



Wednesday 30.09.2026

8:15 - 8:45	Registration Go to Google Maps Location				
8:45 - 9:00	Welcome: Ralf Müller (Vice Dean of Civil & Environmental Engineering) Introduction: Eddie Koenders				
9:00 - 9:30	Keynote Lecture: Jan Wörner				
9:30 - 10:00	Keynote Lecture: Viktor Mechtcherine				
10:00 - 10:30	Coffee Break				
10:30 - 12:30	Parallel-Session 1				
	CARE1 – Low-Clinker Binders, Cement Chemistry & Reactivation	GS1 – Circular Construction, Design for Disassembly & Reuse	AI NDT1 – AI-Enabled Damage Detection & Structural Condition Assessment	SMART1 – Smart & Low-Carbon Cementitious Materials	BEST1 – Bio-Based Insulation, Building Envelopes & PCM
	Session Chair: V. Mechtcherine / A. Ramugla Room: europium	Session Chair: Room: xenon	Session Chair: Room: argon	Session Chair: Room: neon	Session Chair: E. Martinelli Room: helium
	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors
10:30 AM	421 Toward sustainable cement: An electrochemical route to cementitious precursor phase production <i>Ramugla, A.; Koberle, T.; Ben, V.; Kasel, S.; Mechtcherine, V.; Matschei, T.; Liebscher, M.; Weidinger, I.</i>	102 Selective Demolition for Validation of Material Mining Tool <i>Kekez-Baran, S.</i>	385 Automated Identification of Damage Levels in Post-Hazard Condition Assessment Scenarios <i>Shastri, R.; Alpour, A.; Ray-Chaudhuri, S.; Shafiei, B.</i>	353 AI-Assisted Framework for SCM-Enhanced High-Performance Concrete: Experimental Validation Toward Net-Zero Structures <i>Shamayleh, O. A.; Far, H.; Mwafy, A. M.; Eldeib, A. S.</i>	117 Addressing mould and moisture risk in mycelium-based insulation through biofabricated surface skins <i>Wildman, J.; Shea, A.; Henk, D.; Cascione, V.</i>
10:45 AM	218 Diatomaceous Earth as a renewable supplementary cementitious material (SCM) for low-carbon binders <i>Nune, S.; Dani, F.; Ahmed, A. H.; Gelinsky, M.; Liebscher, M.</i>	163 Feasibility assessment of a demountable Post-Tensioned floor system for Design-for-Disassembly <i>Page, M.; Latour, M.; Guha, A.; Di Benedetto, S.; Rizzano, G.; Lima, C.; Martinelli, E.</i>	391 A Scalable Artificial Intelligence-Based Framework for Post-Extreme-Event Damage Detection and Assessment <i>Odeh, J.; Shafiei, B.</i>	396 Self-Sensing Concrete using Recycled Lithium-Ion Battery Black Mass: A Feasibility Study <i>Saxena, N.; Ray-Chaudhuri, S.</i>	158 Material characterisation of recycled bio-based insulation materials to determine readiness for installation in demonstration buildings <i>Holcroft, N.; Shea, A.</i>
11:00 AM	254 On the way to ultra-low clinker cements - effect of high portions of limestone powder on reaction kinetics, workability and strength <i>Wiese, F.; Sposito, R.; Stengel, T.</i>	243 Structural bias in economic assessment of circular building strategies: A systematic literature review <i>Hashmi, R.; Freier, M.; Welfie, A.; Sharmina, M.</i>	200 Net-Zero-Oriented Self-Sensing Cementitious Composites for Lifecycle-Based Structural Health Monitoring <i>Michalek, A.; Dzmrowicz, A.; Koenders, E.; Sadowski, L.</i>	436 Concrete Based on Alkali-Activated Materials: Development, Characterization and Life Cycle Assessment <i>Watzel, A.; Engels, M.; Bachmann, K.; Fast, S.; Laner, D.; Möddendorf, B.</i>	159 Hygrothermal assessment of the retrofit of masonry cavity wall construction with a bio-based external insulation system <i>Holcroft, N.; Moran, F.; Taylor, E.; Shea, A.</i>
11:15 AM	217 Thermal Dehydration Behavior of End-of-Life Low Carbon Cementitious Blends towards Reactivation and Reuse Potential <i>Ahmed, A. H.; Thomas, R.; Scheel, J.; Liebscher, M.</i>	255 A Dual-Scale Techno-Economic Modelling Framework for Circular Economy in Buildings <i>Freier, M.; Sharmina, M.</i>	252 AI-Based Damage Prediction of Sustainable Reinforced Concrete Columns Using Shape Memory Alloys <i>Alzadeh, M.; Abdolmaleki, A.; Mahboubi, S.; Koumarsi, M.</i>	454 Toward practical applications of self-healing cement and concrete: barriers and opportunities <i>Wu, M.; Wang, T.</i>	173 Experimental and numerical thermal assessment of cement-lime mortars with PCM and biomass ash for multilayer architectural enclosures <i>Ramallo, L.; Caggiano, A.; Peralta, I.; Guardia, C.; Barluenga, G.</i>
11:30 AM	178 Low-Carbon Ultra-High-Performance Concrete Using Seawater and Sea Sand for Coastal Applications <i>Khan, M. S.; Rahman, M. K.; Fasil, M.; Al-Zahrani, M. M.</i>	328 Scan-to-BIM for Circular Pre-Demolition Audits: A Case Study Aligned with EU Net-Zero Construction Objectives <i>Vilbić, K.</i>	272 ML-Based Assessment of Corroded Steel Beam-Column Connections toward Net-Zero Structural Systems <i>Ramezani, F.; Mahboubi, S.; Koumarsi, M.</i>	382 Development of Low-Cement Ultra-High-Performance Concrete for Sustainable and Durable Civil Infrastructures <i>Nia, S.; Shafiei, B.</i>	197 Seismic performance of RC frames with PCM-enhanced infills <i>Niogo, E.; Pepe, M.; Martinelli, E.</i>
