

PGATECH



**YEARS
of SERVICE
TO THE INDUSTRY**

PHILIPPINE GEOANALYTICS GROUP OF COMPANIES

PGA Technical Center
No. 85, Kamuning Road
Quezon City 1103
Philippines



PGATECH

PGATECH offers you leading edge technologies and expertise in the ***solution of your Engineering and Construction problems.*** For over twenty years now, **PGATECH** has pioneered in the Introduction of Innovative Engineering Technologies in support of Engineering and Construction. These technologies and expertise are available to your organization to solve complex problems in your projects.

PGATECH has also led in the quest for Quality, having earned Three ISO Accreditations for the Group's firms namely:

PGA Incorporated - 1st ISO Guide 25 accreditation ever awarded to a Testing Laboratory (BPS No. 001).

EM²A Partners & Co. - First Filipino Consulting and Engineering Firm accredited under ISO 9001 by TUV Germany.

PGA Calibration & Metrology Laboratory - ISO Guide 25 accreditation for Calibration & Metrology Laboratory.

OUR COMMITMENT TO SAFETY: The PGA Group of Companies has always put an emphasis on the safety of its personnel. Members of our organization are adequately equipped with high-grade safety equipment and have been extensively trained in the proper use of these equipment in actual field settings.

Did you know that...

1) **PHILIPPINE GEOANALYTICS, INC., (PGAI)** started as a six man laboratory outfit in the early 80's. We are now a 200-man strong organization.

2) The laboratory was the very first Foreign Laboratory accredited by the US Bureau of Commerce, National Bureau of Standards under the National Voluntary Accreditation Program (NVLAP). PGAI was even ahead of any Laboratory in Hawaii.

3) PGAI was the very first Laboratory accredited in the Philippines under the ISO/IEC Guide 25 Quality System with BPS Accreditation Number 001.

4) PGAI served as Audit Laboratory to the US Military bases under OICC SOWESPACE and was the only Laboratory permitted by the OICC to perform Independent Contractor Quality Control for its Contractors while concurrently serving as its Audit Laboratory.

5) We are the Testing Laboratory of the Philippine Government under BPS for testing of Portland Cement and Rubber Tires.

6) The PGATECH Group has three ISO Accreditations (*ISO 9001 & ISO Guide 25*).

www.pgatech.com.ph



THE CLIENT IS THE CENTER OF OUR UNIVERSE

Fields of Expertise and Support to Engineering, Construction and Various Technical Organizations:

- **Subsurface Soil Exploration Technologies (Invasive and Non Invasive)**
- **Soil Mechanics Laboratory**
- **Environmental Investigation and Sampling**
- **Ground Instrumentation and Monitoring**
- **Geophysical Exploration**
 - *Seismic Refraction Surveys*
 - *Resistivity Surveys*
- **GPS Topographic Surveys**
- **Materials Testing & Research**
- **Forensic Engineering Services**
- **Special Foundation Technologies**
 - *Jet Grouting*
 - *Rammed Aggregate Piers GEOPIER®*
 - *Soil Nailing*
 - *Micropiling*
- **Construction Quality Control (CQC)**
- **Calibration and Metrology Services**
- **NonDestructive Testing of Metals and Composites**
- **Structural, Geotechnical, Geoenvironmental and Forensic Engineering**
- **Software Engineering and Design**

Geoenvironmental Investigation & Sampling

PGATECH Group thru PGA Environmental possesses equipment for investigation and sampling of hazardous materials in the subsurface. It is also fully equipped with personal protective clothing and equipment to include disposable coveralls and Self Contained Breathing Apparatus (SCBA) as well as Gas Monitoring Instrumentation for detection of explosive concentrations of gases and also toxic gases in the atmosphere. Detection of buried containers is easy with the use of our magnetic locators.

With the aid of our Truck Mounted Mobile drills using hollow stem augers, we can extract high quality samples uncontaminated by any drilling liquid or flushing medium. The Hollow Stem Augers can be cleaned by our portable Steam Generator in the field.

We have extensive experience in the installation of monitoring wells, having installed these in at least 150 gasoline stations nationwide for a major Petroleum Company.



Self-contained breathing apparatus (SCBA) for hazardous area entry.



Portable gas monitors and environmental monitoring equipment.

www.pgatech.com.ph
em2apart@pgatech.com.ph



Environmental soil sampling and monitoring at a gasoline station

- **Installation of Monitoring Wells**
- **Environmental Sampling**
- **Mapping of Contamination Plumes**
- **Geo-Environmental Engineering**
- **Detection of Buried Wastes and Contamination Plumes through Geophysical Methods**
- **Liner Design / Containment Walls**
- **Permeability Testing of Soils using various methods**
- **Dust and Noise Pollution Monitoring Surveys**
- **Explosive Gas Detection Systems**
- **Contaminant Migration Studies**
- **Out of Service Inspection of Petroleum Tanks**
- **Hazardous area Entry (SCBA and Airlines)**
- **Ground Remediation**



Installation of monitoring wells for ground contaminants survey

Soils and Construction Materials Testing

We have a complete equipment inventory in our Main Laboratory as well as in two satellite laboratories in Cebu and Angeles City to handle routine testing of construction materials.

