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Our Reference: P0011-02_Letter-01 08 June 2018

Mr Phil Owen
V&C (SW) Properties Limited
17 Saron Close
Gorseinon
Swansea
SA4 4FB

By e-mail to phil@vandcsw.co.uk

# Proposed Residential Development at Heol Pentre Bach
## Factual Report on Soil Infiltration Testing

Dear Phil,

Further to your instruction, I am pleased to report the findings of the soil infiltration tests carried out for the proposed residential development at Heol Pentre Bach, Gorseinon on 8 June 2018.

1. The tests were performed in machine excavated trial pits in accordance with the methodology set out in BRE Digest 365 (2016).

2. Three trial pits were excavated using a JCB 3CX at the approximate positions shown on Figure 1 presented in Annex A.

3. The ground conditions observed in the trial pits are recorded on the logs presented in Annex B. Beneath the surficial topsoil, the encountered soils were dominated by orange-brown and grey, slightly sandy slightly gravelly clayey silt down to depths of around 2.0 m. No groundwater seepages were observed and the excavation sides generally remained stable.

4. Soil infiltration tests were run for three hours in each trial pit. No fall in water level was observed at any of the three test locations and the tests were therefore terminated. The test data are summarised in Table 1 below.

**Table 1:** Summary of soil infiltration test results

| Test Location | Test Number | Water Depth (m) | Test Duration (hh:mm) | Comment |
|---|---|---|---|---|
| TP1 | 1 | 0.97 | 3:00 | No fall in water level. Test terminated after 3:00 hours. |
| TP2 | 1 | 1.08 | 3:00 | No fall in water level. Test terminated after 3:00 hours. |
| TP3 | 1 | 0.49 | 3:00 | No fall in water level. Test terminated after 3:00 hours. |

5. The test results demonstrate that the superficial strata at the site are not suitable for conventional soakaways.

6. This conclusion is consistent with the findings reported by Intégral Géotechnique who carried out two BRE Digest 365 infiltration tests on neighbouring land to the east (cf. Site Investigation Report, ref. 11625/PB/15, November 2015). In those tests the water level either remained static or rose slightly during tests run for two hours (the slight rise in water level being attributed to groundwater seepages observed between 0.8 and 1.0 m depth).

I hope that the above and enclosed are consistent with your expectations and don't hesitate to get back in touch if you have any queries or require any further assistance.

Yours sincerely,

Ian Williams

Dr Ian Williams
Director

Encl.

