



Robert L. Siegrist

Decentralized Water Reclamation Engineering

A Curriculum Workbook

 Springer

Robert L. Siegrist

Decentralized Water Reclamation Engineering: A Curriculum Workbook



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This book presents technical information and materials concerning the engineering of decentralized infrastructure to attain effective wastewater treatment while also minimizing resource consumption and providing a source of reclaimed water, nutrients and organic matter.

The methods, technologies and systems described are targeted for green building and sustainable infrastructure over the United States and similar industrialized nations, but they are also relevant to water and sanitation tasks in developing regions all over the world. There are also more than 200 questions and problems highly relevant to the topics covered including example issues that have solutions provided to illustrate engineering concepts and calculations. The book provides in-depth engineering coverage of the topic in a narrative and slide format specifically designed for classroom lectures or facilitated self-study.g. Essential topics are covered including: engineering to fulfill task goals and requirements including sustainability, contemporary water use and wastewater era and methods to achieve water make use of efficiency and resource separation, alternative methods of wastewater collection and conveyance, and treatment and reuse operations including tank-structured (e. The book includes over 300 figures and illustrations of systems and systems and over 150 tables of style and functionality data.g., free water surface area and vegetated subsurface bed wetlands), and land-based unit operations (e.g., subsurface soil infiltration, shallow drip dispersal). Approaches and technology are also offered that may achieve nutrient decrease and resource recovery in some cases or pathogen destruction to enable a particular discharge or reuse program. The book also describes requirements and options for effective management of the process solids, sludges and residuals that can be generated by various approaches, systems, and systems., septic tanks, aerobic treatment systems, porous press biofilters, membrane bioreactors), wetland-based (e. Today, decentralized infrastructure can be used to sustainably serve houses, structures and developments with water use and wastewater flows of 100 to 100,000 gal/d or even more.



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