Geoscience Canada

Geology in the Urban Environment

P. F. Karrow

Volume 5, numéro 3, september 1978

URI : https://id.erudit.org/iderudit/geocan5_3br04

Aller au sommaire du numéro

Éditeur(s)

The Geological Association of Canada

ISSN

0315-0941 (imprimé)
1911-4850 (numérique)

Découvrir la revue

Citer ce compte rendu

Karrow, P. F. (1978). Compte rendu de [Geology in the Urban Environment]. *Geoscience Canada*, *5*(3), 158–158.

effort that has obviously gone into the seismic zoning of the USSR.

Despite its length, frequent repetitiveness and sometimes difficult reading the book must be recommended to those involved in any aspect of seismic risk analysis.

MS received April 21, 1978

Geology in the Urban Environment

By R. O. Utgard, G. D. McKenzie, and D. Foley
Burgess Publishing Company, Minneapolis, Minnesota, 355p., 1978
$9.95

Reviewed by P. F. Karrow
Department of Earth Sciences
University of Waterloo
Waterloo, Ontario N2L 3G1

This book is an exception to my general distaste for collections of papers. Although my first reaction was "Oh, not another one!", on looking through it I found I was excited and fascinated by the papers it contained.

The authors state that the book "is designed as a basic text for courses in geology of the urban environment. It might also be used as a supplementary text in environmental geology courses." I suspect courses in urban geology constitute a very small market, as desirable as such courses may be in theory, and I would expect the use as supplementary reading in environmental geology would predominate. It is not a textbook according to my conception, which involves synthesis and generalization of knowledge on a particular subject. Instead it is a collection of readings and case histories which can serve as useful illustrations of geological problems affecting urban areas. Most papers date from the 70s, some papers have been reduced substantially in length by the authors of the book.

After a short foreward by Robert F. Legget, a recognized authority in the field of urban geology, and a short preface by the authors acknowledging U.S. Geological Survey publications as a major source, the book is divided into seven topical parts. Each part begins with a brief summary by the compilers of the collection.

Part one, introduction, contains four papers by McGill, Legget, Withington, and Loudermilk describing the role and need for urban geology, urban geological and engineering maps, the Washington experience, and some examples from the Old World.

Part two, geologic hazards in the urban environment, contains nine papers dealing with such topics as hydrology and floods, sediment problems, landslides and subsidence, and earthquakes.

Part three, engineering aspects of land use, comprises five papers on swelling clays, the urban water table, landslides, Chicago flood control, and permafrost problems.

Part four, resource availability in the urban environment, contains four papers on water resources, mineral resources, and use of mines for underground space, this last being one of my favourites in the book.

Part five, environmental considerations of urban resource development, contains three papers on waste disposal, lake management, and strip mine reclamation.

Part six deals with interpretation and presentation of geologic data on the urban environment, and contains four papers on San Fransisco, engineering geology maps, carbonate terrain problems, and data systems.

The last part, on utilization of geologic information in regional planning, comprises two papers on general recommendations and the California master plan.

The book concludes with a glossary and four appendices, geologic time chart, conversion factors, surface water criteria for public water supplies, and a listing of state and provincial sources of information (mainly geological surveys).

As can be inferred from the above summary of contents, some overlap in topics is present, both because topics interrelate and because the original papers were not written for the context in which they have been placed.

While I would not agree with its designation as a text book, I believe this book should provide interesting and instructive reading for students of a wide variety, but particularly those in geography, planning, geology, and civil engineering. I should also interest professionals in those fields as a good sampling of the recent experience in urban geology. I have ordered several copies for the supplementary reading shelves in our university book store.

MS received March 23, 1978

Photographic Atlas of the Mid-Atlantic Ridge Rift Valley

By Robert D. Ballard and James G. Moore
Springer-Verlag, New York, 114 p., 1977.
US $19.80

Reviewed by James M. Hall and William A. Kay
Department of Geology
Dalhousie University
Halifax, Nova Scotia B3H 3J5

By the end of the 1960s study of deep ocean geology and geophysics from surface ships had given rise to the attractive plate tectonic model for the lithosphere. However, testing and refining the model by direct examination of critical areas, such as the median valleys of spreading ridges, was held up by the poor resolution of surface ship techniques. For example, attempts to map the topography of rift valleys produced a series of interfering hyperbolae, while dredge-haul rock samples could neither be located in space with much confidence, nor be related to known detailed topography.

Various means of overcoming this problem of lack of resolution came into use in the early 1970s. These include observation and sampling of the ocean floor from submersibles or by deep-tow devices, and sampling of ocean crust by drilling rather than dredging.

The book being reviewed gives some of the first results of observation from submersibles, with supporting photography from towed camera systems. The area covered is the rift valley of the Mid-Atlantic Ridge at 37°N, the FAMOUS (Franco-American Mid-Ocean Undersea Study) area. The book is essentially a collection of photographs which comprise most of the 183 illustrations. Most were taken from within the submersible ALVIN.