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CURRICULUM VITAE

MARK R. SVINKIN

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EXPERTISE

The Field of Geotechnical and Structural Engineering with an emphasis on Soil and Structural Dynamics: Soil and Structural Vibrations from Blasting, Pile Driving, Machine Foundations, and other Construction and Industrial Sources; Application of Dynamic Methods to Piles: Wave Equation Analysis, Pile Integrity Testing, and Engineering Evaluation of High Strain Dynamic Pile Testing.

EDUCATION

Ph.D. in Civil Engineering (Geotechnical, Structural), Scientific-Research Institute of Bases and Underground Structures named N.M. Gersevanov, Moscow, the former USSR, 1978.
M.S. in Mathematics, Kharkov State University, Kharkov, the former USSR, 1968.
M.S. in Civil Engineering (Structural, Geotechnical), Kharkov State Academy of Railway Transport, Kharkov, the former USSR, 1958.

EXPERIENCE SUMMARY

1996 – Present *President*, VIBRACONSULT, Cleveland, Ohio
Consulting Practice and Expert Witness. Forensic engineering of intolerable structural vibrations and damage from construction and industrial dynamic sources: soil and structure responses to ground vibrations, unknown causes of intolerable vibrations from known dynamic sources, effects of dynamic and environmental forces on structures, non-vibration damage to structures undergone dynamic excitation, practical application of existing vibration limits. Preparation of specifications for monitoring and control of soil and structure vibrations generated by construction and industrial sources. Prediction, measurement, and analysis of soil and structural vibrations. Pre/post construction activities condition survey of structures. A reasonable choice of correct and flexible vibration damage criteria. Claim investigations, reports, forensic expert and expert witness in the field of Soil and Structural Dynamics.

Research. Soil and structure vibrations from construction and industrial vibration sources. Calculation of maximum ground vibrations prior to pile installation. Mitigation of soil movements from pile driving. Prediction and calculation of construction vibrations. Minimizing construction vibration effects. Predicting soil and structure vibrations from impact machines. Drawbacks of blast vibration regulations. A new approach to assessment of safe structural vibrations. Engineering judgment in determination of pile capacity by dynamic methods. Evaluation of uncertainties in high-strain dynamic pile testing. Determination of short-duration impacts for dynamic pile testing. A right choice of dynamic methods for specified piles and sites.

1991 - 1996 *Consulting Engineer*, GRL and Associates, Inc., Cleveland, Ohio
Consulting Practice. Responsible for database and correlation study of the research project entitled "Determination of Pile Driveability and Capacity from Penetration Tests" sponsored by Federal Highway Administration. Application of wave equation analysis to pile driving for various projects. Pile integrity testing up to 90 piles per day for various projects.
Research. Relationship between case and hysteretic damping. Pile capacity as a function of time in clayey and sandy soils. Application of wave equation analysis for predicting pile capacity. Influence of pile parameters on pile driveability. Velocity-impedance-energy relationships for driven piles.

1989 – 1991 *Engineer-Detailer*, Kilroy Structural Steel, Cleveland, Ohio
Detailed drawing of steel structures and computing required material for production of steel structures.

1963 – 1987 *Senior Research Associate*, Kharkov Scientific-Recearch and Design Institute for industrial Construction, Kharkov, USSR.
Consulting Practice. Vibration measurements of soil and various structures from construction and industrial sources. Dynamic analysis of structural vibrations, report preparation for clients. Responsible for investigation of machine foundation and soil vibrations made in Kharkov Institute to correct The Building Code for Design of Machine Foundations.
Research. Investigations and analysis of foundations and other structures supporting machines with dynamic loads. Studies of dynamic properties of machine foundation-soil systems. Decreasing dynamic loads from machines and vibration isolation of machines. Predicting soil and structure vibrations generated by machine foundations. Industrial seismology. Accuracy of soil and structure vibration records.

1958 – 1963 *Structural Engineer*, Kharkov Scientific-Research and Design Institute for industrial Construction, Kharkov, USSR.
Design Experience. Design of industrial buildings for different applications such as chemical, metallurgical, and also design of refining plants, machinery shops, etc. Scope of work, design criteria, general layout, final engineering drawings, checking design and shop drawings, coordination of design with other disciplines. Frames analysis, steel and concrete structures analysis and design, foundation analysis and design.

AFFILIATION

American Society of Civil Engineers (ASCE), International Society for Soil Mechanics and Foundation Engineering (ISSMFE), International Society of Explosive Engineers (ISEE), Deep Foundation Institute (DFI).

PUBLICATIONS

More than 150 papers have been published in Proceedings and Journals, three patents, and more than 105 professional reports. US Patent No. 5,610,336 "A method for estimating frequencies of machine foundations".

AWARDS

The 1970 Exhibition of Achievements of National Economy of the USSR Award for the development of heavy crasher vibration isolation and design of lightened foundations under them.

The 1980 Exhibition of Achievements of National Economy of the USSR Medal for a new method for predicting soil and structure vibrations from impact machines incorporated into Russian Manual for Design of Machine Foundations (1982).

The 2005 ASCE MetSection Geotechnical Group Apple Award for the lecture "Mitigation of Soil Movements from Pile Driving" at the Underground Construction in Urban Environments Seminar, New York, May 11-12.

The 2006 ASCE Thomas Fitch Rowland Award for the paper "Minimizing Construction Vibration Effects," Practice Periodical on Structural Design and Construction.

The 2008 Special Presentation of "Soil and Structure Vibrations from Construction and Industrial Sources" at the Sixth International Conference on Case Histories in Geotechnical Engineering and Symposium in Honor of Professor James K. Mitchell, Arlington, VA, August 11-16.

In 2009, Mark Svinkin paper "Predicting Soil and Structure Vibrations from Impact Machines" appears on the top of a list of Google search results for "soil and structure vibrations".

PERSONAL

Married, one child, USA citizen.