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Respond quickly to challenges, versatile initiator in making decisions or solving problems and always be ready to the competition. Act directly and positively before the opposition. Strong person who is willing to take risks to achieve the established goals, but making decisions based on known facts or established procedures that avoid any type of risk or problem to the organization or the work team.

1. EXPERIENCE.

2013 – 2018. DIRAC Ingenieros Consultores

Deputy Director

PROJECTS:

- East Emission Tunnel (TEO). Review of Lining Design Analysis, Review of Advances of the Tunnel Boring Machines (TBMs). CONAGUA client.
- West Emission II Tunnel (TEP II). Development, Review and Analysis of Entry and Exit Portals, Review of Advances of the TBM and the Unique Shaft. CONAGUA client.
- General Electric (GE). Mexico Valley II Energy Plant. Development and Review of Pavement Design, Foundation Platforms and Slope Stability Analysis.
- 3rd Cutzamala System Line. Design and Analysis of Foundations for Uplift Forces, Boxes for Hydraulic Pumps and Design of Little Dam System. CONAGUA client.
- Mexico-Toluca Train. Review of the Design and Analysis of the Tunnel and Connection Galleries. SCT client.
- Urban Electric Train in the Metropolitan Area of Guadalajara. Review of the Foundations Analysis of the Superstructure of Section 1. SCT client.
- Elaboration of the structural security report of the Olympic Pool, the Diving Trench and the Cover of the CNAR. Iztacalco in Mexico City. CNAR client.

ACTIVITIES PERFORMED: Review and elaboration of Geotechnical Executive Projects and Soil Mechanics Studies, Basic and Detail Engineering, Design Bases, Calculation Memories, Elaboration of Base Budgets, Site Visits, Attention to Meetings with Clients and Consultancies in Geotechnics.

2002 – 2013. Universidad Nacional Autónoma de México, Instituto de Ingeniería de la UNAM

Research Associate (Jr. Geotechnical Engineer)

PROJECTS:

- Updated Design Manual for Civil Works, Geotechnical Section B, Item 2.1. Soil Improvement.
- Analysis of slope stability by finite element method (PLAXIS 2D). Analysis site called "La Carbonera" Veracruz. Project Designed for PEMEX.

- First Review of Proposed Projects PEMEX-PEP corresponding to conceptual design for foundations and anchors UNAM.
- Evaluation of regional subsidence using a model elastic-plastic for the Subway Public Transportation System-Project of Line 12, Mexico City.
- Evaluation of the stability of the Barra de las Brisas, considering the expansion of the Port of San Pedrito Interior; Manzanillo, Colima.
- Updated Design Manual for Civil Works, Geotechnical Section B, Item 2. Soil Mechanics. Chapter 1. Characterization of soil deposits.
- Analysis and evaluation of differential settlements that arise in housing units and CTM Coacalco Rafael Sn-13.

2. EDUCATION.

2004 – 2009. Universidad Nacional Autónoma de México, Instituto de Ingeniería de la UNAM.

PhD in Civil Engineering (Soil Mechanics).

Dissertation Project: The effect of the injection pressure in the axial behavior of micro piles installed in soft soil.

Supervisor: Professor Efraín Ovando Shelley.

Project synopsis:

- Adapt, validate and implement the cavity expansion method to investigate the behavior of injected micro piles.
- Investigate the role of the horizontal displacements around an injected micro pile and how these affect the shear strength of the soil.
- Identify the plastic zone generated around a micro pile by the grout pressure using the FLAC3D program.

2005. IELTS. Test Results: Listening 6.0, Reading 6.0, Writing 6.0, Speaking 7.0; Overall Band Score: 6.5 (Competent User, Good User)

2000 – 2001. Universidad Nacional Autónoma de México, Instituto de Ingeniería de la UNAM.

MSc in Civil Engineering (Soil Mechanics).

Dissertation Project: Experimental analysis of the bearing capacity of bored piles.

Modules studied include: Bearing capacity analysis methods and soil – pile interaction, bearing capacity in situ tests, Osterberg load cell for bearing capacity in situ tests, analysis and interpretation of the bearing capacity test made in Torre Mayor (the highest building in Latin America) and modeling bearing capacity in situ tests with PLAXIS.