Our FORNEY L-1000 Universal Testing Machine (UTM) is equipped with a digital extensometer for plotting stress and strain and at 300MT has the highest tensile capacity among the UTM's in the country. A 200MT UTM is available to back it up.

Materials Testing & Research

PGATECH is the largest and most complete materials testing laboratory for testing and research on materials and products. We possess two Universal Testing Machines (200 MT and 300 MT Tensile Capacity) and stiff heavy framed compression testers for concrete compression tests. The use of heavy stiff frames ensures that elastic energy due to the machine is not transferred during failure as to cause lower failure load indications.

The two Universal Testing Machines are used for the testing of metals and metal products including HTS prestressing cables, wires and fasteners and ultra high strength concrete.

PGATECH has extensive testing and instrumentation capabilities for use in materials testing and research. Both destructive and non destructive testing procedures are within the capability of the group.

Failure analyses of metal and assemblies can be studied using Metallurgical, Destructive and Non-Destructive Techniques.

The FORNEY LT 1000 with 300 MT Tensile Capacity is equipped with a digital load indicator connected to a pressure transducer and an extensometer to yield accurate stress strain plots.

Modifications to the system can accommodate set up of special jigs and tools for flexural tests on beams and other steel or concrete products due to its large daylight clearance.

Subsurface Soil Exploration Technologies

PGATECH boasts of the biggest and most up to date inventory of equipment for Soils Exploration and Sampling ranging from four (4) truck mounted Mobile Drills for Auger Drilling and several Skid Mounted Rigs to Electronic Cone Penetrometer Testing Equipment for detailed site characterization and economy in soil exploration.

The truck mounted Mobile Drills generate large torques to drive large-diameter Hollow Stem Augers for faster drilling and higher quality sampling without the use of flushing liquids that could disturb the samples.

Skid Mounted Rigs can be mobilized for use in difficult terrain or areas inaccessible to truck mounted rigs. These are compact and can be used in tight spaces.

Most of the said rigs are diesel driven and are provided with adequate safety features to make them compliant with Petroleum Refinery Safety Standards.

Our personnel have been extensively trained to comply with strict safety standards for operation in hazardous locations.

www.pgatech.com.ph
pgamain@pgatech.com.ph



AGGREGATES
SOIL
CONCRETE
CEMENT
ASPHALT
PAINTS

STEEL BARS
ROLLED SECTIONS
HT CABLES
FASTENERS
WATER QUALITY

- **Soil Mechanics Laboratory for Testing of Strength, Compressibility, Index Properties and Chemical Properties**
- **Triaxial Testing of Soils**
- **Consolidation Tests**
- **Tensile Testing - Metals, Fasteners, Cables (HTS)**
- **Compression Tests on Ultra High Strength Concrete**
- **Stress-Strain Tests on Tension Specimens**
- **Special Tests for Structural Components in Bending, Shear and Torsion with use of Standard Jigs and Accessories**
- **Contractor Quality Control using On-site Mobile / Portable Laboratories**
- **Standards Compliance Testing of Cement, Paints and Automobile Tires for Philippine Government - Bureau of Product Standards**
- **Compaction Control Using Nuclear Density Gauges (2 sets)**



Hollow Stem Auger Drilling for subsurface soil investigation of a pipeline project.

- **Subsurface Soil Exploration**
- **Monitoring Well Installation**
- **Installation of Grounding Rods**
- **Rock & Soil Anchor Installation**
- **Installation of Micropiles**
- **Soil Nailing & Soil Reinforcement**
- **Installation of Relief Wells**
- **Installation of Horizontal Drains**
- **Wellpoint Installation**
- **Soils Mechanics and Water Quality Testing**

Geophysical Exploration

For extensive surveys and field reconnaissance work or for the detection of geotechnical anomalies and for fast site characterization, we offer top of the line technology for detailed stratification, characterization and mapping of the subsurface using non invasive techniques.

Seismic Refraction Using Geometrics SMARTSEIS Seismograph

The Geometrics Seismograph can be used for both seismic refraction and reflection surveys for shallow engineering exploration usually to 30 meters.

This can be used in between deep boreholes for determination of subsurface stratification and for characterization of subterranean layers.

This versatile 12 Channel Seismograph can also be used for the determination of geologic anomalies and cavities in the subsurface as well as determination of aquifers in conjunction with electrical resistivity equipment.

Electrical Resistivity Using Oyo Mark II Electrical Resistivity Equipment

Electrical Resistivity is extensively used in the conduct of corrosion potential of underlying soils and also for the determination of groundwater tables as well as aquifers.

When used independently or in conjunction with the Refraction Seismograph, it could provide a detailed characterization of the subsurface using electrical methods.

The two methods are complementary and when used with borehole information, can provide a very detailed and highly informative characterization of the subsurface at a fraction of the cost of conventional borings.

