

Programme
International Symposium on Earthen Structures (ISES-2018)

Wednesday, 22 August 2018: (Day 1)

08:30 – 09:30:- Registration

09:30 – 10:00:- Inaugural Programme

| Technical Session – 1: Earthen materials and technology (Auditorium) | |
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| Session Chair | Prof. Pete Walker |
| 10:00 – 10:45 | <u>Keynote lecture – 1: Alkaline Stabilization of Adobe and Sustainability</u> <i>Prof. Normando Perazzo Barbosa</i> |
| 10:45 – 11:05 | Tea/Coffee Break |
| 11:05 – 11:25 | Mineralogical, physical and mechanical properties of soil for using in adobe blocks <i>Lucas Miranda Araújo Santos, Aline Figueirêdo Nóbrega de Azerêdo, Givanildo Alves de Azerêdo, Sérgio Ricardo Honório de Assis</i> |
| 11:25 – 11:45 | A case study on technical and social aspects of earth houses in rural India <i>Y. Kulshreshtha, P.J. Vardon, N.J.A. Mota, M.C.M. van Loosdrecht, H.M. Jonkers</i> |
| 11:45 – 12:05 | Strength and cementation in a termite mound <i>Nikita Zachariah, Ramesh K. Kandasami, Aritra Das, Tejas G. Murthy & Renee M. Borges</i> |
| 12:05 – 12:25 | Earthen materials as opportunity for CDW reduction - Results from the EU funded research project RE4 <i>Andrea Klinge, Eike Roswag-Klinge, Christof Ziegert, Caroline Kaiser, Danijela Bojic</i> |
| 12:25 – 12:45 | Identification and quantification of material resource for earth construction <i>Erwan Hamard, Blandine Lemercier, Bogdan Cazacliu, Andry Razakamanantsoa, Jean-Claude Morel</i> |
| 12:45 – 13:05 | The effect of incorporating recycled materials on the load deformation behaviour of earth for buildings <i>Dick, K.J., Pieniuta, J., Arnold, K, Logan, P., Krahn, T</i> |
| 13:05 – 14:00 | Lunch break |

| Technical Session – 2: Earthen materials and technology (Auditorium) | |
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| Session Chair | Prof. Andrew Heath |
| 14:00 – 14:45 | <u>Keynote lecture – 2: How do we explain the properties of earthen construction materials?</u> <i>Prof. Charles Augarde</i> |
| 14:45 – 15:05 | Strength and elastic properties of tank-bed soil and lime-pozzolana based geopolymer units and prisms <i>Jyothi T K, Raghunath S, Ranganath R V, Jagadish K S</i> |
| 15:05 – 15:25 | Stabilisation of clay mixtures and soils by alkali activation <i>Alastair Marsh, Andrew Heath, Pascaline Patureau, Mark Evernden, Pete Walker</i> |
| 15:25 – 15:45 | Studies on geopolymer based earthen compacts <i>Preethi R K, B. V. Venkatarama Reddy</i> |
| 15:45 – 16:00 | Tea/coffee break |

| Parallel session (Auditorium) | |
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| Technical session – 3: Earthen materials and technology | |
| Session Chair | Dr. K. S. Nanjunda Rao |
| 16:00 – 16:20 | Influence of normal stress and bonding techniques on shear bond strength of rammed earth <i>S N Ullas, G S Pavan, K S Nanjunda Rao</i> |

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| 16:20 – 16:40 | Stress strain characteristics of unstabilised rammed earth <i>Abhilash H N, Jean-Claude Morel</i> |
| 16:40 – 17:00 | Shear strength parameters and Mohr-Coulomb failure envelopes for cement stabilised rammed earth <i>Lepakshi R, B. V. Venkatarama Reddy</i> |
| 17:00 – 17:20 | Moisture transport in cement stabilised soil brick – mortar interface and implications on masonry bond strength <i>B. V. Venkatarama Reddy, Nikhil, Nikhilash</i> |
| 17:20 – 17:40 | Reviewing the issue of "acceptability" of earthen structures in housing <i>Sujoy Chaudhury</i> |
| 19:00 – 21:00 | High Tea & cultural event |

