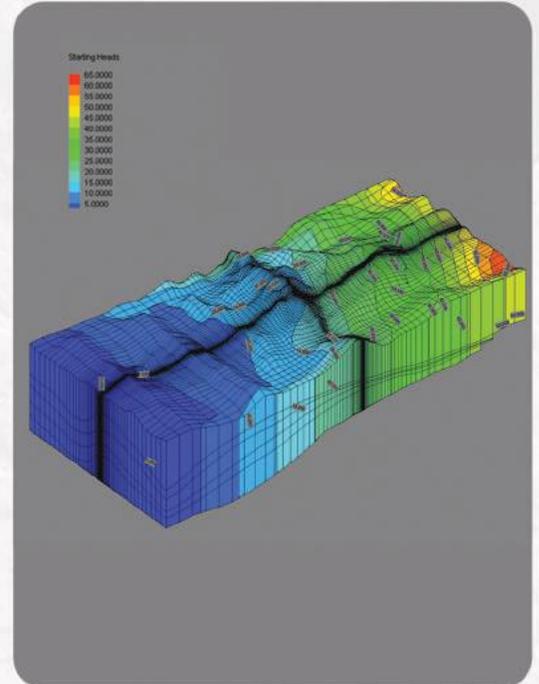


Hydrology, Hydrogeology, Surface Hydrology

Our expertise in hydrology and geohydrology includes research, preliminary surveys, guidance throughout project implementation and service, follow-up and monitoring in-line with the operational demands of the project.

Our expertise includes:

- ▶ Support in managing and operating water sources.
- ▶ Analysis of existing hydrological data and constructing a long term data tracking.
- ▶ Planning monitoring and surveillance systems.
- ▶ Creating hydrogeological maps and analysis of flow regimes.
- ▶ Planning and interpreting geophysical inspections.
- ▶ Obtaining permits and advancing projects through governmental procedures and agencies.
- ▶ Rehabilitation of aquifers from contamination and salt water intrusion.
- ▶ Development of hydrological numerical models.
- ▶ Planning and scheduling future pumping regimes.
- ▶ Feasibility studies for increasing scope of pumping.
- ▶ Hydrological and hydrogeological surveys.
- ▶ Surface water sampling.
- ▶ Flood and surface water data collection and analysis.
- ▶ Drainage systems and runoff channeling.



The Soil, Rock and Water Experts

Well Engineering

The connection between water and engineering originates from the difficulties generated by sedimentation, surface runoff and high groundwater levels in proximity to subsurface structures.

Our personnel works to assess maximum water levels, and design drainage and pumping systems on the basis of mathematical calculations and modeling i.e.: Modflow, SeaWat, WhAEM2000, HYDRUS. These methods are most advanced worldwide for water table control. The benefit of these methods is the ability to examine several parameters, such as location of the wells, which could help lower the costs of the project.

In addition to project management and advancement, our civil engineering division provides engineering support for all of our projects.



Our expertise includes:

- ▶ Planning subsurface drainage during construction.
- ▶ Developing solutions to groundwater intrusion and seepage into buildings.
- ▶ Water quality preservation: creating solutions for drainage and seepage of runoff to groundwater.

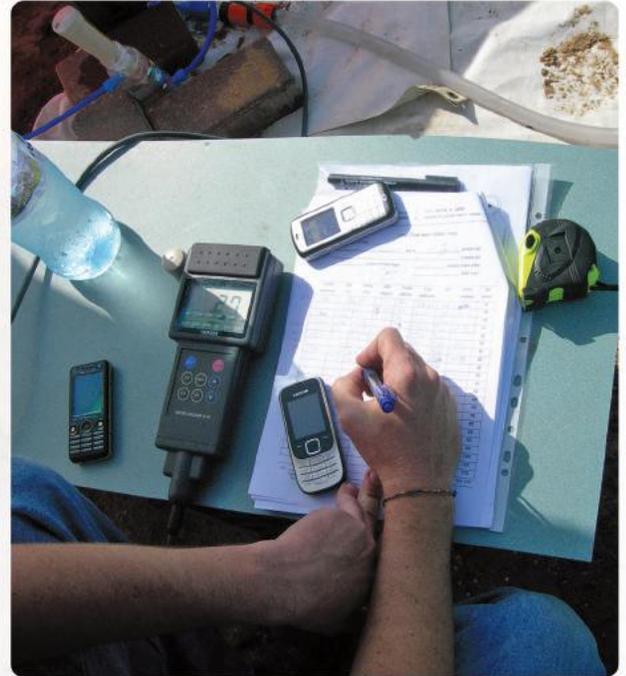


The Soil, Rock and Water Experts

Soil and Water Contamination

Etgar A. Engineering specializes in contaminated site investigations and in evaluating soil and groundwater contamination. We use our knowledge of potential pollution sources, water sources and different environmental factors that influence the movement of pollutants over time to approach site investigations.

Etgar A. Engineering is certified by the Israel Laboratory Accreditation Authority and operates accordingly with ISO/IES 17025. Our company samples soil and piles, and does active and passive soil gas sampling in conjunction with the standards and procedures of the Ministry of the Environment.



Our expertise includes:

- ▶ Environmental, historical and soil surveys.
- ▶ Sampling soil gas, soil and water and results analysis.
- ▶ Planning and installing systems for fuel contamination removal and rehabilitation of polluted aquifers.
- ▶ Installation of wells for monitoring and contaminant removal.
- ▶ Pollution source detection and characterization based on physical and chemical characteristics.
- ▶ Mathematical model development, mapping of pollution dispersion, analysis of the connection between surface and subsurface pollution transport and contaminations pathways.
- ▶ Determining aquifer sensitivity.
- ▶ Calculation of protective radii for water sources.

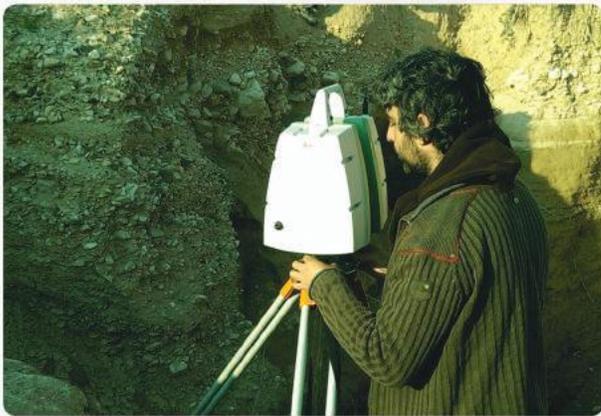


The Soil, Rock and Water Experts

Surface Hydrology and Soil Conservation

Proper management of surface water systems requires an in depth understanding of the inputs, dynamics and interactions of each system with its environment. Our team studies both natural and manmade surface water systems and evaluates soil slope stability mechanisms and soil erosion.

As part of our work in this arena, Etgar A. Engineering provides services for the Ministry of Agriculture including consulting, monitoring services, data collection, data processing and analysis.



Our expertise includes:

- Solutions for drainage and channel runoff.
- Water conservation for meeting Green Building Standards LEED, SI 5281 etc.
- Analysis of surface water base flow and flood events.
- Flood reoccurrence interval calculation using advanced statistical methods and hydrometer measurements.
- Storm-water management and drainage basin management in conjunction with development.
- Measurements and calculation of soil erosion and providing recommendations for promoting soil conservation.
- Construction of hydrological and hydraulic models of rivers and reservoirs.
- Analysis and calibration of cloud radar data.
- In field installation of scientific instruments.
- Flood protection surveys.
- Surface water sampling.
- Soil sampling.