Electric Static Cone Penetrometer Testing (ECPT)

The Electric Static Cone Penetrometer acquired from *A.P. van den Berg* of the Netherlands allows a very fast and economical alternative to subsurface soil borings and is used where more detailed stratigraphic characterization of soils is required. The ECPT unit is attached to a Laptop Computer which monitors ECPT test parameters such as Cone Resistance "qc" and Sleeve Friction "fs" vs depth as well as the Friction Ratio "fr". The program automatically plots the results graphically in real time including rod inclination.

The ECPT unit is mounted on a dedicated self propelled LGP PAGANI Crawler Platform with self anchoring features allowing easy one man set-up and operation.

The ECPT is used in medium stiff to very soft clays and medium to very loose sands. It is a cost effective alternative to drilling of numerous boreholes and thus can substantially lower the cost of the soil exploration programs through elimination of a large number of boreholes.



OYO McOhm Soil Resistivity Tester - Electrical resistivity is widely used in the conduct of corrosion potential of underlying soils and also for the determination of groundwater table as well as aquifers.



Geometrics SMARTSEIS 12 Channel Seismograph - The Geometrics Seismograph can be used for both seismic refraction and reflection surveys for shallow engineering exploration usually to 30 meters.

SEISMIC REFRACTION APPLICATIONS

- **Determination of Seismic Velocities**
- **Detection of Cavities or Voids**
- **Site Characterization and Layering (Stratigraphy)**
- **Evaluation of Rippability**
- **Detection of Subsurface anomalies**
- **Reconnaissance survey to obtain optimum economy in Soil Exploration Program**

GEO-RESISTIVITY APPLICATIONS

- **Determination of Water Bearing Structures**
- **Site Characterization**
- **Mineral/Aggregate Prospecting**
- **Corrosivity Surveys**
- **Detection of Geotechnical Anomalies**
- **Stratigraphy Studies**



Specialized PAGANI TS 73-150 CPT Rig

Equipment Characteristics:
Rough Terrain Vehicle; Self Propelled LGP on 6 Wheels; Maximum 15 MT push Capacity; Self Anchoring with Hydraulically operated augers; Self Leveling with Hydraulic Jacks 3 Nos.; Diesel Powered Lombardini Engine; Optimized efficiency with Single Operator Console; Can be equipped with; MOSTAP discrete depth Contaminated Soils sampler; Directly linked to Onboard CPT Data Logger and Computer.

- **Detailed Stratigraphic Investigation**
- **Cost Effective Alternative to Numerous Borings**
- **Route Surveys to Determine Subgrade Characteristics**
- **Determination of Insitu Soil Parameters without Sampling such as:**

Shear Strength, Deformation Modulus, Density
CBR, Compaction, Soil Classification,
Pore Water Pressure Measurements (PWP),
Contaminant Detection and Sampling

Special Foundation Technologies

PGA GEOPIER Inc. employs **GEOPIER™** Technology which is a fairly recent and innovative solution to address the need for low cost yet efficient foundation solutions. The technology was invented by Dr Nathaniel Fox of Geopier Foundations, Inc. (GFI).

The patented system described as an “Intermediate Rammed Aggregate Pier” consists of drilling a columnar volume of soil using a 30" dia auger and incrementally filling and ramming the aggregate in layers. The ramming or compaction is done using high energy blows from a Hydraulic hammer delivering low amplitude, high frequency blows at about 500 BPM.

The secret of the process is in the patented bevelled shape of the Rammer foot which actually pushes the aggregates sideward. This results in prestraining of the soil and causes the lateral compaction of the ground surrounding the Aggregate Pile.

Lateral Compaction in turn increases the “grip” or side friction allowing large loads to be carried. What is more important, it enables the system to limit or control settlements to less than 25mm within the densified zone and reduces the influence pressures at depth by creating a “rigid “ natural densified mat. The **GEOPIER™** does not need to penetrate too deep through poor soils in order to accomplish its purpose. By calculating and verifying settlements and capacity through Pile Modulus Load Tests, Load Capacity and Settlement Prediction can be very accurate and guaranteed by the Licensors. Although design is carried out here, all designs are checked by GFI through its own independent design review process.

In yet another innovative breakthrough, the **GEOPIER™** can be a very cost-effective anchor system through the introduction of rebars into the Aggregate Pile during installation. This makes it an economical solution for resisting Tension or Pullout loads for towers and antenna structures or even billboards or outdoor signs.

PETER GROUND IMPROVEMENT INC. (PGII) pioneered new foundation technologies in the Philippines like **Jet Grouting & Soil Nailing**. Jet Grouting is an in-situ soil stabilization procedure and consists of injecting cement slurry at ultra high pressure to form cylindrical soil cement columns known as “Soil Crete.” Soil Nailing is an effective solution to stabilization of open cuts in soils, weathered rock, and as a temporary or permanent retaining structure.

www.pgatech.com.ph
pgageopier@pgatech.com.ph
pgii@pgatech.com.ph



Auger equipment to form pier cavity.



