

State-of-the-art housing for humans and the environment

“ In fact, we made three buildings in one. ”

In 2018, SCK•CEN completed the construction of the EME building. “EME is short for EMergency MEDical & MEasurement”, says building coordinator Davy Dehaen. The new, state-of-the-art building offers a better home for three departments: the medical department, the low radioactivity monitoring department and the emergency planning room. “Better housing for humans and the environment.”

The new EME building is crowned with a kind of white ball of ice cream, housing Snow White: an early warning system for low radioactivity contamination – the only one in Belgium. “You could say it’s like a gigantic vacuum cleaner that draws in huge amounts of air and pushes it through a filter”, explains Freddy Verrezen, researcher in low radioactivity monitoring. “High doses of radioactivity can be detected easily. We don’t need advanced technologies for that, but we do for low doses. It is important to invest in instruments that can measure low doses. Indeed, they can reveal a latent issue, such as a hidden leak.”



We will have to wait until 2019 for Snow White to be operational, but researchers are already itching to have the system up and running. “With this investment, we can surpass our current air quality monitoring capacity. So far, air monitoring was done via small funnels. These funnels collected a lot less dust per air intake unit than Snow White. And it is precisely this dust that we need to measure low doses. We test which radioactivity concentration it contains”, explains Freddy Verrezen.

Snow White is only one of the technological marvels to be discovered in the new energy-efficient building. Davy Dehaen, who coordinated the project, explains: “In fact, we created three buildings in one. We christened it ‘EME’. EME stands for EMergency MEDical & MEasurement. A reference to the three departments housed inside.” For this building project, SCK•CEN did not want to make hasty decisions. “In 2012, we started inventorying all needs and expectations of the different departments. This inventory would shape our initial renovation plans for the current building, but we quickly abandoned this idea. New build was a better solution for the dire lack of space on the one hand, and the need for more up-to-date installations on the other”, says Davy Dehaen. In 2018 construction was completed, and the three departments could move in.





Building coordinator **Davy Dehaen** (centre) with his colleagues **Daniëlle Cremers** and **Lode Hoeyberghs**

Mini hospital

The first department to be housed in the EME building was the medical department. This department takes care of the periodic medical monitoring of all staff at SCK•CEN, VITO and Belgoprocess. “We are also entrusted with the monitoring of outsourced personnel who work at SCK•CEN and Belgoprocess temporarily”, explains occupational physician Luc Holmstock. “All in-house and outsourced workers that we examine periodically - approximately 1700 in total – undergo an extensive check-up. Each year, we must also issue approximately the same number of certificates of medical fitness for outsourced workers who come and work in controlled zones for a while. We have our own clinical lab to carry out a whole range of blood and urine tests, equipment to test eye, ear and lung function and an X-ray department, as well as fully fitted infirmary to administer appropriate care in the event of industrial accidents. Combined with a comfortable waiting room, the medical department has the atmosphere of a modern, run-of-the-mill hospital.”

Lab division

The second department to move in is the Low Radioactivity Monitoring (LRM) department. Among other things, it keeps a watchful eye on possible radioactive contamination from industrial activities near nuclear facilities and Flemish hospitals. It also carries out bioanalyses for staff. “This is mainly done through urine sampling, because radioactivity is excreted for 80% via urine”, explains Freddy Verzezen (LRM). To make work easier, the lab was given new equipment. “The installation was adapted to the process flow: from sampling to analysis. We also paid extra attention to the continuous monitoring of certain parameters such as oxygen, temperature, humidity and explosive atmosphere.” The integrated monitoring network is not only located in the new lab, but in all rooms of the building. “We can set threshold within this network. As soon as certain values exceed the threshold, alarms are generated. This enables us to take timely action”, building coordinator Davy Dehaen explains.



Fernand Vermeersch, Luc Holmstock and Freddy Verzezen helped develop the building.

“ *The new emergency planning room is partitioned into different rooms. This enables the members of the crisis cell to focus better, while still being close enough for easy consultation.* ”

Emergency planning room

However, the showpiece of the EME building is the emergency planning room. “All stakeholders gather in the emergency planning room – in the event of an incident – to consult quickly, take action and communicate. The periodic safety evaluation revealed that the existing emergency planning room needed renovating”, says Fernand Vermeersch, Head of the Internal Department for Prevention and Protection at Work. Unlike the current emergency planning room, the members of the crisis cell don’t sit in one big room anymore. The new emergency planning room is divided into different, partitioned rooms. “This enables the members of the crisis cell to focus better, but they are still close enough to each other for quick consultation.” The uniqueness of the room is mainly its ventilation. Fernand: “It works in over-pressure and the air is filtered via a HEPA filter system. This prevents contamination from coming in from outside.” SCK•CEN organises regular drills in the emergency planning room.