

# CROSS-LAMINATED STRUCTURAL SYSTEMS: SUSTAINABILITY AND SEISMIC RESPONSE (CLT-MOD)



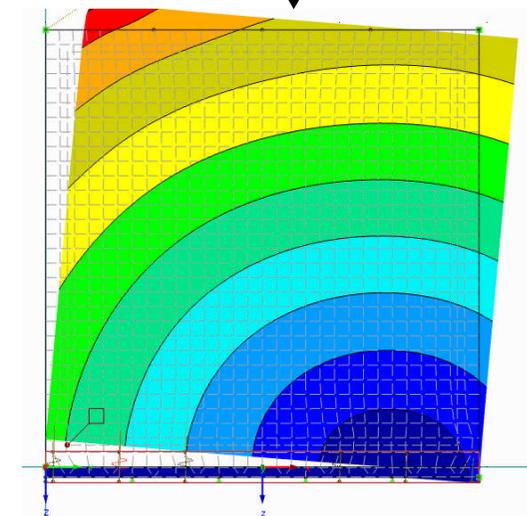
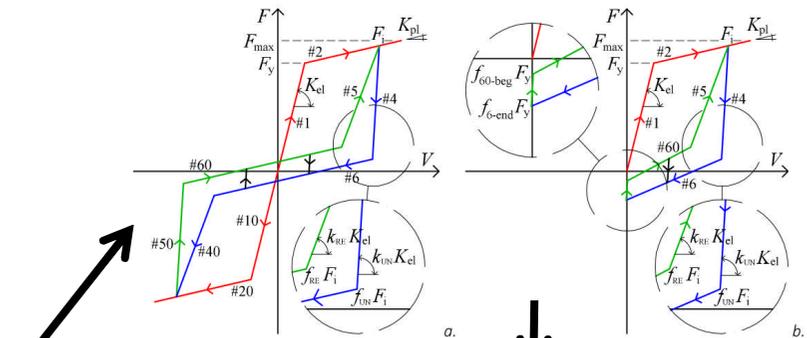
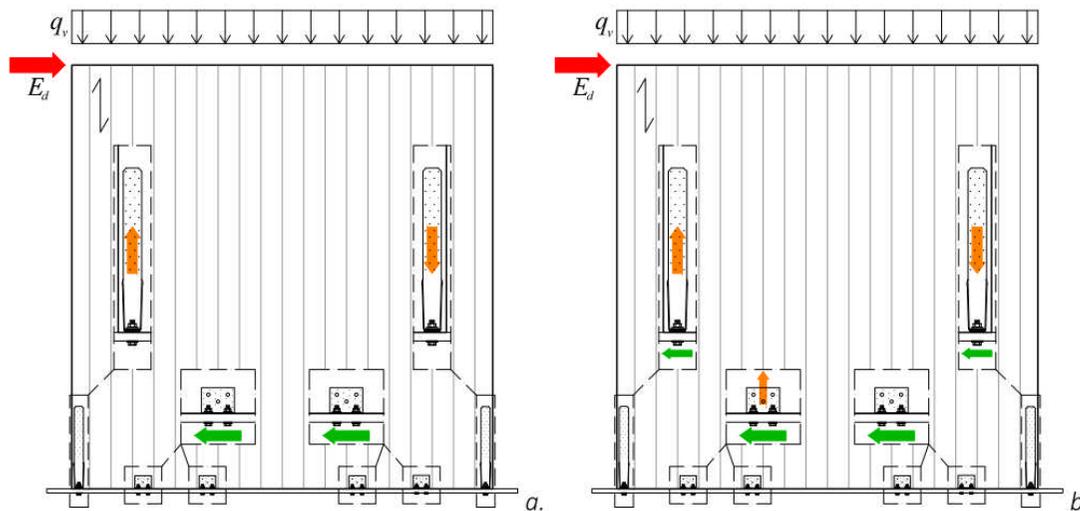
**Cross-Laminated Timber (CLT)** is gaining a significant popularity among structural products as a **sustainable alternative to steel and concrete**. CLT has a **low carbon footprint** and provides **comfortable living conditions**; moreover, the high strength-to-weight ratio, the prefabrication process and the erection speed are additional key points of its broad diffusion.

# CROSS-LAMINATED STRUCTURAL SYSTEMS: SUSTAINABILITY AND SEISMIC RESPONSE



The bottleneck for the widespread application of these systems is the **behavior of wood-metal connections** subjected to cyclic loads. For this purpose we will use real prototype data to calibrate models.

This project will generate applied knowledge and tools based on the numerical modeling of the behavior of cyclical loads of joints between the panels and the most commonly used connections.



# CROSS-LAMINATED STRUCTURAL SYSTEMS: SUSTAINABILITY AND SEISMIC RESPONSE

## Partner institutions and researchers



POLITÉCNICA

Beatriz González Rodrigo  
Juan Carlos Mosquera  
*Universidad Politécnica de Madrid, Spain*



Dolores Gómez Pulido  
*CSIC, Spain*



CEU  
*Universidad  
San Pablo*

Federico Prieto Muñoz  
Federico de Isidro Gordejuela  
*CEU University, Spain*



*The Toolbox Company*



Jorge Branco  
*University of Minho, Portugal*

University of Minho  
School of Engineering

## Other collaborators and potential partners

- 1-. *Technical Universities: i.e. Graz University-Austria, University of L'Aquila-Italy, Univ. de Santiago de Chile*
- 2-. *Research Institutions: i.e. CNR IVALSÀ Trees and Timber Institute-Italy,...*
- 3-. *Professional Chapters and Associations*
- 4-. *Wood companies*

## References

González Rodrigo, B., Fraile de Lerma, A. & Mosquera, J.C.  
*Modeling of the seismic behavior of structures of cross-laminated timber panels . CompWood 2017. 7-9 June , Vienna, Austria. 2017*

González Rodrigo, B., Fraile de Lerma, A. & Mosquera, J.C.  
**Seismic response of a three-storey building with cross-laminated timber panels: lessons learned from numerical simulation .CMMoST 2017. Noviembre Madrid, Spain. 2017**

González Rodrigo, B., Fraile de Lerma, A. & Mosquera, J.C.  
*Analysis of the Seismic Behavior of Structures with Cross-laminated Timber panels. Dyna (In Press)*

Mosquera J.C., Cueto Felgueroso L. Santillán D., González Rodrigo, B. *Caracterización de Las vibraciones stick-slip de un oscilador con amortiguamiento y fricción tipo rate and state. CIBEM 2017. Octubre, Lisboa, Portugal. 2017*