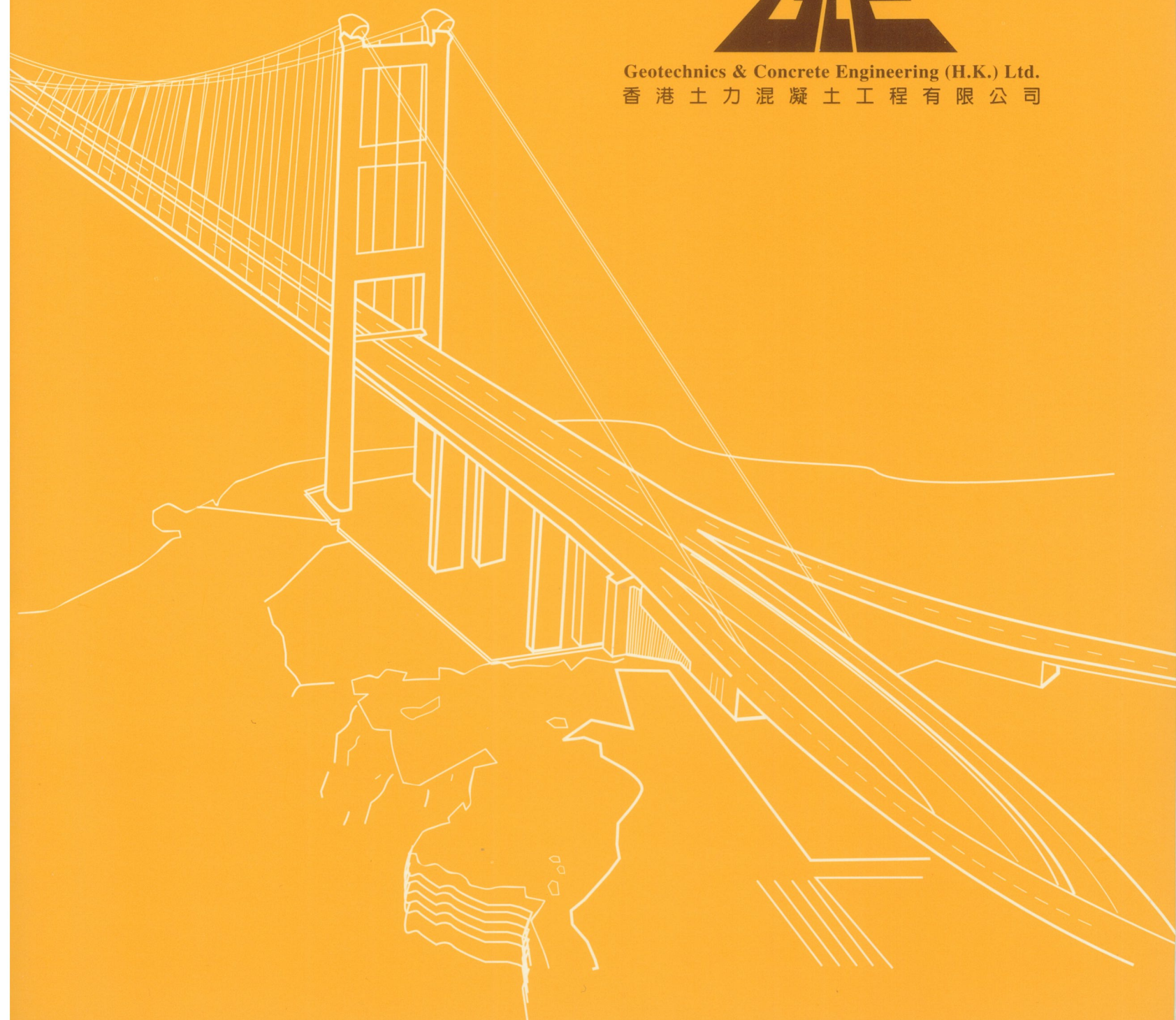


WE STRIVE FOR THE BEST



Geotechnics & Concrete Engineering (H.K.) Ltd.
香港土力混凝土工程有限公司



同心協力 Work As A Team

精益求精 Strive For The Best

品質至上 Maintain Top Quality Service

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關於我們

ABOUT US

香港土力混凝土工程有限公司是一間成立於1976年以香港為基地的公司。

本公司提供地質勘察，建築物料如水泥、混凝土、土壤及岩石、石料等的測試服務，以及包括土木工程，特別是土力工程和物料測試方面的專業顧問服務。

我們由一間規模只有幾位工程師和技術員組成的顧問公司，發展至今已擁有數百名員工及三個不同位置的辦公處，並提供多方面的專業服務，以迎合本地及海外的需要。

經過多年的發展，我們已建立擁有合資格且豐富經驗的員工團隊。作為工程界的表表者，我們均以特殊技術和利用豐富的經驗來處理工程上高難度的問題。

配合最優良的技術知識和儀器設備，我們能提供最快捷、可靠和專業的服務。加上我們不斷提昇的技術、管理水平和營運方式，本公司均能符合客戶工程進度和質量水準等各方面的要求。



ISO 9001 : 2000
Certification No. CC637
GROUND INVESTIGATION
DEPARTMENT

Geotechnics & Concrete Engineering (HK) Ltd (GCE) is a Hong Kong based company founded in 1976. We offer professional consultation services in civil geotechnical and engineering construction materials, specializing in geotechnical engineering, foundation engineering, materials engineering, and testing of building and civil construction materials; inclusive of concrete, cement, soil & rock and chemical.

We started as a professional consultation firm with only a few numbers of engineers and technicians, and has now grown to staffed with several hundred colleagues with three branch offices, providing professional service for a wide range of projects both in local and overseas markets.

Over the years, we have been able to build a professional practice with highly competent and experienced staff. In addition to pioneering technical services in Hong Kong, we have developed a specialized set of skills and experiences in handling problems unique to local conditions.

Equipped with advanced technology and equipment, we provide fast, reliable, and professional service. With our continuous improvement in our technology, management and production skill, we can surely satisfy customer demand towards construction completion and quality level.

