IMI, Bentley Bridge

Project Value:	£20m
Client:	Wilson Bowden
Contractor:	BHE (remediation)
Architect:	Various

The Project:

The project involved the remediation of soils contaminated with phosphorus whilst preventing any significant delay to the earthwork operations of a former foundry site in Wednesfield. The development was for a proposed mixed use industrial and commercial development.

During the cut and fill operations for the main access road buried liquid phosphorous was exposed. Upon exposure to air phosphorous spontaneously combusts producing thick white smoke and flames causing all site operations to cease until a suitable remediation strategy was approved and implemented.

Approximately 297m2 of contaminated material was identified in discrete patches across the southern section of the site to a maximum depth of 1.0m. The principle aim of the remediation was to stabilise the liquid phosphorous and to relocate it to a specially designed borrow pit to the north eastern section of the site and mitigate any potential risks to the health of the end users of the site (i.e. office workers) and any environmental receptors.

The engineered borrow pit was approximately 2.7m deep x 4.0m wide x 50m long and was lined with a 15% lime mix to prevent the formation of phosphoric acid. Over the lime liner a heavy duty visqueen membrane was placed on the base and sides of the pit. The contaminated material was then exposed and extensively mixed with lime to stabilise the volatile reaction the oxygen. This material was then excavated and transported to the borrow pit where it was placed in engineered layers. Upon completion lime granules were placed on the surface and the visqueen liner was folded over to envelope the material. A 1.0m capping layer of site derived stockpiled clays were placed over the liner to ensure complete encapsulation of the treated material

The remedial works provided a suitable barrier to the source of contamination with respect to human health risks that are associated with metallic/inorganic exposure to the soil. Thus negating the Source-Pathway-Receptor pollution linkage. The measures taken have reduced the likelihood of any further contamination to the natural grounds below the site and have minimised any leaching potential.

By being able to treat the contaminated materials on site and place them within a specially designed borrow pit, enabled HSP and the site contractors to work in together to quickly implement the remediation measures in conjunction with the planned site works to allow very little disruption to the overall earthwork operations.

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