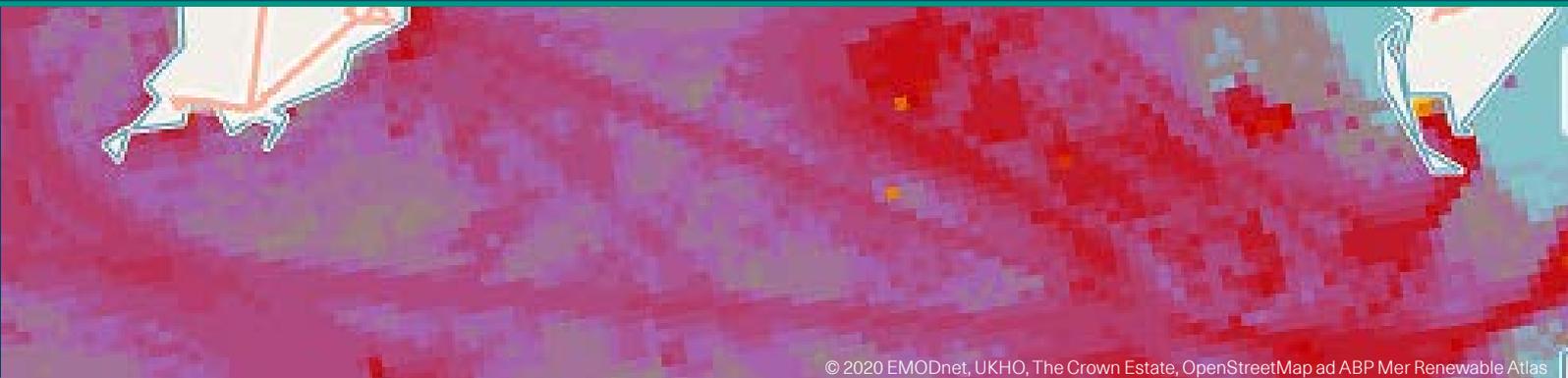




Geotechnical Desk Study and Geohazard Assessment



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Utilising an unrivalled breadth of knowledge and experience we are able to provide the project stakeholders and all interested parties with a bespoke, site specific, geological, geotechnical and geohazards desk study.

Desk study

Conducted at the earliest stages of project development, prior to conceptual design, geological and geotechnical desk studies are the first step taken in proactive seabed risk management. Offering an excellent return on investment, a comprehensive desk study undertaken by an expert such as Cathie enables value engineering in early stage site selection, survey and conceptual design. Desk studies are an office based exercise in the collation, assessment and integration of all natural and anthropogenic site specific information with the aim of determining surface and sub surface conditions.

If onshore geological exposures can be identified that are analogous to the offshore site, site reconnaissance visits can add considerable insight and value, commonly resulting in sample collection and laboratory testing.

Desk studies enable:

- Early identification and mitigation of ground based risk
- Initiation of the process of understanding anticipated ground conditions
- Reduction in the risk of encountering unforeseen ground conditions



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- Development of focussed ground investigation strategies
- Foundation Optioneering and Conceptual Design
- Development of first Geotechnical Risk Register
- Promotion of accurate budget forecasting.

Data

All Cathie desk studies use a baseline of open-source and third-party spatial data - managed and regularly maintained for all key markets in our comprehensive data catalogue. Existing regional geological, environmental, physical, and anthropogenic datasets are augmented with site-specific data searches to produce a content-rich model, allowing for initial assessments of new sites to be conducted efficiently and with confidence. Where available, these data searches are further refined by introducing primary surveyed datasets, constructing a comprehensive and reliable understanding of the site, and its surrounding regional context.

Deliverables

We recognise that all our clients have their own needs and requirements; and that every project is unique, presenting its own, distinct set of opportunities and challenges. Our Desktop Study deliverables are therefore tailored to suit each unique situation: data are provided in a multitude of open and industry standard formats; and drawings and reporting elements can be fine-tuned to ensure the complexity of your site is fully understood. A Cathie desk study can be seen as both comprehensive and bespoke: mitigating risk by targeting each project individually, and providing a set of deliverables suited to your organisation's way of working.

Our vast experience means our desktop studies often become more than a descriptive exercise. Following initial assessment we open up an areas spatial intelligence, combining and weighting constraints to produce a rich "heat map" from which preferable areas for development can be identified.

In addition to factual desk study reporting, depending upon data availability the following deliverables are commonly realised:

- Site specific geological and geotechnical assessments using onshore analogies examined during walkovers
- Spatial data of site constraints complete with metadata and source referencing
- Spatial modelling; heatmapping and weighted overlays
- Geological and geotechnical risk mapping
 - Anthropogenic and seabed user risk mapping
 - Site suitability analysis
 - Preliminary site layout design
- Conceptual foundation design
 - Optioneering and concept scoring
 - Preliminary sizing
 - Installation risk assessment
- Conceptual infield and export cable design
 - Identification of route corridors
 - Preliminary burial tool selection
- Development of geophysical and geotechnical survey strategy.