11:45 AM	152 PCE-Silane Admixtures for Slump Retention in Ultra-Low Clinker Binders <i>Wang, X.; Sun, Y.; Plank, J.</i>	482 Innovation and sustainability in costruction section for the optimised use of fine recycled aggregates from Construction and Demolition Waste <i>Lombardi, R.; Page, M.; Martinelli, E.</i>	113 A DIC Based Error Correction Framework for Non Contact Bridge Deflection Monitoring <i>Zhang, W.; Shi, W.</i>	106 Enhancing CO ₂ Sequestration in Cement Composites through Chemical Activation of Copper Slag <i>Maj, M.; Brzozowska, K.</i>	322 Paper Based Circular Building Systems for Net Zero Futures: From Wall Assemblies to Tiny House Prototypes <i>Burdies, L.; Bosse, N.; Hoffmann, H.; Böhner, N.; Kraus, M.</i>
12:00 PM	154 Optimizing Chemical Admixtures for Calcined Clay-Based Net-Zero Binders: Challenges and Solutions <i>Chen, J.; Plank, J.</i>	423 Towards a C-LCSA Ontology-Based Modelling for Deconstruction Processes through DPP <i>Giese, K.; Tokac Celikyay, I.; Mohamad Radwan Omar Chabrawi, A.; Hashash, Z.; et al.</i>	351 Are We Getting What We Paid For When It Comes to Deicers? Review of AI-Powered Field Assessments of De-icer Performance for Highway Operations <i>Teymouri, M.; Lian, R.; Acharya, P.; Otten, E.</i>	295 Thermomechanical behavior and damage constitutive modeling of phase change microcapsule-modified cement paste <i>Wang, Q.; Shang, R.; Zheng, J.-L.; Cao, D.; et al.</i>	373 Hygro-mechanical performance of flax-lime con-crete incorporating bio-based phase change materials <i>Bekris, I.; Tran Le, A. D.; Zalewski, L.; Tofane, H.; Tittlein, P.</i>
12:15 PM	350 Performance of Gelatinised Starch-Sawdust Bio-composites towards Low-Carbon Construction Applications <i>Akinlunde, A.; O'Flaherty, F.; Ojedokun, O.</i>	310 Circular economy helping carbon neutrality: from assumption to quantification in the building construction sector in Europe <i>Barbosa, J.; Simoes, S.</i>	167 A Case Study: Half-Cell Potential Testing Strategies for Strand Corrosion Assessment in Prestressed Concrete Sleepers <i>Lambrechts, A.; Beushausen, H.</i>	114 Estimating the Compressive Strength of Sustainable Biopolymer-based Concretes: A Data-driven Approach <i>Tolighi, R.; Barbordy, A.; Yekrangnia, M.; Koumarsi, M.</i>	187 Performance-Based Envelope Optimization for Bio-Based Residential Construction: A Genetic Algorithm Approach Across U.S. Climate Zones <i>Norouzi, Y.; Dixit, M.; Sideris, P.; Sharma, S.</i>
12:30 - 13:30	Lunch				
13:30 - 15:00	Panel Discussion: Towards Net-Zero Construction: Challenges and Innovation <i>Members: Romildo Toledo Filho / Michael Haist / David Moses / Annemarij Kooistra</i> <i>Moderator: Hans Beushausen</i>				
15:00 - 15:30	Coffee Break				
15:30 - 17:30	Parallel-Session 2				
	CARE2 – Low-Carbon Concrete, Alternative Materials & Durability	GS2 – LCA, Policy & Socio-Economic Net Zero	REC1 – Recycled Ashes, Sand & Secondary Raw Materials	GS3 – Building Energy Management & Thermal Systems	SPP1 –Net-Zero Concrete: Reaction Mechanisms, Modelling & Carbonation
	Session Chair: H. Le Xuan / H. Kruppa Room: europium	Session Chair: Room: xenon	Session Chair: Frank Dehn Room: argon	Session Chair: Room: neon	Session Chair: Mohammadreza Izadifar Room: helium
	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors
3:30 PM	274 Lignite fly ash as CO ₂ -storage and SCM <i>Kruppa, H.; Felten, C. C.; Volpracht, A.</i>	270 Reframing LCA toward circular construction: A multi-life cycle perspective <i>Verstappen, N.; Allacker, K.</i>	137 Electrodialytic upgrading of wood fly ash to SCM <i>Ottosen, L. M.; Christensen, I. N.</i>	125 Operational Greenhouse Gas Emissions Intensity Metrics for Canadian Housing <i>Ghani, S.; Ferguson, A.</i>	466 Thermodynamic Assessment of Nanoscale K-A-S-H Structures by LAMMPS and DFT <i>Ji, Y.; Hirsch, T.; Matschei, T.; Stephan, D.</i>
3:45 PM	172 Climate-friendly accelerated curing of CO ₂ -reduced concrete casting mixtures using green upcycled carbon fiber <i>Glinicz, R.; Funke, H.; Gebrich, S.; Vogt, C.; Naumann, M.</i>	236 Life Cycle Assessment of Recycled and Warm Mix Asphalt Incorporating Waste Cooking Oil <i>Nurhidayati, Z. A.; Suwanto, F.; Sami, M. F.; De Backer, H.; Outlier, A.</i>	370 Supercritical CO ₂ Carbonation of Fly Ash Alkali-Activated Materials as a Pathway toward Net-Zero Construction <i>Podnar, T. M.; Kravanja, G.; Knez, Ž.</i>	134 Optimal Control of a PV-Integrated Cold Storage System with PCM for Net-Zero Operation Using Dynamic Programming <i>Fan, Y.; Song, X.; Peng, Z.-R.; Liu, J.; Zhang, X.-R.</i>	203 Integrating Experimental Data, Modelling, and Life-Cycle Assessment for Net-Zero Concrete <i>Quelet-Plamondon, C.; Cao, D.; Ganga Anil, W.; Koenders, E.</i>
