

Case Study – SLEMS, Teesworks

Site Summary

The land occupied by the SLEMS is a strategically important development site on Teesworks, forming a key part of the 500-acre South Bank land zone, that is central to the delivery of the Teesworks Offshore Wind Cluster, where SeAH Wind is already in the early stages of construction of a 90-acre monopile manufacturing facility.

The SLEMS site measures approximately 63 acres in area (25 hectares) and it adjoins an already remediated site – the 50-acre (20-hectare) former Metals Recovery area (MRP site), completed in 2021. The site comprises a former landfill that was subject, for decades, to extensive tipping of waste by-products from the steelmaking process. Prior to this, the site was formerly part of the tidal flats associated with the River Tees.

Deposition of hazardous waste materials from the former steelmaking process and contaminated silts from other site activities is thought to have begun in the 1950's prior to the site and its related landfilling operations being formalised as the CLE9 landfill between 1990-2002. The site continued to receive waste BOS Oxide material from steelmaking until 2015. The SLEMS site incorporates a 1km long surface water channel (the Cleveland Channel) that forms part of the environmental management system on this former landfill and waste processing facility.

Ground investigations undertaken by STDC have identified that ground conditions are characterised by the presence of significant contamination including tars, hydrocarbons, and other hazardous, carcinogenic compounds. The BOS Oxide material is itself classified as hazardous waste.



Development Proposals

The SLEMS site is located within 1km of the new, deep-water South Bank Quay that is presently under construction, which will complete in 2023. The site is ideally located for development uses linked to offshore energy and the aforementioned Teesworks Offshore Wind Cluster. While there is significant market interest in the adjoining, remediated MRP site, a number of commercial opportunities have not proceeded because, critically, they required expansion land or a site greater than the 50 acres offered by the MRP land area. Similarly, many of the offshore wind related uses require factory buildings of a long-linear configuration, extending to many hundreds of metres in length, that would require a joining of the two sites. As such, Teesworks aims to develop the SLEMS to form a marketable plot contiguous with the MRP site, affording maximum flexibility on site development opportunities and the economic and socio-economic benefits these would bring, at the same time securing long term environmental protection.

The required remediation measures for the site will need to address significant development constraints and challenges (discussed below) which severely impact the site and its marketability, and which result in it currently having a negative land value. The current condition of the SLEMS also has the potential to adversely impact the attractiveness and marketability, and hence land value, of the neighbouring, remediated MRP site, being as it presently is, a bad neighbour use.

Remediation Requirements

To make the SLEMS site development-ready requires significant ground remediation interventions and related earthworks to address essential environmental hazards and risks, and to deliver a land platform contiguous with the adjacent MRP site that does not overly constrain or restrict the development uses it can accommodate. These works are required to address various key constraints and challenges, which are:

1. The status of the extensive SLEMS hazardous waste materials deposits across the site, which preclude any form of development whatsoever.
2. The major environmental hazard the current site conditions present, in being close to existing watercourses in direct connectivity with the river (notably, the Lackenby Channel).
3. Land reprofiling to address the major level differentials across the site, including mounds of heavily contaminated materials that extend to heights of 10m to 12m above the surrounding ground levels.
4. The decommissioning of the existing watercourse within the site (the Cleveland Channel), which will result in the need to manage significant, grossly contaminated sediment arising from its long-term use as an interception mechanism to capture contaminated run-off from the site, as part of the longstanding environmental management system.
5. Soils at the site requiring significant intervention both from an environmental and geotechnical perspective in order to deliver a remediation solution that is suitable for a commercial / industrial end use. Soils have been comprehensively assessed and are heavily contaminated with hazardous and carcinogenic materials, including tars and chemical wastes. Putting aside contamination, the geotechnical properties of significant volumes of materials deposits across the site make them unsuitable for use in their current condition.
6. Intervention measures to intercept watercourses that presently discharge into the surface water channel that will be removed, which require alternative solutions.

Landfill Tax Trap

Criteria 1 - Demonstrating the use of Landfill is Reasonably Necessary to Realise Opportunities

The extensive non-natural soils on the site are classified as a waste and therefore are not suitable for reuse using the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Extensively, from a categorisation perspective in connection with disposal to landfill, they are classed as hazardous waste. Any potential for alternative treatment strategies, wherever such exist, have been estimated to take many years to implement (likely 5 years plus), which would impact the ability to bring the site forward for development contiguous with the MRP site or even in its own right, resulting in a significant number of development opportunities being lost. The potential treatment technologies that may be possible for certain of the materials, but not all, would also likely deliver a development platform with embedded constraints, impacting land values and the range of development uses that are viable for the site (e.g., load bearing capacity restrictions, more onerous foundation solutions for developments, etc).

