Table of Contents

Preface, Committees and Organizer

Chapter 1: Geotechnical Engineering

E. Akyol, S. Tasdelen and A. Aydin	3
The Study of Soil-Roots Strength Performance of Soil Slope by Using Guinea Grass M.S. bin Zainordin, N.A. bin Yusoff, T.N. binti Tuan Chik, M.A.H. bin Ab Manap, Z. Sayuti and M.F. bin Abdullah	10
Rock Overstressing in Deep Tunnel Excavation of Pahang-Selangor Raw Water Transfer	
Project R. Azit, M.A. Mohamad Ismail, S.F.F. Syed Zainal and N. Mahmood	16
Groundwater Inflows Characterization in the Pahang-Selangor Raw Water Transfer Tunnel Using $\delta^2 H$ and $\delta^{18} O$ as Tracers S.F.F. Syed Zainal, M.A. Mohamad Ismail, R. Mostafa and R. Azit	22
Finite Element Analysis of Tunnelling Induced Deformation towards Pile Foundation M.A. Mohamad Ismail, S.P. Lim and W.W. Tay	28
Modification of Published Prediction Model of Ground Motion due to Sumatra Subduction Earthquakes for the Application in Peninsular Malaysia T.C. Van, T.L. Lau, T.A. Majid, K.K. Choong and F.M. Nazri	34
Seismic Microzonation for Denizli Metropolitan Area, Turkey A. Aydin, E. Akyol, M. Gungor, N. Soyatik and S. Tasdelen	40
Development of a New Tsunami Generator T. Hiraishi	45
The Study of Flow Characteristics of Newtonian and Power-Law Non-Newtonian Fluids by Dam-Break Flow Model P. How Tion, A. Faiz, N.A. Zakaria and H. Takashi	51
Wave Transmission over the Low-Crested Sand Container Breakwaters H.M. Teh	57
The Study of Mengkuang Dam's Chute Spillway by Physical Modeling C.M.A.S. Che Ismail and M.R.R. Mohd Arif Zainol	63
Chapter 2: Structural Engineering	
Identification of Dynamic Characteristics of a Historical Church in Armenia Using Microtremor Survey Technique	
K. Iiyama, H. Morikawa, S. Sasano, S. Motoyui, Y. Fujita and A. Mutoh	71
A Microscopic Dynamics of Crowd Behavior for Crowd Evacuation Simulation in the Event of a Tsunami Disaster	
N. Abd. Rahman, M.S. Abustan, N. Che Mat, H. Gotoh and E. Harada	77
AHP Based Thermal Comfort Assessment through Passive Design Allocation in Tropical School Offices S.C. Chan	83
An Overview of Non – Engineered Buildings Roofing System Failure under Wind Loads M.K.A. Muhammad, M. Taksiah A., N.I. Ramli, S.N.C. Deraman and F.A. Wan Chik	89
Assessment of Adhesion between RPC Overlay and Existing Concrete Substrate B.A. Tayeh, B.H. Abu Bakar and M.A. Megat Johari	95
Cylindrical Section with Helically Arranged Perforations Inspired by Nature Y.P. Woo and K.K. Choong	101
Density Assessment of Heat Treated Malaysian Hardwood Timber: The Case of <i>Kapur</i> (<i>Dryobalanops spp.</i>) and <i>Keruing</i> (<i>Dipterocarpus spp.</i>) N.I.F. Md Noh, Z. Ahmad and M.H. Mohd Hashim	107

Dispersion of Multi-Walled Carbon Nanotubes in Portland Cement Concrete Using Ultra- Sonication and Polycarboxylic Based Superplasticizer	110
A. Yousefi, N. Muhamad Bunnori, M. Khavarian and T.A. Majid	112
Drying Shrinkage of Fly Ash Mortar Mixed with Seawater J.W. Bautista, J.B. Crockett, B.A. Liu, T.J. Obra and C.L. Roxas	118
Effect of Curing Methods on Carbonation Depth of Rubberised Fibre Mortar M. Ahmad Musa, F.N.A. Abdul Aziz and N.A. Mohd Nasir	124
