

Concrete Institute of Australia's Biennial National Conference 2023
SUNDAY 10 September 2023 - WEDNESDAY 13 September 2023
Perth Convention Exhibition Centre

Monday, 11 September 2023

07:30	Registration Open				07:30
Plenary Room (Meeting Rooms 1-3)					
08:45 - 09:15	Opening Ceremony & Welcome to Country				08:45 - 09:15
09:15 - 10:00	Keynote Presentation Future concrete solutions: Improving resilience and sustainability in the built environment. Romilly MADEW, Engineers Australia				09:15 - 10:00
10:00 - 10:30	MORNING TEA & EXHIBITION BREAK				10:00 - 10:30
Room	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 8	Room
Session	Session 1A: Sustainability	Session 1B: Concrete Materials	Session 1C: Concrete Design	Session 1D: Case Studies	Session
10:30 - 10:50	54: Options and Barriers to the Use of Sustainable Concrete David MCDONALD	135: Characterisations of mine tailings to explore their potential beneficiation into cementitious materials Zuobang YAO	161: Increase in longitudinal steel reinforcement to account for shear in RC beam design to AS3600 Sorn VIMONSATIT	226: Modern Methods of Construction-HIEX-MLC Case Study Shan SHANMUGANANTHAKUMAR, Atreyu DE LACY, Troy AULD	10:30 - 10:50
10:50 - 11:10	108: The circular economy: implications for bridges John HILTON	84: Long-term durability assessment of concrete with finer cements Ion DUMITRU	29: Economic and Environmental Assessment of Post-tensioned Composite Slab Systems: a Comparative Study Phuoc Tho DINH, Jeung-Hwan DOH	CROSS-AUS: Towards Safer Concrete Structures John WOODSIDE	10:50 - 11:10
11:10 - 11:30		229: Effect of Lithium Slag on the Durability Performance of Concrete Md. Tanvir Ehsan AMIN	227: Punching Shear design to AS5100.5:2017 Amendment 2 Peter STATTON	152: Cathodic Protection Installation Within an Operational Container Terminal – Brotherson Dock Life Extension: A Case Study Oliver GASIOR, Blane MCGUINNESS	11:10 - 11:30
11:30 - 11:50	251: Utilising Innovative Admixtures to Treat Returned Fresh Concrete Luke CURRAN	80: Opportunities and challenges for coal combustion products with a Circular Economy Craig HEIDRICH	60: The Impact of Confinement and Time Effects on the Calculated Squash Load of Concrete Columns Reinforced with High Strength Steels Anthony NG	148: Design of Electrified Railway Viaducts Satyajit DATAR, James RAJESH	11:30 - 11:50
11:50 - 12:10	150: Design and Detailing for Resilience and Sustainability of Concrete Structures Scott MUNTER	48: study On the Properties Of Concrete Using Large Amounts Of Fly Ash And Clinker Fine Aggregate Tomoya OJIMA	274: Joint Design and Construction for Industrial Ground Floors Arslan AWAN	279: Using nanotechnology to improve concrete admixture for a lower carbon footprint Nam LE	11:50 - 12:10
12:10 - 12:30	191: Recycled Concrete Aggregate as a Sustainable Construction Material: Engineering and Environmental Consideration Youli LIN	236: The use of magnesium oxide as an additive in concrete John TUXWORTH	312: Reducing carbon emissions in 3D concrete printing Arun ARUNOTHAYAN	239: Concrete Modular Systems for High-rise Buildings - the best practice Priyan MENDIS	12:10 - 12:30