常務董事致辭

Managing Director's Message

作為香港土力混凝土工程有限公司的始創者，歡迎閣下能藉此小冊子了解我們的公司營運架構。

自1976年起，憑著我們多年來正確的業務策劃及不斷的鞏固發展，本公司已成為香港物料測試和地質勘察行業中具有重要地位的公司之一。

我們是由一間小型規模公司演變成今天一所多元化的專業企業，公司的成長，實在有賴於我們全體員工工作上的誠懇態度及審慎處事之原則所致。

我們相信團隊精神是一種無懈可擊而且是令我們工作更有效率和準則的原動力。另外我們更深信公司的架構和紀律，亦能加強和促成員工的凝聚力及對公司的歸屬感和自我提升能力。

我們提供足夠且具參與性的計劃以獎勵員工對公司所付出的貢獻。我們鼓勵新入職員工參與公司推廣和贊助的持續進修教育課程，以提升其對工作態度的熱誠、重視效率及勝任能力。

透過公司贊助的學術進修計劃，參與的員工均能改善及提高自己的專業技能和管理水平。此外，我們亦不斷參與國際性的測試活動來提升我們的競爭能力與經驗。

我們最大的資產在於我們擁有一群高質素及同心協力的員工。我祈望能帶領這一支具有專業水平、有知識、有能力的隊伍，為客戶提供高效能及完善的服務而感到無比的自豪。

As the founder of GCE, we welcome you to know more about our company. Through precise strategies and developments, GCE has been one of the leading companies in the field of testing services of construction materials since 1976. We have grown tremendously from a small company to a diversified specialist firm. We believe that the reason for our growth and success is because of our doctrine of philosophy and principles towards our work.

We believe that teamwork is an unbeaten energy resource that improves work efficiency and professional ethics. We also believe organizational structure and discipline strengthens staff loyalty and self-improvement. We provide ample incentive schemes to award our employees for their dedication. Through promotions and sponsorship of continuing education, we award and encourage younger members of our staff for their demonstration of enthusiasm, energy, and competence. All staff are encouraged to improve their technological and managerial skills through company sponsored education programs. We frequently participate in international competitions and conventions to keep ourselves on the competitive edge.

