



***STREETSCENE AND ENGINEERING CABINET BOARD***  
***IMMEDIATELY FOLLOWING CABINET SCRUTINY COMMITTEE***  
***FRIDAY 5 November, 2021***

***VIA TEAMS***

**ALL MOBILE TELEPHONES TO BE SWITCHED TO SILENT FOR THE  
DURATION OF THE MEETING**

1. Appointment of Chairperson
2. Welcome and Roll Call
3. Chair Announcements
4. Declarations of Interest
5. Minutes of Previous Meeting (*Pages 3 - 16*)
6. List of Approved Contractors (*Pages 17 - 38*)
7. Christmas Parking 2021 (*Pages 39 - 46*)
8. Annual Parking Report 2020/2021 (*Pages 47 - 60*)
9. Design Options for the Remediation of Cilmaengwyn Tip above Godre'r Graig Primary School (*Pages 61 - 148*)
10. Three Yearly Grit Bin Policy Review (*Pages 149 - 158*)
11. Traffic Calming Measures at Tonna: Proposed 20 mph speed limits at B4434 Dulais Fach Road, Station Road, Riverside, Taibanc and Brunel Close, Tonna traffic regulation order and Proposed B4434 Dulais Fach Road, Tonna - Proposed speed cushions traffic

- regulation order (*Pages 159 - 176*)
12. Key Performance Indicators 2021/2022 - Quarter 1 (1 April 2021 - 30 June 2021) (*Pages 177 - 186*)
  13. Forward Work Programme 2021/2022 (*Pages 187 - 188*)
  14. Urgent Items  
Any urgent items (whether public or exempt) at the discretion of the Chairman pursuant to Statutory Instrument 2001 No 2290 (as amended).
  15. Access to Meetings  
To resolve to exclude the public for the following items pursuant to Regulation 4 (3) and (5) of Statutory Instrument 2001 No. 2290 and the relevant exempt paragraphs of Part 4 of schedule 12A to the Local Government Act 1972.

## **PART 2**

16. Section 38 Highways Act 1980 Agreement, Commuted Sum Payment - Cae Morfa, Phases Three and Four Skewen (*Pages 189 - 216*)

**K.Jones**  
**Chief Executive**

**Civic Centre**  
**Port Talbot**

**28 October, 2021**

### **Streetscene and Engineering Cabinet Board Members:**

Councillors. M.Harvey and A.Wingrave

**EXECUTIVE DECISION RECORD**

**24 SEPTEMBER 2021**

**STREETSCENE AND ENGINEERING CABINET BOARD**

**Cabinet Members:**

Councillors: M.Harvey (Chairperson) and P.A.Rees

**Officers in Attendance:**

D.Griffiths, M.Roberts, P. Jackson, J.Smith, N.Headon and C.Plowman

**Scrutiny Invitees:**

Councillors: S.Penry (Chair) and R.W.Wood (Vice Chair)

**Invitee:**

Councillor R.Jones

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1. **APPOINTMENT OF CHAIRPERSON**

Agreed that Councillor M.Harvey be appointed Chairperson for the meeting.

2. **DECLARATIONS OF INTEREST**

No declarations of interest were received.

3. **MINUTES OF PREVIOUS MEETING**

**Decision:**

That the Minutes of 2 July 2021, be approved.

4. **RE-ALLOCATION OF HIGHWAY CAPITAL MONIES RELEASED BY 2020/21 GRANT FUNDING**

Officers highlighted that the items in the report were priority safety issues.

**Decision:**

Having given due regard to the first stage Integrated Impact Assessment that approval be granted for additional works to be carried out as part of the 2021/2022 Works Programme, as detailed in the circulated report.

**Reason for Decision:**

To maintain assets for which the Council is responsible and address community concerns in relation to same.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

5. **RENEWAL OF LIGHTING AT MANOR DRIVE, GLYNNEATH**

Officers highlighted a number of these had already been dealt with as part of the investment programme of the Council, and were applying the same process that had been carried out under the main renewal programme.

**Decision:**

Having given due regard to the first stage integrated impact assessment, that approval be granted for officers to seek permission and formal agreement from Aberpergwm Estate to enter Manor Drive and renew lighting under the Public Health Act, as detailed in the circulated report.

**Reason for Decision:**

To address the issue of life expired street lighting infrastructure in Manor Drive, Glynneath.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.



6. **NEATH TOWN CENTRE LIGHTING COLUMN REPLACEMENT**

It was noted that if the lighting was not renewed separate columns and separate power supplies would need to be put in place, hence the measures highlighted in the circulated report.

**Decision:**

Having given due regard to the first stage Integrated Impact Assessment, that approval be granted for the street lighting column replacement work in Neath Town Centre to be funded by a £60K one-off savings in the lighting energy budget associated with the ongoing SALIX funding low energy lamp replacement work, as detailed in the circulated report.

**Reason for Decision:**

To address ageing infrastructure and community needs.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

7. **ELECTRIC CHARGING INFRASTRUCTURE FOR FLEET VEHICLES**

**Decisions:**

Having given due regard to the Integrated Impact Assessment:

1. That the development of Electric Vehicle (EV) charging points and Photovoltaic Solar Panels at the Quays to support the Councils EV fleet transition plan, as detailed in the circulated report, be approved.
2. That approval be granted for an application for grant funding be submitted to Welsh Government Energy Service (WGES) and Office for Zero Emission Vehicles (OZEV) to partly finance the project and to further authorise £516k of borrowing over 25 years to fund the project.
3. That development of an EV charging policy for staff to utilise this service, be approved.

**Reason for Decisions:**

This proposal will support the Councils decarbonisation agenda and forms part of the actions in the DARE strategy. It will also support the planned transition of the Council Fleet to zero emission vehicles in line with W.G's ambitions, as set out in Welsh Governments Prosperity for All Document of 2019, a Low Carbon Wales Proposal 4.

**Implementation of Decisions:**

The decisions will be implemented after the three day call in period.

8. **ZERO EMISSIONS FLEET TRANSITION PLAN**

**Decisions:**

Having given due regard to the Integrated Impact Assessment:

1. That the Fleet Transition Plan, as detailed in the circulated report, be approved.
2. That the submission of the Fleet Transition Plan to the Welsh Government Energy Service by the due date (22 October 2021) in line with the requirements set out in Welsh Governments Prosperity for All Document 2019, a Low Carbon Wales, be approved.

**Reason for Decisions:**

The Fleet Transition Plan will provide a definitive timeline of when vehicles are to be renewed and what they are to be replaced with. The Transition Plan is a Management tool which will help the Council budget for the increased costs that will be incurred with E.V's. and identify any saving that may arise from the transition.

**Implementation of Decisions:**

The decisions will be implemented after the three day call in period.

## 9. LIST OF APPROVED CONTRACTORS

### Decisions:

Having given due regard to the Integrated Impact Assessment approval be granted for the List of Approved Contractors be amended as follows:

Companies to be **added** to the List of Approved Contractors:

R C Cutting & Co. T/A Cuttings (C073)

Category - 66

RTS Tree Specialist Ltd (R041)

Categories - 2, 84, 101, 102

DTS Tree Services Ltd (D043)

Category - 101

Maxim Systems Ltd T/A Maxim Play  
(M052)

Categories – 104, 111

John F Hunt Power Ltd (J020)

Category - 2

Twinfix Ltd (T036)

Categories – 110, 111

Company to **add additional categories** on the List of Approved Contractors:

RDM Electrical Services Limited T/A

RDM Electrical and Mechanical  
Services (R015)

Categories – 39, 40, 57, 59

### Reason for Decisions:

To keep the List of Approved Contractors up to date and as far as possible, ensure a competitive procurement process. These recommendations to be adopted for the purpose of supplying a List of Approved Contractors for invitation to tender within the relevant category.

### Implementation of Decisions:

The decisions will be implemented after the three day call in period.

10. **WELSH GOVERNMENT PROPOSED 20MPH DEFAULT SPEED LIMIT ACROSS WALES**

It was noted that officers would be seeking to submit the Councils consultation to Welsh Government following the full Members Seminar which would be held on 27 September 2021.

Members questioned how feasible it was to limit traffic to 20mph and how popular was it with the public, officers explained that they understood and shared Members concerns and would be working closely with ward Members and our internal communications team in working with individual communities as the 20mph default progressed.

