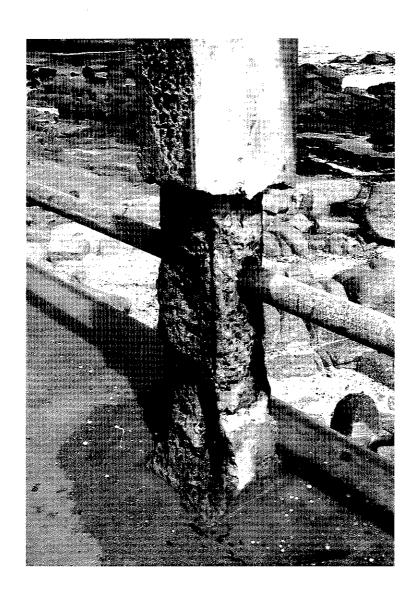
Concrete Repair, Rehabilitation and Retrofitting

Editors:

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Published by: Taylor & Francis/Balkema
P.O. Box 447, 2300 AK Leiden, The Netherlands
e-mail: Pub.NL@tandf.co.uk
www.balkema.nl, www.tandf.co.uk, www.crcpress.com

ISBN set: 0 415 39656 5 ISBN book: 0 415 39654 9 ISBN CD-rom: 0 415 39655 7

Printed in Great Britain

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Preface

The First International Conference on Concrete Repair, Rehabilitation and Retrofitting (ICCRRR 2005) was held in Cape Town, South Africa, from 21–23 November 2005. The conference was a collaborative venture by researchers from the South African Research Programme in Concrete Materials (based at the Universities of Cape Town and The Witwatersrand) and The Construction Materials Section at Leipzig University in Germany. From the outset, the organisation and implementation of the conference carried a strong South African – German link, reflected in the excellent support given to the conference by researchers and practitioners from these two countries. Nevertheless, more than 200 papers from 45 countries were presented at the conference, which represents a high degree of international support for the event. This helped to fulfil one of the aims of ICCRRR 2005, namely to strengthen relationships not only between Africa and Europe but also between countries and regions from all over the world.

The conference has come at an opportune moment for concrete construction worldwide. By no means the only one of its kind, the conference nevertheless sought to focus on an increasingly important aspect in modern infrastructure provision and retention: that of appropriately repairing, maintaining, rehabilitating, and if necessary retrofitting existing infrastructure with a view to extending its life and maximising its economic return. Most countries, whether developed or developing, have seen a huge increase in their Repair and Rehabilitation (R & R) budgets over the last decade or so. Increasingly large amounts of national budgets are being diverted into R & R rather than into new construction. This poses very substantial challenges for engineers and infrastructure managers, to ensure that such operations are carried out from a sound scientific and engineering base and with maximum cost efficiency. The relative newness of the fields implies that a sound base of theory and practice is still being built up; this conference intends in part to address the issue of providing such a sound base and contributing to the development of these fields. Not a small part of this work is the provision of a good case study literature which can inform future work.

South Africa is no exception when it comes to the issue of R & R of national, commercial, and industrial infrastructure. However, much of this work is relatively recent, and approaches to the problem vary widely. Thus, in the local context, the conference aimed at providing an up to date "state of the art" of South African R & R practice so as to track current developments and provide a base for future developments.

The conference Proceedings contain papers, presented at the conference, and classified into a total of 15 sub themes which can be grouped under four main themes:

- Concrete durability aspects
- Condition assessment of concrete structures
- Concrete repair, rehabilitation and retrofitting
- Performance monitoring and health assessment

In assessing the number of papers in each of these main themes it is clear that the major interest in terms of submissions exists in the fields of concrete durability aspects in connection with material compositions, NDE/NDT and measurement techniques, repair methods and materials, and structural strengthening and retrofitting techniques.

All papers that were submitted for ICCRRR 2005 were subjected to a full process of peer review, and the Proceedings contain only those papers that were accepted following this process. The review of manuscripts was undertaken by members of the International Scientific/Technical Advisory Board and other identified leading experts, each acting independently on one or more assigned manuscripts. This invaluable assistance, which has greatly enhanced the quality of the Proceedings, is gratefully acknowledged.

Special acknowledgements are due to the following organisations:

- National Research Foundation of South Africa
- Deutscher Beton- und Bautechnik-Verein
- Cement and Concrete Institute of South Africa
- Concrete Society of Southern Africa
- Deutscher Ausschuss für Stahlbeton
- Deutsche Bauchemie