

## REFERENCES Featured References

- ▶ Mercedes-Benz Manufacturing Hungary Ltd. (environmental and work safety measuring)
- ▶ Audi Hungária Motor Corp. (environmental and work safety measuring)
- ▶ PORR-SBG-HBK Joint Venture Greenline Underground (baseline noise and dust measurement, noise mapping of underground construction work in Doha City, State of Qatar)
- ▶ PSH JV Green Line Underground (continuous vibration monitoring of a 200 meter long section of the Al Messila Tunnel for the Green Line Project, Doha, Qatar)
- ▶ Serbia-Hungary Cross-border-co-operation Program under the support of the European Union - Noise mapping, noise measurement, air mapping and measurement for 82 cities and villages
- ▶ Glencore Corp (Capacity of 800.000 tons of vegetable oil factory)
- ▶ Coca Cola Beverage HBC - work safety measurement (noise, vibration, air, light, climatic parameters)
- ▶ Lego Manufacturing Ltd. - work safety measurement (noise, vibration, air, light, climatic parameters)
- ▶ Walt Disney Hungary Ltd. - work safety measurement (noise, vibration, air, light, climatic parameters)
- ▶ ExxonMobile Careers USA - work safety measurement (air)
- ▶ Vodafone Eu Center. - work safety measurement (air)
- ▶ Pioneer Hungary Ltd - environmental and work safety measurement (air, noise, light, climatic parameters)
- ▶ Hitachi GMBH - Powerplant noise reduction planning and work safety measurement (Noise , air, light)

## Major works in the automotive industry

- Mercedes Benz Manufacturing Hungary Ltd.  
Workplace and ambient noise and air contamination measurements (5 years collaborating)
- Audi Motor Hungary Ltd.  
Workplace and ambient noise and air contamination measurements (10 years collaborating)
- Suzuki Hungary Zrt.  
Occupational health measurements, environmental licensing, wastewater sampling
- ZF Hungaria Ltd.  
Workplace noise and air contamination measurements
- Contitech Fluid Automotive Hungária Ltd.  
Workplace measurements (lighting, noise, vibration, air)
- Veritas Dunakility Ltd.  
Air contamination measurements, air emission measurements
- Bosal Hungary Ltd.  
Workplace noise and air contamination measurements, air emission measurements
- Honsa Ltd.  
Air emission measurements, occupational health measurements: air contamination measurements, measurements of indoor lightning, climatic measurements

- Aib-Vincotte Hungary Ltd.
- Noise pattern mapping for Hungarian Suzuki Inc., Esztergom
- AFL Hungaria Ltd.  
Full scale instrumental measurement of the noise and vibration exposure of workers, ultrasound measurement



# Environmental measurements and monitoring of transport facilities

- (KTI) Institute for Transport Sciences (HU)  
Strategic noise and air mapping of Hungarian and Serbian border, design of Action Plan and the implementation of professional training for the stakeholders (34 cities and villages)
- Municipality of Baja  
Strategic noise mapping of Baja city (HU) and Novi Sad city (SRB), including the design of Action Plan and the implementation of professional training for the stakeholders
- Northern Transdanubian Inspectorate  
Noise and air pattern mapping and action planning for Mosonmagyaróvár and Szentgotthárd cities



- Speciálterv Civil Engineering Company –  
Section of railroad structure and railway catenary road construction work, and related rail signalling plan, monitoring plan and implementation plan
- Metropolitan Research Institute Ltd.  
Preparing a Strategic Environmental Assessment: environmental baseline survey and documentation of completion of studies: noise, air, wildlife conservation areas), a detailed feasibility study
- PSH JV Green Line Underground  
Continuous vibration monitoring of a 200 meter long section of the Al Messila Tunnel for the Green Line Project, Doha, Qatar
- Javno preduzece Putevi Srbije  
Serbia-Hungary (HU-SRB) IPA Cross-border Co-operation Programme HUSRB/1203/111/030-PERS1
- Unitef'83 Műszaki, Tervező és Fejlesztő Inc.  
Planning and preparation tasks for the construction of a motorway section

- Bamco Ltd.  
Measurement of the noise and vibration exposure of workers, ambient noise and vibration measurement, noise reduction planning for the whole Metro Line 4
- Környezet Műszertechnika és Ingatlanforgalmazó Ltd.  
Monitoring tasks (air, noise protection, soil, plant, surface and subsurface water monitoring, conservation monitoring) Motorway M6/M60, between sections Szekszárd-Bóly-Pécs



