Haier Biomedical
Intelligent Protection of Life Science

# Case Study

## Unlocking discovery with cold chain storage solutions

**The Roslin Institute in Midlothian, Scotland, is a globally renowned animal sciences research organisation that aims to promote sustainable agriculture, disease control and animal and human health. Part of the University of Edinburgh's College of Medicine and Veterinary Medicine, it combines unique expertise and infrastructure to conduct pioneering studies in the field of animal biosciences. The Easter Bush campus, home to the Roslin Institute, has become a thriving research hub, and enjoys many key strategic partnerships with academia, industry and governance, as well as acting as an incubator for start-ups by providing state-of-the-art shared laboratory facilities to support the next generation of scientific discovery.**


## CUSTOMER NEEDS

- **Replace inefficient freezers**
- **Avoid sample loss and research impact**
- **Increase energy efficiency**
- **Cost savings**
- **Enable early detection of temperature fluctuations**
- **Improve insulation and cold retention**
- **Power outage mitigation**
- **Proactive preventive maintenance**

"Laboratory space is also often at a premium, and large freezer units would occupy valuable lab footprint that could be dedicated to workbenches and other lab equipment. In addition, placing several freezers in a laboratory would generate a lot of heat, requiring separate cooling equipment and consuming additional energy. Locating all ULT cold chain storage in one shared facility enables researchers to maximise the productivity of their own labs and reduces overall energy expenditure."

# Haier Biomedical: unlocking discovery with cold chain storage solutions

Many of the research groups hosted by the institute rely on biological samples for their various cutting-edge projects, and the campus also boasts extensive archives of samples dating back up to 30 years, which serve as a valuable resource for numerous studies. These important biological materials must be stored at low or ultra-low temperatures (ULT) around the clock to preserve their viability, and the Roslin Institute has been using a wide range of cold chain storage solutions from Haier Biomedical for around 10 years to safeguard its precious research specimens, including [-80 °C], [-40 °C] and Under-counter ULT freezers.

Brian McTeir is the facilities manager for the Easter Bush campus, and part of his multifaceted role is to liaise with incoming research groups to design a lab space suited to their needs, covering aspects such as equipment, storage, amenities, safety precautions and layout. Brian also applies his wealth of knowledge to provide crucial advice about the construction of new laboratory facilities or lab conversions, and oversees the purchasing of equipment across the campus. He explained the institute's current cold chain storage set-up: "University policy is to hold all critical samples in centralised ULT freezers to safeguard their integrity. This practice aligns with Human Tissue Authority licensing requirements, and is often stipulated by funders as a condition of their financial support. Under-counter freezers can be kept in individual labs, but these should not contain original specimens. Haier Biomedical cold chain solutions have become our go-to choice for both centralised ULT facilities and in-lab storage due to their high quality, ease of use and ergonomic design. We also appreciate their compact footprint and the compatibility of the racks between different freezer brands. The units demonstrate very little temperature variance, and it is easy to tell if the doors have been properly shut, helping to prevent alarms and offering reassurance that the biological materials are in safe hands."

Cold storage solutions housing valuable biological specimens require constant monitoring to identify any issues as quickly as possible, allowing remedial action to be taken before samples sustain irreparable damage. All of the campus' 350 critical sample freezers are connected to Haier Biomedical's [real-time alarm and wireless monitoring system], allowing Brian and his colleagues to conveniently check live freezer status remotely, which is especially helpful in the event of an alert out of office hours. In the case of an emergency, real-time information and alarms enable the team to respond straightaway, with a trained staff member arriving on site within 40 minutes to carry out appropriate remedial action. Brian continued: "The Haier Biomedical remote monitoring system is highly reliable and extremely convenient, as we often no longer need to go on site to check a unit in person. This remote monitoring capability has enabled us to reduce our overtime costs by 50 per cent, and also gives staff and researchers peace of mind that the institute's precious materials are closely observed 24/7."

As well as sample safety, there are additional benefits to centralising ULT storage at the Roslin Institute. "Laboratory space is also often at a premium, and large freezer units would occupy valuable lab footprint that could be dedicated to workbenches and other lab equipment. In addition, placing several freezers in a laboratory would generate a lot of heat, requiring separate cooling equipment and consuming additional energy. Locating all ULT cold chain storage in one shared facility enables researchers to maximise the productivity of their own labs and reduces overall energy expenditure."

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The Roslin Institute has recently begun to participate in the Laboratory Efficiency Assessment Framework (LEAF), a self-assessment tool developed by University College London to improve the sustainability and efficiency of research, teaching and medical laboratories within the UK. The LEAF programme includes a set of actions that help lab users to reduce their plastic, water, energy, and other resource consumption, reducing the overall carbon emissions generated by a lab while simultaneously maintaining an environment that supports high quality scientific study. Brian explained how the freezers provided by Haier Biomedical help the institute to comply with this framework: "Some of our ULT freezers are over 20 years old and, as a result, are more prone to issues than newer units. It can also be challenging to find spare parts to repair them. In addition, these legacy freezers are highly energy inefficient, consuming up to 20 kWh a day, whereas several Haier Biomedical ULT freezer models use as little as 8 kWh a day. Consequently, we purchase several new Haier Biomedical freezer units every year to replace our older equipment, helping to prevent malfunctions and significantly reduce our electricity usage in line with the LEAF initiative."

View our ULT freezer portfolio here:

The Roslin Institute will shortly open a new building on the Easter Bush campus, and Brian is in the process of purchasing the necessary cold storage equipment, including two -150 °C Cryo Freezers from Haier Biomedical.

**"Our existing Haier Biomedical freezers have proven to be robust, reliable and perfectly suited to our needs, and the company holds large UK stocks, meaning that delivery has always been extremely fast. It was therefore an obvious choice to go to Haier Biomedical once again when kitting out the new lab facility, and I am looking forward to trying out the company's Cryo freezers for the first time. I'm confident that these will be a valuable addition to our cold storage portfolio, supporting the new research groups that we plan to welcome to the institute in the near future," concluded Brian.**

## PROJECT OUTCOMES

- **Energy-efficient operation and cost savings**
- **Reliable and precise temperature control**
- **Consistent and stable storage conditions**
- **Enhanced sample integrity and viability**
- **Efficient and optimised use of space**
- **Improved accessibility and organisation of stored samples**
- **Enhanced data logging and monitoring**
- **Contributes to overall sustainability goals**

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