

PLANNING AND ENGINEERING GEOLOGY

Proceedings of the 22nd Annual
Conference of the Engineering Group of
the Geological Society
held at Plymouth Polytechnic
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edited by

M. G. Culshaw¹, F. G. Bell², J. C. Cripps³, and M. O'Hara⁴

¹ Engineering Geology and Reservoir Rock Properties Research Group, British Geological Survey, Keyworth,
Nottingham NG12 5GG

² Department of Civil Engineering, Teesside Polytechnic, Middlesbrough TS1 3BA

³ Department of Geology, University of Sheffield, Sheffield S1 3JD

⁴ Department of Geology, Plymouth Polytechnic, Plymouth PL4 8AA

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Foreword

For the 22nd Annual Conference of the Engineering Group the Organizing Committee decided to try a new and different approach from previous years. The difference was that whereas previously Conferences have been organized almost entirely by Engineering Geologists for Engineering Geologists, in 1986 it was decided to try to reflect current trends in adopting a more multidisciplinary approach than ever before by asking land development planners to join in and participate as fully as possible.

One reason we decided to go multidisciplinary was because we thought it was time to start telling our co-workers in other disciplines what engineering geology has to offer instead of just telling one another this. Also in the planning field we realized that we have much to learn from our co-workers in planning as well as from those in our own discipline.

Why we should ask land development planners to share our platform raises an interesting question which can be answered by reference to the fact that the firm I work for and the office I occupy is in Victoria Street, London, the traditional home of consulting engineers. The reason for this is that in Victorian times enabling Parliamentary Bills were generally required for major engineering schemes of national importance. Engineers needed, therefore, to be close at hand for consultation with those who drafted what was in effect planning legislation (also the same thing was happening at local level for local schemes). However, the inter-reaction between development planning and civil engineering and in particular ground engineering is no less important today than it was in Victorian times, in some cases more so.

The timing of the Conference for 1986 is also significant. In the heyday of the Victorian industrial revolution the accent was on growth for the immediate future and although some masterpieces of engineering were created, at the same time at grass roots level, great and widespread damage was done to the environment by the rapid growth of industry. In fact this process continues up to the present day but thankfully at a decreasing rate.

This damage is a legacy that land development planners and engineering geologists one hundred years later have increasingly to deal with in meeting changing demands of industrial development, and indeed of the needs of society as a whole. As evidence of this a number of papers

presented at the Conference deal with the restoration and reclamation of derelict and despoiled land, a matter which has become a national duty endorsed and backed up by recent legislation offering substantial financial inducements for such work (the Derelict Land Act 1982).

Not only are engineering geologists concerned with problems of redevelopment of 'second-hand' sites, development is increasingly called for on new sites that have previously been avoided because of naturally difficult ground conditions. These two classes of sites, those that are difficult to develop because of past damage and those that are difficult because of natural conditions offer a challenge to both land-use planners and engineering geologists. Dealing with this challenge depends on a meeting of minds from both disciplines; this was one of the main aims of the Conference and it is significant that many papers presented deal with this problem of difficult sites.

In a more general way the Proceedings bring together in a unique way topics of interest in engineering geology and land-use planning. They also remind us that geology which is normally thought of as an 'earth science' has its human and social aspects too. As a result it is hoped that these Proceedings will prove to be a useful work of reference in the future both to geologists and those dealing with land planning in some of its broader social aspects by showing both parties what can be done when the going gets difficult, while at the same time enabling them to avoid the more intractable problems.

The Engineering Group Committee is much indebted to all the lead speakers, contributors, workshop leaders, field trip leaders, trade exhibitors, delegates and local organizers and helpers who did so much to make the Plymouth Conference a success. The Committee is also much indebted to the Editors, who, by much hard work, have made the publishing of these Proceedings possible. It is a long trail from the first planning of a conference to production of the final Proceedings; all who contributed on the way gave their time freely and on behalf of the Committee it is my privilege to offer them most grateful and sincere thanks.

D. N. Holt
Chairman — Engineering Group
Freeman Fox & Partners
May, 1987

Preface

'Planning and Engineering Geology' was the theme of the twenty-second Annual Conference of the Engineering Group of the Geological Society held at Plymouth Polytechnic from 8 to 12 September, 1986. The aim of the Conference was to bring together geologists, engineers and planners to discuss topics of mutual interest. Indeed, the creation of a dialogue between these groups of professionals who are intimately concerned with the development of town and country is of immense importance. The Conference was fortunate to have Mr G. F. McDonic, President of the Royal Town Planning Institute, to give the opening address before the delegates got down to the business of trying to understand each others viewpoint. The sessions ranged from the engineering geological input to planning, to aspects of strategic planning and how the law impinges upon the planning process. The dialogue between planners and geologists/engineers was further enhanced by the half-day of workshops, some of which were given by geologists/engineers for planners and other by planners for geologists/engineers.

The papers presented here originally formed a 769 page pre-print volume. To these have been added contributions from lead speakers and the discussion which took place at the Conference. Written discussion, enlargements to the verbal discussion and other contributions received after the Conference are also included.

As with all of the Conferences of Engineering Group of the Geological Society, the attendance was high and included delegates from industry, central government, local government and public companies in the United Kingdom and from overseas. Amongst the distinguished speakers were Mr G. F. McDonic, President of the Royal Town Planning Institute, Dr R. F. Leggett OC, a former President of the Geological Society of America and Mr Gerard Ryan QC. They, and all the other contributors, are particularly thanked for their help in making the Conference a success.

M. G. CULSHAW, F. G. BELL,
J. C. CRIPPS, M. O'HARA
Nottingham, 1987

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