海域探勘組

近年來政府大力推動「離岸風力發電」，台灣海峽海域地質探勘成為開發計畫中相當重要的一環，本組乃因應此需求而成立，以協助國內外開發業者辦理海域地工與地物探勘工作。其中海域地工探勘係與國內外專業公司配合，過去三年藉由鑽探平台與鑽探船在竹南外海與澎湖附近海域完成土壤/岩石取樣與SPT/CPT/PS-logging試驗工作。海域地物探勘則與國內專業公司配合進行，完成多音束水深/側掃聲納/反射震測等探查工作。除應用成熟調查技術獲得地工地物基本資料外，亦針對台灣地區特殊地質條件與離岸風電工程需求衍生之議題，如海床砂波移動/礫石層調查/地盤剪力波速/海域斷層/未爆彈調查等，尋求國內外可行方法協助業主解決難題。

海域地工探勘

- 土壤/岩石取樣
- 現地試驗

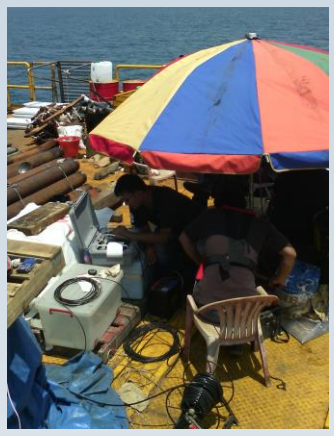
辦理離岸風場場址、風機基礎與海纜路徑等地質調查。與國內外海域鑽探公司合作，採用鑽探平台與鑽探船進行土壤/岩石取樣與辦理現地大地工程相關試驗。

