Wednesday, 29th August

Time	Session
08:00	**Registration** *UCD Sutherland School of Law*
08:45	**Open Opening Address** *A&L Goodbody Theatre*
09:00	**JOD Bridge 10th Joe O'Donovan Memorial Lecture** *A&L Goodbody Theatre*
09:30	**ITRN ITRN 2018 Inaugural Lecture** *A&L Goodbody Theatre*
10:10	**Session 1 Structural Engineering - Steel** *L246* Chaired by:
10:10	**Lateral torsional buckling resistance to non-shear centre loading** » Keith Farrell (Dublin Institute of Technology)
10:25	**The effect of frictional contact properties on intermeshed steel connections** » Pantelis Matis (Queen's University Belfast), Tony Martin (Queen's University Belfast), Patrick McGetrick (Queen's University Belfast), Des Robinson (Queen's University Belfast)
10:40	**Experimental Study of Vertical Deflection on Bracket-Angle Stainless Steel Masonry Support Systems** » Emanuele Scarabino (Queen's University Belfast), Danny McPolin (Queen's University Belfast), Patrick McGetrick (Queen's University Belfast)
10:10	**Session 2 ITRN2018 - Modelling of Traffic & Transportation Network** *A&L Goodbody Theatre* Chaired by: Brian Caulfield

Time	Session
10:10	**The Efficiency of Fully Autonomous Vehicles in Motorway Trips: A Case Study in Dublin - The M50 Motorway** » Amin Rezaei (Trinity College Dublin), Brian Caulfield (Trinity College Dublin)
10:25	**Traffic State Analysis utilising Macroscopic Fundamental Diagram (MFD) in Dublin City** » Bidisha Ghosh (Tri), Elise Henry (ENTPE)
10:40	**Transport Network Risk Analyses** » Ciaran Carey (Roughan & O'Donovan Innovative Solutions), Robert Corbally (Roughan & O'Donovan Innovative Solutions), Lorcan Connolly (Roughan & O'Donovan Innovative Solutions), Alan O'Connor (Roughan & O'Donovan Innovative Solutions)
10:10	**Session 3 Bridge Engineering - Dynamics** *L247* Chaired by: Abdollah Malekjafarian
10:10	**Impact of short-duration acceleration records on the ability of signal processing techniques to derive accurate bridge frequencies.** » Kun Feng (University College Dublin), Arturo Gonzalez (University College Dublin), Miguel Casero (University College Dublin)
10:25	**Estimation of bridge natural frequencies using the responses measured in a passing vehicle** » Licheng Zhu (University College Dublin), Abdollah Malekjafarian (University College Dublin)
10:40	**Review of methods used for automated extraction of frequencies from time domain signals** » Connor O'Higgins (Queen's University Belfast), David Hester (Queen's University Belfast), Patrick McGetrick (Queen's University Belfast), Des Robinson (Queen's University Belfast)
10:10	**Session 4 New Frontiers - TRUSS-ITN Workshop 1** *L248* Chaired by: Arturo Gonzalez

10:10	**The TRUSS ITN project (2015-19): a Marie Skłodowska-Curie innovative training network on reducing uncertainty in structural safety** » Arturo Gonzalez (University College Dublin)
10:25	**Fatigue testing of reinforced concrete beams instrumented with distributed optical fiber sensors (DOFS)** » António Barrias (Universitat Politècnica de Catalunya), Joan Ramon Casas (Universitat Politècnica de Catalunya), Sergi Villalba (Universitat Politècnica de Catalunya)
10:40	**Automated Bridge Deck Evaluation through UAV Derived Point Cloud** » Siyuan Chen (Department of Civil Engineering, University College Dublin), Linh Truong-hong (Department of Civil Engineering, University College Dublin), Debra Laefer (Center for Urban Science and Progress and Department of Civil and Urban, New York University), Eleni Mangina (Department of Computer Science, University College Dublin)
10:10	**Session 5 Pedagogy in Civil Engineering 1** *L249* Chaired by: Ciarán Hanley
10:10	**Teaching and Learning Intuitive Understanding of Structural Behaviour – Today's Learner Perspective** » Ted McKenna (Cork Institute of Technology), Amanda Gibney (University College Dublin), Mark G. Richardson (University College Dublin)
10:25	**Coping with Statistics in Concrete Technology** » Gurbir Kaur (Trinity College Dublin), Pat Shiel (Trinity College Dublin), Roger West (Trinity College Dublin)
10:40	**Communication of Design Intent in the Digital Age** » Nick Bailey (Cork Institute of Technology, Ireland), Kieran Ruane (Cork Institute of Technology), Michael Minehane (RPS Group, Consulting Engineers), Ted McKenna (Cork Institute of Technology)
11:00	**Coffee Break**

