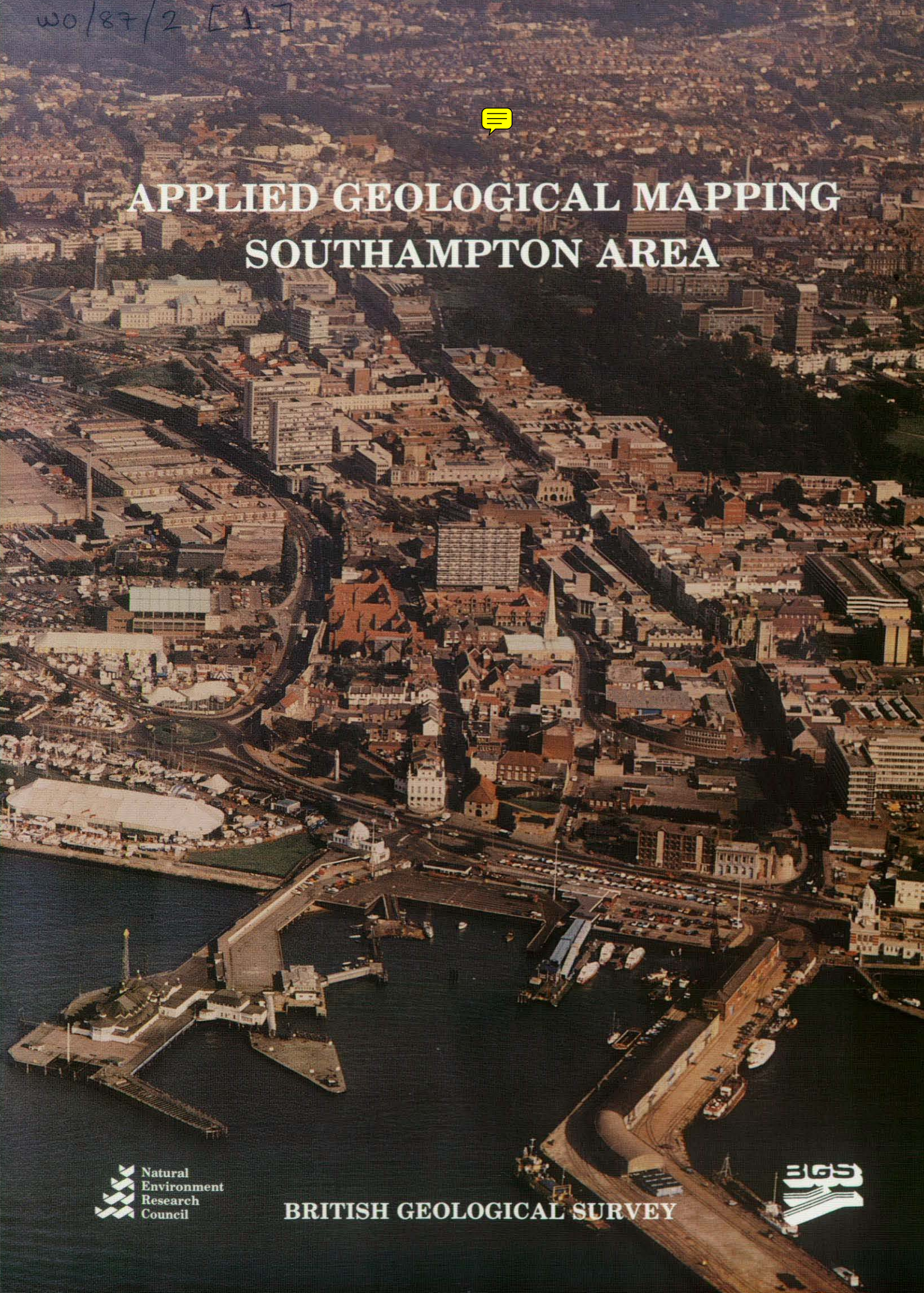


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APPLIED GEOLOGICAL MAPPING SOUTHAMPTON AREA



BRITISH GEOLOGICAL SURVEY



Cover photograph

We see Southampton city centre from the air, looking northwards over the Royal Pier and Mayflower Park (where a Boat show is taking place) in the foreground. The low-lying area in the left centre, occupied mainly by industrial buildings, is formed of reclaimed land over Estuarine Alluvium deposits. Most of the rest of the city is built on River Terrace Deposits overlying formations of the Bracklesham Group.