High frequency (500 BPM) hydraulic tamper with bevelled tamper foot.

www.geopier.com



Shotcreting of soil nailed wall in Fort Bonifacio Building Development



Shotcrete application for a soil nailing project. Note the extra provision of horizontal rebars for safety and the electro welded wire mesh.. An exclusive PGII feature.



Quality control of jet grouted soilcrete by concrete core extraction. The cores will then be tested in unconfined compression testing apparatus. Average strengths exceed 1000psi in most instances.

- **Soil Nailing**
- **Soil Stabilization**
- **Foundation Engineering and Construction**
- **Jet Grouting (underpinning, impermeability, foundation support)**
- **Rammed Aggregate Pier GEOPIER®**
- **Soil and Rock Anchor Installation and Testing**
- **Chemical Grouting**
- **Unidirectional Grouting**

Nondestructive Testing Laboratory (NDTL)

NON DESTRUCTIVE TESTING LABORATORY, Inc. (NDTL) was incorporated in 1995 to serve the increasing demands of the aviation, shipping, construction and manufacturing industry for quality testing work. The company is a member of the PHILIPPINE GEOANALYTICS GROUP OF COMPANIES (PGA) and has been initially conceptualized to focus on the nondestructive testing needs of the industry.

At NDTL, safety of engineering structures is one of our foremost concerns. Structural flaws and defects detected through nondestructive testing are not only reported but also analyzed in order to determine their overall effect on the integrity of engineering structures. We at NDTL provide technical solutions to minimize occurrence of structural defects.

Our job at NDTL does not stop at determining and analyzing defects. Structural component failures are likewise investigated and analyzed in order to determine failure causes so that recurrence of similar failures may be avoided.

At NDTL, we are also one with our clients in their unending effort to improve the quality of engineering works. Thus, not only do we provide quality inspection services through nondestructive testing but also, we make sure quality problems are remedied as well through active problem solving efforts with our clients. In line with these efforts, we are constantly involved with the various technical committees of the Bureau of Product Standards - Department of Trade and Industry in formulating industry standards.

Our clients consist of various industry players in the aviation, construction, manufacturing and fabrication, power plant, petrochemical, cement, transportation and food sectors. To prove our technical expertise, we were commissioned by a distinguished German company to act as NDT and metallurgical consultants in a power plant rehabilitation work.

At NDTL, we believe in the technical capability of fellow Filipinos. Thus, we are constantly active in upgrading the technical skills of Filipino personnel through various lectures and training conducted in coordination with the private and government sectors.

www.pgatech.com.ph
pgandtl@pgatech.com.ph



LIQUID PENETRANT TESTING



EDDY CURRENT TESTING



RADIOGRAPHY



MAGNETIC PARTICLE TESTING



ULTRASONIC TESTING



NDT OF AIRCRAFT COMPONENTS

- **Liquid Penetrant Testing**
- **Ultrasonic Thickness Gaging**
- **Ultrasonic Testing (Flaw Detection)**
- **Magnetic Particle Testing**
- **Radiography (Gamma and X-Ray)**
- **Eddy Current Testing**
- **Weld Inspection**
- **Testing for Welders Qualification**
- **Testing for Welding Procedure Qualification**
- **Metallurgical Failure Investigation**
- **Technical Training**
- **Turbine Blade Inspection**

EM² A Partners and Co.

EM² A Partners & Company started as an A&E Department of the Parent Organization, PHILIPPINE GEOANALYTICS, a single proprietorship company. The A & E Department was subsequently spun-off as a separate organization to concentrate on purely Professional Design & Consulting Activities.

The company has been accredited as the very 1st Filipino Civil Engineering Consultancy Firm under ISO 9001 by TUV Cert of Germany.

EM² A Partners & Co. is a Multidisciplinary Consulting Engineering Firm engaged in Civil, Structural, Geotechnical, Materials, Forensic Engineering and CADD. Through the years, we have specialized in the Structural analysis and design of Industrial Facilities, Geotechnical Engineering, Site Civil Development and remediation measures for Derelict or Damaged Buildings as well as Design of Applications Programs for Information Technology applications using GIS . We are backed up by a complete Materials Testing Laboratory which is fully owned by the company. The Laboratory is the very first Soils and Materials Testing Laboratory accredited under ISO/IEC GUIDE 25.

Our operations are fully computerized and we are among the pioneers in the Engineering Consultancy Business to operate a full CADD FACILITY. We have acquired the most powerful Structural Analysis and Design Software, STAAD III/ISDS to enhance efficiency and Structural Optimization. We have continually beefed up our capabilities through acquisition of Licensed Software to include the most powerful Civil Analysis Software capable of precise Earthwork computations, Digital Terrain Modeling, contouring, Surveying, Roadway Design, Storm Drainage Design, Sewer Design and Water Distribution Network Design. In addition, we have acquired Intergraph's SELECTCAD a sophisticated Stormwater and Sewer Analysis and design Program.