11:30	**Session 10 Geotechnical Engineering 1** *L249* Chaired by: Sogol Fallah
11:30	**Predicting Pile Driving Induced Movement in Gothenburg Soft Clay** » Yeganeh Attari (Gavin & Doherty Geosolutions (GDG)), Paul Doherty (Gavin & Doherty Geosolutions (GDG)), Paul Quigley (Gavin & Doherty Geosolutions (GDG)), Nicholas Lusack (Sigma Civil AB)
11:45	**Mechanical Behaviour of Geothermal Diaphragm Walls** » Quanwei Dai (University College Cork), Alice Di Donna (University of Grenoble), Zili Li (University College Cork)
12:00	**An experimental investigation of helical piles subject to inclined pullout loads** » Darren Reape (ESB International), Pat Naughton (Institute of Technology Sligo)
12:15	**Monopile Soil-Structure Interaction for estimating the dyanmic response of an offshore wind turbine** » David Igoe (Department of Civil, Structural and Environmental Engineering, Trinity College Dublin), Breiffni Fitzgerald (Department of Civil, Structural and Environmental Engineering, Trinity College Dublin), Saptarshi Sarkar (Department of Civil, Structural and Environmental Engineering, Trinity College Dublin)
12:30	**TAGS: How the GSI is making AGS data available to the geotechnical community** » Lin Zhang (Gavin & Doherty Geosolutions (GDG)), Paul Quigley (Gavin & Doherty Geosolutions (GDG)), James Trench (Geological Survey of Ireland), Michael Sheehy (Geological Survey of Ireland)
12:45	**Geosynthetic reinforcement for unpaved roads - recent experience** » Ciaran Reilly (Ciaran Reilly & Associates), Keith Nell (Thrace Synthetic Packaging)
11:30	**Session 6 Structural Engineering - Industry** *L246* Chaired by: Mary Moloney

11:30	**Design and testing of lifting system for a offsite volumetric housing prototype** » Hung Phung (Queen's University Belfast - McAvoy Group), Giuseppina Amato (Queen's University Belfast), Danny McPolin (Queens University Belfast), David Clark (McAvoy Group)
11:45	**The retrofitting of existing buildings to the NZEB Standard: A lifecycle environmental and cost analysis approach** » John O'Connell (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland), Paul Moran (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland), Jamie Goggins (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland)
12:00	**Senator House – A Novel, Cost-Effective Method of Structural Assessment and Monitoring.** » Rebecca Lutton (McFarland Associates Ltd.), Brian Mcfarland (McFarland Associates Ltd.), Enda Mckenna (McFarland Associates Ltd.), Connor O'higgins (McFarland Associates Ltd.), Ben Magee (McFarland Associates Ltd.), Simon Lamont (Design ID), Ronan Carlin (Design ID)
12:15	**The Development and Implementation of Emergent Digital Technologies in the Design of the Built Environment** » Aimee McCabe (Queen's University Belfast), Danny McPolin (Queen's University Belfast), Sreejith Nanukuttan (Queen's University Belfast), Jack Knowles (Queen's University Belfast)
11:30	**Session 7 ITRN2018 - Traffic Safety** *A&L Goodbody Theatre* Chaired by: Bidisha Ghosh
11:30	**Estimation of the Population's Travel-Based Crash Rates** » Orla Mcateer (Queens University Belfast), Salissou Moutari (Quee)

11:45	**The Influence of Passing Events on Cyclists Behaviour and Risk Perception** » Thomas Mac Hale (ESB International), Michael O'Byrne (University College Dublin), Ronan Doorley (Massachusetts institute of technology), Giacinto Rittgers (Trinity College Dublin), Bidisha Ghosh (Trinity College Dublin), Vikram Pakrashi (University College Dublin)
12:00	**Analysis of Traffic Incidents using Machine Learning** » Cathal Leahy (Arup), Stephen Lynch (Arup)
12:15	**Awareness of Medical Fitness to Drive Guidelines among Occupational Physicians and Psychiatrists** » Margaret Ryan (Royal College of Physicians of Ireland and CIHS TCD.), Desmond J O'Neill (School of Medicine, TCD), Regina Mcfadden (Royal College of Physicians of Ireland), Eilish Gilvarry (Northumberland, Tyne & Wear NHS Foundation Trust, Newcastle Addictions Service, Plummer Court, Carliol Place, Newcastle upon Tyne NE1 6UR), Declan Whelan (Irish Rail)
12:30	**Analysis of Aviation Accident Data** » Darren Kerfoot (Institute of Technology Blanchardstown), Markus Hofmann (Institute of Technology Blanchardstown)
11:30	**Session 8 Bridge Engineering - Inspection, Observations and Developing Techniques** *L247* Chaired by: Vesna Jaksic
11:30	**The Effectiveness of Unmanned Aerial Systems For Bridge Inspections** » Thomas Collins (Collins Engineers, Inc.), Barritt Lovelace (Collins Engineers, Inc.), Jennifer Wells (Minnesota Department of Transportation)
11:45	**A Bridge Rehabilitation Strategy based on the analysis of a Data Set of Bridge Inspections** » Liam Dromey (Cork County Council), Kieran Ruane (Cork Institute of Technology), Brian O'Rourke (Cork Institute of Technology), John Murphy (Cork Institute of Technology)

12:00	**Vision-based deformation and free vibration measurements of beams using Unmanned Aerial Vehicles (UAVs)** » Stathis Polydorou (Queen's University Belfast), Des Robinson (Queen's University Belfast), Gerard Treanon (Queen's University Belfast), Su Taylor (Queen's University Belfast), Patrick McGetrick (Queen's University Belfast)
12:15	**Laboratory Investigation of Multiple Camera Displacement Measurement** » Darragh Lydon (Queens University Belfast), Su Taylor (Queen's University Belfast), Jesus Martinez Del Rincon (Queens University Belfast), Myra Lydon (Queens University Belfast), Des Robinson (Queen's University Belfast), David Hester (Queen's University Belfast)
12:30	**Pavement Defects at Integral Bridges – An Irish Perspective** » Ann-Marie Gallagher (Arup Consulting Engineers), Fergal Cahill (Tran)

