We Need to Change the Way we Build
From Seeds to the City
MIND Pavilion, Viale 16, 20157 Milan (IT) | Friday, 17th June 2022

Co-funded by the European Union
“40% off all global emissions are caused by the construction industry.”

The key to this is to **maximise energy efficiency** and **minimise energy and material demand**.

Replacing high-emission materials, esp. cement and steel, **by bio-based materials**.

*Courtesy of Diana Ürge-Vorsatz serves as Vice Chair of IPCC’s Working Group III. She is a Professor at the Department of Environmental Sciences and Policy at the Central European University (CEU)*
To develop our cities in a more sustainable manner, we must decarbonise concrete and steel and use more regenerative and renewable resources, such as timber.

Italy is actively looking at measures to reduce carbon emissions. The City of Milan, as vice chair of C40, is helping to lead the way and committing to zero carbon targets to reduce embodied carbon emissions from the construction industry.

While the material science behind using bio-based construction materials and engineered timber continues to advance, we have found that outdated perceptions and myths still act as barriers to adoption.

Qualitative and quantitative economic, social, and environmental data points created by the Perception of Timber project sponsored by Built by Nature will build a robust and accurate, evidence-based learning that demonstrates timber’s social and economic feasibility in the Milan context and challenge (refute) uncertain and/or negative industry perceptions.

We are glad to present you the first report from a series of workshops to establish, address and propose methods to overcome these barriers and influence the accelerated adoption of Mass Timber in Italy and the EU.
Workshop contents
48 people from 27 organizations were invited to discuss:

- Dreams
- Problems
- Solutions

Related to the diffusion of mass timber in construction engineering

5 breakout groups to realize 1 moderated debate for....

... 1 SHARED DOCUMENT with the proposed SOLUTIONS to increase the promotion in the use of timber for construction purposes
Agenda of the day

Venue: MIND Village Hall, Pitch Arena
09:30 - 10:00 Registration and coffee. Group photo of participants
10:00 - 10:10 Welcome - workshop objectives and context
10:10 - 10:20 Welcome speech by Kirsten Dunlop, CEO, EIT Climate-KIC; Amada Sturgeon, CEO, Built by Nature; Alan Bates and Nadia Boschi, Lendlease
10:20 - 10:35 'Icebreaker' exercise
10:35 - 11:05 DREAMS- First interactive session. Introduction based on work done so far (PLENARY)
11:05 - 11:35 PROBLEMS- Second interactive session (PLENARY)
11:35 - 12:05 SOLUTIONS - Third interactive session (PLENARY)

Venue: MIND The Hive, reception area
12:05 - 13:00 Lunch

Venue: MIND The Hive, Gaia Panina Auditorium
13:00 - 13:20 Feedback on DREAMS, PROBLEMS AND SOLUTIONS
13:20 - 14:05 Division into six groups (approx. 5 people per group from different sectors)
Objective: test the SOLUTIONS generated by the plenary session and examine which mechanisms need to be developed to realise the DREAMS
14:05 - 15:05 Plenary presentation of the list of priorities and any conflicts or synergies found, 10 minutes per group
15:05 - 15:15 Plenary to define the top 10 mechanisms for action and impact
15:15 - 15:30 Closing - thanks, summary and next steps
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<th>Name</th>
<th>Role</th>
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<tr>
<td>Paolo Cresci</td>
<td>Italy Sustainable Development Leader</td>
<td>ARUP</td>
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<td>Alessandro Sassi</td>
<td>Architect and owner</td>
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<td>Tommaso Pagnacco</td>
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<td>Julien Vincelot</td>
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<td>Amanda Sturgeon</td>
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<td>Gianluca Padula</td>
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<td>Advisory and Transaction services</td>
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<td>Riccardo Marini</td>
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Introduction and Context

Sixth Assessment Report
Lessons and opportunities for the property industry from the latest UN climate report
Environmental Goals

01 Climate Change Adaption
02 Sustainable use and protection of water and marine resources
03 Transition to a circular economy
04 Pollution prevention and control
05 Protection and restoration of biodiversity and ecosystems
06 Climate Change Mitigation
1. Environmental
- Renewable fuels
- Greenhouse gas (GHG) emissions
- Climate risk
- Water Management
- Recycling processes
- Emergency preparedness

2. Social
- Health & safety
- Working conditions
- Employee benefits
- Diversity and inclusion
- Human Rights
- Impact on local communities

3. Governance
- Ethical standards
- Board diversity and governance
- Stakeholder engagement
- Shareholder rights
- Pay for performance
‘Icebreaker’ exercise

This activity was designed to put people at ease, create a sense of community, and get an understanding of the cohort of people attendees are going to spend the day with. For this purpose, we showed two different sets of images and asked attendees to react to them, observing each other in the process.