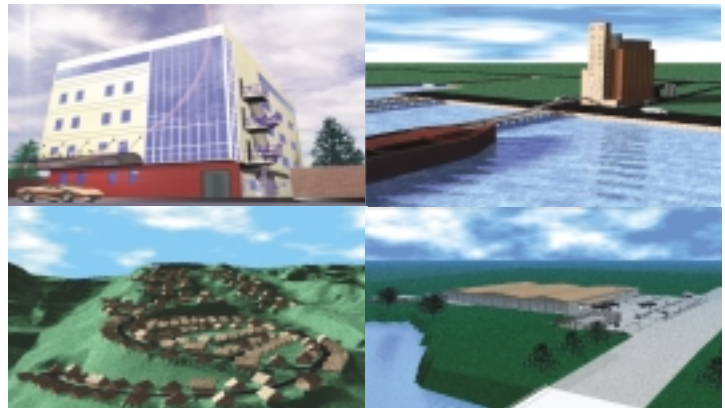
We have also acquired the PCA Software MATS for design and analysis of MAT Foundations using Finite Element Analysis. We also have Scanning & Intelligent vectorizing Software to convert Drawings and Plans to CAD format. EM²A also makes use of CAD Manufacturing Solutions' popular IntelliCADD software for general CADD application. We use Intergraph's GEOMEDIA Software for Information Technology applications.

We respect intellectual property rights and we are fully compliant with software registration and licensing requirements.

www.pgatech.com.ph
em2apart@pgatech.com.ph



San Miguel Davao Brewery



STRUCTURAL ENGINEERING

- **Structural Failure Analysis & Remediation**
- **Structural Analysis and Design**
- **Structural Optimization & Value Engineering Services**

GEOTECHNICAL ENGINEERING

- **Settlement Analysis**
- **Slope Stability Analysis**
- **Ground Instrumentation & Monitoring**
- **Soil Remediation**
- **Soft Soil Engineering & Utilization of marginal lands**

GEOENVIRONMENTAL ENGINEERING

- **Detection and Mapping of Contamination Plumes**
- **Landfill Design**
- **Liner Design**
- **In-situ Ground Remediation**
- **Design of Barrier and Containment Walls**

CIVIL DESIGN AND SITE DEVELOPMENT

- **Site Development Planning**
- **Software Development**
- **Soil Reclamation**

COMPUTER AIDED DESIGN

- **Software Development**

TOPOGRAPHIC SURVEY

- **GPS Topographic Survey TRIMBLE RTK Equipment**

GPSG Inc.

When there is a need to perform fast and accurate topographic and alignment surveys of extensive areas or long linear structures in flat or difficult open terrain, there is no substitute to GPS (Global Positioning System) Survey using Dual Station Differential Leveling Techniques and Real Time Kinematic (RTK) Techniques.

With the US DOD removal of Selective Availability (SA) routines in the NAVSTAR GPS Satellite System, subcentimeter accuracies are possible for location and near centimeter for elevation.

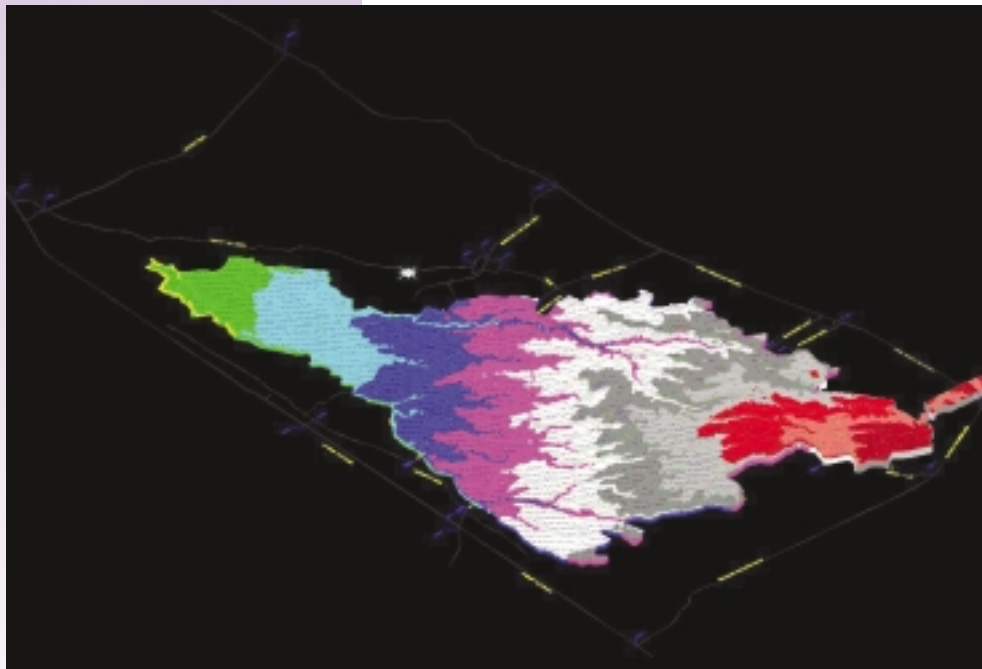
The Dual Station System has a radius of 10 km communicating with each other via a dedicated radio link.