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**MAPS OF
ROCKHEAD CONTOURS
(D1-D6)**

VOLUME 5

BGS Research Report ICSSO/87/2

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Natural Environment Research Council
BRITISH GEOLOGICAL SURVEY

**APPLIED GEOLOGICAL MAPPING
SOUTHAMPTON AREA**

Area covered by
1:50 000 Geological sheet No. 315 (Southampton)
Parts of OS 1:10 000 sheets SU20, SU21, SU22, SU30, SU31,
SU32, SU40, SU41, SU42, SU50, SU51 and SU52

VOLUME 5: MAPS OF ROCKHEAD CONTOURS

R. A. Edwards, R. C. Scrivener and A. Forster

*Production of this report was supported by
the Department of the Environment but the views
expressed in it are not necessarily those of
the Department*

Bibliographic reference

EDWARDS, R.A., SCRIVENER, R.C. and FORSTER, A. 1987.
Applied geological mapping: Southampton area.
Research Report of the British Geological Survey, No ICSO/87/2, vol 5.

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Notes to the user

There is considerable variation in the quality and reliability of the source data used to compile this report and the accompanying set of applied geology maps, as well as a great disparity in the density of site investigation data within the study area. Therefore, the accuracy and reliability of the interpreted information reflects that of the source data. However, emphasis has been placed throughout on the most reliable data, particularly those derived from authoritative sources such as geotechnical engineers and geologists.

Thus the report and maps are to be regarded as the *best interpretation of the information available at the time of compilation*. They should be used for preliminary studies only and are not intended as a substitute for on-site investigations or detailed local searches. The responsibility for assuring that geological, geotechnical and mineral and water resource data for any given site are as indicated in the maps and in the figures and text of this report must remain solely that of the user.

The possible occurrence of undetected anomalous site conditions should always be anticipated. The indicated occurrences of mineral deposits do not necessarily imply an economic resource. The possible presence of unmapped variable thicknesses of superficial deposits and Made Ground, particularly within the urban area of Southampton, should also be taken into account in any planning procedures.

There is no substitute for the knowledge provided by a detailed site investigation that takes into consideration the extent, nature and location of a proposed development. Therefore the report and maps are intended a) to give guidance on when to seek specialist advice and b) to aid developers in formulating effective investigations.

No information made available after the end of 1986 has been taken into account in this report.

All National Grid references in the report lie within the 100km square SU. Grid references are given to either eight figures (accurate to within 10m), or six figures for more extensive locations.

Data used in preparing this report and associated maps is lodged at the Exeter office of the British Geological Survey. Any enquiries concerning these documents should be directed to that office. Enquiries concerning the computer techniques or methodology should be directed to the Edinburgh or Keyworth office of the Survey. Enquiries about purchase of the report or maps should be

directed to the National Geosciences Data Centre, British Geological Survey, Keyworth, Nottingham NG12 5GG.

DESCRIPTION OF THE APPLIED GEOLOGY MAPS

Rockhead contours (Maps D1-D6)

This set of maps consisting of six sheets at the 1:25 000 scale showing the form of the rockhead surface over the study area. Where there is no drift, and rock therefore occurs at surface, the rockhead contours are simply the topographical contours. Where there is drift cover, the rockhead contours depart from the topographical contours to an extent that is a function of the thickness of the drift. Rockhead contours in areas of drift are an interpretation based on the drift thickness maps and their accuracy decreases both with decrease in the borehole density, on which the drift thickness maps are based, and with increase in drift thickness. Where the drift is considered thin, then rockhead contours will closely parallel the topographical contours and can be drawn with some confidence even where there are few boreholes. In areas of thick drift, the rockhead contours bear little relation to topographical contours and their accuracy is entirely a function of borehole density.

The rockhead contour maps are accompanied by a distribution map showing the boreholes used in their construction.

Because of the generally thin (1-5m) drift in the study area, rockhead contours do not diverge greatly from topographical contours. The buried channels of the rivers are, however, clearly revealed by rockhead contours that indicate excavation of the old channel of the River Test to a depth below -20m O.D. at the southern edge of the project area and the buried channel of the River Hamble to a depth of -10m O.D. In the case of the River Test, the buried channel reaches a depth of -46m O.D. southeast of the Isle of Wight (Dyer, 1975) and is at or below O.D. as far north as the confluence with the River Blackwater. The contours show that the channel lies mainly along the western side of the present river valley.

The buried channels of the rivers were excavated during a period of low sea level, probably during the last deglaciation, when the rivers cut down their channels rapidly in order to adjust to the new base level. River gravels occur on submerged terraces in the buried channel of the River Test. As sea level rose after the last glaciation, the river valley was drowned, and the buried channel was filled with estuarine clay, silt, sand, gravel and peat.