

**CONTROL TOWER, RISSINGTON AIRFIELD,**

**RISSINGTON, GLOUCESTERSHIRE (**

**Executive Summary for Report 4188 (Issued on 02/06/2017)**

A ground investigation has been undertaken at the above site, preceded by desk study researches. Those researches indicated the site has been undeveloped agricultural land since the earliest available mapping of 1882 until sometime during the 1930's when encompassed within the grounds of the Airfield. Between 1946 and 1976 the control tower was constructed, and it remains until the present day, scheduled for conversion to a dwelling. The preliminary conceptual site model has identified a small number of potential pollutant linkages to human health and controlled waters.

Six trial pits were excavated across the site primarily targeting proposed soft landscaping areas. Trial pits confirmed ground conditions to be commensurate with geological mapping, proving up to 0.42m thickness of surface topsoil or hardstand with sub-base directly overlying undisturbed clay with gravel and cobbles of the recorded Chipping Norton Limestone Formation (CNL). Groundwater was not encountered up to a maximum excavated depth of 1.3m.

A detailed quantitative contamination risk assessment has been undertaken, with the lab testing recording elevated PAH compounds in a single sample of topsoil and a single sample of tarmac hardstand sub-base that potentially pose a risk to human health. The underlying natural soil is uncontaminated. The topsoil contamination is thought to be localised, however the elevation recorded within the sub-base may well be representative of all the sub-base across the site, although further testing would be needed to confirm.

Considering the contaminated *topsoil* material, if this stratum is retained on site within proposed garden areas then a clean cover system of minimum 100mm thickness is required above. Considering the contaminated *sub-base* material, if this stratum is retained on site beneath proposed garden areas, due to the higher concentrations of PAH recorded in this stratum a greater thickness of clean cover (minimum 500mm thickness) is required above. Post report issue it has come to our attention that the client is now considering the application of astroturf at surface as an alternative to the foregoing; in this instance, on the basis that its construction requires the installation of an impenetrable macadam base layer below the synthetic surface, this would act to break the potential pollutant linkage to human health and on which basis no cover system ought to be necessary.

Sub-base retained beneath existing and future hardstand (i.e. driveway) can be left insitu with no cover system requirement.

There is no risk of contamination impacting upon groundwater resources.

There is no requirement for landfill gas protection measures, however full radon protection measures will need to be retrospectively fitted to the existing building during refurbishment.

Regarding the possible presence of "localised radium contaminated soil" this is beyond this Practice's remit of investigation, although it can be confirmed that no metal (scrap aircraft instruments or otherwise) was encountered during intrusive investigation.

Should offsite disposal of surplus arisings be required, the arisings would be classified as a "Non-hazardous Mirror Entry" therefore such materials can be disposed of at a suitably licensed "non-hazardous" landfill site. WAC testing will be required if disposal as inert waste is to be considered.

Whilst not part our original instruction this Practice has also been asked (post report issue) to consider surface water drainage. It is understood that the client proposes to install a porous surface for the proposed driveway directly above the existing tarmac surface with several drainage holes 'punched' through the buried hardstand to permit water to escape into the subsoil. Whilst such a method ought to facilitate the rapid removal of water from the surface, please be aware that this water will filter into the granular made ground immediately below the tarmac (sub-base) where it may then become confined by the underlying natural cohesive soil below. It is recommended that soil percolation tests are undertaken within the underlying natural soil to assess the drainage potential of the subsoil and to discuss those findings with a specialist drainage consultant.