12:30 - 13:30	LUNCH & EXHIBITION BREAK				12:30 - 13:30
Room	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 8	Room
Session	Session 2A: Sustainability	Session 2B: Concrete Materials	Session 2C: Concrete Design	Session 2D: Repair and Retrofit	Session
13:30 - 13:50	79: Low Carbon Concrete Pavement innovation: Coal Combustion Products, rigid and flexible pavement application Craig HEIDRICH	116: Dynamic response of rubberized F-shape barrier subjected to lateral impact Xin LYU	111: Safety in Design: How the concrete designer can stay afloat in a sea of legal & commercial & reputational risk. Geoff FLETCHER	286: Hay St Art Deco Heritage Concrete; Project Enablers of Restoration and Adaptive Re-use Anthea AIREY	13:30 - 13:50
13:50 - 14:10	319: Enabling beneficial use of DBS in concrete application under Circular Economy Mauricio OLIVARES	51: Corrosion Behavior of Steel In Low Calcium Fly Ash Geopolymer Concrete After 10 Years Severe Exposure In Buried Environment Didar CHEEMA	66: How do we teach undergraduates and graduates to design concrete John WOODSIDE	133: Assessing the carbon footprint of concrete repair Greg VAN ROOYEN	13:50 - 14:10
14:10 - 14:30	238: Decarbonisation of Concrete Industry through Innovative Technologies Priyan MENDIS	202: Effect of end-of-life tyre shred content on acoustic and mechanical properties of rubberized concrete Roshan JAYATHILAKAGE	142: Aspects of modelling and design of tall reinforced concrete buildings in seismic areas according to Eurocode Alexander TRAYKOV	67: Electrochemical Chloride Extraction: Re-injecting Sustainability into the Australian Market Troy PALMER	14:10 - 14:30
14:30 - 14:50	156: Exploring the Potential for Developing Economical and Sustainable Cemented Paste Backfill using Mine Wastes Iman AL-DAMAD, Taehwan KIM	215: Concrete incorporating waste oyster shells for artificial reefs Madhwanthi RUPASINGHE	91: Design of fasteners under fatigue loading in Australia Tilak POKHAREL	43: Factors Causing Premature Peeling of Repair Materials and Key Considerations for Appropriate Repair Methods of Concrete Pavements Yuya KATO	14:30 - 14:50
14:50 - 15:10	176: Mineral and crystallographic study of aluminosilicate gel in lithium slag geopolymer Usman JAVED	Water Leakage in Concrete Balconies & Roof tops – Do we need to treat concrete as the primary water resisting element? Shan KUMAR	61: Testing Program to evaluate seismic performance of ETA-approved mechanical anchors used in concrete filled metal deck applications Curtis FOGELBERG	110: Blast strengthening of an historic congress building John TUXWORTH	14:50 - 15:10

