



Kirkland Developments Limited

**Proposed Development at
Vine Street, Gorton**

**Excavation Strategies
Revision V0**

1 Project Description

TDS (Northern) Ltd Have been appointed to give advice on the installation of the services (gas, water, electricity, and telecoms) in the tree root zone area on Vine Street Gorton.

R.E: Vine Street Gorton – Installation of the utility services for plots facing Vine Street.

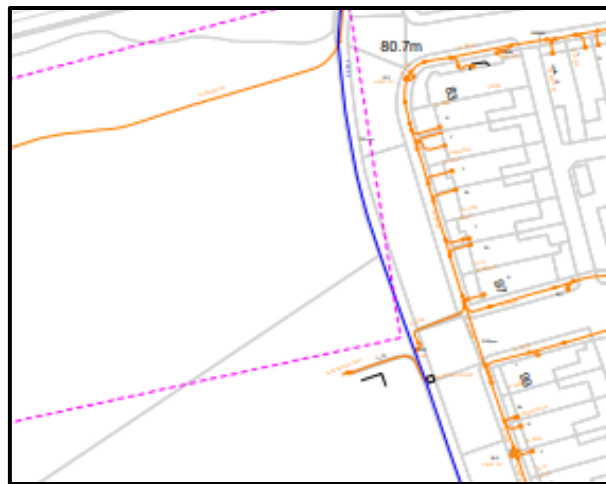


2 Existing Infrastructure

In reviewing the existing main's locations, the below infrastructure is within the vicinity of the plots requiring services connections without mechanical excavation.

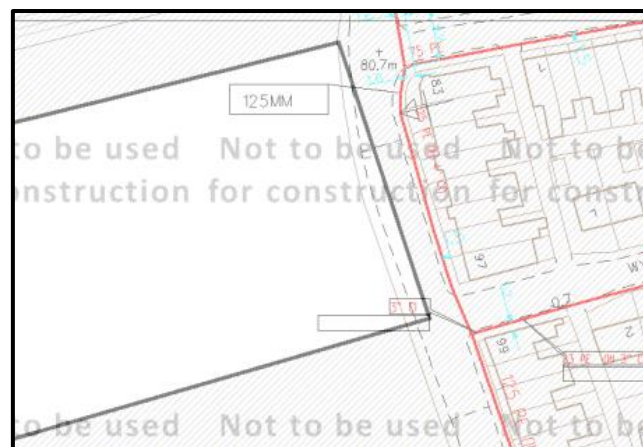
Electricity

The existing electricity infrastructure within the vicinity of the site is owned and operated by Electricity North West as a licenced Distribution Network Operator. The below plan shows existing Electricity North West infrastructure records in the vicinity of the site. The plans show existing low voltage network in the footpath opposite the proposed development area. They also indicate a High Voltage 6,600Volt cable along Vine Road footpath, development side.



Gas

The existing gas infrastructure within the vicinity of the site is owned and operated by Cadent Gas as a licenced Gas Transporter. The below plan shows existing Cadent infrastructure records in the vicinity of the site, identifying an existing 125mm PE low-pressure network in the footpath opposite the proposed development.



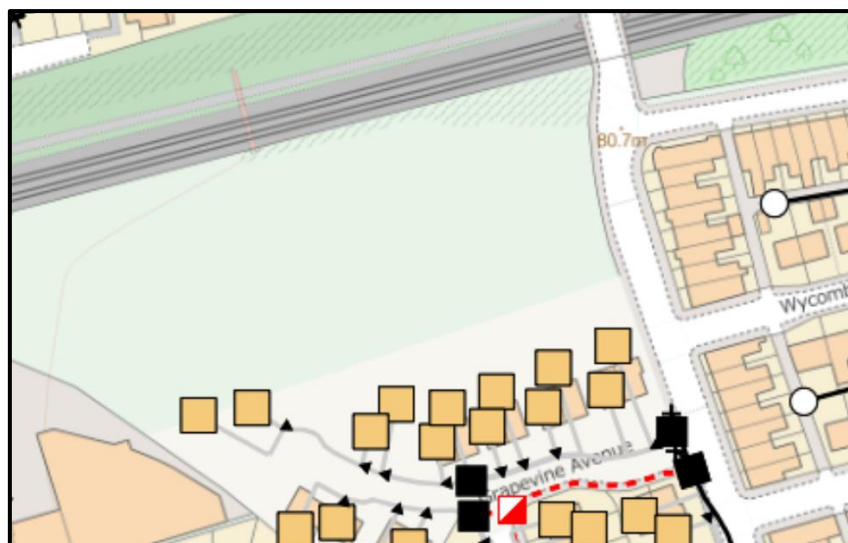
Water

The existing water infrastructure within the vicinity of the site is owned and operated by United Utilities as a licenced water network operator. The below plan shows existing United Utilities infrastructure records in the vicinity of the site, showing an existing 4" CI main along Vine Street in the footpath opposite the proposed development.