11:30	**Session 9 TRUSS-ITN Workshop:2** *L248* Chaired by: Salam Al-Sabah
11:30	**On the effectiveness and uncertainty of inspection methods for fatigue crack management** » Guang Zou (Lloyd's Register), Kian Banisoleiman (Lloyd's Register), Arturo Gonzalez (University College Dublin)
11:45	**On the application of Gaussian process regression for structural analysis** » Rui Teixeira (Trinity College Dublin), Alan O'Connor (Trinity College Dublin), Maria Nogal (Trinity College Dublin)
12:00	**Statistical reliability of the screw pullout test in the assessment of in-situ concrete strength** » Shah Nur Alam Sourav (University College Dublin/Arup), Salam Al-Sabah (Arup), Ciaran McNally (University College Dublin)
12:15	**A comparative study on different BFRP rebar design methodologies** » Sofia Antonopoulou (University College Dublin), Ciaran McNally (University College Dublin), Greg Byrne (Burgmann Packings Ltd)

12:30	**A big data approach for investigating the performance of the road infrastructure** » Federico Perrotta (University of Nottingham), Anonymous User (Organisation Removed), Luis C. Neves (University of Nottingham), Mohammad Mesgarpour (Microlise Ltd), Emma Benbow (TRL), Helen Viner (TRL)
12:50	**Lunch Break**
14:00	**KN Struct Keynote Structures** *A&L Goodbody Theatre*
14:30	**KN Concret Keynote Concrete** *A&L Goodbody Theatre*
15:10	**Session 11 Structural Engineering - RC and Composites** *A&L Goodbody Theatre* Chaired by:
15:10	**A Strut-and-Tie approach in detailing RC structures** » Salam Al-Sabah (Arup), Jeremy Chipperfield (Arup), Holger Falter (Coburg University of Applied Sciences)
15:25	**Laboratory testing of the structural behaviour of precast concrete lattice girder slabs at construction stage** » Shane Newell (Galway-Mayo Institute of Technology), Gerard O'Kelly-Lynch (National University of Ireland, Galway), Jamie Goggins (National University of Ireland, Galway)
15:40	**Experimental investigation on basalt reinforced mortar strips in tension** » Jennifer D'Anna (University of Palermo), Giuseppina Amato (Queen's University Belfast), Jian-fei Chen (Queen's University Belfast), Giovanni Minafò (University of Palermo), Lidia La Mendola (University of Palermo)
15:10	**Session 12 ITRN2018 - Irish Transportation Economics & Brexit** *L249* Chaired by:

15:10	**Post BREXIT Influences on Irish freight logistics: A critique** » Raja Maitra (Visiting Researcher, Dynamical Systems and Risk Laboratory, School of Mechanical and Materials Engineering, University College Dublin.), Vikram Pakrashi (School of Mechanical and Materials Engineering University College Dublin Ireland)
15:25	**Brexit: Adding extra links to already taut Supply Chains to and from Europe** » Brian Naughton (Dublin Institute of Technology)
15:40	**DETERMINATION OF THE CRITICAL ECONOMIC CORRIDOR ZONES SERVICING DUBLIN CITY** » Dermot Kinane (Dublin City Council), Markus Hofmann (Institute of Technology Blanchardstown)

15:10	**Session 13 Bridge Engineering - Scour** *L247* Chaired by: Paraic Ryan
15:10	**Detecting bridge scour using mode shapes derived from time-domain data** » Abdollah Malekjafarian (University College Dublin), Luke Prendergast (University of Nottingham), Eugene O'Brien (University College Dublin)
15:25	**Bridge Scour Detection using Vehicle Acceleration Measurements** » Eugene O'Brien (University College Dublin), Abdollah Malekjafarian (University College Dublin), Paul Fitzgerald (University College Dublin)
15:40	**Scour and the Stability of Short-Span, Masonry Arch Bridge: findings from a diagnostic, flume study** » Robert Ettema (Colorado State Univeristy), Brian Solan (Ulster University), Claire Watters (Ulster University), Gerard Hamill (Queen's University Belfast), Donal Ryan (EDC Consulting)

15:10	**Session 14 Concrete Technology 1** *L248* Chaired by: Ciaran McNally

15:10	**Effect of Recycled Concrete Aggregates on the Performance of Structural Grade Concrete** » Alan Lowe (IT Sligo), Tomas O'Flaherty (IT Sligo)
15:25	**Using crumb rubber as an aggregate in a sustainable concrete mix** » Ahmed Alawais (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Roger West (Trinity College Dublin)
15:40	**Pre-treatment of recycled concrete aggregates with silica fume** » Ahmed Alawais (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Roger West (Trinity College Dublin)

15:10	**Session 15 TRUSS-ITN Workshop:3** *L246* Chaired by: Arturo Gonzalez
15:10	**Vibration tests of an underwater free-standing 2-rack system** » Alberto Gonzalez (Equipos Nucleares S.A.), Luis Costas (Equipos Nucleares S.A.), Arturo Gonzalez (University College Dublin)
15:25	**Reduction of uncertainties associated to the dynamic response of a ship unloader** » Giulia Milana (University College Dublin/ Lloyd's Register), Kian Banisoleiman (Lloyd's Register), Arturo Gonzalez (University College Dublin)
15:40	**Sensitivity of SHM Sensors to Bridge Stiffness** » Daniel Martinez Otero (University College Dublin), Eugene O'Brien (University College Dublin), Abdollah Malekjafarian (University College Dublin), Yahya M. Mohammed (University of Alabama), Nasim Uddim (University of Alabama)
16:00	**Coffee Break**
16:30	**Session 16 Structural Engineering - Seismic and Composite** *L246* Chaired by:

