

Our ref: R2132-L02

24th June 2017

Mr Gerry Kellett
Real Planning

by email: info@realplanning.co.uk

Dear Gerry,

Bryn Gwyn, Chapel Street, Acrefair: Assessment of Extended Site Area to south of Original Plot

SGP originally carried out a desk study and preliminary site investigation of the plot of land previously occupied by Bryn Gwyn, Acrefair (report R1036-R01, April 2007), and subsequently undertook an additional site investigation comprising hand-dug trial pits and chemical testing of soil samples (letter R2132-L01, July 2015). Adjacent land immediately to the south of the original Bryn Gwyn site, owned by the same client, is now to be included within the consideration of potential contamination risks for the purposes of residential development. Drawing D01 shows the approximate boundary of the extended plot of land.

Historical Site Setting

Historical mapping shows no development on the plot. The presence of old coal mining shafts to the south and southeast on the 1873-1875 map is noted. A fenced area outside but adjacent to the northern site boundary possibly marks the location of one of the former mineshafts. As on the site of Bryn Gwyn the extended site covers an elevated area of made ground formed as a result of the 19th century deposition of coal mining spoil and foundry waste from the former New British Iron Works at Acrefair.

Previous Assessment of Bryn Gwyn

The Bryn Gwyn site was originally identified as being associated with adjacent colliery waste deposits, backing onto the former ironworks tips. The former dwelling was a chalet style building with asbestos cement wall cladding, and was demolished between 2007 and 2015.

The 2015 intrusive investigation (detailed in R2132-L01) noted ground conditions on the site consisting of a made ground topsoil (sandy loam with varying degrees of gravel and frequent roots and rootlets). Four hand-dug trial pits were excavated to a maximum depth of 0.5m bgl. Five soil samples were collected, of which three were analysed for metals, polycyclic aromatic hydrocarbons (PAHs), sulphate, pH and asbestos presence, and two were analysed for calorific value to assess the potential for combustibility.

Asbestos contamination was noted in soil samples taken from the site, but no significant concentrations of contaminants relating to metals or PAHs were found within soil samples. No significant risk of ground combustion at the site was identified. Asbestos cement debris was also noted in the vicinity of the house footprint following demolition works to remove the building. This was commented upon and remediation works were subsequently carried out. SGP was provided with copies of a certificate of completion of works and waste transfer notes confirming the removal of asbestos containing waste, contaminated foliage and other asbestos debris from the site in 2015. The works were carried out by A & D Environmental Services Ltd. Post-remediation validation was not conducted, however no asbestos debris was observed at the site in a site inspection by SGP in June 2017.

Site Inspection Observations

During inspection of the extended site area in June 2017, the area was noted to form part of the same raised area and slope as the original property. The land is well-vegetated by long grass, tall weeds and some scrub, with no evidence of previous structures or development other than a services marker post. The soil surface was uniform and included leaf litter with occasional fragments of iron slag visible, but no evidence of significant contamination. There was no evidence of groundwater seeps or leachate from the rising ground to the north.

In these respect the extension area appeared to closely resemble the upper parts of the original site, and it is reasonable to assume that the ground conditions (made ground formed from weathered colliery spoil - mudstones, sandstones and occasional coal fragments, together with scattered iron slags) is likely to be present. This is expected to overlie glacial till (boulder clay) and Coal Measures bedrock. In terms of contamination, conditions are expected to be similar to those pertaining to the

original site, although asbestos from demolition of the original Bryn Gwyn building is unlikely to be present.

Conclusions and Recommendations

The inclusion of the extension area within the overall site does not appear to result in any significant new liabilities other than possibly with respect to old mineshafts. The previous conclusions from the Bryn Gwyn assessment of June 2015 therefore continue to be relevant, that there are no significant concentrations of contaminants relating to metals or PAHs found within soil samples taken from the site on the 3rd of June, 2015. On the basis of the tests carried out there is no significant risk of ground combustion at the site.

Though asbestos cement sheeting and other asbestos related debris has been subsequently removed from the Bryn Gwyn building footprint to a nominal depth of 8 inches (~200mm) below existing ground level, the ground surface is irregular, and it is possible that asbestos (as dispersed fibres or small sheet fragments) may still be present within the soil below and around the former building position. Asbestos is only a hazard if loose fibres are disturbed and enter the atmosphere in substantial amounts that may then be inhaled by people on or adjacent to the site. The risk can be minimised by ensuring that dust and fibres are not released to the atmosphere as a consequence of ground disturbance; this is usually achieved by wetting down of surfaces and any soil to be removed, careful handling of spoil, and covering over any remaining contamination, either below permanent hard-standing or building foundations, or below a suitable depth of cover soil (typically a minimum of 600mm of uncontaminated soil cover in garden areas).

Any future residential development is likely to result in some re-grading works and the removal of old foundations to facilitate new construction. As the former house area is likely to be on or close to any proposed new development, impacted soil could either be removed from the site as controlled waste, or retained below the development. With regard to construction works during redevelopment of the site, due diligence to prevent unnecessary liberation of asbestos fibres within the soil, such as damping down of soil prior to any mechanical disturbance during dry conditions, should be adhered to. Good work hygiene practises will also be required when working with/around the impacted soil to minimise potential fibre release and exposure. If residual asbestos fibre or asbestos cement sheet fragments are present in future garden areas these should be covered by a minimum thickness of 600mm of clean subsoil and topsoil.

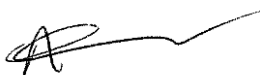
Should soils be excavated, for example to be removed as general waste, they will require further testign for waste classification purposes. Any visible fragments of asbestos cement waste are likely to

be classified as hazardous waste by reason of containing >0.1% asbestos fibre. If such fragments are present within soil then the entire volume will be classified as hazardous waste, so it is generally cost-effective to seek to selectively remove asbestos cement fragments from soils and dispose of these separately. Any soil containing loose asbestos fibres will only be classified as hazardous waste due to asbestos where the asbestos content is 0.1% or more by weight.

It is recommended that additional investigation be carried out prior to any new development to inform a construction and residential use risk assessment and remediation strategy. This should preferably involve the use of machine excavated trial pits. A formal remediation strategy is expected to be required including details of methods to remove or isolate any remaining contamination hazards (possible asbestos), dust suppression and airborne fibre monitoring if necessary, together with methods for investigating and dealing with any unexpected contamination, validation testing of any placed soil cover to gardens, and provision for a remediation completion report.

With respect to mining risks, a mining risk assessment should be carried out, however on existing information it appears likely that a development stand-off from the known shaft positions outside the site will not be significantly restrictive to the redevelopment of the site assuming that any new buildings will be located on or close to the previous structure and at least 10m from the shafts.

Yours sincerely
for: Smith Grant LLP



Dr A F Smith, Partner



DRAWING