4:00 PM	422 Carbon fiber recovery and polymer upcycling of fiber reinforced composites from the building sector <i>Devasis, M. M.; Ly, P. Y.; Schaeffer, C.; Elschner, C.; Osterhuhn, O.; Klankermayer, J.; Weidinger, I.</i>	261 Carbon capture to commodity: A framework to support lifecycle emissions accounting of cementitious materials <i>Parker, A.</i>	131 Effects of waste concrete powder and recycled sand on the performance of sustainable mortars <i>Chenmeng, E. A.; Rambodu, M. S.</i>	146 Performance Analysis of a CO ₂ Dual-Source Ejector-Assisted Heat Pump with Corrected G-Function <i>Zhang, R.-J.; Wang, Y.-Z.; Zhang, X.-R.</i>	221 An ontology-based framework for enforced carbonation of cementitious materials: integrating experiments, modeling and life cycle assessment <i>Warner, G. A.; Ukrainczyk, N.; Dehn, F.; Hirsch, T.; Newthner, F.; et al.</i>
4:15 PM	334 Leaching properties of bottom ashes used as fine aggregate <i>Jensen, A.; Ottosen, L. M.; Edvardsen, C. K.</i>	383 Evaluating the Environmental Impacts of Admixture Encapsulation in Stimuli-Responsive Concrete <i>Echt, T.; Göbel, L.</i>	372 Low-carbon concrete with waste ash binders: strength and sustainability evaluation <i>Alawi, N.; Tan Nguyen, K.; Ahmed, A.; Clarke, N.; Ashaka, O.; Huynh, A.</i>	176 Towards net-zero emissions in steelmaking: a viable process route based on the direct use of green hydrogen <i>Paletta, A.; Spadaro, L.</i>	222 From Atoms to Rates: Kinetic Monte Carlo (kMC) Upscaling of Metakaolin Dissolution in Bicarbonate Suspensions <i>Izadifar, M.; Ukrainczyk, N.; Koenders, E.</i>
4:30 PM	174 Performance and Durability Response of Seawater-Mixed Limestone Calcined Clay Cement (LCC) under Aggressive Sulphate Exposure <i>Sajid, M.; Rahman, M. K.; Al-Osta, M.; Adekunle, S. K.</i>	441 People-Led Net Zero: A model to promote net zero and application to the built environment <i>Dams, B.; Laffanzio, S.; Atashkhelei, A.; Pashapour, A.; Newnes, L.</i>	347 Functionalization of Recycled Aggregate via Polymer Emulsion for Enhanced Mechanical Properties of Concrete - A review Study <i>Teymouri, M.; Acharya, P.</i>	367 Strategic Technical Energy Management in Municipal Building Rehabilitation: Case Studies from Norway <i>Liang, E. Z.; Horpestad, S.; Pedersen, S.; Edvardsen, E.; Langelo, K.</i>	467 Activation and hydration of forsterite – mineralogical studies on CO ₂ -neutral Mg-binders <i>Rafiehl, E.; Belmann, F.; Götz-Neunhoeffer, F.; Neubauer, J.</i>
4:45 PM	343 Spatially Resolved Moisture Detection in Concrete Structures via Fiber-Based Sensors using Time Domain Reflectometry <i>Le Xuan, H.; Waschlewski, B.; Cherif, C.</i>	473 Industrial Symbiosis solutions involving steel, construction and building sectors <i>Colla, V.; Branca, T. A.; Petruccianni, A.; Merenda, F.; et al.</i>	147 From Waste to Module: Optimizing Strength and Microstructure of Hybrid Additive Manufactured Structural Elements <i>Abdoli, M.</i>	368 From Calculated to Realized Energy Savings: A Comparative Case Study of Ventilation Upgrades in Municipal School Buildings <i>Liang, E. Z.; Storvang, V.; Johannessen, E. W.; Etterlid, O. S.; Nordahl Nebb, M.</i>	475 Carbonation of Mg-minerals in alternative Mg-silicate binders <i>Franko, S.; Belmann, F.; Neubauer, J.</i>
5:00 PM	487 From Strength Prediction to Time-Dependent Sustainable Mix Optimization: A Unified Experimental-Statistical Framework with Self-Compacting Concrete as a Case Study <i>Knyzhantsovskiy, V.</i>	435 Towards circularity: Case Study in Sortland, Norway <i>Novakova, I.; Kekez-Baran, S.; Røir, K.; Elncini, H.</i>	346 Valorization of Fine Recycled Sands in Dry Screeds through Particle Packing Optimization <i>Yagoub, M.; Boel, V.; Matthys, S.</i>	369 Bridging the Performance Gap: The Role of Technical Energy Management in Norwegian Public and Commercial Buildings <i>Liang, E. Z.; Johannes, J.; Aberg, M.; Akkouch, N.</i>	156 Influence of Liquid-to-Solid Ratio on Phase Assemblage of Carbonated γ-C2S in Bicarbonate Suspensions <i>Ukrainczyk, N.; Morina, N.; Rößler, C.</i>
