



**ACTIVE GEOENGINEERING CONSULTANCY**





## ABOUT US

Active Geoengineering Consultancy (AGC) was formed with the idea of offering a full-suite of pre-design services ranging from geotechnical, geologic, geodetic, hydro, and up to civil infrastructure design that would eliminate design gaps while using modern techniques.

## MISSION

To use to firm's holistic expertise in the geo-civil sphere and project management to create practical solutions to infrastructure, geotechnical, and foundation engineering problems nationwide.

## VISION

To be a leading partner to architects and major developers in their pursuit of maximizing land-use while minimizing time and cost in master planning and development.







## Rainier B. Ramos, MSCE, MSCM Geotechnical Engineer

President of **Active Geoanchor Inc.** and **Active Geoengineering Consultancy**, has more than a decade of experience in civil engineering, geotechnical engineering, project management, and real estate development in the Philippines. Previous work in top local and international firms, and graduate studies has led to his technical and management expertise. He earned his degrees in Master of Science in Civil Engineering (MSCE) major in Geotechnical Engineering from the University of the Philippines, Diliman and Master of Science in Construction Management (MSCM) from the University of the East, Manila. He is also a registered DPWH Materials Engineer and Master Plumber.

Member of Philippine Constructors Association, Philippine Society for Soil Mechanics and Geotechnical Engineering, and the Urban Land Institute.





**Carlos Amante, MASC, MENG**  
Geotechnical Engineer

Over three decades of geotechnical and earthquake engineering consulting and project management experience in California, New Zealand and the Philippines. He has managed major geotechnical and seismic investigations, design and construction quality assurance testing and inspection of numerous projects.

Educated in University of British Columbia, Canada, Kanazawa University, Japan and University of the Philippines Diliman

Licensed professional civil and geotechnical engineer in the state of California, USA.



**Jun Patron, MSCE**  
Geotechnical Engineer

Over three decades of specializing in geotechnical engineering in local and international sphere has led to various infrastructure projects and numerous international publications

Educated in University of the Philippines Diliman and Asian Institute of Technology in Bangkok

Member of Philippine Institute of Civil Engineers QC Chapter, Environmental Impact Assessment Review Committee of the DENR-Environmental Management Board (2003-2015)

Top 9 in the Civil Engineering Board Exam in 1985





**Cesar Garcia Jr., MSCE**  
Geotechnical Engineer

Twelve years experience in geotechnical engineering design and assessment. His experience includes foundation design, liquefaction assessment, earthworks design, ground improvement techniques, slope stability analysis, seismic analysis and various civil works. Proficient in the use of WALLAP, SLOPE/W, SEEP/W, SLIDE, Plaxis and Roclab, CLiq.

Educated in University of the Philippines

Top 9 in the Civil Engineering Board Exam in 2004



**Louell Rebodos**  
Civil Design Engineer

A civil engineer with over sixteen years of experience in infrastructure land development design with specific expertise in highway transport planning, utility development (water, storm drainage, and sewer infrastructures), and mass-housing land development. Proficient in Civil 3D, Microstation, LanDev3, Hydraflow Storm Sewer, Epanet, Loop & Branch.

Educated in Polytechnic University of the Philippines





**Emil Sylvester Ramos**  
Tech Consultant

Emil is an award winning tech entrepreneur recognized by the G20 Infrastructure Working Group, the International Road Federation, Geneva, the Global infrastructure Hub and other international engineering organizations. He is currently the CEO and Co-founder of IRIS, a Canadian AI infrastructure solutions company headquartered in Toronto. IRIS work with cities, concessionaires, tolling agencies and infrastructure companies to increase road safety and extend the life of the world's ageing road infrastructure through proactive maintenance, data and AI.

Emil is an active member of Canada's innovation ecosystem, inventor and patent holder in the areas of IoT (internet of things), AI and Data Science.



**Clipper Besin**  
Geotechnical Engineer

Extensive knowledge in principles, design and practice of geotechnical engineering, and building/civil structures and enabling works from over two decades of mastery in public and private infrastructure projects across the country.