It was highlighted that with reference to feedback from the community in Cilfrew which was used as a pilot, the community were largely supportive of the pilot, though noted that public there were happy in the cul-de-sac location, but officers would be meeting with individual ward Members with regard to the main arterial routes across the county borough moving forward.

Officers explained that they would be working closely with Ward Members before submitting a plan to Welsh Government.

**Decision:**

That the report be noted.

11. **FOOTWAY/CYCLEWAY LINK TO EGLWYS NUNNYDD AND ST DAVIDS PARK, MARGAM**

Officers explained with regard to the query on page 211 and 212 of the circulated report in terms of speed, it was confirmed that it should state ‘*a reduction in the National speed limit along the A48 route from 60mph to 40mph*’.

The Local Member for the Margam Ward thanked officers for their hard work.

**Decisions:**

That having given due regard to the Integrated Impact Screening Assessment:

1. That approval be granted to construct a shared footpath/cycleway to serve the residents of Eglwys Nunnydd and St Davids Park, Margam.
2. That the £550k within the Highways Improvement programme be allocated to this scheme from within the Council's existing Capital programme, profiled over two consecutive financial years 2021/2022 and 2022/2023 to facilitate the phased delivery of the scheme, be approved.
3. That the Director of Environment and Regeneration be granted delegated powers to enter into agreements with land owners to secure land to facilitate the construction of the footway/cycle path.
4. That the construction work be undertaken by the Council's Streetcare Services over the two year period.

**Reason for Decisions:**

To provide a safe walking and cycle footpath for the residents of Eglwys Nunnydd and St Davids Park and the wider community in the interest of road safety.

**Implementation of Decisions:**

The decisions will be implemented after the three day call in period.

12. **TRAFFIC REGULATION ORDER/S: GLAIS TO PONTRDAWE**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the 40 mph Speed Limit Traffic Regulation Order at the A4067 Glais to Pontardawe (Neath Port Talbot Council boundary to Pontardawe), as detailed in the circulated report, and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To help reduce traffic speed in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

13. **TRAFFIC REGULATION ORDER/S: CILFREW**

It was noted that this is part of the Cilfrew 20mph pilot.

**Decision:**

Having given due regard to the integrated impact that the objections be overruled to the 20 mph Speed Limit Traffic Regulation Order at Cilfrew Village, Neath (Various Streets, Cilfrew) (Revocation) and (20 mph Speed Limits) Order 2021, as detailed in the circulated report and be implemented on site as advertised and the objectors be informed of the decision accordingly.

**Reason for Decision:**

To help reduce traffic speed in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

14. **TRAFFIC REGULATION ORDER/S: CIMLA ROAD, NEATH**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the Individual Disabled Parking Place traffic regulation order at No. 135 Cimla Road, Neath, SA11 3UE, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To allow the successful applicant to maintain their independence and quality of life.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

15. **TRAFFIC REGULATION ORDER/S: BLAENGWRACH**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the proposed Chain Road, Blaengwrach, Glynneath – Proposed No Waiting, Loading and Unloading at Any Time Order 2021, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To prevent indiscriminate parking in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

16. **TRAFFIC REGULATION ORDER/S: NEATH**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the Neath Abbey Road and Ffordd Yr Hen Gaer, Neath – Proposed No Waiting, Loading and Unloading At Any Time Order 2021, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To prevent indiscriminate parking and assist in traffic flow in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

17. **TRAFFIC REGULATION ORDER/S: BRYNCOCH**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the Main Road, Margaret Street, Bryncoch - Proposed Prohibition of Waiting, Loading or Unloading at Any Time traffic regulation order, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To prevent indiscriminate parking in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

18. **TRAFFIC REGULATION ORDER/S: RIVERSIDE, NEATH**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise Riverside (Brickyard Cottages), Neath - Proposed Prohibition of Waiting, Loading or Unloading at Any Time traffic regulation order and the Proposed Goods Loading Only traffic regulation order, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To prevent indiscriminate parking and allow Goods Loading only in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.



19. **TRAFFIC REGULATION ORDER/S: ALLTWEN**

**Decision:**

Having given due regard to the integrated impact assessment that the objection is overruled to (Gwyn Street and Heol Phillip, Alltwen, Pontardawe) (Prohibition of Waiting at Any time) order 2021, as detailed in the circulated report and the scheme be implemented as advertised and the objector be informed of the decision.

**Reason for Decision:**

The proposed scheme will prevent indiscriminate parking and assist with traffic flow in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

20. **TRAFFIC REGULATION ORDER/S: PORT TALBOT**

**Decision:**

Having given due regard to the integrated impact assessment that approval is granted to advertise the proposed Pen Y Cae and Gwar Y Caeau, Port Talbot – Proposed No Waiting, at Any Time Order 2021, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To prevent indiscriminate parking in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

21. **TRAFFIC REGULATION ORDER/S: TONNA**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the Traffic Calming Measures at Tonna, Proposed 20 mph speed limits at B4434 Dulais Fach Road, Station Road, Riverside, Taibanc and Brunel Close, Tonna traffic regulation order and Proposed B4434 Dulais Fach Road, Tonna – Proposed speed cushions traffic regulation order as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

To help reduce traffic speed in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

22. **TRAFFIC REGULATION ORDER/S: A483 FABIAN WAY**

**Decision:**

Having given due regard to the integrated impact assessment that approval be granted to advertise the proposed A483 Fabian Way - Proposed speed limit revisions, as detailed in the circulated report and if no objections are received that the proposals be implemented on site as advertised.

**Reason for Decision:**

The scheme will help to reduce traffic speed in the interest of road safety.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

23. **PROHIBITION OF WAITING AT ANY TIME ORDER: TONNA**

**Decision:**

Having given due regard to the integrated impact assessment that the objections are up held to the proposed (Henfaes Road and Park Street, Tonna) (Prohibition of Waiting at Any time) Order 2021, as detailed in the circulated report and the scheme be withdrawn and the objectors be informed of the decision.

**Reason for Decision:**

There were no expressions of support received for the scheme with the majority of those responding objecting to the proposals.

**Implementation of Decision:**

The decision will be implemented after the three day call in period.

24. **FORWARD WORK PROGRAMME 2021/2022**

The Forward Work Programme was noted.

**CHAIRPERSON**

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Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

## NEATH PORT TALBOT COUNTY BOROUGH COUNCIL

### Streetscene and Engineering Cabinet Board

5<sup>th</sup> November 2021

### Report of the Head of Engineering & Transport (David W. Griffiths)

#### **Matter for Decision**

**Wards Affected:** All

#### **List of Approved Contractors**

#### **Purpose of the Report:**

To seek Members' approval to amend the List of Approved Contractors.

#### **Executive Summary:**

To seek approval for Contractors to be included on the List of Approved Contractors, Contractor to add an additional category and Contractors who have not met with NPTCBC's criteria to be removed.

#### **Background:**

Members will be aware that on previous occasions, reports concerning the List of Approved Contractors have been presented to Cabinet Board.

The process gives local companies an opportunity to provide goods and services to the Council.

The full list of categories is set out in Appendix A for your information.

**Financial Impacts:**

No implications.

**Integrated Impact Assessment:**

A first stage Impact Assessment has been undertaken to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment, attached at Appendix B, has indicated that a more in-depth assessment is not required. A summary is included below:-

The report is seeking approval to include additional contractors onto the existing List of Approved Contractors.

This does not affect any group of people and or impact the Welsh language, biodiversity or the five ways of working.

**Valleys Communities Impacts:**

No implications.

**Workforce Impacts:**

No implications.

**Legal Impacts:**

No implications.

**Risk Management Impacts:**

No implications.

**Consultation:**

There is no requirement for external consultation on this item.