The images selected were a juxtaposition of two extreme situations: the first set portrayed two ‘cityscapes’, one car-dominated (Dubai), and one people-dominated (the fictional city of Wakanda). The second set of images showed two people that are in the public eye for their views on matters relevant to the day: climate and justice. The ice breaker activity seems to have been conducive to create a debate, as well as some humour, that primed the mood for the rest of the day.
Official Welcome

Amanda Sturgeon
CEO, Built by Nature

“The world needs inspiration and proof that inclusive, fast and large-scale change is possible to achieve net zero in time.”

Kirsten Dunlop
CEO, EIT Climate-KIC

“Built by Nature’s vision is for our built environment to work in unison with nature.”

Alan Bates
Exec General Manager, Lendlease Italy

“Companies have to justify their worth to society, with greater emphasis placed on environmental and social impacts.”

Nadia Boschi
Head of Sustainability, Lendlease Italy and Continental Europe

“We have made it our mission to reach zero carbon by 2040.”
DREAMS, PROBLEMS and SOLUTIONS
Interactive session
Key outcomes of the DREAMS session

- A city where my kids can go to school by bike
- Closed loops for raw materials
- Cities that smell like woods
- Passive construction sector with ZERO emissions
- Shared environmental responsibility
- Circular production
- Cross country standardization of construction regulation
- Investment in sustainable social housing projects
- TIMBER = OXYGEN
  Building in timber using carbon stored in the material as a credit
- Synergetic approach across stakeholders
- Risk prevention with standardized quality controls
- Increase the quality of what is being built
- DREAMS vs. RULES
  Modernisation of regulatory framework, which is written for the world of 50 years ago
- ECONOMIC ACCOUNTABILITY
- ENVIRONMENTAL ACCOUNTABILITY
- SOCIAL ACCOUNTABILITY
Accountability

Towards the planet.
Towards future generations.

Awareness

Of the problems that the brick building world brings with it (40% of polluting emissions come from the 'traditional' building world).

Of the enormous contribution that green building would make to reducing and absorbing man-made carbon emissions.

Of the advantages in urban planning terms of timber construction.

Access

For companies that want to move towards a total (or partial) transition to green building.

For private individuals who want to build their homes with environmentally sustainable materials, through a reduction in the cost of materials and skilled labour.
Key outcomes of the PROBLEMS session

- Purchasing cost of bio materials
- Availability of resources
- Lack of Return On Investment in the short term
- Fear of flammability of materials
- Lack of engineering skills
- Lack of knowledge sharing and know-how
- LACK OF TRAINING AND SKILL on the use of timber for complex projects
- LACK OF COMMUNICATION
- LACK OF TRAINING AND SKILL on the use of timber for complex projects
- BUREAUCRACY PENALISING TIMBER CONSTRUCTION
- Insurance companies not keen to insure timber projects
- Norms are not future-oriented
- Lack of precedents
- Lack of certainty in project timelines

COSTS

- Lack of training AND SKILL on the use of timber for complex projects

PROBLEMS

- Built by Nature
With the public administration, which is not interested in such issues.

With insurance companies that, given the low number of statistics (compared to brick buildings) on safety performance, do not consider wood to be a safe material.

Overly complex and time-consuming regulations unable to adapt to the demands of the times.

Materials too expensive for privates.

Barriers to entry for companies that want to start a transition.

Costs

Lack of communication

Bureaucracy

Supply chain

How traceable is this material?

How available is it?

Lack of training and skills

Of specialised personnel.

Of the population, who consider wood an obsolete and unsafe material.

How traceable is this material?

How available is it?
Key outcomes of the SOLUTIONS session

- Use of Italian solutions to global problems
- Decarbonised construction
- Sharing generously
- Creation of interdisciplinary working groups
- Creation of a unique benchmark for evaluation of embodied carbon
- Creation and sharing of best-practices from the top-down
- Creation of a systemic, integrated approach
- Local wood as future building material
- Inform families on financing options for sustainable investment
- MODERNISATION OF REGULATIONS on the use of wood for complex projects
- COLLABORATION between stakeholders and between institutional and private
- DISSEMINATION of knowledge and skills
- INFORMATION = CHANGE
- INCENTIVES
- MODERNISATION OF REGULATIONS on the use of wood for complex projects
- INSURANCE, government and financial INCENTIVES
- INFORMATION = CHANGE
- MODERNISATION OF REGULATIONS on the use of wood for complex projects
Co-operation between companies.
Sharing of know-how.
Multidisciplinary tables.

