

**Title:** **Brownfield Site Development: The advantages of treating contaminated soil on site rather than removing from site to external treatment centres**

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**Purpose:**

The main aim of this research was to establish if current engineering technology can provide cost-effective remediation to brownfield sites by utilizing on site remediation methods such as bioremediation and soil washing. It was anticipated that by carrying out this research the author would develop a set of recommendations that could help his organisation to become a leader in this field.

**Methodology:**

There was a wide ranging Literature Review undertaken to gain a comprehensive understanding of remediation processes that are available for on site remediation. The Methodology applied to gain the primary research was a mixture of questionnaires and semi-structured interviews. The questionnaires were for soil investigation and treatment companies while the interviews were for consultant engineers and construction site agents, who are all working in the remediation of contaminated sites.

**Findings:**

The researcher found that when doing site investigation it was field errors that caused the most uncertainty. The main contaminants found in soils in Ireland are hydrocarbons followed by heavy metals, which are suitable for treatment by bioremediation and soil washing respectively. A remediation strategy should be based on the end use of the site and it should never be to clean the soil 100%. The research concluded by recommending that more attention is paid to the site investigation report to identify any gaps or possible anomalies. Other recommendations included possibly forming an alliance with a consultant dealing with waste and contaminated soils and utilising BAM's sister companies to shorten the learning curve associated with remediation techniques.

**Keywords:**

Bioremediation, Brownfield Site, Sampling Strategies, Soil Remediation, Soil Washing.

**Classification:** Sustainable Development