



International Conference on Earthen Construction 2024

The University of Edinburgh, UK



Monday, July 8th, 2024

9:00 to 9:30	Opening Welcome words: Principal of The University of Edinburgh Larch Lecture Theatre	
9:30 to 10:30	Keynote presentation: Gabriela Medero Larch Lecture Theatre	
10:30 to 11:00	Break	
11:00 to 13:00	Reinforcement Larch Lecture Theatre	Hydromechanics 1 Yew Lecture Theatre
	<p>INBUILT - Innovative bio/geo-sourced, re-used and recycled products coupled with BIM-based digital platform for very low carbon construction, circular economy, energy and resource efficiency Losini Alessia</p> <p>Understanding the mechanism behind natural fiber reinforcement of adobe bricks, researched on micro and macro scale Luijten Nienke</p> <p>Bonding behaviour of bamboo reinforcement in rammed earth Beckett Christopher</p> <p>Durability assessment of compressed earth bricks (CEB) incorporating raw and treated red algae "Gelidium sesquipedale" fibers Talibi Soukayna</p> <p>Mitigation of alkali-silica reaction by shredded wind turbine blade waste in mortar Liu Tao</p> <p>Optimization of mechanical properties of geopolymer- stabilized soil using central composite design Farez Younes</p> <p>Predicting the hygro mechanical behaviour of stabilized compressed earth bricks Salassi Simon-Pierre Joy</p>	<p>Evaluation of the hygrothermal and mechanical properties of earth by AI: first step of the CNRS project AI for EB Bonnet Stéphanie</p> <p>Structural behavior of compressed earth blocks stabilized with the mineral-based admixture Oxabrick Loko Ensslin Jonathan</p> <p>Compressed earth blocks with sewage sludge ash Bertelsen Ida</p> <p>First findings on the mechanical analysis of cob using a Discontinuity Layout Optimization (DLO) approach Jimanez Rios Alejandro</p> <p>Preliminary results of interlaboratory tests on hygrothermal properties of CEB Colinart Thibaut</p> <p>Capillary absorption into 2-layer composites comprising of natural stone and Compressed Earth Blocks Panagiotou Rafail</p> <p>Mechanical and thermal characterisation of compressed earth blocks made of termite mound soil (Macrotermes sp.) stabilised with corn starch gel Malonga Tsayi Berthia Blanchette</p> <p>Unsaturated behaviour of material from a vernacular eastern Croatia rammed earth house Perifá Fekete Ana</p>

13:00 to 14:00	Break	
14:00 to 15:45	3D printing 1 Larch Lecture Theatre	Hydromechanics 2 Yew Lecture Theatre
	Bending Strength of 3D-Printed Light Straw Clay Construction Elements Carcassi Olga Beatrice Development of a clay mixture for extrusion Vaculik Selina Additive Manufacturing with Earth Based Materials - Minimization of Shrinkage Deformation Gleiser Leonie Assessing the recyclability of raw and stabilized compressed earth blocks Mathieu Audren Keeping the Processability of a Clay Mortar for Extrusion 3D Printing while Decreasing Shrinkage and Increasing the Green Strength Dorresteijn Evelien Optimisation of Earth-based Mixtures in Terms of 3D-Printability and Mechanical Properties: feasibility study Markovic Ivan	An examination of thermal performance of earth construction from theory and practice Estève-Bourrel Pierre Experimental investigation of hygrothermal properties of raw earth compressed blocks Cehade Sara Rammed earth with brick waste and influence of moulding water content and lime Bertelsen Ida Impact of rendering on drying stage of light earth walls El Assaad Machhour Valorization Of Mining By-Products For Rammed Earth Construction Martin Antunes Miguel Angel Predicating the hygro physico mechanical behaviour of clay earth compressed bricks Nshimiyimana Philbert
15:45 to 16:15	Break	
16:15 to 17:30	3D printing 2 Larch Lecture Theatre	Architecture Yew Lecture Theatre
	Robotic Rammed Earth-Concrete (RREC): a novel additive manufacturing technology to strengthen rammed earth structures by integrated rammed concrete parts Salamatian Ali Workflow for Earth-based 3D-Printing Khader Noor 3D-printed raw earth structures to create in cities vegetated oasis of coolness Paquet Elodie	Earthen construction, architecture and building materials in different educative programs, an experience in Catalonia (Spain) Rivera Vidal Amanda Investigating the Thermal Properties of Adobes An Overview of the Adobes Research Programme Philokyprou Maria Bibliometric analysis and research trends on earthen architecture and construction Rivera Vidal Amanda Overview of Codes of Practice for Earthen Construction Around the World Boumezerane Djmalddine

Tuesday, July 9th, 2024

9:00 to 10:00	Keynote presentation: Bourgès Ann Larch Lecture Theatre	
10:00 to 10:15	RILEM contribution to earthen building Faria Paulina Larch Lecture Theatre	
10:15 to 11:00	RILEM Technical Committees panel and open discussion Chris Beckett, Antonin Fabbri, Emmanuel Keita, Céline Perlot, Arnaud Perrot Larch Lecture Theatre	
11:00 to 11:30	Break	
11:30 to 13:00	Bio-stabilization 1 Larch Lecture Theatre	Characterization 1 Yew Lecture Theatre
	Biopolymer-stabilized Earth-based Materials and Structures - It's Time to Talk Seriously about the Micro-scale Armistead Samuel Improving the water resistance of biopolymer treated soils through acetylation Yu Xinyuan Mechanical and Durability Properties of GGBS-Based Geopolymer Stabilized Earth Chami Diana Strength and durability of biostabilised Ghanaian mud bricks Beckett Christopher Sustainable poured earth construction using tropical soil and local wood residue extracts Walter Lily Comprehensive Investigation into the Influence of Soil Composition and Water Content on Cracking due to Drying Shrinkage in 3D-Printed Earthen Structures Silva Guido	A homogenisation method to assess the properties of earth construction materials Anglade Elsa Accounting for Construction Techniques in Cob Mechanical Characterisation: a Review of Past Studies Hot Germain An experimental method to characterize the performance of admixtures for a stabilized clayey material Bouzinac Solène Application of machine learning tools on a dataset of earth characteristics to predict their service life properties Guihéneuf Simon Assessing the Possibility of Recycling Concrete Waste into Earthen Building Systems: The Case of Adjuvantised Compressed Earth Blocks Rozzi Vincent Assessment of building energy performance of Raw Earth for sustainable construction Belarbi Yassine Elias
13:00 to 14:00	Lunch	