## Recommendations:

Having had due regard to the Integrated Impact Assessment it is recommended that:-

The List of Approved Contractors is amended as follows:

### Companies to be **added** to the List of Approved Contractors

The following companies have applied to be included on the list and have passed the required assessments:-

| <u>Company</u>                            | <u>Category</u>                |
|---|--------------------------------|
| Seven Sisters Sawmills (Sheds) Ltd (S098) | 111                            |
| Allied Mechanical Engineering Ltd (A074)  | 39, 40, 45, 59                 |
| Warmserve Services Ltd (W035)             | 39, 40, 41, 42, 43, 44, 55, 68 |

### Company to **add an additional category** on List of Approved Contractors

The following company has applied to be included on the list for an additional category and has passed the required assessments:-

| <u>Company</u>                    | <u>Category</u> |
|-----------------------------------|-----------------|
| Quantum Traffic Management (Q003) | 96              |

### Companies to be **removed** from List of Approved Contractors

The following companies have failed to meet NPTCBC criteria due to no Health & Safety assessment/accreditation and therefore, approval is required for removal from the List of Approved Contractors:-

| <u>Company</u>                 | <u>Company</u>                            |
|--------------------------------|---|
| A F Pool Services Ltd (A030)   | Ascend (Cymru) Ltd (A034)                 |
| ABS Fencing (A037)             | A J Services (Swansea) Ltd (A053)         |
| Courtstall Services Ltd (C036) | Cotton & Sons Cleaning Supplies (C057)    |
| Draigmor Ltd (D011)            | Elite Landscaping (E015)                  |
| Electratest (UK) Ltd (E025)    | Bowen Hopkins Ltd (H003)                  |
| Homesafe/Lindman Doors (H019)  | Harsco Infrastructure Services Ltd (H025) |

|   |  |
|---|--|
| IMI Independent Memorial Inspection (I008)                | Inspace Systems Ltd (I009)                 |
| Just In Time Ltd (J015)                                   | Selwyn Jones Stonemasons Ltd (J017)        |
| Tarmac Aggregates Ltd (L007)                              | Landscape Wales (L024)                     |
| Mechurion Ltd (M019)                                      | McCarthy Contractors (Bridgend) Ltd (M031) |
| Memsafe Ltd (M032)  | Merthyr Tydfil CBC (M039)                  |
| Morgan Powered Access (M040)                              | W J Owen (Electrical) Ltd (O006)           |
| Oakdale Fencing Ltd (O008)                                | Zig Zag Water Ltd (P024)                   |
| Phoenix Partitioning Ltd (P026)                           | Pauls Plant Hire (P034)                    |
| Pathfinders Countryside Ltd (P036)                        | P & T Ltd (P039)                           |
| Ken Parfitt (PAT Testing) (P043)                          | Reeslectrics Ltd (R022)                    |
| RJG Carpentry Services (R023)                             | REC Asbestos Ltd (R031)                    |
| Siemens Building Technologies Security Systems Ltd (S007) | Stay Safe Inspection & Testing (S024)      |
| Storage Design Ltd (S034)                                 | Solar Sunshades Ltd (S037)                 |
| SGMS Building Services Maintenance (S041)                 | Site Heat Treatment Services Ltd (S042)    |
| Showmaster Solutions (S046)                               | Space Plan Interiors Ltd (S052)            |
| South Wales UPVC Ltd (S057)                               | L H Snow & Son Ltd (S066)                  |
| Trac International Ltd (T016)                             | Transformations Wales Ltd (T027)           |
| 3 Steps Gardening & Landscaping Services (T031)           | The Secret Ingredient (Swansea) Ltd (T034) |
| Work-Tool Hire Ltd (W024)                                 | Welsh Glass Window Door Repair (W025)      |
| G Wood Flooring (W030)                                    |  |

### **Reasons for Proposed Decision:**

To keep the List of Approved Contractors up to date and as far as possible, ensure a competitive procurement process.

These recommendations to be adopted for the purpose of supplying a List of Approved Contractors for invitation to tender within the relevant category.

### **Implementation of Decision:**

The decision is proposed for implementation after the three day call in period.

### **Appendices:**

Appendix A - Categories for List of Approved Contractors

Appendix B - First Stage IIA



## List of Background Papers

None

## Officer Contact

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Amanda Phillips, Programme & Commissioning Manager

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## **Appendix A**

### **Categories for List of Approved Contractors**

#### **General Services**

1. Signs
2. Plant Hire
3. Security
4. Clinical Waste
5. Pest Control
6. Re-Cycling
7. Waste Disposal (e.g. Car, Computers, Steel)
8. Crowd Control
9. Traffic Management
10. Portable Buildings
11. Scaffolding

#### **Building Construction / Maintenance**

12. Building Construction £50,000 - £200,000
13. Building Construction £200,000 - £1m
14. Building Construction over £1m
15. Minor Building Works below £50,000
16. Works of Adaptation below £5,000
17. Re-Roofing
  - a) Felt & Asphalt below £10,000 / above £10,000
  - b) Tiles & Slate below £10,000 / above £10,000
  - c) GRP
  - d) High Performance Coverings
  - e) Sheeting & Cladding
18. Supply & Installation of Floor Finishes
  - a) Flexible Sheet, Tiles, Carpets
  - b) Jointless
  - c) Rigid Tiles, Slabs, Mosaics
  - d) Wood
19. Plastering
20. Painting & Decorating
21. Supply & Installation of Windows/Doors (Windows to BS 7412, Doors to PAS 23/1, PAS 24/1 to BS 7950 Kitemark Scheme)
  - a) PVCU (using Aluplast System)
  - b) Timber
  - c) Aluminium

- d) Steel
- e) Roller Shutter
- f) Security Doors
- g) Automatic Doors
- 22. Suspended Ceilings
- 23. Welding / Fabrication below £5,000
- 24. Welding / Fabrication above £5,000
- 25. Stonework Repair / Restoration / Cleaning
- 26. Glazing & Safety Filming
- 27. Wall Tie Replacement
- 28. External Wall Insulation
- 29. Damp Proofing / Dry Rot / Woodworm Treatment
- 30. Cavity Wall and / or Loft Insulation
- 31. Asbestos Handling & Removal, Asbestos Surveys & Asbestos Consultancy Services
- 32. Window Blinds
- 33. Shop Fitters – Specialist Joinery
- 34. Refurbishment of Laboratories
- 35. Clearance of Void properties
- 36. Works to Listed Buildings

### **Mechanical & Electrical Engineering**

- 37. Domestic (including Housing) Plumbing & Central Heating below £50,000
- 38. Domestic (including Housing) Plumbing & Central Heating above £50,000
- 39. Commercial Heating & Ventilating below £100,000
- 40. Commercial Heating & Ventilating above £100,000
- 41. Domestic (including Housing) Electrical Installation below £50,000
- 42. Domestic (including Housing) Electrical Installation above £50,000
- 43. Commercial Electrical Installations below £100,000
- 44. Commercial Electrical Installations above £100,000
- 45. Gas Boiler Maintenance
- 46. Maintenance of Building Management Systems for Heating & Ventilation

### **Mechanical & Electrical Specialist Services**

- 47. CCTV
- 48. Intruder Alarms
- 49. Fire Alarms
- 50. Warden Call System
- 51. Lifts

52. Swimming Pool Plant Equipment
53. Water Systems Cleaning & Chlorination
54. Ductwork System Cleaning & Sterilisation
55. Domestic & Commercial Kitchen Equipment Maintenance
56. Supply & Installation of Specialist Kitchen Equipment / Fittings
57. Installation, Testing & Maintenance of Local Exhaust Ventilation (LEV)
58. Water Systems – Risk Assessment
59. Supply & Installation of Pipework & Ductwork Installation
60. Supply, Installation and / or Servicing of Automatic Door Systems
61. PA Systems / Sound Systems
62. Stage Lighting
63. Service / Repair of Kilns
64. Supply, Installation & Servicing of Leisure Services Equipment
65. Specialist Steelwork (stainless Steel & Fabricated Works)
66. Lightning Conductors
67. Fire Fighting Equipment including Hose Reels
68. Smoke / Fire Detectors
69. Stage Equipment including Curtains, Gantry, Special Effects etc.
70. Computer / Telephone Cabling

### **Civil Engineering**

71. Civil Engineering £0 – £25,000
72. Civil Engineering £25,000 – £250,000
73. Civil Engineering £250,000 – £1m
74. Civil Engineering over £1m
75. Land Reclamation
76. Sewers & Drainage
77. Hard & Soft Landscaping
78. Ground Investigation
79. Demolition
80. Surfacing, Carriageway & Footways
81. Surface Dressing
82. Road Markings & Reflective Road Studs
83. Carriageway Slurry Surfacing & Footways
84. Fencing
85. Gabion & Blockstone
86. Steel Fabrication below £25,000
87. Steel Fabrication above £25,000
88. Bridge Works, New & Maintenance