Effect of Diameter on Fire Exposed Concrete-Filled Double Skin Steel Tubular (CFDST) Columns under Concentric Axial Loads	
S.S. Mohd Zuki, K.K. Choong, J. Jayaprakash and S. Shahidan	130
Effect of Footfall Induced Vibration on Footbridges J.H. Aw, A. Mohammed Parvez and W. Elleithy	136
Effect of Ground Granulated Blast Furnace Slag on Compressive Strength of POFA Blended Concrete	
M.N. Noor Azline, F.N.A. Abd Aziz and A. Suleiman Juma	142
Effects of Coal Bottom Ash on the Compressive Strength of Portland Cement Mortar A.H. Ibrahim, K.K. Choong, M.A. Megat Johari, S.I. Md Noor, N.L. Zainal and K.S. Ariffin	149
Effects of Footfall Induced Vibrations on Concrete and Composite Floors C.K. Leing, A. Mohammed Parvez and W. Elleithy	155
Effects of Thickness of Ultra High-Performance Fiber Concrete Wrapping on the Torsional	
Strength of Reinforced Concrete Beam T. Jasim Mohammed, B.H. Abu Bakar and N. Muhamad Bunnori	161
Effects on Concrete Bonding of Green Universiti Sains Malaysia Reinforced Concrete	101
(GUSMRC) at Elevated Temperatures	
N.L. Zainal and N. Muhamad Bunnori	166
Estimation of Tsunami Force for Onshore Buildings in the Northwest Coast of Peninsular	
Malaysia T.L. Lau, K.K. Choong, M. Taksiah A., N.A. Zakaria, A. Ab. Ghani and S. Inoue	172
Experimental Study on Lateral -Torsional Buckling of Triangular Web Profile Steel Section	
H. Hasan, F. De'nan and K.K. Choong	178
Experimental Study on Reinforced Concrete Box Beam Strengthened by CFRP under	
Combined Action S.Q. Ma, N. Muhamad Bunnori and K.K. Choong	184
Experimental Study on the Effect of Macroroughness on Tsunami Flow and Loading of	101
Building	100
W.C. Moon, L.Q. Chiew, K.W. Cheong, Y.C. Tee, J.B. Chun and T.L. Lau	190
Influence of Crumb Rubber on Impact Energy of Steel Fiber Concrete Beams A.T. Noaman, B.H. Abu Bakar and H.M. Akil	196
Influence of Initial Silica Modulus of Na ₂ SiO ₃ on the Compressive Strength of Alkali	
Activated Ultrafine Palm Oil Fuel Ash Based Mortar O.M.M. Elbasir, M.A. Megat Johari and Z.A. Ahmad	202
Influence of People Walking on Floor Performance due to Low Level Vibration	202
T.N. Tuan Chik, S. Yabi, M.H. Wan Ibrahim, N.A. Yusoff, T.A. Majid and R. Alexius Asiew	208
Influence of Silica Fume Inclusion on the Compressive Strength Development of High	
Strength Concrete Containing High Volume of Palm Oil Fuel Ash A. Hatem Alani and M.A. Megat Johari	214
Lightweight Building Materials of Geopolymer Reinforced Wood Particles Aggregate – A	211
Review S.N. Sarmin	220
Mechanical Properties of Mortar Modified with Cement Treated Tyre Crumb and Oil Palm	220
Fruit Fibre	225
F.N. Abdul Aziz, S. Mohammed Bida, N.A. Mohd Nasir, N.A. Safiee and M.S. Jaafar	225
Nonliear Analysis of Reinforced Concrete Structures Considering Plastic Deformation M.K. Miralimov	231
Nonlinear Bending Analysis for Steel Purlin with Perforation	227
J.Y. Ling and F. De'nan	237
Numerical Models of Hysteretic Steel Damper with a Hollow Diamond Shape for Energy Dissipation	
D.R. Teruna, T.A. Majid and B. Budiono	243

Performance of Recycled Aggregate Containing POFA as Additives for Cement A. Suraya Hani, W. Mohd Haziman, N. Jamaluddin and N.H. Zakaria	249
Practical Method for Damage Evaluation Based on Point Estimate Considering Uncertainty of Structural Properties	
