

USE OF THE BOOK

This book has been produced for the purpose of transferring knowledge, not only between regions but also between disciplines, in the hope that past mistakes can be avoided and that progress in achievement and understanding within this field is accelerated.

It is unrealistic to attempt to prepare a definitive text dealing with every aspect of every discipline now involved in land reclamation. This book has been written for practitioners and assumes familiarity with these disciplines, but aims to draw out applications of these skills in unfamiliar situations. Much of what has already been achieved by way of reclamation has not been described before, let alone brought together in one publication. The current research effort in Germany, as just one example, is immense and varied. Even a review of the work in German universities and technical institutes is beyond the scope of this book. The book has attempted to review, in particular, the last twenty years, and to indicate where recent research and developments can be applied to good effect on site.

The book is divided into seventeen chapters which guide the reader through the subject from introduction and site investigations, the description and characteristics of former collieries and steelworks, through the application of techniques of treatment, towards final site use and management.

For many, the book will be accessed by referring to the contents and index. In addition, the following chapter-by-chapter summary will aid reference of the book:

Chapter 1 - An introduction to dereliction in Europe caused by the coal and steel industries.

- Chapter 2 - Site assessment: covers methods of site investigation for chemical contamination, ecological and archaeological value, geotechnical parameters and preliminary site audits.
- Chapter 3 - The investigation and treatment of mineworkings and unstable ground: deals with mining subsidence and instability and the methods available to investigate and improve ground stability.
- Chapter 4 - Demolition and site clearance: includes the measures to be taken to avoid wastage of materials and spread of contamination during site clearance.
- Chapter 5 - Colliery spoil heap characteristics: the physical and chemical profiles of colliery spoil can affect after use. This chapter discusses spoil characteristics with regard to revegetation and site re-use.
- Chapter 6 - Colliery spoil heap stability: concerns tipping methods, modes of tip failure, the investigation of spoil heap stability, and the methods available to treat unstable tips.
- Chapter 7 - Colliery spoil heap combustion: examines the reasons for combustion and its effects, including risk. Methods of assessment and treatment are defined.
- Chapter 8 - Colliery spoil washing: describes feasibility of coal recovery from spoil materials according to their characteristics, the methods of spoil washing, and the use of coal recovery to offset reclamation costs.
- Chapter 9 - Steel industry raw materials and wastes: describes the iron and steel making processes and the physical and

chemical characteristics of the materials involved. The testing and assessment of these materials is discussed.

- Chapter 10 - Coal carbonisation: examines the range of potential pollutants produced during coke making and coal gasification, and the constraints that these have on the reclamation of such sites.
- Chapter 11 - The treatment of contaminated soils: reviews the range of treatments that are available to remove, contain, stabilise or destroy chemically polluted soils, and the practical application of these methods to coal and steel sites.
- Chapter 12 - Water quality: discusses the association of water with former industrial sites, the adverse effects of the industries on water quality, assessment of water pollution, methods of control, legislation and standards.
- Chapter 13 - Landform and earthworks: landforms are extremely variable at former coal and steel sites. This chapter examines the options and methods available for remodelling landform in relation to site after-use, including consideration of material placement and drainage.
- Chapter 14 - The establishment and care of vegetation: considers vegetation of reclaimed land in relation to site after-use, including soil improvement methods, selection of species, planting and sowing, and aftercare.
- Chapter 15 - Management of reclaimed land: the post-reclamation management of a site is discussed with reference to management plans, responsibility and the requirements of different sites.

- Chapter 16 - A framework for site regeneration: examines the holistic approach to reclamation and the need to plan for regeneration at an early stage, and to organise a programme of reclamation appropriately.
- Chapter 17 - Case studies: takes the reader through a variety of coal and steel site reclamations in Europe, giving a regional context to the book.

The chapters are fully cross referenced in the text so that all information relevant to a particular subject will be brought to the attention of the reader. In addition, where more technical or specific detail is provided, this has been placed into 'boxes' rather than the main text. These boxes, and some of the more technical tables and figures, can be referred to according to the amount of detail required. Where references have been cited, these appear as superscript numbers within the text. The reference section lists references alphabetically; reference numbers follow this alphabetical sequence.