- UNITEF 83 Inc.  
Traffic noise measurement after motorway construction
- State Motorway Management Co. Ltd.  
Motorway M7 environmental measurements & services
- Constanta Port & Galati Port  
Noise pattern mapping for a commercial port of 6000 ha in Constanta & Galati, Romania
- PORR-SBG-HBK Joint Venture Greenline Underground  
Baseline noise and dust measurement, noise mapping of underground construction work in Doha City, State of Qatar
- Négy P Bt.  
Environmental impact study, planning and operation of a monitor network for air immission (three months)
- Local Government of Baja  
Environmental impact study of a 100 ha pool type cargo port with 7 berths and logistics centre to be built in Baja
- Szeviép Inc.  
Planning and operation of a monitor network for air immission (lasting for 1 year)
- Glencore Ltd.  
Full-scale environmental impact study, planning and operation of a monitor network for noise and air immission lasting for three months



# Major works in the oil and gas industry

- Abdiás Lp., Kunszentmiklós  
Detailed exploration, technical intervention plan /type of contamination: hydrocarbon contamination
- Végh&Végh MKT Ltd.  
Field work of detailed exploration; technical intervention plan
- MOL Inc.  
Technical intervention plan, environmental remediation, operation of monitoring system



# Major charges from the field of energetic

- ETV-Erőterv Inc.  
Noise pattern mapping for a 2X400 MW, combined cycle, gas-turbine driven power plant
- ERM Hungária Ltd.  
Noise pattern mapping; modelling of the noise impact analysis of construction and operating of related water, gas and transmission. Advanced Power AG. 800 MW combined cycle power plant, Szeged
- ERŐTERV Inc.  
Environmental impact study, noise and vibration study, planning and operation of noise monitor network
- ERM Ltd.  
Environmental impact study, noise and vibration study, planning and operation of noise monitor network
- Interspan Faipari Ltd.  
IPPC licensing, environmental impact study for a 50 MW biomass power plant
- Greenergy Ltd.  
Acoustic planning with related documentation for a 2X2 MW gas turbine.
- Greenergy Ltd.  
Acoustic planning and related documentation for a 15 MW gas-turbine driven micropower station
- Hitachi Power Europe GmbH  
Post noise reduction planning with related documentation, measurement of noise immission after construction for a



50 MW gas-turbine driven power plant  
Full-scale ambient noise measurement of the power plant (1000 MW) after expansion

- Synergy Ltd  
Full-scale workplace noise measurements of gas-turbine driven and hydroelectric stations
- Greenergy Ltd.  
Air emission measurement of gas-turbine driven and gas-engine power stations for 10 sites in Hungary
- ERM Hungaria Ltd.  
Planning and operating of an immission air purity protection monitoring system connected to the establishment of ALSTOM lignit power plant
- Kraftszer Ltd  
Carrying out full scale operation permit tests /lighting, noise, vibration, air/ at the biomass plant

# Occupational health measurements (Workplace)

- Interspan Faipari Ltd.  
Workplace noise and air contamination measurement
- Bosch Rexroth Pneumatika Ltd.  
Workplace noise and air contamination measurements
- Lear Corporation Hungary Ltd.  
Workplace noise and air contamination measurements
- Nestlé Ltd  
Workplace noise measurement for Nestlé Ltd.
- Firth Rixson Hungaria Ltd.  
Workplace noise and air contamination measurements
- United Hungarian Glass Containers, O-I Hungary Ltd.  
Full scale work health measurements (lighting, noise, vibration, air)

# Environmental impact studies

- Belemnites Mérnöki Iroda Ltd.  
Detailed environmental impact study for the construction of a waste battery recycling plant (lasting for six months)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for 3 months)
- Trade Invest Ltd.  
Full-scale environmental impact study, planning and operation of a monitor network for noise and air immission (lasting for one month) for a shopping mall with parking area



- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for one month)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for one month) for an office block with 700 offices in Dózsa György Road in Budapest
- Ferenc Kovács, land owner  
Full-scale environmental impact study, planning and operation of a monitor network for air immission (lasting for three months)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for three months)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for 3 months)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for three months)
- Local Government of Baja  
Full-scale environmental impact study, planning and

operation of a monitor network for air immission (lasting for three months)

- Belemnites Mérnöki Iroda Kft.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for three months)
- Belemnites Mérnöki Iroda Ltd.  
Environmental impact study, noise and air study, planning and operation of a monitor network for air immission (lasting for three months)
- ERM Ltd.  
Testing of air quality, planning and operation of a monitor network for air immission (lasting for one year) for the establishment of a shopping mall with 4200 parking places

# Ongoing Research and development programs

- Noise Barriers & Enclosures  
Many pieces of machinery produce excessive noise levels which can be intrusive to sensitive receptors in close proximity. We currently manufacture and install noise enclosures which consist of barriers made from re-cycled car tires. The testing and design development is currently on-going at our accredited laboratory in Hungary. We are currently working on a new manufacturing plant for Qatar which aims to be fully operational in the coming year.