K. Iiyama, M. Hoso, T. Ishida, K. Fujita, Y. Yamazaki, T. Ichimura, L. Wijerathne, H. Morikawa, M. Hori, S. Yamada, H. Sakata, H. Yamanaka and S. Hirose	255
Precast Concrete Closed Spandrel Arch Bridge System as Viable Alternative to Conventional Beam Bridge System	
G.E. Tan, T.B. Ong and O. Chong Yong	261
Properties of Cement Mortar Consisting Raw Rice Husk M.M. Ahmad, F. Ahmad, M. Azmi and M.Z.A. Mohd Zahid	267
Strength Development in Cement Admixed Fine-Grained Dredged Marine Soils A. Azhar and C.M. Chan	272
Study on Fluid Transport Properties between Normal Concrete Substrate and Green-USM-Reinforced Concrete (GUSMRC) Containing Ultra Fine Palm Oil Fuel Ash (U-POFA) as Repair Material M.H. Hassan and N. Muhamad Bunnori	277
UHPFRC as Repair Material for Fire-Damaged Reinforced Concrete Structure – A Review M.A.H. Abdullah, M.Z.A. Mohd Zahid, B.H. Abu Bakar, F.M. Nazri and A. Ayob	283
Strength Prediction of Double-Lap Bolted Joints of Woven Fabric CFRP Composite Plates Using Hashin Formulations H. Ahmad and M.A. Abed	290
Trends and Development of Precast Concrete Closed Spandrel Arch Bridge Systems G.E. Tan, T.B. Ong and O. Chong Yong	295
Chapter 3: Highway and Transportation Engineering	
Behavior of Cold Recycled Mixes in the Range of Low Temperatures – Experimental Study O. Krpalek and J. Valentin	303
Impact of Ageing and the Stability of Adhesion Additive on Moisture Susceptibility and Adhesion	
T. Valentova, J. Altman, J. Valentin and M.O. Hamzah	309
The Effects of Bituminous Binders on Cold Recycled Mixes Prepared by the Foamed Bitumen Technology J. Suda and J. Valentin	315
Effects of Calcium Carbonate and Treated Palm Oil Fly Ash on the Rheological Properties	
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut	321
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder	
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review	327
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western	
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor	327
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite	327 333
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone	327 333
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite Index Method	327 333 339
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite Index Method M.R. Intan Suhana, H. Hussain, T.H. Law and M.S. Ahmad Farhan Volume-Delay Function in Trip Assignment L.V. Leong and K.Y. Tan Evaluating the Effect of Mixing Process on Nano-Clay Modified Binders Using the Pull-Off Test Method	327 333 339 345 351
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite Index Method M.R. Intan Suhana, H. Hussain, T.H. Law and M.S. Ahmad Farhan Volume-Delay Function in Trip Assignment L.V. Leong and K.Y. Tan Evaluating the Effect of Mixing Process on Nano-Clay Modified Binders Using the Pull-Off Test Method H. Ali Omar, N.I. Md Yusoff, Z. Sajuri, H. Ceylan, F.M. Jakarni and A. Ismail	327 333 339 345
