BASAJAUN | Sustainable wood construction chain for Europe



Wood construction chains can be optimized to foster both rural development and urban transformation whilst being connected with sustainable forest management in Europe. Two full-scale medium-sized demo buildings are being constructed in Finland and France to integrate various innovative materials, products and components.

Objectives. The core idea is to enable the construction of a mid-sized building with the lowest possible surface of forest area. A series of innovative bio-based materials, products and constructive systems are jointly developed and tested by companies and researchers. A digital framework of the 'forest to building' chain and several regional innovation roadmaps are set up to explore how wood construction can create benefits for rural areas. The special feature of the project is that it integrates the full value chain: all steps from forestry, wood processing, intermediate manufacturing and building are included, to establish the link from raw materials in rural areas up to the high-end products in the urban environment. The activities of the project can be grouped into three main topics: 1. Rural development, 2. Sustainable wood construction, and 3. Digitalization and innovation.

R&D aproach. The project partners develop and test innovative materials, products, building systems and supply chain solutions for manufacturers and end users. The proof points for industrial end users and customers include a full record of the product's technological and sustainability characteristics, productivity, cost efficiency and competitiveness, and their demonstration in the form of two full scale demo buildings realised in operational settings. The aim is to exploit 100% of the raw materials obtained from harvested wood (i.e. solid wood, fibres, veneers, bark, sawdust, etc.) and create a building that is as much as possible based in products and sub-products from all these materials. This goal is challenging but can deliver convincing evidence that sustainable wood construction is ready to tackle three global challenges at the same time: 1. mitigation of GHG emissions of the construction sector, 2. development of sustainable high-value materials and products for urban customers, and 3. strengthening of rural development and employment.

Main outcomes. 1) Several guidance reports about building with wood addressing a holistic value chain including LCA, recyclability and eco-design of novel building products and systems, 2) Studies on wood as driver for sustainable development in Europe's rural regions, 3) A 'Forest to Building Digital Framework' (F2BDF) as digital twin of the whole value chain, 4) A series of innovative bio-based materials, products and constructive systems, including thermoplastic composites, WPC foams, waterborne coatings with fire-proof properties, structural components, structural insulation panels, façade, interior partitions and roof prototypes, etc., 5) Two full-scale demo buildings integrating these innovations, in France and in Finland, 6) A regional innovation platform for upscaling

results with companies and stakeholders.

Coordinated by Tecnalia in Spain, the consortium comprises 29 partners from 12 countries including 14 companies, 12 research organizations and universities, and 3 other public and sectoral organizations. The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 862942 from 2019-2023.

MAIS DETALHES

DESAFIO ABORDADO

6. Fomentar a bioeconomia baseada na floresta através do uso circular e de produtos de valor acrescentado

DOMíNIO

Industria da madeira para construção

TIPO DE SOLUçãO

Redes, plataformas de teste, plataformas de desenvolvimento e investigação

PALAVRAS-CHAVE

wood construction; digital twin; innovative engineered wood products; circular use

SOLUçãO DIGITAL

Sim

INOVAçãO

Sim

PAíS DE ORIGEM

Finlândia

ESCALA DE APLICAçãO

Além fronteiras/ multilateral

ANO DE INíCIO E FIM

2019 - 2023

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REFERENCES AND RESOURCES

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RECURSOS

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WEBSITE DO PROJETO

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REFERêNCIA AO PROJETO

BASAJAUN, EC Horizon 2020, grant no. 862942, 2019-2023.

LOGOTIPO DA BOA PRáTICA

LOGOTIPO DA ORGANIZAçãO PRINCIPAL

BASAJAUN

PROJETO NO âMBITO DO QUAL A FOLHA DE DIVULGAçãO FOI CRIADA

Rosewood 4.0

DATA DE ENTRADA

17 Dez 2021

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

cesefor
Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León