It may be possible to recover the waste via a Deposit for Recovery (DfR) Environmental Permit, however, it is unlikely that the Environment Agency (EA) would issue such a permit for SLEMS. If a DfR is not issued by the EA for the site, then a disposal permit would be required which would adversely affect the land value due to potential ongoing liabilities and investor perception if, wherever possible and practicable, the material was reprocessed and retained in situ. Disposal to landfill will therefore be required, with the material being categorised as a hazardous waste for landfill purposes.

The sediment resulting from the diversion of the Cleveland Channel is not considered suitable for remediation due to its geotechnical properties and elevated contamination levels. Disposal to landfill will again be required, where the material will, on the basis of available site data, also be classified as hazardous waste.

Remediation involving significant landfill is therefore the only feasible option to realise opportunities for redevelopment. As such, in respect of the first criteria of the LfT Trap, use of landfill is reasonably necessary to dispose of some or all of the contamination or material present at the site to realise opportunities for remediation and economic development, and to secure long term environmental protection of surrounding land.

Criteria 2 - Landfill Tax Obligations Exceed Land Value Uplift

It has been demonstrated that to conduct the remediation of the SLEMS requires major interventions.

Significant ground investigations have been undertaken on the site and these have revealed extensive contaminated soils of a hazardous nature in the region of 1.0M to 1.5M tonnes. The Landfill Tax burden associated with this level of essential material disposal would be of the order of £100M to £150M. This equates to £1.6M to £2.4M per acre which massively exceeds the range of potential land value uplifts that could be realised from the remediation of the SLEMS.

Thus, the site meets the second criteria of the LfT Trap, in that LfT obligations arising from the necessary disposal of material from remediation to landfill would result in the total costs of site remediation exceeding the land value uplift from bringing the land affected by contamination back into beneficial use.

Criteria 3 – Other Remediation Costs do not Exceed Land Value Uplift

Remediation costs on the SLEMS, absent of the LfT obligation, have been estimated at £15M to £20M. This estimate allows for excavation and haulage of waste materials to STDC's own licenced landfill on Teesworks (High Tip), which apply regardless of LfT status. This estimate includes for all other aspects of the required remediation works, such as decontamination and infilling of the Cleveland Channel watercourse, and infilling of the SLEMS site with suitable engineering fill materials to replace much of the material volume disposed to landfill, raise the SLEMS to the desired site level post-remediation, and create a development platform suitable for a wide range of commercial / industrial uses.

STDC has sufficient fill material available across Teesworks to address the fill volume deficit, without the need to rely on costly imported fill materials. The processing costs associated with this material (i.e., screening and crushing to produce material of suitable sizes and gradings) is included in the cost estimate, and this has been the method successfully deployed to date on other remediation projects.

It is anticipated that it will be possible to realise a land value uplift above the 'Other Remediation Costs' estimate. Therefore, the site is expected to satisfy the third criteria of the Landfill Tax Trap, in that all other costs of remediation, absent the LfT obligation, will be less than the land value uplift.

Summary

Based on current assessments, informed by significant ground investigation works and related analysis, there are extensive volumes of waste and other materials contained within the SLEMS site that are not suitable for in situ treatment, particularly when considering related delivery timescales, which accordingly require removal to landfill.

The site is strategically important to STDC's development objectives for Teesworks and it forms a key part of the emerging offshore wind cluster on the South Bank land zone, where land is already beginning to be leased for new uses.

Failure to implement an expedient remediation solution will lead to lost development opportunities on the SLEMS, which may likely be to the detriment of securing end users for the neighbouring MRP site, especially if the end user requires both sites. A number of commercial opportunities have already not proceeded because, critically, they required expansion land or a site greater than the 50 acres offered by the MRP land area.

The LfT obligations arising from the necessary disposal of material to landfill amount to a cost burden in the region of £100M to £150M, which alone far exceeds the achievable land value uplift, even before other remediation costs are taken into consideration. On the matter of other remediation costs, absent the LfT obligation, these are at a level that should be exceeded by the resulting land value uplift.

Accordingly, all three criteria of the Landfill Tax Trap are expected to be met by this site and the related remediation project.