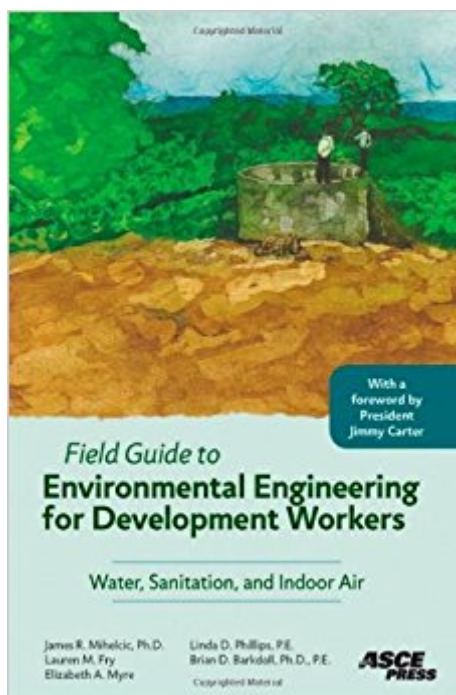




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# Field Guide To Environmental Engineering For Development Workers: Water, Sanitation, And Indoor Air



## Synopsis

Throughout the world, and even in the United States, engineers are tackling the challenges of sustainable development and public health - challenges that engineers are uniquely qualified to address. Yet engineers working abroad on development projects often lack the knowledge and information to design, plan, construct, operate, and maintain technology that is culturally, economically, and geographically appropriate - technology that takes into account gender, does not use significant amounts of fossil fuels, accounts for environmental conditions like water scarcity, and uses local construction materials. This readable and fully illustrated guide is a complete handbook for international engineering service projects that involve water supply and treatment, watersheds, sanitation systems, and indoor air quality. It provides the tools necessary to implement the right technology in developing regions around the world. The authors introduce sustainable engineering and explain how environmental engineering fosters public health, with an emphasis on the relationship between community participation and the success of an engineering project. In addition, this book covers topographical surveying, project planning, watershed management, and construction materials and techniques. Specific technical guidance is offered for the design and construction of multiple systems for water supply, water and wastewater treatment, and flood storage and drainage, as well as solid waste management and indoor air quality improvement. This book is a valuable resource for engineering students, faculty, and practitioners involved with programs like Engineers without Borders, Water for People, and Engineers for a Sustainable World, as well as those affiliated with government groups, international agencies, and charitable organizations.

## Book Information

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## Customer Reviews

Book titles occasionally include the term field guide in a euphemistic sense, and such works very rarely are actually used in the trenches. With *Field Guide to Environmental Engineering for Development Workers*, however, a more literal take is in order. Indeed, on the inside front cover the reader will find a checklist of steps to be taken to avoid diarrhea. With a large team of authors and contributors, most of whom spent time in the Peace Corps, this book is nothing less than a how-to guide for applying engineering know-how to help people in the developing world gain access to clean water and achieve higher standards of sanitation. A foreword by the former U.S. president Jimmy Carter, our volunteer in chief, underlines the importance of the mission at hand. The guide is densely packed with straightforward, practical black-and-white illustrations and sketches, many of them showing the construction and operation of various facets of infrastructure that we in the developed world tend to take for granted. Proper construction of pipeline crossings, assessing the status of a wastewater lagoon by interpreting the color of its water, and understanding how to increase the capacity of a gravity-fed water system are among the many topics covered in this work. *Field Guide* is meant to be, as much as possible, accessible to those who are not engineers but want to do their part in helping people who are less fortunate. Engineers may not be impressed by the sophistication of the technology described, but they are sure to be sobered by the realization that the basic needs of so many millions of people around the world are not being met. And those working to meet those needs will simply find it a godsend. --This review appeared in the December 2009 (vol.79, issue 12) of *Civil Engineering*. Copyright 2009 by the American Society of Civil Engineers.

James R. Mihelcic, Ph.D., BCEEM, is a professor of civil and environmental engineering, a state of Florida 21st Century World Class Scholar, and director of the Master's International Program in Civil and Environmental Engineering at the University of South Florida. Lauren M. Fry is a doctoral candidate in environmental engineering at Michigan Technological University. Elizabeth A. Myre has managed water, sanitation, and renewable energy projects with NGOs in Haiti and Guatemala. Linda D. Phillips, P.E., P.M.P, C.D.T., is a lecturer and Patel Associate in the Department of Civil and Environmental Engineering and director of the International Capstone Design (ICD) program at the University of South Florida. Brian Barkdoll, Ph.D., P.E., D.WRE, F.ASCE is an associate

professor of civil and environmental engineering at Michigan Technological University.

This is a must-have book for anyone working in the field on engineering projects. Don't reinvent the wheel. A lot of experience and research has gone into this book, and it's an easy read.

I knew what I was buying because I was familiar with and impressed with the book. I expect to use it frequently because I am not an engineer but I'm involved with projects involving engineering. The people I work with are not engineers, indeed not many of them can read, so the guide helps me understand so I can explain to them the whys.

Great field guide for engineers & non-engineers alike. Very easy to read & understand. A must have for working in rural or undeveloped countries.

great condition & affordable price

Book is a great resource for a practicing Engineer (or someone with construction experience) in a Disaster Recovery area. Used this book in a design project in Haiti, and it helped having a reference for a lot of things we take for granted in the developing world. Worth its weight.

This book is a great reminder to engineers that we have a responsibility to consider more than just the technical outcomes of our work, but also the social and environmental factors.

This is a stellar book for university students who are going into global engineering projects! I went for an engineering project in Kenya before reading this book and I think this could have helped with the experience. Funnily enough, the water filter segment of this book described exactly what we designed and built in Eldoret. I used it again for another project in Beirut involving rainwater harvesting. It helped form the base of the design and was a great starting point for a literature review. This should be a required book for anyone getting involved with development projects with any engineering organization such as EWB, ASCE, EPICS, etc.

This book is written for anyone to understand. It gives very good field use of engineering principals for developing environmental systems for public use.

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