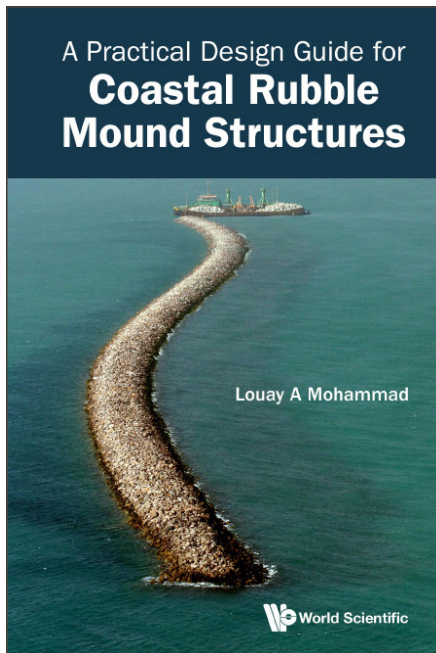


## A Practical Design Guide for Coastal Rubble Mound Structures



By Louay A Mohammad  
(COWI A/S, Denmark)

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### ABOUT THE BOOK

This comprehensive compendium highlights the practical side in the design of the coastal rubble mound structures. All basic rubble mound structural elements with various special features or arrangements are discussed and presented with guidelines to the best practices.

A unique feature of this book offers insight into practical constraints and problems. A variety of practical designs and construction examples are elucidated to most common issues faced in the design with extensive discussions on what influences the selection of the proper solution. It is an essential aid to take the design a step further, from basic to a professional level.

This useful reference benefits coastal engineers in general, design consultants, construction engineers or anyone carrying out supervision and inspection work.

### READERSHIP

Researchers, professionals, academics, and graduate students in coastal engineering and civil engineering.

### CONTENTS

- Introduction
- Coastal RMS Projects
- Reclaimed Waterfront Developments
- Selection and Design of Edge Perimeter Structures
- Detailed Layouts

- Transitions, Tie-ups and Junctions
- Interfaces
- Roundheads, Bends and Corners
- Rock Armour
- Concrete Armour Units (CAU)
- Underlayer
- Core Material
- Granular and Geotextile Filters
- Toe and Toe-Berm
- Crest
- Superstructures
- Breakwater Rear Side
- Slope Protection Under Open-Piled Structures
- Shoreline Outfalls, Pipelines and Cables
- Marine Pipeline Protection
- Seabed — Outcrops and Depressions
- Beach Control Structures
- Dredging Near Marine Structures
- Construction Progress Monitoring

## ABOUT THE AUTHOR

**Dr Louay A Mohammad** started his professional carrier after receiving his BSc degree in civil engineering from University of Basrah (Basrah, Iraq) in 1977. Then it was followed by a master degree, MSc, in hydraulics, hydrology and coastal dynamics from University of Strathclyde, (Glasgow, Scotland, UK) in 1982. He continued his research in the same field to be awarded a Doctor of Philosophy, PhD in 1987 from the University of Strathclyde. The author then became a lecturer in hydraulics and coastal engineering in the University of Basrah, Iraq, supervising also many post-graduate research projects.

The author academic life came to an end after joining COWI A/S in Copenhagen, Denmark (a world leading multi-disciplinary engineering design consultancy) in 1999 as a senior coastal/marine design engineer. He was involved in the design of different coastal structures from various parts of the world. Further to that he was engaged in a good working relation with DHI (Danish Hydraulic Institute, situated in Copenhagen) where many of COWI's designs underwent physical model testing.

After few years working at the main office of COWI, Dr Mohammad decided to grape the opportunity to be directly involved in the most exciting coastal projects at the time when NAKEEL requested technical assistance from COWI. He was assigned in 2004 to be a Technical Expert Advisor to NAKEEL, the developer of Palm Jumeirah, Palm Jebel Ali, The World and Palm Deira projects in Dubai, UAE. However, in 2007 the author elected to join NAKEEL to be the General Manager-Coastal and Marine Works for Palm Deira, the world largest offshore reclamation project. A revision to the project masterplan was instigated with significant optimisations on different aspects were achieved. A design review for the various coastal structures in this iconic project is to be carried out as part of his duties, which is coupled with careful supervision to the construction which comprised of coastal structures, dredging, reclamation and soil improvement works.

Due to the World economic crisis in 2009 NAKEEL were forced to drastically scale down its operations and practically stopping all new construction activities. The author has therefore moved on to join Archirodon Construction (Oversea) Co. SA, an international construction company with many large marine/coastal projects in its portfolio. He became the Engineering Manager for the north Africa operations, based in Cairo, Egypt, for the period 2010 to 2015. The company then restructured its operations and he was relocated to Dubai, UAE, for the period 2015 to 2020 to be the engineering manager of some key projects in the region.

Dr Mohammad has been wearing many hats in his carrier, a researcher, an academic, a design consultant, owner representative and an engineering manager/designer for a construction company. Therefore, he knows very well what is required from the design engineer in order to develop a professional design and at the same time satisfying and meeting the expectation of all the different parties involved in the work. With such a long and rich background, the author was able to extract useful and important information to be presented in this book. Some of his earlier work has already been published in papers or presented in conferences and seminars.

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