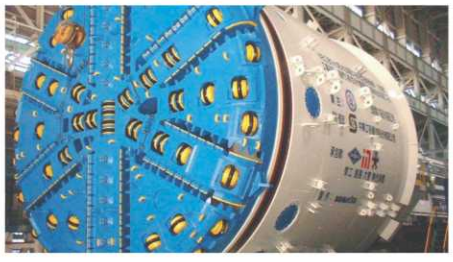
目錄 Catalog

GEN CHI CONSTRUCTION ENGINEERING CO., LTD.



根啟營造工程有限公司

Jet Grouting

高壓灌漿

一般高壓之壓力界限從30 kg/cm^2 至400kg/cm^2 以上均統稱高壓，高壓噴射灌漿為使用鑽機鑽孔至設計深度，由鑽桿下方之特殊噴嘴，將硬化劑以高壓力噴入土層中，強制將土壤顆粒與硬化劑混合，並經由鑽桿旋轉及提昇的過程使改良之土壤呈圓柱狀。

70年代將高壓水刀技術應用於地質改良上，發展出現今常用CCP、JSP及JSG等工法。

Jet Grouting

Generally, high pressures are limited within the range from 30 kg/cm^2 to400kg/cm^2.
In high-pressure grouting, we use a drilling rig that drills to the designed depth.
Then hardening agents that are injected through a special nozzle under the drilling rod are injected into the soil in high pressure and force the mixture.
The soil is improved and formed a cylindrical shape by the rotation and ascendance of the drilling rod. In the 70s, the Water Jet Cutting was applied to geological improvements and was developed into CCP, JSP and JSG methods nowadays.

CCP 工法

CCP施工法係利用超高壓噴流水之原理再加以深入應用之工法。先以超高壓泵來產生強勁之超高壓力(一瞬間可產生200kg/cm^2 的高壓，其最高壓力能達到350kg/cm^2)再將土壤與注入劑強制加以混合攪拌，使其凝結成為堅實強固之止水樁。

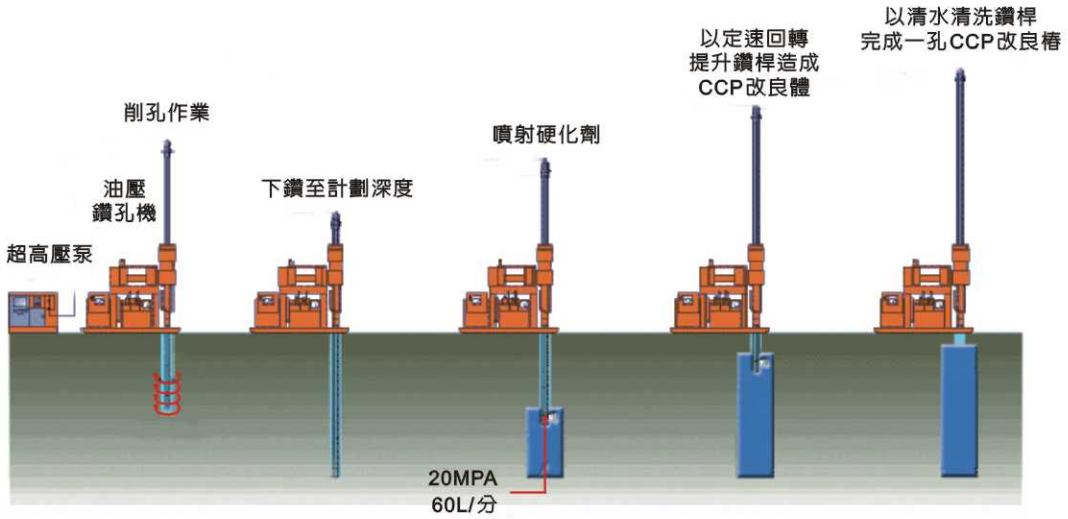
CCP施工法目前為最完善之施工法且被廣泛地應用於各種工程，其精確性、安全性及經濟性極大，在工程界之評價極高。

Chemical Churning Pile

CCP construction method is a construction technique based on the principles of ultrahigh-pressure water spray with in-depth application.
An ultrahigh pressure pump first generates an ultra high pressure (200kg/cm^2 at instant, maximum pressure 350kg/cm^2), and forcely mixes soil with materials (adhesives, stabilizers). Once dried the stirred mixture forms a solid strong water stoppable pile.

CCP construction method, at the present, is the most complete and widely used method in various projects. Its accuracy, security, and economy.
CCP construction methods attains numerous praises in the various engineering field.

