

DAY 1 – Monday 29th August

Time	ENG-G018	ENG-047	ENG-2001	
8:00	Registration			
8:45	Plenary Session: Introduction by Dr Jamie Goggins, Chairperson of Civil Engineering Research Association of Ireland (CERAI) Welcome by Dr Jim Browne, President, NUI Galway			
9:00	Session Chair: Dr Vikram Pakrasi and Dr Niamh Power 5th Joe O'Donovan Memorial Keynote Lecture – Bridges: Prof Enzo Siviero Keynote Lecture – Environment: Prof Corey Griffin			
10:10	Coffee			
Day 1	10.30	<p style="text-align: center;">Bridge I Session Chair: Prof Eugene O'Brien</p> <p>Detection of train passages during forced vibration testing of bridge structure using energy harvesting technology - <u>Cahill Paul</u>, Karoumi Raid, Mathewson Alan, Andersson Andreas, Pakrashi Vikram</p> <p>Effect of vehicle velocity on exciting the lateral dynamic response of two-span integral bridges - <u>Prendergast Luke</u>, Gavin Kenneth, Hester David</p> <p>Drive-by Bridge Damage Detection Using Curvatures in Uncertain Environments - <u>Martinez Otero Daniel</u>, OBrien Eugene J., Sevillano Bravo Enrique</p> <p>Evaluation of bridge safety based on Weigh-in-Motion data - <u>Heitner Barbara</u>, OBrien Eugene J., Schoefs Franck, Décatoire Rodrigue, Yalamas Thierry, Leahy Cathal</p> <p>Advancements of Vibration Based Damage Detection Techniques for Small to Medium Span Bridges - <u>Moughy John</u>, Casas Joan Ramon</p> <p>Monitoring and Maintenance of the Boyne Viaduct - <u>Connolly Lorcan</u>, O'Connor Alan, Bowe Cathal</p> <p>Practical Applications of Weigh-in-Motion Data - <u>Corbally Robert</u>, O'Connor Alan, Cahill Fergal</p> <p>An Analysis of a Dataset of 1,400 Bridge Inspections in County Cork - <u>Dromey Liam</u>, Murphy John, O'Rourke Brian, Ruane Kieran</p>	<p style="text-align: center;">Environmental I Session Chair: Dr William Finnegan</p> <p>Building performance evaluation of domestic energy efficient retrofits in current and future climates - <u>McGrath Teresa</u>, Campbell Neil, Nanukuttan Sreejith, Soban Danielle, Basheer Muhammed</p> <p>How accurate are Building Energy Ratings for predicting the energy use of existing residential buildings? - <u>Moran Paul</u>, Hadjukiewicz Magdalena, Goggins Jamie</p> <p>The Thermo-Hygro-metric Properties of Cathedrals in Ireland - <u>Shiell Christopher</u>, West Roger</p> <p>Monitoring moisture in a historic brick wall following the application of internal thermal insulation – <u>Walker Rosanne</u>, Pavia Sara</p> <p>Design process to evaluate potential of wind noise at facade elements - <u>Paduano Cristina</u>, Mac Réamoinn Réamonn, Keenahan Jennifer</p> <p>Bi-phase methodology for sensitivity analysis of complex models - <u>Martinez-Pastor Beatriz</u>, Nogal Maria, O'Connor Alan</p> <p>Life cycle assessment of bio-SNG production via a nationwide system of gasification and methanation in Ireland - <u>Singlitico Alessandro</u>, Goggins Jamie, Monaghan Rory</p> <p>Is the development of a Net Zero Energy agricultural dairy farm possible in Ireland? - <u>Keane Liam</u>, Power Niamh</p> <p>The impact of the Irish dairy processing industry on climate change - <u>Finnegan William</u>, Goggins Jamie, Clifford Eoghan, Zhan Xinmin</p>	<p style="text-align: center;">Materials I Session Chair: Dr Paul Archbold</p> <p>Flexural