Geo-Environment and Landscape Evolution III

WIT PRESS

WIT Press publishes leading books in Science and Technology.
Visit our website for the current list of titles.
www.witpress.com

WIT eLibrary

Home of the Transactions of the Wessex Institute.
Papers presented at Geo-Environment and Landscape Evolution III are archived in the WIT elibrary in volume 100 of WIT Transactions on the Built Environment (ISSN 1743-3509). The WIT electronic-library provides the international scientific community with immediate and permanent access to individual papers presented at WIT conferences. http://library.witpress.com

THIRD INTERNATIONAL CONFERENCE ON EVOLUTION, MONITORING, SIMULATION, MANAGEMENT AND REMEDIATION OF THE GEOLOGICAL ENVIRONMENT AND LANDSCAPE

Geo-Environment and Landscape Evolution III

Conference Chairmen

U. Mander
University of Tartu, Estonia

C.A. Brebbia
Wessex Institute of Technology, UK

J. F. Martín-Duque
Complutense University, Spain

International Scientific Advisory Committee

M. Antrop
D. Gilmanov
M. Mirzaeian
M. Noormets

Organised by
Wessex Institute of Technology, UK
Complutense University, Spain

Sponsored by
WIT Transactions on The Built Environment

WIT Transactions

Transactions Editor

Carlos Brebbia
Wessex Institute of Technology
Ashurst Lodge, Ashurst
Southampton SO40 7AA, UK
Email: carlos@wessex.ac.uk

Editorial Board

Geo-Environment and Landscape Evolution III

Evolution, Monitoring, Simulation, Management and Remediation of the Geological Environment and Landscape

Editors

U. Mander
University of Tartu, Estonia

C. A. Brebbia
Wessex Institute of Technology, UK

J.F. Martín-Duque
Complutense University, Spain

WIT PRESS Southampton, Boston

U. Mander
University of Tartu, Estonia

C.A. Brebbia
Wessex Institute of Technology, UK

J.F. Martin-Duque
Universidad Complutense, Spain

Published by

WIT Press
Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK
Tel: 44 (0) 238 029 3223; Fax: 44 (0) 238 029 2853
E-Mail: witpress@witpress.com
http://www.witpress.com

For USA, Canada and Mexico

Computational Mechanics Inc
25 Bridge Street, Billerica, MA 01821, USA
Tel: 978 667 5841; Fax: 978 667 7582
E-Mail: infousa@witpress.com
http://www.witpress.com

British Library Cataloguing-in-Publication Data

A Catalogue record for this book is available
from the British Library

ISBN: 978-1-84564-117-7
ISSN: 1746-4498 (print)
ISSN: 1743-3509 (on-line)

The texts of the papers in this volume were set individually by the authors or under their supervision. Only minor corrections to the text may have been carried out by the publisher.

Printed in Great Britain by Cambridge Printing

Preface

This book contains most of the papers presented at the 3rd International Conference on Evaluation, Monitoring, Simulation, Management and Remediation of the Geological Environment and Landscape held in The New Forest, Ashurst Lodge, UK, in June 2008, organised by the Wessex Institute of Technology, UK, Complutense University, Madrid, Spain and the University of Tartu, Estonia. The first meeting of this successful conference series was held in Segovia, Spain in 2004 followed by one in Rhodes in 2006.

This conference aimed to study the role of geosciences in environmental management. The geosciences' understanding of natural systems and their process is of fundamental relevance for proper use of the land. The study of the Earth's materials and dynamic processes is essential for different fields of application, and to increase our knowledge of varying environmental problems, such as air, soil and water pollution, soil erosion, waste disposal, water quality, building materials and foundations, and many others. Understanding geological processes is also essential to other fields of study, such as engineering, environmental management, land preservation and restoration, urban environment, land and ecosystem inventories and scenery assessments and landscaping.

The objective of the meeting was to provide a forum for discussion of these topics among researchers, engineers, planners, decision-makers, consultants and other professionals interested in the contribution of geosciences and geo-information to environmental management, land preservation, remediation and sustainable development.

This volume brings together international information, experience and research in order to give the reader a greater knowledge and ability to help communities to develop in a sustainable way. It discusses some of the problems facing the public and private sectors and the engineering and scientific communities. It studies several aspects of environmental pollution, modelling, and monitoring, soil and rock properties, vulnerability studies, ecosystem remediation, climatological processes and hydrological studies, geo-ecology and landscape analysis, geo-environment in urban settings, natural hazards and risks, remote sensing of the environment,

environmental planning and management, and restoration of ecosystems.

The papers published in the book are grouped in the following sections: Remediation and Restoration; Environmental Modelling; Environmental Monitoring; Environmental Hazards and Pollution; Landscape Analysis.

The Editors are grateful to all authors for their contributions and to the members of the International Scientific Advisory Committee for their help in selecting the papers included in this volume.

The Editors
New Forest, UK, 2008

Contents

Section 5: Landscape analysis