

Deployable Mortuary for the Royal New Zealand Navy – HMNZS Manawanui



In 2023, Heuch Cooling Solutions was awarded a prestigious contract by the Government of New Zealand to design and manufacture a deployable mortuary for the Royal New Zealand Navy (RNZN). The deployable mortuary is intended for use aboard RNZN Ships, being operated on land as well as being land and air transportable, providing critical Humanitarian Assistance and Disaster Relief (HADR) capabilities in challenging environments.

This case study outlines the challenges, our innovative solution, and the successful deployment of the mortuary system, highlighting the importance of Heuch's expertise in creating rugged, efficient, and adaptable containerised cooling and refrigeration solutions.

PROJECT REQUIREMENTS

The RNZN required a solution for a deployable mortuary that would meet the following criteria:

- **Transportable and Marine-Compliant:** The mortuary had to be based on an ISO 10-foot container, capable of being loaded onto ships and transport vehicles, including a C-130J Hercules aircraft.
- **Environmental Resilience:** Designed to withstand a wide range of marine conditions and harsh climates, it had to be robust enough for open deck use on ships.
- **Self-Sufficiency:** It needed to operate independently with refrigeration, lighting, and a hygienic environment for storing and managing human remains.
- **Operational Simplicity:** The system should be easy to operate, require minimal maintenance, and ensure the safe handling of deceased individuals in the challenging conditions of sea and military operations.

HEUCH COOLING SOLUTIONS' APPROACH

Heuch Cooling Solutions leveraged its extensive experience in designing containerized refrigeration systems for the defence and humanitarian sectors to meet the client's specific needs. Heuch's solution was built upon decades of designing rugged, deployable systems for military and disaster relief applications, ensuring the mortuary unit could perform under extreme conditions.





KEY ELEMENTS OF THE SOLUTION INCLUDED:

- **ISO 10-Foot Container Design:** Heuch's mortuary was based on a standard ISO 10-foot container with a "marinised" design, capable of withstanding the rigors of deployment in harsh marine environments.
- **Refrigeration:** The unit featured a state-of-the-art refrigeration system, capable of maintaining temperatures as low as -20°C, critical for the preservation of human remains.
- **Heavy Duty Mortuary Equipment:** The design incorporated 6 mortuary trays with locking mechanisms and tie-downs to secure bodies during transport, even in heavy seas. This equipment also included an electric mortuary lifter for easy placement and removal of remains.
- **Storage and Hygiene:** The interior included storage cabinets for personal effects, protective gear such as hazmat suits, and ample space to maintain hygiene and safety standards. The design ensured that the unit could be easily cleaned and decontaminated.
- **Power Supply:** The mortuary was designed to operate on both 230Vac 50/60 Hz power supply and 440/230Vac 60 Hz transformer for compatibility with various shipboard power systems.

CHALLENGES ADDRESSED

The project presented several key challenges, all of which Heuch Cooling Solutions addressed successfully:

- **Marine Environment:** The need for a system that could operate in the challenging marine environment was critical. Heuch's design was based on years of experience with rugged, offshore containers used by organisations such as the Australian Defence Force and Exxon Mobil.
- **Transportability:** Heuch ensured the mortuary met the exacting standards for container compatibility with ships and the C-130J Hercules aircraft, adhering to size and weight restrictions while maintaining performance.
- **Simplicity and Ease of Use:** Heuch's design made sure the unit was simple to operate, requiring only basic maintenance and operator-level care, addressing the RNZN's need for operational simplicity.

The Heuch-designed deployable mortuary met all the RNZN's requirements, delivering a high-quality, functional, and adaptable solution.

Heuch's proven track record in providing military-grade, ruggedised systems ensured the mortuary would perform reliably in various conditions. This solution will enhance New Zealand's capability to respond to emergencies and provide essential services during critical operations.

At Heuch Cooling Solutions, we specialise in providing bespoke, ruggedised cooling systems for a variety of industries, including defense, mining, and humanitarian assistance. Our experienced engineering team is ready to discuss your specific needs and provide tailored solutions.

Contact our engineering team today to discuss your next project or for more information on our deployable mortuary systems and other containerised solutions.