response of bamboo-epoxy frames - <u>West Roger</u>, Bhalla Suresh, Bhagat Diwakar</p> <p>Dynamic analysis of the nonlinear response of high density fuel storage racks - <u>Gonzalez Merino Alberto</u>, Costas De La Peña Luis, González Arturo</p> <p>The Shelbourne Hotel - Long Term Innovative Treatment of Corroding Steel Frame - <u>McKenna Enda</u>, McFarland Brian, Kearney Jason, Collier Dermot</p> <p>Preliminary Investigation into the rate of carbonation of cement blocks under normal production yard conditions - <u>Byrne Aimee</u>, Nolan Eanna</p> <p>Effect of waste ceramic powder on strength development characteristics of cement based mortars - <u>Ferrara Liberato</u>, Deegan Peter, Pattarini Andrea, Sonebi Mohammed, Taylor Su</p> <p>Understanding the microstructure of alternative binder systems – banahCEM a metakaolin based geopolymer - <u>Lawther Susan</u>, Mcintosh Andrew, Nanukuttan Sreejith, Provis John, Soutsos Marios, Jose Deepa</p> <p>The Potential Use of Ceramic Waste Sludge as a Supplementary Cementitious Material - <u>Archbold Paul</u>, Russell Mark, Hoey Colm</p> <p>Developing braided FRP reinforcement for concrete structures - <u>Antonopoulou Sofia</u>, McNally Ciaran, Byrne Greg</p> <p>Characterisation and water aging of composite materials for tidal turbine blades - Grogan David, <u>Flanagan Michael</u>, Goggins Jamie, Kennedy Ciaran, Leen Sean, Doyle Adrian</p>
12:30	Lunch			
13.30	Session Chair: Dr Niall Holmes Keynote Lecture – Concrete: Prof John McCarter			
14.10	<p style="text-align: center;">Concrete I Session Chair: Prof Roger West</p> <p>Investigation of the Maturity and Engineering Performance of Self-Compacting Concrete for Pre-cast Elements - <u>Deegan Peter</u>, Sonebi Mohammed, Kelly Gavin, Taylor Su, Pattarini Andrea</p>	<p style="text-align: center;">Bridge II Session Chair: Prof Alan O'Connor</p> <p>Monitoring of Bridges using Computer Vision Methods - <u>Lydon Darragh</u>, Taylor Su, Martinez del Rincon Jesus, Hester David, Robinson Des, Lydon Myra</p> <p>The Influence of Traffic Growth on</p>	<p style="text-align: center;">Technology I Session Chair: Dr Brian Mulry</p> <p>Large Scale Structural Testing of Wind Turbine Blades Manufactured Using a One-Shot Out-Of-Autoclave Process - <u>Flanagan Michael</u>, Doyle Fintan, Goggins Jamie, Fagan Edward, Leen Sean, Doyle Adrian, Flanagan Tomás, Feerick PJ</p>	

	<p>Effect of Steel Fibre Dosage on the Behaviour of Ultra High Performance Fibre Reinforced Concrete Beams and Slabs - <u>Wilson William</u>, O'Flaherty Tomas</p> <p>Resistance of alkali activated slag concretes to chloride environments - Bondar Dali, Thompson Douglas, <u>Nanukuttan Sreejith</u>, Soutsos Marios</p> <p>The Influence of Basalt Fibres on the Mechanical Properties of Concrete - <u>Archbold Paul</u>, da Costa Santos Ana Caroline, Loonam Adam</p> <p>An experimental study of the shear behaviour of Ultra-High Performance Fibre Reinforced Concrete - <u>English Samuel</u>, Chen Jian Fei, Soutsos Marios, Robinson Des</p> <p>The Influence of Short Fibre Additions on the Pullout Behaviour of Reinforced Concrete - <u>Kenna John</u>, Mulheron Mike, Archbold Paul</p> <p>Reducing the environmental impact of concrete products, while at the same time saving money - Goggins