15:10 - 15:40	AFTERNOON TEA & EXHIBITION BREAK				15:10 - 15:40
Meeting Rooms 1-2					
15:40 - 16:10	Invited Speaker Session 317: How Standards Are Rising to the Digitisation of the Construction World Adam STINGEMORE, Standards Australia				15:40 - 16:10
Room	Meeting Room 1-2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 3A: Alkali Activated and Geopolymer	Session 3B: Durability	Session 3C: Standards & Codes	Session 3D: Digital Innovation	Session
16:10 - 16:30	35: Impact Performance of BFRP-reinforced Precast Segmental Beams Made of Geopolymer and Portland Cement Concrete Duong TRAN	128: New Northbound Bridge Over Shoalhaven River at Nowra - Concrete Design Peter BOESCH	102: Design for Shear and Torsion Douglas JENKINS	182: Experimental Insight on Flow Induced Particle Migration During Concrete Pumping Xiangyu XIE, Xuemei LIU	16:10 - 16:30
16:30 - 16:50	24: Experimental Study on Waste Glass Cullet as Fine Aggregates in Geopolymer Concrete Hong Lich DINH	144: Impact on Durability of Carbon Dioxide used as a Concrete Admixture Dan ROWLEY	257: Design guidelines for the serviceability limit state of composite steel-concrete structures Gianluca RANZI	72: Current research on 3D concrete printing technology and pilot construction projects in Thailand Ganchai TANAPORNRAWEEKIT	16:30 - 16:50
16:50 - 17:10	214: Engineering properties of EFC geopolymer for tunneling applications Ivan CLARKE	<i>(sponsored by Fosroc)</i> 155: Using Carbon Nanotube enriched liquid additive technology to improve concrete durability and design life, contributing as a sustainable solution. Tasha EAGLE	92: Durability of post- installed fasteners Tilak POKHAREL	70: Improve CNN-based Crack Segmentation Using Weighting Strategies Quang Du NGUYEN	16:50 - 17:10
17:10 - 17:30	12: Hydrolytic stability of geopolymer: A review Morteza TAHMASEBI YAMCHELOU	250: Comparing concrete blocks exposed to 20 years of real environment with laboratory experiments Mickael SAILLIO	27: Assessment of International Code Practice on the Contribution of Post-tensioning Towards Integrity Reinforcement Antonio HIRSCH BLANCO	87: Potential Energy Saving by Using 3D Printed Lightweight Concrete Walls of a House in Australia Alireza KASHANI	17:10 - 17:30
17:30 - 17:50	6: The Performance Evaluation of Alkali Activated Materials (AAMs) Eddy Mohd Fairuz MOHD YUSSLEE	47: Mechanical And Durability Behaviour Of Seawater And Sea-sand Ultra-high Performance Concrete Under Wetting-drying Cycles. Shameer SALEH	55: Footpath and Cycleway (Non-Highway Pavements) – Best Practice Design and Construction Methods Kipp RICHTER	179: Digitalisation of reinforcing steel supply chain in construction Lee BRANKLEY, Ladin CAMCI	17:30 - 17:50
18:00	WELCOME RECEPTION				18:00

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Tuesday, 12 September 2023

07:30	Registration Open				07:30
	Meeting Room 8				
07:30 - 08:30	<p>5 CIA NEXGen panellists representing the design, construction, supply, client, and academic/research sectors will discuss how they found their pathway, what they love about concrete, and their expectations for the concrete industry into the future.</p> <p align="center">CIA NEXGen Forum - the future of concrete in Australia <i>(Sponsored by SmartCrete)</i></p>				07:30 - 08:30
08:30	Day Briefing & Introduction				08:30
	Plenary Room (Meeting Rooms 1-3)				
08:45 - 09:30	<p>Keynote Presentation 314: Bringing circular economy principles into the mainstream design, construction & decommissioning practices for concrete structures Dr.ir. Agnieszka Bigaj-van Vliet (Netherlands)</p>				08:45 - 09:30
09:30 - 10:15	<p>Keynote Presentation 315: Conservation and interventions of concrete structures and international standardization Professor Tamon UEDA (Japan)</p>				09:30 - 10:15
10:15 - 10:45	MORNING TEA & EXHIBITION BREAK				10:15 - 10:45
Room	Meeting Room 1-2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 4A: Sustainability	Session 4B: Concrete Materials	Session 4C: Concrete Properties	Session 4D: Case Studies	Session
10:45 - 11:05	211: Review of the embodied carbon of Australian concreting materials Indira VASIKOVA	313: Use of Composites as Reinforcement to Concrete Antonio NANNI	201: Effect of alkali-activator solution-to-binder ratio on fresh and hardened mortar characteristics of low calcium geopolymer mortar for concrete sewer rehabilitation Piumika Waswani ARIYADASA	162: Reuse of a 50-year-old building core in a new 50 storey concrete building development Daksh BAWEJA	10:45 - 11:05
11:05 - 11:25	26: Carbonation and its role in improving the sustainability of concrete production Marie Joshua TAPAS	25: Limestone Calcined Clay Cement (LC3): A review of properties and performance in comparison to conventional binder systems Paul THOMAS	134: Concrete heat of hydration – Issues with use of C766 for Australian cements, use of multidimensional thermal modelling and value of using of cooling pipes. Inam KHAN	31: mount Street Bridge Cable Stay Replacement Peter VERBUYST	11:05 - 11:25
11:25 - 11:45	38: Australian Clays as a Supplementary Cementitious Material Emily CANDIA	56: Investigation of admixtures and water uptake of lightweight aggregate effect on the rheological behaviour of mortar mixes for 3D printing Carolina MACIEL RANGEL	180: CCAA Data Collecting Program for Autogenous Shrinkage in Concrete - How a Quality and Realistic Data Collection is being Produced for Australian Concretes Jason NAIRN	105: Case Study - Rawdon Island Bridge Remediation Project Jarrad DUFFY, Garon DEUTSCH	11:25 - 11:45

