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## **Experience Summary**

- Over 30 years post-graduate experience in offshore geotechnical and foundation engineering worldwide.
- Expert Witness experienced in writing technical reports and giving oral evidence in arbitration hearings.
- Core competence is the acquisition, description and interpretation of offshore and nearshore soils for marine construction projects and subsequent foundation engineering and installation analyses.
- In-depth experience of geotechnical laboratory testing (specification, management and interpretation of results).
- Significant foundation design and installation experience (e.g. driven piles, drive/drill/drive piles, drilled & grouted piles, suction caissons, gravity-based structures, monopiles, marine anchors and mooring systems).
- Trenching engineering assessments for cables and pipelines, upheaval buckling assessments, dredging, rock dump and on-bottom stability assessments
- Geotechnical analysis of dredging and offshore reclamation/artificial island schemes.
- Significant period spent offshore managing and supervising site surveys and trenching, piling and rock placement operations.

## **Qualifications**

- MEng BSc (hons) Civil Engineering, University of Manchester (1990)
- Certified Expert Witness, Cardiff University (2017)
- Member of the Academy of Experts (2021)

## **Summary of Professional Experience**

### September 2016 to Date

Ternan Energy  
Founder / Principal Engineer

### May 1997 to August 2002

Coflexip Stena Offshore  
Senior / Principal Geotechnical Engineer

### September 2008 to September 2016

Senergy (acquired by Lloyds Register)  
Founding Director

### March 1992 to May 1997

Brown & Root  
Foundation Engineer

### April 2005 to September 2008

ISIS Energy (acquired by Senergy)  
Founding Director

### August 1990 to March 1992

Fugro McClelland  
Senior Geotechnical Engineer

### August 2002 to April 2005

Hydrosearch (RPS Energy)  
Manager Geotechnical Engineering

## **Affiliations**

- Chartered Engineer (CEng MIMarEST)
- Member of the Academy of Experts (Practicing Geotechnical Engineer)
- Fellow of UK Society for Underwater Technology (SUT)
- Member and former Chairman of UK SUT OSIG committee
- Member of the IMarEST Offshore Renewables Special Interest Group (ORSIG)
- Member of the UK Offshore Engineering Society

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**Selected Expert Witness Experience**

Central to these disputes has been the acquisition techniques for geotechnical samples, the overall quality and quantity of site investigation data and the interpretation of seabed and sub-seabed conditions, alleged unforeseen/unforeseeable ground conditions and how these may have impacted on the engineering design and installation operations.

- 2024  
Seaway 7 vs Changfang Wind Power Co & Xidao Wind Power  
Seabed preparation (CFE) and trenching of subsea power cables  
Expert Reports and *ad hoc* technical advice
- 2022  
Prime Capital Maldives vs Government of Maldives  
Reclamation of artificial islands  
Expert Reports, Experts Joint Report and oral evidence in arbitration. Singapore (May 2022)
- 2021 & 2022  
LSC vs Boskalis  
Installation of subsea power cables, Singapore / Malaysia  
Expert Report & oral evidence in arbitration. Singapore (April 2022)
- 2021  
ADNOC vs NMDC  
Design of artificial islands offshore UAE  
Expert Report and (virtual) technical advice in Expert Determination (November 2021)
- 2021  
Bluewater Energy Services vs CPP  
Installation of drag anchors, Oman  
Expert Report and *ad hoc* technical advice
- 2020  
Boskalis vs Vattenfall  
Design of suction caisson foundations & trenching of export cables  
Offshore wind farm, Scotland  
Expert Reports & (virtual) oral evidence in arbitration. Edinburgh (September 2020)
- 2020  
BIC vs BGC  
Umm Qasar Jetty 3. Nearshore pile design and installation.  
Oil offloading jetty, Iraq  
Expert Reports & oral evidence in arbitration. Dubai (February 2020)
- 2019  
Boskalis vs Titan-2  
Nearshore rock and soil dredging, Finland  
Expert Reports & oral evidence in arbitration. Helsinki (October 2019)
- 2016/2017  
SPT vs SEP (Allseas)  
Design and installation of suction caissons, Dutch North Sea.  
Expert Reports, Joint Report & oral evidence in arbitration. Rotterdam (April 2017)
- 2013  
James Fisher vs IAM  
Dredging of existing offshore pipeline, Indonesia  
Efficiency of dredging tool.  
Expert Report & oral evidence in arbitration. London (March 2013)

