



Wednesday 1st October 2014

A joint OES / EGGS meeting

being held at

**The Geological Society, Burlington House, Piccadilly, London W1J 0BG.
at 18:00hrs**

(Refreshments provided and will be served from 17:30)

**ONSHORE – OFFSHORE GEOLOGY:
THE VITAL LINK FOR THE ENGINEERING OF
OFFSHORE WIND FARMS FOUNDED IN CHALK**

Presented by

Rory Mortimore and John Carey

For the offshore wind farm industry, including construction of foundations for wind turbines and associated sea-bed infrastructure, identification of suitable onshore analogues in the Chalk would be invaluable. The offshore engineering ground profile is generally shallow depth around 30 m and in exceptional circumstances may reach 60-80 m. Within this profile the Chalk may range from high or very high density to low or very low density. The density of the intact chalk has a strong influence on pile capacity and pile drivability. In addition, the Chalk in the near offshore Southern North Sea has been subjected to both glacial and periglacial Quaternary processes. Defining the depths of weathering and CIRIA chalk grades resulting from these Quaternary processes is essential. This is because the behaviour of piled foundations is also strongly influenced by the degree of weathering/fracturing of the chalk mass.

The coastal Chalk cliffs and quarries of England from Yorkshire to Sussex and the French coast of Upper Normandy all provide partial analogues. There is no single field section that contains all the answers. An ideal onshore analogue will combine the hard, high density, glacially eroded chinks of the Yorkshire coast, with the soft, high porosity, part glacially and part periglacially weathered chinks of Norfolk, southern England and the Paris Basin. Other key aspects of the onshore field sections include the presence of palaeovalleys and faults where the extent of weathering can be measured and related to features seen in offshore seismic sections. Field sections showing such features will be illustrated. Interpretation of offshore geophysical borehole logs, seismic sections and geotechnical test results in both shallow and deep environments benefit from examples of geology found in onshore field sections.

The influence of intact chalk density and fracture state on pile capacity and pile drivability will be discussed and some general design guidelines will be provided.

About the speakers:

Rory Mortimore is Emeritus Professor of Engineering Geology at the University of Brighton and MD of ChalkRock Limited. He has spent 40 years investigating the Chalk.

John Carey is MD of Wind Support Limited. He has acted as a Geotechnical Consultant on 10 offshore wind farms in chalk areas and was responsible for a joint industry research project involving pile testing in low to medium density chalk.

BOOKING INFORMATION

OES members:

Please book your place at this event through the online link at <http://www.ice.org.uk/Event?ID=3017>

If you experience any difficulty booking online, please contact jacqueline.finch@ice.org.uk

EGGS members:

To book your place at this event, please email Jacqueline Finch at jacqueline.finch@ice.org.uk or phone 020 7665 2238 and she will register you.

Priority is given to OES members, EGGS members, co-sponsors' organisations and speakers' organisations.

[Link for directions to The Geological Society at Burlington House:](https://maps.google.co.uk/maps?ie=UTF8&cid=17488385273923313565&q=The+Geological+Society&iwloc=A&gl=GB&hl=en)

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