# Annex A
# Trial Pit Location Plan

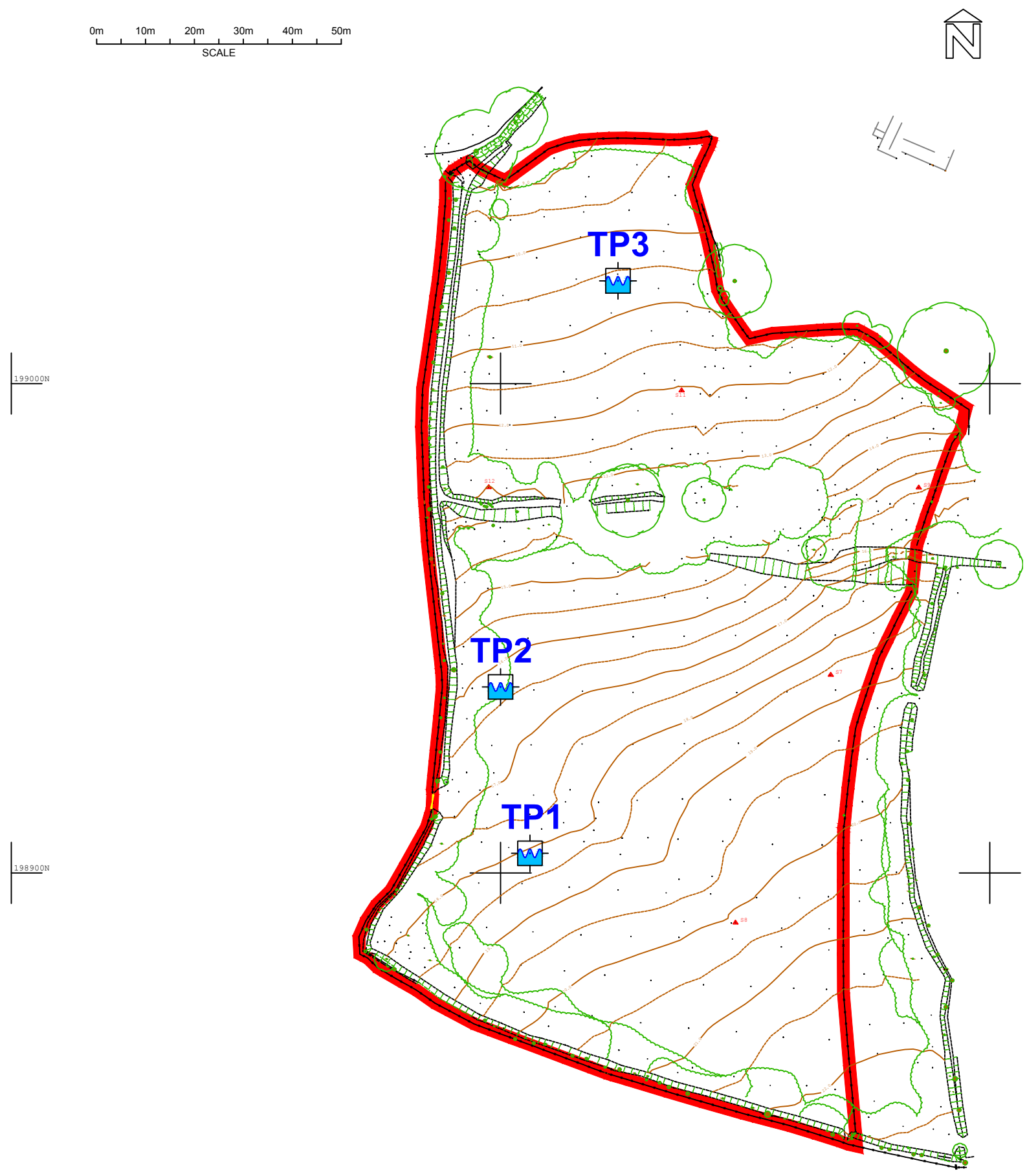


**Figure 1**
Trial pit postions

# Annex B
# Trial Pit Logs

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# Trial Pit Record

Hole ID
**TP1**
Sheet 1 of 1 (0.00m-2.50m)
All dimensions in metres
Scale 1:13

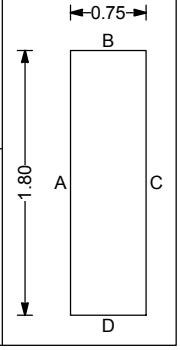
| | | | |
|---|---|---|---|
| **Site:** Heol Pentre Bach, Gorseinon | **Method/Plant Used:** JCB 3CX | | |
| **Client:** V&C (SW) Properties Limited | **Start date:** 08/06/18 | **End Date:** 08/06/18 | **Logged By:** IW |
| **Job No:** P0011-02 | **Easting:** 257,606.00 | **Northing:** 198,904.00 | **Elevation:** |

| SAMPLES & IN-SITU TESTS | | | WATER | STRATA | | |
|---|---|---|---|---|---|---|
| **Depth** | **Type / No** | **Results / Remarks** | | **Legend** | **Depth** | **Description** |
| | | | | | (0.30) | Firm dark brown slightly sandy slightly gravelly clayey SILT with low cobble content and fine roots.<br>**TOPSOIL** |
| | | | | | 0.30 | Firm orange-brown and grey slightly sandy slightly gravelly CLAY/SILT with medium cobble and boulder contents (maximum boulder dimension is about 0.40m).<br>**TILL** |
| | | | | | (1.70) | >> Below about 1.10m: gravel, cobble and boulder contents increasing; clay/silt matrix becoming stiff; dig becoming hard and progress becoming slow. |
| | | | | | 2.00 | Trial pit terminated at 2.00m for infiltration testing. |

**Groundwater Observations**

| Strike Depth | Flow Rate Remarks |
|---|---|
| | |

**Shoring/Support:** None.
**Side Stability:** Some saplling of gravel, cobbles and boulders between ground level and 1.1m depth.




**General Remarks**
(1) Trial pit excavated to facilitate soil infiltration tests.
(2) Stated coordinates established with hand-held GPS and are approximate (estimated accuracy ± 3m).
(3) Approximate position of trial pit shown on Figure 1.
(4) Strata logged from ground surface in accordance with BS5930.
(5) Trial pit backfilled with excavated spoil on completion of soil infiltration tests.

