

CIVIL ENGINEERING RESEARCH IN IRELAND

28 - 29 AUGUST 2014 - Queen's University Belfast

	Time	Conference Room 1	Conference Room 2
Day 1	8:00	Registration (Tea and Coffee)	
	8:45	Plenary Session: Introduction and Welcome by Prof. Trevor Whittaker, Head of School, SPACE, Queen's University Belfast	
	9:00	Session Chairs: Dr. Alan O'Connor & Dr. Vikram Pakrashi 4 th Joe O'Donovan Memorial Keynote Lecture – Bridges: Mr. Barry Colford Keynote Lecture – Structures: Prof. Alistair Borthwick	
	10:00	Coffee	
	10:20	Bridge I Managing Ireland's National Road Bridges - <u>Liam Duffy</u> Administration of Abnormal Vehicles in Ireland – <u>Robert Corbally</u> , <u>Alan O'Connor</u> , <u>Fergal Cahill</u> , <u>Albert Daly</u> Seismic Testing and Analysis of the FlexiArch™ - <u>Christopher McCracken</u> , <u>Su Taylor</u> , <u>Paul McNulty</u> , <u>Myra Lydon</u> , <u>Daniel McCrum</u> , <u>Desmond Robinson</u> Probabilistic Analysis of Potential Impact of Extreme Weather Events on Infrastructures – <u>Alan O'Connor</u> , <u>Eugene O'Brien</u> , <u>Donya Hajjalizadeh</u> The Full Potential of Energy Harvesting from Train Induced Responses in Bridges – <u>Paul Cahill</u> , <u>Nathan Jackson</u> , <u>Alan Mathewson</u> , <u>Vikram Pakrashi</u> Design of scaled bridge prototype for energy harvesting testing - <u>Paul Cahill</u> , <u>Giuseppina Amato</u> , <u>Nathan Jackson</u> , <u>Alan Mathewson</u> , <u>Vikram Pakrashi</u> Parameter Importance Measure Studies on Prestressed Concrete Bridges in Ireland – <u>Ciarán Hanley</u> , <u>Vikram Pakrashi</u> A study of transverse load distribution in masonry arch bridges – <u>Helen Dunne</u> , <u>John Justin Murphy</u> , <u>Kieran Ruane</u>	Timber Irish Timber – Characterisation, Potential and Innovation – <u>Annette Harte</u> , <u>Daniel McPolin</u> , <u>Karol Sikora</u> , <u>Caoimhe O'Neill</u> , <u>Conan O'Ceallaigh</u> Life Cycle Assessment of Sawn Timber Produced from Irish forests – <u>Desmond Dolan</u> , <u>Annette Harte</u> Multi-storey construction in Timber – <u>Annette Harte</u> , <u>Cian Glennon</u> Structural Performance of Timber Connections - <u>Daniel Coleman</u> , <u>John Justin Murhpy</u> Bond quality of cross-laminated timber from Irish Sitka spruce – <u>Karol Sikora</u> , <u>Annette Harte</u> , <u>Daniel McPolin</u> Post-Tensioning of Timber Beams with Steel Rods – <u>Emma McConnell</u> , <u>Daniel McPolin</u> , <u>Su Taylor</u> Mechano-sorptive Creep of FRP Reinforced Laminated Timber Beams – <u>Conan O'Ceallaigh</u> , <u>Annette Harte</u> , <u>Karol Sikora</u> , <u>Daniel McPolin</u> Influence of embedded length of BFRP rods bonded parallel to the grain of low grade timber by pullout-bending tests – <u>Caoimhe O'Neill</u> , <u>Daniel McPolin</u> , <u>Su Taylor</u> , <u>Annette Harte</u>
	12:20	Lunch	
