



Plate 1 - Completed commercial buildings following the installation of the barrier.

Completion Date:	November 1998
Development:	Commercial
Developer:	Kingswood Commercial Developments
Remediation Contractor:	May Gurney
Consultant:	John Newton & Partners
End Value:	£10M

Site Overview

The Harmondsworth site (plate 2) occupies an area of approximately 7.5 acres. Extensive contamination was identified with soil and groundwater polluted with chlorinated hydrocarbon.

It was the intention of Kingswood Commercial Developments to redevelop the site for commercial / industrial end use.

Objective

The remediation strategy at the Harmondsworth site was designed to address the on-site contamination problems and prevented the potential risk of future contamination of the adjacent site through groundwater migration.



Plate 2 - The site prior to remediation

Methodology

Envirotrat installed an Active Containment System comprising both non-permeable and permeable sections (figure 1). The Envirotreat Technology at the Harmondsworth was applied using a Continuous Flight Auger (CFA). The active (permeable) section of the barrier contained modified pillared E-clays® designed to remove and chemically immobilise the prime pollutants of concern. The non-permeable (passive) sections of the barrier are composed of a clay and cement mix. Passive barrier sections are used to channel groundwater towards active barrier sections where contamination can be 'filtered' out. Non-permeable barrier sections are included to reduce installation costs as their raw materials are cheaper than those of the active sections.

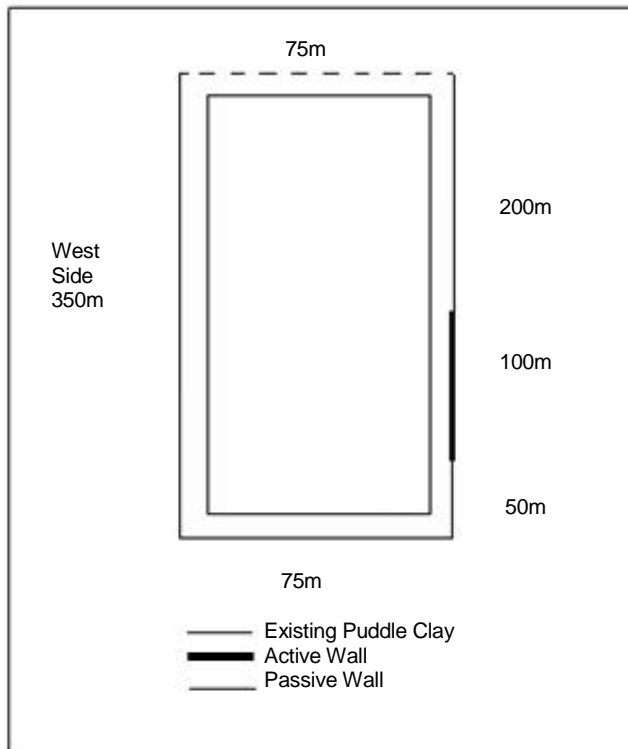


Figure 1: ACS Schematic

The works were conducted over a 12-week period under the auspices of Envirotreat's Mobile Process Licence (MPL). Specialist technology, materials and supervision were supplied by Envirotreat, whilst May Gurney supplied all the required plant and labour for application of the Envirotreat® Process.

The total length of the active barrier was 800m, with an average depth of 7m (the total depth varied with the depth of the underlying clay into which the barrier was keyed into).

The barrier was installed by advanced soil mixing techniques using continuous flight auger systems. The active barrier comprised a single row of overlapping columns (each column having a nominal diameter of 900 mm).

Validation & Results

Following the successful installation of the

active and passive barrier sections, validation of the system was required. This validation was carried out by the engineers, John Newton and Partners.

The validation demonstrated that the Envirotreat Soil Mixed Reactive Barrier System effectively reduced the potential for off site contaminant migration. The concentrations of contaminants of concern were all below the site-specific target levels.

The remediation project was successfully completed under the auspices of the MPL, with the results illustrating that the objective of protecting the surrounding area from the off-site migration of contaminants within the groundwater has been achieved. The barrier has intercepted the migration of contamination by the introduction of modified pillared E-clays designed to remove and chemically immobilise the prime pollutants of concern in the soil.

The development was completed with the construction of a 200,000 sq ft of industrial and space (plate 3).



Plate 3 - Completed commercial development

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