We maintain that our most important advantage is in the quality of our staff, and we are proud to lead such a professional, energetic and knowledgeable team to provide our best service to our clients.



工程顧問部

Engineering Consultation Department

工程顧問部擁有具有專業資格和豐富經驗的工程技術人員，除對內提供全面的技術支援外，還對外包括政府和私營機構提供土木、土力、結構、土壤及岩石、護土牆和材料等工程顧問服務。

此等顧問服務包括策劃，初步和詳細設計，工程品質控制、合約管理以及地盤施工監督等。

Engineering Consultation Department consists of qualified professionals and experienced engineers. It provides services on planning, feasibility study and detailed design, project management, contract administration and site supervision. Specialized fields include ground investigation, construction material testing, non-destructive tests, geotechnical / civil engineering design and analysis, drainage, seawall, reclamation, soil and rock anchors.

校正服務部

Calibration Department

校正服務部備有多種標準參考材料及儀器，能為客戶提供不同類別的校正服務。

溫度測量

- 玻璃液體溫度計
- 數字溫度計
- 溫度記錄儀

機械測量

- 電子天秤
- 砝碼
- 卡尺
- 千分表
- 位移傳感器
- 鋼直尺
- 延伸計
- 塞規
- 壓力和萬能材料試驗機
- 負荷傳感器
- 壓力環
- 壓力表
- 壓力傳感器

Processes with various standard materials & equipment, our calibration department provides various adequate calibration services to clients.

Temperature Measurement :

- Liquid-in-glass thermometers
- Digital thermometers
- Temperature loggers / recorders

Mechanical Metrology Measurement :

- Electronic balances
- Weights
- Calipers
- Dial gauges
- Displacement transducers
- Steel rules
- Extensometers
- Feeler gauges
- Compression and universal testing machines
- Load cells
- Proving rings
- Pressure gauges
- Pressure transducers

焊接檢測部

Welding & Piling Testing Department

焊接檢測部提供了多方面的檢測服務；而服務項目如下：

無損壞檢測包括：

- 磁粉檢測
- 液體（染料）滲透檢測
- 超聲波檢測
- X-射線檢測
- 外觀檢查（目檢）

相關的焊接檢測：

- 焊接程序資格的檢測及認證
- 焊工資格的檢測及認證
- 焊接硬度試驗
- 焊接拉力試驗
- 焊接彎曲試驗
- 焊接宏觀試驗
- 全焊拉力試驗
- 焊接衝擊試驗

樁柱檢測：

- 跨孔聲波測試
- 高應變基樁動測
- 低應變基樁測試
- 超聲波孔壁測試
- 應變計裝置及監測

結構儀器裝置及監測：

- 振動監測
- 石屎溫度監測
- 傾斜測試
- 位移測試



Welding & Foundation Piling Department provides inspection and testing services in various aspects.
Our services include :

Non-destructive tests :

- Magnetic particle inspection
- Dye penetrant test
- Ultrasonic test
- X-ray radiographic test
- Visual examination of weld

Welding tests :

- Welding procedure test
- Welder qualification test
- Welded joint Hardness test
- Welded joint tensile test
- Welded joint bend test
- Welded joint macro test
- All weld tensile test
- Welded joint impact test

Foundation Piling Tests :

- Cross-hole sonic logging testing
- Dynamic load test (High-strain Dynamic test)
- Pile Integrity test (Low-strain Integrity test)
- Ultrasonic Echo Sounder test (Roden test)
- Static Loading test
- Instrumented Pile test

Field Instrumentation & Monitoring:

- Vibration monitoring
- Concrete temperature monitoring
- Inclinator survey
- Extensometer test

品質控制部

Quality Control Testing Department

品質控制部工作旨在施工現場進行材料品質測試，檢測材料的質素是否達到政府或客戶所規定的要求。

測試服務包括：

- 建築材料取樣本，包括鋼筋、水泥、骨料、新拌或凝固的混凝土
- 測試新拌混凝土的特性及預制測試樣本
- 鑽取混凝土岩芯樣本
- 紅外線溫度掃描以探測建築物外牆之損害
- 結構破損或無破損的測試

