



Case Study

Manufacturing Assessment of Design

THE CHALLENGE

The client has a design for large stainless steel storage boxes, each weighing over a ton. These boxes are built to safely store radioactive waste for a minimum of 500 years. There's a pressing need to manufacture a substantial quantity of these boxes to support future radioactive waste management and decommissioning. The client has tasked Frazer-Nash with optimizing the current waste box design for manufacturability and affordability, utilizing advanced technologies and identifying opportunities for cost savings. This case study examines how Frazer-Nash addressed these challenges, resulting in a more efficient and cost-effective solution for radioactive waste storage.

OUR SOLUTION

Beginning with the top-level assembly drawing, Frazer-Nash Consultancy constructed a Work Breakdown Structure (WBS) to plan the manufacturing process. The WBS formed the foundation for estimating both cost and time for manufacturing, which was subsequently verified as accurate by the client.

Frazer-Nash Consultancy facilitated workshops aimed at challenging the design intent and initiating A3 improvement activities to enhance the manufacturability of crucial design elements.

Selected design options were accurately modelled, and structural calculations were performed to ensure their suitability. Estimations of manufacturing costs were carried out to compare with the existing design.

As a result of these efforts, a theoretical reduction of circa 20% per box was achieved, primarily attributed to lowered material costs, reduced machining, and welding. This represents a substantial cost-saving benefit for the client when scaled up to meet the total program demand.

BENEFITS

Frazer-Nash Consultancy boasts a team of highly experienced industry professionals specializing in manufacturing engineering. Our team has a wealth of hands-on experience in addressing engineering challenges within the nuclear sector. We are uniquely positioned to support our clients by applying our extensive industry knowledge to view design projects through the lens of manufacturing. This approach enables us to develop tailored solutions that meet the specific needs of our clients in the nuclear sector. By combining our expertise with a keen focus on manufacturing, we can deliver practical and effective solutions that support our clients in achieving their goals.

Business need

Manufacturing

Design for Manufacture

Why Frazer-Nash

Systems engineering

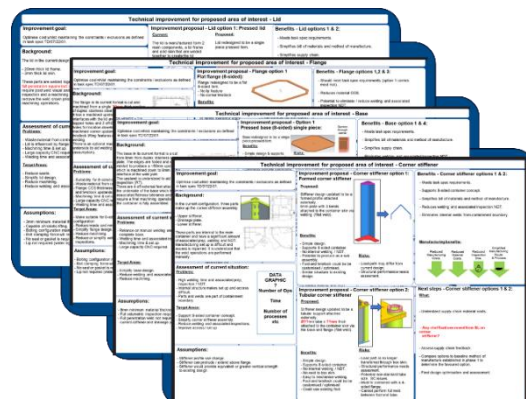
approach to manufacturing

challenges with access to

industry via AMTech.

Date project completed

September 2023



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Offices throughout the UK and Australia

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To find out more about our work and how we can add value to your business visit our website.

