

PROJECT MANAGEMENT

Project Management

International

Marine Geotechnical Investigations, Port of Cotonou

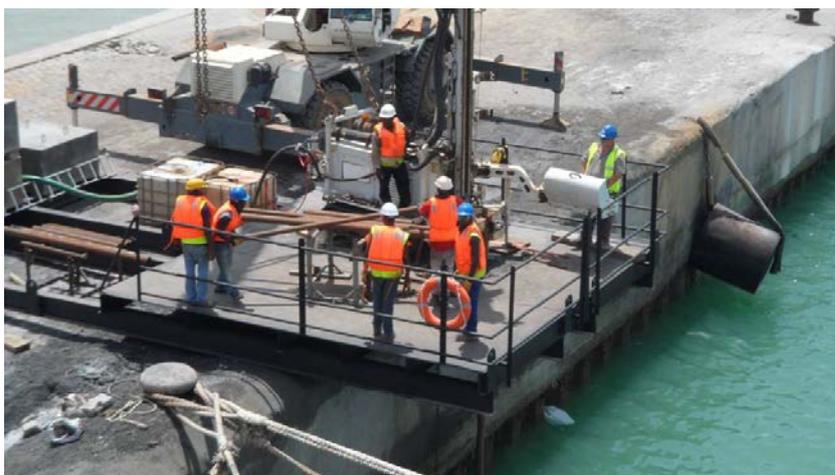
Client: Sogea Satom
Location: Cotonou, Benin
Period: October to November 2013

Marine Boreholes, Vibrocoreing and Seabed Cone Penetrometer Testing

Sogea Satom was appointed to oversee port infrastructure upgrades in the Port of Cotonou, Benin.

In order to design the required works, information was required of seabed conditions at the various upgrade locations.

PMI was appointed by Sogea Satom to execute the required marine geotechnical investigations.



Scope of Work

The marine geotechnical investigations included:

- 8no. geotechnical boreholes with sampling and testing to depths of up to 30m
- 15no. seabed CPTu tests to depths of 10m
- 11no. vibrocores sampling to depths of up to 5.5m

Vibrocoreing and seabed CPTu testing was undertaken from a Multicat Tug vessel that mobilised daily from the Port of Cotonou.

The multicat on-board crane deploys the vibrocorer and seabed CPTu test unit to the seabed where the tests are conducted.

A vibrocore test yields a 90mm soil sample at up to 5.5m below seabed level. The sample is then logged by a PMI Geotechnical Engineer. Soil samples are then extracted from the vibrocore and carefully packed and shipped to certified laboratories for soils testing.

Seabed CPTu's are used to obtain seabed ground formation information at up to 30m depth. At Cotonou PMI tested to 10m depth.

A continuous soil profile with engineering parameters is the output of the seabed CPTu process.

PMI executed the marine boreholes

by deploying a cantilever drilling platform mounted on the quay wall.

Conclusion

The PMI methodology of successfully executing vibrocoreing, seabed CPTu's and a cantilever platform for boreholes saved the Client significantly in terms of cost and time, when compared with the conventional method of mobilising a marine Jack Up Barge for investigations.



The Works

Investigations were executed in the period October to November 2013 to take advantage of the fair weather window for marine works in West Africa.

