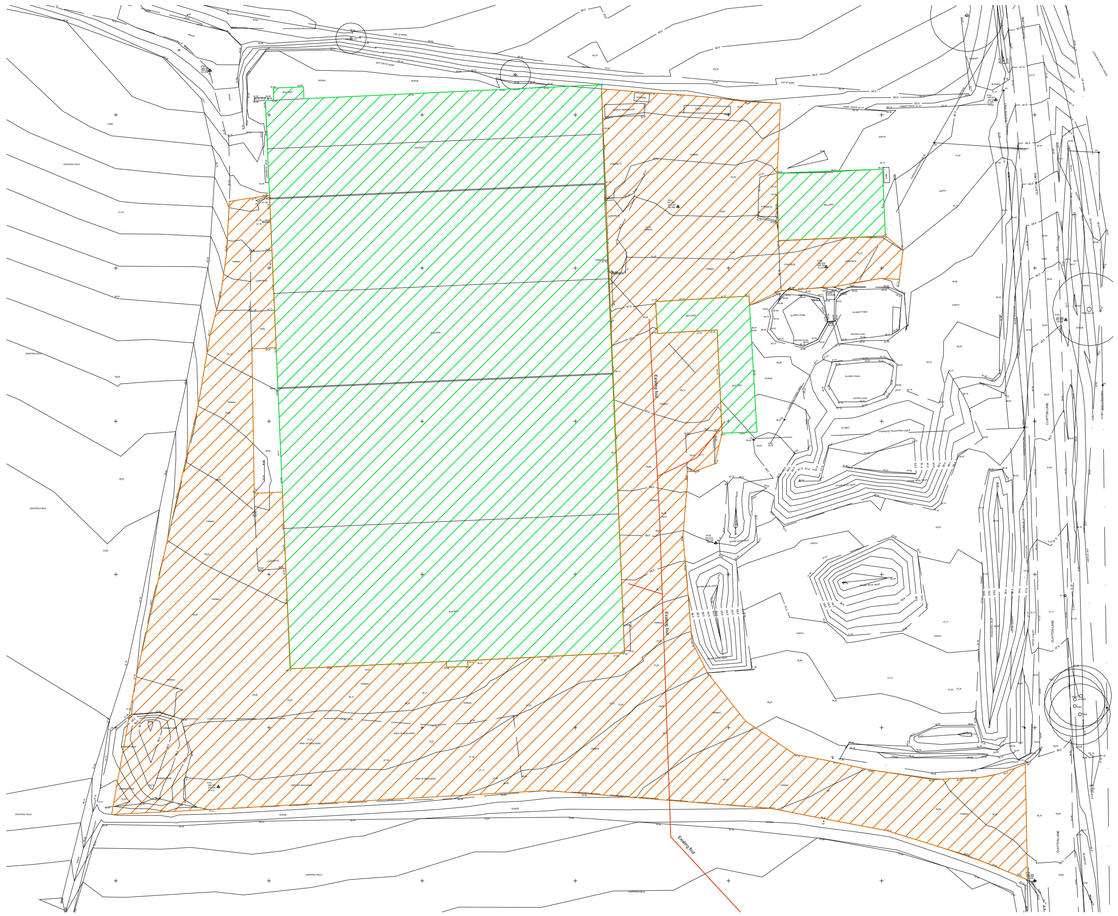
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Notes:

1. This drawing is to be read in conjunction with all relevant architect's and engineer's drawings.

2. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.



Existing Site Plan Catchment Area (1:500)

Existing Roof Catchment Area = 5465m2
Surface water run off in a 1in1 year storm = 76L/sec

Existing Hardstanding Catchment Area = 5655m2
Surface water run off in a 1in1 year storm = 79L/sec

Total surface water run off in a 1in1 year storm = 155L/sec



Proposed Site Plan Catchment Area (1:500)

Proposed Catchment Area = 4865m2



Aerial Photograph

Drainage Strategy

Surface Water
The site is located within flood zone 1 with a low risk of flooding from rivers or the sea, and pluvial (surface water flooding) is not considered to be a significant risk.

The development site measures 1.749 Ha and therefore a site specific flood risk assessment has been carried out. (See separate report).

Currently there is a large industrial building on the site together with a number of smaller buildings. Associated access roads, hardstandings and parking areas are formed from tarmac and concrete.
The existing impermeable area totals 11120m2 (see existing catchment area plan and aerial photo).

The site is currently used for cutting and storage of stone. Large volumes of water are used for cooling when cutting the stone, this is recyled with water being pumped into a purpose made concrete settlement tank on western elevation and a series of open basins to the east of the main building. We understand rainwater run off from the roofs is used to supply this water.
Although there are a series of MH`s on the site, along the access road it is not clear where these outfall to. There are limited gullys visible on the hardstanding areas. The run off appears to find its way towards a shallow depression in the field/paddock to the south.

In severe storms this run off is likely to find its way onto Clayton Lane and into the highway gullys to the south.

Site investigations have been carried out on the site which reveal the underlying strata to be fill material over mudstone.
Gas/water monitoring boreholes were installed, with the water level ranging from 0.36m to 2.30m. This is believed to be perched water due to the impermeable nature of the ground.

The investigation concludes that the use of infiltration devices is unlikely to be feasible.

Yorkshire Water sewer records show there is a 300mm diam surface water sewer and a 150mm combined sewer located in Clayton Lane 175m to the south of the site.

NPPF guidelines require that surface water arising from a developed site should as far as practicable be managed in a sustainable manner to mimic the surface water flows arising from the site prior to development.

The national planning policy guidance sets out the hierarchy of drainage to promote the use of sustainable drainage systems. The aim of the hierarchy is to drain surface water run-off as high up the drainage hierarchy as reasonably practical.

1. Into the ground (Infiltration).
2. A surface water body.
3. To a surface water sewer.
4. To a combined sewer.

The site investigations show the ground is not suitable for infiltration. Any piped discharge to nearby watercourses would require access across third party land. The most suitable point of surface water discharge is therefore the 300mm surface water sewer to the south of the site, with the connection taken down Clayton Lane.

Unless it can be proven there is an existing connection from the site into this sewer then the proposed flows should be attenuated as close as possible to greenfield run off rates.

The Qbar greenfield run off rate is 3.668L/sec/Ha. The overall development site measures 1.749Ha, therefore if the existing site was greenfield the run off rate would be 6.415L/sec.

The proposed catchment area totals 4865m2 which is a 56% reduction on the existing catchment area.

We propose the flows from the site are attenuated to 5L/sec and underground storage be provided to cater for the 1in100 year storm with a 40% allowance for climate change.

See micro-drainage calculations.

This can be acheived using a 98mm diam hydrobrake and 265m3 of storage in a network of 1500mm diam pipes. The pipes can be located below the public open space and offered to Yorkshire water for adoption under a section 104 agreement.

This will ensure the site is drained in a controlled manner, alleviating the risk of any downstream flooding.

Foul Drainage

The site currently drains via garvity to public sewer in Clayton Lane, this drain is to be surveyed to establish its suitability for adoption. If it proves to be unsuitable a new connection will need to be formed down Clayton Lane as shown.

No.	Revision	Date	Drwn
P1	Existing foul drainage added	4-4-22	

Status: Approval

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Project: Residential Development
Clayton Lane, Thurnscoe

Drawing title: Drainage Strategy

Drawn	Chkd	Date	Scale
PB		March 2022	1:500

Contract No.	Drg No.	Revision
22183-DR	C-0102	P1