

**Proposed New Entrance Complex,
Omega 1, Scarborough**

Flood Risk Assessment & Drainage Statement

**For
Morgan Sindall Plc**

Report Ref	Issue	Prepared by	Reviewed by	Date
13084	1	J Mitchell	S Thorpe	July 2014

Client

Morgan Sindall Plc
Nelson House
No 2 George Mann Way
Hunslet
Leeds
LS10 1DR

3e Consulting Engineers Ltd
4 Calder Close
Calder Park
Wakefield
WF4 3BA

Tel : 01924 240420
Fax : 01924 240421

PROPOSED NEW ENTRANCE COMPLEX – OMEGA 1, SCARBOROUGH

FLOOD RISK ASSESSMENT AND DRAINAGE STATEMENT FOR NEW ENTRANCE COMPLEX

This Flood Risk Assessment and Drainage Statement has been prepared for Morgan Sindall Plc to accompany a planning application for a proposed new entrance complex including gatehouse and car parking at Omega 1, located off the A170 Racecourse Road, Scarborough. The site, centred on OS Grid Reference 501234, 486729, is located approximately 3.5km south west of Scarborough Town Centre and is shown in **Appendix A**.

The site occupies an area of 1.60 hectares and is roughly rectangular in shape. The development area is partly open land used for grazing with the northern part lying within the current MOD establishment and enclosed within security fencing. It is proposed that the site will be developed to form a new entrance complex including a gatehouse, car parking and new canopy to the existing building. The proposed site layout is shown in **Appendix C**.

This Flood Risk Assessment and Drainage Statement identifies the flood risks posed to the site from all sources and sets out the principles for the proposed surface water drainage. The detailed drainage scheme should be secured through an appropriately worded planning condition attached to any consent. Given the extents of the site, this risk assessment is required by and in accordance with the National Planning Policy Framework (NPPF).

Flood Risk Assessment

Based on the latest information on the Environment Agency's indicative flood map it is understood that the site is not at risk of flooding from rivers or the sea up to the 1 in 1000 year event. The Environment Agency's flood map is included in **Appendix B**.

A potential source of flooding is as a result of excess surface water run-off from the development. It is important that the proposed ground levels are configured such that any flooding on site is directed away from any of the existing or the proposed buildings and towards the surface water storage/soakaway facilities. It should also ensure that any overland flows resulting from excess run-off are retained on site within the development area.

The drainage system and storm water attenuation/soakaway facilities should be designed to ensure no flooding up to the 1 in 30 year event and the 1 in 100 year plus climate change event should be retained on site with no flooding to buildings. The climate change uplift will be 20% as noted in the NPPF.

It has been identified that there is no risk of flooding from ground water. No information is available to determine if the Water Authority have any records of flooding in this area, however, given the topography of the surrounding area it is unlikely that the proposed development will be affected should any existing systems fail.

Proposed Surface Water Disposal

The current Building Regulations now require disposal of new development surface water to discharge by infiltration (to ground), to watercourse or to sewer in that order of priority. Sustainable Drainage Systems (SUDS) should also be used wherever possible to mimic as far as practicable the natural run-off.

There are no watercourses within the site boundary to which the surface water could outfall.

The Phase 1 Geo-Environmental Assessment produced by 3e Consulting Engineers indicates that infiltration systems such as soakaways and infiltration trenches are considered suitable for disposal of surface water run-off. Infiltration tests were carried out at 2no locations where granular soils, including wethered bedrock, were encountered at shallow depth. Permeability rates of 4.5×10^{-5} mm/hr were recorded.

Any infiltration systems used must be positioned at least 5 metres from any existing or proposed building and from the site boundary.

The soakaways should be sized to ensure there is no flooding on site up to the 1 in 30 year event and all floodwaters up to the 1 in 100 year plus climate change event are retained on site. Given the anticipated falls across the site, the soakaways may need to be sized to accommodate the 1 in 100 year event without flooding.

Petrol/oil interceptors will be required to treat all surface water run-off from car parking and hard standing areas. Roof water should not pass through through these interceptors.

