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The Programme of the 3rd International Conference on Rehabilitation and Maintenance in Civil Engineering (3rd ICRMCE)

Solo, 19-21 November 2015

The Sahid Jaya Hotel

Jl. Gajah Mada No.82, Banjarsari, Kota Surakarta, Jawa Tengah 57132, Indonesia

Date/Day	Time	Activities	Venues
19 th Nov 2015 Thursday	07.30-9.00	Registration	Pedan Room
	09.00-10.15	Opening Ceremony	
		Indonesia Raya, Hymne UNS	
		Welcoming speech 1 (Chair of the Organizing Committee of the 3 rd ICRMCE Ary Setiawan, MSc, Ph.,D)	
		Opening Speech (Rector the Universitas Sebelas Maret Prof. Ravik Karsidi)	
		Keynote Speech : Atiyanto Bustono, MT (Directore General of Highway Ministry of Public Works and Public Housing the Republic of Indonesia)	
		Souvenirs Hand On to Sponsors	
		Voca Erudita Singing Performance: "Gundul-gundul pacul" "Kopi Dangdut"	
		Photo session	
		Announcement	
		10.15-10.30	
	10.30-12.00	Plenary session	
		Voca Erudita Singing Performance (1 song) chairman : Dr. Han Ay Lie, MEng	
10.30 -10.50	Invited Speaker 1 Title: Friction Type seismic Isolation Device of Steel Pile Foundation in Shaking Table Tests and its Numerical Simulations By Prof. Buntara Sthenly Gan		
10.50 -11.30	Invited Speaker 2 Title : Bacteria Based Self-healing Concrete for Application in the Marine Environment By Damian Palin		
11.30-11.45	Discussion		

	11.45-12.00	Sponsorship Presentation (WIKA)	
	12.00-13.00	Lunch break	
	13.00-14.40	Parallel session 1	Sukoharjo Room 1,2,3, Sidodrajat Room
	14.40-15.00	Refreshment / afternoon break	
	15.00-16.40	Parallel session 2	Sukoharjo Room 1,2,3, Sidodrajat Room
	18.30-21.00	Conference Dinner and Cultural Performance	Pedan Room
20 th Nov 2015 Friday	08.00-09.00	Registration	
	09.00-10.15	Plenary session Chairman: Dr (techn). Sholihin As'ad, MT	Pedan Room
	09.00-09.30	Invited Speaker 3 Title: The Recent Efforts in Indonesia to mitigate the Impact of Earthquake Hazard in Construction Industry from Geotechnical Engineering Perspective By Prof. Ir. Masyhur Irsyam, MSE., PhD	
	09.30-10.00	Invited Speaker 4 Title: Seismic Upgrade of Earth Dams - Australian Practice By Hendra Jitno, PhD	
	10.00-10.30	Invited Speaker 5 Title: The Challenge of Preservation Programme for Indonesian National Roadway By Ary Setyawan, MSc (Eng), PhD	
	10.30-10.45	Discussion	
	10.45-11.15	Refreshment / morning break	
	10.15-11.30	Free time	
20 th Nov 2015 Friday	11.30-13.30	Lunch break and Friday Prayer (Moslems)	Syahid Al Muzhir Mosque (Hotel Basement)
	13.30-15.00	Parallel Session 1	Sukoharjo Room 1,2,3, Sidodrajat Room
	14.40-15.00	Refreshment / afternoon break	
	15.00-17.00	Parallel session 2	Sukoharjo Room 1,2,3, Sidodrajat Room
21 th Nov 2015 Saturday (optional)	07.00-08.00	Preparation for Conference Tour	The Sahid Jaya Hotel
	08.00-17.00	Conference Tour to Borobudur and Prambanan Temples	Borobudur and Prambanan