Our service provided by the Quality Control Testing Department is to perform tests on site, to inspect whether the quality has reached Government regulations or Clients' requirement. The service included:

- Sampling of steel, cement, aggregate, and fresh and hardened concrete
- Testing of the properties of fresh concrete, and casting samples
- Obtaining concrete core specimen for testing
- Infra-red thermography scanning to determine the defect of the external wall
- Destructive and non-destructive testing



地質勘測部

Ground Investigation Department

地質勘測部提供有關地底結構和地質、地基的穩定性、斜坡和護土牆的探索及研究。所有的土地勘探和勘測工作均根據香港政府土力工程擴展處編製的《岩土指南第二冊》和《岩土指南第三冊》以及有關國際標準指引而進行。

地質勘測部提供的服務主要包括如下三個方面：

1. 探井、探槽坑、斜坡條狀表土剝露的挖掘和探測器地下勘測；
2. 旋轉鑽探及其相關的抽取樣本，鑽孔內的現場測試和裝置儀器；
3. 土壤和岩石樣本的試驗室測試。

Provides services on exploration and investigation of sub-surface ground condition and site formation, stability studies of foundation, slopes and retaining walls. All the working methodologies are strictly adhere to Geoguides 2 and 3 by Civil Engineering Development Department and relevant International standards. The following describes each service's specific function :

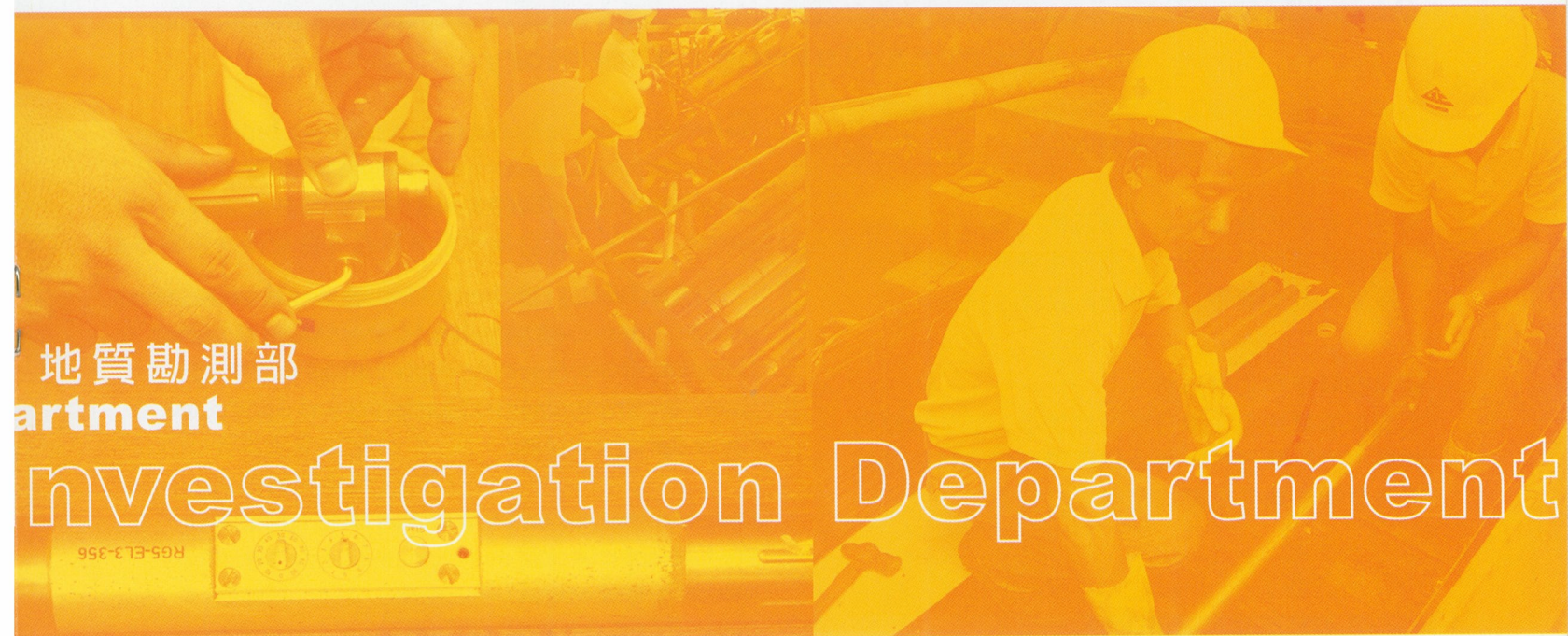
1. Excavation of inspection pits, trial pits, slope surface stripping and sinking of probes;
2. Rotary drilling with associated sampling, field testing and installation of instrument;
3. Laboratory testing on soil and rock samples.