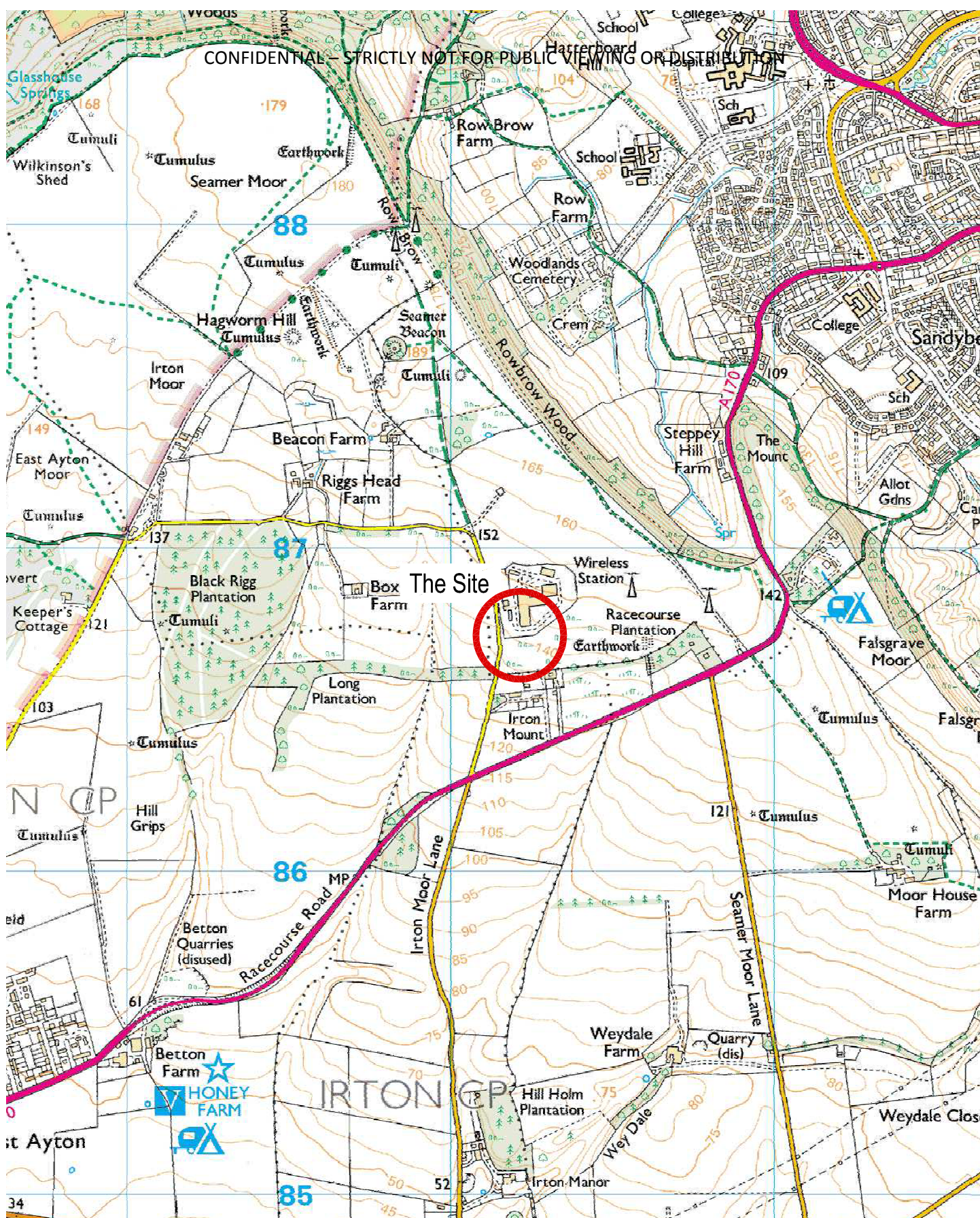
In accordance with the NPPF, Sustainable Urban Drainage (SUDS) techniques should be employed to:

- a) Reduce the peak surface water run-off from the site and hence reduce the risk of flooding both on site and downstream of the site and
- b) Increase the quality of any surface water discharged from the site.