Jamie, <u>McGovern Paddy</u>, McHugh Kieran, Finnegan William</p> <p>Development of resilient and environmentally responsible highway infrastructure solutions using geopolymer cement concrete - <u>Wilkinson Allistair</u>, Magee Brian, Woodward David, Tretsiakova-McNally Svetlana</p>	<p>Bridge Load Effect Forecasting - <u>Leahy Cathal</u>, OBrien Eugene J., O'Connor Alan</p> <p>Laboratory investigation of contactless displacement measurement using computer vision systems - <u>Lydon Myra</u>, Taylor Su, Taylor Su, Hester David, Robinson Des</p> <p>Rehabilitation of Haulbowline Bridges, Cork Harbour - <u>Ruane Kieran</u>, Minehane Michael, O'Suilleabhain Cormac</p> <p>Rehabilitation of Steel Orthotropic Deck Bridges using High Strength Concrete Overlay renovation technique - <u>Moore Pat</u>, Tuinstra Dimitri</p> <p>Implementation of a drive-by monitoring system for transport infrastructure utilising GPS - <u>McGetrick Patrick</u></p> <p>Integrating multivariate techniques in bridge management systems for life-cycle prediction - <u>Hanley Ciaran</u>, Matos Jose, Kelliher Denis, Pakrashi Vikram</p> <p>Abercorn Bridge – An Innovative Approach to Bridge Remediation - <u>O'Higgins Connor</u>, McFarland Brian, Callender Paul, Taylor Su, Gilmore Darren</p> <p>Arch Bridges under flood conditions, a study of the velocity distributions, and the resulting bed scour - <u>Ryan Donal</u>, Hamill Gerard, Solan Brian, Ettema Robert</p>	<p>Risk assessment for an Italian road network due to an extreme earthquake hazard scenario and the associated landslide cascading effects - Clarke Julie, Lam Juan Carlos, Gehl Pierre, Taalab Khaled, <u>Corbally Robert</u></p> <p>Quantification of Multi Risk Scenarios Subjected to Extreme Weather Events - <u>Hajjalizadeh Donya</u>, Carey Ciaran, OBrien Eugene J</p> <p>Application of Image Processing to the Analysis of Congested Traffic - <u>Micu Elena Alexandra</u>, OBrien Eugene J., Sevillano Bravo Enrique</p> <p>Drive-by inference of railway track longitudinal profile using accelerometer readings taken by in-service vehicles - OBrien Eugene J., Bowe Cathal, <u>Quirke Paraic</u>, Cantero Daniel</p> <p>A Simplified System for Assessing the Condition of Irish Regional and Local Roads - <u>Mulry Brian</u>, McCarthy John</p> <p>The Use of Average Least Dimension in Surface Dressing Design - <u>Mulry Brian</u>, Feighan Kieran, Casey Tom</p> <p>The Introduction and Implementation of Mobile Retroreflectivity Measurement of Pavement Markings in Ireland - Greaney Eoin, <u>Boyle Alan</u></p>
16:00	Coffee		
16.20	<p style="text-align: center;">Concrete II Session Chair: Dr Bryan Magee</p> <p>Sustainable concrete with 95% recycled and natural components - <u>Alawais Ahmed</u>, West Roger</p> <p>Mechanical and thermal evaluation of different types of PCM-concrete composite panels - <u>Niall Dervilla</u>, West Roger, McCormack Sarah</p> <p>Using photovoltaics to power electrochemical chloride extraction from concrete - <u>Bond Sean</u>, O'Callaghan Lynette, Holmes Niall, Norton Brian</p> <p>Pre-stressing using basalt bars: an experimental investigation on a new frontier of precast concrete - <u>Dal Lago Bruno</u>, Deegan Peter, Taylor Su, Crossett Philip, Sonebi Mohammed, Ferrara Liberato, Pattarini Andrea</p> <p>Evaluating