

Climate-neutral construction has to be a joint effort, making it vital for us to exchange ideas and discuss matters openly across all industries.

Do please look us up on our event website and find out further details, get in touch and keep up to date:

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A LOOK AT THE FUTURE OF CONSTRUCTION

Our Goals and Demands 2022

Sustainable construction – a joint effort

Our future will be impacted by two major factors: climate change and environmental care. It has been scientifically established and universally acknowledged that climate change is caused by massive emissions of greenhouse gases. In addition, we are also seeing an increasing shortage of various goods and materials.

One major contributor to the use of resources is the real estate industry: Germany alone spends around 40% of its energy on the construction and management of buildings, and construction uses up 70% of all raw materials mined nationwide. The construction and real estate industries are significant contributors to climate change, which gives us a major responsibility in this area.

It's a responsibility we take particularly seriously at Vonovia as we face the challenges that lie ahead. We started taking a close look at the performance of our building stock at an early stage, in 2020, and so we now have a climate roadmap that defines how we want to move towards climate-neutral neighbourhoods.

This year, our special focus is on building materials. For new builds, the energy efficiency requirements are already very high and are set to rise even further. Proportionally, therefore, the flow of materials in the construction industry is set to increase its impact on climate change, so that we will see a greater emphasis on the type, production and recyclability of building materials. Using our discussion forum *Perspectives on the Future of Construction*, we have been addressing this issue together with many other stakeholders in the construction industry, resulting in a range of practical proposals. In this process, we have been supported by the Fraunhofer Institutes for Material Flow and Logistics (IML) and Building Physics (IBP).

The results will become part of our action strategy and will also be tested in innovation projects and established as standards – always based on the Triple Zero principle: Zero Energy | Zero Waste | Zero Emissions.

It's an ambitious roadmap that can only be mastered with our partners – by pulling together and supporting each other. We now need to be proactive in promoting technical skills and expertise, so that new construction methods can be applied without delay. Moreover, we also need legal parameters that create a favourable environment, not obstacles.

As we move along this roadmap for construction, we want to work closely with educational institutions, industry and government, confident that we can make a major contribution to a world that is worth living in.

Action point 01

Create greater transparency on the impact of building materials

The aim: To ensure full-scale transparency of the lifecycles of buildings and their structural components
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Current challenges

At the moment, there is no adequate consideration of the entire lifecycle of a building – a deficit which can be seen in legislation, subsidies and financing and also in the decisions of planners and building owners. Different certification procedures and standards specify different calculation rules, while the existing methods of calculation are creating false incentives. Furthermore, not enough standardised and comparable data is available for materials, especially building materials, in the form of environmental product declarations (EPDs).

Vonovia's contribution

Vonovia is set to develop a company-wide target for lifecycle emissions, covering both new builds and upgrades of existing stock. In the future, our calculation procedures for lifecycle emissions will be integrated even more closely into our planning processes. But we'll also be advocating industry-wide standards for better lifecycle assessments in the housing sector. We'll be giving our suppliers clear specifications for their building materials, covering carbon emissions, primary energy demand and water consumption. and we will also require EPDs for all products and structural components.

Our political and industrial demands

The lifecycle of a building will need to feature as an important item in legislation, regulations and subsidy schemes. Also, incentives need to be provided for sustainable buildings with a generally low footprint – incentives such as higher subsidies and accelerated planning permissions. Moreover, the German Building Energy Act will need to be expanded into a Building Lifecycle Act, specifying certain values for carbon emissions.

It is also vital that there should be a complete revision of the calculation rules for lifecycle assessments of buildings and structural components. In the future, such assessments should be based on the expected lifespan, which will require transparency concerning carbon emissions and the primary energy requirements of structural components and materials. This can be achieved by expanding the ÖKOBAUDAT platform into a comprehensive, user-friendly construction database with product-specific EPDs.

Action point 02

Create and expand product and material cycles

The aim: To ensure closed-loop recycling of all materials
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Current challenges

Recyclability has not yet been sufficiently well established as a goal in the construction industry, and the relevant benchmarks still need to be rolled out widely. Many building materials are still mainly produced from primary materials, and the reuse of components continues to be a rare exception. Instead, today's technical and regulatory parameters are still presenting obstacles, and there are no regulations on reuse. The infrastructure for the collection, recycling and reuse of specific material flows in the construction industry is still underdeveloped, and there are not enough financial incentives to separate building materials by type.

Vonovia's contribution

To become more focused in ensuring the recyclability of building materials, we will continue to develop our calculation tools and our cost effectiveness assessments. This will include identifying the residual value of building materials and the adaptability of reusable components at the planning stage. Such an approach will also serve as a criterion and goal in our tender process. In addition, Vonovia will gradually introduce material passports for all new buildings as well as a key performance indicator showing the recyclability of new builds and upgrades.

Our political and industrial demands

Regulatory requirements must be put in place, so that recyclability becomes an important part of the planning process. Whenever approval is granted, there needs to be a mandatory check to see if the product can be reused, demolished and recycled. Financial incentives must be provided, making it attractive to use recycled and reusable building materials.