Ground Investigation Dept Ground I

服務範圍

1. 探井及探槽坑挖掘
2. 旋轉式鑽探(鑽孔及岩芯鑽孔)
3. 斜坡條狀表土剝露
4. 工地測試:
 - a) 十字板剪切試驗
 - b) 滲透試驗
 - c) 吸水率測試
 - d) 壓印器測試
 - e) 磅壓試驗
 - f) "Eastman"測試
 - g) "Pajari" 測試
5. 儀器裝置及測量
 - a) 立管式水壓計
 - b) 氣壓式水壓計
 - c) 振弦式滲壓計
 - d) 測斜儀
 - e) 磁環沉降儀



地質勘測部

Department

Investigation Department

956-813-008

Scope of Works

1. Excavation of trial pits and trial trenches
2. Rotary drilling (drillholes and coreholes)
3. Stripping of slope surface protection
4. Field testings:
 - a) vane shear test
 - b) permeability test
 - c) water absorption test
 - d) impression packer test
 - e) pressuremeter test
 - f) "Eastman" test
 - g) "Pajari" test
5. Instrumentation:
 - a) standpipe piezometer
 - b) pneumatic piezometer
 - c) vibrating wire piezometer
 - d) inclinometer
 - e) magnetic extensometer



化學試驗室

Chemical Testing Laboratory

化學試驗室是主要為多個政府部門和私營機構提供廣泛的化學及環保測試服務。

現在，化學試驗室從事三個技術方向的工作：建築物料樣本化學分析，土壤和水源樣本環保分析，環境監測和審核 (EM&A) 顧問服務。

建築物料樣本化學分析

化學試驗室採用化學品和通過儀器去鑑定建築材料樣本的化學成份，很多建築物料的測試已獲得香港實驗室認可計劃的認可，它包括：

- 水泥
- 混凝土
- 燃料灰燼的消損(PFA)
- 燃料灰燼水泥的消損(PFAC)
- 聚合物
- 聚合砂磚(PMM)
- 混合物
- 製造混凝土用的水
- 土壤

Chemical Testing Laboratory provides a broad range of chemical and environment testing to various government departments and clients from private sector.

Chemical Testing Laboratory divides into three technical groups: Chemical Analysis on Construction Material Samples, Environment Analysis on Soil and Water Samples, Environmental Monitoring and Audit (EM&A) Consultancy Services

Chemical Analysis on Construction Material Samples

We use wet-chemical and instrumental methods for determining chemical composition of construction material samples, most of them are accredited by HOKLAS, they include:

- Cement
- Concrete
- Pulverized Fuel Ash (PFA)
- Pulverized Fuel Ash Cement (PFAC)
- Aggregate
- Polymer Modified Mortar (PMM)
- Admixture
- Water
- Soil



土壤和水源樣本環保分析

化學試驗室提供土壤和水源樣本環保分析，從事這方面的分析所擁有的高科技儀器包括：

- 電感耦合等離子體 / 發射光譜儀 (ICP/OES)
- 火焰速石墨爐原子吸收分光光譜儀
- 手提式的分析儀器：
 - 溶氧量測試錶
 - 酸鹼值測試計
 - 風速錶
 - 電導率計
 - 鹽度計

