REFA

CONSULTING ENGINEERS

CIVIL • STRUCTURAL

GEOTECHNICAL • ENVIRONMENTAL

DRAINAGE STATEMENT FOR

HOUSING DEVELOPMENT

NORTHCOTE ROAD

LANGHO

MAY 2022

Job No. 22009

ROBERT E FRY & ASSOCIATES LTD.
45, Bridgeman Terrace
Wigan, WN1 1TT

Telephone: 01942 826020
Fax: 01942 230816
Email: mail@refa.co.uk
Company Registration No. 2436911

smas worksafe consultant
www.smasltd.com
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SUMMARY

Robert E Fry & Associates are appointed by Oak Tree Developments, to prepare a drainage statement in relation to the proposed development of the above site for private housing.

EXISTING SITUATION

The site extends to some 0.41 hectares in size and is currently a grassed/tree area.

The site is bounded by properties trees and grassland.

PROPOSED SITUATION

We have been provided with the current proposed planning layout by Oak Tree Developments which indicates that it is intended to construct 8 new dwellings in a mixture of configurations within part of the land some 0.2 hectares.

EXISTING DRAINAGE

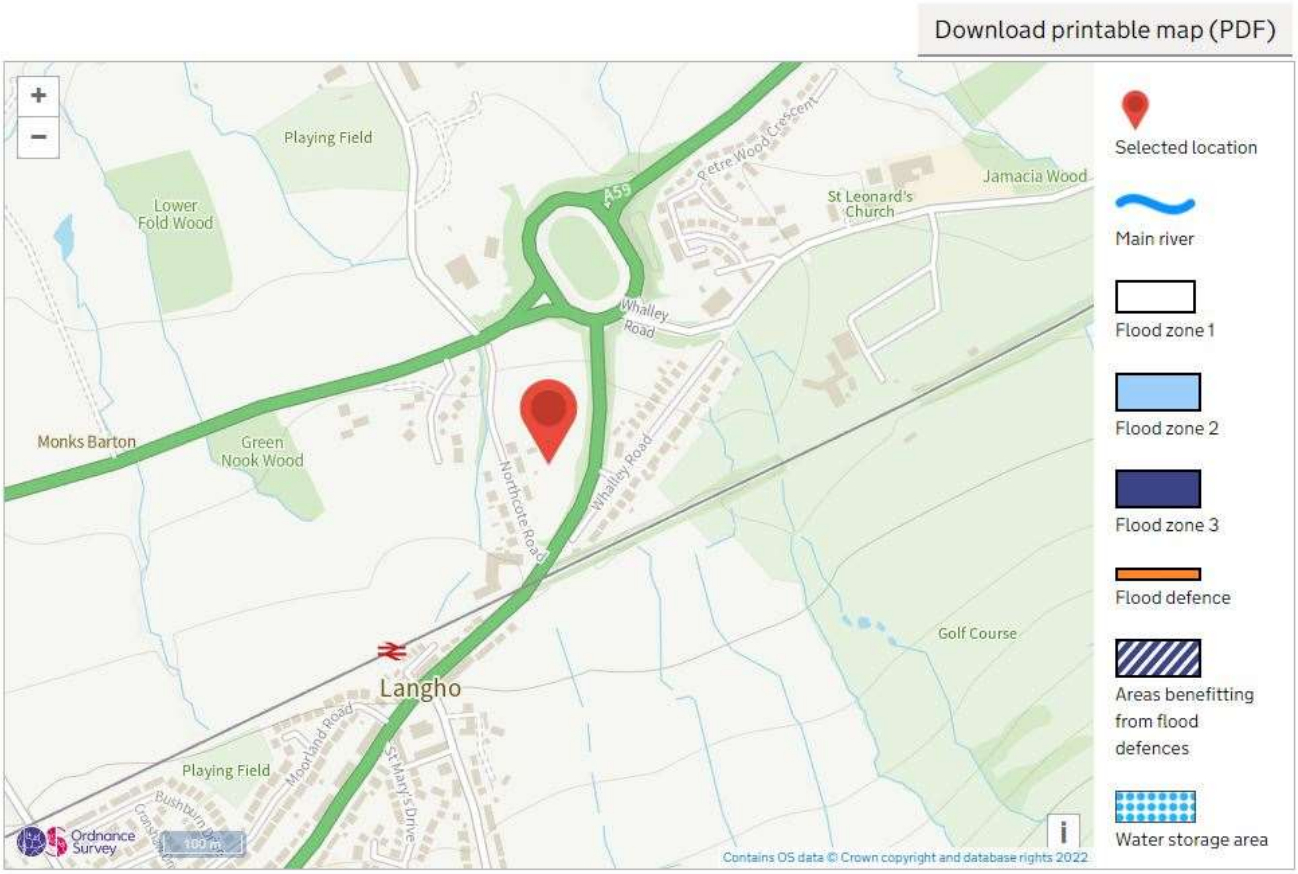
There is an existing 300mm diameter combined sewer running through our clients site boundary. Our client has retained the right to connect into the combined sewer in the garden area of the bungalow as it lies within the same ownership.

EXISTING FLOOD RISK

Reference to the gov.uk website confirms the site to be in Flood Zone 1 and thus residential development is an appropriate use.

Land in Flood Zone 1 has been shown to have a less than 0.1& chance of flooding in any year, often referred to as having a 1 in 1000 year chance of flooding.

See below



PROPOSED FOUL WATER DRAINAGE

It would be proposed to discharge foul water flows from the site into the existing combined sewer within the development area and maintained by a private management company.

A pre development enquiry has been submitted to United Utilities and they have confirmed the point of connection.

PROPOSED SURFACE WATER DRAINAGE

Under current guidance a hierarchical approach to surface water drainage and disposal is now required as follows-

1. Soakaways / infiltration
2. Watercourse
3. SW sewer
4. Combined sewer

Investigation works have confirmed that soakaways/infiltration will not work on the site. See below extract from '22009 FULL Geo-Environmental Report' produced by REFA and issued to client.

5.7.1 Assessment of the ground conditions present within this site in terms of sustainable urban drainage, confirms the presence of shallow groundwater within the site and effectively impermeable cohesive natural strata. It is our opinion, based upon the results of these investigations, that the site conditions are considered to be impermeable and not suitable for the use of a soakaway system of surface water disposal. It will be necessary for surface water to be disposed of utilising a tradition gravity drainage system.

United utilities indicated a culverted watercourse ran through or near to the clients site boundary. Investigations have taken place on site and concluded that there is no visible sign of any culverted watercourse near the site.

It would be proposed to discharge surface water flows from the site into the existing combined sewer within the development area. Surface water from the development will be drained by gravity via a proposed surface water network within the development.

Surface water sewers from the site will remain private and be maintained by a private management company.

In line with United Utilities response, we are limited to restricted discharge rate of 5 litres/second for all events up to and including 1%AEP + 40% climate change, with no predicted flooding of the site.

All the surface water will be attenuated within the development area and will be accommodated within pipes and cellular storage for the above event with a restricted discharge by means of a Hydrobrake or other approved flow control.

A pre development enquiry has been submitted to United Utilities and they have confirmed the point of connection.

We can confirm that all the sewers on this project will be designed in accordance with The Design and Construction Guidance dated May 2021.

CONCLUSIONS

The proposed method of draining this development is in accordance with current guidance and best management practise and thus we consider it to be an acceptable means of foul and surface water disposal.

A. Styler

For and on behalf of R.E.Fry & Associates Ltd.

04.05.22