Training for companies.
Consumer information.
Sharing of best practices.
More transparent supply chain.

More up-to-date laws and timetables.
Assessments of the most efficient buildings and creation of benchmarks.

Comprehensive statistics on safety and reliability characteristics, on a par with brick constructions.
Greater confidence on the part of insurance companies.

State bonuses that promote construction using sustainable methods and materials.

Greater confidence on the part of banks in financing innovative constructions.
Bonuses that encourage private individuals to opt for more environmentally sustainable choices.

Collaboration
Dissemination
Modernisation of normatives

Insurance incentives
Governmental incentives
Financial incentives

Greater confidence on the part of insurance companies.
Breakout Groups

Test the SOLUTIONS generated by the plenary session and examine which mechanisms need to be developed to realise the DREAMS and list priorities for action.
Topics discussed in the five breakout groups

- Economic Aspects
- Cultural Aspects
- Communication
- The role of public administration
- Data sharing and the role of university
- Technical Targets
Recommended actions on economic & financial aspects

Institution of an initial common construction fund to cover any unforeseen extra costs that occurred for projects on mass timber buildings.

Institution an INITIAL incentive in the form of tax relief or aimed at reducing costs.

Hybrid solutions implemented within the timber construction structural parts made with traditional technologies (mainly reinforced concrete).

Development of an insurance model based on an analytical approach which could fill the lack of data.
Address the choice of mass timber through sensitivity principles without only focusing on business and economical affordability.

Look back at the history of the material to start a dialogue with institute operator rulers.

Organize discussion table between all the stakeholders involved in the business.

Open the participation to start-up, contractors, timber end-of-life workers and Soprintendenza dei Beni Paesaggistici e Culturali.

Initial investment to train smaller companies in the real perception related to mass timber buildings.

Initial investment to train the Public Administration (PA) in the real perception related to mass timber buildings.

Recommended actions on cultural aspects
Recommended actions on communication

Encourage collaboration and data management between the stakeholders involved in the industry.

Communication about themes of well-being and comfort.

Adopting a language that the end consumer can understand in the least technical way possible.

Collect and synthetize all the information inside a place managed by a bottom-up representative.

Communicate data by adopting mass media tools.
Recommended actions on the role of Public Administration (PA)

The public sector could help in the intent by intervening in the "starting requirements".

The public administration could become the promoter of a vision able to "diffuse a culture".

Facilitator role by systematizing the proposals received that are considered most suitable and interesting.

Facilitator role by managing a roadmap for a medium-to-long term project.
Recommended actions on Data Sharing and the role of research

- Encourage **collaboration and data management** between the stakeholders involved in the industry.

- Transform the network into an ecosystem represented by a **common bottom-up institution**.

- Promote the **culture of generosity**.

- Information obtained and data need to be shared among the stakeholders.

- Universities could be the institutions responsible for producing and sharing data and value.

- Development of a unique public platform managed by a third party to combine the information of the various trade associations, preserving their autonomy and respecting the copyright.
Recommended actions on technical targets

- Focus on **life-cycle approach** as the basis for standards and requirements for timber buildings
- Write a manifesto about timber buildings empathizing also their qualitative and livability aspects
- Creation of **comparative business plans** to show the lower indirect costs occurred for timber constructions
- Diffusion of **Building Information Modelling (BIM)** for the standardization of the entire supply chain in order to increase the quality
- The role of **voluntary certification** (S.A.L.E, LEED, etc.) to guarantee quality and increase the value of the building
Conclusions and next steps

Participants to ‘From the seed to the city’, the first workshop of the MIND Perception of Timber project sponsored by Built by Nature and coordinated by Climate-KIC for LendLease, POLIMI, WTA, ARUP, UCL and StoraEnso have experienced active participation and positive energy, leading to inspiration and new knowledge.

Both during the workshop on Friday 17th June in the beautiful location of the Milano Innovation District, and in the following days, attendees gave us very positive feedback on the activities undertaken together during the day. We wish to thank you all for the kind words!

The first workshop shall act as a catalyst to continue working in smaller groups on the priority actions we identified. We are looking forward to the upcoming workshops, where we will draw roadmaps for implementation and reflect on impacts achieved together.
Did we get this right?
Please tell us anything we may have missed
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