GPS Surveying is fast, accurate and foolproof. It eliminates human errors in the field (intended or accidental) as the results can immediately be checked by computer in the field. Thus, the engineer is assured that all areas have been covered to the degree of accuracy specified.



TRIMBLE 4800 Dual Station GPS with RTK Operating Radius of 10 Km being used at NAIA IPT3 Project.

- **Subcentimeter Surveys**
- **Detailed Topographic Surveys**
- **Alignment Surveys for linear structures such as railway lines, utility lines (Gas, Electricity, Water Telecom, etc.)**
- **Location of known points given the coordinate locations and reference point**
- **Layout of Roadways and Subdivision Lots**
- **Facilities Inventory and Management**
- **Preparation of Maps and Plans for GIS, FMS**
- **10 Km Operating Radius with dedicated Radio Link**



2D-3D Digital Terrain Map (DTM) representation of a 1,000-hectare topographic terrain

Geospatial Data Intelligence Integrators, Inc. - GDI³

In a move aimed at positioning itself in the new information age, EM²A has spun off its I.T. Section into a new I.T. company - Geospatial Data Intelligence Integrators, Inc. - GDI³. As its name implies, GDI³ will focus on geospatial data applications programming converting geospace into intelligent information media merged with databases.

GDI³ systems applications extend the capabilities of traditional database applications using accurate geospatial information to provide solutions in several fields such as but not limited to:

- Infrastructure management solutions for public works and transportation departments
- Land information management solutions for transportation and land management departments
- Data management and cartography solutions for mapping agencies
- Infrastructure management and land information management for real estate projects
- Infrastructure and asset management for corporate and industrial properties (office buildings, factories)
- Infrastructure management and land information management for airports, military bases and other public/government assets (hotels, resorts)
- Other applications wherein geospatial database information will be needed

NPALS

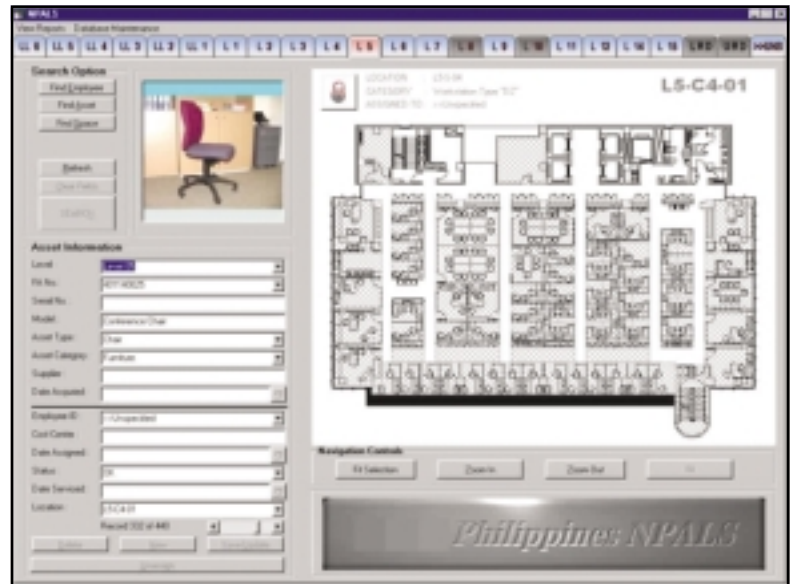
GDI³ has developed and supplied a major food conglomerate with a geospace based personnel and assets locator and inventory software for their headquarters building called **NPALS**.

NPALS is a personnel and assets locator system within a multistory building. It was specifically designed for the particular needs of a multinational company.

Among its capabilities are: (1) Search for personnel, (2) Search for assets, (3) Space locator including parking space, (4) Utilities manager, (5) Generation of reports, (6) Assets Inventory Reporting, and (7) Personnel Inventory

NPALS has a password protected unified interface which uses data warehousing that is capable of geospatial data presentation together with the standard relational database function.

NPALS and REALMS extensively use GIS based information linked to maps and plans that contain intelligent information.

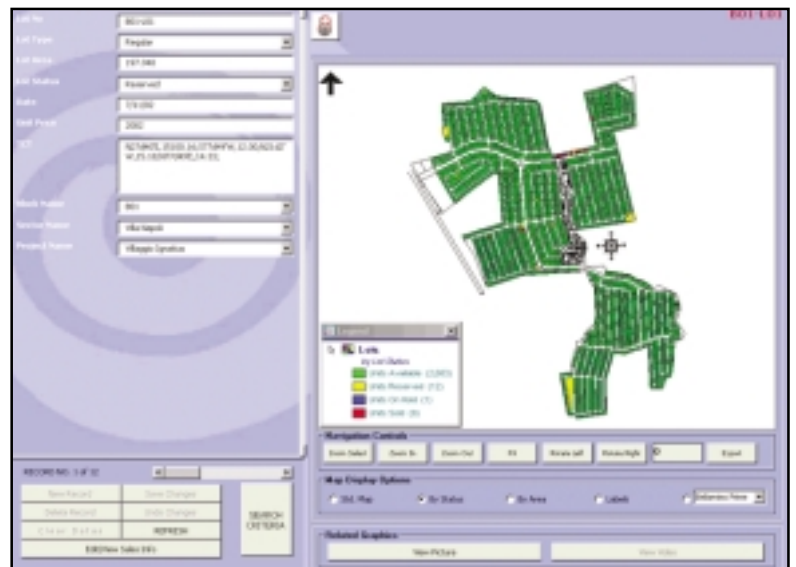


REALMS

GDI³ is currently offering the Real Estate Assets and Land Management System or **REALMS** to clients.