5:15 PM	348 Behaviour of Puzzle-Shaped Composite Dowels Embedded in Recycled Aggregate Concrete under Shear Loading <i>Fu, Q.; Schäfer, M.</i>	439 Enhancing Walkability in European Cities: A Systematic Review of Urban Design, Mobility and Governance <i>Bikrud, K. G.; Helgesen, S.; Johann, S. T.; Help, E. G.; Tadayon, A.</i>	365 Mesoscale approach for assessing the properties of recycled concrete aggregates governing carbonation in concrete containing RCA <i>Thomas, E.; Fanara, A.; Ourard, L.; Collin, F.</i>	175 Decarbonization of hard-to-abate industrial construction sectors through the exploitation of novel process technologies, based on non-electrolytic green hydrogen from waste-recycling <i>Spadaro, L.; Paletta, A.</i>	489 Concurrent FE-MD Coupling for Reactive Atomistic Modeling of Fracture Propagation in Sodium Aluminosilicate Glasses <i>Norouzi, S.; Ukrainczyk, N.; Koenders, E.</i>
17:30 - 18:30	Break				
18:30 - 21:00	Brewery Evening (optional) <i>Arrival: 18:30 - 19:00</i> <i>Buffet: 19:00 - 21:00</i> Go to Google Maps Location <i>(Tickets still available until 23.09. through netzfuture@wib.tu-darmstadt.de)</i>				



Thursday 01.10.2026

9:00 - 9:30	Keynote Lecture: <i>Nele de Belie</i>				
9:30 - 10:00	Keynote Lecture: <i>David Moses</i>				
10:00 - 10:30	Coffee Break				
10:30 - 12:30	Parallel-Session 3				
	CARE3 – Structural Circularity, Efficiency and Digitization	GS4 – Low-Clinker Binders & Cement Chemistry	SMART2 – Digital Decision Support & Net-Zero Management	GS5 – Durability, Damage & Structural Assessment	BEST2 – Bio-Based Composites, Fibres & Emerging Low-Carbon Materials
	Session Chair: <i>S. Muthukrishnan / F. Menzel</i> Room: <i>europium</i>	Session Chair: Room: <i>xenon</i>	Session Chair: Room: <i>argon</i>	Session Chair: Room: <i>neon</i>	Session Chair: Room: <i>helium</i>
	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors
10:30 AM	304 Connecting Material Banks to BIM: Methods for Discoverability, Assessment, and Reuse <i>Gschweidl, L.; Walder, P.; Lang-Raudaschl, M.; Stavic, M.</i>	151 Challenges and Solutions Towards Decarbonization of the Global Cement Industry <i>Plank, J.</i>	471 Life cycle assessment of upcycled shipping container building: A circular footprint formula approach <i>Ali-Gombe, B.; Tokbolat, S.; Mckechnie, J.</i>	381 Enhancing Durability and Sustainability of RC Marine Infrastructures Under Aggressive Environmental Conditions <i>Alsultani, R.</i>	140 Supercritical CO ₂ Drying of Reduced Graphene Oxide Monolith Aerogel: Advancing Energy-Efficient Carbon Capture Technology <i>Zabala, D.; Tamsilian, Y.; Fidanchevska, M.; Sanz, O.; et al.</i>
10:45 AM	308 Synergistic Integration of BIM, IoT and Blockchain Technology in Construction: Pathways to a Sustainable, Circular and Net-Zero Future <i>Pittri, H.; Godawatte, G. A. G. R.; Forster, A. M.</i>	179 Accelerating low-carbon cementitious binder development under seasonal resource constraints using AI-driven sequential learning <i>Klewe, T.; Kamashanji, K. C.; Schmidt, W.; Kruschwitz, S.</i>	177 Fuzzy-Based Decision-Making Framework for Positive Energy Districts <i>Esmailizadeh, A.; Hamdy, M.</i>	259 Wet Corrosion Behaviour of High-Strength Steel under Controlled Harsh Environmental Conditions <i>Majidian, A.; Durant, E.; Chauhan, N.; Di Sarno, L.</i>	165 Effect of superabsorbent polymers and cellulose microfibers on early age shrinkage of 3D printing cement-based mortars <i>Estela, M. P.; Marquez, A.; Ramallo, L.; Folino, P.; Barluenga, G.</i>
11:00 AM	344 Development of Automated Manufacturing Workflows for Material-Efficient Concrete Components in Interlocking Slab Systems <i>Menzel, F.; Weingartz, B.; Sevinck, J.; Classen, M.; Klinkel, S.; Kobbelt, L.</i>	275 Hydration and strength development of very low clinker metakaolin-limestone cement <i>Bian, Z.; Snellings, R.; Cizer, Ö.</i>	280 A Flexible Life-Cycle Framework for Digital and Circular Net-Zero Construction <i>Nahod, M.-M.</i>	263 Experimental Performance Evaluation Of A Paper-Based Wall System Under Driving Rain and Airborne Sound <i>Bosse, N.; Burdies, I.; Hoffmann, H.; Bishara, N.; Kraus, M.</i>	181 Synthesis and characterization of coated jute fibers for enhanced durability in civil engineering applications <i>Zamora-Mendoza, L.; Sellitto, E.; Alexis, F.; Lantsoght, E.; Pepe, M.; Di Maio, L.; Martinelli, E.</i>
11:15 AM	251 Levels of reuse: A building classification system for the reuse of elements at their highest possible stage of technical development <i>Lang-Raudaschl, M.; Gschweidl, L.</i>	302 Resolving C-A-S-H composition of aluminosilicate SCM reactions in portland model systems: A combined 27Al/29Si solid-state and 1H NMR study <i>Lepêcheur, G.; Skibsted, J.; Joseph, S.; Cizer, O.; Snellings, R.</i>	294 A Decision Support Framework for Low-Carbon Concrete Procurement in Construction Management Using Active Learning <i>Nguyen, T. T. H.; Bui, G. B. N.; Tran, D. T.; Ly, H. B.; Jin, R.</i>	389 Post-Repair Structural Performance and Integrity Assessment of Precast Prestressed Concrete Beams <i>Pepera, R.; Shafei, B.</i>	282 Structural Enhancement of Miscanthus-Lime Composites Using Auxetic Grid Reinforcement for Net-Zero Construction <i>Khan, M. K.; Vinai, R.; Kripakaran, P.; Evans, K.; et al.</i>