a new CEM III/A cement for concretes exposed to harsh acid rich environments- <u>Thompson David</u>, Holmes Niall, Reddy John</p>	<p style="text-align: center;">Technology II Session Chair: Mr Tom Cosgrove</p> <p>Potential applications for image-based systems in structural engineering - de la Torre Oscar, Newell Shane, Flanagan Michael, Goggins Jamie</p> <p>Evaluation of camera calibration techniques for quantifying damage - <u>O'Byrne Michael</u>, Pakrashi Vikram, Ghosh Bidisha, Schoefs Franck</p> <p>An overview of Arup Computational Fluid Dynamics Projects - <u>Keenahan Jennifer</u>, Paduano Cristina, Mac Réamoinn Réamonn</p> <p>Generating robust algorithms for energy efficient lighting as a performance aspect of the building operational energy optimisation framework - <u>Ganguly Turya</u>, Hajdukiewicz Magdalena, Keane Marcus, Goggins Jamie</p> <p>Diagnostics and intervention methods for façade retrofit of post-WWII non-domestic buildings in Europe for energy efficiency - <u>Zuhaib Sheikh</u>, Hajdukiewicz Magdalena, Keane Marcus, Goggins Jamie</p> <p>Assessing aerodynamic performance in cycling using computational fluid dynamics - <u>Mannion Paul</u>, Clifford Eoghan, Blocken Bert, Hajdukiewicz Magdalena</p>	<p style="text-align: center;">Teaching and Learning Session Chair: Prof Dermot O'Dwyer</p> <p>A changing Civil Engineering curriculum at UCD - <u>Purcell Patrick</u></p> <p>Teaching Engineering Design 1840s – Present - <u>O'Dwyer Dermot</u>, Cox Ronald</p> <p>Developing a deeper understanding of structural dynamics - <u>West Roger</u>, Basu Biswajit, Broderick Brian, McGranaghan Gerard</p> <p>The Pedagogy of Building Information Modelling - <u>Eadie Robert</u>, Solan Brian, Magee Brian, Rice Mark</p> <p>Clacton and Holland on Sea Coastal Protection Case Study to assess the pros and cons of using BIM on coastal protection schemes - <u>Collery David</u>, McCloud Andrew, Deakin Victoria, Ennos James</p>
18:00	FINISH		
	<p>Conference Dinner 7.30pm - Wine reception at Meyrick Hotel 8.00pm – Conference banquet at Meyrick Hotel</p>		

DAY 2 – Tuesday 30th August

Time	ENG-G047	ENG-2001	ENG-2002
8:00	General Meeting of CERAI [Venue: ENG-G018]		
9:00	Session Chair: Mr Des Walsh and Prof Ken Gavin [Venue: ENG-G018]		
	Keynote Lecture – Timber: Dr. Annette Harte Keynote Lecture – Geotechnical: Prof David Frost		
10:10	Coffee		
	Geotechnics I Session Chair: Dr Bryan McCabe	Timber Session Chair: Dr Annette Harte	Structures Session Chair: Mr Shane Newell
Day 2 10.30	<p>Some geotechnical characteristics of soft soil deposits along the Terryland River valley - <u>Quigley Paul</u>, McCabe Bryan, Hunt Pat, Rodgers Michael</p> <p>Assessment of Ground Movement for a Deep Excavation in Soft Marine Clay - <u>Fallah Sogol</u>, Casey Patrick, Sweeney Paul</p> <p>Heave-ho! A laboratory model of an underfloor environment incorporating pyritiferous fill - <u>McKeon Eanna P.