Australia-first toxic seal-off wins award

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A pioneering method for safely sealing off a huge volume of contaminated soil under a Sydney car park while it was cleaned up has won the CARE Award for 2013.

The award went to Thiess Services for its highly innovative design of a sealed relocatable building that provided a controlled environment for the remediation of volatile contaminants left over from the manufacture of dry cleaning fluids and coolants, ensuring the health of workers and the surrounding community.

The project involved excavating and treating 45,000 cubic metres of contaminated soil that was encapsulated in a synthetic liner underneath a car park at the Botany site. The soil was contaminated with hexachlorobutadiene (HCBD) and low levels of hexachlorobenzene (HCB) and hexachloroethane (HCE) – byproducts from historical manufacturing of chlorinated solvents by Orica. The encapsulated waste was treated using a form of heat treatment named thermal desorption technology.

"Thiess first had to develop a solution for enclosing the Car Park Waste Encapsulation so that onsite workers and people from the surrounding community would not be exposed to emissions from the contaminated soil during its excavation. The solution was the Excavation Soil Building," the company's entry explains

This innovative building featured internal walls and pillars that could be progressively moved as excavation and clean-up progressed. The air-

tight seal on the building had to trap any vapours or emissions so that workers on the site and nearby residents would not be exposed.

Thiess was responsible for the building's concept, functionality, layout, staged excavation concept, ventilation design and airlock design. GWH Build Pty Ltd was subcontracted by Thiess as the structural engineer and installer of the building.

The building's creation was the result of cumulative knowledge gained by Thiess over the past decade. The main innovation was the installation and relocation of the building's internal walls and columns as the excavation progressed to maintain air volumes compatible with the capacity of the building's Emission Control System.

Announcing the award the managing director of CRC CARE, Professor Ravi Naidu, said "The design and construction of the Excavation Soil Building has set a new benchmark for the remediation industry. Thiess drew on its wide experience and expertise gained in other major Australian clean-up projects to develop an innovative solution to a unique and particularly difficult remediation problem.

"This is a fine example of Australian clean-up technology – and a potential export to help the world in its task of cleaning up the estimated 5 million potentially contaminated sites that exist around the globe. At CRC CARE we commend and applaud all those involved in the project's design and implementation."

The CARE Award recognises technologies and innovations in the area of contamination assessment and remediation of the environment, and celebrates the achievements of the winner among the industry sector and peers.

The Award receives nominations for innovations and technological

developments from organisations, consultants, contractors, product developers and suppliers, service providers, regulators and researchers who are working in fields of environmental contamination assessment and remediation science.

The winner of the 2013 CARE award receives a unique, hand-crafted glass sculpture, a $10,000 cash prize and exclusive use of the 2013 CARE Award logo. Their achievement was announced at the Gala Dinner of CleanUp 2013, the world's leading remediation conference.

Provided by CRC for Contamination Assessment and Remediation of the Environment