11:30 AM	450 Beyond Technical Circularity: A Circular Socio-Technical Integra-tion Framework for Digital Renovation and Construction <i>Wuebben, D.; Spyridakos, S.; Boemi, S.-N.</i>	318 Alumina phases formed during the hydration of clay-blended cement <i>Black, A.; Russell, M.; Davis, G.; Soutos, M.; Wilkinson, A.; Nanukuttan, S.</i>	406 User-Centred Design of a Mobile App to Promote Eco-Friendly Practices Among UK University Students <i>Ponnampuram, D.; Alhawamdeh, M.; Abuezhayeh, S.</i>	405 Damage Evolution in Limestone Calcined Clay Cement Mortars Subject to Cyclic Thermal Loads <i>Chahar, V.; Shafei, B.; Lahoti, M.</i>	336 Investigating the Potential of Biochar as Cement Replacement <i>Teymour, M.; Wei, L.; Acharya, P.</i>
11:45 AM	244 Integrating Circular Economy Principles in Underground Car Park Structures <i>Novalic, L.; Martins, J.; Matias de Paula Filho, J. H.; Fohl, F.; Gregor, O.; Hechler, O.</i>	431 Influence of polycarboxylate superplasticizers on the viscoelastic-plastic and structural build-up properties of LCA cement systems <i>Gonzalez Aulia, J. J.; Saucedo Marut, G. S.; Durán Herrera, A.; Mendoza Rangel, J. M.; et al.</i>	464 Early Contractor Involvement (ECI) practices in different countries <i>Tadeyon, A.; Kikage, O. J.</i>	472 Shrinkage and shrinkage induced cracking in low carbon cementitious systems (FA, GGBS & LCC3): implications for chloride ingress and rebar corrosion <i>Pakala, B.; Beushausen, H.</i>	407 Integrated structural and acoustic performances and assessment of masonry elements reinforced with bio-based systems <i>Paolillo, B.; Guarnaccia, C.; Sommella, P.; Pepe, M.; et al.</i>
12:00 PM	429 D-CONFORM: Digital Construction Using Reinforced Low-Carbon Mineral Foam - Introduction and Initial Outcomes <i>Muthukrishnan, S.; Bielak, J.; Will, F.; Andres, B.; Kaskel, S.</i>	433 Decarbonizing Cement in Concrete: Technologies, Maturity, and Barriers to Industrial Adoption <i>Yang, S.; Ukrainczyk, N.; Koenders, E. A. B.</i>	448 Participatory ESG Integration in Africa's Cement Industry: Reconciling Net Zero Ambitions with Local Economic Development and Community Well-Being <i>Onsongo, S.; Olukuru, J.; Mwaborie, O.</i>	428 Multiphase porosity in recycled concrete: Influence of coarse aggregate pore structure <i>Gómez-Cano, D.; Garzon, J.; Gomez, L.; Hendriks, M.; Gebremariam, A.</i>	273 Growth behavior and preliminary biomineralization screening of basidiomycete fungi for mycelium-based construction materials <i>Cayo, N.; Alviano, D.; Belchior, M.; Rocha, J.; Ciaramella Molit, G.; Ferreira, S.; Toledo Filho, R.</i>
12:15 PM	170 There is always an alternative to demolition <i>Muff Christensen, R.; Firth, I.; Gaimarini, A.</i>	219 Uniaxial Stress-Strain Behavior of High-Volume cement Replaced Low-Carbon Concrete with Icelandic Volcanic Pozzolan and Silicomanganese Slag <i>Marczak, J.; Hettiarachchi, D.; Samarakoon, S.</i>		269 Self-Healing Concrete: The Case of Nordic Countries <i>Stormoen, H.; Tsalkatidis, T.</i>	278 Enhancement of the performance of artificial aggregates derived from Argon Oxygen Decarburization (AOD) slag waste by an innovative laboratory-based approach <i>Kumar, M.; Kizhakkumodam Venkatanarayanan, H.</i>
12:30 - 13:30	Lunch				
13:30 - 14:00	Keynote Lecture: <i>Sophia Villmow</i>				
14:00 - 14:30	Keynote Lecture: <i>Bassem Andrawes</i>				
14:30 - 15:00	Coffee Break & Group Photo				
15:00 - 17:00	Parallel-Session 4				
	CARE4 – LCA, Sustainability Assessment & Industrial Decarbonization	GS6 – Digital Design, Retrofit & Building Transformation	SMART3 – Sustainable Structural Performance & Infrastructure	Corporate Presentations + Start-Up & Scale-Up Session	SPP2 – Net-Zero Concrete: Activation, Hydration & Low-CO ₂ Binders
	Session Chair: <i>K. Kleinschrot / C. Signorini</i> Room: <i>europium</i>	Session Chair: Room: <i>xenon</i>	Session Chair: Room: <i>argon</i>	Session Chair: <i>Romildo Toledo Filho</i> Room: <i>neon</i>	Session Chair: Room: <i>helium</i>
	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors
