

2nd Aceh International Symposium on Civil Engineering (AISCE 2019)

IOP Conference Series: Materials Science and Engineering
Volume 933

Banda Aceh, Indonesia
18-19 September 2019

ISBN: 978-1-7138-4769-4
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Peer review declaration

INFRASTRUCTURE ENGINEERING

Identification of fire protection system availability in faculty of engineering, University of Teuku Umar.....	1
<i>I Y Salena, M Safriani, M A R Amin</i>	
Analysis of NATM tunneling method using CYCLONE modeling and simulation tools.....	11
<i>B B Nataadinigrat, A W Prabowo, I M A B Rasmawan, A T Putri, M Abduh, R D Wirahadikusumah</i>	
The effect of wood ash and styrofoam on the characteristics of AC-WC mixture	21
<i>R M Yusputri, S M Saleh, M Isya</i>	
The use of Sabang mountain rocks and substitution of LDPE in the AC-WC mixture with dry method	31
<i>A Siswadi, S M Saleh, Y Darma</i>	
The influence of occupational safety and health program on the manpower performance of construction company in Banda Aceh city	40
<i>M Jamil, F Maulina, Fachurrazi, M Hasan, Muslimsyah</i>	
Level of importance and housing satisfaction of Jeulingke residence housing on-road aspect	47
<i>M Iqbal</i>	
Mix design and properties of reactive powder concrete with diatomaceous earth as cement replacement	54
<i>T Saidi, M Hasan, A D D Riski, R R Ayunizar, A Mubarak</i>	
Characteristic of calcined diatomaceous earth from Aceh Besar District - Indonesia as cementitious binder.....	62
<i>M Hasan, T Saidi, A Muyasir, Y R Alkhaly, M Muslimsyah</i>	
Analysis of unsignalized intersection upgrading at constrained area in the city of Banda Aceh.....	69
<i>R Taufiqy, M Isya, Y Darma, Thamalkhani</i>	
Use of bamboo fiber on the relationship between compressive strength and split tensile strength of high strength concrete.....	79
<i>A Yusra, T Triwulan, M Safriani, M Ikhsan</i>	
Risk analysis study on building projects in Pidie District	89
<i>F Fahmi, T B Aulia, M Isya</i>	
Travel cost budget distributions among household life stages considering bus users in Banda Aceh.....	99
<i>A Putri, S Sugiarto, S M Saleh, D Basrin</i>	
The effect of public space availability on children's creativity (case study: Taman Sari kota Banda Aceh)	107
<i>I Fitri, T B Aulia, M Fuady</i>	

Performance of reinforced concrete columns strengthened with carbon fiber reinforced polymer (CFRP) - case study of an abandoned school project	112
<i>N M Amin, N A Ahmad</i>	
Topographic change and sediment transport on Maeshima Tombolo tidal flat.....	121
<i>S Kato, I Kuritani, T Tabata, R Nakamura, T Okabe</i>	
Slope stability analysis in The Babahrot-Blangkejeren road section sta. 13 + 885	132
<i>Kurniawan, Y Yunus, SM Saleh</i>	
The analysis of roadside obstacles to the performance of Syiah Kuala Street.....	139
<i>R Musita, R Anggraini, S Sugiarto</i>	
The reliability of fire protection system case study of Aceh Besar district regency office	146
<i>F Anwar, T B Aulia, M Afifuddin</i>	
The effect of porous zigzag-type breakwaters on the coastline changes in Neuheun village, Aceh.....	154
<i>P Pagihariadi, E Fatimah, S Syamsidik</i>	
Analysis of flexural capacity in hybrid high strength reinforced concrete beams with additive, fine aggregate, and coarse aggregate substitutions	162
<i>D Hastuti, T B Aulia, M Muttaqin</i>	
The study of the operation of Trans Koetaradja public bus transportation of the corridor II A and II B in Banda Aceh city.....	171
<i>F Fachrurrozy, E Wulandari, Y Darma</i>	
Numerical modeling of suspended sediment concentration (SSC) due to water surface fluctuations of the Krueng Langsa estuary, Aceh Province	181
<i>F Isma, Y Ismida, M Purwandito, H Fajri</i>	
Analysis on the willingness to pay and ability to pay in determining the fares of Sigli - Banda Aceh toll road	190
<i>QH Wathan, M Isya, Sugiarto</i>	
Simulation of road treatment costs based on life-cycle cost analysis	198
<i>A Mulyawan, S M Saleh, R Anggraini</i>	
Small-sized contractors' strategies of construction material purchasing in road rehabilitation projects	208
<i>SCS Maisarah, R Irfanto, M Abduh</i>	
Optimization of water distribution for channel irrigation networks Krueng Baro Kiri scheme (Aceh-Indonesia)	217
<i>I Yanita, A Azmeri, E Fatimah</i>	
Rainfall interception loss by corn crop	223
<i>T Erlangga, A Yulianur, Sugianto, L Aditya</i>	
A simple and safe brick masonry infill construction for high seismic-prone area.....	230
<i>J Tanjung, FA Ismail, M Maidiawati, Y Hayati</i>	
Effects of Gondorukem addition on AC-WC pavement containing reclaimed asphalt pavement.....	237
<i>EE Putri, T Kurniati, Y Yosritzal, A D E Putra</i>	
Predicting of land logistics travel demand in Aceh Province Indonesia.....	245
<i>M Isya, N Fadhly</i>	