## Mark FINCH

CEng MEng BSc (hons) MAE

Technical Authority – Offshore Geotechnical Engineering

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### **Detailed Professional Experience**

#### **September 2016 to Date**

Ternan Energy

Founder, Managing Director and Principal Geotechnical Engineer

Assessment of offshore geotechnical data, gap analyses and advice on adequacy of datasets.

Engineering analyses and risk assessments to inform project execution offshore.

Advice to clients on how to manage seabed risks on their projects.

Expert Witness for seabed surveys, trenching and burial projects and foundation design for offshore structures.

Selected projects:

- Copenhagen Offshore Partners  
Survey Package Manager for Pentland Floating offshore Wind Farm, UK.
- Vattenfall  
Expert Witness for Aberdeen Bay Offshore Windfarm export cable and suction pile design disputes.
- SDIC Red Rock Power  
Foundations Engineer  
Inch Cape Offshore Wind Farm
- EnQuest Heather  
Follower removal loads – independent analyses  
Back analyses of pile driving records and pile installation procedures
- DeepOcean UK  
Independent Technical Authority for trenching projects  
Lateral pile analyses  
Jack-up stability analyses
- OHT  
Leg penetration Analyses for Jack-up rigs  
Numerous sites/projects worldwide

#### **March 2005 to September 2016**

Senergy (acquired by Lloyds Register)

Geotechnical Director

Review and assessment of offshore soils data and engineering design based on this data.

Engineering analyses and risk assessments to inform project execution offshore.

Expert Witness instructions.

Independent review of geotechnical information and engineering analyses.

- SSE  
Caithness-Moray-Shetland HVDC Cable  
for all geotechnical aspects of project including route assessments and prediction of trenching performance and risks.
- AGIP KCO  
Kashagan Development  
Support to geotechnical design works for offshore, ice-resistant artificial islands for drilling wellhead and central facilities for oil development in Caspian Sea.
- Numerous Sites Worldwide (including North Sea, Persian Gulf, Far East, West Africa)  
Jack-up emplacement analyses, remedial foundation solutions, interaction and removal. Risk assessments. Application of HSE Offshore Information Sheet 3/2008 procedures.

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- EDF Energies Nouvelle  
French Offshore Wind Farms  
Geotechnical and foundation design and installation support
  - Shell Qatar  
RasGas Development  
Several trenching assessments (i.e. review of soil data and assessment of performance of trenching tools)
  - London Array Offshore Wind Farm  
Site Investigation Design and Management  
Expert Witness support regarding installation vessel emplacement
  - GDF  
Cygnus Development  
Technical Authority for jacket pile design and installation engineering.  
Geotechnical overview of in-field and export pipeline installation.

### **April 2005 to September 2008**

ISIS Energy (acquired by Senergy)

Founding Director

Broad range of offshore geotechnical and construction advice to Clients worldwide. Key areas were geotechnical site and route assessments, trenching and burial engineering. Advice on emplacement of jack-up vessels and potential seabed risks. Frequent trips offshore to manage site investigations and trenching projects.

### **August 2002 to April 2005**

Hydrosearch (RPS Energy)

Manager Geotechnical Engineering

Broad range of offshore geotechnical site assessments and interpretation of soils conditions for engineering.  
Detailed foundation designs for offshore structures.

### **May 1997 to August 2002**

Coflexip Stena Offshore

Principal Geotechnical Engineer

Responsible for all geotechnical engineering (mainly trenching and subsea structure foundation designs) for CSO worldwide.

Numerous trenching and burial projects (> 60 projects). A typical project included the review of route specific geotechnical information and the engineering analysis of trenching operations and identification of risks and mitigation strategies.  
Responsible for all soils aspects of deep water dredging of seabed pits offshore Canada.