所得樣本經本社大地工程試驗室進行相關室內試樣，提供所需物理/力學參數。

綜合現地探查資料與試驗結果，撰寫離岸風場地質調查分析報告。


▲ Submersible CPT

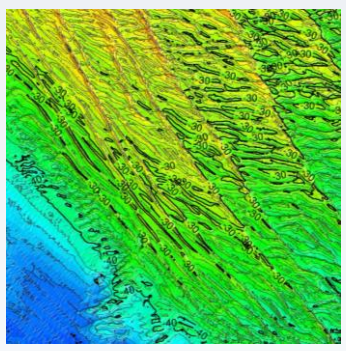

▲ PCPT


▲ Pressure meter test

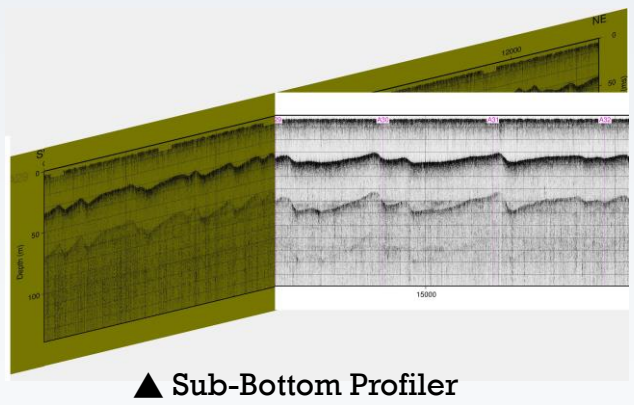

▲ Suspension P/S logging

海域地物探勘

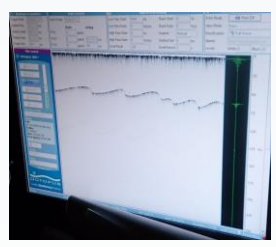
- 多音束/側掃聲納
- 反射震測探勘
- 磁力探勘
- UXO探勘

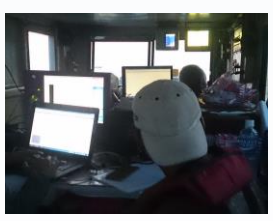


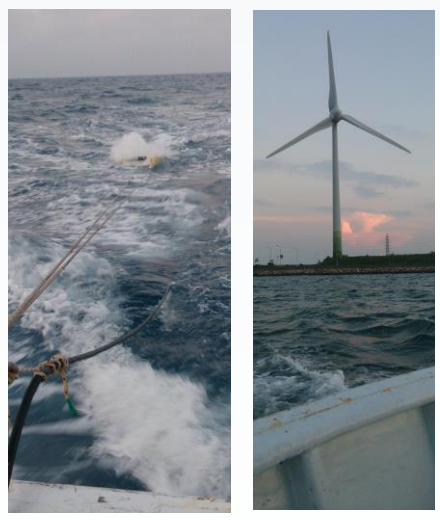
▲ Bathymetry

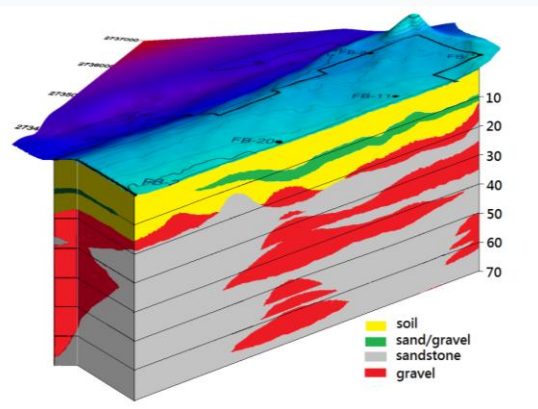

▲ Sub-Bottom Profiler

辦理離岸風場場址、風機基礎與海纜路徑等地球物理調查，用於瞭解海床地形/地貌、土層/岩層深度與斷層分布、海床埋藏物(包含文化遺址與未爆彈等)。與國內外海域地物探勘公司合作，採用探勘船進行現地探勘工作。包含多音束聲納探勘(Multi-beam sonar survey)、側掃聲納探勘(Side-scan sonar survey)、底質剖面探勘(Sub-bottom profiler)、多頻道反射震測(Multi-Channel seismic)、磁力探勘(Magnemometer)、未爆彈探勘(UXO survey)等。









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中興社大地工程研究中心

Geotechnical Engineering Research Center (GERC)

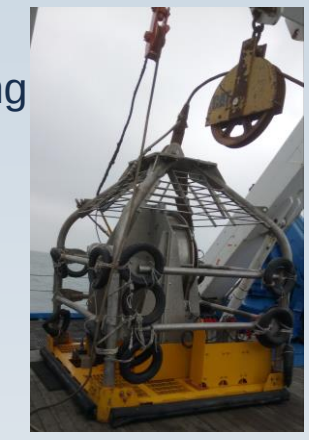
Offshore-Investigation Group

Since the Government has vigorously promoted offshore wind farm in recent years, marine geological exploration in the Taiwan Strait has become a very important issue for development of OWF. This group, Offshore Investigation Group, is set up in response to this demand, to assist wind farm developers to handle marine geotechnical and geophysical prospecting work. Geotechnical survey work is cooperating with professional firms, the investigation campaign including soil/rock sampling and SPT/CPT/PS-logging/Pressuremeter tests had been completed in the past three years with drilling rig and vessel in the waters near ChuNan and Penghu. Marine geophysical prospecting is carried out with the assist of domestic professional firm, the investigation job included multi-beam sonar, side-scan sonar and sub-bottom profiler. Besides the mature survey technology mentioned above, also in view of the special geological conditions and engineering needs of the issue, such as seabed sand wave movement investigation, gravel layer survey, shear wave velocity measurement, fault investigation and UXO study, to find feasible methods and resources to help developers solve problems.

Geotechnical Investigation

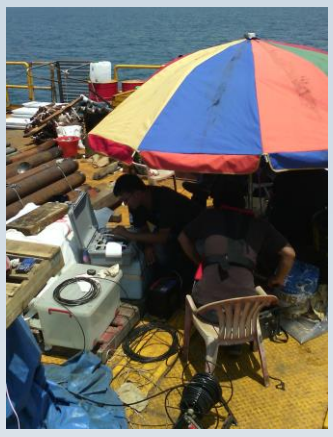
- Soil/Rock Sampling
- In-situ Test

Managing the offshore geotechnical survey for site field, WTG foundation and cable route. Cooperation with domestic/ foreign professional investigation company, jack-up platform and vessel adopted for soil/rock sampling and in-situ tests.
The recovered sample will be treated and tested in Sinotech laboratory for the specified physical and mechanical parameters.
The investigation data and test result will be evaluated and concluded in the GIR.