### **Civil Engineering Specialists**

89. Concrete Repairs
90. Diving Inspections & Works within Water
91. Bridge Deck Expansion Joints
92. Bridge Deck Water Proofing
93. Soil Nailing
94. Sewer Relining
95. Sewer Surveys
96. Safety Fencing
97. Bridge Parapets (Manufacture & Installation)
98. Access Plant for Inspection
99. Bridge Parapet Painting
100. Painting of Structural Steelwork
101. Arboriculturalist
102. Weed-spraying
103. Weather Forecasting
104. Playground Equipment
105. Specialist Cleaning
106. Synthetic Pitches and Sports Facilities
107. Bus/Cycle Shelters
108. Traffic Signals
109. Street Lighting
110. Street Furniture
111. Specialist Contractor not listed above – please specify type of work



## **Appendix B**

### **Integrated Impact Assessment (IIA)**

This Integrated Impact Assessment considers the duties and requirements of the following legislation in order to inform and ensure effective decision making and compliance:

- Equality Act 2010
- Welsh Language Standards (No.1) Regulations 2015
- Well-being of Future Generations (Wales) Act 2015
- Environment (Wales) Act 2016

#### **Version Control**

| <b>Version</b> | <b>Author</b>   | <b>Job title</b>                  | <b>Date</b> |
|----------------|-----------------|-----------------------------------|-------------|
| Version 1      | Amanda Phillips | Programme & Commissioning Manager | April 2021  |

## 1. Details of the initiative

|           |   |
|-----------|---|
|           | <b>Title of the Initiative: List of Approved Contractors – Approval to add Contractor/add Categories for Contractor /remove Contractor</b>  |
| <b>1a</b> | <b>Service Area:</b> Procurement  |
| <b>1b</b> | <b>Directorate:</b> All   |
| <b>1c</b> | <p><b>Summary of the initiative:</b><br/>         Approving additional Contractors onto the Approved list of Contractors will enable NPT to procure works with these companies. This will allow the companies to provide employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.</p> <p>The Approved List of Contractors gives Local companies the opportunity to be contracted by NPT to undertake works.</p>  |
| <b>1d</b> | <b>Is this a ‘strategic decision’?</b> No.  |
| <b>1e</b> | <b>Who will be directly affected by this initiative?</b> Internal administrative process only.  |
| <b>1f</b> | <p><b>When and how were people consulted?</b></p> <p>The Approved List is available for all construction companies to apply to be included. Various checks are undertaken on applicants to ascertain their suitability for inclusion, these checks are undertaken in the form of references, technical, quality, environmental and Health and Safety checks. Checks are performed in consultation with other departments in the Authority. Due to the nature of the process there is no requirement to consult with external groups on this matter, consultation will be undertaken for the individual schemes procured using contractors on the Approved List.</p> |
| <b>1g</b> | <p><b>What were the outcomes of the consultation?</b></p> <p>Consultation with other departments in the Authority has supported the recommendations within the report.</p>  |

## 2. Evidence

### What evidence was used in assessing the initiative?

Applicants wishing to be included on the List of Approved Contractors need to demonstrate their suitability on the application form. The application is checked by various departments to determine the suitability of the applicant to be included on the Approved List prior to approval being sort by Members.

## 3. Equalities

a) How does the initiative impact on people who share a **protected characteristic**?

Page 28

| Protected Characteristic     | + | - | +/- | Why will it have this impact? |
|------------------------------|---|---|-----|-------------------------------|
| Age                          |   |   | x   |                               |
| Disability                   |   |   | x   |                               |
| Gender reassignment          |   |   | x   |                               |
| Marriage & civil partnership |   |   | x   |                               |
| Pregnancy and maternity      |   |   | x   |                               |
| Race                         |   |   | x   |                               |
| Religion or belief           |   |   | x   |                               |
| Sex                          |   |   | x   |                               |
| Sexual orientation           |   |   | x   |                               |



**What action will be taken to improve positive or mitigate negative impacts?**

Applications to be included on the List of Approved Contractors are welcomed from all construction companies.

b) How will the initiative assist or inhibit the ability to meet the **Public Sector Equality Duty**?

| <b>Public Sector Equality Duty (PSED)</b>                   | <b>+</b> | <b>-</b> | <b>+/-</b> | <b>Why will it have this impact?</b> |
|---|----------|----------|------------|--------------------------------------|
| To eliminate discrimination, harassment and victimisation   |          |          | x          |                                      |
| To advance equality of opportunity between different groups |          |          | x          |                                      |
| To foster good relations between different groups           |          |          | x          |                                      |

**What action will be taken to improve positive or mitigate negative impacts?**

The approved list is open to applications from all construction companies.

#### 4. Socio Economic Duty

| Impact                | Details of the impact/advantage/disadvantage |
|-----------------------|--|
| Positive/Advantage    |  |
| Negative/Disadvantage |  |
| Neutral               |  |

Page 30

| What action will be taken to reduce inequality of outcome |
|---|
|   |

#### 5. Community Cohesion/Social Exclusion/Poverty

|                    | + | - | +/- | Why will it have this impact? |
|--------------------|---|---|-----|-------------------------------|
| Community Cohesion |   |   | x   |                               |
| Social Exclusion   |   |   | x   |                               |
| Poverty            |   |   | x   |                               |

**What action will be taken to improve positive or mitigate negative impacts?**

The List of Approved Contractors facilitate the procurement of local construction companies to secure work with NPT. This will allow local companies to provide employment opportunities allowing people to secure decent work.

**6. Welsh**

Page 31

|  | + | - | +/- | Why will it have this effect? |
|--|---|---|-----|-------------------------------|
| What effect does the initiative have on:<br>- people's opportunities to use the Welsh language |   |   | x   |                               |
| - treating the Welsh and English languages equally   |   |   | x   |                               |

**What action will be taken to improve positive or mitigate negative impacts?**

N/A

## 7. Biodiversity

How will the initiative assist or inhibit the ability to meet the **Biodiversity Duty**?

| Biodiversity Duty  | + | - | +/- | Why will it have this impact? |
|--|---|---|-----|-------------------------------|
| To maintain and enhance biodiversity   |   |   | x   |                               |
| To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc. |   |   | x   |                               |

Page 32

| What action will be taken to improve positive or mitigate negative impacts? |
|---|
| N/A   |

## 8. Well-being of Future Generations

How have the five ways of working been applied in the development of the initiative?

| Ways of Working  | Details  |
|--|--|
| i. <b>Long term</b> – looking at least 10 years (and up to 25 years) ahead                       | The addition of Contractors onto the List of Approved Contractors will enable these companies to be procured in accordance with NPT's Procurement Rules.   |
| ii. <b>Prevention</b> – preventing problems occurring or getting worse                           | The List of Approved Contractors allows local contactors the opportunity to undertake works for NPT.   |
| iii. <b>Collaboration</b> – working with other services internal or external                     | Several departments have been involved in checking that Contractors are suitable to undertake works for the category/ies. The Approved list is available for use by all departments in the Authority wishing to undertake works.   |
| iv. <b>Involvement</b> – involving people, ensuring they reflect the diversity of the population | The companies have been assessed to determine their suitability to be included on the approved list.<br>External financial checks have been undertaken.<br>Various departments have undertaken checks on the companies for Insurance, Technical ability, Quality, Environmental and Health & Safety.   |
| v. <b>Integration</b> – making connections to maximise contribution to:                          | Approving additional Contractors onto the List of Approved Contractors will enable NPT to procure works with these companies. This will allow the companies to provide employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.<br>The List of Approved Contractors gives local companies the opportunity to be contracted by NPT to undertake works. |

|  |   |
|--|---|
| <b>Council's well-being objectives</b> | The List of Approved Contractors gives local companies the opportunity to be contracted by NPT to undertake works. This will allow local companies to provide employment opportunities allowing people to secure decent work. |
| <b>Other public bodies objectives</b>  | The List of Approved Contractors gives local companies the opportunity to be contracted by NPT to undertake works. This will allow local companies to provide employment opportunities allowing people to secure decent work. |

### 9. Monitoring Arrangements

Provide information on the monitoring arrangements to:

Monitor the impact of the initiative on Equalities, Community Cohesion, the Welsh Measure, Biodiversity Duty and the Wellbeing Objectives.

|   |
|---|
| Regular checks in accordance with the Authority's Corporate Procurement Rules are undertaken on the companies on the List of Approved Contractors to ensure they are compliant. |
|---|