11:45 - 12:05	45: study On The Properties Of Mortar Using Ordinary Portland Cement Clinker As Fine Aggregate Tayuto KIKUCHI	120: Mechanical properties and crackclosing performance of shape memory alloy (SMA) fibre-reinforced concrete Panwei DU	126: GRAPHENE OXIDE INCORPORATED SMART CONCRETE: ITS PERFORMANCE AND APPLICABILITY IN CONCRETE APPLICATIONS Isuri FONSEKA	231: Armadale Road to North Lake Road Bridge Project James DE BURGH	11:45 - 12:05
12:05 - 12:25	196: Continuing development of sustainable supplementary cementitious materials from lithium aluminosilicates Bob MUNN	32: Thermolectric concrete and its potential as a new energy harvesting technology Carlos ZAPATA	249: Long term effects of increased limestone mineral additions on compressive strength of concrete Tom BENN	109: How to select the most suitable concrete coating solutions in the water and wastewater industry Jorge MELLADO	12:05 - 12:25
12:25 - 12:45	172: Design of a CO2-reduced 3D concrete mixture using circular (clay-based) building materials Naomi VAN HIERDEN	190: Chloride diffusion resistance of limestone calcined clay cement (LC3) concrete based on calcined clay reactivity Quang Dieu NGUYEN	75: Developing a Chloride Penetration Model for Recycled Aggregate Concrete Using the Automatic Regression Technique Emadaldin MOHAMMADI GOLAFSHANI	148: Design of Electrified Railway Viaducts Satyajit DATAR, James RAJESH	12:25 - 12:45
12:45 - 13:30	LUNCH & EXHIBITION BREAK				12:45 - 13:30
Room	Meeting Room 1-2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 5A: Sustainability	Session 5B: Durability	Session 5C: Concrete Materials & Properties	Session 5D: Precast, Prefabricated and Modular Concrete	Session
13:30 - 13:50	183: Sustainable Concrete for Footpaths on Glenroy Level Crossing Project Tim WARREN, Addison KAYE	106: Formal Durability Planning: Past, Present and Future Rodney PAULL	136: Investigations on water penetration and autogenous healing of cracked concrete Reza HASSANI	160: Designing prefabricated concrete cladding and pavers for the Sydney Opera House 2007-2022 John WOODSIDE	13:30 - 13:50
13:50 - 14:10	219: Hemp fibres: a novel sustainable curing agent for concrete Rahnum Tasnuva NAZMUL	11: Adequacy of waterproofing methods and concrete cover against chloride-induced corrosion to find service life of the slab Saugat HUMAGAIN	234: Influence of metakaolin and marble powder as partial replacement of cement on some properties of self-compacting mortar Sorn VIMONSATIT	256: Water proofing for large prestressed precast potable water concrete tanks Md. Zayedur RAHMAN	13:50 - 14:10
14:10 - 14:30	232: Recycled fibres in textile-reinforced concrete combined with building component activation Vanessa OVERHAGE	85: A new approach to building more durable structures. Alireza BIPARVA	266: Opportunities in Australia for the use of coal combustion products in construction materials Weena LOKUGE	40: The Effect of Heat-Accelerated Curing on the Durability of Precast Concrete Stephen RAE	14:10 - 14:30
14:30 - 14:50	242: Premixed Concrete Made with Photovoltaic Derived Glass Fines (SolarCrete) Massoud SOFI	273: Catalyst Technology for Increasing the Durability of Concrete Benjamin RAMSAY	17: Life-cycle assessment of sustainable concrete containing recycled waste materials Alvaro AMEZQUITA VACA	261: Innovative solutions for moment resisting precast concrete connections for framed structures. Sid DAHER	14:30 - 14:50

