

Contents

Part I Structures, Built & Natural Environment

Demolition of steel structures: structural engineering solutions for a more sustainable construction industry	3
Richard Walls	
Preservation of cultural heritage: the design of low-energy archival storage	11
Tim Taylor	
Ont-EIR Framework to Deliver Sustainable Heritage Projects	19
Shadan Dwairi, Lamine Mahjoubi, Mohammed Odeh and Mario Kossmann	
Heritage Preservation within public open spaces: the case of Qabel Street (Old Jeddah) Spacious Experience	31
Aida Nayer and Samaa Badawi	
The Potential of Living Labs for Smart Heritage Building Adaptation	41
John Counsell	
Using SITES for Sustainable Rehabilitation of Cultural Heritage Landscape Areas; Case of Giza Zoo	51
Walaa S.E. Ismaeel	
Between the Tangible & Intangible Smart Reading of Heritage Buildings	63
Gehan A.N. Radwan and Sanaa Ibrahim Abd-El-Maksud	
Radicalism vs. Consistency: The Cyber Influence on Individuals' Non-Routine Uses in Public Spaces, the case of Cairo	69
Reem Albarakat and Gehan Selim	

Carbon mapping for residential low carbon retrofitting	79
Marwa Dabaieh, Inji Kenawy, Walaa Salah and Marwa Adel	
Towards sustainable slums: understanding fire engineering in informal settlements	93
Richard Walls and Patricia Zweig	
Cooling the Future: Bridging architectural aspects from the past with modern energy efficient paints	99
Prokopis Perdakis	
Part II Energy	
Proposed District Cooling Plant for the British University in Egypt Campus	111
Mohamed H. Hamza and Hesham Safwat	
Part III Advanced Mechanical Technologies	
Review of fault detection techniques for health monitoring of helicopter gearbox	125
Adebayo Ogundare, Sunday Ojolo, David Mba and Fang Duan	
Internet of Things – A Predictive Maintenance Tool for General Machinery, Petrochemicals and Water Treatment	137
Abdel Bayoumi and Rhea McCaslin	
Mechanical fault detection and classification using pattern recognition based on bispectrum algorithm	147
Michael R. Habib, Mohammed A. Hassan, Rania A. Abul Seoud and Abdel M. Bayoumi	
Internet of Things – A Complete Solution for Aviation's Predictive Maintenance	167
Travis Edwards, Abdel Bayoumi and MG Lester Eisner	
The Effects of Nanoparticle-Enhanced Oil on the Efficiencies of Internal Combustion Engines	179
James Patrick Folk, Thomas Hartmann, Rebecca Fecteau, Olaoluwa Shorinwa and Abdel Bayoumi	
Part IV Electronics & Communication technologies	
Helicopter Main Gearbox Bearing Defect Identification Based on Vibration Signal	193
Fang Duan and D. Mba	

**Wireless Acoustic Emission Transmission System Designed
for Fault Detection of Rotating Machine. 201**
Linghao Zhou, Fang Duan and David Mba

Author Index. 209

Advanced Technologies for Sustainable Systems
Selected Contributions from the International
Conference on Sustainable Vital Technologies in
Engineering and Informatics, BUE ACE1 2016, 7-9
November 2016, Cairo, Egypt
Bahei-El-Din, Y.; Hassan, M. (Eds.)
2017, XII, 209 p. 74 illus., 22 illus. in color., Softcover
ISBN: 978-3-319-48724-3