To cover the entire product lifecycle, legal provisions must be in place, stipulating a mandatory demolition plan as early as the planning permit stage. Central collection and return systems need to be set up as part of an extended producer responsibility for manufacturers of construction products.

Support and accelerate the development and use of sustainable and renewable building materials

The aim: To ensure preferential, fast-track approval and large-scale use of renewable building materials

Current challenges

The current share of renewable, recycled and carbon-neutral building materials is still rather low. The production of cement accounts for 20% of Germany's carbon emissions in the construction sector. Research into low and zero-carbon cement has only just started, and the approval of low-carbon cement still tends to be rather slow. Furthermore, regulatory ambiguities and legal provisions in regional building regulations are making it difficult to use renewable, recycled or carbon-neutral materials. The Model Guideline for Timber Construction is the only special requirement within the building code of a federal state in Germany. In its current form, it prevents an appropriate execution of timber frame designs that do justice to the material.

Vonovia's contribution

We want to keep increasing the share of renewable and sustainable materials in the construction of new builds and to do so continually and demonstrably. We therefore put a major emphasis on serial and modular construction methods, and we are seeking to conduct regular pilot and collaboration projects on innovative building materials. To follow up and establish these goals in our processes, we'll be supplementing our calculation tools and profitability calculations with aspects of sustainability and climate neutrality – always with due regard to the operational and management phases of buildings.

Our political and industrial demands

There is a clear need to expand, standardise and simplify today's regulations on construction subsidies, so that they include renewable raw materials. In the future, innovative products and procedures should receive approval quickly and with minimal effort as soon as their successful operation is clearly in evidence. We'd also like to see the introduction of a European-wide certificate trading system for carbon emissions of building materials. The decarbonisation of the cement industry should be stepped up and supported through regulations.

To ensure the use of renewable raw materials, it will be important to strengthen the authority of the relevant government agencies (including the German Institute for Building Technology, DIBt) in timber construction. Independent timber construction specialists must be involved in setting up regulatory and approval processes. In the future, innovative products and procedures should receive approval quickly and with minimal effort as soon as their successful operation is clearly in evidence.

Intensify digitisation and cooperation within the value chain

The aim: To facilitate a coherent flow of information along the entire process, which should lead to better networking and the integration of all stakeholders

Current challenges

Due to complex business relationships, the flow of information and materials often lacks transparency and digital exchange formats. In many instances, not all the partners of the different supply chains are actually known. This makes it difficult to respond to malfunctions in the supply chain either appropriately or on time. The transparency of the supply chain is closely related to data protection requirements, the vested interests of competing business partners and the obligations of market leaders under anti-trust legislation. Moreover, we have no information along the supply chains for a clear assessment of the climate impact, and neither are we in a position to exert a positive influence on it.

Vonovia's contribution

We will sustainably digitise our building stock for the purpose of improved recyclability, optimised maintenance and longer operation all the way through to the demolition of a building. We will continually demand that our partners meet our need for sustainable and renewable low-emission materials and products, not only regarding new builds, but also the redevelopment and modernisation of existing stock. To this end, Vonovia will define certain preferred products and specify certain low-emission, low-pollutant and sustainable products through catalogue orders while setting appropriate priorities in the relevant tendering and award processes. We will initiate a regular Suppliers' Meeting, so that we can enter into dialogue with our stakeholders and promote an exchange along the supply chain.

Our political and industrial demands

Regulations must aim to standardise the digitisation of approval processes in the building industry throughout Germany. In addition, supply networks need to be improved and become visible through digitisation. We therefore welcome the use of blockchain technology. In the future we want to see a much stronger exchange along the supply chain. This will mean establishing regular exchange formats that will identify any potential scalability of innovative and low-emission products and make such products available in sufficient quantities.

Action point 05

Develop knowledge and promote expertise

The aim: To deploy sufficient professionals with comprehensive expertise in sustainable construction, both in industry and at government agencies

Current challenges

We can see a lack of expertise at all levels concerning the appropriate planning of material use and in assessing designs that involve renewable, recycled or innovative raw materials. Companies and public authorities currently still have too little expertise in the proper creation and assessment of a lifecycle analysis. The situation is compounded by a shortage of skilled workers in the construction industry. This lack of experience means that we do not often see innovative technologies at building sites that might counteract this trend or save carbon emissions through digital instructions.

Vonovia's contribution

Vonovia is currently launching an expertise and information campaign on alternative building materials and structural designs. We also provide our workforce with state-of-the-art professional development, and we are looking at ways to reduce organisational workloads through the use of innovative digital solutions. We are planning to promote a systematic exchange with manufacturers and the construction industry, and we also want to cooperate more closely with universities and chambers of commerce in providing career opportunities for the younger generation.

Our political and industrial demands

Universities and colleges will need to intensify the development and transfer of knowledge in using renewable raw materials, sustainable building materials and prefabrication methods. Bachelor degree courses in civil engineering should therefore include mandatory modules in sustainability and in using renewable raw materials, and sustainable construction will need to become a core element on all the relevant vocational training courses. Also, the handling of prefabricated parts and structural components should form part of all apprenticeship training in the construction industry and should be taught at vocational schools and on all industry-wide training courses.