3:00 PM	424 Towards a harmonized, multi-layered Sustainability Assessment Framework for Circular Construction: Life-Cycle Indicators, Spatial-Temporal Dynamics and the Human Factor <i>Kleinschrot, K.; Boffel, C.; Chabrawi, A. M. R. O.; Gruner, A.; et al.</i>	311 sLender Façade: A Mass-Customised Volumetric Envelope System for Scalable Deep Renovation of Existing Housing Stock <i>Tuksam, S.; Pihlak, S.; Orinski, A.</i>	427 Experimental Investigation of Ultra-High Performance Concrete Shear Walls of Various Height-to-Length Ratios <i>Nawaz, S. R.; Qureshi, M. H.; Vakili, A.; Kioumars, M.; Shafei, B.</i>	Company Presentation: ROXIT <i>Dr.-Ing. Sha Yang</i>	139 Low-CO ₂ Binders from Burned Coal Dumps: Application <i>Kruppa, H.; Bewa Nobouassia, C.; Rausch, M.; Warner, G. A.; Cao, D.; Koenders, E.; Vollpracht, A.</i>
3:15 PM	420 Life Cycle Analysis in Construction Sites: A Systematic Review of Methodological Gaps and Standardization Needs <i>Aktaş, E.; Tanyer, A. M.</i>	262 Auditing and Retrofitting Building Automation and Control Systems in a Danish Public School Using an Interactive Assessment Tool <i>Jradi, M.</i>	434 Rational Placement of MR Dampers for Optimized Structural Performance <i>Baheti, A.; Ray-Chaudhuri, S.</i>	Company Presentation: Röser Ingenieurbau <i>Dr.-Ing. Frank Röser</i>	161 Mechanical and durability properties of concrete containing thermally activated concrete fines as supplementary cementitious materials <i>Hoffgen, J. P.; Dehn, F.</i>
3:30 PM	171 Developing embedded GHG emissions accounting framework and calculation tools for Australian cement industries <i>Biswas, W.; Niamah, A.; Aisbett, E.; John, M.</i>	319 Net Zero Energy Retrofitting in the Hospitality Sector: A Case Study in Southern Spain <i>Mayer, M.; López Müller, E.; Mead, T.; Postigo Del Ser, C.</i>	438 Pathways to Net-Zero Bridge Structures: A Review of Bridge Construction Requirements <i>Cieniasws, W.; Shafei, B.</i>	Company Presentation: Material Performance 59 <i>Prof. Dr.-Ing. Albrecht Gilka-Bötow</i>	206 The AFm Phase Hemicaobaluminate in Inorganic Binders <i>Hirsch, T.; Klein, F.; Ji, Y.; Stephan, D.; Matschei, T.</i>
3:45 PM	303 Construction and Demolition Waste Classification and Management in a Circular Economy: An Overview of Concept <i>Alhawamdeh, M.</i>	477 Development, Application, and Climate Sensitivity Analysis of Automated BIM-BSA Framework in India Context <i>Md Nasir, M. J.; Prakash, P. R.; Suman, M.</i>	330 An Integrated Circularity-Carbon-Cost Framework for Net-Zero Asphalt Pavements Using High-RAP Mixtures <i>Medeiros Melo Neto, O.; Mendes, L. P. T.; Lopes Lucena, L. C. F.; Jourblat, R.</i>	Company Presentation: CACTA Construction <i>Dr.-Ing. Luciano Sambataro</i>	223 Comparative study of thermal and mechanochemical activation of 2:1 mixed clays: Reactivity enhancement and energy demand <i>Zeidler, R.; Schmidt-Döhl, F.</i>
4:00 PM	338 Construction Waste Management Approaches in China: Identifying Gaps and Emerging Trends Towards Sustainability <i>Fayad, R.; Alhawamdeh, M.</i>	485 From Feasibility to Suitability: A Framework for Industrialized Building Retrofit <i>Hübner, J.; Latke, F.; Heidecker, M.</i>	309 Machine Learning-based Prediction of Seismic Drift Response of Unreinforced Masonry Walls <i>Hamzeh, M.; Poorahad, P.; Mahboubi, S.; Shiravand, M.; Kioumars, M.</i>	457 Emerging technologies for structural engineering applications: the experience of TESIS srl <i>Pepe, M.; Lima, C.; Martinelli, E.</i>	265 Effect of Hydration Control Agents on early-age hydration and setting of different cements <i>Schreiber, J.; Kirchberger, I.; Singer, M.; Gunkler, A.; Skibbe, S.; et al.</i>
4:15 PM	289 Carbon-Negative Construction Materials: Integrated AI-Driven Design and CO ₂ Mineralisation for Net-Zero Built Environment <i>Dod, R.; Dhare, A.; Malavadkar, P.</i>	124 Multi-Objective Optimization of BIPV Façade Configurations for enhanced Energy, Economic and Environmental Performance <i>Azeem, A.; Thomas, A.</i>	342 Data-driven LCA for parametric optimisation of timber slabs in multi-storey buildings <i>Panik, S.; Müller, M.</i>	486 Introducing Hy4Smelt – Towards Green Steel Production in Europe <i>Hoffmann, C.; Wimmer, G.; Voraberger, B.; Ludwig, H.-M.</i>	276 Effectiveness of Aluminate Hydration Control Additives in cement pastes and mortars <i>Gunkler, A.; Skibbe, S.; Schreiber, J.; Jansen, D.; Gdtk, T.; Lowke, D.</i>
4:30 PM	446 Layered Double Hydroxide-Based Binders for Commercially Viable Alkali-Activated Materials <i>Abdel-Gawwad, H.; Stephan, D.</i>	129 Illustrative Material-Level Application of an Integrated Rating Framework for Net-Zero and Resilient Envelope Design in Port Arthur, Texas <i>Nemati Aghdam, M.; Dixit, M.</i>	132 Performance evaluation of sustainable concrete pavement blocks incorporating fly ash and recycled sand <i>Chemeng, E. A.; Ramabodu, M. S.</i>	345 Opportunities and challenges for 3D printing and carbonation of slag-based concrete <i>Lorika, D.; Ferahani, A.; Ooms, T.; Matthys, S.; et al.</i>	388 Pathways to Benefit from Alternative Synthetic Fibers for the Carbon Footprint Reduction of Ultra-High Performance Concrete <i>Ramezani, A.; Shafei, B.</i>
