
Woodworking Industry's feedback to the "Renovation Wave" Initiative

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CEI-Bois welcomes the European Commission's announcement to launch a "Renovation wave" initiative as part of the EU Green Deal. The European Woodworking Industry is a strong advocate of the role of sustainable construction for a climate-neutral European economy and supports the use of timber construction as an immediate way to achieve long term carbon storage in products, as also recognised in the 2020 Circular Economy Action Plan. It is estimated that timber construction could store between 10 million to 700 million tons per year, while also reducing emissions due to the production of alternative materials such as steel and concrete, according to a recent [study](#)¹.

Wood applications also have a role in the renovation of the existing building stock. First of all, wood is an inherent insulant, so the ideal material for the low energy building: wood's unique cellular structure makes it 10 times more insulating than concrete, 400 times more than steel and 700 times more than aluminium. A 2.5cm thick timber wall panel provides better thermal resistance than an 11.5cm brick wall². Consequently, besides timber producing better insulating walls, multi-glazed windows perform better in wood frames, while timber floors also provide better thermal insulation than concrete.

Secondly, wood products used in renovation require less energy in manufacturing and transport, thereby reducing the final embodied energy in the building.

Thirdly, timber can be used in roof extensions or for adding storeys to an existing building. This application proves to have a range of advantages over alternatives. Thanks to their low weight, civil engineers often choose wood for top-ups, because the load-bearing structure and the foundation do not usually have to be reinforced. Prefabricated wooden elements can be lifted to the top floor with a mobile crane. This reduces the effort on site and the rooms can be occupied quickly. In consequence residents and the neighbourhood are hardly disturbed by noise and dust. One recent example is the Green House office building in central London, where the combination of retrofitting and extension of a 1960 concrete block with cross laminated timber and glue-lam allowed to provide additional space while decreasing GHG emissions by half³.

Recommendations:

- CEI-Bois welcomes the initiative and suggests that incentives are directed at renovation of both residential and non-residential buildings (such as offices and retail buildings);
- CEI-Bois supports the proposal to foster deep renovation of buildings while also looking at complementary dimensions to energy efficiency such as climate resilience and circularity. In

¹ Churkina, G., Organschi, A., Reyer, C.P.O. et al. Buildings as a global carbon sink. *Nature Sustainability* 3, 269–276 (2020).

² Commonwealth of Australia (2008), *Your Home Technical Manual*. Australia's guide to environmentally sustainable homes. Available at <http://www.yourhome.gov.au/>

³ <https://www.architectsjournal.co.uk/buildings/waugh-thistleton-halves-co2-emissions-of-office-building-in-east-london/10043669.article?blocktitle=Buildings&contentID=18247>.

particular, the Renovation strategy should not just focus on the energy performance of buildings during operation but should also take into account the embodied carbon of the products used in renovation works, taking as inspiration the targets set by the [World Green Building Council](#): *“By 2030, all new buildings, infrastructure and renovations will have at least 40% less embodied carbon with significant upfront carbon reduction, and all new buildings are net zero operational carbon. By 2050, new buildings, infrastructure and renovations will have net zero embodied carbon, and all buildings, including existing buildings must be net zero operational carbon”*.

- Finally, the Strategy should tackle the issue of renovation not only as a way for improving the energy performance of the building stock, but also as an occasion for promoting the densification of the existing settlement areas, that is, generating more living space without using mor land.