## 10. Assessment Conclusions

Please provide details of the conclusions reached in relation to each element of the assessment:

|   | <b>Conclusion</b>   |
|---|---|
| <b>Equalities</b>                                       | Applications to be included on the approved list of contractors are welcomed from all construction companies.   |
| <b>Socio Economic Disadvantage</b>                      |   |
| <b>Community Cohesion/<br/>Social Exclusion/Poverty</b> | The List of Approved Contractors facilitate the procurement of local construction companies to secure work with NPT. This will allow local companies to provide employment opportunities allowing people to secure decent work.   |
| <b>Welsh</b>  | N/A   |
| <b>Biodiversity</b>                                     | N/A   |
| <b>Well-being of Future Generations</b>                 | <p>Approving additional Contractors onto the List of Approved Contractors will enable NPT to procure works with these companies. This will allow the companies to provide employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.</p> <p>The List of Approved Contractors gives local companies the opportunity to be contracted by NPT to undertake works.</p> <p>Several departments have been involved in checking that Contractors are suitable to undertake works for the category/ies. The approved list is available for use by all departments in the Authority wishing to undertake works.</p> |

## Overall Conclusion

Please indicate the conclusion reached:

- **Continue** - as planned as no problems and all opportunities have been maximised
- **Make adjustments** - as potential problems/missed opportunities/negative impacts have been identified along with mitigating actions
- **Justification** - for continuing with the initiative even though there is a potential for negative impacts or missed opportunities
- **STOP** - redraft the initiative as actual or potential unlawful discrimination has been identified

Please provide details of the overall conclusion reached in relation to the initiative



## 11. Actions

What actions are required in relation to obtaining further data/information, to reduce or remove negative impacts or improve positive impacts?

| Action | Who will be responsible for seeing it is done? | When will it be done by? | How will we know we have achieved our objective? |
|--------|--|--------------------------|--|
| N/A    |  |                          |  |

## 12. Sign off

|                      | Name            | Position                          | Signature | Date     |
|----------------------|-----------------|-----------------------------------|-----------|----------|
| <b>Completed by</b>  | Amanda Phillips | Programme & Commissioning Manager | AJP       | 14/10/21 |
| <b>Signed off by</b> | David Griffiths | Head of Engineering & Transport   | DWG       | 18/10/21 |

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Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

## NEATH PORT TALBOT COUNTY BOROUGH COUNCIL

### Streetscene & Engineering Cabinet Board Cabinet 5<sup>th</sup> November 2021

#### Report of the Head of Engineering & Transport David W. Griffiths

#### **Matter for Decision**

**Wards Affected:** Neath North, Port Talbot & Pontardawe

#### **Christmas Parking 2021**

#### **Purpose of the Report:**

To seek Members' approval for the Christmas parking arrangements for 2021 in the Authority's town centres Pay & Display car parks (excluding The Gnoll, Afan Forest Park and Aberavon Seafront car parks).

#### **Executive Summary:**

The report sets out proposals to consider free Christmas car parking over the festive season.

#### **Background:**

It is acknowledged that our town centres and the traders who operate within them have been significantly affected during lockdown with many being prevented from opening. To support our town centre economy it is acknowledged that providing free Christmas car parking would further support their recovery.

It was agreed last year that the Council offer free car parking in all the Authority's Pay & Display car parks from Saturday 12<sup>th</sup> December 2019 to Friday 1<sup>st</sup> January 2020 inclusive.

It is proposed this year the Council offers free car parking from Saturday 11<sup>th</sup> December 2021 to Saturday 1<sup>st</sup> January 2022.

**Financial Impacts:**

Free Christmas parking is estimated to cost circa £20,000 for the town centres' car parks this year, based upon the current tariff structure which has to be absorbed by the consolidated Parking Management Account.

**Integrated Impact Assessment:**

A first stage Impact Assessment has been undertaken to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment, attached at Appendix A, has indicated that a more in-depth assessment is not required.

**Valleys Communities Impacts:**

No implications.

**Workforce Impacts:**

No implications.

**Legal Impacts:**

No implications.

**Risk Management Impacts:**

Any potential loss of income would need to be absorbed by the Parking Account.

**Consultation:**

There is no requirement for consultation on this item. Signage will be placed on-site informing members of the public.

## **Recommendations:**

It is recommended having due regard to the integrated impact screening assessment that:-

Free Christmas parking is approved in Neath, Port Talbot and Pontardawe Pay & Display car parks from Saturday 11<sup>th</sup> December 2021 to Saturday 1<sup>st</sup> January 2022 inclusive (excluding The Gnoll, Afan Forest Country Park and Aberavon Seafront car parks).

## **Reasons for Proposed Decision:**

To support our town centre economy it is acknowledged that providing free Christmas car parking would further support their recovery.

## **Implementation of Decision:**

The decision is proposed for implementation after the three day call in period.

## **Appendices:**

Appendix A - First Stage IIA

## **List of Background Papers:**

None

## **Officer Contact:**

Steve Cook, Parking Manager  
Tel. No: 01639 763968  
Email: [environment@npt.gov.uk](mailto:environment@npt.gov.uk)

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## Impact Assessment - First Stage

### 1. Details of the initiative

|  |
|--|
| <b>Initiative description and summary: Free Christmas Car Parking 2021</b> |
| <b>Service Area: Parking Services</b>                                      |
| <b>Directorate: Environment</b>  |

### 2. Does the initiative affect:

|                                      | Yes | No |
|--------------------------------------|-----|----|
| Service users                        | ✓   |    |
| Staff                                | ✓   |    |
| Wider community                      | ✓   |    |
| Internal administrative process only |     | ✓  |

### 3. Does the initiative impact on people because of their:

|                            | Yes | No | None/<br>Negligible | Don't<br>Know | Impact<br>H/M/L | Reasons for your decision (including evidence)/How<br>might it impact? |
|----------------------------|-----|----|---------------------|---------------|-----------------|--|
| Age                        |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Disability                 |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Gender Reassignment        |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Marriage/Civil Partnership |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Pregnancy/Maternity        |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Race                       |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Religion/Belief            |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Sex                        |     | ✓  |                     |               |                 | Free car parking for all users.  |
| Sexual orientation         |     | ✓  |                     |               |                 | Free car parking for all users.  |

**4. Does the initiative impact on:**

|   | Yes | No | None/<br>Negligible | Don't<br>know | Impact<br>H/M/L | Reasons for your decision (including evidence used) /<br>How might it impact? |
|---|-----|----|---------------------|---------------|-----------------|---|
| People's opportunities to use the Welsh language            |     | ✓  |                     |               |                 |   |
| Treating the Welsh language no less favourably than English |     | ✓  |                     |               |                 |   |

**5. Does the initiative impact on biodiversity:**

|  | Yes | No | None/<br>Negligible | Don't<br>know | Impact<br>H/M/L | Reasons for your decision (including evidence) /<br>How might it impact?                            |
|--|-----|----|---------------------|---------------|-----------------|---|
| To maintain and enhance biodiversity   |     | ✓  |                     |               |                 |   |
| To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc. | ✓   |    |                     |               |                 | There will be an effect with air quality as we are encouraging more vehicles in to the town centre. |



**6. Does the initiative embrace the sustainable development principle (5 ways of working):**

|  | Yes | No | Details  |
|--|-----|----|--|
| <b>Long term</b> - how the initiative supports the long term well-being of people                                |     | ✓  | This is a short term initiative that is undertaken every year to promote the town centres.             |
| <b>Integration</b> - how the initiative impacts upon our wellbeing objectives                                    | ✓   |    | The initiative will help with the economic growth over the period.                                     |
| <b>Involvement</b> - how people have been involved in developing the initiative                                  | ✓   |    | Local elected members have been involved in this initiative as well as Cabinet Members and the Leader. |
| <b>Collaboration</b> - how we have worked with other services/organisations to find shared sustainable solutions | ✓   |    | Discussion have been undertaken with the Aberavon Shopping Centre Manager.                             |
| <b>Prevention</b> - how the initiative will prevent problems occurring or getting worse                          |     | ✓  |  |

**7. Declaration - based on above assessment (tick as appropriate):**

|  |   |
|--|---|
| A full impact assessment (second stage) <b>is not</b> required   | ✓ |
| Reasons for this conclusion  |   |
| There is no reason for a full integrated impact assessment as the free car parking initiative will benefit all car park users. |   |

|  |  |
|--|--|
| A full impact assessment (second stage) <b>is</b> required |  |
| Reasons for this conclusion                                |  |
|  |  |

Page 46

|               | Name               | Position                        | Signature | Date     |
|---------------|--------------------|---------------------------------|-----------|----------|
| Completed by  | Steve Cook         | Parking Manager                 |           | 05.11.21 |
| Signed off by | David W. Griffiths | Head of Engineering & Transport |           | 05.11.21 |

## NEATH PORT TALBOT COUNTY BOROUGH COUNCIL

### Streetscene & Engineering Cabinet Board

5<sup>th</sup> November 2021

#### **Matters for Information**

**Wards Affected:** All Wards

#### **Annual Parking Report**

##### **Purpose of Report**

To report to Members' for their attention the annual parking services report for 2020/21.

