



“Two words stand out about Royal HaskoningDHV on this project: proactivity and delivery. They took the initiative to provide us with the best possible solution while minimising the losses to our insurers, and they delivered on time and on budget. They always maintained a can-do approach.”

Brian Parsons
Manufacturing Director

Out of the ashes... ... restoring Mueller’s factory after the fire

On 9 November 2008 a fire swept through the Eastern section of Mueller Europe Limited’s factory at Bilston in the West Midlands. The fire damaged or contaminated machinery, equipment, and stocks of copper tubing, across almost half of the production facility. Although the severely damaged area was limited, the extent of contamination meant that the facility had to cease production. However, just six weeks later on December 8th Mueller was able to resume production and in nine weeks the remaining factory area, untouched by the fire; was fully operational.

Royal HaskoningDHV was appointed to determine the overall extent of the demolition work needed to restore the factory, design all of the necessary replacement civil and structural engineering works, and tender the works on behalf of Mueller. Royal HaskoningDHV was also asked to act as the overall Construction, Design and Management (CDM) Coordinator for the project.

The intense heat weakened the steel structure and destroyed the roof in one section, having first burned through the asbestos cladding that protected the roof from fire.

Peter Wood, Royal HaskoningDHV’s project manager, described the scene: “The most interesting feature was seeing the damage that a fire can cause, up close and personal. The fire heated the steel structure beyond red hot and altered its metallurgical properties. This was the cause of the twisted and bent steelwork found after the fire had been put out. If we could see that steel had either burned back to base metal or was deformed in any way, then that steel work was condemned. In total about 100 tons of steel had to be replaced. The old coats of paint were a valuable guide to the extent of the damage – if the bottom layer of paint was intact, the steel below was generally sound.”

Most of the smoke from the fire was contained within the building, which was good news for the local community, but made the clean-up operation more difficult. The contamination released from the roof cladding penetrated the whole site and had to be removed inch by inch. The contaminated area was sealed off from the rest of the factory and then the cleaning teams went to work, initially using specialised breathing apparatus to avoid inhaling asbestos fibres. Even as the asbestos levels declined they continued to wear protective gloves, goggles, hats and face masks.



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Peter Wood paid tribute to the efforts of all involved: "The teams worked over Christmas to ensure the factory was ready to re-open on 5 January, nine weeks after the fire. Mueller's Manufacturing Director Brian Parsons was instrumental in driving the remediation project forward. There were several parties involved, including the insurers and their disaster recovery facilitators, and he drove everyone and kept them all communicating with each other.

"As the stocks of copper tubing had been contaminated in the fire it was necessary to recycle the material, this meant that the sales team had to buy more material from other sources to ensure that the company could meet its short term commitments to clients in the immediate aftermath of the fire. Our role was to ensure that the factory buildings were ready to support production again by the start of the New Year. Everyone worked together to ensure that the business was maintained."

Peter describes Royal HaskoningDHV's role as a 'building detective', working out how the structure behaved after the fire, where it was stable and where it was damaged. An important aspect of the job was to work with the insurance company to keep its losses to a minimum, which involved not only getting the factory back to work but also finding cost effective solutions wherever possible. The work continued for some time after the initial disaster recovery period and was finally completed in 2010.

The design team took the opportunity to improve on the mid 20th century building by updating the original designs to meet current best practice standards. The work also exposed some previously hidden defects, such as a structure that had been built using methods that would be frowned upon today. As Peter Wood recalls: "A crane rail was cut to allow a damaged gantry girder to be removed. As the cut was made, the supporting column moved with a bang. It almost broke out of its base. The column had been 'plumbed' by over-tightening the bolts that previously connected it to the roof trusses." This problem was rectified, along with several others.

Royal HaskoningDHV draws on more than 70 years experience of working with historical manufacturing facilities. Many of these structures are between 50 and 100 years old. This in depth experience gives Royal HaskoningDHV unrivalled insights into how historical manufacturing structures behave, where problems may arise and where designs can be improved.

The Mueller project not only adds to that knowledge base but leaves a happy client with a fully operational factory and a business that has survived a major disaster.

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