Ref: J21-001-R04 V1

Date: 10th January 2024

FAO: Jason Lewis

Cicero Estates Limited
Towngate House,
2-8 Parkstone Road,
Poole
BH15 2PW
Dear Jason,

Re: Groundwater Monitoring – Holbeach, Spalding, Lincolnshire

GCC was commissioned by Paul Basham Associates in January 2021 to undertake a targeted site investigation comprising the installation of groundwater monitoring wells and initial groundwater monitoring at the site. GCC was then further instructed in November 2023 to undertake further monitoring of the wells installed in 2023, to inform the drainage design for the proposed development. The location of the site and location of installed monitoring wells are shown on Figure 1.

The British Geological Survey Geology of Britain Viewer (online) shows the site to be underlain by superficial Tidal Flat Deposits (clay and silt) over bedrock Ampthill Clay Formation (mudstone).

5no. windowless sample boreholes were drilled on the 20th January 2021 and monitoring wells were installed in all boreholes to depths between 1.6mbgl and 3.1mbgl, comprising unslotted pipe with a bentonite seal around it, followed by slotted pipe to the base of installation with a gravel filter pack and approximately 0.5m of unslotted pipe extending above ground level to be visible to farm machinery. The monitoring well installation depths were limited by blowing silt in the borehole casing.

The ground conditions encountered in the boreholes were as follows:

WS101:

0.0-0.1m Soft brown silty CLAY (Topsoil)

0.1-2.9m Brown very clayey SILT

2.9-5.0m Grey very clayey SILT

Well: 0.72m unslotted, 2.0m slotted

WS102:

0.0-0.2m Soft brown silty CLAY (Topsoil)

0.2-3.2m Brown very clayey SILT

3.2-5.0m Grey very clayey SILT

Well: 0.56m unslotted, 1.0m slotted

WS103:

0.0-0.3m Soft brown silty CLAY (Topsoil)

0.3-3.0m Brown very clayey SILT

Well: 0.47m unslotted, 2.0m slotted

WS104:

0.0-0.2m Soft brown silty CLAY (Topsoil)

0.2-2.7m Brown very clayey SILT

2.7-3.5m Grey very clayey SILT

Well: 1.0m unslotted, 2.0m slotted

WS105:

0.0-0.2m Soft brown silty CLAY (Topsoil)

0.2-3.1m Brown very clayey SILT

3.1-3.5m Grey very clayey SILT

Well: 1.0m unslotted, 2.0m slotted

Groundwater monitoring was undertaken on completion of the site works in January 2023 with groundwater monitored between 0.75mbgl and 1.24mbgl.

Groundwater monitoring was subsequently undertaken on the 30th November 2023 and the 8th January 2024. Due to office closures over the Christmas and New Year period, the December 2023 round was deferred to early January 2024. Groundwater levels were recorded to be between 0.52mbgl and 0.67mbgl during the November 2023 round and between 0.33mbgl and 0.48mbgl in the January 2024 round. The full results are appended to this letter.

It is of particular note that the January 2024 round followed shortly after a period of very heavy rain and localised flooding in parts of the country. The monitored groundwater levels are therefore considered to be a good indication of the likely highest groundwater levels anticipated at the site.

During the monitoring visits, water was observed in the drainage ditches around the periphery of the site, particularly in the north. The observed groundwater levels appeared to be similar to the monitored groundwater levels.

Due to the very shallow groundwater levels recorded across the site, infiltration drainage is not considered likely to be viable at the site.

Yours sincerely

ANTONY PLATT
Director
For Ground Condition Consultants Ltd

RASMUS PALMGREN
Director
For Ground Condition Consultants Ltd

Encl: Figure 1: Location plan
Groundwater monitoring data