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# Trial Pit Record

Hole ID
**TP2**
Sheet 1 of 1 (0.00m-2.50m)
All dimensions in metres
Scale 1:13

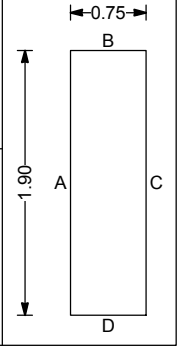
| | | | |
|---|---|---|---|
| **Site:** Heol Pentre Bach, Gorseinon | **Method/Plant Used:** JCB 3CX | | |
| **Client:** V&C (SW) Properties Limited | **Start date:** 08/06/18 | **End Date:** 08/06/18 | **Logged By:** IW |
| **Job No:** P0011-02 | **Easting:** 257,600.00 | **Northing:** 198,938.00 | **Elevation:** |

| SAMPLES & IN-SITU TESTS | | | WATER | STRATA | | |
|---|---|---|---|---|---|---|
| **Depth** | **Type / No** | **Results / Remarks** | | **Legend** | **Depth** | **Description** |
| | | | | | | Firm dark brown slightly sandy slightly gravelly clayey SILT with low cobble content and fine roots.<br>**TOPSOIL** |
| | | | | | (0.50) | |
| | | | | | 0.50 | Firm orange-brown and grey slightly sandy slightly gravelly CLAY/SILT with low cobble content and occasional fine roots.<br>**TILL** |
| | | | | | (1.50) | |
| | | | | | | >> Below about 1.30m: gravel and cobble contents increasing; with low boulder content (maximum boulder dimension is about 0.35m); clay/silt matrix becoming firm to stiff and stiff; dig becoming hard and progress becoming slow. |
| | | | | | 2.00 | Trial pit terminated at 2.00m for infiltration testing. |

**Groundwater Observations**

| Strike Depth | Flow Rate Remarks |
|---|---|
| | |

**Shoring/Support:** None.
**Side Stability:** Sime localised spalling from topsoil between ground level and 0.5m depth.




**General Remarks**
(1) Trial pit excavated to facilitate soil infiltration tests.
(2) Stated coordinates established with hand-held GPS and are approximate (estimated accuracy ± 3m).
(3) Approximate position of trial pit shown on Figure 1.
(4) Strata logged from ground surface in accordance with BS5930.
(5) Trial pit backfilled with excavated spoil on completion of soil infiltration tests.

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# Trial Pit Record

Hole ID
**TP3**
Sheet 1 of 1 (0.00m-2.50m)
All dimensions in metres
Scale 1:13

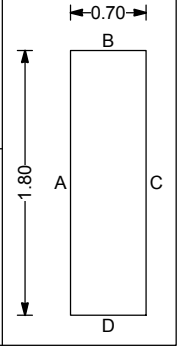
| | | | |
|---|---|---|---|
| **Site:** Heol Pentre Bach, Gorseinon | **Method/Plant Used:** JCB 3CX | | |
| **Client:** V&C (SW) Properties Limited | **Start date:** 08/06/18 | **End Date:** 08/06/18 | **Logged By:** IW |
| **Job No:** P0011-02 | **Easting:** 257,624.00 | **Northing:** 199,021.00 | **Elevation:** |

| SAMPLES & IN-SITU TESTS | | | WATER | STRATA | | |
|---|---|---|---|---|---|---|
| **Depth** | **Type / No** | **Results / Remarks** | | **Legend** | **Depth** | **Description** |
| | | | | | (0.35) | Firm dark brown slightly sandy slightly gravelly clayey SILT with low cobble content and fine roots.<br>**TOPSOIL** |
| | | | | | 0.35 | Firm orange-brown and grey slightly sandy CLAY/SILT with occasional fine roots.<br>**TILL**<br><br>>> Below about 0.55m: becoming slightly gravelly with medium cobble content and low boulder content (maximum boulder content is about 0.35m). |
| | | | | | (1.75) | >> Below about 1.60m: gravel, cobble and boulder contents increasing; clay/silt matrix becoming firm to stiff and stiff; dig becoming hard and progress becoming slow. |
| | | | | | 2.10 | Trial pit terminated at 2.10m for infiltration testing. |

**Groundwater Observations**

| Strike Depth | Flow Rate Remarks |
|---|---|
| | |

**Shoring/Support:** None.
**Side Stability:** Stable.




**General Remarks**
(1) Trial pit excavated to facilitate soil infiltration tests.
(2) Stated coordinates established with hand-held GPS and are approximate (estimated accuracy ± 3m).
(3) Approximate position of trial pit shown on Figure 1.
(4) Strata logged from ground surface in accordance with BS5930.
(5) Trial pit backfilled with excavated spoil on completion of soil infiltration tests.