



LEKO Labs' combination of artificial intelligence and automated pre-fabrication could be the future of construction | Photo source [LEKO Labs](#)

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## CREATING A CARBON NEGATIVE CONSTRUCTION COMPANY

 PROPERTY & CONSTRUCTION

### Robot builders, AI design, and sustainably sourced wood-based materials maximise efficiency and sustainability

**Spotted:** Luxembourg's LEKO Labs is dedicated to achieving carbon negative construction as soon as possible. Using a variety of technologies, the company is increasing efficiencies and reducing waste throughout construction processes and projects of every size – from single homes to a multi-storey urban apartment block. Every project begins with an artificial intelligence reviewed design plan that maximises a building's acoustics and heating and cooling options. The digital blueprint includes load-bearing capacities for walls and volumes of materials needed.

Knowing exactly how much wood a building requires helps architects and builders reduce waste and polluting emissions during manufacture and construction. The company's proprietary engineered wood walls are strong enough to directly replace all above ground steel and concrete materials. The integrated insulation makes the walls so efficient that they are slimmer than traditional designs, thereby providing up to 10 per cent more interior floor space.

Automated prefabrication of the walls further reduces construction pollution while reducing time and resources required on site. Walls are made to measure inside a lab by a team of robotic builders, completely eliminating the need to rely on weather conditions for completion. And rather than the average of two years that it takes to build a house, the LEKOS Lab system is able to complete a project in six to nine months.

The creativity inherent in building something new is contributing to a wide range of exciting developments in architecture and construction. Innovations recently spotted by Springwise include a chemical-free method for turning plastic waste into [construction materials](#) and a smart [roof coating](#) that keeps homes cool in the summer and warm in the winter.

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## **Takeaway:**

The combination of sustainable sourcing with faster builds and new materials has the potential to transform the construction industry from one of the world's worst polluters to a leader in carbon negativity. Add in other innovations Springwise has spotted, such as electric construction vehicles, and the number of opportunities to further reduce a build's carbon emissions increases significantly. And among the increasing severity of extreme weather events, new materials that regularly outperform steel and concrete in strength and flexibility are helping keep communities, and their environments, safer.