

1.6 – Ground Risk, Diversions, and Drainage works

Remediation & Contamination

- No significant pollutant linkages have been identified at the site and a Remediation Strategy should not be required by the Local Planning Authority according to the SI report.
- *We have recently been advised that the LPA will require additional ground investigation following the demolition of the South Block, and that they will also require a Remediation Strategy to be provided. Given the testing that has taken place and the update to the conceptual site model this is surprising. Additional ground investigations will impact the proposed program of works. An EWN has been notified to this effect.*
- A materials management plan (MMP) will be required in order for us to retain and reuse excavated soils on the site (a U1 exemption is not suitable due to the volume excavated). MMP to be prepared by ID Geo and submitted to CL:AIRE.
- A dye works was present in the south of the site. Whilst no evidence of contamination associated with the dye works was encountered during the investigation, IDG recommend that a watching brief be provided during any excavations that occur within the footprint of the dye works during re-development on the site.
- No evidence of organic or inorganic contamination has been identified in the Made Ground or natural soils tested during the investigation
- Samples of the groundwater bodies present within the Glaciofluvial Sheet Deposits and the PMCM strata were tested and no evidence of contamination was identified.
- No hazardous ground gas sources have been identified. The risk of hazardous ground gases such as carbon dioxide and methane at the site has therefore been discounted
- The results of the chemical testing have determined that the preliminary conceptual site model can be revised (before and after shown →)
- Based on the Revised Conceptual Model presented above, the only potential pollutant linkage identified at the site relates to radon gas. At the time of preparing the report, building control regulations do not require radon protection measures to be installed in new buildings to mitigate the risk. However, recently the UK Health Security Agency and the BGS have updated the radon potential maps. It is expected that Radon Protection measures will now need to be incorporated into the design

Preliminary Conceptual Site model

Potential Contamination Source	Receptors	Plausible Pathways	Evidence / Site Features
Metals & PAHs in Made Ground	Human Health (future site users – commercial users)	Ingestion, direct contact, inhalation of dust	Former buildings on site have been demolished
	Shallow groundwater in Superficial Deposits which are in continuity with the River Irwell	Leaching and migration of dissolved heavy metals contamination	
Asbestos in Made Ground	Human Health (future site users – commercial users)	Inhalation of dust containing asbestos fibres	Former buildings on site have been demolished
Hydrocarbon impacted soils (PCBs, solvents)	Human Health (future site users – commercial users)	Ingestion, direct contact and inhalation of vapours	PCBs from electricity substation on site Dye works on site
	Shallow groundwater in Superficial Deposits which are in continuity with the River Irwell	Migration of free product and leaching and migrations of dissolved phase hydrocarbons	
Hazardous Gas (Radon)	Human Health	Migration of radon through granular strata and ingress into confined spaces leading to adverse health effects	The site is in an intermediate probability radon area, current Building Control Regulations do not require radon protection measures to be installed in new buildings. Consideration should be given to the installation of basic radon protection measures during construction of the development to mitigate any potential issue upon completion of the building

Revised Conceptual Site model

Sources	Receptors	Plausible Pathways	Potential Remediation Options
Hazardous Gas (radon)	Human Health	Migration of Radon gas through granular strata and ingress into confined spaces leading to adverse health effects	The site is in an intermediate probability radon area, current Building Control Regulations do not require radon protection measures to be installed. Consideration should be given to the installation of basic radon protection measures during construction of the development to mitigate any potential issue upon completion of the building