- ITES System  
ITES stands for Intelligent Traffic Environmental System and is a system that can be implemented in busy cities to reduce traffic pollution over a long period of time. The system works by monitoring air pollution levels around a given city in different locations as well as traffic density. Once the levels of traffic and associated pollution have been identified, a plan can be implemented for the traffic to be re-routed in order to help reduce the pollution in certain areas of the city. The purpose is to give continuous feedback to stakeholders in the city and help to create a long terms solution to the problem of environmental pollution.

# Our Research and development programs

- National Office for Research and Technology, New Hungary Development Plan, Central Hungary Operative Program (KMOP).  
Development of air-noise sections, creating static and dynamic maps, reviewing IT infrastructure, testing and developing information systems (database design, spatial data infrastructure) and building up the knowledge base of ENFO ([www.enfo.hu](http://www.enfo.hu))  
Procurer: Budapest University of Technology and Economics, Dept. of Applied Biotechnology and Food Science, Research Group of Environmental Microbiology and Biotechnology
- Innovation in noise reduction  
The project "*Applying Akusztika Ltd. innovation results for noise reduction in offices*", under the support of the **European Union** has set the objective to develop the acoustic environment, considering decoration options, too.  
Many offices, meeting rooms and auditoriums at company offices have inappropriate acoustics, which hinder the understanding of speeches due to the high levels of reverberation time (echo in the room). This influences the daily work and the quality of negotiations. The applied material serves two functions, primarily to reduce the reverberation and secondary for decoration purposes. Therefore examination of the technical specifications of foams and laminating textiles are important (textiles applicable for direct printing), adhesive films, timber frame or back side to create resonating effects. Our experts' reverb measurements are able to determine the amount of absorption at different frequencies. The tests take all possible factors into account, so the result is a tool for modifying inner acoustics, which combines the absorbing surface with decoration goals.



- Innovation in immission measuring  
The project "*Innovation in immission measuring*" under the support of the **European Union** has set the objective to compare the applied reference and non-reference immission measuring methods.

There are two very common methods to measure airborne dust immission, first is the mass measurement process and the second is a method based on beta absorption. For the measuring mass the growing weight of the filter is counted, and for the beta absorption measuring, the solid material separated on the filter belt could be measured by the beta radiation. Both methods

are applicable, but only the mass measuring meets the norms and became a reference method. However, the disadvantage of this method is that the results would be accessible only after a considerably delay and the filter should be exchanged regularly. In case of beta absorption the measuring is automatic, and the data is available immediately. In case of smog alerts it is very important. Earlier the equivalence of the two types of methods or the possibility of eventual potential conversion, and its method has not been tested.

In the framework of the project we are going to test the connections between the two methods. We are going to develop a conversion process, which provides same quality results at each measuring. We are going to examine the whole dust fraction of PM<sub>10</sub>, a PM<sub>2</sub>, PM<sub>1</sub> and the amount of their shares. In addition, we are going to measure that in case of exclusively PM<sub>10</sub> measuring whether it is possible to define other fractions' PM<sub>2,5</sub> and PM<sub>1</sub> value. The developer experts are going to determine the connections form parallel examinations, and prepare the validation of the process. They are going to determine the applicability of an automatic system related to the reference method.



# Newly developed noise barriers produced from used car tires

Erste Real Estate Ltd. (part of Erste Bank)



# Complex noise reduction planning and construction using customized techniques, noise reduction barriers.

Flextronics International Ltd.



Ceva-Phylaxia corporation



# Complex acoustic design: offices, and other spaces - design supported unique absorbers.

Audi Hungary Motor Ltd. executive offices, restaurant.



Custom made acoustical products, to meet all needs.



Nestlé Hungary Ltd.



Getronics Ltd.



**Meeting needs of our customers: specially designed, custom made acoustic products.**

Robert Bosch Energy and Body Systems Ltd.  
anechoic chamber



Nokia Network Solutions Ltd.  
Open-Office meeting points



**Noise reduction plans, according to environmental threshold, using custom designed noise barriers.**

Nitrogénművek corporation, compressor facility



Nitrogénművek corporation, chill tower fans