16:30	**DEVELOPMENT OF A SEISMIC RISK MITIGATION STRATEGY FOR EXISTING READY MADE GARMENT FACTORIES IN BANGLADESH** » Kerem Pencereci (Arup), Timurhan Timur (Arup), Rory McGowan (Arup), Aidan Madden (Arup)		16:45	**Best practice on current and emerging training schemes, methodologies and tools in the transport sector and mapping to future training requirements and scenarios** » Aoife Ahern (University College Dublin), Grace Moloney (University College Dublin), Marin Marinov (University of Newcastle), Matina Loueka (CERTH), Jean-christophe Meunier (VIAS Institute), Alexandre Sanchez Perez (Valencia Port Foundation), Carmen Estela Mut (Valencia Port Foundation)
16:45	**Lifetime seismic loss assessment of steel Concentrically Braced Frames designed to EC8** » John Hickey (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Brian Broderick (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin)		17:00	**ANALYSIS OF THE COMMUTING PATTERNS OF CSPPA STUDY PARTICIPANTS** » Ross Higgins (University College Dublin), Aoife Ahern (Univ)
17:00	**Probability Based Resilience Assessment of Infrastructure** » Caitriona de Paor (ROD-IS), Lorcan Connolly (ROD-IS), Marko Duranovic (Rou), Alan O'connor (ROD-IS), Cathal Bowe (Irish Rail)		17:15	**Characterising Pavement Surface Macrotexture using 3D Modelling Techniques** » Raymond McGowan (PMS Pavement Management Services Ltd), Kieran Feighan (PMS Pavement Management Services Ltd), Brian Mulry (PMS Pavement Management Services Ltd), Tom Casey (Transport Infrastructure Ireland)
17:15	**An assessment of the utility of ANSYS structural modelling for the seismic retrofit of steel building frames.** » Alma Narcy (INSA Rouen Normandie), Brian Broderick (Trinity College Dublin), Maria Nogal (Trinity College Dublin)		17:30	**The long-term impact of utility reinstatements in urban flexible carriageways** » Finan Dooley (Dublin City Council), Pat Naughton (Institute of Technology Sligo)
17:30	**Assessing a modified approach to the design of X-braced Concentrically Braced Frames for Earthquake Loading using Non-Linear Analysis.** » Terence Ryan (University of Limerick), Brian Broderick (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), John Hickey (Trinity College Dublin)		17:45	**INSIGHTS INTO UNUSUAL TRAFFIC EVENTS IN DUBLIN CITY: DATA MINING DELIVERING BUSINESS INTELLIGENCE** » Dermot Kinane (Dublin City Council), Markus Hofmann (Institute of Technology Blanchardstown)
17:45	**Composite Action in Double Layer Bending Active OSB Gridshells** » Abdussalam Mellad (University of Limerick), Matthew Collins (University of Limerick), Tom Cosgrove (University of Limerick)		16:30	**Session 18 Environmental Engineering - Climate Change, SuDS, and Flood Analysis** *L243* Chaired by:
16:30	**Session 17 ITRN2018 - Insights & Emerging Trends** *L249* Chaired by: Aoife Ahern		16:30	**High-Level Climate Change Risk Assessment of Irish Critical Infrastructure** » Lara Hawchar (UCC), Paraic ryan (UCC), Owen Naughton (Trinity College Dublin)
16:30	**Assessing social outcomes of transport investments – A quasi-experimental study of Pernambuco, Brazil.** » Rodolfo Benevenuto (Trinity College Dublin), Fernando Castellon Jr (Trinity College Dublin), Brian Caulfield (Trinity College Dublin)			

16:45	**Prediction of Flood Hydrograph in Small River Catchments Using System Modelling Approach** » Ahmed Nasr (DIT (Dublin Institute of Technology)), Zeinab Bedri (Dublin Institute of Technology), Loreta Ramanauske (Dublin Institute of Technology)
17:00	**A Socio-Economic Analysis of SuDS in Water management in the face of Climate Change** » mark Tucker (Roughan & O'Donovan Innovative Solutions), John Paul Rooney (Roughan & O'Donovan), Robert Corbally (Roughan & O'Donovan Innovative Solutions), Warren Vokes (Roughan & O'Donovan)
17:15	**Simulating the Performance of Sustainable Drainage Systems using CFD** » Gareth Robinson (Queen's University Belfast / FP McCann), Oisin O'Kane (FP McCann), Gerard Hamill (Queen's University Belfast), Des Robinson (Queen's University Belfast)
17:30	**The Effect of Climate Change on Flooding in Cork City** » Jennifer Kirkpatrick (National University of Ireland, Galway), Agnieszka I. Olbert (National University of Ireland, Galway)
17:45	**Suspended and Bed Sediment Transport in the River Bandon, Ireland** » Laurence Lomasney (Cork Institute of Technology), Joe Harrington (Cork Institute of Technology)
16:30	**Session 19 Concrete Technology 2** *L248* Chaired by: Niall Holmes
16:30	**Temperature and admixtures effects on maturity of GGBS mortar for Precast Industry** » Chaaruchandra Korde (Trinity College Dublin), Matthew Cruickshank (Trinity College Dublin), Roger West (Trinity College Dublin), John Reddy (Ecocem)