Parallel session 1 (the 1st day)
Thursday, 19th November 2015

Time	Presentation	Paper Number
13.00-14.40	Group A : Material and Structure Venue: Sukoharjo Room 1 Chairman : Prof. S A Kristiawan, MSc, PhD	
13.00-13.20	Design of Structural Health Monitoring Using Wireless Sensor Network Case Study Pasupati Bridge Annisa Dian Kumalasari ; Suhartono Tjondronegoro	9
13.20-13.40	Strengthening and Retrofitting Strategy for Masonry (New Build Construction in Indonesia) Gede Adi Susila ; Parthasarati Mandal; Thomas Swailes	13
13.40-14.00	Durability of Class C High Volume Fly Ash Concrete incorporated with Lime Water as Mixing Water Mochamad Solikin	16
14.00-14.20	Sisal Fiber as Steel Bar Replacement of Lightweight Concrete under Flexural Loading Murtiadi Suryawan and Akmaluddin	22
14.20-14.40	Steel Fiber Reinforced Concrete to Improve the Characteristics of Fire-Resistant Concrete Yenny Nurchasanah , Mohamed Alfitouri Masoud and Mochammad Solikin	23
Time	Presentation	Paper Number
13.00-14.40	Group B : Material and Structure Venue: Sukoharjo Room 2 Chairman : Dr. Senot Sangadji, MT	
13.00-13.20	Strength Models of Axial Capacity of FRP-Confined Circular Concrete Columns Ida Bagus Rai Widiarsa and I Nyoman Sutarja	24
13.20-13.40	Performance of Brick Masonry Wall Retrofitted using PP-Band Meshes under Cyclic Loading Andreas Triwiyono , Frederica Neo, Johan Ardianto, Gumbert Maylda Pratama and Andreas Sugijopranoto	40
13.40-14.00	Experimental Investigation Of Trapezoidal Profile Sheeting Under Varying Shear Spans A.Siva, S.Swaminathan , K.Prasanth and R.Senthil	30
14.00-14.20	Experimental Study On Shear Capacity Of Rc Beams Strengthened With Carbon Fiber Reinforced Polymer Mandated By ACI 440 Sri Tudjono , Himawan Indarto and Monica Devi	31
14.20-14.40	Determination of Damage Location in Reinforced Concrete Beams Using Mode Shape Curvature Square (MSCS) Method	43

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Time	Presentation	Paper Number
13.00-14.40	Group C : Management Venue : Sukoharjo Room 3 Chairman : Setiono, MSc	
13.00-13.20	Relationship between Predetermined Maintenance Interval and Maintenance Performanc Cheong Peng Au-Yong; Azlan Shah Ali; Faizah Ahmad	1
13.20-13.40	A Study on the Characteristics of Building Maintenance on Public Universities in Malang City Apif M. Hajji and Angga Suharsono	37
13.40-14.00	Implementation of Life Cycle Costing: A Case of Hostel Building in Kediri, Eastern Jawa, Indonesia Peter F. Kaming and Juli Marliansyah	41
14.00-14.20	Computer Program For Reinforced Concrete Bar Bending Schedulling To Increase Efficiency Of Reinforcement Widi Hartono, Sugiyarto, Sofa Marwoto and Budi Laksito	42
14.20-14.40	The Basic Algorithm Of Adaptive Management Of The Synchronous Generator With A Reference Model Victor Sevchenko	48
Time	Presentation	Paper Number
13.00-14.40	Group D: Earthquake Venue: Sidodrajat Room Chairman: Budi Yulianto, MSc, PhD	
13.00-13.20	Structural Assessment : A Case Study Of Low Rise Building Performance After Experiencing Earthquake Widodo P, Mayhendra RD, Sarwid	2
13.20-13.40	Effect of Supplemental Damping on the Seismic Performance of Triple Pendulum Bearing Isolators under Near-Fault Ground Motions Sima Rezaei and Gholamreza Ghodrati Amiri	29
13.40-14.00	Parametric Study on the Influence of Bays Number and Frame-Span Length on the Redundancy Indices of Reinforced Concrete Structures M.P. Cripstyani, S.A. Kristiawan and E. Purwanto	33
14.00-14.20	Structural Performance Evaluation With Pushover Analysis Case Study : The Integrated Central Surgery Building, Bethesda Hospital in Yogyakarta Masbudi, Edy Purwanto and Agus Supriyadi	34