##### **Executive Summary**

Under the Traffic management Act 2004 there is a requirement to publish an annual parking report. Attached in appendix 1 is the annual report for 2020/21.

##### **Background**

Members will need to note that due to the Covid 19 pandemic and the advice given to local authorities from the Welsh Local Government Association (WLGA) and the British Parking Association (BPA) not to enforce some restrictions the penalty charge level has reduced during the period of the report.

##### **Financial Impact**

Financial information is contained in the annual report.

##### **Integrated Impact Assessment**

There is no requirement to undertake an Integrated Impact Assessment as this report is for information purposes.

##### **Workforce Impacts**

There are no workforce impacts.

## **Legal Impacts**

There are no legal impacts

## **Risk Management**

None.

## **Consultation**

No consultation required.

## **Recommendations**

It is recommended that:-

That members acknowledge the parking report and that it be published on the authority's parking services web page.

## **Reasons for proposed Decision**

To bring to members attention the contents of 2020/21 annual parking services report.

## **Implementation of Decision**

This item is for information only.

## **Appendices / List of Background Papers**

Annual Parking Services Report 2020/21.

## **Officer Contact**

Steve Cook, Parking Manager  
Tel. No: 01639 763968  
email: [s.cook@npt.gov.uk](mailto:s.cook@npt.gov.uk)



Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

## Parking Services Annual Report 2020 – 2021



# Parking Services Annual Report 2020 - 2021

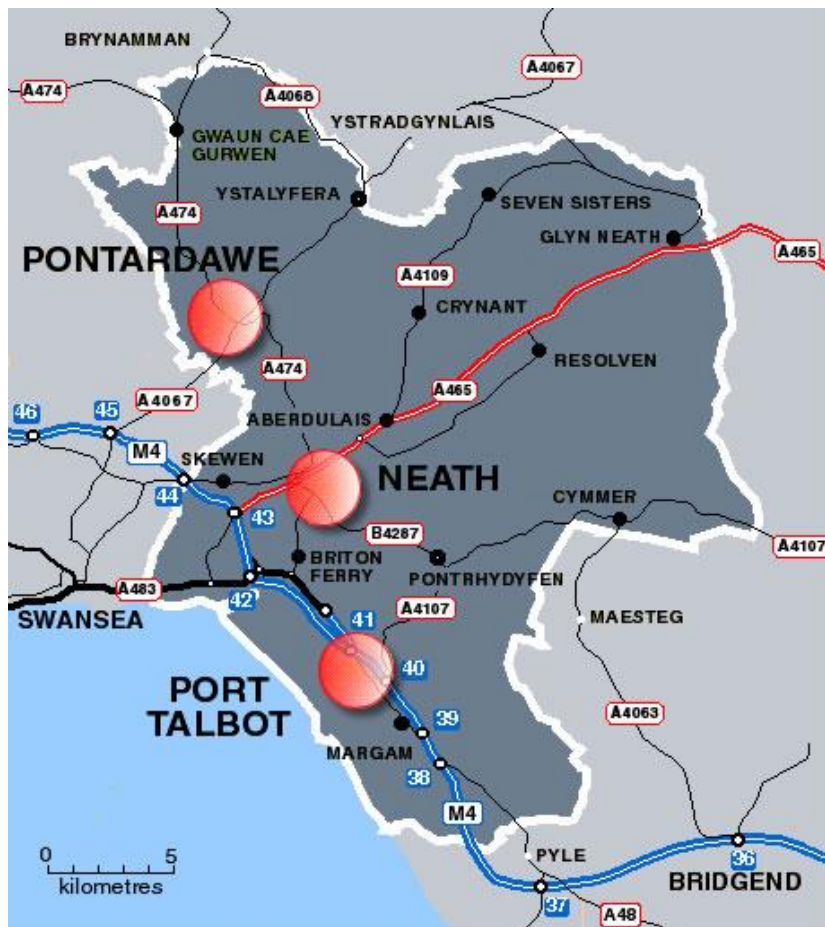
## I n d e x

|                                   | Page No. |
|-----------------------------------|----------|
| 1. Introduction                   | 3-4      |
| 2. Aim and Objectives             | 5        |
| 3. History and Current Operations | 5        |
| 4. Car Parks                      | 6        |
| 5. Safer Parking                  | 7        |
| 6. Innovation & Technology        | 7        |
| 7. Statistics                     | 8-9      |
| 8. Appeals and Challenges         | 9        |
| 9. Traffic Enforcement Centre     | 10       |
| 10. Income and Expenditure        | 10       |
| 11. Training                      | 10       |
| 12. Acknowledgements              | 11       |

## 1 Introduction

Neath Port Talbot is a county borough and one of the unitary authority areas of Wales. Neath Port Talbot is the 8th most populous county in Wales and the third most populous county borough.

The county borough borders the other principal areas of Bridgend and Rhondda Cynon Taff to the east, Powys and Carmarthenshire to the north and Swansea to the west. Its principal towns are Neath, Port Talbot and Pontardawe.



Neath Port Talbot County Borough Council were the first to introduce Decriminalised Parking Enforcement under the Road traffic Act 1991 in Wales. The enforcement of road traffic regulation orders by the authority came in to effect on 1<sup>st</sup> June 1999.

On 31<sup>st</sup> March 2008 the Road Traffic Act 1991 was replaced by the Traffic Management Act 2004, and all authorities currently enforcing traffic orders under the 1991 Act automatically became Civil Enforcement Areas under the new Traffic Management Act.

Enforcement of the on and off street traffic regulation orders comes under the Traffic management Act 2004.

(Section 78 of the Traffic Management Act 2004 and Regulation 9 of the Civil Enforcement of Road Traffic Contraventions (General Provisions) (Wales) Regulations 2013).

Civil Enforcement of Parking Contraventions (Representations and Appeals) (Wales) Regulations 2008.

Civil Enforcement of Parking Contraventions (Penalty Charge Notices, Enforcement and Adjudication) (Wales) Regulations 2008.

There is a requirement set out in the Statutory Guidance provided pursuant to the Traffic Management Act 2004 is for Local Authorities to produce and publish an annual report on parking enforcement activities.

Neath Port Talbot is committed to providing a fair, consistent and transparent Parking Service. Publishing clear statistical and financial information will help achieve this. This report includes information about the level of parking enforcement activity for the period 2020/2021, as well as the income and expenditure recorded in our 'parking account'.



## 2 Aim and Objectives

The overall aim of the Authority is to provide a Parking Service that supports residents, visitors and businesses within Neath Port Talbot. We set out to achieve this through the following objectives:

- Improve road safety and access to services for all road users including pedestrians
- Support the local economy by ensuring a turnover of vehicles in short stay parking bays

## 3 History and Current Operation

In 1999 the authority tendered two contracts one for the enforcement of on and off street parking and the other for the notice processing. The two contracts were won by Sureway Parking Services, which changed its name during the contract period to Vinci Parking Services.

Following a Member review, when the contracts were due to expire the authority brought both contracts back in-house in April 2007, transferring the Vinci personnel over to the authority.

Parking Services were initially based in Port Talbot town centre up until August 2013. This allowed for a shop facility for the public to purchase permits and pay parking fines. New software was purchased in 2013 which allowed residents to purchase or renew parking permits online. This meant there was no longer the need for a parking shop. Members of the public are still able to contact parking services with any queries via e-mail, telephone or in writing.

Parking Services operate from The Quays, in Baglan Energy Park and employs 18 members of staff. Enforcement is operational seven days a week. Seven beats cover the Borough, three in Neath, one in Port Talbot, one in Skewen, one in Pontardawe and one mobile patrol covering the rural areas. In addition to this a Mobile CCTV vehicle was obtained in February 2019 to assist in the enforcement of more rural areas and to keep up with demand for a presence outside schools.

Those people who have been issued with a Penalty Charge Notice are able to pay either over the telephone payment line, online, by post or in person at either of our Civic Centres. All appeals have to be in writing to Parking Services.

## 4 Car Parks

Neath Port Talbot Council operate most of the car parks in the Borough. Cashless payment is available in all car parks by means of card readers installed into the Pay and Display Machines.