16:45	**A study on the impact of a controlled permeability form liner, polymer resin, calcium aluminate cement and heat treatment on the permeability of an ultra-high-performance geopolymer concrete cladding panel** » Roisin Hyde (Queens University Belfast, School of Natural & Built Environment), Roger West (Trinity College Dublin), Sreejith Nanukuttan (Queen's University Belfast)
17:00	**Design and manufacture of a precast PCM enhanced concrete cladding panel for full scale performance monitoring** » Dervilla Niall (Trinity College Dublin), Oliver Kinnane (University College Dublin), Roger West (Trinity College Dublin)
17:15	**Finite Element Analysis of Thin Precast Concrete Sandwich Panels** » Richard O'Hegarty (University College Dublin), Oliver Kinnane (University College Dublin), Roger West (Trinity College Dublin)
17:30	**Ultimate Capacity and deflection behaviour of BFRP prestressed SCC beam** » Philip Crossett (Queen's University Belfast), Su Taylor (Queen's University Belfast), Mohammed Sonebi (Queen's University Belfast), Liberato Ferrara (Politechnico di Milano)
17:45	**Numerical Modelling of Conventional and Ultra High Performance Fibre Reinforced Concrete Beams and Slabs** » William Wilson (Institute of Technology Sligo), Tomas O'Flaherty (IT Sligo)
16:30	**Session 20 TRUSS-ITN Workshop: 4** *L247* Chaired by: Eugene OBrien
16:30	**Nothing On the Road Axle Detection System Using Direct Strain Measurements – A Case Study** » Farhad Huseynov (Full Scale Dynamics Limited), Eugene O'Brien (University College Dublin), James Brownjohn (University of Exeter), David Hester (Queen's University Belfast), Karen Faulkner (The University of Exeter)

16:45	**Finding the influence line for a bridge based on random traffic and field measurements on site** » Eugene O'Brien (University College Dublin), Franck Schoefs (Université de Nantes), Barbara Heitner (Phimeca Engineering), Guillaume Causse (Phimeca Engineering), Thierry YALAMAS (Phimeca Engineering)
17:00	**A machine learning classifier for condition monitoring and damage detection of bridge infrastructure** » matteo vagnoli (The University of Nottingham), Rasa Remenyte-Prescott (The University of Nottingham), John Andrews (The University of Nottingham)
17:15	**Vibration-Based, Output-Only Damage Identification of Bridge under Vehicle Induced Excitation** » John Moughty (Universitat Politècnica de Catalunya), Joan Ramon Casas (Universitat Politècnica de Catalunya)
17:30	**Damage Assessment of the Built Infrastructure using Smartphones** » Michael O'Byrne (University College Dublin), Bidisha Ghosh (Tri), Franck Schoefs (Université de Nantes), Vikram Pakrashi (U)
17:45	**Repair and Conservation of The Four Courts Dome, Dublin.** » Marwa Aly (TCD), Sara Pavia (Trinity College Dublin)
19:30	**Conference Dinner** *Radisson Blu*

Thursday, 30th August

08:45	**KN Pedagog Keynote Pedagogy** *A&L Goodbody Theatre*
09:15	**KN Env Keynote Environmental** *A&L Goodbody Theatre*
09:45	**KN Geotech Keynote Geoetechnical** *A&L Goodbody Theatre*

10:20	**Session 21 Structural Engineering - Timber** *L246* Chaired by: Niall Holmes
10:20	**Experimental investigation of the serviceability behaviour of a cross laminated timber floor** » Caitríona Uí Chúláin (National University of Ireland, Galway), Annette Harte (National University of Ireland, Galway)
10:35	**Behaviour of cross-laminated timber wall systems under monotonic loading** » Claire Hughes (Queen's University Belfast), Danny McPolin (Queen's University Belfast), Patrick McGetrick (Queen's University Belfast), Daniel McCrum (University College Dublin/School of Civil Engineering)
10:50	**Exploring a sustainable alternative for addressing the Irish Housing Crisis using Bamboo** » Chaaruchandra Korde (Trinity College Dublin), Matthew Cruickshank (Trinity College Dublin), Roger West (Trinity College Dublin)
10:20	**Session 22 ITRN2018 - Transport, Environment & Sustainability** *L249* Chaired by: Salissou Moutari
10:20	**Fleet Emissions Control (FEC) Framework for Passenger Cars** » Md. Saniul ALAM (Trinity College Dublin), Aonghus McNabola (Trinity College Dublin)
10:35	**Framing Energy Information: The Potential Role of Running Cost Information in New Car Sales** » William Brazil (Trinity College Dublin), Steffen Kallbekken (Cicero), Håkon Sælen (Cicero), James Carroll (Trinity College Dublin)
10:50	**Modelling NOx concentrations and emissions from road transport at street level in Dublin City** » Shreya Dey (Trinity College Dublin), Brian Caulfield (Trinity College Dublin), Bidisha Ghosh (Trinity College Dublin)