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite Index Method M.R. Intan Suhana, H. Hussain, T.H. Law and M.S. Ahmad Farhan Volume-Delay Function in Trip Assignment L.V. Leong and K.Y. Tan Evaluating the Effect of Mixing Process on Nano-Clay Modified Binders Using the Pull-Off Test Method H. Ali Omar, N.I. Md Yusoff, Z. Sajuri, H. Ceylan, F.M. Jakarni and A. Ismail Physical and Rheological Properties of Aged Bitumen Rejuvenated with Waste Engine Oil A.K. Arshad, N.A. Kamaluddin, W. Hashim and S.R. Ahmad Roslan	327 333 339 345 351
of Asphalt Mastic M.O. Hamzah and F. Mohamed Elkut Effects of Wax Additive on the Rheological Properties of Asphalt Binder L. Gungat, M.O. Hamzah and S.W. Goh Life Cycle Assessment for Pavement Sustainable Development: Critical Review P. Babashamsi, N.I. Md Yusoff, H. Ceylan and N.G. Md Nor Mode Shifting Behavior for the Inter-Island Passenger Transportation in the Western Visayas Region, Philippines N.R. Roxas and A.M. Fillone Locating Problematic Road Sections: Comparisons between Crash Data and Composite Index Method M.R. Intan Suhana, H. Hussain, T.H. Law and M.S. Ahmad Farhan Volume-Delay Function in Trip Assignment L.V. Leong and K.Y. Tan Evaluating the Effect of Mixing Process on Nano-Clay Modified Binders Using the Pull-Off Test Method H. Ali Omar, N.I. Md Yusoff, Z. Sajuri, H. Ceylan, F.M. Jakarni and A. Ismail Physical and Rheological Properties of Aged Bitumen Rejuvenated with Waste Engine Oil	327 333 339 345 351

Time Gap Evaluation due to the Existence of Heavy Vehicles on Urban Expressways W. Hashim, A.K. Arshad, M. Mustafa and N.A. Kamaluddin	375
Using Nanopolyacrylate and Nanocomposite as Binder Modifiers for Stone Mastic Asphalt (SMA)	
E. Shaffie, J. Ahmad, A.K. Arshad and D. Kamarun	381
Assessment of Queue Length and Delay at Toll Plaza Using Microscopic Traffic Simulation M.B. Mahdi and L.V. Leong	387
Effect of Roadside Development on the Safety of Intersections without Signals A. Ahmed, A.F.M. Sadullah and A.S. Yahya	393
Chapter 4: Environmental Engineering	
Biological Treatment of Poultry Slaughterhouse Wastewater by Using Different Fibers N.N. Ahmad Puat and H.A. Aziz	401
A Comparative Study of Floc and Sludge of Leachate under Different Types of Coagulants N.S.M. Zin, H.A. Aziz, M.N. Adlan, A. Ariffin, M.S. Yusoff and I. Dahlan	406
A Comprehensive Review of Environmental, Physical and Socio-Economic (EPSE) Criteria for Spatial Site Selection of Landfills in Malaysia	412
S.Z. Ahmad, M.S.S. Ahamad and M.S. Yusoff	412
An Analysis of Pro-Environmental Attributes towards Adolescents in Penang Using Extended Theory of Planned Behaviour N.K. Basri, N.S. Abdul Sukor and S.A. binti Hassan	419
Comparative Study of Basic, Acid and Reactive Dyes Adsorption onto Rubber Seed-Coated	
Activated Carbon M.N. Ismail, H.A. Aziz, M.A. Ahmad and N.A. Yusoff	425
Effect of Ni/Co Ratio on Bimetallic Oxide Supported Silica Catalyst in CO ₂ Methanation S.A. Md Ali, K.H. Ku Hamid and K.N. Ismail	431
Enhancing BOD/COD Ratio of POME Treatment in SBR System H. Farraji, N. Qamaruz Zaman, H.A. Aziz, M.A. Ashraf, A. Mojiri and P. Mohajeri	437
H ₂ S Emissions within Vicinity of Swine Farming Area in Nibong Tebal, Pulau Pinang,	
Malaysia M.B.H. bin Ab Manaf, N.A. Ramli, A.S. Yahya, M.Z.A. Mohd Zahid, M.M. Ahmad, N.F. Isa, N.Z. Zainol, M. Azizi Azizan, K. Muhammad and L.A. Sofri	443