種　類 Type	CCP	CCP-L	CCP-S
注入壓力 Injection pressure	200 kg/cm^2	200 kg/cm^2	400 kg/cm^2
注入流量 Injection flowrate	35 L/min	80 L/min	100 L/min
樁　徑 Pile size (diameter)	300～500mm	500～800mm	800～1200mm



超高壓灌漿（JSP、JSG）工法

係利用超高壓噴流切削破壞地盤，並將破碎之土砂與硬化劑拌合使其固結成圓柱體之施工法。
其切削的方法乃是利用超高壓泵產生強勁之超高壓力，同時由鑽管前端之特殊噴嘴噴出，使地盤內之土粒受擾動而與硬化劑混合，地盤因而硬化之一種工法。如此；即可使其土壤與硬化材混合凝結成為堅實強固之圓柱形固結體。

Jet Grouting

The Jet Grouting is the construction method by applying ultrahigh-pressure jet to and cut and destroy soil for site destruction, and combining the shattered soil with hardening agents to form solid cylinders.
The cutting method is based on the super pressure created by the ultrahigh-pressure pump with a special nozzle in front of the drilling pipe (tube), in which the disturbed soil of the site are mixed with the hardening agent.
The site is then stabilized (solidified) by this method.
Thus, the soil and hardening mixture form a solid strong cylindrical body at the site.

超高壓灌漿

施工法之特色

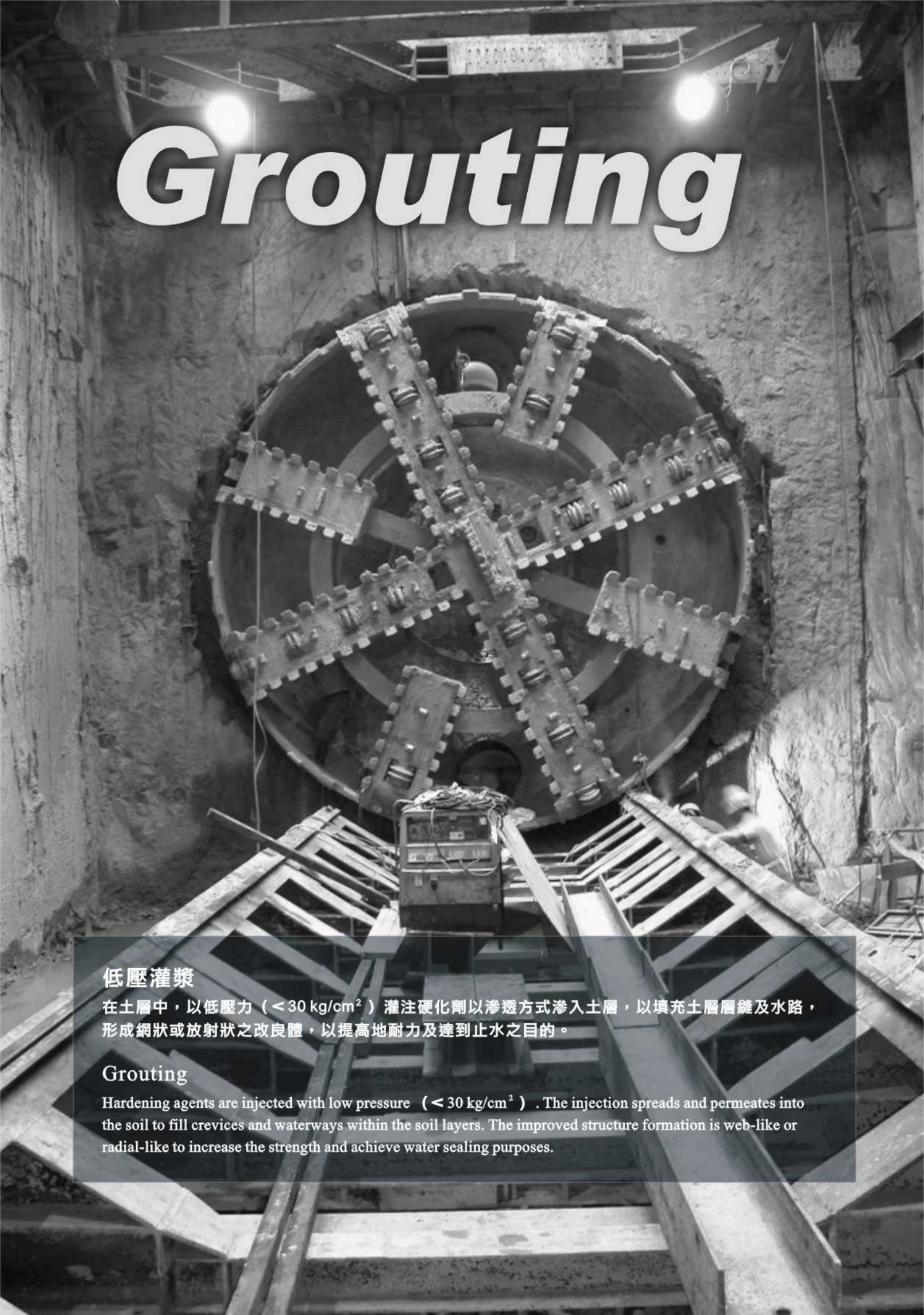
1. 改良深度可隨意選擇。
2. 改良後的土壤強度提高及透水性減少。
3. 改良範圍廣。
4. 無公害及低噪音。
5. 機械自動化。