3. RESEARCH EXPERIENCE AND TECHNICAL SKILLS.

- Extensive experience of PLAXIS 2D/3D and FLAC3D.
- Researcher Assistant in several Geotechnical Projects at the Engineering Institute, UNAM
- Associate Professor at the UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO (UNAM) for sixteen years. Foundations Lecture and Laboratory of Soil Mechanics.

4. RESEARCH-RELATED EXPERIENCE.

2011. Universidad Politécnica de Catalunya (UPC), Spain. **Postdoc visitor.** European Project GEOEXCEL 'GEO-engineering EXChanges between Europe and Latin-America (Marie Curie Actions-International Research Staff Exchange Scheme FP7-PEOPLEIRSES-2008, Grant Agreement No. 230860 PIRSES-GA-2008-230860). Supervisor: Professor Alberto Ledesma. Researcher Professor of Civil Engineering at UPC.

2006. University of Nottingham, U.K. **Researcher PhD student visitor.** Supervisor: Professor Hai-Sui Yu. Deputy Head of the School of Civil Engineering and Director of the Nottingham Centre for Geomechanics.

5. PUBLICATIONS.

Ortiz, R., et al. (2018), *Soil Improvement*, Section B Geotechnics, Topic 2.1. Soil Mechanics, Civil Works Design Manual, Federal Electricity Commission, Mexico.

Ortiz, R., et al. (2018), *Characterization of Soil Deposits*, Section B Geotechnics, Topic 2. Soil Mechanics, Civil Works Design Manual, Federal Electricity Commission, Mexico.

Ortiz, R., Vargas, C., Flores, A., (2016), *Evaluation of Vulnerability to Sand Liquefaction*. Mexican Society of Geotechnical Engineering, Mexico.

Ortiz, R., Espinosa, M., (2010), *Experiences Obtained in Physical Scale Models for the Academic Study of Geotechnical Problems*. XXVth Mexico Soil Mechanics Meeting.

Chávez, J., Ortiz, R., (2010), *Preliminary Study of Mortar Characterization for Mines Injection*. Scientific Divulcation Journal of the FES Acatlán-UNAM.

Ortiz, R., Ovando, E., (2009), *Development of Pore Pressure and Consolidation Around Micro Piles Injected in Soft Soil*. UDG Scientific Divulcation Journal, egnosis, ISSN: 1665-5745 2009, e-Gnosis Vol. 7, Art.5.

Ortiz, R., Ovando, E., (2008), *The Effect of the Injection Pressure in the Axial Behavior of Micro piles Installed in Soft Soil*. XXIVth Mexico Soil Mechanics Meeting.

Ortiz, R., Espinosa, M., (2008), *Geotechnique and Structures: A Bound Between Both Disciplines*. XXIVth Mexico Soil Mechanics Meeting.

Ortiz, R., Ovando, E., (2006), *Pore Pressure Increments Owing to Cavity Expansion in Mexico City Clays*. XXIIIth Mexico Soil Mechanics Meeting.

Ortiz, R., Ovando, E., (2006), *Lateral Subsoil Deformations Due to Inclusions Construction*. ISSMGE TC36, Symposium of rigid inclusions in difficult subsoil conditions. México City.

Ortiz, R., Ovando, E., (2004), *EPS-Embankment Design Above Low Bearing Capacity Soils*. XXIIth Mexico Soil Mechanics Meeting.

Ortiz, R., Ovando, E., (2004), *Bearing Capacity no Conventional Test Analysis*. XXIIth Mexico Soil Mechanics Meeting.

6. PROFESSIONAL CERTIFICATES.

Geotechnical Expert Certified: PPGT-051

Civil Engineer Certified: No. 052 (SEP/DGP/CP080/16)

7. ACHIEVEMENTS.

Received **“Nabor Carrillo Flores Award 2017”** for **Best Research Book- *Evaluation of Vulnerability to Sand Liquefaction***. By College of Civil Engineers of Mexico (CICM).

Received **“Manuel Gonzalez Flores Award 2010”** for **Best Overall Academic Achievement**. By Mexican Society of Geotechnical Engineering (SMIG).

8. INTERESTS.

- I enjoy sports, especially swimming and jogging.
- I find listening to music a relaxing pastime and I also enjoy movie and reading all kind of books.