</u>, McCabe Bryan, Sexton Brian, Cavalcante Marilia, Ibáñez-Valle José Luis, O'Connell Aidan M</p> <p>Performance testing of novel gravity-base foundation for offshore wind - <u>Attari Yeganeh</u>, Prendergast Luke, Gavin Kenneth</p> <p>The geotechnical properties of the pulverised coal ash produced at Moneypoint Power Station - <u>Reilly Ciaran</u>, Rugero Saul, Doherty Paul</p> <p>The behavior of a novel dynamically installed anchor during deployment – insights from field tests - <u>Jalilvand Soroosh</u>, Gavin Kenneth, Vinayagamoothy Siva, Bradshaw Aaron</p> <p>Bearing capacity beneath tapered blades of open dug caisson in sand - <u>Royston Ronan</u>, Phillips Bryn, Sheil Brian, Byrne Byron</p> <p>Landslide susceptibility assessment for engineered slopes using statistical and deterministic approaches - <u>Martinovic Karlo</u>, Gavin Kenneth, Reale Cormac</p>	<p>Distribution of stresses along the length of BFRP rods glued-in to Irish Sitka Spruce - <u>O'Neill Caoimhe</u>, McPolin Danny, Taylor Su, Harte Annette</p> <p>Viscoelastic Creep of FRP Reinforced Glulam - <u>O'Ceallaigh Conan</u>, Sikora Karol, McPolin Danny, Harte Annette</p> <p>The effects of planting density on the structural timber properties of 23-year-old Irish-grown Sitka spruce - <u>Simic Karlo</u>, Gendvilas Vilius, O'Reilly Conor, Nieuwenhuis Maarten, Harte Annette</p> <p>Mechanical characterization of green Sitka spruce logs - <u>Krajnc Luka</u>, Farrelly Niall, Harte Annette</p> <p>Potential for Medium Rise Timber Structures in Ireland - <u>Glavin Paul</u>, Macilwraith Andrew, Coleman Donogh, McKenna Ted</p> <p>Timber/steel composite members in multi-storey buildings under standard fire test loadings - <u>Whelton Matthew</u>, Macilwraith Andrew</p> <p>A Review of the State of the Art of Timber Gridshell Design and Construction - <u>Collins Matt</u>, Cosgrove Tom</p> <p>Considerations for the Design of Bending Active Timber Gridshells - <u>Collins Matt</u>, Cosgrove Tom</p> <p>Probabilistic Climate Change Adaptation Analysis for Timber Power Pole Infrastructure - <u>Ryan Paraic</u>, Stewart Mark G</p>	<p>Comparative analysis of the probabilistic methods to estimate the probability of failure of offshore wind turbine towers - <u>Teixeira Rui</u>, O'Connor Alan, Nogal Maria</p> <p>Experimental investigation and numerical modelling of domestic scale wind turbine blades - <u>Fagan Edward</u>, Goggins Jamie, Leen Sean, de la Torre Oscar</p> <p>The Four Courts, Dublin – Innovative Monitoring and Long Term Repair Techniques - <u>Gilmore Darren</u>, McFarland Brian, McKenna Enda, O'Higgins Connor, Kearney Jason</p> <p>Large inelastic cyclic testing of the gusset-plate brace member assemblies in ultra-low cycle fatigue regime - <u>Hassan M. Shariq</u>, English Jack, Goggins Jamie, Salawdeh Suhaib</p> <p>Recommendations for Numerical Modelling of Concentrically Braced Steel Frames with Gusset Plate Connections subjected to Earthquake Ground Motion - <u>Ryan Terence</u>, Broderick Brian, Hunt Alan, Goggins Jamie, Salawdeh Suhaib</p> <p>Seismic design and performance of non-structural elements - <u>Salawdeh Suhaib</u>, Goggins Jamie</p> <p>Stress analysis of welded steel catenary risers - <u>Devaney Ronan</u>, O'Donoghue Pdraic, Leen Sean</p> <p>Improving finite element implementation in topology optimisation - <u>Al-Sabah Salam</u></p> <p>Bridge Damage Detection using Moving Force Identification - <u>Fitzgerald Paul</u>, O'Brien Eugene J., Sevellano Bravo Enrique</p>
12:30	Lunch		
	Geotechnics II Session Chair: Dr Luke Predergast	Concrete III Session Chair: Dr Giuseppina Amato	Environmental II Session Chair: Dr Donal Ryan