The table below shows a list of car parks operated by Neath Port Talbot Council along with capacity levels.

| <b>Car Park</b>                   | <b>Location</b> | <b>Capacity</b> |
|-----------------------------------|-----------------|-----------------|
| High Street Car Park              | Neath           | 37              |
| Milland Road Car Park             | Neath           | 450             |
| Neath Multi-Storey Car Park       | Neath           | 600             |
| Rosser Street Car Park            | Neath           | 33              |
| Herbert Street Lower Car Park     | Pontardawe      | 19              |
| Herbert Street Upper Car Park     | Pontardawe      | 37              |
| Pontardawe By-Pass Car Park       | Pontardawe      | 44              |
| Bay View                          | Port Talbot     | 68              |
| Bethany Square Car Park           | Port Talbot     | 166             |
| Harbourside - Parkway             | Port Talbot     | 111             |
| Ocean Way                         | Port Talbot     | 282             |
| Port Talbot Civic                 | Port Talbot     | 80              |
| Victoria Road                     | Port Talbot     | 20              |
| Port Talbot Multi-Storey Car Park | Port Talbot     | 705             |
| Scarlet Avenue Car Park           | Port Talbot     | 111             |
| St Mary's Car Park                | Port Talbot     | 41              |
| Station Road Car Park             | Port Talbot     | 107             |

## 5 Safer Parking

The Safer Parking Scheme is an initiative of the Association of Chief Police Officers aimed at reducing crime in parking facilities.

Thirteen of the car parks managed by Parking Services have achieved Safer Parking status. Park Mark® is awarded to car parks that have met the requirements of a risk assessment conducted by the police.

For customers using a Park Mark® car park, it reduces the fear of crime by showing that measures are in place to create a safer environment. More information and a list of accredited car parks can be found on the safer parking website - <http://www.saferparking.com>.

## 6 Innovation and Technology



During 2020/21 we invested in 11 new Pay and Display Machines as a lot of our old equipment was nearing the end of its working life.

The new machines have the added benefit of contactless payment. This has proven very popular with the public as opposed to the old method of chip and pin.

Where these new machines have been installed more customers are paying by contactless than those who pay by cash. This also has an added benefit for us in that we now spend less time emptying the machines.

It is planned to update more of our machines during 2021/22 if possible.

## 7 Statistics

In the financial year 2020/21, 2,723 Penalty Charge Notices were issued, 2,227 on street and 496 off street.

The table below shows the split of Penalty Charge Notices issued between 01<sup>st</sup> April 2020 and 31<sup>st</sup> March 2021.

|   |             |
|---|-------------|
| Number of Higher Level PCN's Issued                       | 2284        |
| Number of Lower Level PCN's Issued                        | 439         |
| <b>Total Number of PCN's Issued</b>                       | <b>2723</b> |
| Number of PCN's Paid at Discount                          | 1602        |
| Number of PCN's Paid at Non - Discount                    | 237         |
| <b>Total Number of PCN's Paid</b>                         | <b>1839</b> |
| Number of PCN's Appealed Against                          | 807         |
| Percentage of PCN's Appealed Against                      | 35%         |
| <b>Number of PCN's Cancelled as a Result of an Appeal</b> | <b>398</b>  |
| Percentage of Successful Appeals                          | 49%         |
| Numbers of PCN's cancelled for other reasons              | 112         |
| Number of Vehicles Immobilised                            | N/A         |
| Number of Vehicles Removed                                | N/A         |

A total of 510 or 19% of all Penalty Charge Notices issued were cancelled for a variety of reasons. Each case is considered on merit with all mitigating circumstances taken into account.

At the time of reporting the remaining 374 Penalty Charge Notices are at various stages of recovery. Therefore the figures are subject to variation.

The table below shows the split of Penalty Charge Notices and the total of deployed hours on a monthly basis between 1<sup>st</sup> April 2020 and 31<sup>st</sup> March 2021.

| MONTH         | PCN ISSUED  | HOURS DEPLOYED | PCN PER HOUR |
|---------------|-------------|----------------|--------------|
| APRIL         | 0           | 0              | 0            |
| MAY           | 0           | 0              | 0            |
| JUNE          | 0           | 0              | 0            |
| JULY          | 0           | 0              | 0            |
| AUGUST        | 343         | 768            | 0.45         |
| SEPTEMBER     | 492         | 747            | 0.66         |
| OCTOBER       | 555         | 890            | 0.62         |
| NOVEMBER      | 605         | 864            | 0.70         |
| DECEMBER      | 502         | 570            | 0.88         |
| JANUARY       | 0           | 0              | 0            |
| FEBRUARY      | 0           | 0              | 0            |
| MARCH         | 226         | 120            | 1.88         |
| <b>TOTALS</b> | <b>2723</b> | <b>3959</b>    | <b>0.69</b>  |

## 8 Appeals and Challenges

All members of the public have the right to challenge a Penalty Charge Notice.

This can be done informally by writing to NPTCBC within 28 days of the issue of the Penalty Charge Notice or formally by making representation to NPTCBC after a Notice to Owner has been served on the person or company registered with the DVLA as the owner of the vehicle.

There is also recourse to appeal to The Traffic Penalty Tribunal which is an independent adjudication service if they are not happy about a decision that has been reached by Neath Port Talbot Council in regard to the Penalty Charge Notice.

10 appeals were made to Traffic Penalty Tribunal during 2020/21.

All the required forms that the public need to appeal to the Traffic Penalty Tribunal are sent out with the Notice of Rejection that the appellant receives from Neath Port Talbot Council Borough Council. Further information can be found at [www.trafficpenaltytribunal.gov.uk](http://www.trafficpenaltytribunal.gov.uk).

## 9 Traffic Enforcement Centre

When all attempts to recover outstanding charges have failed, Neath Port Talbot Council will apply to the Traffic Enforcement Centre (TEC) for a Warrant of Control. This enables the collection of the unpaid debt to the Authority. These warrants are then issued to Enforcement Companies to recover the outstanding debt at no cost to the Authority.

Further information about the Traffic Enforcement Centre can be found at:

<https://courtribunalfinder.service.gov.uk/courts/traffic-enforcement-centre-tec>

The Authority regrets that this action became necessary to collect outstanding charges; however, it is only taken when all other attempts to collect outstanding Penalty Charge Notices have failed. During 2020/21, 719 Warrants of Control were issued.

## 10 Income and Expenditure

|                         | £         |
|-------------------------|-----------|
| Car Park Income         | 1,038,995 |
| Car Park Expenditure    | 769,990   |
| Car Park Balance        | 269,005   |
| Enforcement Income      | 480,640   |
| Enforcement Expenditure | 812,550   |
| Enforcement Balance     | 331,910   |
| Total Balance           | 62,905    |

## 11 Training

Regular briefings are held with all Civil Enforcement Officers and Parking Assistants to ensure that the enforcement and administration of Parking Services throughout the Borough is fair, transparent and consistent.

In conjunction with the Authorities Training & Development Department we have developed a good working relationship with Alpha Parking, Talk Training and ACT Training Limited which have proven to be very successful.

## 12 Acknowledgements

Ian Rees (Parking Services)

Melanie Davies (Accounts)

Please contact Steve Cook, Parking Manager on 01639 763968 or by e-mail at [s.cook@npt.gov.uk](mailto:s.cook@npt.gov.uk) if you have any questions in relation to this report.

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## Streetscene and Engineering Cabinet Board

5<sup>th</sup> November 2021

### Report of the Head of Engineering & Transport

D.W Griffiths

#### Matter for Decision

Wards affected: Godre'r Graig

#### Design Options for the Remediation of Cilmaengwyn Tip above Godre'r Graig Primary School

#### Purpose of Report

To inform Members of the results of Earth Science Partnership's work to investigate design options and produce budget estimates for works associated with the remediation of Cilmaengwyn Spoil Tip and for Members to agree the option to be pursued.

#### Executive Summary

The report outlines the remediation options and associated costs for the remediation of Cilmaengwyn Spoil Tip.

#### Background

Inspection of historic Ordnance Survey plans dating from 1877 indicates the overall site to have initially developed with the formation of two small quarries, one named Cwar Pentwyn and the other unnamed and described as an 'old quarry'. A mine entry (adit) is shown as an 'old coal level' at the southwest corner of Cwar Pentwyn with a small spoil tip immediately adjacent. Mounds of quarry waste are shown to the south and east of both quarries.

