

Searching for ways to make the biggest impact



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Excellence Scholar Josien de Koning is working to improve the energy efficiency of buildings. Creative and talented individuals with ambitious goals such as hers are playing a crucial role in ensuring that the construction industry does its bit for the climate.

"Challenging the status quo and developing viable long-term solutions" is how Josien de Koning sums up her day-to-day routine as she works on her Master's in integrated building systems. Sustainability has been a key concern for the 23-year-old for many years now and, given her love of technology, this led her to move away from more traditional architectural questions and instead examine how sustainable energy technologies can best be integrated into buildings and districts.

Take photovoltaics, for example: "Solar panels don't have a great reputation because we see so many examples where they've been tacked on to facades almost as an after-thought. The results aren't very attractive. But it doesn't have to be that way. Today we can work with a whole range of different colours and textures. We have a broad palette to choose from." She quotes one of her lecturers: "Any south-facing facade that isn't fitted with solar panels is a waste of a facade." It is important that this technology is taken into account in the architectural design from the outset and becomes an integral part of the project. "The potential is huge," the talented young student states, describing the opportunities in her field, before adding, "Architects need to work more closely with climate engineers."

Sustainability as a common thread

At Eindhoven University of Technology, where Josien de Koning completed her Bachelor's degree, she took on the role of "sustainable change agent". At her instigation, student parties, and then many other on-campus events,

stopped using disposable cups. To create habitats for bees and butterflies, wild flowers were sown on patches of lawn, helping to encourage biodiversity. Before commencing her studies at ETH Zurich, the Excellence Scholar gained work experience at the Utrecht-based architectural practice "Sustainer Homes", which specialises in sustainable modular wooden building systems. "I was very grateful to receive the ETH Excellence Scholarship. For me, it confirms that I'm on the right track." She is currently enjoying learning German. "I'm about to move into a German-speaking flat share."

Idea after idea

The future could see Josien de Koning move even further from her native country: "Most of the construction work taking place today is happening in Africa and Asia. Cities there are growing at breakneck speed. And that means that we can achieve much more in these countries than in Europe." The architect took her first steps in this direction in 2017 when she took part in a project constructing cob buildings in Kenya. In Europe, she's particularly excited by the idea of retrofitting and renovating buildings to meet climate targets. Other issues on her radar include the interface between digitalisation and construction and the subject of storage technologies. "Sometimes it can almost feel a bit daunting, how much there is to do. But I'm ambitious, I have a lot of ideas and I enjoy exchanging information with others."

She believes that, at the end of the day, it all comes down to people and their needs. If a home is intelligently designed and meets the needs of its residents, that can make up for any reduction in space, for example. Josien de Koning is a firm believer that, "You can make people happy with less."



The Master's student with a prototype of a facade she developed featuring integrated photovoltaic technology.

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