

Description of innovation

Innovation	
Title	High Efficiency Light Panel (HELP), a new wood-base panels system.
Picture	
Domain	Construction
Source of wood	Stemwood
Location	Spain
Implementers	Mabitat
Actual status	Running
Approach	The aim of the project is to develop a construction system known as High Efficiency Light Panel (HELP). Consists of a set of innovative solutions based on a mixture of lightweight timber framing and cross laminated timber (CLT), for the manufacture of "Zero Emission" walls, slabs and roofs.
Main results	<p>The new building solutions are based on wooden or wood-base panels which will be subjected to tests, analytical calculations and numerical approximations for their structural, thermal, acoustic, watertight and fire resistance characterization. In addition, its environmental characterization (CO₂, reutilization) will be carried out.</p> <p>A solution with the new construction system has been defined for use in slabs, walls and roofs. Spreadsheets have been developed to obtain thermal transmissivity, surface and interstitial condensations, sound absorption and structural capacity.</p>
Lessons learned	There is an improvement of the structural capacity of the construction system that allows more height (3-4 floors) than with the traditional lightweight building. The positioning of a three-layer or CLT board on the inside of the walls acts directly as a vapour barrier, saving the cost of installation.
Contact information	https://www.mabitat.es/contacto/
Link to website	www.mabitat.es
Code	IN_ES_03

Innovation assessment

Region	Spain
Time scale	2017 - 2018
Mobilization Potential	10-20 m3 / house
Kind of wood concerned	Sawn timber, KVH
Sustainability Potential	Very positive
Impact on environment & biodiversity	Positive
Ease of implementation	Medium
Economic impact	Increase of the load-bearing capacity of the building by 30% approximately
Job effect	Positive: increased efficiency of materials
Income effect	Positive: decreased building time
Specific knowledge needed	High knowledge needed about similar construction systems
Costs of implementation	House building cost increased in 10%
Technical readiness level	Applicable
Key information for adoption	Experienced timber workers