Parallel session 2 (the 1st day)
Thursday, 19th November 2015

Time	Presentation	Paper Number
15.00-16.40	Group A : Material and Structure Venue: Sukoharjo Room 1 Chairman : Dr. Sholihin As'ad, MT	
15.00-15.20	Structural Behavior of Steel Reinforced Sandwich Concrete Beam with Pumice Lightweight Concrete Core Akmaluddin ; Murtiadi Suryawan; Gazalba Zaedar	3
15.20-15.40	Inclusion-to-specimen Volume Ratio Influence on the Strength and Stiffness Behaviors of Concrete: an Experimental Study Han Aylie; Buntara Sthenly Gan; Rudi Yuniarto; Anastasia Yesica ; Rakhma N. Editia	5
15.40-16.00	Performance Of Reactive Powder Concrete Partial Prestressed Beam-Column Subassembly Structure System With Partial Prestressed Ratio Exceeds 30% Siti Aisyah Nurjannah , Bambang Budiono, Iswandi Imran, Saptahari Sugiri	6
16.00-16.20	Behaviors of Repaired Edge Column Slab Connections after Punching Failure Using Normal and Non-Shrinkable (CAH) Concrete I Ketut Sudarsana	8
16.20-16.40	Experimental Study on Flexural Behavior of Reinforced Concrete Beams with Variety Lap Splices of Reinforcing Steel Bars Mochamad Teguh , Novia Mahlisani	39
Time	Presentation	Paper Number
15.00-16.40	Group A : Geotechnic Venue: Sukoharjo Room 2 Chairman : Ary Setyawan, MSc, PhD	
15.00-15.20	A Quick Assessment Method for the Mud Eruption Hazard Risks of the Lusi Surrounding Area with a Special Reference to Ground Deformation Behavior Didi S. Agustawijaya	7
15.40-16.00	Pencil Pressuremeter Efficiency for Data Compilation and Analysis Farid Messaoud and Paul. J. Cosentino	19
16.00-16.20	Axial Pile Capacity Prediction Obtained From Environmental Friendly Jack-In Piling Test On Clayey Soil Yusep Muslih Purwana , Niken Silmi Surjandari and Haryanto Wahyu	21

16.20-16.40	Development Of Graphical Method Of Pile Group Efficiency For Pile Foundation Design Noegroho Djarwanti, Raden Harya Dananjaya, Fauzia Prasetyaningrum	55
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Time	Presentation	Paper Number
15.00-17.00	Group C : Hydro Venue: Sukoharjo Room 2 Chairman : Dr. Cahyono Ikhsan, MT	
15.00-15.20	Rainfall Simulation at Bah Bolon Watershed with Backpropagation Artificial Neural Network based on Rainfall data Using Scilab Setiono ; Rintis Hadiani; Edo Erlangga; Solichin	12
15.20-15.40	Identification of Suspended Sediment Concentration in Stream Network Yusron Saadi , Agus Suroso and IB Giri Putra	18
15.40-16.00	Rainfall-Discharge Simulation In Bah Bolon Catchment Area By Mock Method, Nreca Method, And Gr2m Method Rintis Hadiani, Suyanto and Yosephina Puspa Setyoasri	20
16.00-16.20	Decentralized System of Greywater Recycling for Sustainable Urban Water Source (Case Study: Surakarta City-Indonesia) Siti Qomariyah	28
16.20-16.40	The Analysis Of Sediment Transport Using Yang Method, Engelund And Hansen Method, And Bagnold Method In Bah Bolon River, Simalungun Regency Of North Sumatera Suyanto, Rintis Hadiani, Rian Mantasa Salve Prastica	36
16.40-17.00	Energy Potential Of Kendhat River As A Micro Hydropower Plant Solichin, Rintis Hadiani & Ischa Wati Eka Putri	47
Time	Presentation	Paper Number
15.00-16.40	Group D: Traffic and road construction Venue: Sidodrajat Room Chairman : Dr. (Eng) Syafi'I, MT	
15.00 -15.20	The Application of Traffic Conflict Technique as a Road Safety Evaluation Method: a Case Study of Hasselt Intersection Fardzanela Suwanto and Kami Hari Basuki	27
15.40-16.00	Numerical Analysis on The Deformation of Flexible Pavement System Mokhammad Farid Maruf , Sri Wahyuni and Jojok Widodo	32