	13:20	Bridge II A Bayesian Approach For Estimating Characteristic Bridge Traffic Load Effects – <u>Bernard Enright</u> , <u>Cathal Leahy</u> , <u>Eugene O'Brien</u> Allowing for a Rocking Datum in the Analysis of Drive-By Bridge Inspections – <u>Jennifer Keenahan</u> , <u>Eugene O'Brien</u> Dynamic amplification factor of continuous versus simply supported bridges due to the action of a moving load – <u>Omar Mohammed</u> , <u>Daniel Cantero</u> , <u>Arturo Gonzalez</u> , <u>Salam Al-Sabah</u> Monitoring of structural performance – <u>David Hester</u> , <u>James Brownjohn</u> Probabilistic-Based Modelling and Assessment of a Steel Truss Railway Bridge – <u>Alan O'Connor</u> , <u>Lorcan Connolly</u> , <u>Mairéad Ní Choinne</u>	Materials I Development of a Geopolymer Binder from the Interbasaltic Laterites of Northern Ireland – <u>Andrew John McIntosh</u> , <u>Marios Soutsos</u> Chloride ingress through alkali activated slag concretes – <u>Muhammed Basheer</u> , <u>Qianmin Ma</u> , <u>Sreejith Nanukuttan</u> , <u>Yun Bai</u> , <u>Changhui Yang</u> Characterisation of Irish sandstones used for building – <u>Paul Kissane</u> , <u>Sara Pavia</u> , <u>Oliver Kinnane</u> The influence of heat transfer and storage in structural precast building components on indoor environments – <u>Magdalena Hajdukiewicz</u> , <u>Jamie Goggins</u> Thermo-mechanical fatigue in power plant steels: Enhanced numerical modelling with experimental validation – <u>Padraic O'Donoghue</u> , <u>Richard Barrett</u> , <u>Stephen Scully</u> , <u>Shane Reape</u> , <u>Christopher Hyde</u> , <u>Sean Leen</u>
	14:35	Break	
	14:45	Bridges III Statistical Analysis of HGV Bridge loading for a DBFO scheme Using Northern Ireland Weigh-In-Motion Data – <u>Ciaran Doherty</u> , <u>Alistair Heanen</u> , <u>Su Taylor</u> , <u>David Cleland</u> , <u>Myra Lydon</u> BridgeMon: Improved Monitoring Techniques for Bridges – <u>Peter Favai</u> , <u>Eugene O'Brien</u> , <u>Aleš Žnidarič</u> , <u>Hans Van Loo</u> , <u>Przemyslaw Kolakowski</u> , <u>Robert Corbally</u> Development of a new generation Bridge Weigh in Motion System – <u>Myra Lydon</u> , <u>Su Taylor</u> , <u>Desmond Robinson</u> , <u>Ciaran Doherty</u> Next generation Structural Health Monitoring using Wireless Sensor Network Technology – <u>Brendan O'Flynn</u> , <u>Holger Wörsching</u> , <u>David Boyle</u> Application of output-only modal method to the monitoring of bridges using an instrumented vehicle – <u>Abdollah Malekifarjan</u> , <u>Eugene O'Brien</u>	Materials II Ceramic Waste Sludge as a partial cement replacement – <u>Francis Kenna</u> , <u>Paul Archbold</u> Impact of hydration in the properties of lime hemp concretes made with commercial binder – <u>Rosanne Walker</u> , <u>Sara Pavia</u> A study on cement grout rheology: Optimum dosage of SP related to their composition and interaction with mineral additions – <u>Emilio García-Taengua</u> , <u>Mohammed Sonebi</u> , <u>Su Taylor</u> , <u>Liberato Ferrara</u> , <u>Peter Deegan</u> , <u>Andrea Pattarini</u>
	16:00	Coffee	
	16:30	Testing, Monitoring & Modelling Real time monitoring and performance of retaining structures – <u>Eugene Baily</u> , <u>Bryan McCabe</u> , <u>Jamie Goggins</u> , <u>Paul Kieran</u> The Use of 3D Laser Scanning Technology for Bridge Inspection and Assessment – <u>Michael Minehane</u> , <u>Ross O'Donovan</u> , <u>Kieran Ruane</u> , <u>Barry O'Keeffe</u> Underwater Imaging Research and Implementation on Bridges and Marine Infrastructure – <u>Terence Browne</u> , <u>Thomas Collins</u> The hydraulics and resulting bed scour within the vicinity of Submerged Single Span Arch Bridges – <u>Donal Ryan</u> , <u>Gerard Hamill</u> , <u>John McRobert</u> , <u>William Smyth</u> Numerical simulation of fluid flow around an array of cylinders