

Sustainable Civil Engineering

Principles and Applications

Varinder Singh Kanwar Sanjay Kumar Shukla Siby John Harpreet Singh Kandra



สำนักหอสมุด มหาวิทยาลัยเชียงใหม่

b 16406122 0 12544490 i 22686265

Sustainable Civil Engineering Principles and Applications



Edited by
Varinder Singh Kanwar
Sanjay Kumar Shukla
Siby John
Harpreet Singh Kandra



CRC Press is an imprint of the Taylor & Francis Group, an **Informa** business

Contents

	Preface	ix
	About the Editors	x_i
	List of Contributors	$x\iota$
1	Recycled construction and demolition waste as backfill material for geosynthetic-reinforced structures FERNANDA BESSA FERREIRA, CASTORINA SILVA VIEIRA, PAULO PEREIRA, AND MARIA DE LURDES LOPES	1
2	Investigation of economic feasibility between bamboo and conventional construction materials in non-residential projects VIJAYALAXMI J. AND AISHWARYA SUDHEER VADUKKUMCHERY	29
3	An insight into sustainability in construction of shallow foundations MUHAMMAD NOUMAN AMJAD RAJA AND SANJAY KUMAR SHUKLA	47
4	Enhancement of bearing capacity of cohesive and granular soils using sustainable Kenaf fibre geotextile AHMAD SAFUAN A RASHID, ROOHOLLAH KALATEHJARI, AND MOHAMMAD GHAREHZADEH SHIRAZI	63
5	Energy-efficient buildings for sustainable development SATEESH KUMAR PISINI, SWETHA PRIYA THAMMADI, AND SUZANNE WILKINSON	79

6	Development and application of FBG sensors for	
	landslide monitoring	95
	HONG-HU ZHU, XIAO YE, HUA-FU PEI, DAO-YUAN TAN, AND BIN SHI	
7	Small and medium enterprises and sustainable development AYON CHAKRABORTY	107
8	Application of GIS techniques and environmental flow norms for sustainable mitigation measure for hydropower impact on ecosystem	123
	C PRAKASAM, MANVI KANWAR, SARAVANAN R, ARAVINTH R, VARINDER SINGH KANWAR, AND M K SHARMA	
9	Waste lime sludge: A potential additive in asphalt	143
	ABHISHEK KANOUNGO, VARINDER SINGH KANWAR, ANKUSH TANTA, AND SHRISTI KANOUNGO	
10	Sustainable solid waste management and factors influencing it: An assessment from Indian context PRAMOD KUMAR AND SIBY JOHN	157
11	Carbon-neutral construction: Assessing the potential for carbon capture in an integrated pavement system SIMON BEECHAM, ASIF IQBAL, AND MD MIZANUR RAHMAN	177
12	Communal rainwater systems – an alternative to individual household systems THULO RAM GURUNG, ASHOK K. SHARMA, CARA D. BEAL, AND RODNEY A. STEWART	197
13	Climate change and geo-infrastructures: Assessment and challenges SUSANGA COSTA, DILAN ROBERT, AND JAYANTHA KODIKARA	217
14	Risk-based asset management decision-making in life management of concrete water reservoirs H.S. RICHARDS, G. CHATTOPADHYAY, HARPREET SINGH KANDRA,	235
	AND N. ISLAM	

15	Review of clogging processes in stormwater treatment filters HARPREET SINGH KANDRA, DAVID MCCARTHY, AND ANA DELETIC	247
16	Smart buildings and their rating tools DANNY BYRNE, ASHOK K. SHARMA, SHOBHA MUTHUKUMARAN, AND DIMUTH NAVARATA	281
17	Review of water quality monitoring using Internet of Things	309
	T. A. CHOUDHURY, HARPREET SINGH KANDRA, KHANG DINH, AND SURYANI LIM Index	337