16.00-16.20	Water Resistance Evaluation of Asphalt Concrete Wearing Course Made With Crumb Rubber of Motorcycle Tire Waste Henri Siswanto , Bambang Supriyanto, Luthfil Abid	53
16.20-16.40	Characteristics of Freight Transport Parking and Infrastructures Facilities of Sustainable Primary Arterial Road (A Case Study of Surakarta Ring Road– Central Java – Indonesia) Dewi Handayani , Amiroatul MHM, SJ Legawa, Anindya Arstity Putri & Nanang Dwi Prasetyo	57

**Parallel session 1 (the 2nd day)
Friday, 20th November 2015**

time	Presentation	Paper Number
13.20-15.00	Group A : Geotechnic Venue: Sukoharjo Room 1 Chairman : Yusep Muslih P., MT, PhD	
13.20-13.40	Finite Element Method (FEM) of Rigid Pavement Laid on Soft Soil Stabilized with Soil Cement Column Fendi Hary Yanto ; Yuseph Muslih Purwana; Niken Silmi Surjandari	10
13.40-14.00	A Numerical Method of the Flexible Pavement Supported by SSC on Expansive Soil Agus Setyo Muntohar	15
14.00-14.20	Stress Analysis In The Combination Of Footplat And Caisson Foundation Niken Silmi Surjandari , Yusep Muslih Purwana and Rensia Erlyana Majid	25
14.20-14.40	Technical Review Of Slope Failure (Case Study Of Tawangmangu-Cemorosewu Sta. 4+600 Section) Alik Mustakim, Yusep Muslih Purwana , Ary Setyawan, Mamok Suprpto	35
time	Presentation	Paper Number
13.20 -15.00	Group B : Earthquake Venue: Sukoharjo Room 2 Chairman : Dr. Senot Sangadji, MT	
13.20 -13.40	Analysis of Seismic Ground Response of Makassar using Geotechnical In-situ Tests Ardy Arsyad , A. Bakri Muhiddin, Ryan Rante , A. Rahman Djamaluddin, Ariningsih Suprpti	38
13.40-14.00	Structural Response And Pounding Of Andalas University Hospital Building Using New Indonesian Seismic Code SNI 1726-2012 Fauzan, Febrin Anas Ismail and , Zev Al Jauhari	46
14.00-14.20	Assessment of Seismic Vulnerability of Reinforced Concrete Building Based on the Development of Fragility Curve: A Case of 5th Building of Engineering Faculty, Sebelas Maret University Erlin Wijayanti , Senot Sangadji, SA Kristiawan, Edy Purwanto	59
14.20-14.40	Retrofitting Of Stkip Adzkie Padang Building Using V-Inverted Steel Bracing	60

Fauzan, Febrin Anas Ismail, Abdul Hakam, Zaidir,
Nugrafindo Yanto, **Siska Apriwelni**

time	Presentation	Paper Number
13.20-15.00	Group C: Management Venue: Sukoharjo Room 3 Chairman : Setiono, MSc	
13.20-13.40	Assessing Contractor Satisfaction Towards Client Performance In Construction Projects Jati Utomo Dwi Hatmoko and Riqi Radian Khasani	50
13.40-14.00	Development of the Hradec Králové - Pardubice agglomeration since 1986 Eslíková Hurdálková Lucie and Kutá Dagmar	51
14.00-14.20	Optimisation In Indonesia's Bridge Preventive Maintenance Programme: A Proposal Hari Agung Yuniarto and Yusuf Qaradhawi	52
14.20-14.40	Application Of Ahp Method For Determining The Priority Of Puskesmas Pembantu Building Maintenance Based on GIS In Sukoharjo District Central Of Java Widi Hartono , Muchacha Mufti A., Sugiyarto, Sofa Marwoto, Budi Laksito	56
time	Presentation	Paper Number
13.20-14.20	Group D: Traffic and road construction Venue: Sidodrajat Room Chairman: Budi Yulianto, MSc, PhD	
13.20-13.40	Value of Travel Time for Public Transport Passenger in Urban and Intercity Trip AMH. Mahmudah; Djoko Sarwono; RI. Pramesty ; PS Rahina	4
13.40-14.00	Impact of Performance Based Contract Implementation on National Road Maintenance Project to Road Functional Performance Betty Susanti ; Reini D. Wirahadikusumah; Biemo W. Soemardi; Mei Sutrisno	11
14.00-14.20	Study on the Properties of Sand Sheet Asphalt Mixture Using Old Road Pavement Milling and Asphalt Emulsion I NA Thanaya ; I GR Purbanto; I MSJ Negara	14
14.20-14.40	Genetic Algorithm Applied for Optimization of Pavement Maintenance under Overload Traffic: Case Study Indonesia National Highway Andri I. Rifai , Sigit P. Hadiwardoyo, A. Gomes Correia and Paulo Pereira	17