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| Parallel session | | (Lecture Hall) |
| Technical Session – 4: Architecture / design, materials conservation, repair/ reuse | | |
| Session Chair | Prof. Monto Mani | |
| 16:00 – 16:20 | Role of earthen materials in rural vernacular architecture: the case of ANAVANGOT ancestral home <i>Sridevi Changali, Rosie Paul</i> | |
| 16:20 – 16:40 | Climate responsive earthen architecture of Chigule <i>Amit C Kinjawadekar</i> | |
| 16:40 – 17:00 | Exploring attributes of vernacular Assam type house design techniques in contemporary setting <i>Shiva Ji, Ravi Mokashi Punekar</i> | |
| 17:00 – 17:20 | Organic stabilisers in traditional mud homes of India <i>Rosie Paul, Sridevi Changali</i> | |
| 17:20 – 17:40 | Interlocking in mud blocks for improved flexural strength <i>H. G. Vivek Prasad, K. S. Jagadish</i> | |
| 19:00 – 21:00 | High Tea & cultural event | |

Thursday, 23 August 2018 (Day 2)

| Technical Session 5 - Earthen Materials and technology | | (Auditorium) |
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| Session Chair | Prof. B. V. Venkatarama Reddy | |
| 09:30 – 10:15 | <u>Keynote lecture – 3: Stabilized earth in load bearing walls and other applications</u> <i>Prof. Chintha Jayasinghe</i> | |
| 10:15 – 11:00 | <u>Keynote lecture – 4: Building with unstabilised earth in the XXI century</u> <i>Prof. Jean Claude Morel</i> | |
| 11:00 – 11:15 | Tea Break | |

| <u>Parallel session</u> | | (Auditorium) |
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| Technical Session 6 - Energy, environment, structural performance, earthen materials | | |
| Session Chair | Prof. Antonin FABBRI | |
| 11:15 – 11:35 | Light earth performances for thermal insulation: Application to earth-hemp <i>T. Vincelas, T. Colinart, E. Hamard, A. Hellouin de Ménibus, T. Lecompte, H. Lenormand</i> | |
| 11:35 – 11:55 | The relevance of earthen plasters for eco innovative, cost efficient and healthy construction - Results from the EU funded research project [H] house <i>Andrea Klinge, Eike Roswag-Klinge, Matthias Richter, Patrick Fontana, Johannes Hoppe, and Jerome Payet</i> | |
| 11:55 – 12:15 | Alternative methods in numerical modelling of earth masonry under seismic loading <i>K P I E Ariyaratne, C Jayasinghe, M T R Jayasinghe, and P Walker</i> | |
| 12:15 – 12:35 | Durability of rammed earth: A comparative study of spray erosion testing and natural weathering <i>Inayath Kharoti, Pete Walker and Chintha Jayasinghe</i> | |
| 12:35 – 12:55 | Advances in the use of biological stabilisers and hyper-compaction for sustainable earthen construction materials <i>Sravan Muguda, George Lucas, Paul Hughes, Charles Augarde, Alessia Cuccurullo, Agostino Walter Bruno, Celine Perlot, Domenico Gallipoli</i> | |
| 12:55 – 13:15 | Characteristics of flowable stabilised earth concrete <i>K Gourav, S N Ullas</i> | |
| 13:15 – 14:00 | Lunch break | |