14:50 - 15:10	117: Improved Sustainability in Bridge Design through the use of Factory Produced Pretensioned, Prestressed Concrete Girder and Beam Elements Duncan FRENCH, Zachariah ARNEIL	14: From Transparency To Impact: Findings From The Development Of Australia's First Carbon Neutral Ready-mix Concrete And Environmental Product Declaration Evan SMITH	171: Application of particle packing theory on mortar and the effect on mortar properties Zhe SONG	112: Design and testing of flat slab construction incorporating innovative recycled plastic ROBOVOID void formers Jessey LEE	14:50 - 15:10
15:10 - 15:40	AFTERNOON TEA & EXHIBITION BREAK				15:10 - 15:40
Meeting Rooms 1-2					
15:40 - 16:10	Invited Speaker Session 318: Resilient design of RC Structures in Australia and other regions of lower seismicity Emeritus Professor John Wilson (Swinburne University)				15:40 - 16:10
Room	Meeting Room 1-2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 6A: Alkali Activated	Session 6B: Durability	Session 6C: Standards & Codes	Session 6D: Seismic	Session
16:10 - 16:30	280: Mode I fracture energy of fly ash-based geopolymer concrete Trijon KARMOKAR	71: Durability Loss in Concrete Due to ASRDEF, The Role of Aggregate Reactivity in Deleterious Def Liam MARTIN	233: Creating Reliability in concrete structures—the case for using execution plans Marton MAROSSZEKY	124: Low-Velocity Impact Resistance of Graphene Oxide (GO) Incorporated Concrete Composite Beams Isuri FONSEKA	16:10 - 16:30
16:30 - 16:50	39: Foamed geopolymer for wastewater treatment: an efficient solution for heavy metal Zn(II) ions removal Ailar HAJIMOHAMMADI	163: Guidelines to prevent expansive delayed ettringite formation in Australian concrete structures Yogesh Kumar RAMU	154: CCAA Cement Proficiency Testing Program - An Overview of How the Industry has Improved their Testing Proficiency Jason NAIRN	63: Seismic category C1 and C2 tests on channel bolts installed in anchor channels Martin CUNNINGHAM	16:30 - 16:50
16:50 - 17:10	44: Developing the Mix Design of Geopolymer Concrete Combining the Absolute Volume Method and the Particle Packing Method Arpitha B J	18: Comparison of ASR Mitigating Effects of Ca2+ with Three Different Test Methods Frank ONG	115: Concrete Technology and Durability in TMR – Past, Present, and Future Wayne ROBERTS	123: Investigation of failure mechanisms of post-tensioned concrete flatplate structures Ziyang JIAO	16:50 - 17:10
17:10 - 17:30	65: Fresh, hardened, and microstructural properties of self-compacting alkali-activated concrete cured at ambient temperatures Safat AL-DEEN	97: Comparison of accelerated test methods for ASR reactivity testing Brendan BOYD-WEETMAN	177: Conformity Assessment Model for the supply and Installation of Post-Tensioning Systems in Concrete Structures in Australia and New Zealand Peter Tonkin	16: Connection and Bracing System tested to allow for seismic design parameters in Australia Curtis FOGELBERG	17:10 - 17:30
19:00	CONFERENCE DINNER				19:00

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Wednesday, 13 September 2023

