

Hazardous Site Cleanup:
Missile base in Latvia

Once again, Environment Canada is to be congratulated for its timely publication of the proceedings.

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PII: S0304-3894(98)00199-X

Introduction to Stormwater: Concept, Purpose, Design, Bruce K. Ferguson, Wiley, New York, NY, 1998, US\$ 59.95, 255 pp., ISBN: 0-471-16528-X

Urban water quality is significantly affected by stormwater runoff. Thus the author wrote this book “... to give its users an understanding of the relationships of stormwater to the human and natural environment, recognition of the range of available management approaches and their implications for water resources and site development, and skill in applying basic quantitative methods to estimate and design for stormwater.”

In the USA, the US Environmental Protection Agency (USEPA) has mandated monitoring and control of both municipal and industrial stormwater discharges. Although not addressing those regulations directly, this book should help those who must comply with them through data (and numerous charts and graphs) on frequency and amount of precipitation events, runoff volume, monitoring, etc.

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PII: S0304-3894(98)00198-8

Brownfields Redevelopment: Programs and Strategies for Rehabilitating Contaminated Real Estate, Mark S. Dennison, Government Institutes, Rockville, MD, 1998, US\$79.00, 407 pp., ISBN: 0-86587-579-0

The term ‘Brownfield’ is used (in the USA) to refer to abandoned, idled or underused commercial property that has been taken out of productive use, often as a result of property abandoned by a commercial (or industrial) operation. Given the property’s potential (or real) contamination, the U.S. Government Accounting Office estimates there may be as many as 650 000 Brownfield sites in the USA.

The problem for future users of these sites is the liability posed by the contaminants, real or imagined. A buyer, unless indemnified, assumes the responsibility of cleaning up the site under CERCLA (the Comprehensive Environmental Response, Compensation, and Liability Act) even though he/she may not have contributed to the existing contamination on the site.

In the first chapter, the author [who is a well-published attorney] reviews the federal [EPA mainly] regulations and programs that form the regulatory framework and economic stimulation for rehabilitating a contaminated site.

State Brownfield properties are the subject of the second chapter. Over the past few years, 32 states have created programs to encourage productive reuse of abandoned, idle or underutilized sites that are ‘blacklisted’ because of their industrial history. These state

programs, called voluntary action programs, brownfield programs, recycling property, etc., basically offer financial incentives and liability protection in exchange for voluntary investigation and cleanup of the sites. The programs of 21 states are discussed in this chapter.

In Chapter 3, Dennison discusses Brownfield's developing strategies, including site investigation, economic evaluation and environmental site assessment. Financing tools are discussed in Chapter 4, including a discussion of property taxation. Financing through low interest loans, revolving loan fund bonds and grants also is reviewed. Finally, the very important topics of liability assurance and covenants not-to-sue are treated.

The U.S. EPA has awarded grants to state and local governments since 1993. How EPA funds for pilot projects may (and may not) be used are described in Chapter 5. Interestingly, Brownfield program funds may not be used for assessment, identification, characterization, or remediation planning at sites contaminated by petroleum products unless they are believed to be co-mingled with a hazardous substance, pollutant or contaminant (e.g. used oil). Numerous descriptions of 'Assessment Demonstration Pilots' follow, state-by-state.

Names and telephone numbers of U.S. EPA contact personnel are given.

Chapter 6 was written by three environmental consultants, this chapter having originally been presented as a paper at a professional meeting. In it, the authors describe three Brownfield cleanup projects. Although the description of each project is interesting, the preamble to the paper is more so, as it clearly illustrates the importance of the Brownfield concept—intelligent cleanup levels.

'One of the advantages of development of a brownfields site is that the planned land use can truly be considered in the development of cleanup options. This advantage can best be appreciated when one considers that environmental agencies traditionally have required that sites be remediated to natural background levels if the site was proposed for future use. This was usually cost-prohibitive. As an alternative to background conditions, owners and/or prospective purchasers can use risk assessments to identify cleanup levels that would be protective of human health under worst case exposure scenarios. However, historic regulatory requirements were based on unrealistic exposure periods (i.e. a lifetime) and overly conservative exposure conditions (i.e. children ingesting soil). This yielded unrealistic cleanup levels and overstated risk. By applying good science (i.e. realistic exposure assumptions and the most current toxicological parameters) and real planned land use, sites can be remediated and be beneficially reused at a fraction of the cost.'

The book ends with several appendices, a bibliography and a glossary:

- U.S. EPA Brownfield Program Contacts
- State Brownfield Program Contacts
- Model Prospective Purchaser Agreement
- Sample EPA Comfort/Status Letters
- CERCLA Enforcement Against Lenders and Government Entities That Acquire Property Involuntarily
- Brownfields Bibliography (32, mainly legal, references)
- Glossary (40 pp.; in my opinion a little too extreme for a legally-oriented text)

An interesting side note is that the publishers have used very large print in the book, comforting for those of us who are older (with failing eyesight), but the choice of print of this size did cause many more pages to be used in printing.

In summary, for U.S. cities, the Brownfield program represents a major breakthrough in industrial property reclamation. This book should markedly assist both engineers and lawyers in this process.

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PII: S0304-3894(98)00205-2

Electrical Installations in Hazardous Areas, Alan McMillan, Published by Butterworth Heinemann, May 1998, 4, price £75. Hardback 360 pp. 234 x 156 mm, 25 half tones, 100 line illustrations ISBN 0-7506 3768

This book draws together information from a substantial range of sources, that I have not seen assembled in a single publication before. On many topics it gives an insight into the reasons for particular requirements in equipment design, that is not available from reading European Standards. Engineers of quite a diverse range of backgrounds need some understanding of this subject, but their needs and interests will vary. This is particularly the case with hazardous area classification, which may be left to the electrical engineer, if no other professional expertise is available, but which properly needs an input from chemical engineers, who may have designed the plant layout, and mechanical engineers, who may have essential information about the integrity of the containment system. I was surprised then, to find that the chapters on hazardous area classification have not drawn from the work of Cox, Lees and Ang, published by the I Chem E, but a rare example of cooperation between four professional engineering institutions.

The material presented in chapters 2, 3 4 and 5 on area classification is a useful contribution to the subject, but the details are not likely to be universally acceptable, as well established codes are available for different industries. This is a topic on which the IEC and CENELEC really do not lead, and the regular practitioner is more likely to use codes such as those from the Institute of Petroleum, the former British Gas, or the LP Gas Association, depending on the application.

Chapter 6 covering area classification for dusts perhaps ought to recognise, that however desirable such an exercise might be, very few of the relevant industries actually have attempted to specify zones within their plants. Where it is given any serious thought, safety depends on minimising the consequences of an ignition rather than worrying about zone boundaries and IEC standards on construction of equipment.

Chapters 7–14 look in turn at the different protection concepts used in preventing electrical equipment igniting atmospheres containing gases or vapours. These draw heavily on the relevant European standards, but also contain some background information on the development of the protection concepts and the reason for some of the requirements. Later chapters cover equipment for dusty areas, selection considerations, and much information about good installation practice.