環境監測和審核(EM&A) 顧問服務

化學試驗室亦為多個政府部門和私營機構提供環保有關之監察及審核顧問服務。

根據EM&A手冊制定的有關施工前基線值、施工進行中的影響及完工後監測階段的指標，我們從事抽取空氣樣本、噪音音量及海水水質的監測。

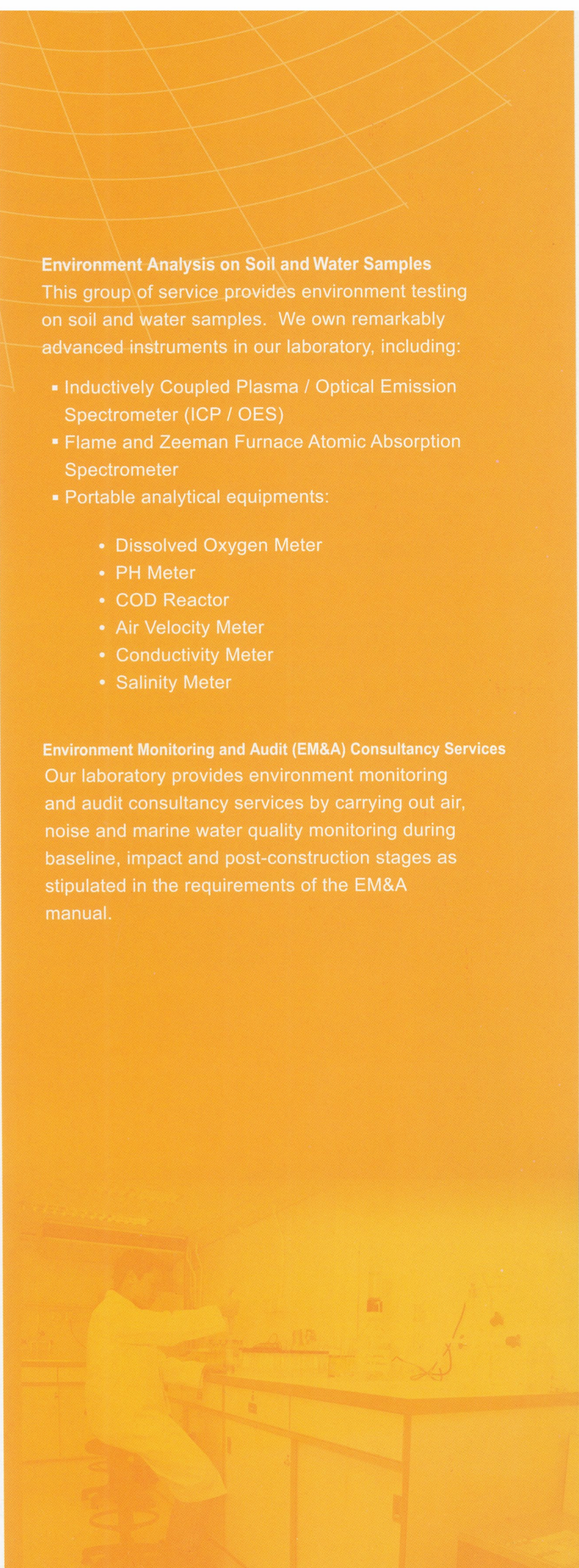
Environment Analysis on Soil and Water Samples

This group of service provides environment testing on soil and water samples. We own remarkably advanced instruments in our laboratory, including:

- Inductively Coupled Plasma / Optical Emission Spectrometer (ICP / OES)
- Flame and Zeeman Furnace Atomic Absorption Spectrometer
- Portable analytical equipments:
 - Dissolved Oxygen Meter
 - PH Meter
 - COD Reactor
 - Air Velocity Meter
 - Conductivity Meter
 - Salinity Meter

Environment Monitoring and Audit (EM&A) Consultancy Services

Our laboratory provides environment monitoring and audit consultancy services by carrying out air, noise and marine water quality monitoring during baseline, impact and post-construction stages as stipulated in the requirements of the EM&A manual.