07:30	Registration Open					07:30
Plenary Room (Meeting Rooms 1-3)						
08:30 - 09:15	Keynote Presentation 320: Concrete Digital Fabrication and Sustainability Dr Tim WANGLER (Switzerland)					08:30 - 09:15
09:15 - 10:00	Keynote Presentation 316: Overcoming the Barriers to More Sustainable Concrete Professor Doug HOOTON (Canada)					09:15 - 10:00
10:00 - 10:30	MORNING TEA & EXHIBITION BREAK					10:00 - 10:30
10:30 - 12:30	TRADE DAY SESSION					10:30 - 12:30
Room	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 7A: Sustainability	Session 7B: Durability	Session 7C: HPC & Reinforcement	Session 7E: Concrete Forums	Session 7D: Inspection and Testing	Session
10:30 - 10:50	50: Sustainability benefits of concrete maturity assessment. James ALDRED	23: Limit state modelling for carbonation induced corrosion. The effect of the climate change and low CO ₂ - binders on the servicelife. Jeanette VISSER	138: A Model for the Calculation of Shear Crack Widths for Beams Constructed using High Strength Steel Stirrups Stephen FOSTER	Construction Forum Breaking Down Barriers in Sustainable Construction covering Indigenous Participation in Construction, Women in Construction, and Government Policy Nicole Lockwood, <i>Deputy Chairperson, Infrastructure WA (IWA)</i> Racquel Kerr, <i>Djaara/Boonwurrung, Aboriginal & Stakeholder Engagement Advisor - WA, GHD WA</i> Sophie Bond, <i>WA Co-Vice President, NAWIC</i>	165: Guidance on the Proof Testing of Post-Installed Anchors in Concrete Ramey OTHMAN	10:30 - 10:50
10:50 - 11:10	22: Waste-based concrete mix design for road infrastructure applications using Artificial Intelligence. Jianbin YANG, Rebecca GRAVINA		125: Comparative study of current standards for fire resistance of ultra- high performance concrete beams Jiacheng YANG, Jeung-Hwan DOH		46: Common errors in installation of postinstalled fasteners Jessey LEE	10:50 - 11:10
11:10 - 11:30	208: Pathways to nett zero Douglas JENKINS	129: Modelling for improved durability design - Background to critical chloride level establishment and proposal for further refinement. Frank PAPWORTH	181: Assessing the evolution of zero-stress temperature of high- performance concrete from early ages Vinh DAO		114: Investigation and Management of Bridges with ASR in QLD Wayne ROBERTS	11:10 - 11:30