14:00 to 16:00	<p>Bio-stabilization 2 Larch Lecture Theatre</p> <p>Mechanical and thermal characterisation of compressed earth blocks made of termite mound soil (Macrotermes sp.) stabilised with corn starch gel Malonga Tsayi Berthia Blanchelle</p> <p>Bio and Geo-Sourced Additives Influence on the Hygrothermal Properties of Earth Plaster Derived from Excavated Soil in Reunion Island Fogue Djombou Yannick Igor</p> <p>Poured earth: The influence of bio-additives and reinforcement with plant fibers on earth-based construction materials Berger Félix</p> <p>Influence of biostabilization on the thermal conductivity and mechanical strength of earth materials Simpore Arnel</p> <p>Investigation of fermented rice husk use for the formulation of an earth plaster Nshimiyimana Philbert</p> <p>Sorghum fibers reinforced mudbrick: experimental characterization and analytical modelling of thermal properties Fourmeau Marion</p> <p>Challenges of Insulating Rammed Earth Using Bio-Based Materials Khalil Sara</p> <p>Transforming construction in Sub-Saharan Africa with microbial reinforcement of compressed earth bricks Theodoridou Magdalini</p>	<p>Characterization 2 Yew Lecture Theatre</p> <p>Data collection and analysis of rammed earth walls subjected to shear-compression loading Zhu Yuhan</p> <p>Evaluating Fresh State and Long-Term Mechanical Properties of Excavation Wastes Utilizing Low Carbon Binders for Sustainable Building Material Development Kuppusamy Suganya</p> <p>Sonic tomography inspection of rammed earth Solis Mario</p> <p>Toward a Non-destructive Method to monitor the Young's Modulus variation during drying process of Rammed Earth Material Force Marie-Sarah</p> <p>Additive manufacturing for earth-based materials: an experimental investigation Trento Daniel</p> <p>Drying-Induced Cracking of Raw Earth Plaster Karbala Ghida</p> <p>Investigating the Thermal Conductivity of Compacted Earth Blocks Versus Density and Moisture Content Hamieh Nancy</p> <p>Rammed earth building: contribution of moisture transfer on indoor comfort Poupard Théo</p>
16:00 to 16:30	Break	
16:30 to 17:30	<p>Fire Larch Lecture Theatre</p> <p>Use of Organic Residues for the Mechanical Enhancement of Sustainable Rammed Earth Chacara César</p> <p>Effect of mechanical loading on the fire behavior of compressed earth bricks Abdallah Rafik</p> <p>Optimization of the performance of earth mortars at elevated temperatures Tadonbou Jordan</p> <p>High-temperature performances of compressed earth blocks stabilized with cementitious binders Philbert Nshimiyimana</p>	<p>Characterization 3 Yew Lecture Theatre</p> <p>Mechanical and microstructural study of raw earth stabilised by alkali-activated slag Prud'homme Elodie</p> <p>Soil stabilization with Brazilian iron ore tailings to produce rammed earth Bessa Sofia</p> <p>Workmanship impact on raw earth masonry tensile strength Raspail Valentin</p> <p>Sample extraction method of earthen traditional coatings Marchante Patricia</p>

Wednesday, July 10th, 2024

9:00 to 10:30	<p>LCA Larch Lecture Theatre</p> <p>BIM-LCA for earthen constructions Thiel Charlotte</p> <p>Building with earth: How to design buildings fitting future environmental objectives? Estève-Bourrel Pierre</p> <p>Sustainability of earth-based materials incorporating marble cutting waste Giuffrida Giada</p> <p>Modelling of the drying of earthen materials: on the fragility of the relationship between capillary pressure and water content Le Mire Etienne</p> <p>Investigation of irreversible CO2 interactions with clay minerals for the passive regulation of CO2 in indoor environments Roucan Sofia</p>	<p>Rheology Yew Lecture Theatre</p> <p>Earth mortar: towards a unified method to prepare 4*4*16 specimens Cadet Kindro</p> <p>Poured earth: the emerging liquid stone for XXI century Du Yi</p> <p>Monitoring and modeling of formwork pressure exerted by castable earthen materials Guihéneuf Simon</p> <p>Viscosity control of kaolinites dispersion via addition of tannin and ferric chloride Lovage Charlotte</p> <p>Holistic comparison of bio-stabilized rammed earth for building construction Losini Alessia</p>
10:30 to 11:00	Break	
11:00 to 12:00	<p>Keynote presentation: Kloft Harald Larch Lecture Theatre</p>	
12:00 to 12:30	<p>Prizes + Closing remarks Larch Lecture Theatre</p>	
12:30 to 13:30	Lunch	
13:30 to 17:00	RILEM TC general meetings (open to non-members)	