

Growing a sustainable construction sector by upgrading wood educations

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Increasing the use of wood in construction is one way of making the sector more sustainable. This in turn requires professionals with the right competencies to build with the material. Outdated educational methods and materials, however, may currently be impairing the education of the next generation of professionals within wood science and engineering.

Climate change provides an imminent global challenge that requires immediate action to prevent or limit the negative impact on the environment and, ultimately, human lives. Our societies are therefore forced to adopt a sustainable use of resources and limit the release of greenhouse gases, most importantly carbon dioxide (CO₂) into the atmosphere. A key component for the transition into a sustainable society is an increased use of renewable resources of which wood is our most abundant and economically important. Living trees absorb CO₂ during their growth and sequester the carbon in the biomass produced. As long as this biomass is not degraded, the material will act as carbon storage. Consequently, using more wood in the construction sector will keep carbon out of the atmosphere for the service life of the building. Moreover, increasing the use of wood as a substitute for concrete and steel will further decrease the environmental impact of buildings by replacing these materials, which have large environmental footprints, with wood.

Nordic societies are currently experiencing rising demand for the use of wood in the construction sector. This trend is expected to continue as both legalisation and consumers are pushing for buildings with a lower environmental footprint. The next generation of professionals such as architects and engineers, will be the ones to build a future sustainable society, however, their education within wood materials science and engineering is often impaired by outmoded teaching methods and materials. For example, many textbooks currently used in the Nordic countries are more than 20-30 years old and 1) contain scientific knowledge which is now deemed factually incorrect, 2) have little or no information about sustainability in relation to the use of wood, and 3) do not reflect modern pedagogical practices. This lack of updated information impedes the education of those destined to design and build with wood, and it seriously hinders the widespread and correct application of wood in the construction sector.

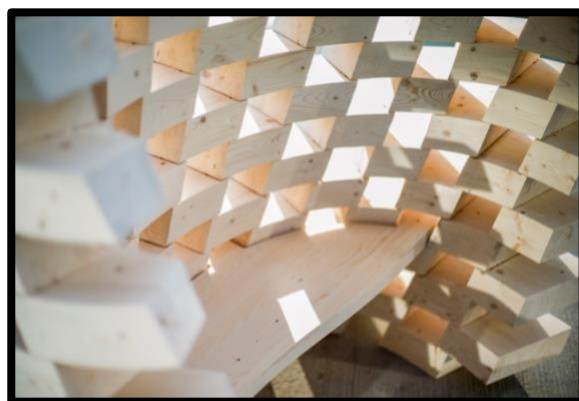


Photo: Pasi Aalto

Therefore, if the potential to create a sustainable construction sector by using more wood is to be realised, it requires upgrading and updating the education within wood science and engineering. An important first step in doing so is to develop new educational material for bachelor and master's level studies that reflects modern pedagogical practices and requirements for learning materials.

The EFINORD-SNS funded "Northern European Network for Wood Science and Engineering" has a strong focus on education, however, mainly for PhD students and other early-stage researchers (ESRs). Thus, about half of the participants in the network meetings are ESRs; e.g. at the 13th annual network meeting in Copenhagen in September 2017 41 out of 90 participants were either PhD students or Postdocs, and

the day before the network meeting 24 ESRs joined a full-day training school. Growing a sustainable construction sector requires, however, a substantial upgrade and revitalisation of bachelor and master's level education related to wood. This is an ambitious goal, which can only be reached by the inclusion of a wide range of stakeholders from both academia and industry. It is indeed an enormous task, but the gains of educating the next generation of professionals with the right competencies for building with wood are enormous; not only for the industry that needs skilled people, but for society as a whole that need to mitigate climate change by adopting a sustainable use of resources and increasingly rely on renewable materials. We therefore would like to invite all interested parties from academia and industry to join our efforts and help shape the future of wood educations.

WSE – Northern European Network for Wood Science and Engineering

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