Influence of Hydraulic Conductivity and Organic Matter Content in Different Bioretention Media on Nutrient Removal	440
H.W. Goh, T.L. Lau, F.K. Yuen, C.K. Chang and N.A. Zakaria	448
Influence of Operating Conditions on the Persulfate Oxidation of Textile Waste Water at Ambient Temperature F.O. Kehinde and H.A. Aziz	454
Iron and Manganese Removal from Groundwater Using High Quality Limestone N.A. Akbar, H.A. Aziz and M.N. Adlan	460
Landfill Leachate Treatment by Bentonite Augmented Sequencing Batch Reactor (SBR)	
System H. Farraji, N. Qamaruz Zaman, H.A. Aziz, M.A. Ashraf, A. Mojiri and P. Mohajeri	466
Odour Intensity Assessment at Different Area of a Palm Oil Mill Using Olfactometry	100
Method N. Yaacof, N. Qamaruz Zaman and Y. Yusop	472
Optimization of COD and Color Removal for Matang's Landfill Leachate Treatment by Using Polyaluminum Chloride	
M.F.M. Ahmad Zamri, M.S. Yusoff, H.A. Aziz and M.A. Kamaruddin	478
Optimum of Treatment Condition for Artocarpus heterophyllus Seeds Starch as Natural Coagulant Aid in Landfill Leachate Treatment by RSM M.S. Yusoff and N.A. Mohamad Zuki	484
Oxygen Uptake by Biological Processes inside Oxidation Ditch N.A. Saad, H.A. Aziz, M.Z. Abdullah, M. Zubair and M.A.Z. Mohd Remy Rozainy	490
Performance of some New Bacterial Isolates on Biodegradation of Libyan Light Crude Oil Using Agro-Industrial Wastes as Co-Substrates	
A.M. El Mahdi, H.A. Aziz, S.S. Abu Amr, N.S. El-Gendy and H. Nassar	496

Performance of Ozone/ZrCl ₄ Oxidation in Stabilized Landfill Leachate Treatment S.N.F. Zakaria, H.A. Aziz and S.S. Abu Amr	501
Pharmaceutical Removal from Synthetic Wastewater Using Heterogeneous - Photocatalyst C.M. Lee, P. Palaniandy, N.Q. Zaman and M.N. Adlan	507
Natural Organic Matter and Disinfectant By-Products (DBPs) Formation Potential in Agriculture Area in Malaysia N. Ibrahim, H.A. Aziz and M.S. Yusoff	513
Removal of Suspended Solids, Chemical Oxygen Demand and Color from Domestic Wastewater Using Sago Starch as Coagulant	313
W.I.S. Wan Kamar, H.A. Aziz and S.F. Ramli	519
Review on Applications of Nanoparticles in Landfill Leachate Treatment G. Zaidi Ab, M.S. Yusoff and J. Andas	525
Effects of Substituted Transition Metals (Me:Cr ³⁺ , Mn ³⁺ , Fe ³⁺ and Mo) on the Fe ²⁺ /Modified Silica in the Oxidative Degradation of Reactive Black 5 N. Nasuha and B.H. Hameed	531
Sustainable GIS Based-ANN's Solution for Landfill Suitability Analysis S.K.M. Abujayyab, M.S.S. Ahamad, A.S. Yahya, M. Elbayoumi and M.S. Alkhasawneh	537
Waste to Wealth: Recovery of Recyclable Items and Biodegradable Wastes from Night Markets at Seberang Perai Selatan, Penang M.A. Kamaruddin, M.S. Yusoff and A.H. Ahmad	543
Optimization of HCO ₃ - Production Reflect to CaCo ₃ Precipitation for Self-Healing by	313
Bacillus sphaericus N. Mokhtar, Z.S. Mohd Ilias, H.A. Tajarudin and M.A. Megat Johari	549
Chapter 5: Water Resources Engineering	
Riverbank Filtration Site Suitability Selection Using Spatial Data Techniques: Case Study for Kota Lama Kiri, Kuala Kangsar	<i></i>
M.F. Abdul Razak, M.A. Md Said and R. Yusoh Multiple Regression Model Using Performance Indices for Storage Capacity of a Reservoir	557
System in Johor Catchment I. Saket Oskoui, R. Abdullah and M. Montaseri	563