4:45 PM	260 Effect of the durability of a reinforced concrete beam on environmental impacts determined through a life cycle analysis (LCA) <i>Calixte, R.; Gattingt, F.; Lopez-Caballero, F.</i>	359 Circular Economy and LCA in Heritage buildings Rehabilitation – Lessons from case studies and practitioners' perspective <i>Fufa, S.; Flyen, C.</i>	293 Performance Investigation of a Novel Heat Pipe-based Thermoelectric Rock Bolt (HPRB) for High-Geothermal Tunnels: Experiment and Simulation <i>Yuan, Y.; Cui, P.; Zhang, J.-L.</i>		490 Geopolymers Based on Construction and Demolition Waste: Potential for High-Temperature Applications <i>Sprem, M.; Jelčić Rukavina, M.; Barčević, A.; Serdar, M.</i>
17:00 - 19:30	Break - Transfer to Frankfurt				
19:30 - 22:30	Conference Dinner (Boat-Tour)				

Friday 02.10.2026

9:00 - 9:30	Keynote Lecture: Anna Braune				
9:30 - 10:00	Keynote Lecture: Moritz Dörstelmann				
10:00 - 10:30	Coffee Break				
10:30 - 12:30	Parallel-Session 5				
	GS7 – Alkali-Activated, Geopolymer & Alternative Concrete	GS8 – Sustainable & Resilient Infrastructure Systems	AI NDT2 – Digital, Life-Cycle & Performance Assessment for Net-Zero Infrastructure	GS9 – Innovative Structural & Circular Material Systems	SPP3 – Net-Zero Concrete: Carbonation, CO ₂ Uptake & Carbon-Sink Materials
	Session Chair: Mohammadreza Izadifar Room: europium	Session Chair: Room: xenon	Session Chair: Room: argon	Session Chair: Room: neon	Session Chair: Room: helium
	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors	ID Title & Authors
10:30 AM	112 On the Suitability of Dredged Marine Clays for Alkali-Activated Materials in Marine Environments <u>Safhi, A. E. M.</u> ; <u>Plethvar, S.</u> ; <u>Kioumars, M.</u>	105 Evaluation System and Sustainable Optimization Design of Green and Low-carbon Bridges <u>Song, S.</u> ; <u>Wei, X.</u> ; <u>Xiao, L.</u> ; <u>Huang, Q.</u>	108 Quantum Computing for Energy and Comfort in Buildings: A Review of Methods Integration Pathways and Research Gaps <u>Hosamo, H.</u> ; <u>Rofsen, C. N.</u>	233 Two-Direction Moment-Resistant Frame made of Thermo Siffened Polymeric Aluminum for a Research Facility Built at the Antartica <u>Núñez-Moreno, F. A.</u> ; <u>Aristizábal-Vargas, J. S.</u> ; <u>Gutiérrez-Quintero, C. A.</u> ; <u>Jaramillo-Gómez, L. A.</u> ; et al.	141 Influence of Thermal and Carbonation Activation on the Properties of Recycled Concrete Fines <u>Denu, M.</u> ; <u>Hoffgen, J. P.</u> ; <u>Patel, R. A.</u> ; <u>Dehn, F.</u>
10:45 AM	186 Mechanical and Thermal Properties of 3D Printed Lightweight Geopolymer Concrete Incorporating C&D Waste <u>Al Mawed, L.</u> ; <u>Borg, R. P.</u>	226 Bricks and Blocks in Africa's Urban Transition: Sustainability Challenges, Material Demand, and Knowledge Gaps <u>Oketobo, A.</u> ; <u>Beushausen, H.</u> ; <u>Alexander, M.</u>	476 A Comparison of Noise and Air Pollution from a Diesel and an Electric Excavator <u>Høien, G.</u> ; <u>Yang, A.</u> ; <u>Conta, S.</u> ; <u>Wik, M. R. K.</u>	249 Mineralogical and microstructural evolution of EAF slag during wet carbonation <u>Runci, A.</u> ; <u>Pires Martins, N.</u> ; <u>Nielsen, P.</u> ; <u>Vilagrán Zaccardi, Y.</u>	321 Comparative LCA of carbonatable binders: Belite clinker vs Slag in low-carbon concretes <u>Warrier, G. A.</u> ; <u>Morina, N.</u> ; <u>Ukrainczyk, N.</u> ; <u>Megens, J.</u> ; <u>Nguyen, T.</u> ; <u>Koenders, E.</u>
11:00 AM	196 Evaluation of post-cracking behaviour of CDW-based fiber-reinforced alkali activated concrete <u>Vitse, J.</u> ; <u>Sultan, A.</u> ; <u>Zhang, D.</u> ; <u>Vandeginste, V.</u> ; <u>Li, J.</u>	121 Measuring Construction Phase Performance in South African Water Services Authorities: A Structured Review and Conceptual Framework for a Composite Indicator <u>Mbhele, N.</u> ; <u>Luyaba, L.</u> ; <u>Moyo, P.</u>	397 Rail-Structure Interaction on a Curved Railway Viaduct: Finite-Element Analysis and Parametric Assessment <u>Saxena, N.</u> ; <u>Ray-Chaudhuri, S.</u>	133 Utilisation of fly ash and recycled sand for sustainable mortar production <u>Ohemeng, E. A.</u> ; <u>Ramabodu, M. S.</u>	205 Carbon Sink by Design: Co-optimizing CO ₂ Uptake in Lightweight Concrete Structures via Accelerated Carbonation and Structural Topology <u>Kovaleva, D.</u> ; <u>Weiss, L.</u> ; <u>Eckstein, M.</u> ; <u>Blandini, L.</u>