| <u>Parallel session</u> | | (Lecture Hall) |
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| Technical Session 7 - Earthen materials, energy, environmental performance | | |
| Session Chair | Prof. Normando Barbosa | |
| 11:15 – 11:35 | Effect of bamboo fiber and C&D waste on moisture content and compressive strength relationship for cement stabilised rammed earth <i>Arpitha K</i> | |
| 11:35 – 11:55 | Studies on strength development of geopolymer stabilised soil-LPC (Lime-Pozzolana-Cement) mortars <i>Jitha P T, Sunil Kumar B, Raghunath S</i> | |
| 11:55 – 12:15 | Effectiveness of polypropylene fibers on impact and shrinkage cracking behaviour of adobe mixes (Video) <i>Gerardo Araya-Letelier, Federico C. Antico, Jose Concha-Riedel, Andres Glade, María J. Wiener</i> | |
| 12:15 – 12:35 | Influence of jute fibers to improve flexural toughness, impact resistance and drying shrinkage cracking in adobe mixes (Video) <i>Jose Concha-Riedel, Gerardo Araya-Letelier, Federico C. Antico, Ursula Reidel, Andres Glade</i> | |

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| 12:35 – 12:55 | Error analysis on thermal conductivity measurements of cement-stabilized soil blocks <i>N. C. Balaji, and Monto Mani</i> |
| 12:55 – 13:15 | |
| 13:15 – 14:00 | Lunch break |

| Technical Session 8 - Structural performance, design, earthen materials (Auditorium) | |
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| Session Chair | Prof. Chintha Jayasinghe |
| 14:00 – 14:30 | Keynote lecture – 5: Seismic performance, retrofitting and testing of earth based buildings: A review <i>Dr K. S. Nanjunda Rao</i> |
| 14:30 – 14:50 | Bond strength of rebars in cement stabilised rammed earth <i>Lepakshi R, B. V. Venkatarama Reddy</i> |
| 14:50 – 15:10 | Behaviour of cement stabilised rammed earth walls under concentric and eccentric gravity loading <i>B. V. Venkatarama Reddy, V. Suresh, and K. S. Nanjunda Rao</i> |
| 15:10 – 15:30 | Engineering Design of Rammed Earth in Canada <i>Timothy J. Krahn, P., Kristopher J. Dick</i> |
| 15:30 – 15:50 | The stabilized rammed earth building technique and its use in Australia (Video) <i>Rodrigo Amaral do Prado Rocha, Pedro Henryque Melo de Oliveira</i> |
| 15:50 – 16:00 | Tea/coffee break |

| Technical Session 9 – Posters | |
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| Session Chair | Prof. Monto Mani/ Dr. HN Abhilash |
| 16:00 – 16:10 | Transformation of a natural building tradition - climate adaptive earthen buildings in Iraq and Morocco, a trauma therapy centre in Iraq and a school on Morocco <i>Eike Roswag-Klinge, Christof Ziegert, Marine Miroux</i> |
| 16:10 – 16:20 | Gadhi soil in Maharashtra as energy efficient building material <i>Vijay G. Kondekar, O.R. Jaiswal, L.M. Gupta, Prashant R. Gandhi</i> |
| 16:20 – 16:30 | Superadobe technology and building systems – A review <i>Syed Faizan Husain</i> |
| 16:30 – 16:40 | Effects of treated date palm fibre on the durability of stabilized earth blocks <i>Abdeldjebar R, Fouchal F, Zebair A, Hamouine A, Labbaci B</i> |
| 16:40 – 16:50 | New horizonte community center - A new earthen architecture in Lisbon <i>Ana Perdigão Antunes</i> |
| 16:50 – 17:00 | Experimental investigation on cement-stabilized rammed earth-filled steel tubular stub columns under axial compression <i>Prasanta Kar, Deb Dulal Tripura, Konjengbam Darunkumar Singh</i> |
| 17:00– 17:10 | Heritage Preservation of Earthen Structures <i>S. Shantharama Patil, Tessia Zachariah</i> |
| 17:10 – 17:20 | Monitoring sulphate attack on compressed stabilized earth blocks by wetting cycles <i>Wesley Vítor Dantas, Aline de Azeredo, Gibson Rocha Meira, Givanildo Azeredo</i> |
| 17:20 – 17:30 | Breathing spaces – The Earthen Structures <i>S. Shantharama Patil, Sahitya Pydipati, Shagun Kapur</i> |
| 17:30 – 17:40 | Down to Earth with Adobe <i>S. Shantharama Patil, Pooja Mishra</i> |
| 17:40 – 17:50 | Born from the Earth <i>S. Shantharama Patil, Jemy Joy Philip</i> |
| 17:50 – 18:00 | Round About to Earthen Techniques <i>S. Shantharama Patil, Deepakshi Vivek Mittal</i> |

