Mark FINCH

CEng MEng BSc (hons) MAE
Expert Witness - Marine Geotechnical Engineering

TernanEnergy
Integrity Independence Innovation

Experience Summary

- 35 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 near-shore seabed and sub-seabed data for marine construction projects and subsequent foundation engineering and installation analyses.
- Design, management and interpretation of offshore surveys.
- 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 periods spent offshore managing and supervising site surveys and trenching, piling and rock placement operations.
- Invited speaker at numerous conferences and seminars.

Qualifications and Affiliations

- MEng BSc (hons) Civil Engineering, University of Manchester (1990)
- Certified Expert Witness, Cardiff University (2017)
- 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 UK Offshore Engineering Society

Summary of Professional Experience

September 2016 to Date
Ternan Energy
Founder & CEO / Principal Engineer

September 2008 to September 2016
Senergy (acquired by Lloyds Register)
Geotechnical Director

April 2005 to September 2008
ISIS Energy (acquired by Senergy)
Founding Director

August 2002 to April 2005
Hydrosearch (RPS Energy)
Manager Geotechnical Engineering

May 1997 to August 2002
Coflexip Stena Offshore
Senior / Principal Geotechnical Engineer

March 1992 to May 1997
Brown & Root
Foundation Engineer

August 1990 to March 1992
Fugro McClelland
Senior Geotechnical Engineer

Selected Expert Witness Experience

- **2025**
  Fugro vs KFW
  Korea
  Site surveys for offshore wind farm
  Expert Reports, Experts Joint Report. Arbitration scheduled for June 2026 in Singapore
- **2024/2025**
  DEME vs EDF
  Scotland
  Trenching of OWF Inter Array Cables
  Expert Reports
- **2024**
  Seaway 7 vs Changfang Wind Power Co & Xidao Wind Power
  Taiwan
  Seabed preparation (CFE) and trenching of subsea power cables
  Expert Reports and *ad hoc* technical advice
- **2022**
  Prime Capital Maldives vs Government of Maldives
  Republic of the Maldives
  Reclamation of artificial islands
  Expert Reports, Experts Joint Report and oral evidence in arbitration - Singapore
- **2021 & 2022**
  LSC vs Boskalis
  Singapore/Malaysia
  Installation of subsea power cables, Singapore / Malaysia
  Expert Report & oral evidence in arbitration - Singapore
- **2021**
  ADNOC vs NMDC
  UAE
  Design of artificial islands, offshore UAE
  Expert Report and (virtual) technical advice in Expert Determination
- **2020**
  Boskalis vs Vattenfall
  Scotland
  Design of suction caisson foundations & trenching of export cables for offshore wind farm
  Expert Reports & (virtual) oral evidence in arbitration - Edinburgh
- **2020**
  BIC vs BGC
  Iraq
  Umm Qasar Jetty 3. Nearshore pile design and installation.
  Oil offloading jetty, Iraq
  Expert Reports & oral evidence in arbitration – Dubai
  2019
  Boskalis vs Titan-2
  Finland
  Nearshore rock and soil dredging
  Expert Reports & oral evidence in arbitration - Helsinki
- **2016/2017**
  SPT vs SEP
  Dutch North Sea
  Design and installation of suction caissons, Dutch North Sea
  Expert Reports, Joint Report & oral evidence in arbitration - Rotterdam

Detailed Professional Experience

September 2016 to Date
Ternan Energy
Founder, CEO and Principal Geotechnical Engineer

Assessment of offshore survey 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.

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.
Selected projects:

- 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.
- EDF Energies Nouvelle
  French Offshore Wind Farms
  Geotechnical and foundation design and installation support

- 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.

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 site investigation projects worldwide
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.

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 Charecterisation 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. Machin, J., Messina, F., Mangal, J., Girard, J., Finch, M., 'Recent Research on Stiff Clay Jetting', Proceedings of Offshore Technology Conference, Houston, 2001.
9. **Finch, M.** and Machin, J., 'Meeting the Challenges of Deepwater Cable and Pipeline Burial', Proceedings of Offshore Technology Conference, Houston, 2001.
10. **Finch, M.** and Fisher, R., 'An Integrated Approach to Pipeline Burial in the 21st Century', Proceedings of Deep Offshore Technology Conference, New Orleans, 2000.
11. **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.
12. **Finch, M.** and Machin., J., 'Pipeline Foundation Considerations', Proceedings of OSIG Conference, London, 1998.
13. **Finch, M.**, 'Glory Hole Construction and Trenching Challenges Offshore Canada', Proceedings of OSIG Conference, London, 1998.
14. **Finch, M.** and Fisher, R., 'The Right Tool for the Job', Proceedings of Subsea Geotechnics Conference, Aberdeen, 1998.
15. **Finch, M.**, 'A Novel Deepwater Excavation System for Harsh Offshore Environments', Proceedings of Subsea Geotechnics Conference, Aberdeen, 1998.