Futura Park Redevelopment, Ipswich

Scope: Site Clearance | Earthworks | Remediation | Enabling Works

Aquigen (Nacton) LLP

£9m

Principal Contractor for the site clearance, remediation and enabling works on a 44-acre former foundry and castings site containing historic landfills, for commercial and retail use.

John F Hunt Regeneration (JFHR) undertook a complete package of works at the site, from demolition, enabling works and design and build remediation. The works required ecological protection measures throughout, including reptile fencing and the protection of significant surface water features.

The scope of work included:

- Stage 1: Extensive soft strip of the structures to enable safe access to work areas in readiness for demolition.
- Stage 2: Controlled strategic dismantling and demolition of existing buildings and structures.
- Stage 3: Remediation to manage legacy ground contamination.
- Stage 4: Highways and infrastructure (Design and Build)

Demolition and Dismantling

The demolition phase involved the demolition of over 55,000m^2 of factory buildings with the associated dust, vibration and noise controls. Large foundations and basements were removed beyond 6m below ground level and contaminated soils were excavated and treated before use as engineered fill as part of the re-development. 28,000m^3 of concrete were crushed to specification for re-use on-site as part of the enabling works as engineered fill beneath roads and other areas where a high quality fill was required.

Remediation and Materials Management

JFHR entered into a design and build contract for remediation design including detailed quantitative risk assessment for site specific remediation criteria. This contractual relationship provided continuity and surety for the client whilst a wide range of different types of work were underway simultaneously.

Significant amounts of contaminated soils were encountered during the works and hydrocarbon impacted soils were remediated by ex-situ bio-piling. The soils were carefully pre-treated by screening and sorting whilst amendments including nutrients and specialised bacteria were added to facilitate the biological degradation of the hydrocarbons. The pipe network aerated the soil pile and extracted leachate for treatment.

The site was listed as containing two historic landfills; one for the landfill of 'inert waste' and the other listed for the landfill of 'difficult waste'. These former landfill areas were delineated, excavated and remediated as part of the works. Processed soils were re-used as part of the development platform. Waste was impacted with petroleum hydrocarbons, asbestos containing material and included large quantities of oversize material including metals and deleterious material. A variety of techniques were implemented to render the material for re-use including: primary and secondary physical separation, bioremediation and asbestos removal.

In addition to the remediation and engineering of the two former landfills, the works involved the management of some 35,000m^3 of previously unidentified asbestos contaminated soil. This was an unforeseen project abnormal that the client had not budgeted for, and required a change in remedial design and Materials Management Plan (MMP).

Our team proposed and agreed a method of on-site asbestos processing (removal) followed by a stabilisation / solidification process to the regulators; this modification to the design was accepted. Through a modification to the MMP, the treated materials were then strategically incorporated into the works as part of the construction platform preparations.

The discovery of significant quantities of previously unidentified asbestos impacted material meant that JFHR had to work quickly, effectively and pragmatically with all project stakeholders. Our in-house knowledge of the management and remediation of asbestos impacted soils, along with out collaborative approach to the project, allowed the agreement and undertaking of the works to be expedited to full agreement with the stakeholders. All works were undertaken in accordance with relevant asbestos legislation.

The project also included draining and infilling two artificial ponds at the site. The ponds were drained during the demolition, excavation and soils handling works to provide a good source of water for dust suppression. After they were fully drained the ponds were infilled utilising site won materials from the remediation process.

Environmental control and monitoring of the works was critical, with particular emphasis on airborne odours and dust, along with monitoring and protection of on-site surface water features and ecological protection measures.

Added Value

The delineation, assessment and ultimately the agreement to treat and re-use the unexpected asbestos contaminated soils provided significant value for money for the client. Without the innovative approach to the treatment and re-use of the impacted soils, these would have had to be removed from site to landfill at a significant cost.

JFHR were able to successfully negotiate that re-use of the treated material as engineered fill on site during a time when no guidance or established mechanisms existed for the re-use of asbestos affected soils in the UK.

JFHR have the in-house capabilities to find a solution to issues that may arise; key to this is maintaining a close working relationship with the wider project team – the client and regulators.

We worked in a collaborative manner with all stakeholders to update the design and deliver the site to the satisfaction of the client.

The proficiency and meticulous planning of this project minimised off-site disposal, saving 3500 lorry movements to landfill and £5.2m Landfill Tax

Significant amounts of contaminated soils were encountered during the works and hydrocarbon impacted soils were remediated by ex-situ bio-piling.

Works involved the demolition of factory buildings and removal of large foundations and basements, carried out with the associated dust, vibration and noise controls.