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### **March 1992 to May 1997**

Brown & Root

Foundation Engineer

Detailed foundation design projects included:

- Hamilton Brothers  
Liverpool Bay Development
- Conoco  
Ganymede Development
- ONGC  
Bombay High, SHW platforms

All projects included in-depth review of soil conditions at site, development of design geotechnical parameters and detailed engineering for foundation piles and their installation.

Frequent trips offshore (approximately 250 days spent offshore, mainly in West Africa and the North Sea) to supervise piling operations.

### **August 1990 to May 1992**

Fugro McClelland

Senior Geotechnical Engineer

Offshore Geotechnical Engineer for more than 30 offshore site investigation projects worldwide including the Persian Gulf, North Sea, Gulf of Mexico, West Africa, South China Sea, India, Venezuela, Canada and Russia.

Approximately 300 days spent offshore on site investigation vessels.

Responsible for acquisition and interpretation of geotechnical data, writing of factual reports etc.

Foundation engineering including pile design, pile driveability, gravity base design etc.

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## **Publications**

1. Georgiopoulou, A., Lipp, P., Abel, L., O'Brien, J., Lauder, K., Searle, A., **Finch, M.**, Bagaria, P., 'A Geological and Geotechnical Assessment of the UK and Irish Celtic Sea Seabed for Floating Wind Energy', Proceedings of OSIG Conference, London, 2023.
2. Moran, P., **Finch, M.**, Brianso Del Rio, J., Orlowska, M., 'Geotechnical Characterisation of Soils Containing a High Silt Content, Proceedings of OSIG Conference, London, 2017.
3. Palmer, A., White, D., Baumgard, A., Bolton, M., Barefoot, A., **Finch, M.**, Powell, T., 'Uplift resistance of buried submarine pipelines: comparison between centrifuge modelling and full-scale tests', Geotechnique, Vol. 53, Issue 10, June 2005.
4. **Finch, M.**, 'Managing Seabed Risk in Developing Offshore Renewables', Proceedings of Oceanology, June 2004
5. **Finch, M.**, 'Optimising Site Investigations for Offshore Windfarm Projects', Proceedings of UK Offshore Wind Conference, London, 2003.
6. Maconichie, A., Fisher, R. and **Finch, M.**, 'Assessing Pile Driving Risks in Carbonate Soils and Rocks', Proceedings of BGA International Conference on Foundations, London, 2003.
7. Jenner, C., Finlayson, K. and **Finch, M.**, 'Optimising Integrated Site Investigation for Offshore Renewable Energy Projects', Proceedings of OSIG Conference, London, 2002.
8. Cowie, M. and **Finch, M.**, 'Backfill Improvement Techniques – Optimizing Pipeline Burial Solutions', Proceedings of Offshore Technology Conference, Houston, 2001.
9. Machin, J., Messina, F., Mangal, J., Girard, J., Finch, M., 'Recent Research on Stiff Clay Jetting', Proceedings of Offshore Technology Conference, Houston, 2001.
10. **Finch, M.** and Machin, J., 'Meeting the Challenges of Deepwater Cable and Pipeline Burial', Proceedings of Offshore Technology Conference, Houston, 2001.
11. **Finch, M.** and Fisher, R., 'An Integrated Approach to Pipeline Burial in the 21st Century', Proceedings of Deep Offshore Technology Conference, New Orleans, 2000.
12. **Finch, M.**, 'Upheaval Buckling and Floatation of Rigid Pipelines: The Influence of Recent Geotechnical Research on the Current State of the Art', Proceedings of Offshore Technology Conference, Houston, 1999.
13. **Finch, M.** and Machin, J., 'Pipeline Foundation Considerations', Proceedings of OSIG Conference, London, 1998.
14. **Finch, M.**, 'Glory Hole Construction and Trenching Challenges Offshore Canada', Proceedings of OSIG Conference, London, 1998.
15. **Finch, M.** and Fisher, R., 'The Right Tool for the Job', Proceedings of Subsea Geotechnics Conference, Aberdeen, 1998.
16. **Finch, M.**, 'A Novel Deepwater Excavation System for Harsh Offshore Environments', Proceedings of Subsea Geotechnics Conference, Aberdeen, 1998.