10:20	**Session 23 Environmental Engineering - Hydraulics, Water Quality and Supply** *L243* Chaired by:
10:20	**Multiphase numerical modelling of tangential inlet vortex drop shaft structures** » Sean Mulligan (College of Engineering & Informatics and Ryan institute, NUI Galway), Théo Bonfils (Département Hydraulique Urbaine, Ecole Nationale du Genie de l'Eau et de l'Environnement de Strasbourg (ENGEES) , 1 Quai Koch, 67070 Strasbourg, France), Colin O'Neill (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland), Benjamin Gonzalez (Département Hydraulique Urbaine, Ecole Nationale du Genie de l'Eau et de l'Environnement de Strasbourg (ENGEES) , 1 Quai Koch, 67070 Strasbourg, France), Alan Carty (College of Engineering and Informatics, National University of Ireland Galway, University Road, Galway, Ireland), Eoghan Clifford (College of Engineering & Informatics and Ryan institute, NUI Galway), Stephen Nash (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland)
10:35	**Assessment of potential water supply management Scenarios in Dublin using the Water Evaluation and Planning (WEAP21) Model** » Mohammed Yassin (Dublin Institute of Technology), Ahmed Nasr (Dublin Institute of Technology)
10:50	**Remote Sensing of Surface Waters in Ireland** » Anuj Agarwal (National University of Ireland, Galway), Agnieszka I. Olbert (National University of Ireland, Galway), Adelaide Taveneau (University of Toulon)
10:20	**Session 24 Geotechnical Engineering 2** *A&L Goodbody Theatre* Chaired by: Lin Zhang
10:20	**Embankment construction over soft ground in Galway, Ireland** » Graham Barton (CH2M a Jacobs Company)

10:35	**Blackpool South Strategy project - analysis of pipe-jacking records** » Kevin O'Dwyer (National University of Ireland, Galway and Ward and Burke Construction Limited, UK), Bryan McCabe (National University of Ireland, Galway), Brian B. Sheil (University of Oxford), David P. Hernon (Ward and Burke Construction Limited, UK)
10:50	**Experimental investigation of undrained shear behavior of peat** » Di Wang (University College Cork), Eileen McCarthy (University College Cork), Romain Rodrigues De Amorim (Ecole Normale Supérieure Paris-Saclay), Zili Li (University College Cork)
10:20	**Session 25 New Frontiers - Marine Systems** *L248* Chaired by: Paul Cahill
10:20	**Design of buildings and structures near the sea: influence of the wave overtopping forces** » Phoebe Watson (Arup Consulting Engineers, Dublin), Siegmund Nuyts (University College Cork), Jimmy Murphy (University College Cork), Susana Lizondo (Arup Consulting Engineers, Dublin), Ioannis Avgeris (Arup Consulting Engineers, Dublin)
10:35	**Development of an open-source simulation tool for mooring systems** » Lin Chen (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Biswajit Basu (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin)
10:50	**Double multiple stream-tube model for high solidity vertical axis tidal turbines** » Brian Mannion (National University of Ireland, Galway), Stephen Nash (National University of Ireland, Galway), Sean Leen (National University of Ireland, Galway)
11:00	**Coffee Break**
11:30	**Session 26 Structural Engineering - Renewable Energy** *L246* Chaired by:

11:30	**The pressurised immersion of hydrophobically coated composite materials with marine renewable energy applications** » Michael Walls (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland), Heather Connor (School of Mechanical and Materials Engineering, University College Dublin, Ireland), Jamie Goggins (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland), Denis Dowling (University College Dublin)
11:45	**Static and fatigue tensile testing of pressurised immersion aged, hydrophobically coated, glass fibre composite material with marine renewable energy applications.** » Michael Walls (College of Engineering & Informatics, National University of Ireland Galway, Ireland), Heather Connor (School of Mechanical and Materials Engineering, University College Dublin, Ireland), Denis Dowling (University College Dublin), Jamie Goggins (Civil Engineering, College of Engineering & Informatics, National University of Ireland Galway, Ireland)
12:00	**Design of Offshore Wind Turbine Tower Using Composite Materials** » Vesna Jaksic (Cork Institute of Technology), Aoife White (Deloitte), Michael O'sullivan (John Sisk & Sons), Conchúr ó Brádaigh (The University of Edinburgh)
12:15	**Computational fluid dynamics modelling for marine renewable energy applications** » William Finnegan (National University of Ireland, Galway), Redaun Atan (National University of Ireland, Galway), Tomas Flanagan (EireComposites), Jamie Goggins (Na)

12:30	**An investigation into hydrodynamic effects on vortex drop structures liners using fluid-structure interaction techniques** » Alan Carty (College of Engineering & Informatics and Ryan institute, NUI Galway), Sean Mulligan (College of Engineering & Informatics and Ryan institute, NUI Galway), Eoghan Clifford (College of Engineering & Informatics and Ryan institute, NUI Galway), Stephen Nash (National University of Ireland, Galway), Théo Bonfils (Département Hydraulique Urbaine, Ecole Nationale du Genie de l'Eau et de l'Environnement de Strasbourg (ENGEES) , 1 Quai Koch, 67070 Strasbourg, France), Benjamin Gonzalez (Département Hydraulique Urbaine, Ecole Nationale du Genie de l'Eau et de l'Environnement de Strasbourg (ENGEES) , 1 Quai Koch, 67070 Strasbourg, France)
11:30	**Session 27 ITRN2018 - Urban Cycling** *L249* Chaired by:
11:30	**Sentiment analysis and comparison of public bike sharing schemes in different geographical regions** » Brian Lee (Institute of Technology Blanchardstown), Markus Hofmann (Institute of Technology Blanchardstown)
11:45	**The Role of Weather Conditions on Cycle Counter Observations in Dublin** » William Brazil (Trinity College Dublin)
12:00	**An Investigation of Factors that Encourage Female Cycling** » William Brazil (Trinity College Dublin), James Carroll (Trinity College Dublin), Eleanor Denny (Trinity College Dublin)
12:15	**[Topic: Safety in Transportation] Measurement of Cycling Risk to underpin Quantitative Policy** » suzanne meade (Edinburgh Napier University), Kathryn Stewart (Edinburgh Napier University), Michael Maher (Unversity College London)
11:30	**Session 28 Bridge Engineering - Loading and Assessment** *L247* Chaired by: Kieran Ruane

