Upward thinking: affordable housing through vertical extension

Workshop report

16.10.2025

On 14 October 2025, Eurogypsum hosted the policy workshop "***Upward thinking: affordable housing through vertical extension***" as a follow-up to its earlier event, "*Aiming High: The Power of Vertical Extensions*" held on 13 May 2025. The May event introduced vertical extension as a promising solution to urban housing challenges, with experts from academia, architecture, and local authorities highlighting its benefits and barriers. The event helped to identify five key elements which are needed to **SCALE** up the use of vertical extension in the urban policies across the EU:

Simplified permitting – easier approval procedures for vertical extension

Criteria – a clear framework, set of guidelines for the selection of suitable locations

Awareness – wider general knowledge about this solution, its benefits and consequences

Local capacity – dissemination of knowledge and best practices to local authorities

Evaluation – broader mapping of the existing potential for using vertical extension in local contexts

The objective of the October workshop "*Upward thinking*" was to build on these insights and identify EU policy levers which would act on the identified missing elements to promote a wider use of the vertical extension potential to create additional housing supply.

The targeted policy workshop was structured along three themes:

(I) ***Barriers and breakthroughs*** – exploring the persisting impeding factors to the development of vertical extensions and possible solutions pioneered at local level.
(II) ***One roof, two wins*** – discussing how to leverage synergies between vertical extensions and financing energy renovations.
(III) ***From factory to rooftop*** – analysing the links between vertical extension and the supply of lightweight, offsite construction solutions.

The following report presents key takeaways from the workshop and the resulting policy recommendations.

What is vertical extension?

Vertical extension (also referred to as 'rooftop extension', 'roof stacking' or 'top-up renovation') involves the construction of additional storey on top of an existing base building.
This solution:

- **Preserves existing buildings** and enables renovation of the base structure, improving performance and extending lifespan.
- **Minimises lifecycle emissions** and promotes circularity by reusing existing structures.
- Increases housing supply **without using new land**, helping reduce urban sprawl.
- Offers **significant potential**, with estimates including:
  - 1.5 million units in Germany
  - 100,000 dwellings in the Netherlands
  - Housing for 59,000 people in Brussels
- Applies to **various ownership types**, including public, private, social housing, and condominiums.
- Enabled by innovative methods such as **offsite, modular, and lightweight construction**.

Theme I: Barriers and breakthroughs

Despite their many benefits, **vertical extensions are rarely integrated into local housing strategies** in a systematic way. Urban planning regulations often act as barriers—for example, requirements for a minimum number of parking spaces per housing unit can prevent densification. Although vertical extensions offer significant potential to create new housing and upgrade existing buildings, they are not widely recognised as a key solution. In fact, practitioners estimate that **5–10% of the existing building stock could be suitable for vertical extension**, yet in most urban areas, less than 1% of buildings have been extended vertically to date.

To close this gap and unlock the full potential of vertical extensions, local municipalities **should adapt impeding regulations**.

Jonathan Morice from Rennes Métropole shared how the municipality is actively working to reduce such barriers. Under the *Programme Local de l'Habitat*, Rennes has set a target for **10% of new housing to come from "recycled" buildings**—including repurposed offices and added floors. In support of this goal, local authorities assessed the feasibility of vertical extensions across various building types, including social housing, co-owned buildings, and heritage properties. They also explored how extensions could improve accessibility, such as enabling the installation of lifts.

This investigation revealed that **certain urban planning rules were obstructive**. As a result, the regulatory adaptations were proposed. Projects that improve energy performance, heritage value, or accessibility could be exempt from existing rules on building placement, height, greening, and parking requirements.

Rennes Métropole is now in active discussions with local landlords' associations to advance several vertical extension projects.

Didier Mignery from UpFactor highlighted that cooperation with local authorities is crucial, given that the potential for vertical extension on **public buildings** is high – not only residential, but also e.g. educational buildings.

Theme II: One roof, two wins

Vertical extensions offer a **unique opportunity to finance much-needed upgrades to existing buildings**. Renovating old, poorly performing structures is often financially challenging, but adding new housing units through vertical expansion **creates additional value that can unlock innovative financing models**.

During the workshop, Didier Mignery from UpFactor presented several ongoing projects that combine the creation of new housing space atop existing buildings with comprehensive renovations of the entire structure. One example is a condominium on Rue d'Odessa in Paris, where an agreement has been reached to construct two additional storeys. The value generated from the new units will be used to fund a full renovation of the building—including the roof, façade, sewage system, insulation, heating, ventilation, electricity, and plumbing.

These projects demonstrate an attractive model for financing building upgrades through the added value of new apartments. To **ensure affordability** in transformed buildings, mechanisms such as the Community Land Trust model or earmarking a portion of units as social or affordable housing can be applied.

