



'THE WHOLE SUSTAINABLE BUILDING CONCEPT IS DEVELOPING RAPIDLY'

In conversation with
Jacco Paauw, Jeroen Krijnders
and Kirsten van Vollenhoven

The buildings for Stibbe and AkzoNobel were both awarded the international BREEAM Excellent certificate. They were designed and built to meet very high sustainability standards. Jacco Paauw, Jeroen Krijnders and Kirsten van Vollenhoven each made their own contribution to this achievement: Paauw in terms of design, Krijnders in terms of construction and Van Vollenhoven in terms of use. Van Vollenhoven: 'Sustainability has become a wider corporate social responsibility. It's something you just have to do.'

After studying Building Technology at Delft University of Technology, Jacco Paauw started his career at DGMR, a consultancy firm dealing with issues such as building physics, fire safety, sustainability, noise and vibration. DGMR's clients can be found in road and rail traffic, nonresidential construction as well as area development. In addition, the firm designs dedicated energy performance and noise software for engineering firms. Paauw feels at home working at this interface of architecture, technology and sustainability: 'The best thing is becoming involved at the design stage. Then the architect can really take your input on board.' Paauw was already working on the two projects back in 2006, when they were still under development by ING Real Estate. DGMR stayed involved all through the eventual transfer of the projects to Dura Vermeer via Stibbe and AkzoNobel.

Jeroen Krijnders is a work planner for Dura Vermeer. When he joined the construction company in 1995, sustainability was still in its infancy: 'In those days we installed high-efficiency boilers and that was pretty much it. It took until 2011 for me to embark on my first project under BREEAM.' This certification of sustainable buildings was introduced in 2008 by the Dutch Green Building Council, of which Dura Vermeer is a founding partner, and quickly came to be the common standard. Early in 2013 Krijnders joined the project team for the Stibbe and AkzoNobel buildings. 'I had gained quite a lot of experience with BREEAM at

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Dura Vermeer in the meantime, and of course the clients liked that. Besides, because of my interest in architecture I have always kept an eye on the design qualities.'

Kirsten van Vollenhoven studied Applied Domestic Science, more commonly known now as Facility Management, in Heerlen. After working for various clients in catering and hospitality sector, including Holland Casino, Keukenhof Gardens and the Kasteel Oud Wassenaar estate, Van Vollenhoven became facility manager at Stibbe in 2002. Here she organized the activities of the support services. In early 2013 she was asked to work on the Stibbe construction project as facility manager.

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Van Vollenhoven: 'Of course, we had to see to it that technology, hospitality and services-related facilities were organized properly. In that respect a law firm like Stibbe is a very specific sort of client. Work in their building goes on 24/7.' It was a deliberate choice to involve the support services in the construction process from day one in order to achieve the best possible design concept. BREEAM certification was intended from the start; in the first instance the aim was the 'very good' level, but soon they were determined to go for 'excellent' certification.

Van Vollenhoven: 'The sustainability field is transforming rapidly and that meant we had to be able to adjust quickly as well and come up with new solutions during the process.' Van Vollenhoven made an important contribution relating to routing and logistics during the design stage of the Stibbe building. Screens to block the sun and excess light were also a factor, not only in terms of working atmosphere in the offices but also because of the building's energy performance. Van Vollenhoven's efforts were directed primarily to 'BREEAM in use' certification, which concerns sustainable management and use of a building. Here too the aim was to go for BREEAM Excellent certification. Van Vollenhoven: 'Using less paper, recycling bicycles and an electric car for office use: they all count. Of course, the building is your principal asset. That is where you can make the difference in terms of energy consumption, green energy and the way you deal with waste disposal.' Van Vollenhoven focuses on the Stibbe office, but a similar approach applies in AkzoNobel's case. From the moment the offices become operational, the companies

have three years to gain the desired 'BREEAM in use' certification. Paauw: 'Sustainability in construction has become much more comprehensive over the years. In the first instance it was just about energy consumption linked to financial models. Then use of materials and water consumption were added. With BREEAM we are dealing with sustainability in all its aspects, with high quality, flexibility and social sustainability all playing a part as well.' This means that sustainability is considered during the entire process from design and construction right up to the facility stage. This frequently threw up interesting questions when the values of different choices concerning sustainability had to be balanced against each other. Krijnders: 'The façade of the AkzoNobel building is a case in point. Dura Vermeer proposed replacing the wood as a way of improving quality. Wood is a natural product that can warp and so may not last as long. Opting for aluminum covered with a thin layer of wood would give better results, but is much less environmentally friendly. It would mean having to compensate bauxite mine and blast furnace operation. That turned out to outweigh the potential drawbacks of wood.'

One of the key facilities sustainability-wise is the thermal storage plant (WKO) used by both buildings. It enables underground storage of excess heat in summer, so that it can be used in winter to heat the building, while in winter cold can be stored for cooling the building in summer. The obligatory district heating is used only for supplementary heating on extremely cold days. Other facilities include the solar cells on the roof of the AkzoNobel building and Stibbe's green roof.

'The carpenter was not allowed to leave the site in his work clothes because he might be spreading building material via his clothes'

The AkzoNobel building has an intelligent double façade, guaranteeing ample daylight entry and views while at the same time providing high energy efficiency. The space between the two façade layers has a heating effect in winter and a cooling one in summer because hot air can rise up between the façades and flow out. A lot of attention has also been paid to installations. For instance, rooms with varying occupancy have been equipped with a carbon sensor which will automatically switch on the mechanical ventilation if required. Sustainability was also emphasized during construction. It provided

the opportunity to score important credits in environmental impact, waste management and ecological terms. One example is the ecologist brought in to observe the flight of the various bat populations in the nearby Beatrix Park for several nights. To disturb the routine of these animals as little as possible, the volume of white light on the building site was reduced. This led to green light being used for the security firm and amber orientation lights.

Krijnders: 'To me that was a really fun and interesting part, even though my colleagues' response tended to be, 'there he goes again'. For instance, when I had to tell a fifty-year-old carpenter that he was not allowed to leave the site in his work clothes to get some french fries because he might be spreading building material via his clothes.'

'From now on sustainable buildings are going to look quite different'

In terms of sustainable use and management Stibbe and AkzoNobel will have a great basis where all the installations are in working order and future-proof. Van Vollenhoven: 'We see that our people are really enthusiastic about the new building and are also prepared to take the next step and make truly different use of the building. It's all about changing mentality and behavior. If the lights go out automatically when you leave the room, chances are that people will switch off the lights themselves in other places as well.'

Paauw found both projects very interesting. They show how the concept of sustainable construction is developing rapidly. Thus you have the favorable material scores that can be attained when buildings have an open office interior with a limited number of inside walls. Another important issue is the way in which the environmental load ratio between the different aspects of the building changes. Paauw: 'That combination of sustainability-related facilities is what makes it so interesting. Using thermal storage reduces the cost of heating and cooling so much that lighting turns into the greatest expense – even when highly energy-efficient LED lighting is used like we do in the AkzoNobel building. This makes it interesting to come up with buildings with plenty of daylight. It represents a break with the old assumptions about sustainable buildings, which always took compact buildings with small façades as their premise. I believe that from now on sustainable buildings are going to look quite different.'