Proposed Foul Water Disposal

Foul flows should discharge into the existing foul water system present within the MOD establishment.

Given the anticipated levels across the site and the location of the existing foul water drainage, a gravity connection may not be feasible and a pumped solution may be required.



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consulting engineers

4, Calder Close
Calder Park
Wakefield
WF4 3BA

tel: 01924 240 420
fax: 01924 240 421

www.3econsult.com

Project **PROPOSED NEW ENTRANCE, OMEGA 1
FOR MORGAN SINDALL**

Title **SITE LOCATION PLAN**

Scale
1:25,000

Drawn
AHC

Checked
AP

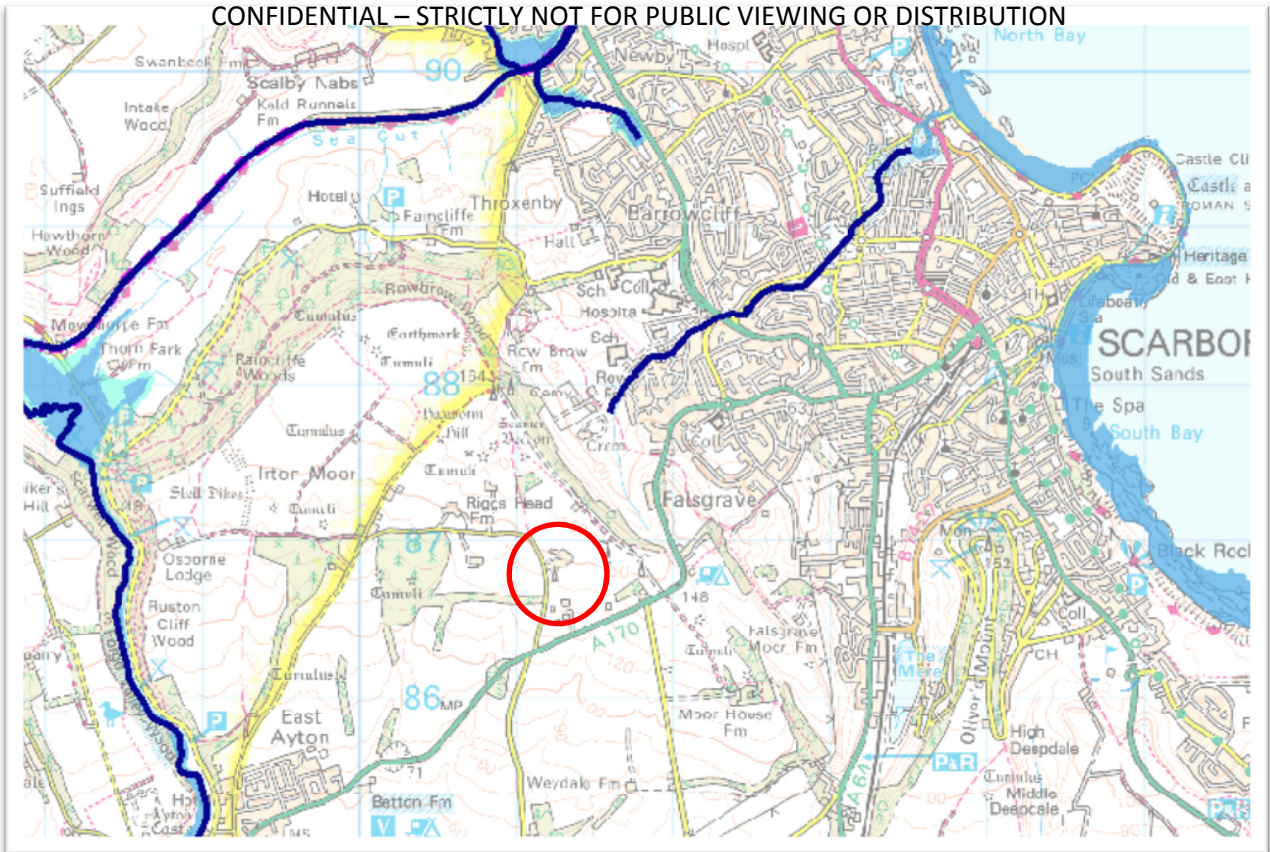
Date
JULY '14

Job No. **13084**

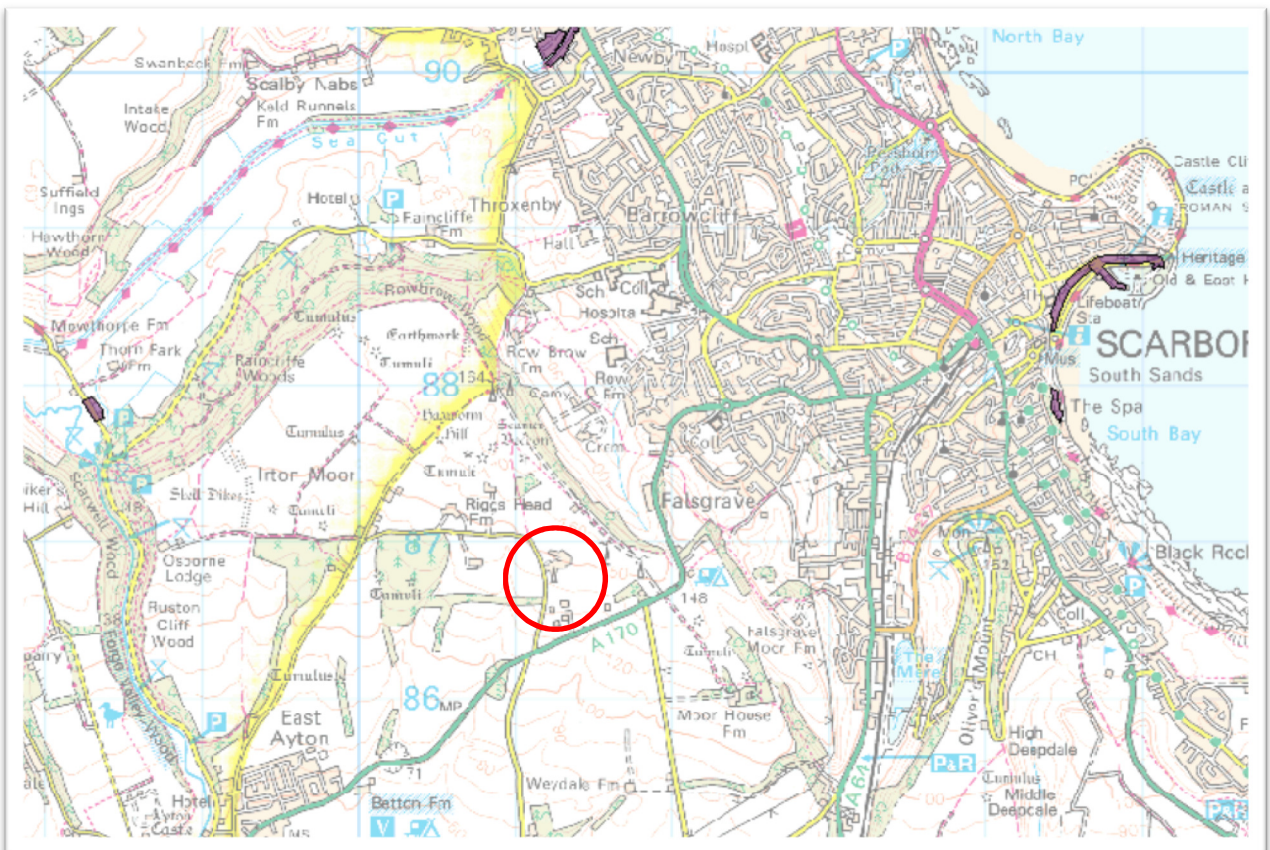
Drawing No. **FIGURE 1**

Rev **0**

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ENVIRONMENT AGENCY INDICATIVE FLOOD MAP



ENVIRONMENT AGENCY FLOOD WARNING ZONES

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