Educated in University of the Philippines, De La Salle University and University of Nueva Caceres







**Samuel Sendon**  
Geologist

Forty five years as professional geologist with vast experience in mineral exploration involving local and international mining companies. Mainly involved in gold exploration and other metallic and non-metallic, as well as in advance exploration and development programs. Projects worldwide including Canada, Indonesia, Solomon Islands and Cyprus.

Educated in University of the Philippines Diliman. Nominee for "HARD ROCK' Award, Philippine Bureau of Mines, 1984.



**Patricia Adiaz**  
Structural Design Engineer

Honed by years of experience in structural design in Sy Squared and Associates Inc. working in various landmark projects in the country. Proficient in the use of GRASP, PCACOL, CSICOL, STAAD, SAFE, SAP, ETABS. Also serving as managing director of Kontakbuilders, general building construction company.

Educated in De La Salle University





## PRE-DESIGN SERVICES

Land, Bathymetric, and Topographic Survey  
Geotechnical Investigation and Lab Testing  
Standard Penetration Test (SPT)  
Cone Penetration Test (CPT)  
Ground Penetrating Radar (GPR)  
Electrical Resistivity (Georesistivity)  
Foundation Assessment and Design  
Slope Stability Assessment and Design  
Engineering Geologic and Geohazard Assessment  
Hydrologic and Hydraulic Study  
Environmental Impact Assessment  
Structural Assessment and As-Building

## CIVIL INFRASTRUCTURE

Engineering Master Plan  
Highway Transport and Planning  
Pavement Analysis and Design  
Road Infrastructure Design and Alignment  
Terrain Analysis and Grading Design  
Storm Drainage System  
Water Distribution Network System  
Sanitary Sewer and Wastewater Network System  
Boundary Retaining Wall and Slope Protection  
Traffic Engineering & Modeling  
Bridge Assessment and Design  
Structural Design for Infrastructure Facilities





## RECENT COMPLETED PROJECTS

- Foundation Design Analysis for proposed 4-Storey Structure in Sta. Cruz, Manila
- Geotechnical Investigation for proposed Residence in Punta Fuego, Batangas
- Geotechnical Investigation for proposed Residence in Peninsula de Punta Fuego, Batangas
- Electrical Resistivity Test for Metro Manila Subway Project CP103 Project
- Geotechnical Investigation for proposed Residence in Damar Village, Quezon City
- Land of Nomads Project (Geotechnical, Hydrology, & EGGAR)
- Geotechnical Investigation for proposed Residence in Damar Village, Quezon City
- Geotechnical Investigation for proposed 12-storey building in Panay Ave., Diliman, Quezon City
- Computation of Design Forces for DMCI Anissa Heights Project in Zamora, Pasay



## RECENT COMPLETED PROJECTS

- Geotechnical Investigation for proposed Driving Range in Mimosa Drive, Pampanga
- Geotechnical Investigation for proposed Residence with Basement in Sun Valley Golf Estates, Antipolo
- Tangent Pile Design for Velaris Residences T2 and T3
- Civil Infrastructure Design for Land of Nomads Project
- Ground Improvement Design for CCPC RMC Effluent Treatment Plant
- Geotechnical Investigation for proposed Omega warehouse and building in Malvar, Batangas
- Hydrology and Hydraulics Study for Valley Golf and Country Club, Antipolo
- Slope Stability Design for Golden Haven Project
- Slope Stability Design for Proposed Cold Storage in Antipolo City



## RECENT COMPLETED PROJECTS

- Civil Infrastructure Design for the Proposed Twin Acacia Dive Resort & Spa Project
- Buenavista Heights Phase 3 Outfall (Design)
- Civil Infrastructure Design for the Proposed Greenstone Warehouse
- Maris Tailrace Hydrology Study
- Civil Infrastructure Design for the Proposed Hacienda Sta Elena
- Civil Infrastructure Design for the Proposed Santos Farmhouse
- 2X4.173MW DMPC Cataingan Slope Protection Design
- Structural Design for the Proposed Samson Residence Valle Verde 1
- Structural Design for the Proposed Yushoken Project
- Structural Design for the Proposed Mendoza Beach Home
- Sheet Pile Design for the Proposed The Calinea Tower



