Cross Laminated Timber furniture providing shelter during earthquakes. Lifeshell public domain release.

Marco Fellin1\*, Mario Polidori2, Ario Ceccotti3

1 MUSE Museum of Science, Trento, Italy. [marco.fellin.wood@gmail.com](mailto:marco.fellin.wood@gmail.com)

2 Vaglia Municipality (former), P.zza Corsini n. 3 Vaglia (FI), Italy. [mariopolidori@hotmail.com](mailto:mariopolidori@hotmail.com)  
3 Boğaziçi University, Istanbul, Turkey, [ario.ceccotti@boun.edu.tr](mailto:ario.ceccotti@boun.edu.tr)

\*Corresponding author

Earthquakes are an unpredictable potentially deadly phenomena. Buildings anti-seismic technology can effectively reduce the risk of injuries, however the anti-seismic performances of many buildings in Italy and other countries are still weak. Lack of funds, logistics and bureaucracy are still delaying the adoption of this technology on large scale. As a result citizens spend hours everyday in private and public buildings (including schools) which are still a dangerous place.

A wooden based furniture that can be used as an anti-seismic shelter is here released under the Creative Commons Licence: a low-cost, natural-based, open-source, copyright-free solution. The so-called *Life Shell* concept has been independently funded by former wood researchers and it is presented in its engineering characteristics. “Life in Shell” depicts an alive human being protected by wood during an earthquake.

Life Shell is a furniture in the shape of school desk, wardrobe, table or bed realized using Cross Laminated Timber panels. The design foresees as many closed sides as possible and the assembly uses metal connections and screws for wooden constructions. A 1300 x 700 x 500 mm school desk prototype has been successfully tested, resisting to a total impact energy of 40.000 Joule without major damages.

Life Shell is foreseen in various types, sizes, weights, finishing and accessories. A very low cost-version is thought for being assembled and finished by the final user, while a top-range version can include a surviving kit (torch, whistle, water, dust mask, a laminated emergency guide, energy bars, first aid kit) or even topped with fancy technology (oxygen masks, avalanche beacon, 2 way radio, hand crank power generator).

Authors desired to release this potential life-saving technology using the Creative Commons CC BY 4.0 License (public domain), which allows the production and selling of these furniture without any royalty fee for the authors.

**Keywords:** anti-seismic, furniture, Cross Laminated Timber, CLT, X-LAM, Crosslam, shelter, creative commons.

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