11:30	**A DIRECT INTEGRATION APPROACH TO DRIVE-BY DAMAGE MONITORING OF RAILWAY TRACKS** » Yifei Ren (University College Dublin), Jennifer Keenahan (University College Dublin), Eugene O'Brien (University College Dublin), Paraic Quirke (Murphy Surveys Ltd.), Cathal Bowe (Irish Rail)
11:45	**Railway Bridge Self-Assessment Using Real-Time Loading Data** » Róisín Donnelly (Roughan & O'Donovan Innovative Solutions), Lorcan Connolly (Roughan & O'Donovan Innovative Solutions), Alan O'Connor (Roughan & O'Donovan Innovative Solutions), Luigi Rocco (Network Rail)
12:00	**Application of Monitoring Data to Risk Assessment of Bridges** » Marko Duranovic (Roughan & O'Donovan Innovative Solutions), Lorcan Connolly (Roughan & O'Donovan Innovative Solutions), Alan O'Connor (Roughan & O'Donovan Innovative Solutions), Cathal Bowe (Irish Rail)
12:15	**Estimation of traffic load effects on Forth Road Bridge using camera measurements** » E. Alexandra Micu (University College Dublin), Ross McKinstray (Amey Consulting), Ewan Angus (Amey Consulting), Eugene O'Brien (University College Dublin), Abdollah Malekjafarian (University College Dublin), Myra Lydon (Queen's University Belfast)
12:30	**Bridge Health Monitoring Using an Acceleration-Based Bridge Weigh-in-Motion System** » Daniel McCrum (University College Dublin/School of Civil Engineering), Eugene O'Brien (University College Dublin), Muhammad Arslan Khan (University College Dublin/School of Civil Engineering)
11:30	**Session 29 Concrete Technology 3** *A&L Goodbody Theatre* Chaired by: Roger West
11:30	**Concrete Research in Ireland 2015 to 2017** » Roger West (Trinity College Dublin), Gurbir Kaur (Trinity College Dublin)

11:45	**Investigation into the correlation between curing temperature and compressive strength gain of concrete** » Christian Killeen (Department of Civil Engineering, National University of Ireland, Galway, Galway, Ireland), Jamie Goggins (Department of Civil Engineering, National University of Ireland, Galway, Galway, Ireland), Magdalena Hajdukiewicz (Department of Civil Engineering, National University of Ireland, Galway, Galway, Ireland)
12:00	**Influence of Concrete Resistance on Electrochemical Chloride Extraction** » Sean Bond (Dublin Institute of Technology), Niall Holmes (Dublin Institute of Technology), Brian Norton (Dublin Institute of Technology)
12:15	**A review into the performance of steel reinforced concrete exposed to both carbon dioxide and chloride environments** » YUJIA ZHENG (Queen's University Belfast), Sreejith Nanukuttan (Queen's University Belfast), Danny McPolin (Queen's University Belfast)
12:30	**A simplified mix design procedure for geopolymer cement mortars based on metakaolin and industrial waste products activated with potassium silicate** » Luke oakes (Ulster University), Bryan Magee (Ulster University), Phillip Millar (Ulster University), Allistair Mcilhagger (Ulster University), Mark Mccartney (Ulster University)
11:30	**Session 30 Geotechnical Engineering 3** *L248* Chaired by: David Igoe
11:30	**Laboratory Push-In Resistance Tests (PIRT) in a stabilised pseudo-fibrous peat** » Iarfhlaith ó Conchubhair (Ryan Hanley Consulting Engineers), Bryan McCabe (National University of Ireland, Galway), Martin J. Timoney (Arup Consulting Engineers, Dublin)

11:45	**The Use of Near Surface Geophysical Methods for Assessing the Condition of Transport Infrastructure** » Jessica Holmes (Queen's University Belfast), Shane Donohue (University College Dublin), Jonathan Chambers (BGS), Sebastian Uhlemann (BGS), Paul Wilkinson (BGS), Philip Meldrum (BGS), Russell Swift (BGS), David Huntley (CGS), Peter Bobrowsky (CGS)
12:00	**Development of Numerical Method for Eurocode 7 Pile Design using Cone Penetration Tests** » Juliana de Oliveira Vasconcelos (Gavin & Doherty Geosolutions (GDG)), John O'Donovan (Gavin & Doherty Geosolutions (GDG)), Shane Donohue (University College Dublin), Paul Doherty (Gavin & Doherty Geosolutions (GDG))
12:15	**Geotechnical and leaching behaviour of a stabilized contaminated Irish sediment** » Wanlu Zhang (National University of Ireland, Galway and Hohai University, Nanjing, China), Bryan McCabe (National University of Ireland, Galway), Liam Morrison (National University of Ireland, Galway)
12:30	**Application of Machine Learning in Geotechnics** » Negin Yousefpour (Arup), Sogol Fallah (Arup)
12:50	**Lunch Break**
14:00	**Session 31 Concrete Technology 4** *L248* Chaired by: Tomas O'Flaherty
14:00	**An Assessment of the Thermal Storage Capacity of Hemp-Lime Using the Transient Energy Ratio Method** » Aidan Reilly (University College Dublin), Oliver Kinnane (University College Dublin)
14:15	**Introducing a new cement hydration and microstructure model** » Niall Holmes (Dublin Institute of Technology), Anselm Griffin (Dublin Institute of Technology), Bernard Enright (Dublin Institute of Technology), Denis Killiher (University College Cork)

