



International Workshop on Rammed Earth Materials and Sustainable Structures & Hakka Tulou Forum 2011: Structures of Sustainability

In conjunction with
International Symposium on Innovation & Sustainability of Structures in Civil Engineering
(ISSS'2011)

Date: Oct 28 – 31, 2011
Place: Xiamen University, Xiamen, China

Organized by
West Virginia University Constructed Facilities Center, USA
Xiamen University School of Architecture and Civil Engineering, China
International Hakka Tulou Alliance

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One half of the world's population, approximately three billion people on six continents, lives or works in buildings constructed of earth.

Ronald Rael, University of California, Berkeley and Founder of EarthArchitecture.org

Introduction: Rammed earth is a sustainable construction material due to many benefits for the environment including: 1) natural (non processed) material, 2) universal availability, 3) durability, 4) recyclability, 5) low embodied energy, 6) low CO2 emissions, 7) high thermal mass, 8) traditional construction method, and 9) low cost for material, construction, transportation. Hakka rammed earth buildings in Fujian Province of China reflect the importance of historical precedents, universal evolution, emerging innovation and advancement in the science and engineering of rammed earth construction, from 8th century to 20th century. They are considered as “EcoVillages” of best practices for planet earth’s sustainability in their planning, design, construction, lifestyle, resource management, micro industries, renewable energy, recycling of human and animal waste, and a low ecological footprint.

The *International Workshop on Rammed Earth Materials and Sustainable Structures*, as a special session of the *International Symposium on Innovation and Sustainability of Structures in Civil Engineering (ISISS'2011)*, takes place from October 28 to 31, 2011, Xiamen University, Xiamen, China. This workshop is being organized as the 2nd event of Hakka Tulou Forum Series. The first *Hakka Tulou Forum: Lessons to Be Learned, Past, Present and Future* took place on June 24, 2009 at Xiamen University, China where the International Hakka Tulou Alliance was also launched at the same time.

Objectives: Rammed earth is both a structural material and construction technique with favorable life cycle impact on the planet Earth, yet there are challenges to implement rammed earth technologies in modern constructions. This workshop brings together experts from Australia, Canada, China, Japan, UK and USA to examine the research potential of rammed earth materials and structures. Topics include: 1) Practices and experiences with rammed earth for sustainable structures; 2) Status and issues related to construction specifications and standards; and 3) Research directions, needs, and strategies for incorporating rammed earth in modern architecture. An important outcome of this workshop is to: 1) Establish a network of professionals to catalyze collaborative research, development and implementation including international partnerships and 2) Develop joint R&D and educational programs emphasizing the implementation of rammed earth construction with its inherent environmental and structural stability and sustainability. The workshop to take place in a city near the Hakka villages offers a unique opportunity for the workshop participants to witness the sustainability of Hakka architecture and adapt the past for the world to come.

Activities: The workshop will be opened with presentations by invited participants at XMU in three half-a-day sessions, followed by one half-a-day roundtable discussion session on joint research and development topics and program development, and continued by a field study tour of Hakka rammed earth buildings in Yongding County, Fujian Province, which is located within 3 hours driving distance from XMU. Furthermore, a special field session will be organized for interacting with Hakka rammed earth construction Masters (local field experts) and viewing the US History Channel film entitled "History Made for Tomorrow: Hakka Tulous" by its Director.

Proceedings: The papers of the workshop will be published in the proceedings of the workshop highlighting the state-of-the-art of rammed earth material and construction technologies. These papers will surely play multifold roles in building a sustainable 21st century; including helping make the engineering community aware of the advantages of rammed earth construction and promoting new research opportunities that can further advance our knowledge on the rammed earth material for modern construction.

For more information, please contact the Workshop Organizer:

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