Characteristics

1. Improvement of the depth (range) at free choices
2. The modified soil is increased in strength and reduced in water permeability
3. Modified site ranges are wide and various.
4. Pollution-free and low noise.
5. Automation

Construction parameters

高壓噴射工法 Ultrahigh pressure grouting			JSG	JSP
超高壓噴射流 Ultrahigh pressure injection	使用材 Materials		硬化劑 hardening agent	硬化劑 hardening agent
	壓力 Pressure	kg/cm^2	180～220	180～220
	吐出量 Injection rate	L/min	60	60
壓縮空氣 Pressurized air	壓力 Pressure	kg/cm^2	6～7	--
	吐出量 Injection rate	L/min	1.5～3.0	--



Grouting

低壓灌漿

在土層中，以低壓力（＜30 kg/cm^2）灌注硬化劑以滲透方式滲入土層，以填充土層層縫及水路，形成網狀或放射狀之改良體，以提高地耐力及達到止水之目的。

Grouting

Hardening agents are injected with low pressure （＜30 kg/cm^2）. The injection spreads and permeates into the soil to fill crevices and waterways within the soil layers. The improved structure formation is web-like or radial-like to increase the strength and achieve water sealing purposes.

雙環塞(馬歇管)灌漿

雙環塞(馬歇管)灌漿

此工法是將灌漿管(馬歇管)的埋設與灌漿過程分開，灌漿管中的雙環塞灌注頭，是一種裝設特殊隔膜(Packer)之灌漿裝置。
在灌漿管埋設後，可依現場需求以水平方向滲透，有效的將灌漿液完全填滿地改區，並可重複注入之工法。

Double Packer

This method consists two (or more) separate stages in which the site for the grouting tubes (Manchette tube) is separated from the grouting process.
The set of double packers is a special installed packer device.
Once the tubes are placed, the method can be based on the condition and requirements of the site and complete the grouting efficiently and repeatedly.

特色

1. **藉由埋設之灌漿管與雙環塞灌注頭之搭配，能確保灌液能注入目標區。**
2. **灌漿工程能在任何土層反覆施作。**
3. **大幅降低傳統工法鑽孔時對土層之擾動。**
4. **大型機具佔用工區空間時間較短，不會妨礙其他工程進行。**

Characteristics

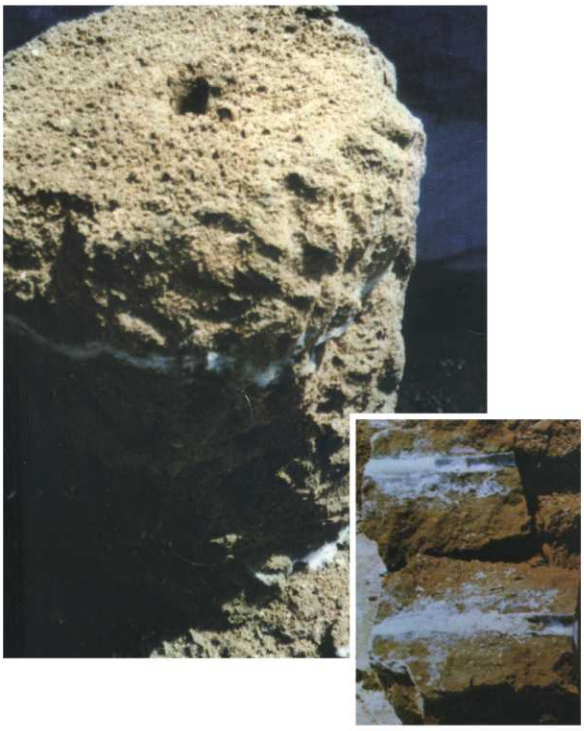
1. By the combination of pipe laying and double packers to ensure complete grouting within the target areas.
2. Grouting projects can be repeated at any stage.
3. Significantly reduces the soil disturbance caused by traditional drilling methods.
4. Large machinery occupies the construction area with a shorter period, and will not hinder the processes of other constructions.