14:30	**Ecostructure: Concrete design for improved marine biodiversity** » Atteyeh S.Natanzi (University College Dublin), Ciaran McNally (University College Dublin)
14:00	**Session 32 New Frontiers - New Designs 1** *L246* Chaired by: Michael O'Byrne
14:00	**Optimisation of Tidal Turbine Arrays** » Anna phoenix (National University of Ireland, Galway), Stephen Nash (National University of Ireland, Galway)
14:15	**Challenges modelling near field thermal plumes in the built environment** » Paul Miguel Bernardo (Arup), Reamonn McReamonn (Arup), Scott Flynn (Arup Consulting Engineers)
14:30	**The Further Development of Average Least Dimension and the Use of Average Greatest Dimension in Surface Dressing Design.** » Brian Mulry (PMS Pavement Management Services Ltd), Alan Boyle (PMS Pavement Management Services Ltd.), Tom Casey (Transport Infrastructure Ireland)
14:45	**Irish Sod Houses** » Ross O'Donovan (University College Cork), Michael Murphy (University College Cork), Christian Helling (Gebel and Helling Conservation Ltd)
15:00	**CFD Modelling of Helicopter Downwash and Assessment of its impact on Pedestrian Comfort** » Paul Miguel Bernardo (Arup), Reamonn McReamonn (Arup), Philip Cardiff (ucd), Jennifer Keenahan (University College Dublin), Patrick Young (ucd)
14:00	**Session 33 Environmental Engineering - Radon Mitigation and Water/Wastewater Treatment** *A&L Goodbody Theatre* Chaired by:

14:00	**Development of a test tank to investigate the pressure field extension for specified granular fill materials for radon mitigation by soil depressurisation systems** » Conor Croxford (National University of Ireland, Galway), Le Chi Hung (National University of Ireland, Galway), Mark Foley (National University of Ireland, Galway), Jamie Goggins (National University of Ireland, Galway)
14:15	**Radon mitigation in Spanish pilot house: results overview and measurement plan** » Marta Fuente (National University of Ireland, Galway), Le Chi Hung (National University of Ireland, Galway), Jamie Goggins (National University of Ireland, Galway), Mark Foley (National University of Ireland, Galway)
14:30	**Investigation into IASBR system efficiency for treatment of dairy processing wastewater** » Peter Leonard (National University of Ireland, Galway), Emma Tarpey (National University of Ireland, Galway), William Finnegan (National University of Ireland, Galway), Xinmin Zhan (National University of Ireland, Galway)
14:45	**The use of Streaming Current Monitors to optimise coagulant dosage in Water Treatment Plants** » Diarmuid Dunne (Galway-Mayo Institute of Technology), Shane Newell (Galway-Mayo Institute of Technology)
14:00	**Session 34 Pedagogy in Civil Engineering 2** *L244* Chaired by: Ciarán Hanley
14:00	**Integrating critical thinking in a Civil Engineering module** » Abdollah Malekjafarian (University College Dublin), Aoife Ahern (University College Dublin)
14:15	**The Successful Development of a Positive Health and Safety Culture in the Students of a Civil Engineering Department** » Mary Moloney (Cork Institute of Technology, Ireland), Des Walsh (Cork Institute of Technology)

14:30	**Aligning Learning Outcomes to Improve Communication and Learning Skills in an Interdisciplinary Problem-Based Learning Environment** » Jennifer Keenahan (University College Dublin), Daniel McCrum (University College Dublin/School of Civil Engineering)
14:45	**Using Peer Instruction in the Teaching of Civil Engineering Hydraulics** » Stephen Nash (National University of Ireland, Galway)
14:00	**Session 35 Bridge Engineering - Design and Construction** *L247* Chaired by: Des Walsh
14:00	**Laboratory based experimental investigation of patch based piezoelectric energy harvesters for civil infrastructure** » Paul Cahill (University College Cork), Alan Mathewson (Tyndall National Institute), Vikram Pakrashi (University College Dublin)
14:15	**FlexiArch - Revolutionises Arch Construction** » Adrian Long (Queen's University Belfast), Danny McPolin (Queen's University Belfast), Sreejith Nanukuttan (Queen's University Belfast), Abhey Gupta (Macrete)
14:30	**FlexiArch: Concept to case histories** » Danny McPolin (Queen's University Belfast), Adrian Long (Queen's University Belfast), Abhey Gupta (Macrete), John Cook (PB)
14:00	**Session 36 New Frontiers - New Designs 2** *L249* Chaired by:
14:00	**The thermo-hygrometric environment in Ireland's cathedrals** » Christopher Shiell (Trinity College Dublin), Roger West (Trinity College Dublin)
14:15	**Effectiveness of draught reduction measures at improving building air-tightness** » Rosanne Walker (Trinity College Dublin), Sara Pavia (Trinity College Dublin)

14:30	**Analysis of the effectiveness of mechanical ventilation in controlling humidity in sealed dwellings** » Niti Saini (Trinity College Dublin), Roger West (Trinity College Dublin), Pat Shiel (Trinity College Dublin)
14:45	**Development of a Flexible Multibody Dynamics Wind Turbine Model following Kane's Method** » Saptarshi Sarkar (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Breiffni Fitzgerald (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin), Biswajit Basu (Department of Civil, Structural and Environmental Engineering, Trinity College, University of Dublin)
15:00	**Coffee Break**
15:30	**Interactive Discussion** *A&L Goodbody Theatre*
16:15	**Award Presentation** *A&L Goodbody Theatre*
16:30	**Conference Close**