11:15 AM	380 Colorimetric Study on Chemical Deterioration in High-Strength Alkali-Activated Concrete <u>Rakesh, P.</u> ; <u>Venkateswara Rao, S.</u> ; <u>Rathish Kumar, P.</u> ; <u>Madhavi Latha, K.</u>	404 Sustainable Performance Improvement of AAC Blocks <u>Latha, L.</u> ; <u>Ray-Chaudhuri, S.</u> ; <u>Das, D.</u>	214 A Life-Cycle Sustainability Assessment Framework for Bridges with Parametric Evaluation of Social and Environmental Factors <u>Khare, N.</u> ; <u>Maharankintakam, A.</u> ; <u>P. Sulakhe, R.</u> ; <u>Ghosh, S.</u> ; et al.	371 Circular repair mortars with recycled fine fractions : a DoE optimisation approach <u>Langkohl, S.</u> ; <u>Courard, L.</u>	241 Ultra-high performance concrete (UHPC) with high volume of biochar as carbon-sink aggregates <u>Latif, M.</u> ; <u>Mayer, M.</u> ; <u>Koenders, E.</u> ; <u>Middendorf, B.</u>
11:30 AM	456 Optimizing hybrid Alkali-Activated Slag Mortars with LCC, CSA Low-Carbon Cements Engineering and Sul-fate Attack Properties <u>Ahmed Abderraouf, B.</u> ; <u>Nawefleh, T.</u> ; <u>Berkouche, A.</u> ; <u>Aggoun, S.</u> ; <u>Chiker, T.</u>	352 Cement free Conductive Concrete Pavement for Cold Weather : A Review Study <u>Acharya, P.</u> ; <u>Teymouri, M.</u>	455 Electric Actuators in Wheel Loaders: A Comparative LCA and LCC study of Conventional and Electric wheel loaders <u>Mamo Fufa, S.</u> ; <u>Hormaei, S.</u> ; <u>Henke, L.</u>	449 Feasibility study on using commercial flue gas to carbonate recycled aggregates for use as an input in concrete production <u>Oliva Rivera, A.</u> ; <u>Malaga, K.</u> ; <u>Sadagopan, M.</u> ; <u>Nagy, A.</u>	267 Carbonation of Steel Slags and the Potential of a CO ₂ -negative supplementary cementitious material <u>Hoffmann, C.</u> ; <u>Chupakhin, G.</u> ; <u>Rößler, C.</u> ; <u>Ludwig, H.-M.</u>
11:45 AM	363 Influence of SCBA Treatment, Activator Molarity, and Aggregate Morphology on the Performance of Alkali-Activated Artificial Aggregates and Concrete <u>Patil, R.</u> ; <u>Katere, V.</u>	234 Train Identification of Heavy Haul Railway Bridges Using Structural Health Monitoring Data <u>Mupwedi, E. J.</u> ; <u>Moyo, P.</u>	394 Decomposition of Long-term Modal Frequency Variability in a Long-span Bridge Using Environment-Conditioned Stochastic Analysis <u>Latha, L.</u> ; <u>Raychowdhury, P.</u> ; <u>Ray-Chaudhuri, S.</u>	451 Mapping the knowledge structure of waste concrete powder mortars: a bibliometric and network analysis <u>Ohemeng, E. A.</u> ; <u>Ramabodu, M. S.</u>	183 Unidirectional Carbonation of Limestone Calined Clay Cement Based Foam Concrete <u>Jose, A.</u> ; <u>Ahmed, A. H.</u> ; <u>Butler, M.</u> ; <u>Liebscher, M.</u> ; <u>Mechtcherine, V.</u>
12:00 PM	362 Effect of water-binder ratio and activator dosage on compressive strength of one-part geopolymer concrete <u>Sharma, D.</u> ; <u>Kumar, A.</u> ; <u>Singh, R. B.</u>	198 Place-based Climate Adaptive KPI Framework for Net-Zero Emission Resilient Built Environments: Evidence from an Indonesia Living Lab <u>Prabowo, B.</u> ; <u>Houlihan Wiberg, A.</u> ; <u>Resmussen, F.</u> ; <u>Dixit, M.</u> ; et al.	202 Envelope-Based Surrogate Modeling for Operational Energy Prediction <u>Abbasi Kamazani, M.</u>	257 Hardened-State Performance of 3D-Printable Earth-Cement Mortars with Bamboo Particles <u>Paiva, R.</u> ; <u>Tinoco, M.</u> ; <u>Viegas, V.</u> ; <u>Reales, O.</u> ; <u>Toledo Filho, R.</u>	488 Screen-overflow biochar as cement replacement and their influence on fresh and hardened concrete properties <u>Mayer, M.</u> ; <u>Schitz, L.</u> ; <u>Koenders, E.</u>
12:15 PM	329 On the Feasibility of Dredged Fluvial Clays as Precursors for One-Part Alkali-Activated Mortars <u>Kristiansen, S.</u> ; <u>Omid Moaf, F.</u> ; <u>Safiri, A. E. M.</u> ; <u>Plethvar, S.</u> ; <u>Valentini, L.</u> ; <u>Kioumars, M.</u>	213 Framework for Assessing Weather-Induced Building Envelope Degradation and Its Impact on Energy Performance Under Current and Future Climate Conditions <u>Shanbhag, S.</u> ; <u>Elmi, M.</u> ; <u>Norouzi, Y.</u> ; <u>Dixit, M.</u> ; et al.	493 FEM Analysis of Offshore Floating UHPC Structure under JONSWAP Waves Loading <u>Koushan, E.</u> ; <u>Ukrainczyk, N.</u> ; <u>Baderiya, N.</u> ; <u>Koenders, E.</u>	491 UpCement®: The challenges in thermal upcycling of Portland-cement based concretes <u>Lupascu, D.</u> ; <u>Noel, N.</u> ; <u>Gierth, A.</u> ; <u>Helmich, S.</u> ; <u>Mielke, T.</u>	492 Carbonate Formation and Product Characterization during v-C ₂ S Carbonation <u>Morina, N.</u> ; <u>Rößler, C.</u> ; <u>Ukrainczyk, N.</u> ; <u>Sowoldnich, T.</u> ; <u>Koenders, E.</u>
12:30 - 13:00	Closing Ceremony				
13:00 - 14:00	Goodbye Snacks & Drinks				