



focus on
Laboratory Products

Safe Chemical Storage Solutions

Dr Teresa Knapp, Technical Services Manager, School of Life Sciences

A Translational Drug Discovery Group comprising medicinal chemistry and molecular pharmacology laboratories has been established at the University of Sussex as part of a major new strategic investment within the University's School of Life Sciences.

The Challenge

The group aims to deliver drug candidates for evaluation in clinical trials by synthesising and characterising compounds with biological activity against defined molecular targets in indications such as cancer, neurodegenerative and psychiatric disease, and pathogenic infection.

Several early exploratory drug discovery programmes are being initiated in collaboration with colleagues across the School of Life Sciences, the School of Psychology, the Brighton and Sussex Medical School and the Royal Sussex and Brighton Hospital.

The new investment includes refurbishment of several laboratories, and as part of this work, the method of safely storing chemicals was looked at and revised. A number of dangerous and/or flammable chemicals are housed in the Chemistry buildings. To avoid risk of injury to staff, students and buildings, these chemicals need to be stored securely and safely.

Dr Teresa Knapp, Technical Services Manager for the School of Life Sciences, explained: "The industry standard is that no more than 50 litres of flammable material should be kept in a lab at any one time because of the safety risk. In Chemistry, staff often need to be able to use more than 50 litres to be able to do their work, so we looked at managing the risk and decided to opt for safety containment."

The Solution

To this end, the University of Sussex looked at sourcing cabinets that would be resistant against fire for 90 minutes before they started degrading, giving people 90 minutes to leave the building if there were an incident.

Asecos was recommended by one of the University's contractors, Weldway Engineering Services. "It was the only company we could find that offered 90-minute storage and was also recommended to us as a company that could provide good quality cabinets. It all tied together," recalled Dr Knapp.

The revision of the safe and secure storage of the chemicals in the chemistry labs and therefore usage of the safety storage cabinets also came about because a number of new research groups were coming in to the School.

Explaining the effect of these new research groups, Dr Knapp said: "Some of our new research groups are coming from industry, from companies such as Pfizer and Novartis, who have high expectations of their facilities."

"Asecos products fitted more with what they expected and were used to seeing in terms of the quality of make and build. One of our new research groups stipulated they wanted ventilated cabinets to store materials that could be unpleasant smelling, even if not necessarily flammable. It was a natural progression to use these products," she said.

The Outcome

The University ordered a variety of different-sized classic storage cabinets in 2011. The cabinets offer a flexible storage system – some have wing doors, some have automatic door-closing after 60 seconds, while some ventilate into the labs' exhaust system. They are used

in a variety of different ways for storing a whole range of flammables such as ethanol and general hazardous chemicals.

"There is a lockable poisons cabinet within one of the cabinets to keep poisons secure. I thought it was a really neat idea to have one lockable cabinet within another," said Dr Knapp. "There are tight guidelines about storage of poisons and the cabinets help us to more easily comply with these."

The Benefits

The cabinets are customisable, with differing numbers of shelves or pull-out drawers. Runners can be placed at different heights, depending on what is to be stored, so they are extremely flexible. "My staff find them easy to use," reported Dr Knapp. "The equipment is of really good quality and very well made. We feel that our chemicals are stored in a safe way."

Although staff safety is the principal benefit from using the cabinets, there is also a drive from the health and safety industry and chemical labs in general to improve archiving, so the chemists make a list of the contents on each cabinet and on an online database.

"It is easier for us to centrally store all our chemicals and have a proper archive of them," said Dr Knapp. "It results in less duplication as we know exactly what we've got in the building in different labs, so this leads to cost savings too. If there were an incident I would feel happy knowing that everything was stored in a 90-minute cabinet. The old-fashioned yellow metal flammable cabinets don't give enough protection," she adds.

Future

The University is planning to buy more of the Asecos safety cabinets. "Not many companies offer 90-minute protection and that is what we wanted for our hazardous chemicals," observed Dr Knapp.

The cabinets comply with all the relevant legislation on the storage of hazardous substances such as the Dangerous Substances and Explosive Atmospheres Regulations, unlike some other storage cabinets on the market. They also conform to and exceed European standard BS EN 14470.

Dr Knapp concluded: "Although the safety cabinets are not cheap, you get what you pay for."

Author Details

Dr Teresa Knapp is the Technical Services Manager for the School of Life Sciences.

She manages the School's technical staff, premises, space, and equipment and assists with the planning and development of new and existing space. Dr Knapp holds a PhD in molecular biology from the University of Liverpool.

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