at low Reynolds number – <u>William Finnegan</u> , <u>Jamie Goggins</u> Contact Mechanics for Fretting in Flexible Marine Risers – <u>Sinead O'Halloran</u> , <u>Adrian Connaire</u> , <u>Sean Leen</u> , <u>Annette Harte</u>	Materials III/Durability A Comparison of Techniques to Determine Surface Texture Data – <u>Grainne McQuaid</u> , <u>Phillip Millar</u> , <u>David Woodward</u> Bond Coats and Asphalt Durability under Cyclic Freeze Thaw Conditions – <u>Philip McManus</u> , <u>David Woodward</u> , <u>Alan Strong</u> Development of a Method to Predict the Durability of Warm Mix Asphalt – <u>Karen Kennedy</u> , <u>David Woodward</u> , <u>Ruth Mitchell</u> , <u>Phillip Millar</u> Non-contact evaluation of geometric properties of highway surfacing materials – <u>Phillip Millar</u> , <u>David Woodward</u> , <u>Grainne McQuaid</u> The Performance of a Cathodic Protection System in Reinforced Concrete Structure: Monitoring and Service Life Modelling – <u>Cillian Ward</u> , <u>Sreejith Nanukuttan</u> , <u>John McRobert</u> A New Performance Based Method for Design and Maintenance of Reinforced Concrete Structures – <u>Colleen Green</u> , <u>Sreejith Nanukuttan</u> , <u>Muhammed Basheer</u>
	18:00	Finish	
		Conference Dinner 7.00pm – Optional tour of Belfast City Hall 7.15pm - Wine reception at Belfast City Hall 8.00pm – Conference banquet at Belfast City Hall	

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Time	Conference Room 1	Conference Room 2
	08:30	General Meeting of CERAI
09:00	Session Chairs: Dr. Ken Gavin and Dr. Paul Archbold	
09:00	Keynote Lecture – Geotechnics: Prof. Bob Gilbert Keynote Lecture – Concrete: Dr. Roger West	
10:00	Coffee	
10:20	Structural Concrete I Ultimate Structural Capacity of Very High Dosage Steel Fibre Concrete Beams and Slabs – <i>Andrew Donnelly, Roger West, Abbas Kasim Mohammed, Michael Grimes</i> Effect of fibre type and dosage on early tensile strength of high performance mortar – <i>Jonathon Backus, Mohammed Sonebi, Tim Moore, David Hughes</i> Real-time monitoring of a hybrid precast and insitu concrete flat slab system – <i>Jamie Goggins, Shane Newell, Daniel King, Magdalena Hajdukiewicz</i> Impact Resistance of High-Dosage Steel Fibre Reinforced Concrete Slabs – <i>Roger West, Mohammad Reza Dousti</i> Strength and Deformation Characteristics of Concrete Containing Recycled Aggregates Fines – <i>David Collery, Philip McKenna, David Dunne, Kevin Paine</i>	Geotechnics I Assessing the reliability of pile driveability predictions from wave equations – <i>Eric Farrell, David Gill, Niamh Farrell</i> Finite element analyses of the installation of offshore foundations – <i>Sogol Fallah, Ken Gavin</i> Reassessing Foundation Reuse Assessment Tools – <i>Debra Laefer, Kelly-Ann Farrell</i> Soil nailing optimisation: lost opportunities in current practice – <i>Debra Laefer, Conor McGroarty, Oisín Ó Murchú</i> The Effect of Scour on the Dynamic Response of an Offshore Wind Turbine – <i>Luke Prendergast, Ken Gavin, Paul Doherty</i>
11:35	Break	
