



# masts & towers

# masts & towers



## from the earth to the sky

Royal Haskoning, through Posford Haskoning Ltd., and Haskoning Nederland B.V., has acquired extensive experience in servicing the needs of the telecommunication and power supply industries over the last 20 years. Services are provided both internationally and across the United Kingdom from several strategically placed outlets for a number of government and private companies, including clients such as the Maritime and Coastguard Agency, National Air Traffic Services, the Ministry of Defence and Cable & Wireless.

## acquisition & delivery

With new telecommunication installations, we offer expertise in site search and procurement negotiation, obtaining statutory consents, project and feasibility studies as well as the design, planning, building and commissioning of new telecommunication and power line sites. To overcome strict planning legislation and environmental constraints, we seek co-location on existing facilities including churches, towers, chimneys, electrical pylons, listed buildings etc and actively use “stealth technology” to incorporate micro cells into existing facilities. By exploiting the potential of these existing sites, Royal Haskoning is able to develop sites successfully, which may have been ruled out by others.



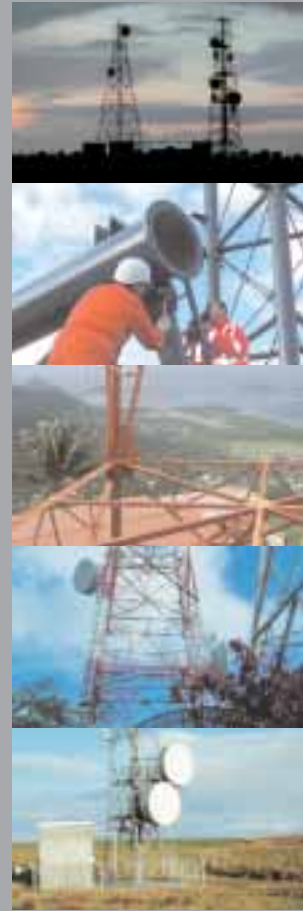
## inspection, analysis, maintenance

Expertise is continuously enhanced through the design and assessment of mast and tower structures (including pylons) together with the facility management of remote radio and power facilities, including site surveys, preparation of forward maintenance plans and the management of repair solutions. Specialities include the preparation of structural surveys including load and deflection assessments, preparation of antenna and feeder schedules, maintenance surveys, RF hazard surveys, guy tension measurement and adjustment, ultrasonic testing, lightning protection system design and project management of the overall works package.

Survey methods include visual inspection by trained climbing engineers in all topographic locations to structures with heights in excess of 300m. Abseil access can be utilised for structures, which have difficult access. Analysis of structures is undertaken to determine a structure's integrity based on its surveyed condition and/or for changes in equipment loading. State of the art three dimensional space frame software (MSTower) is used. If a structure is overloaded then Royal Haskoning can design and implement strengthening works. The long-term value of our client's assets is maximised through the preparation and implementation of maintenance schedules.

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 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
- ICHCA International Cargo Handling Co-ordination Association
- CIRIA Construction Industry Research Information Association British Section
- ICID International Commission on Irrigation and Drainage
- IEMA Institute of Environmental and Management Assessment
- FIDIC International Federation of Consulting Engineers

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, Department for International Development, United Nations Development Programme World Bank, and many other Funds and National Authorities.

# thinking in all dimensions

## EDINBURGH

10 Bernard Street  
Leith  
Edinburgh EH6 6PP  
United Kingdom  
Tel: +44 (0)131 5550506  
Fax: +44 (0)131 5550502  
E-mail: [info@edinburgh.royalhaskoning.com](mailto:info@edinburgh.royalhaskoning.com)

## 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

Exeter  
Haywards Heath  
London  
Newcastle  
Rochdale

## OTHER NL OFFICES

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

## WORLDWIDE OFFICES

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

[www.royalhaskoning.com](http://www.royalhaskoning.com)