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| 18:00 – 18:10 | Experimental evaluation of pig hair fibers on mechanical, shrinkage and impact performance of earthen materials <i>Gerardo Araya-Letelier, Federico Antico, Jose Concha-Riedel, Ursula Reidel, María Wiener</i> |
| 19:30 | Banquet |

Friday, 24 August 2018 (Day 3)

| Technical Session 10 – Earthen materials and technology | | (Auditorium) |
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| Session Chair | Prof. Guillaume Habert | |
| 09:30 – 09:50 | CBRI's role in betterment of Indian rural habitat <i>N Gopalakrishnan</i> | |
| 09:50 – 10:10 | Innovations in construction of Cement Stabilised Rammed Earth Dwellings post Bhuj - 2001 earthquake <i>Kiran Vaghela, Tejas Kotak</i> | |
| 10:10 – 10:55 | <u>Keynote lecture – 6: Sustainability of earth building materials – Environmental product declarations as an instrument of competition in building material industry</u> <i>Dr. Horst Schroeder</i> | |
| 10:55 – 11:10 | Tea break | |

| Technical Session 11 - Climatic response, thermal performance, codes, indoor air-quality | | (Auditorium) |
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| Session Chair | Dr. Daniel Maskell | |
| 11:10 – 11:55 | <u>Keynote lecture – 7: Building to heal</u> Prof. Guillaume Habert | |
| 11:55 – 12:15 | Hygrothermal behaviour of cob material <i>Tuan Anh Phung, Malo Le Guern, Mohamed Boutouil, Hasna Louahlia</i> | |
| 12:15 – 12:35 | Hygrothermal and hydromechanical behaviours of unstabilised compacted earth <i>Antonin Fabbri, Longfei Xu (PhD student), Henry Wong, Fionn McGregor</i> | |
| 12:35 – 12:55 | Indoor air quality regulation through the usage of eco-efficient plasters <i>Maria Idália Gomes, João Gomes, Paulina Faria</i> | |
| 12:55 – 13:15 | Full-scale simulation of indoor humidity and moisture buffering properties of clay <i>Valeria Cascione, Daniel Maskell, Andy Shea, Pete Walker</i> | |
| 13:15 – 14:00 | Lunch break | |

| Technical Session 12 - Presentations from industry | | (Auditorium) |
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| Session Chair | Prof. B.V. Venkatarama Reddy | |
| 14:00 – 14:20 | Mr. Kiran Vaghela, <i>Hunnarashala Gujarat</i> | |
| 14:20 – 14:40 | Mr. Georg Leuzinger | |
| 14:40 – 15:00 | Ms. Savneet Kaur, <i>IMARAT Architects</i> | |
| 15:00 – 15:20 | Dr. M R Yogananda, <i>Mrinmayee</i> | |
| 15:20 – 15:40 | Mr. V S Sreeram & Mr. R C Manjunath | |
| 15:40 – 16:00 | Ms. Mala S & Dr. S N Ullas | |
| 16:00 – 16:20 | Ms. Nathasha Iype, <i>Goodearth</i> | |
| 16:20 – 17:20 | Discussion and concluding session | |
| 17:20 – 17:50 | High Tea | |

Saturday, 25 August 2018 (Day 4):

08:00 – 16:00 – Optional technical field visit

Project : GoodEarth Malhar eco-homes

Web site : <http://goodearth.org.in/#>

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The project is a commercial venture adopting stabilised earth block (SEB) technology. Villa houses built using local materials. The homes have load bearing stabilised earth block masonry. The homes are arranged in clusters of 8 - 12 units with open spaces having garden, plants and other common amenities. The SEB's were made using manual systems, produced about 60 million blocks. The project has in built systems for harvesting rainwater and recycling of wastewater for secondary applications.