Theme III: From factory to rooftop

Offsite construction methods are a key enabler of making vertical extensions possible. These methods are compatible with **lightweight construction** solutions (involving steel, timber, gypsum, insulation). These materials allow for the addition of multiple storeys while respecting the structural limits of existing buildings. Their reduced weight is essential for safe and feasible extensions. Beyond structural compatibility, offsite construction **helps overcome logistical challenges**. It significantly shortens construction timelines and minimises disruption for current residents and neighbouring communities.

Despite these advantages, offsite construction still faces **several barriers** to wider adoption, including:

- **No constant pipeline of offsite construction projects**, preventing optimalization of industrialised construction processes
- **Market fragmentation**, due to insufficient standardisation of modular solutions
- Local building codes and **urban regulations** that restrict the use of offsite methods
- Insufficient integration into **vocational training** and architecture education, limiting skilled workforce development
- **Negative public perception**, shaped by outdated views of prefabricated construction

Addressing these challenges is essential to fully leverage offsite construction as a fast, efficient, and sustainable solution for expanding urban housing through vertical extensions.

Conclusions

Vertical extension is a uniquely low-carbon and circular solution for urban development, yet it still faces significant barriers to scaling. Pilot projects—whether vertical extensions or broader building repurposing—require substantial upfront investment, as both industry practices and planning frameworks remain largely focused on new builds. However, when implemented at scale, vertical extensions become more cost-effective.

Permitting procedures are another major challenge. Officials are often unfamiliar with the concept, and existing urban regulations—such as restrictions on building height, parking space requirements, and proximity to roads—can delay or prevent the addition of extra storeys.

Taxation rules also add complexity. Vertical extensions are not clearly classified as either renovations or new builds, making it difficult for developers to calculate applicable taxes. A clear and explicit reference to vertical extension projects for possible preferential rates should be added in the EU VAT Directive, to encourage Member States to apply lower rates for such projects and reduce legal uncertainty.

Moreover, **the actual potential of vertical extension is not widely understood.** In most locations, the quantitative potential has not been assessed or made publicly available. As a result, vertical extension is often seen as a niche solution, despite estimates suggesting that **up to 10% of the building stock could be suitable for extension**, compared to less than 1% currently utilised.

Resistance from certain local authorities and lack of awareness of residents also plays a role. Municipalities may be concerned about the visual impact on urban centres, while residents may be worried about construction-related disturbances.

To unlock the full potential of vertical extension, **targeted policy support, regulatory adaptation, and awareness-building are essential**.

Call to action: Enabling vertical extension through EU-level support

Vertical extension is a cross-cutting solution that supports sustainable urban development and aligns with the EU's climate and circular economy goals. It embodies the principle of sufficiency—making the best use of existing buildings—while offering a low-carbon pathway to increase housing supply.

Although urban planning is primarily a local competence, **EU-level action can play a crucial enabling role** in scaling up vertical extension across Member States. While best practices and successful case studies exist, they must be **replicated and adapted to diverse local contexts**.

To unlock the full potential of vertical extension, the EU should consider the following actions:

- **Establish a platform for sharing best practices** on urban densification, building repurposing, and vertical extension. This platform should allow local authorities to exchange insights on regulatory adaptations, financing models, and mapping of vertical extension potential. It should also foster synergies between renovation plans, accessibility improvements, and vertical extension opportunities. An open-source database mapping vertical extension potential could be a key feature.
- **Act as a catalyst for cooperation between municipalities**, for example through the *Covenant of Mayors*, to promote knowledge exchange and joint initiatives.
- **Support the integration of vertical extension into renovation policies**, recognising its role in improving energy performance, accessibility, and housing supply.
- **Encourage Member States to apply reduced levels of VAT (or tax exemptions) for "building recycling" projects**, including vertical extension and repurposing, through amendments to the EU VAT Directive.
- **Foster synergies between vertical extension projects and other EU priorities**, such as soft mobility, accessibility, and whole-life carbon reduction—providing technical assistance where needed.
- **Classify vertical extension and building repurposing as sustainable activities** under the EU Sustainable Finance Taxonomy to attract private investment and unlock funding.
- **Encourage assessment of vertical extension potential** as part of funding decisions for renovation projects, including those supported by the *Social Climate Fund*, *Cohesion Funds*, and the *Recovery and Resilience Facility*.
- **Raise visibility of vertical extension projects through the New European Bauhaus initiative**, helping to build public and institutional awareness.
- **Encourage Member States to include vertical extension potential assessments** in their National Building Renovation Plans.
- **Promote favourable conditions for offsite and modular construction methods** in the Public Procurement Directives, such as awarding bonus points for reduced site disruption, faster timelines, improved digitalisation, and safer working conditions.

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