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CASE STUDY

Asbestos Remediation

Wester Inch, Bathgate

Client

Taylor Wimpey

Environmental Consultants

MASON EVANS
Geo-Environmental Consultants

Site Background & History

The site was previously occupied by part of the former British Leyland Works. The Bathgate Plant was used for the production of trucks and tractors – the plant closed in 1986. The Whitehill Industrial Estate is located immediately to the south of the site and encompasses various depots, garages and works. The site in 2005 is shown in Figure 1 below.

Figure 1 – Site in 2005

Taylor Wimpey were redeveloping the area of the site known as Area H2 in Wester Inch Village, Bathgate for residential use including domestic gardens, associated areas of communal landscaping and road infrastructure.

Mason Evans Partnership [MEP] carried out a site investigation in January 2015 which comprised of 24 trial pitting investigations and the sinking of 12 boreholes to a maximum depth of 5.00m below ground level [bgl].

The initial MEP site investigations recorded the presence of PAH contaminants above the threshold soil guideline values (specifically naphthalene and benzo-a-pyrene) plus the presence of asbestos fibres (<0.001% to 0.166 % by vol) within the made ground. The identified asbestos fibre content of 0.166% exceeded the hazardous threshold of 0.1%.

Additional investigations recorded the pervasive presence of asbestos within the made ground. A total of 486 of the Mason Evans samples, collected at depths ranging between 0.4m and 1.3m bgl were assessed for the presence of asbestos. A total of 304 samples were found to contain asbestos. Quantitative asbestos testing was undertaken on 100 of these 304 positive samples. The findings showed that the quantity of asbestos ranged from between <0.001% to 0.555%. The majority of the samples tested ranged from between from between <0.001% to 0.061%. In samples in which the quantity of asbestos exceeded 0.1% hazardous threshold, the asbestos identified related to the presence of Asbestos Containing Materials [ACMs] such as insulation board or cement bound asbestos.

Envirotreat was commissioned by Taylor Wimpey to carry out the required remediation works to enable the housing development to proceed (working closely with MEP). The prime focus was on addressing the pervasive asbestos contamination.

Site Works

The works were undertaken in two phases - the initial phase comprised of a general ‘cut’ (reduction of site level) to required formation levels. The second phase comprised of deep excavations for service corridors.

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Envirotreat determined that the works would be deemed 'notifiable non-licenced' in relation to the type / nature of the asbestos contamination and perceived risks (in accordance with the Control of Asbestos Regulations).

Initial Phase (Phase I)

Envirotreat undertook the initial phase of the works in accordance with the agreed Remediation Method Statement and Health & Safety Risk Assessments / Method Statements.

Envirotreat reduced site levels and delineated asbestos contaminated soils based on MEP's site investigation. Twelve stockpiles of excavated asbestos contaminated soils were generated – these stockpiles were then individually assessed to enable the controlled offsite disposal of the soils to the designated landfill repository. The soil stockpiles are shown in Figure 2 below.

Figure 2 – Phase I Soil Stockpiles

Both qualitative and quantitative asbestos screening was undertaken on composite samples taken from all twelve stockpiles. It was only necessary to carry out quantitative testing for samples shown to be positive following qualitative testing. Four composite samples were taken from each stockpile.

All stockpiles were shown to be non-hazardous / inert. Three of the stockpiles [SP6, SP7 and SP10] reported no asbestos detected. Four stockpiles [SP3, SP4, SP5 and SP11] reported no asbestos detected or <0.001% present which would typically classify the soils as inert.

The remaining stockpiles reported no asbestos detected through to a maximum of 0.002%.

The initial total volume of soils was estimated to be 13,140m^3. Envirotreat arranged for the disposal of these soils to a local non-hazardous landfill repository. The soils were transported over a twelve-day period.

Phase II

The deeper soils associated with proposed service corridors were excavated and stockpiled for on-site assessment prior to offsite disposal.

Both qualitative and quantitative asbestos screening was undertaken on composite samples taken from the excavated stockpiles. The screening results confirmed that the soils should be classified as non-hazardous / inert. The total quantity of soils excavated from the Phase II works was estimated to be 3,800 tonnes.

Envirotreat arranged for the disposal of these soils to a local non-hazardous landfill repository. The soils were transported over a five-day period. The removal of soils is shown in Figure 3 below.

Figure 3 – Phase II Soils Removal

Environmental Monitoring

Comprehensive environmental monitoring was carried out throughout the works including daily reassurance air monitoring to confirm that asbestos fibres were not being released into the air and therefore not posing a risk to site users / site neighbours.

The buildings under construction are shown in Figures 4, 5 and 6 below.

The completed development is shown in Figure 7 below.

Figure 4 – Buildings Under Construction

Figure 5 – Buildings Under Construction

Figure 6 – Buildings Under Construction

Figure 7 – Completed Development

Conclusions

Envirotreat effectively managed the identified and potential asbestos contamination on-site. This provided a cost-effective solution which enabled the housing development to proceed as planned.