



# geomorphology



**ROYAL HASKONING**

thinking in  
all dimensions

# geomorphology



Left: Entrance to Pagham Harbour, Sussex, UK Right: Beach at Mundesley, Norfolk, UK

## living with landforms

Geomorphology plays an important role in understanding the interaction between human activities and the changing landforms of our rivers, estuaries, coasts and offshore areas. To help our clients make informed decisions in these sensitive and dynamic environments, Royal Haskoning, through Posford Haskoning Ltd., and Haskoning Nederland B.V., has established a dedicated geomorphology team. The team draws upon substantial expertise and experience to provide applied geomorphological services to a wide range of projects.

The services are provided as standalone assignments or within the context of larger projects, such as:

- River catchment management
- Coastal and estuarine strategies
- Coastal zone and shoreline management
- Environmental impact assessment
- Habitat management and creation
- Offshore planning and development
- Offshore resource management
- Research and development



*Clockwise from left: Cliff at Overstrand, Norfolk, UK; Spit-dune system at Borth, Ceredigion, UK; Findhorn Bay, Moray, UK*

## technical & scientific services

Royal Haskoning's geomorphology team provides services in a variety of environments, to meet a range of consultancy and research needs. Our scientists cover rivers, estuaries, coasts, nearshore and offshore environments in the fields of geology, geomorphology and coastal processes.

The range of services provided benefits from our involvement in research, allowing us to apply the latest understanding and knowledge to practical solution-orientated work.

In particular the team's activities cover:

- Estuarine geomorphological change
- Beach behaviour
- Intertidal flat and saltmarsh dynamics
- Habitat-landform linkages
- Accretion and erosion patterns
- Coastal, estuarine and river sediment budgets
- River and floodplain restoration
- Sedimentary processes
- Marine and coastal geology



Clockwise from left: Seismic profile, North Sea, UK\*; Aerial photograph, Karavasta Lagoon, Albania; Geophysical equipment; Sediment core, North Sea, UK\*

## tools & techniques

Working in diverse environments requires the considered application of geoscientific techniques. Our geomorphology team includes specialists who are able to select and apply the most appropriate methods in each project. These include:

**Remote Sensing:** Interpretation of satellite imagery, aerial photography and other remote survey data.

**Core Analysis:** Interpretation of the sedimentological and geotechnical properties of sediment cores.

**Geophysics:** Analysis of echo sounder, side-scan sonar and seismic data in estuarine, nearshore and offshore environments.

**Historical Trend Analysis:** Analysis of historical data to identify morphological changes, trends and rates of change. This technique uses our GIS capabilities.

**Expert Geomorphological Assessment:** Development of conceptual models for both coastal zone and river catchment management, incorporating changes and present processes and trends. This is invaluable for assessing likely future behaviour.

**Geographic Information Systems (GIS):** A fully integrated GIS and geomorphology service providing a wide range of GI and database expertise.



Left: Chagos Archipelago, Indian Ocean Right: Loe Bar shingle ridge, Cornwall, UK

## worldwide multidisciplinary support

From our United Kingdom base, Royal Haskoning's geomorphology team is supported by specialists in other related fields from our offices around the world. Our geomorphological services are complemented by the work of our numerical modelling experts, with capabilities in the modelling of sediment transport, tidal circulation and waves. Other complementary services include ecological survey work, geotechnical investigations, engineering design and data management.

We are committed to generating value for our clients through the development of flexible, highly practical business solutions. Clients are drawn from a variety of areas including:

- Environmental agencies and authorities
- Ministries responsible for flooding, coastal protection and the marine environment
- Third World development and relief agencies
- Port authorities
- Local authorities
- Offshore developers
- Coastal groups and forums

Royal Haskoning is an independent, worldwide operating consultancy that has its origins in a firm established in 1881 in the Netherlands. The consultancy now has a staff of 3,000 who together combine a wide range of knowledge and experience. Rooted in a technical background, our consultancy services focus on the broad field of the interaction between people and their environment, in the fields of spatial development, infrastructure & transport, architecture & building, mechanical & electrical services, environment, water, coastal & rivers and maritime. We are committed to working enthusiastically with our clients to achieve sustainable solutions in an increasingly complex society. The expertise and experience of our professionals in a variety of disciplines allow us to

consider all technical, logistical, architectural, legal, organisational, social, environmental and economic aspects of your project, in order to develop sustainable and practical solutions. Royal Haskoning has subsidiaries and partners throughout the world. Through our branch and project offices in Europe and overseas, we have access to all major international markets. This way, Royal Haskoning offers multidisciplinary and integrated services locally, based on experience built globally. With our personal service in consultancy, we contribute effectively to the successful planning, design, implementation, commissioning and operation of your projects and programmes and enhance our clients' work with added value.



Royal Haskoning, through Posford Haskoning Ltd and Haskoning Nederland B.V. is a member of:

- ACE The Association of Consulting Engineers
- BCCB British Consultants & Construction Bureau
- PIANC International Navigation Association
- CIRIA Construction Industry Research Information Association
- CIWEM Chartered Institute of Water and Environmental Management
- ICE Institution of Civil Engineers
- BANC British Association of Nature Conservation
- CDA Central Dredging Association
- IEMA Institute of Environmental Management and Assessment
- IOS Institute of Oceanographic Sciences
- INA International Navigation Association

Individual membership of professional organisations relevant to geomorphology:

- FGS Fellows of the Geological Society
- GA Geologist's Association
- QRA Quaternary Research Association
- AGI Association of Geographic Information CoastNET

Royal Haskoning through Posford Haskoning Ltd or Haskoning Nederland B.V. is registered with: African Development Bank, Asian Development Bank, Caribbean Development Bank, European Bank for Reconstruction and Development, European Development Fund, International Development Bank, Islamic Development Bank, Kuwait Fund for Arab Economic Development, Overseas Development Administration, United Nations Development Programme World Bank, and many other Funds and National Authorities.

# thinking in all dimensions

## PETERBOROUGH

Rightwell House  
Bretton  
Peterborough PE3 8DW  
United Kingdom  
Tel: +44 (0)1733 334455  
Fax: +44 (0)1733 262243  
E-mail: [info@peterborough.royalhaskoning.com](mailto:info@peterborough.royalhaskoning.com)

## NIJMEGEN

Barbarossastraat 35  
PO Box 151  
6500 AD Nijmegen  
The Netherlands  
Tel: +31 (0)24 3284284  
Fax: +31 (0)24 3239346  
E-mail: [info@nijmegen.royalhaskoning.com](mailto:info@nijmegen.royalhaskoning.com)

## OTHER UK OFFICES

Edinburgh  
Exeter  
Haywards Heath  
London  
Newcastle  
Rochdale

## DUTCH OFFICES

Amsterdam  
Delft  
Enschede  
Goes  
Groningen  
's-Hertogenbosch  
Maastricht  
Rotterdam  
Steenwijk  
Utrecht  
Veendam

## WORLDWIDE OFFICES

Bahrain  
Bangladesh  
Belgium  
Burkina Faso  
Cambodia  
Cameroon  
China – Hong Kong  
Egypt  
France  
Ghana  
Hungary  
India  
Indonesia  
Ireland  
Malaysia  
Nigeria  
Philippines  
Poland  
Romania  
Thailand  
Trinidad  
Vietnam