Modelling Critical Period of a Reservoir System Using Performance Indices in Johor Catchment	560
I. Saket Oskoui, R. Abdullah and M. Montaseri Rainwater Availability Assessment for Tourism Development: A Case Study of Turtle	569
Islands Park, Sabah J.L. Ayog, M.R. Taharin and T.Z. Sheng	575
Public Participation and Response towards Water Resources Management Options in Gaza	272
Strip, Palestine S.S. Abu Amr, Y. Salah Abu Mayla, M.J.K. Bashir and H.A. Aziz	581
Computational Investigation of Inlet Baffle Height on the Flow in a Rectangular Oil/Water	
Separator Tanks H.A. Hussein, R. Abdullah and M.A. Md Said	587
Effect of Utilizing Different Building's Roof Material on Rainwater Harvesting System's Payback Period, Water and Energy Savings, and Carbon Dioxide Emission Reduction M.S. Nasif and R. Roslan	593
Analysis of Flow Characteristics in Sewerage System H.T. Yap and S.K. Ngien	599
Studying Effect of Riverbank Filtration (RBF) on Ground Water Using 'Time-Lapse Electrical Resistivity Imaging' at Kuala Kangsar, Perak M.H. Mohamad, M. Nawawi, M.N. Adlan and K. Abdullah	605
The Potential and Benefits of Artificial Barrier Application at RBF N.A. Abd Rashid, N. Abd Rahim, I. Abustan, R.F. Munawar and N.A. Ahmad Awalludin	611
Model Study for Upgrading of Sungai Belibis Pump Sump M.A.Z. Mohd Remy Rozainy, A.W. Khairy, I. Abustan and M.M. Al Bakri Abdullah	617
Evaluation of Water Quality Index (WQI) Performance in Newly Constructed Free Water Surface (FWS) Constructed Wetland for Stormwater Treatment S. Shaharuddin, A. Ab Ghani and N.A. Zakaria	623

Subsurface Characterization Using Ground and Underwater Resistivity Techniques for Groundwater Abstraction	
R. Yusoh, M.A. Md Said, M.A. Mohamad Ismail and M.F. Abdul Razak	629
A Study on the Characteristic and Properties of Riverbank Soil Samples as RBF Natural Materials from Sungai Perak, Kota Lama Kiri, Kuala Kangsar, Perak Darul Ridzuan, Malaysia	(24
M.N. Adlan, M.R. Selamat and S.Z. Othman	634
Direct Determination of Groundwater Direction and Velocity Using Colloidal Borescope at Jenderam Hilir, Selangor	
M.F. binti Ghazali, M.N. bin Adlan, K. bin Samuding and M.R. bin Selamat	640
Chapter 6: Construction Management	
Improved Water Services and Malaysian Household's Willingness to Pay: A Descriptive Analysis	
A.W. Nabsiah, K.H. Chew and I. Abustan	649
Developing a DMS (Dredged Marine Sediments) Management Framework for Beneficial Reuse in Artificial Land Creation	
S. Kaliannan, C.M. Chan and A. Suratkon	655
Delphi Technique Procedures: A New Perspective in Construction Management Research W.S. Alaloul, M.S. Liew and N.A.W. Zawawi	661
Motivations and Limitations of Prefabricated Building: An Overview K.M.A. El-Abidi and F.E.M. Ghazali	668
Quantification of Concrete Waste Generated in Housing Construction Sites via Site Sampling: Development of a Multiple Linear Regression Model	676
S. Hafizan Hassan, H.A. Aziz, I.B. Johari and M.N. Adlan	676
Rethinking Sustainable Housing Maintenance Delivery O. Abdul Lateef, S.Y. Tan and L.T. Lee	682
The Study of the Implementation of Bridge Management System in Sabah D. Salinah, M.M. Fashius and G. Habibah	688