11:30 - 11:50	264: Role of structural design optimisations in reduction of up front embodied carbon Mahdi BABAEE	151: A numerical model to predict the elastic modulus of ASR-affected concrete using Artificial Neural Network Mehdi HABIBAGAH, Shami NEJADI	271: Performance of high-strength steel reinforcing bars under low-velocity impact Amin HEIDARPOUR	Sustainability Forum <i>(Sponsored by SmartCrete)</i> Facilitated by: Clare TUBOLETS, CEO, SmartCrete	326: Important Aspects of Testing Existing Structures to Prevent Failure of Repairs Jessie RATCLIFFE	11:30 - 11:50
11:50 - 12:10	255: EKOPipe – the development of a low carbon steel reinforced concrete pipe. Adrian CAHILL	170: How Chloride Diffusion Test Results Reflect on Chloride Diffusion Modelling Daksh BAWEJA, Thomas BENN	277: Design of raft foundations with SFRC/combined reinforcement Philipp GUIRGUIS		210: State of the Art: The Value of Processed GPR Data in Concrete Inspection Reuben BARNES	11:50 - 12:10
12:10 - 12:30	178: Embodied carbon over the life cycle of reinforcing steels: Carbon emissions associated with Modules A1-A3 Product stage and A4-A5 Construction stage Ladin CAMCI	10: Comparison of Full Probabilistic Modelling and Deemed to Satisfy Requirements for Concrete Carbonation Induced Corrosion Herman JONG	287: Development of a novel generation of grade IV GFRP bars (70GPa) Omar ALAJARMEH		153: Use of Thermography to Detect Concrete Delamination and Water Leakage Defects Johnny AU	12:10 - 12:30
Meeting Room 1						
12:30 - 13:00	Invited Speaker Session <i>(Sponsored by BG&E)</i> 321: Towards More Sustainable Concrete: Recent Activities Within ACI and ASTM to Achieve Carbon Neutral Concrete Professor Larry SUTTER					12:30 - 13:00
13:00 - 14:00	LUNCH & EXHIBITION BREAK					13:00 - 14:00
14:00 - 15:30	TRADE DAY SESSION					14:00 - 15:30
Room	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 7	Meeting Room 8	Room
Session	Session 8A: Sustainability	Session 8B: Durability	Session 8C: Infrastructure	Session 8E: fib and ACI Updates	Session 8D: Asset Maintenance	Session
14:00 - 14:20	207: ECOTERA™ - High Performance Sustainable Concrete Dean MADERO, Ashok AGARWAL	188: Resistance to chloride and CO2 ingress of concrete made with carbonated / uncarbonated recycled concrete aggregates Benjamin SMITH	Role of Infrastructure Bodies driving Project Delivery Reform, including reference to Infrastructure Western Australia, Infrastructure Net Zero and Infrastructure Australia Nicole LOCKWOOD	fib & ACI Forum fib Model Code 2020 Final Draft contents overview with: Dr.ir. Agnieszka Bigaj-van Vliet Prof Tamon Ueda ACI 321 Durability Code progress review and contents overview with: Prof Larry Sutter Prof Doug Hooton ACI Overview Antonio Nanni	204: How Industry 4.0 is Influencing Concrete Investigations Reuben BARNES	14:00 - 14:20
14:20 - 14:40	74: Multi-Objective Optimization of Calcination Process Fuel Input for Lowering Carbon Footprint Harish SRIVASTAVA	272: Durability of Steel Reinforced Concrete Pipe in Below Ground Conditions Peter SLEEP	99: Creep of Geopolymer and Alkali Activated Binder Concrete: Comparison with OPC Concrete and Design Codes Stephen FOSTER		200: Management of aging concrete cooling towers during low carbon transition Robert REIS Heidi GOEBEL	14:20 - 14:40
14:40 - 15:00	118: Optimizing Prestressed Concrete Mix designs for Lower Carbon Emissions Duncan FRENCH	30: Sustainable Resilience – The Impact of Hydrogel Technology on Concrete Infrastructure Service Life Douglas HAMLIN, Brendan STEAD	Emerging opportunities and challenges for natural and manufactured pozzolans: an Australian Perspective Craig HEIDRICH		42: the Latest Developments In The Management Of Cathodic Protection Systems Atef CHEAITANI	14:40 - 15:00

15:00 - 15:20	147: The innovation process and its importance for the uptake of lower carbon concretes Jason CHANDLER	230: Effects of corrosion on the behaviour of short reinforced concrete T-beams exposed to high temperatures Saugat HUMAGAIN	131: Torsional behaviour of GFRP-reinforced concrete pontoon decks with and without an edge cutout Xian YANG	CIA Durability Updates CIA Z7/05 Durability Modelling Reinforcement Corrosion in Concrete Structures with: Frank Papworth Rodney Paull CIA Durability Committee Update for 2024 Actions	209: Forensic investigation & recommendations for aging public swimming pool infrastructure John TUXWORTH	15:00 - 15:20
15:20 - 15:50	AFTERNOON TEA & EXHIBITION BREAK					15:20 - 15:50
Meeting Room 1-3						
15:50 - 16:10	CLOSING CEREMONY Remarks from Concrete 2023 Chair and handing over to Concrete 2025					15:50 - 16:10