土壤及岩石試驗室

Soil and Rock Testing Laboratory

測試項目均符合香港土力工程處的規範如土力工程處第三十六號報告或GEOSPEC 3，並已獲得香港實驗室認可計劃的認可。

- 篩分析: 土壤顆粒大小的分析
- 塑性試驗
- 特殊比重測試
- 壓縮測試
- 加洲承載比率
California Bearing Ratio Test (CBR)
- 土壤三軸測試
- 沉壓測試
- 剪力測試

而對於岩石的測試，本公司擁有全港最先進的設備，提供的測試服務包括：

- 單軸抗壓測試
- 定點承載測試
- 剪力測試
- 彈性模數測試

所有岩石的測試方法均是根據美國測試ASTM和國際岩石ISRM機構標準。

All the soil testing methodologies are in accordance with GEO Report No.36 or GEOSPEC 3. All tests are accredited by HOKLAS.

- Sieve Analysis : Particle Size Distribution
- Atterberg Limits
- Specific Gravity
- Compaction
- California Bearing Ratio
- Triaxial
- Oedometer Consolidation
- Shear Box

Our Rock Testing Laboratory is the utmost modern facilities equipped in Hong Kong. We perform tests including:

- Uniaxial Compression
- Point Load
- Direct Shear
- Modulus

All the rock testing methodologies mainly follow standards set by American Society for Testing and Materials (ASTM) and International Society for Rock Mechanics (ISRM).

物理試驗部

Physical Testing Laboratory

物理試驗部包括以下試驗室為客戶提供各種建築材料的試驗，所有項目已獲得香港實驗室認可計劃(HOKLAS)之認可，其項目如下：

- 鋼筋
- 水泥
- 骨料
- 土壤
- 岩石
- 煤灰
- 混凝土

Physical Testing Laboratory carries out a broad range of tests on material for clients and all of the material tests are accredited by HOKLAS; such as:

- Structure steel
- Cement
- Aggregate
- Soil
- Rock
- Pulverized Fuel Ash
- Concrete

鋼筋材料試驗室

Steel Testing

鋼筋材料試驗室設有四部先進的抗拉試驗機(UTM)來測試各種尺寸和形狀的鋼材樣品，如鋼筋、金屬板、鐵網、螺絲等。

我們提供的測試包括：

- 抗拉強度
- 延展性
- 鋼筋彎曲性
- 衝擊強度

Steel Testing Unit possesses four newly deployed universal testing machines (UTM) for testing various sizes and shapes of steel products such as reinforcement steel bars, steel plates, steel fabrics and steel bolts and nuts.

We offer various tests on steel sample including:

- Yield, tensile strength
- Elongation
- Bending and re-bending
- Impact strength

混凝土材料試驗室

Concrete Cube Testing

混凝土材料試驗室設有多部全電腦控制的壓力試驗機及可容納超過3,500個混凝土樣本的多個恆溫養護箱。

主要測試項目包括：

- 混凝土的抗壓強度
- 密度
- 抗彎強度
- 間接抗拉強度
- 彈性模數

Concrete Testing Unit is responsible for testing concrete cube and core samples. Our Laboratory is equipped with several automatic compression machines and thermostatically controlled curing tanks. They are capable in curing more than 3,500 nos. of samples.

Our major tests include :

- Compressive strength
- Density
- Flexural strength
- Tensile splitting
- Elastic modulus

樓宇組件試驗室

Building Component Testing

本試驗室所提供的服務均根據香港政府(建築)規範，主要測試項目如下：

- 木門
- 鋅鐵灶組件
- 鐵閘

Building Component Testing oblige with Hong Kong Government (Construction) regulations, our testing services include:

- Timber Doorsets testing
- Cooking Benches and Sink Units Testing
- Metal Gatesets testing