11:45	Structural Concrete II Mechanical Resistance Characteristics of GGBS Concrete in Fire – <i>Ted McKenna, Mark Richardson, Brian O'Rourke</i> Shear Behaviour of Precast Prestressed Hollowcore Slabs – <i>Cian Twomey, Brian O'Rourke, David Hodge</i> The Behaviour of Connections in Segmental Precast Concrete Pile Systems – <i>Evan Causer, Kieran Ruane</i> Shear Capacity of Insulated Precast Concrete Façade Panels – <i>Oliver Kinnane, Roger West, Michael Grimes, John Grimes</i> An Investigation into the Capabilities of Design Codes to Determine the Load Capacities of RC Deep Beams – <i>Daniel Shinnick, Des Walsh, Kieran Ruane</i>	Geotechnics II The Overconsolidation Ratio of the Dublin Port Clay – <i>David Gill, Eric Farrell</i> A novel triaxial testing procedure to model the action of lubricants in pipe jacking – <i>Ciaran Reilly, Trevor Orr</i> A systematic review of common correlations between unconfined compressive strength and point load index for Dublin calp Limestone – <i>Patrick Casey, Marie Fleming</i> Some geotechnical characteristics of a soft soil deposit along the Foyle Valley – <i>Paul Quigley, Mike Long, Segios Solera, Dan Raynor, Corrado Ruta</i> Implications of geometrical variations on the pull-out capacity of plate anchors – <i>Soroosh Jalilvand, Ken Gavin, Paul Doherty</i>
13:00	Lunch	
14:00	Structures Effect of prestress force and eccentricity on natural frequencies of prestressed concrete structures – <i>Darragh Noble, Maria Nogal, Alan O'Connor, Vikram Pakrashi</i> Stressing Geometry Control of Cable-Stayed Bridges – <i>James Barry, Kieran Ruane, John Justin Murphy</i> The Design of Moment Connections between Rectangular Hollow Sections – <i>Billy Allen, John Justin Murphy</i> Detailing & Curtailment of Steel Reinforcement to Eurocode 2 – <i>Brian O'Riordan, Ted McKenna, Donogh Coleman</i> Performance of vinyl on concrete floors subject to pull off testing – <i>Niall Holmes, Roger West</i>	Performance of concrete Combined chloride and carbon dioxide ingress in concrete exposed to cyclic wetting and drying – <i>Jonathon Backus, Daniel McPolin, Niall Holmes, Adrian Long</i> A Study of Chlorides in a Reinforced Concrete Bridge – <i>Ross O'Donovan, Brian O'Rourke, Kieran Ruane, John Justin Murphy</i> Performance of GGBS Concretes in Acidic Wastewater Environments – <i>Donogh Coleman, Ciaran McNally, Brian O'Rourke, Mark Richardson</i> Influence of compressive loading on chloride ingress through concrete – <i>Junjie Wang, Muhammed Basheer, Sreejith Nanukuttan, Yun Bai</i> Effects of Turbidity and Lighting on an Image Processing based Crack Detection Technique – <i>Michael O'Bryne, Bidisha Ghosh, Vikram Pakrashi, Franck Shoefs</i>
15:15	Coffee	
15:30	Research in Civil Engineering A research-based approach to exploring the adoption of novel UK-based concrete test methods in Chinese construction sector – <i>Bryan Magee, Muhammed Basheer, Sreejith Nanukuttan, Ting-Yu Hao, Zhi-Gang Wu</i> PD6694 and the Design of Gravity Retaining Walls – <i>Brian Solan, Sandra Orr, John Whitworth, Peter McMenamin</i> Vibration based seismic damage identification procedure for a steel concentrically braced frame structure – <i>Daniel McCrum & Andrea Staino</i> Resistance of Plated Concrete to Impact Loading – <i>David Dunne, David Collery, Philip McKenna</i> Preservation of Titanic's Dry Dock – <i>Mervyn Watley, Gerry Hennity</i> Evaluation and Maintenance of Inland Waterway Weirs – <i>Jim Harvey, Kerrie Gillen</i>	Award Committee Meeting
17:00	Plenary Session: Awards and Close	
17:15	Finish	

Day 2