

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V.

No More Business as Usual: Transforming the European Agenda for Housing

Fraunhofer welcomes the EU's commitment to tackling the housing crisis through a coordinated and tailor-made Action Plan. However, to create lasting impact and reshape the construction and housing sector for the 21st century, the EU must move beyond traditional fixes and prioritize the development and scaling of innovative construction solutions – grounded in productivity, sustainability, and resilience – that can unlock affordability while addressing the climate crisis and social needs.

Europe's Construction and Housing Sector at a Crossroads

For decades, existing building methods, products and materials met societal and economic needs, but they are no longer fit for purpose. Today, the sector faces a complex convergence of challenges: growing housing affordability crisis and social demand for sustainable living environments, rising construction costs and stagnating productivity. The sector accounts for nearly 40% of global CO₂ emissions, over a third of greenhouse gas emissions and waste, and yet struggles to deliver the quantity and quality of affordable housing Europeans desperately need. Innovation is not optional; it is the only way to transform construction into a sector that delivers affordable, sustainable, and resilient homes at scale. This requires radically new approaches to processes, materials, digitalization, and circularity that together can break the productivity ceiling, cut costs, and reduce environmental harm. Gradual and scattered improvements are no longer sufficient. Tailor-made and innovative solutions will enable construction to transition from a cost and emissions source into a driver of economic growth, social equity, and climate leadership.

Closing the Productivity Gap: Innovation Unlocks Affordability and Growth

For more than 30 years, construction productivity has stagnated, lagging far behind other industries such as manufacturing. Today, productivity growth hovers around 1% annually—90% lower than that of Germany's manufacturing sector. This productivity gap translates directly into skyrocketing costs and delays, undermining the sector's ability to provide affordable housing. Over the last decade, residential construction prices in Europe have surged by 65%. Administrative burdens add complexity and cost, with nearly 3,900 differing building standards across the EU and some countries, like Germany, facing building-related costs as high as 37% of total costs. Compounding this are structural challenges such as an anticipated shortage of 4 million skilled workers by 2030 and low adoption of digital tools—only one in five SMEs use digital solutions intensively.

The potential of innovation is immense. A modest 1% productivity increase in Germany alone could generate €1.6 billion annually in additional value. Other sectors demonstrate what is possible: shipbuilding completes complex, city-sized structures in nine months using modular construction and digital technologies. Austria reduced residential construction costs by up to 40% compared to neighboring countries by streamlining regulations and adopting innovations such as digital tools and modular building systems.

To unlock these gains and reduce housing costs, the EU must launch a comprehensive productivity offensive focused on:

- Systematic adoption of digital tools—BIM, AI, IoT, digital twins—and federated data infrastructure (e.g., GAIA-X) to optimize design, construction, and maintenance.
- Cross-sector knowledge transfer from industries like automotive and shipbuilding.
- Increase productivity within the existing SME structure through reduction of complexity based on newly developed construction systems.
- Rising productivity by use of process mining, robotics and specified interfaces between the trades.
- Modular and prefabricated construction systems that speed delivery and improve quality.
- Rationalizing standards and regulations to reduce unnecessary compliance costs.
- Creating dedicated construction innovation hubs to integrate testing, development, and approval for a quick market process.
- Supporting SMEs with training and funding to adopt new technologies.

Innovation in productivity is the foundation of affordable housing delivery—it reduces waste, shortens timelines, lowers labor costs, and ensures consistent quality at scale. These gains in productivity go hand in hand with the need of sustainable construction and resilience.

Innovation in sustainability is the pathway for Europe to lead globally in green construction while cutting costs by reducing energy demand and unlocking circular economy benefits. Innovation in resilience ensures the long-term viability of Europe's housing stock, protects citizens, and safeguards economic stability and thus represents a sustainable investment in society.

Innovation as the Cornerstone of Europe's Construction and Housing Future

Europe's construction and housing sector holds immense untapped potential. Innovation across productivity, sustainability, and resilience is the only way to unlock affordable, high-quality housing while meeting Europe's climate and social goals. The Affordable Housing Action Plan must therefore champion a bold, innovation-driven transformation that integrates new materials, digital technologies, circular systems, and climate adaptation solutions.

The time to act is now. The future of Europe's built environment—and the well-being of its citizens—depend on making innovation the strategic centerpiece of construction and housing policy, investment, and implementation.