骨料試驗室

Aggregate Testing

骨料試驗室根據BS812標準要求，提供各種物理與力學性質試驗如下：

- 篩分析：骨料顆粒大小的分佈
- 骨料中的幼細泥沙及塵埃量測試
- 扁平度指數
- 長度指數
- 相對密度和吸水率
- 含水量
- 骨料壓碎數值
- 骨料撞擊數值
- 粗骨料中之貝殼含量
- 10%幼骨料之抗壓數值測驗

Oblige with test procedures of BS812 standard, Aggregate Testing Unit provide testing services on the following physical and mechanical testing services:

- Sieve analysis : particle size distribution
- Silt, clay and dust content
- Flakiness index
- Elongation index
- Relative density & water absorption
- Moisture content
- Aggregate crushing value
- Aggregate impact value
- Shell content
- Ten per cent fines value

水泥試驗室

Cement Testing

所有水泥試驗室測試均根據BS 4550或BS EN 196標準，同時也達到香港實驗室認可計劃(HOKLAS)之認可。我們提供的測試項目如下：

- 密度
- 微細度
- 標準稠度吸水量
- 抗壓強度能力
- 凝結時間
- 膨脹度

All tests in Cement Testing Unit sustain standards of BS4550 or BS EN196, and have attained HOKLAS accreditation. We perform tests including :

- Density
- Fineness
- Standard consistence
- Compressive strength
- Setting times
- Soundness

煤灰試驗室

Pulverised Fly Ash (PFA) Testing

煤灰試驗室所提供之測試項目均根據BS3892標準，如下：

- 如煤灰之含水量
- 微細度
- 水量要求

We offer services in PFA Testing Unit by following BS 3892 standard; they include:

- Moisture content
- Fineness
- Water requirement

磚類試驗室

Brick and Block Testing

磚類磚類試驗室所提供之測試項目均根據相關國際標準或香港房屋署測試規範，如下：

- 樣本尺寸之檢定
- 橫向破裂負載之檢定
- 防滑檢定
- 抗壓特性檢定
- 吸水量檢定

We offer services in Brick and Block Testing in accordance with international standards or regulated by HKHA, such as:

- Measurement of Dimensions
- Transverse Breaking Load
- Skid Resistance
- Compressive Strength of Interlocking Blocks
- Water Absorption of Masonry Units and Segmental Pavers

水泥漿試驗室

Grout Testing

水泥漿試驗室提供之測試項目均根據ASTM標準或香港房屋署測試規範，如下：

- 抗壓強度
- 流度
- 凝結時間
- 膨脹及溢水量
- 早期高度改變
- 高度改變
- 空氣滲透測試

We offer services in Grout Testing in accordance with ASTM or HKHA requirement, including:

- Compressive Strength
- Flow (Flow Cone Method)
- Time of Setting
- Expansion and Bleeding
- Changes in Height at Early Age of Cylindrical Specimens from Cementitious Mixtures
- Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
- Air Permeability by Figg Method

維修水泥沙漿試驗室

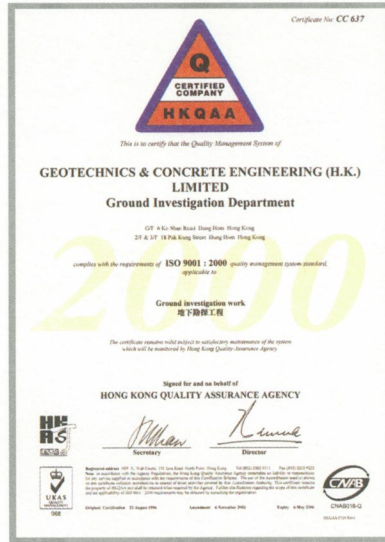
Repair Mortar Testing

維修水泥沙漿試驗室提供之測試項目均根據香港房屋署測試規範，如下：

- 抗壓強度
- 稠度
- 流度
- 圓環收縮裂縫測試(Coutinho Ring Test)
- 吸水
- 長期性收縮

We offer services in Repair Mortar Testing in accordance with HKHA specification, which include:

- Compressive Strength
- Consistence
- Flow
- Coutinho Ring Test (Shrinkage Cracking)
- Sorptivity
- Long Term Shrinkage



CERTIFICATES

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