This application was developed both as a Sales and Top Management Tool for Real Estate Companies. It allows for quick and easy access of up to date information on Lot status and availability. The program allows for effortless query or generation of Reports on Sales, inventory and status of lots with point and click ease. **REALMS** shares a common database but prevents unauthorized access. Security levels can be assigned on a need to know basis.

REALMS does away with slow and often manual information retrieval process and tedious status updating of lot status. REALMS can be used to access information on an unlimited number of Subdivisions and other Landholdings of the Company or Group. **REALMS** is flexible, "open ended" and readily Customizable to suit user requirements.



www.pgatech.com.ph
em2apart@pgatech.com.ph

Calibration and Metrology Laboratory

"Quality cannot be compromised"

This is the motto for every calibration job we undertake. We understand that this is what you are paying for; from the calibration of thermometers, ovens, pressure gauges to oscilloscopes & burettes, you can count on the quality, validity & expertise that goes beyond each and every job we accept. Our technical staff have undergone local & international training to provide you the utmost confidence in your calibrated equipment. As an ISO/IEC Guide 17025 Accredited lab, you can be sure that our procedures are from internationally recognized methods.

Our company boasts of one of the most technologically up-to-date laboratories in the Philippines, carrying the latest state-of-the-art equipment & procedures coupled with the widest selection of calibration service in the field, catering to the Food, Semiconductor, Petroleum, Automotive & Aviation, Power Generation and Manufacturing sectors to name a few, most of which are leaders in their respective industries. We can facilitate the calibration of your instruments IN-PLANT, anywhere in the country, depending on the type & requirement through the use of our portable calibrators. You can also bring your equipment to our lab via domestic courier service and we can send it back to you. All this is being done to ensure you of the highest levels of quality service at the most convenient & customer friendly manner. Our turn-around time is also one of the fastest in the industry. All these services available at very reasonable rates.

As an added service to our ever growing list of more than 700 clients, we currently offer Training Seminars for Metrology & Uncertainty of Measurements and Calibration Consultancy Services. You can visit our website & e-mail us for your on-line calibration inquires & requests.

You may be a big multi-national company or a small family-owned business, an ISO Certified or ISO seeking company. Whatever the size of your company or whatever reasons you may have, Philippine Geoanalytics will always be there to extend a helping hand. Give us a call, & find out what we are all about!

www.pgatech.com.ph
pgacalab@pgatech.com.ph



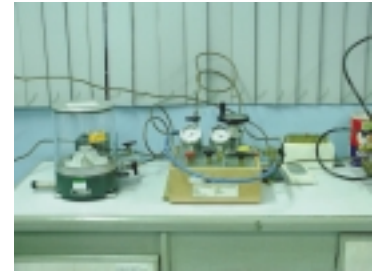
Temperature Calibration



Electrical Calibration



Volumetric Calibration using a Sartorius Microbalance



Pressure Calibrator RUSKA Model 2465 Deadweight Piston Calibrator as used by the US NIST

Pressure

Pressure Gauges o Sphygmomanometer o Pressure Modules o Vacuum Gauges o Test Gauges o Magnehelic Gauges o Deadweight Testers o Pressure Calibrators o Pressure Controllers, Switches & Transmitters, Barometers, Air-leak Testers o Others

Temperature

ASTM Glass Thermometers, Bimetal, Remote Dial Thermometers o Resistance Temperature Detectors o Temperature Controllers, Switches, Transmitters o Temp Gauges o Thermocouples o Ovens o Furnace o Incubators o Calibration Baths o PRT o Dry Block Calibrators o Calibrators/Simulators o Process Calibrators o Hybrid Recorders o Chillers & Refrigerators o Others

Mass

Various Balances o Digital & Mechanical Weighing Scales o Precision Test Weights o Cast Iron Weights o Deadweight Masses o Others

Dimensional

Calipers o Micrometers o Dial Indicators & Thickness Gauges o Height Gauges o Others

Electrical

Digital/Graphical Multimeters o Clamp Meters o Scope Meters o Ammeters o Voltmeters o Wattmeters o Process & Multiloop Calibrators o Data Loggers o Oscilloscopes o Curve Tracers o Power Supply o DC Voltage/Current Standard o Ohmmeters o Millivolt Potentiometers o Decade Resistance Box o Panel Meters o RTD Simulators/Calibrators o LCR Meter o Others