## RECENT COMPLETED PROJECTS

- Foundation and Ground Improvement Design for the Proposed DLA Building Iloilo
- Hydrological Assessment Study for the Proposed Cold Storage in Antipolo City
- Slope Stability Design for Herald Parksuites
- Slope Stability Design for 8-Storey Building with Basement
- Slope Stability Design for MRT 7 Depot
- Slope Stability Design for Olin at Jade Drive
- Slope Stability Design for Lee St., 671 Property
- Slope Stability Design for SMDC Jade Residences
- Slope Stability Design for Alabang Country Homes
- Slope Stability Design for Proposed MHEPP Warehouse
- Slope Stability Design for Philakor Creek





## RECENT COMPLETED PROJECTS

### Golden Haven Antipolo



## RECENT COMPLETED PROJECTS

### Buenvista Heights Phase 3



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## RECENT COMPLETED PROJECTS

### Section of South Luzon Expressway



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## CASE STUDY 01



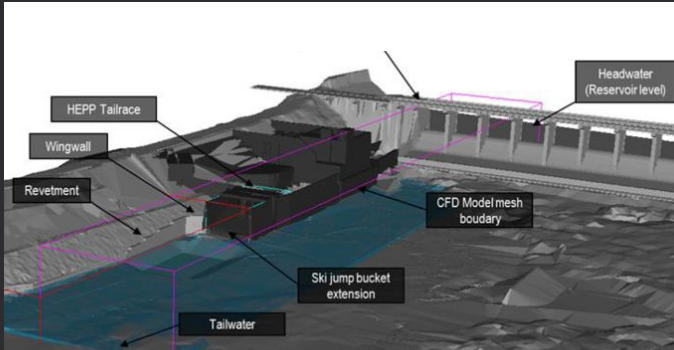
**PROBLEM:** Scouring was observed along a 27-meter slope where an existing live outfall is also located. Recurring and intense rainfall in the past had caused the slope to erode where the RCPC outfall was built.

**INVESTIGATION/STUDY:** A geotechnical investigation was conducted wherein soil samples were collected and tested for its properties using Direct Shear Test and Dynamic Cone Penetration Test. The existing outfall was studied using hydrologic and hydraulic analysis with the use of software modelling and simulation in determining the discharge velocity of the existing drainage.

**CONCEPT & DESIGN:** Diverting the existing outfall in an area where a relatively dense soil will support the new outfall system. An outfall system was designed to reduce the discharge velocity of the outfall to prevent future erosion and scouring. Soil nailing with shotcrete, erosion control matting, and rockfall protection were also designed to maintain slope stability.



## CASE STUDY 02



**PROBLEM:** Heavy rainfall and sustained strong winds in an island in the Philippines resulted in the destruction of properties both infrastructure and agriculture. A slope failure had occurred wherein an area in the revetment close to the tailrace has collapsed after the onslaught of the typhoon.

**INVESTIGATION/STUDY:** A geotechnical investigation was conducted in the collapsed/exposed area, and it was observed that the fill material composing of coarse-grained soil and cobbles were wet indicating that the occurrence of seepage. Samples were also taken on site for laboratory testing to determine the properties and strength of the fill material. Topographic and bathymetric surveys were also conducted near the area where the failure occurred which will be critical in designing the appropriate system in addressing the problem. Furthermore, a hydrology and hydraulic study were also conducted using simulation and modelling of the flow of the water from HEPP to discharge and impact. A slope stability study was also conducted to design an effective slope protection for the compromised revetment.

**CONCEPT & DESIGN:** A plunge pool was designed to dissipate the flow of the water following its discharge from the spillway. A setback distance for the revetment away from the ski jump bucket to avoid close impact from the discharge of water. Modifying the lip angle of the ski jump bucket to increase the trajectory of the water farther away the revetment wall. New wing wall and revetment wall were also designed considering the tailrace flow and discharge to protect against possible erosion and scouring of the slope.



# THANK YOU

Active Geoen지니어ing Consultancy



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