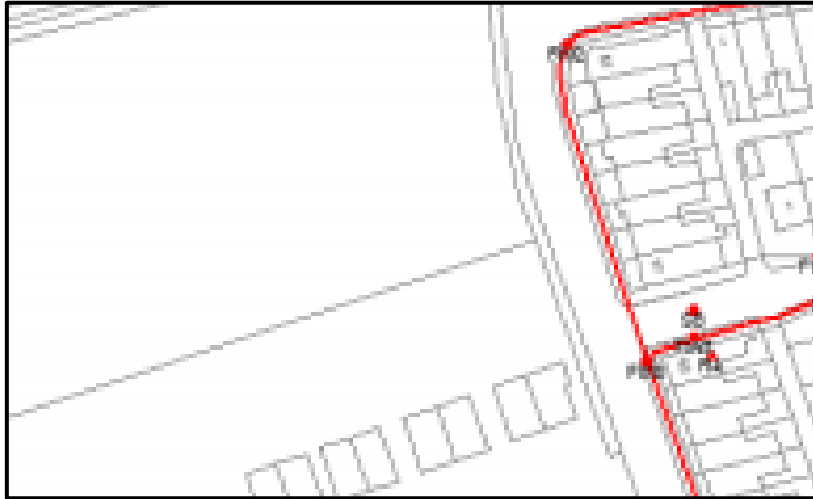
Openreach

BT Openreach own and operate existing telecommunications infrastructure within the vicinity of the proposed site under its rights derived from the telecommunications act. The below plan shows existing BT Openreach infrastructure records in the vicinity of the site, identifying existing BT network up to the Grapevine Avenue, Vine street junction where joint boxes are shown. From this point proposed duct and cable routes are displayed, just off Grapevine Avenue for the plots fronting onto Vine Street and further west into the development.



Virgin Media

Virgin Media own and operate existing telecommunications infrastructure within the vicinity of the proposed site under its rights derived from the telecommunications act. The below plan shows existing Virgin Media infrastructure records in the vicinity of the site, displaying existing duct and cable within the footpath opposite the proposed development.



2 Excavation Methodologies

The plots in question are Plots 1 to 3. Each house requires individual electricity, gas, water and telecoms connections which are usually situated on the front or side elevation of each plot and must be in the curtilage of that house ownership.

So as to minimise disruption to the existing trees, Plot 3 can be designed so that the new service connections are fed from the new mains on the estate road and positioned on the gable end. This is not an option for plots 1 and 2 and utility infrastructure will need to be taken to the eastern footpath of Vine Street. In order to achieve this with minimum disruption to the existing trees the following options should be explored.

- **Mole Boring** - this method uses a soil displacement hammer which is safely controlled by an engineer that propels it from a small excavation pit allowing the mole to punch its way through the ground to the next excavation point which is approx. 10-20m away, once travelling through the ground the soil is compacted outwards to create a smooth bore hole which allows new pipework and ducting's to be installed without the need for an open excavation.
- **Vacuum Excavation** – this method of excavation utilises a vacuum extraction system mounted to a truck, or can be handheld, which collects the excavated material via suction. The high-powered extraction safely lifts away the material from around roots and existing utilities. Removal of the surface tarmac and loosening of some material may still require hand excavation.
- **Hand Dig** – this method can be utilised in the tree root zone. Such excavation should be undertaken carefully, using hand-held tools and preferably by compressed air soil displacement. Roots, whilst exposed, should immediately be wrapped, or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g., bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability. Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree.

3 Summary

There are a number of options that could be utilised in order to complete the safe installation of utility connections to plots 1 – 3 without causing damage to the existing trees in the footpath. We would suggest that the different options should be explored with the relevant approving authorities and should start with Mole Boring, moving to Vacuum Excavation and finally hand excavation in order of preference. A number of factors affect the effectiveness of these methodologies including ground conditions and it is likely that relevant consultants may need to be on site whilst the works are carried out.