Torque

Torque Meters o Torque Wrenches o Torque Drivers o Multipliers

Volumetric

Beakers o Burettes o Pipettes o Volumetric/Erlen Meyer Flasks o Graduated Cylinders o Digital Burettes

Force

Universal Testing Machines o Force Indicating Instruments o 600,000-lb Capacity Proving Ring

PGA TECHNICAL CENTER



PHILIPPINE GEO ANALYTICS, INC.

phone: 929-3352 to 55 / 929-1786

fax: 929-3353

e-mail: pgamain@pgatech.com.ph

EM²A PARTNERS AND CO.

phone: 371-1804, 371-1806

fax: 374-4338

e-mail: em2apart@pgatech.com.ph

PETER GROUND IMPROVEMENT INC.

phone: 374-3448, fax: 410-0510

e-mail: pgii@pgatech.com.ph

PGA CALIBRATION & METROLOGY LABORATORY

phone: 929-3536 to 37

fax: 929-3539

e-mail: pgacalab@pgatech.com.ph

NON DESTRUCTIVE TESTING LABORATORY, INC.

phone: 929-3405, fax: 929-3406

e-mail: pgandtl@pgatech.com.ph

PGA PRODUCT & TESTING LABORATORY

phone: 929-3352 to 55 / 929-1786

fax: 929-3353

e-mail: pgamain@pgatech.com.ph

PGA GEOPHYSICAL

phone: 371-1804, 371-1806

fax: 374-4338

e-mail: em2apart@pgatech.com.ph

GPS GEOMEASUREMENT INC.

phone: 371-1804, 371-1806

fax: 374-4338

e-mail: em2apart@pgatech.com.ph

PGAGEOPIER

phone: 371-1804, 371-1806

fax: 374-4338

e-mail: pgageopier@pgatech.com.ph

GDF³ - GEOSPATIAL DATA INTELLIGENCE INTEGRATORS, INC.

phone: 371-1806, fax: 374-4338

e-mail: em2apart@pgatech.com.ph

REGIONAL BRANCHES

PGA - CEBU BRANCH

Mount Mayon St., Singson Village

Mandaue City, Cebu

Telefax: (032) 346-1484

PGA - PAMPANGA BRANCH

No. 1055 Malvar st. cor. Bulacan St.

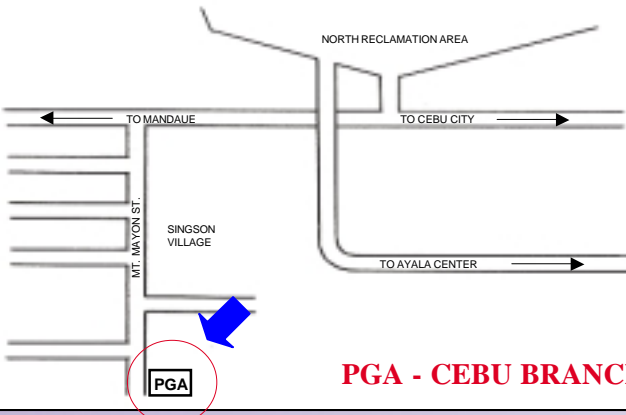
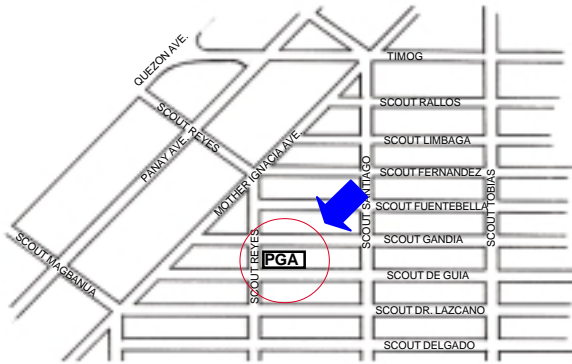
Mountain View Subdivision

Balibago, Angeles City

Pampanga

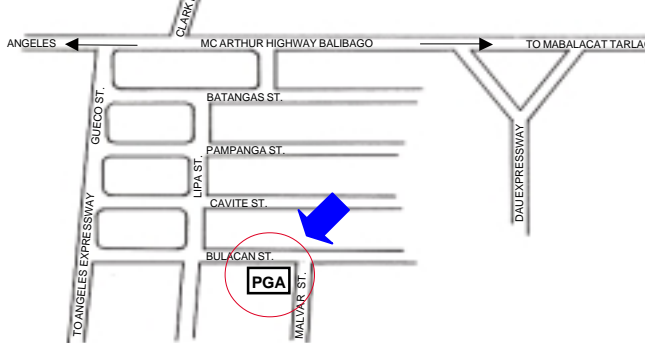
Telefax: (045) 625-5624

EM²A PARTNERS AND CO.



PGA - CEBU BRANCH

PGA - PAMPANGA BRANCH



For a full detailed list of company capabilities, equipment inventory, list of projects and technical papers for downloading - PLEASE Visit:

www.pgatech.com.ph