



Andrew Galbraith

PhD PDipStats BA BAI CEng

Personal Information

Profile	A dedicated professional with over 13 years' experience in onshore and offshore geotechnical engineering. Expertise includes site investigation and site characterisation, interpretive reporting, laboratory testing, foundation design & installation and advanced numerical analysis predominantly within the oil & gas and offshore wind sectors.
Email	apg@geowynd.com
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Nationality	British-Irish Dual
Education	Oct 2003 – June 2010: Trinity College Dublin
Qualifications	CEng – Chartered Engineer PhD – Design and Performance of Deep Foundations in Ireland PDipStats – Postgraduate Diploma in Statistics BA BAI – Civil, Structural & Environmental Engineering
Additional Training	IOSH Managing Safely NEBOSH National Certificate in Construction Health and Safety

Experience

2018 – Jan 2021	Vattenfall – Head of Geoscience Leading a team of 15 No. Geoscience professionals including geotechnical engineers, geophysicists and UXO experts to deliver offshore and onshore wind portfolio in Europe. Responsible for procurement of site investigation services, management of same through execution, interpretation of the data for risk mitigation and for input to design of foundations for offshore wind turbines. Also responsible for the geotechnical foundation design and for installation related items such as monopile driving, cable installation and leg penetration analyses for installation vessels.
2015 – 2018	Vattenfall – Senior Lead Geotechnical Engineer This role included geotechnical support to offshore wind farm developments in the North Sea, mainly in the UK and Danish sectors.
2013 – 2015	Wood Group Kenny – Senior Geotechnical/Pipelines Engineer Geotechnical desktop study and development of site investigation strategy and interpretive reporting to deliver oil & gas projects. This role included pipeline/spool design, stability and routing including assessment of upheaval/lateral buckling, requirement for mattress or rock-dump.
2010 – 2013	Byrne Looby Partners – Geotechnical Project Engineer Slope stability, shallow and deep foundation design, retaining wall design, temporary works incl. propping, tunnelling, and pipe jacking design and analysis, 3D numerical modelling and desk study.
2007 – 2010	Trinity College Dublin – PhD Candidate Geotechnical Engineering Thesis entitled 'Design and Performance of Deep Foundations in Ireland' including literary review on pile design and reliability methods with particular relevance to Ireland. Collation of static pile load test results to create a database of pile

load test in Ireland. Design and installation of instrumented pile load tests. Reliability assessment of piles to determine appropriate partial factors for LRFD in various soils

2007

Trinity College Dublin – Research Assistant

Research and Development of a new pre-fabricated permanent formwork system for the construction of in-situ concrete walls.

Publications

Galbraith, A.P., Farrell, E.R., and Byrne, J.J., 2014. Uncertainty in pile resistance from static load tests database. *Institution of Civil Engineers (ICE) Geotechnical Engineering*, **167** (5)

Key Projects and Experience

Hollandse Kust Zuid Offshore Wind Farm: Designing site investigation strategy including all geotechnical, geophysical and UXO related survey to inform a robust foundation and cables design. Interpretation of site investigation data to deliver geotechnical design parameters and development of design methodology for monopiles by 3DFEM at all WTG locations. Pile driving assessment and installation related calculations to ensure foundations could be installed. Liaising closely with Certifiers to ensure design inputs and geotechnical design methodology is satisfactory and accepted by the industry. Working within integrated load analyses methodology to ensure optimised foundation design.

Vesterhav Nord and Vesterhav Syd Offshore Wind Farms: Drafting geotechnical site investigation scope of work, contractor selection, management of offshore works, laboratory testing program through to drafting of GIR for these sites to inform foundation design, cables design and installation. Scheduling of integrated load analyses cycles with foundations and loads teams to optimise pile-soil-load system and liaising closely with certifiers to deliver the overall design.

Horns Rev III Offshore Wind Farm: Procurement, management, reporting and interpretation of geotechnical investigation. Preliminary engineering calculations relating to leg penetration for jack-up vessels, pile geometry for turbine foundation and pile driving assessment. Geotechnical client representative during monopile installation.

Aberdeen Bay Offshore Wind Farm: Offshore client representative for detailed WTG specific pre-construction site investigation. Interpretive work to determine soil parameters for input to design of 3-legged jacket supported on suction caissons.

East Anglia North, Thanet Extension, Swedish Kreigers Flak and Stora Middlegrund Offshore Wind Farms: Drafting and implementation of site investigation strategy including geotechnical and geophysical works. Geotechnical support to projects from earliest stages to gain development consent. Conceptual foundation design and installation to support project business cases

Peterhead Carbon Capture and Storage: GIR for pipeline and replacement SSIV piled structure and checking of design analysis.

ETAP Field: GIR for design of 6 No. new umbilicals running from the ETAP platform to satellite fields at Machar, Madoes and Mirren and 6 No. subsea structures to terminate the umbilicals.

Shah Deniz Field: GIR and seismic analyses of the subsea infrastructure including concrete crossing structures, suction caissons and mud-mats. This work was carried out in Plaxis3D and liaising closely with the structures and pipelines design teams. Other tasks included installation and retrieval analysis for suction caissons installed to limit pipeline walking.

Schiehallion Field: A lateral buckling assessment was undertaken for the water injection and gas flowlines in the Schiehallion field using FEA in Abaqus to model pipe-soil interaction.

Aviat Field: Route selection, layout and approach design for this 8-inch, 23km long pipeline. I was also responsible for expansion analysis of the pipeline and tie-in spool design and layout at the Forties Alpha platform and at new wells. This work comprised various reports and calculations and also included FEA of the pipeline-spool-soil system. Other (non-technical) aspects of the work for which I was personally responsible included project cost estimate and project scheduling for the subsea installation activities.

Corrib Gas Terminal: The design of several retaining structures (total length exceeding 200m) was outlined for a tunnel boring machine (TBM) launch pit and lead-in ramp. The design of the TBM launch pit was such that penetration of the TBM through a soft-eye in the wall was accommodated. Propping within the launch pit and lead-in ramp was also limited so as not to inhibit the placement of the TBM in the launch pit.

Balmurrie Wind Farm: A peat slide risk assessment for the site and the design of access tracks and hardstands for 7 No. wind turbines were carried out. Particular difficulties arose due to the topography of the site which was steeply sloping over large areas and with depths of peat exceeding 3m. An economical solution was achieved through floating road design and conventional track construction which I designed.

Altahullion Wind Farm: Carried out peat slide risk assessment and design of access tracks and hardstands for Altahullion Windfarm. The design aspect included setting the vertical and horizontal alignment of the access tracks and specification of the make-up of the access tracks and hardstands.
