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Bamboo Trusses with Low Cost and High Ductility Joints

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ABSTRACT

Innovative solutions of joints for bamboo trusses are presented. Experimental tests show the performances and the high level of ductility of the proposed technique, joined with simplicity in the concept of the joints, low level of technology and low cost of all used materials. It can permit a proper dissemination and a sustainable maintenance in developing countries.

KEYWORDS

Bamboo Constructions; Trusses; Structural Optimization; Low-Cost Technology

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References

- [1] C. Comartin, S. Brzev, F. Naeim, M. Greene, M. Blondet, S. Cherry, D. D' Ayala, M. Farsi, S. Jain, J. Pantelic, L. Samant and M. Sassu, " A Challenge to Earthquake Engineering Professionals," *Earthquake Spectra*, Vol. 20, No. 4, 2004, pp. 1049-1056. doi:10.1193/1.1809130
- [2] P. Maydl, " Sustainable Engineering: State-of-the-Art and Prospects," *Structural Engineering International*, Vol. 14, No. 3, 2004, pp. 176-180.
- [3] J. O. Oyawa, " Eco-Materials for Developing Countries," *Structural Engineering International*, Vol. 14, No. 3, 2004, pp. 208-212.
- [4] D. Romagno and M. Sassu, " Low Cost Seismic Constructions: Design and Dissemination in Developing SocioEconomic Areas," *Proceedings INTED09, Valencia, 9-11 March 2009*, pp. 2808-2818.
- [5] M. Sassu, " Chapter 7: Vernacular Construction," In: *World Housing Encyclopedia*, Oakland, 2004, pp. 1-10.
- [6] H. Schreckenbach, " Training Strategies for an R & D Project in Technical Co-Operation: Low-Cost Housing Technologies in Kenya," *Building Advisory Service and Information Network*, No. 22, 2001.
- [7] R. Stulz, " Appropriate Building Materials," SKAT and Intermediate Technology Publications Ltd., CH-9000, St. Gallen, 1983.
- [8] C. Sumerauer, " Connecting Bamboo Know-How Resources Globally for Sharing Knowledge," *Building Advisory Service and Information Network*, No. 25, 2003.
- [9] S. K. Paudel, " Proceeding of Bamboo Housing Workshop," *INBAR Proceeding No. 10*, 2003. <http://www.inbar.int/InfoPortal.htm>
- [10] J. A. Janssen, " Mechanical Properties of Bamboo," *Eindhoven University of Technology, Kluwer Academic Publishers, The Netherlands*, 1991. doi:10.1007/978-94-011-3236-7
- [11] J. A. Janssen, " Building with Bamboo: A Handbook," *Intermediate Technology Publications Limited*,

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- [12] D. L. Jayanetti and P. R. Follet, " Bamboo in Construction, an Introduction," TRADA Technology Ltd., Bicinghamshire, 1998.
- [13] P. R. Follet, " Earthquake-Proof House Shakes Bamboo World," Proceedings of the Institution of Civil Engineers, Vol. 157, No. 3, 2004, p. 102.
- [14] H. N. Mishra and S. N. Sanyal, " Mature Bamboo in Mass Housing," Proceeding of the 4th International Workshop, Chiangmai, 27-30 November 1991, pp. 309-314.
- [15] A. Kumar, I. V. Ramanuja Rao and C. B. Sastry, " Bamboo for Sustainable Development: Proceedings of the 5th International Bamboo Congress," INBAR Proceeding No. 7, 1998.
- [16] O. A. Arce, " Connection of Bamboo Elements. Bamboo in Asia and the Pacific," Proceeding of the 4th International Workshop, Chaingmai, 27-30 November 1991.
- [17] P. Taylor and M. B. Luther, " Evaluating Rammed Earth Walls: A Case Study," Solar Energy, Vol. 76, No. 1-3, 2004, pp. 79-84. doi:10.1016/j.solener.2003.08.026
- [18] M. Sassu, D. Romagno, I. Ngoma, N. Puccinelli and R. Bonicoli, " A Proposal for Low-Cost Earthquake-Resistant Bamboo Buildings," TEP Editor, Pisa, 2010