Factsheet

The serial timber-hybrid construction system for urban housing

Why we need to rethink building

Germany currently has a shortage of around 550,000 homes. Families, single parents, students and older people who have difficulty finding affordable housing are particularly affected. At the same time, according to the Federal Environment Agency, the building sector is responsible for around 30 percent of the country's carbon dioxide emissions. These emissions are caused by the construction and operation of buildings. We are faced with a double challenge: more housing needs to be created and at the same time construction needs to be made more environmentally friendly. The serial timber-hybrid construction method from MOLENO® Wohnen offers a solution by enabling fast, economical and resource-efficient housing construction. This approach is particularly relevant in view of the increasing demand for housing and the need to meet climate targets.

Cover A LENO® ADD external wall comes flying in. © Sandra Sitzmann



Our answer for the building turnaround: An IBA'27 project with model character

ZÜBLIN's MOLENO® serial construction system represents a new approach to residential construction. IIn times of housing shortages, rising construction costs and increasing climate impact, it shows how construction can be faster and more economical without compromising on quality of living. The potential is evident on the Hangweide site in Kernen im Remstal – a project within the framework of the International Building Exhibition 2027 (IBA'27). A total of 34 socially subsidised apartments have already been built there using a hybrid timber construction method. The approximately eight-hectare site has been transformed into affordable living space for people of all ages and social backgrounds. One of the buildings, a three- to four-storey serial timber hybrid construction with an area of around 3,000 square metres, was completed by the end of 2025 – in just eleven months instead of the originally
estimated 13 months.

Serial and systemic construction with MOLENO® at a glance

- **Serial construction**
  - Use of prefabricated, standardized components
  - Repeatable, efficient construction processes
  - Shorter planning and construction time
  - High deadline and cost certainty
- **Systemic construction**
  - Modular system with combinable components
  - Flexible adaptation to utilisation, size and requirements
  - Harmonised technical standards and interfaces
  - Suitable for residential, educational and commercial use



1 Timber is an important material in the MOLENO® building system. © Sandra Sitzmann

Building with system and living space benefits

The industrialized construction system follows a simple principle: external wall elements, flat partition walls, concrete ceilings, balconies and even the building technology are prefabricated regardless of the weather and assembled precisely on site. This reduces the construction time by up to 40 percent compared to conventional construction methods. Depending on the size of the project, realization takes just eight to twelve months. This is of particular benefit to cities and local authorities that need to respond quickly to the shortage of affordable housing.

Housing associations, property developers and tenants benefit from greater planning security, lower costs and faster availability of living space. In addition to the time and cost savings, the construction method also offers a space advantage: compact, efficient floor plans create more usable living space in the same area. This is particularly relevant in densely built-up urban areas. The system combines timber and concrete to create a hybrid construction that enables stable, energy-efficient and comfortable residential buildings. It thus meets technical requirements for sound insulation and fire protection, as well as social expectations for modern, liveable housing.



With MOLENO® Wohnen, we create affordable living space with a system – economical, eligible for subsidies and flexible to use. This convinces investors, housing associations and local authorities alike.

Roger Breyer,
Ed. Züblin AG, Stuttgart Office,
Lake Constance area
Head of Sales

Another key feature is the efficient utilisation of the available space. Thanks to industrial prefabrication and an intelligent arrangement of the components, up to 5% more living space can be achieved compared to traditional construction methods. This can make a noticeable difference in larger projects. At the same time, the system offers design flexibility. Planning is not tied to rigid grids or standardized floor plans. A wide variety of flat types can be realized, from compact units for single people or students to family-friendly flats with several rooms. This adaptability makes the system suitable for very different urban planning contexts: from closing gaps in inner-city neighborhoods to developing new residential areas in rural areas. In this way, MOLENO® Wohnen helps to create affordable and needs-orientated living space where it is urgently needed.



2 The wet room is already in place. / **3** Teamwork when installing the outer walls. © Sandra Sitzmann



Environmental benefits, economic advantages: access to funding

For local authorities, housing associations and investors, it is not only the speed of construction that is decisive, but also the environmental and cost balance of a project. The timber-hybrid construction system used here significantly reduces carbon dioxide emissions by up to 30% compared to conventional construction methods, even in the shell stage. This is made possible by the use of timber as the central building material, which comes from certified, sustainable forestry. In addition, this type of construction fulfils the requirements for a so-called efficiency house forty. This means that the energy requirement during operation is only 40% of that of an average new building. Not only does this reduce operating costs, but it can also make it easier to access government support schemes, for example through the 'Sustainable Building' (QNG) quality mark. This government-issued mark confirms that a building meets environmental, social and economic sustainability criteria. The system therefore offers a dual perspective: it supports the climate targets in the building sector and at the same time creates living space that remains affordable in the long term. For many local authorities, this is an important option for meeting social, ecological and economic requirements at the same time.

Wide range of applications for different uses

Of course, it is not only new homes that can be built serially and systemically. This construction method is also suitable for educational facilities such as schools and day care centers as well as for office and administration buildings in the public and commercial sectors. It is based on a standardized construction principle with prefabricated components, clearly defined processes and a high degree of planning reliability. Despite the standardized approach, the system remains flexible. Floor plans, technical equipment and energy requirements can be adapted depending on utilization.



© Sandra Sitzmann

With the timber-hybrid construction method from MOLENO® Wohnen, we optimally combine timber and concrete. While is a renewable and sustainable building material, concrete fulfils the high fire and sound insulation requirements.

Lukas Horrer,
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4 A view of the ZÜBLIN-Timber plant in Aichach, where LENO® ADD external walls are prefabricated.
© Michael Stiegeler/ZÜBLIN Timber



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MOLENO® – Serial Planning & Construction

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