▲ Submersible CPT

▲ PCPT

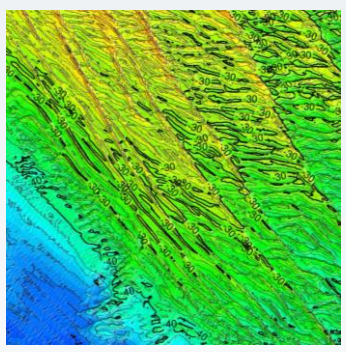


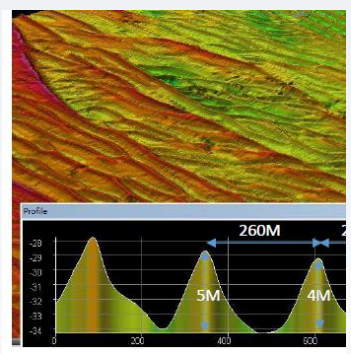
▲ Pressure meter test

▲ Suspension P/S logging

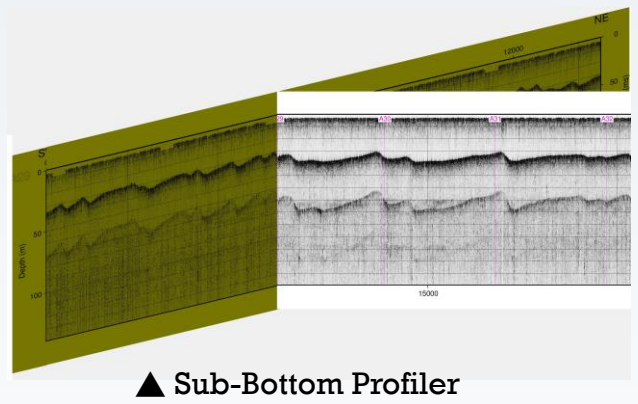
Geophysical Survey

- MBS/SSS
- Seismic
- Magnetometer
- UXO survey





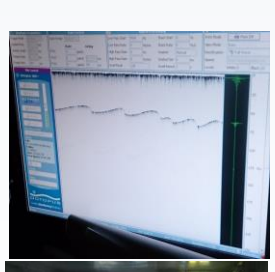
▲ Bathymetry

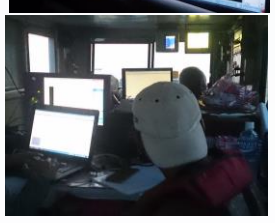


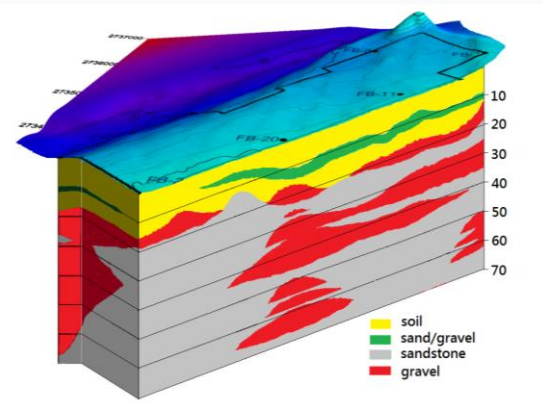
▲ Sub-Bottom Profiler

Managing the offshore geophysical survey for site field, WTG foundation and cable route, the applications include survey of bathymetry and morphology, investigation of soil/rock depth and fault distribution, detection of seabed buried target(including cultural heritage and UXO).

Cooperation with domestic/ foreign professional investigation company, the survey methods include Multi-beam sonar, Side-scan sonar, Sub-bottom profiler, Multi-channel reflection seismic, and Magnemometer.







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