溶液型化學灌漿 (SA-40)

SA-40化學灌漿是一種以矽酸鈉為基底之漿液與SA-40無機反應劑組成之漿液做為化學灌漿液材料。
可依地質狀態需求調整凝結時間，達到有效滲透止水及固結鬆散土層之效果，且無毒性、有效時間長。

Chemical grouting (SA-40)

SA-40 chemical grouting is the use of a sodium silicate based slurry with the inorganic reaction SA-40 to form a chemical based grout.
The solidifying time can be adjusted based by the geological conditions to achieve an effective seal infiltration and consolidation of loose soil. In addition it is non-toxic and has a long time effect.



特色

1. 膠凝之硬化物為無機系且無毒性，不會污染地下水。
2. 絕不侵蝕鐵類，對於施工的機械絕無腐蝕現象。
3. 膠凝時間容易調整。
4. 硬化前粘度低、浸透性佳，能有效滲入各種層次之土壤。
5. 24 小時達到最高硬度。

Characteristics

1. The hardening cement is inorganic and non-toxic. It will not pollute the underground water.
2. No corrosion to irons and construction machinery.
3. The gel time is easily adjusted.
4. Low viscosity before solidification.
   High penetration, can effectively reach each layer of the soil.
5. Reached maximum strength in 24 hours.

止水灌漿

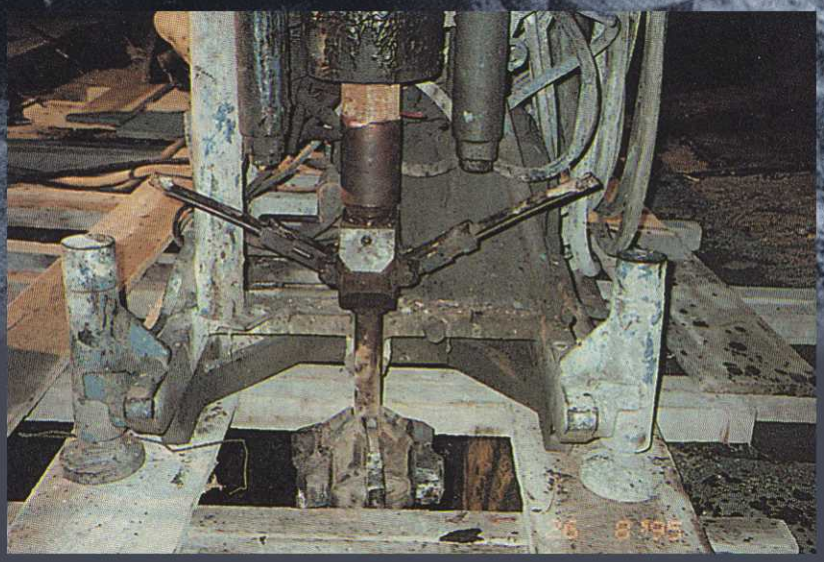
止水灌漿

近年來政府大力推行都市土木工程，連續壁深開挖及高透水性土壤施工，是常見之工程項目，開挖面或工作介面因施工不慎或是施工品質不良等因素，產生湧水、湧砂等現象，需要進行緊急止水灌漿等緊急應變處置。

Sealing Filling

With the government's implementation of Civil Engineering in the urban areas, deep and extensive excavation and construction in sites with highly permeable soil are common. Normally, water and sand gushing due to careless or poor-quality constructions at excavation sites or interfaces demand immediate sealing Filling or relevant emergency response measures.

Mixing Pile



Jet Grouting
高壓灌漿 CCP、JSG、JSP

Grouting
低壓灌漿 雙環塞(馬歇管)灌漿/溶液型化學灌漿/止水灌漿

Mixing Pile
深層攪拌樁 高壓噴射攪拌/低壓機械攪拌

Building Strengthening
建物扶正

Slope Stabilization
邊坡穩定 地錨/土釘/噴草植生

Structure Reinforcement
結構補強

根啟營造工程有限公司
GEN CHI CONSTRUCTION ENGINEERING CO., LTD.
台北縣新店市安康路三段525巷70之3號
No.70-3, Lane 525, Sec. 3, Ankang Rd., Sindian City, Taipei County 231, Taiwan (R.O.C.)
TEL:886-2-2215-5719 FAX:886-2-2215-6205
E-mail:pan59324@ms67.hinet.net