Builder perception on the implementation of earthquake resistant non-engineered house construction practice in Padang City	254
<i>Y Hesna, J Sunaryati, P A Marlin</i>	
Joint operation of parallel reservoir with interconnected tunnel.....	261
<i>K Iqbal, L M Limantara, W Soetopo, U Andawayanti</i>	
Study of potential implementations for motorcycle lanes in Padang city.....	269
<i>T Kurniati, E Afyendo, E E Putri</i>	
Large deformation of building frame structure due to December 7, 2016 Pidie Jaya earthquake	275
<i>M Hasan, M Afifuddin, R Putra</i>	
Slope stability analysis using Bishop and Finite Element Methods	284
<i>M Sungkar, M Munirwansyah, R P Munirwan, D Safrina</i>	
The effect of fishbone fiber and rice husk ash additive on the mechanical properties of normal concrete	295
<i>S Damayanti, T B Aulia, Y Hayati</i>	
Analysis of reinforced concrete beam-column joint structures retrofitting	304
<i>Z Araby, A Abdullah, M Affifuddin</i>	
Coconut fiber strength test as a potential to prevent landslides on badlands.....	313
<i>M Suhendra, H Yunita, S M Saleh</i>	
Hard bearing layers identification of escape hill design for facing tsunami - earthquake disaster at Deah Baroe rural area for natural disaster risk reduction	323
<i>M Munirwansyah, R P Munirwan, M Sungkar, H Yunita, H Munirwan, Saharuddin, F Fachrurrazi, W Widilestari</i>	
Numerical simulation of groyne placement in minimising Krueng Aceh river bank erosion	333
<i>E Fatimah, A Fauzi, S Rezeki, S Suryati</i>	
Community satisfaction levels on the housing reconstruction project after Mentawai tsunami in 2010 - a case study at Sipora Island	343
<i>T Ophiyandri, B Hidayat, C Ghiffari</i>	
Seismic performance analysis of multi-span masonry infilled RC frame based on analytical strut model.....	350
<i>M Maidiawati, J Tanjung, F Nugroho, Y Hayati</i>	
Public perception of the transit bus plan in the city of Lhokseumawe	359
<i>H Haryadi, Y Darma, M Isya</i>	
Mechanical properties improvement of clay soils using dry dust collector and silica sand wastes.....	366
<i>A S S Gunarti, S Nuryati, F Primatama, I Raharja</i>	
Passenger's choice in responding to inter-city railway operation for Makassar - Parepare line: a conditional logit model based on stated preference method	373
<i>M I Ramli, H Yatmar, D B E Dharmowijoyo, S A Adisasmita, M Pasra, A Arif, H Dwiatmoko, M Z Irawan</i>	
Effect of vertical distance of geogrid layers on slope stability	382
<i>B Chairullah, H Yunita, M Munirwansyah, R Ambiya</i>	

Effect of utilizing geopolymer fly ash on potential and corrosion rate of reinforcement in high-strength concrete.....	388
<i>T B Aulia, M Muttaqin, M Afifuddin, M Zaki, Firdaus</i>	
The feasibility construction of Alas-Pedesi bridge in Kuta Cane Southeast Aceh district based on the analysis of the transportation economic value	397
<i>J Harja, M Isya, S Sugiarto</i>	
Oversights in road planning leading to unsafe road features: a safety auditor's perspective	409
<i>Y Darma, M R Karim, S Abdullah</i>	
The effect of water cement ratio (WCR) on compressive strength of interlocking bricks with mix design variations.....	415
<i>N Malahayati, Y Hayati, Mahlil, D Sundary, F Maulina</i>	

ENVIRONMENTAL ENGINEERING

The effect of diameter and distance between vegetation in the riverbank to flood discharge by Eco-hydraulic in the Lawe Alas River, Southeast Aceh, Indonesia.....	421
<i>Ziana, M Rizalihadi, Azmeri, A Nugraha</i>	
Study on the impact of canal blocking on groundwater fluctuation for tropical peatland restoration	429
<i>S Sutikno, R Rinaldi, R A Putri, G K Khotimah</i>	
Water management for hydrological restoration and fire prevention in tropical peatland	437
<i>S Sutikno, R Rinaldi, E Saputra, M Kusairi, B H Saharjo, E I Putra</i>	
Spatial analysis of land subsidence potential due to lowland conversion (case study at Tanjung Api-Api).....	445
<i>Andriani, E Ibrahim, D D A Putranto, A K Affandy, H G Putra</i>	
Spatio-temporal shoreline changes analysis based on Landsat satellite images in Lahewa Beach of North Nias due to tectonics 2005	454
<i>A Fauzia, S Syamsidik, S Syahreza</i>	
Geophysical investigation of road failure the case of the main street of Alue Naga, Banda Aceh, Indonesia	462
<i>M Syukri, A M Taib, Z Fadhl, R Safitri</i>	
Noise mitigation based on noise barrier for railway Makassar - Parepare line.....	469
<i>M Hustim, I Ramli, R Zakaria, E Evianista</i>	
Hospital fire safety improvement effort (study case Rumah Sakit Ibu dan Anak, Banda Aceh).....	480
<i>I Wahyuni, N Ismail, I Izziah</i>	

Author Index