Parallel session 2 (the 2nd day)
Friday, 20th November 2015

time	Presentation	Paper Number
15.00 -17.00	Group A : Material and Structure Venue: Sukoharjo Room 1 Chairman : Prof. SA Kristiawan, MSc, PhD	
15.00-15.20	Flexural Capacity of Bamboo Strip Notched Reinforced Concrete Beams Agus Setiya Budi , Endang Rismunarsi and Sunary	44
15.20-15.40	Structural Condition Assessment of Steel-Framed Maintenance Plant in Muara Badak, Balikpapan, East Kalimantan Adinda Chaerany , Ali Awaludin, Henricus Priyosulistyo and Andreas Triwiyono	26
15.40-16.00	Performance of Ferro Foam Concrete Girder Beam Subjected to Static Load Mochammad Afifuddin and Abdullah	45
16.00-16.20	Yield Penetration Displacement of Lightly Reinforced Concrete Columns Ari Wibowo , John Wilson, Nelson Lam and Emad Gad	49
16.20-16.40	An Artificial Neural Networks Model for Compressive Strength of Self Compacting Concrete Akhmad Suryadi , Qomariah, and M. Sarosa	54
16.40-17.00	Effects of the Steel Ring Width Variations as the External Confinement on Load - Moment Interaction Behavior of Reinforced Concrete Column Endah Safitri , Iswandi Imran, Nurodji, Sholihin As'ad	58

Borobudur and Prambanan Temples



Borobudur is one of the greatest Buddhist monuments in the world. Founded by a king of the Saliendra dynasty, it was built to honour the glory of both the Buddha and its founder, a true king Bodhisattva. The name Borobudur is believed to have been derived from the Sanskrit words vihara Buddha uhr, meaning the Buddhist monastery on the hill. Borobudur temple is located in Muntilan, Magelang, and is about 42 km from Yogyakarta city or about 87 km from Solo.

This colossal temple was built between AD 750 and 842: 300 years before Cambodia's Angkor Wat, 400 years before work had begun on the great European cathedrals. Little is known about its early history except that a huge army of workers worked in the tropical heat to shift and carve the 60,000 m³ of stone.

At the beginning of the 11th century AD, because of the political situation in Central Java, divine monuments in that area, including the Borobudur Temple became completely neglected and given over to decay. The Sanctuary was exposed to volcanic eruption and other ravages of nature. The temple was not rediscovered until the 19th century. A first restoration campaign, supervised by Theodor van Erp, was undertaken shortly after the turn of the century. A second one was led more recently (1973-82).



Prambanan, named after the village, is the biggest temple complex in Java. It is actually a huge Hindu temple complex about 15 km north-east of Yogyakarta or about 40 km from Solo. Dedicated to the three great Hindu divinities, this temple with its decorated reliefs is an outstanding example of Siva art in Indonesia and the region.

It was built in the 9th century and designed as three concentric squares. In all there are 224 temples in the entire complex. The inner square contains 16 temples, the most significant being the 47 m high central Siva temple flanked to the north by the Brahma temple and to the south by the Vishnu temple. These three ancient masterpieces of Hindu architecture are locally referred to as the Prambanan Temple or Lorojonggrang Temple (Slender Maiden); the compound was deserted soon after it was completed, possibly owing to the eruption of nearby Mount Merapi.