13.30	<p>Numerical modelling of Cone Penetration Test in Clay using Coupled Eulerian Lagrangian Method - <u>Fallah Sogol</u>, Gavin Kenneth, Jalilvand Soroosh</p> <p>The treatment of karst features encountered during road construction in County Galway - <u>Madden Esther</u>, O'Hara Deirdre</p> <p>Performance of Road Embankments on Glacial Deposits in Ireland - <u>Buggy Fintan</u>, Kissane Paul, Rush Dominic, Long Mike</p> <p>Energy transfer ratio of hydraulic</p>	<p>An overview of the development of cement-based batteries for the cathodic protection of embedded steel in concrete - Holmes Niall, Byrne Aimee, Norton Brian</p> <p>Resistance of alkali activated slag concretes to chloride environments - <u>Bondar Dali</u></p> <p>Strength assessment of in-situ concrete for the evaluation of structural capacity: State of the art - <u>Sourav Shah Nur Alam</u>, Al-Sabah Salam, McNally Ciaran</p> <p>Heat Activated Prestressing of Shape</p>	<p>Sediment Transport Modelling on the River Bandon - <u>Harrington Joe</u>, Gamble John</p> <p>Low flow analysis of ungauged river catchments in Ireland - <u>Forde Paul</u>, O'Driscoll Leonard</p> <p>Tidal stream energy resource assessment of the Shannon estuary - <u>Phoenix Anna</u>, Nash Stephen</p> <p>Development of a 2D hydrodynamic model to assess the risk of flooding from wave overtopping and tidal inundation of a site in Co. Clare - <u>Barry Kevin</u>, Walsh Daniel, Reilly Joshua, Lizondo Susana, Ascoop Julie,</p>

	<p>pile driving hammers - <u>Flynn Kevin</u>, McCabe Bryan Sheet-pile corrosion rates within an existing outfall channel in Dublin Port - <u>Sexton Brian</u>, Gill David, O'Donnell Conor</p>	<p>Memory Alloys for Active Confinement of Concrete Sections - <u>Suhail Raj</u>, Amato Giuseppina, Chen Jian Fei, McCrum Daniel An Assessment of Reinforced Concrete Members in Tension Strengthened with Near Surface Mounted CFRP Strips - <u>Meehan Andrew</u>, Ruane Kieran Interface Shear Behavior of precast prestressed concrete beams with slender webs in beam and slab bridge construction - <u>Slevin Michael</u>, O'Connor Alan Behaviour of hybrid concrete lattice girder flat slab system using insitu structural health monitoring - <u>Newell Shane</u>, Goggins Jamie, Hajdukiewicz Magdalena, Holleran David</p>	<p>Lahiffe Steve, Tiernan Tom Development of a high resolution wave model at AMETS using SWAN - <u>Atan Reduan</u>, Goggins Jamie, Nash Stephen Modelling the effects of Climate Change on historic maritime structures: Howth East Pier (Ireland) - <u>Lizondo Susana</u>, Reilly Joshua, Ascoop Julie, Connolly Grainne, Campbell John Tertiary treatment technologies for water reuse and rainwater harvesting in the Irish dairy industry - <u>Fitzhenry Kelly</u>, Rowan Neil, Finnegan William, Tarpey Emma, Goggins Jamie, Zhan Xinmin, Clifford Eoghan Energy Benchmarking in Wastewater Collection and Treatment - <u>Cronin Donald</u>, Power Niamh Use of IASBR to treat dairy processing wastewater: A laboratory scale study - <u>Tarpey Emma</u>, Finnegan William, Fitzhenry Kelly, Zhan Xinmin</p>
15:30	Coffee		
15.50	<p>Session Chair: Dr Sreejith Nanukuttan 3 Minute Presentations (Industry/ Education)</p>	<p>Award Committee Meeting</p>	
17:00	Plenary Session: Awards and Close		
17.15	FINISH		