The 1898 plan shows Cwar Pentwyn to have expanded slightly, with a corresponding increase in spoil tip mounds to the south and east. Both quarries appear to be disused on the 1918 Edition plan, with Godre'r Graig School having been constructed during the period between surveys.

The spoil tip to the east is the problematic one above the school. The majority of the land on which this tip is on, is in the ownership of Neath Port Talbot CBC and is registered on the same Land Registry Title as the school. The other tips within this complex are on privately owned land.

A report was presented to the Streetscene and Engineering Cabinet Board on 21<sup>st</sup> May 2021 seeking permission to direct award Earth Science Partnership work to investigate design options and produce budget estimates for works associated with the remediation of Cilmaengwyn Spoil Tip. The results of that work are contained within this Cabinet Board Report.

### Remedial Options

In June 2021 ESP were asked to investigate design options and produce budget estimates for works associated to the tip, to include, but not limited to:

Option 1 - The development of a design and production of a budget estimate for the removal of the spoil materials associated with Cilmaengwyn Godre'r Graig tip.

Option 2 - The development of a design and production of a budget estimate for a hard engineering solution in the form of bunds, catch walls etc., to protect Godre'r Graig Primary School from the slip of any spoil material associated with Cilmaengwyn Godre'r Graig Tip; and

Option 3 - The development of a design and production of a budget estimate for demolition of Godre'r Graig Primary School building and reusing the site with a community benefit. This option will have to take into account the effect on properties downhill of the school from the slip of any spoil material associated with Cilmaengwyn Godre'r Graig Tip.

The full Earth Science Partnership Tip Remediation Assessment Report ESP.7234e.04.3564 is attached in Appendix A.

The detailed advice for each of the three options which includes risk and costs is as follows:

#### Option 1 - Removal of Quarry Spoil Tip

This option would involve the design and removal of approximately 90,000m<sup>3</sup> of material. The work would take a year to complete and the budget estimate is £6.1m. NPT would also have to enter into negotiations with a number of private land owners to agree access for the vehicles needed to remove the material, this will remove the risk.

#### Option 2 - Engineered Structure

This option would involve the construction of a retaining structure above the school which is designed to catch any falling material. The work would take an estimated 8-10 months to complete and the budget estimate is £1.4m. NPT would also have to enter into negotiations with a number of private land owners to agree purchase & access rights for construction. This option would not remove the risk which would require on-going monitoring and management.

#### Option 3 - Demolition of School

This option would involve the demolition of the school building, however the site will not be suitable for re-use in terms of a community benefit. As part of this work the area will be remediated and landscaped with a bund formed to protect the properties downhill of the school from any slip materials. The work would take an estimated 3 months to complete and the budget estimate is £245K.

### **Financial Impact**

Option 1 will cost £6.1MTB

Option 2 will cost £1.4M

Option 3 will cost £245K

Dependent upon which option is pursued funding will need to be identified.

## **Integrated Impact Assessment**

A first stage impact assessment has been undertaken to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment, attached at Appendix B, has indicated that a more in-depth assessment is not required. A summary is included below:-

A full impact assessment is not required, as the proposed remediation works will provide a benefit to the Community.

### **Valleys Community Impacts**

Option 1 would remove the risk.

Option 2 the risk and hazard will remain, but mitigation work undertaken as set out in Earth Science Partnership report.

Option 3 the risk would remain, mitigation work undertaken would enhance the local environment and protect properties downhill of the school.

### **Workforce Impacts**

There are '**No Implications**' associated with this report.

### **Legal Impacts**

There are '**No Implications**' associated with this report.

### **Risk Management Impacts**

Option 1 would remove the hazard and the risk.

Options 2 & 3 the hazard would remain but mitigation work undertaken to reduce the risk from tip spoil flow.

It should be noted that the recent monitoring undertaken has recorded movement in the vicinity of the tip which has now been assessed as Actively Unstable.

## **Consultation**

Local Members and the Godre'r Graig Board of Governors and Head Teacher have been briefed on the options report. The report was published on the Councils website and a letter drop undertaken advising the community of the report. In addition an on-line resident engagement briefing was facilitated to explain the options report to the local community.

## **Recommendations**

Having due regard to the Integrated Impact Screening Assessment it is recommended that:

Option 3 - The demolition of Godre'r Graig Primary School building be implemented to manage the risk and improve the local environment.

## **Reason for Proposed Decision**

To manage the risks and liabilities associated with spoil tip debris flow at the site, as this is the only affordable solution available to the council.

## **Implementation of Decision:**

The decision is proposed for implementation after the three day call in period.

## **Appendices**

Appendix A – Earth Science Partnership - Tip Remediation Assessment Report ESP.7234e.04.3564.

Appendix B – Integrated Impact Assessment.

## **Background Papers**

None.

## **Officer Contact**

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Tel. No. 01639 686463

Email [h.hasan@npt.gov.uk](mailto:h.hasan@npt.gov.uk)

# Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

## Godre'r Graig Primary School, Godre'r Graig Tip Remediation Assessment

Report Reference: ESP.7234e.04.3564

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# Earth Science Partnership

Consulting Engineers | Geologists | Environmental Scientists

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## Godre'r Graig Primary School Tip Remediation Assessment

**Prepared for:**  
**Neath Port Talbot County Borough Council**  
 The Quays, Baglan Energy Park,  
 Brunel Way, Briton Ferry,  
 SA11 2GG



Report Reference: **ESP.7234e.04.3564**

| Revision          | Status  | Date      | Written by                        | Checked and Approved by   |
|-------------------|---|-----------|-----------------------------------|---|
| 0                 | Draft   | July 2021 | Matthew Elcock<br>BEng (Hons) FGS | Matthew Eynon<br>BSc (Hons) MSc CGeol EurGeol FGS<br>RoGEP Specialist |
| 1                 | Draft   | July 2021 |                                   |   |
| 2                 | Draft   | Aug 2021  |                                   |   |
| 3                 | Draft   | Aug 2021  |                                   |   |
| <b>Signature:</b> |   |           |                                   |   |
| <b>Notes:</b>     | 1. Once issued this document is Uncontrolled, for the latest version and/or to confirm you have authorisation to use it please contact the Earth Science Partnership at <a href="mailto:enquiries@earthsciencepartnership.com">enquiries@earthsciencepartnership.com</a> or by telephone at 029 2081 3385.<br>2. This document has been optimised for double sided printing and therefore may produce some blank pages when printed single sided. |           |                                   |   |

# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Introduction</b>                                | <b>1</b>  |
| 1.1      | Background .....                                   | 1         |
| 1.2      | Updated Monitoring .....                           | 3         |
| 1.3      | Objective and Scope of Works.....                  | 4         |
| 1.4      | Report Format .....                                | 4         |
| 1.5      | Limitations of Report .....                        | 4         |
| <b>2</b> | <b>Removal of Quarry Spoil Tip</b>                 | <b>6</b>  |
| 2.1      | Removal Method .....                               | 6         |
| 2.2      | Costs .....  | 6         |
| 2.3      | Assumptions.....                                   | 7         |
| <b>3</b> | <b>Engineered Structure</b>                        | <b>8</b>  |
| 3.1      | Engineered Solution Selection .....                | 8         |
| 3.2      | Design of Barrier .....                            | 11        |
| 3.3      | Construction Method Including Temporary Works..... | 12        |
| 3.4      | Costs .....  | 13        |
| 3.5      | Programme.....                                     | 13        |
| 3.6      | Assumptions.....                                   | 14        |
| <b>4</b> | <b>Demolition of School and Assessment</b>         | <b>15</b> |
| 4.1      | Method of Demolition .....                         | 15        |
| 4.2      | Cost of Demolition.....                            | 16        |
| 4.3      | Assumptions.....                                   | 16        |
| 4.4      | Future Use .....                                   | 16        |
| 4.5      | Risk Assessment.....                               | 17        |
| <b>5</b> | <b>Discussion</b>                                  | <b>20</b> |
| 5.1      | Introduction .....                                 | 20        |
| 5.2      | Outcomes.....                                      | 21        |
| <b>6</b> | <b>References</b>                                  | <b>22</b> |

- Appendix A Inclinometer Locations and Records
- Appendix B Access Points for Tip Removal
- Appendix C Embedded Retaining Wall Calculation
- Appendix D Cost detail of Wall, Walters School widening cost plan
- Appendix E Demolition Timeline for Godre'r Graig School

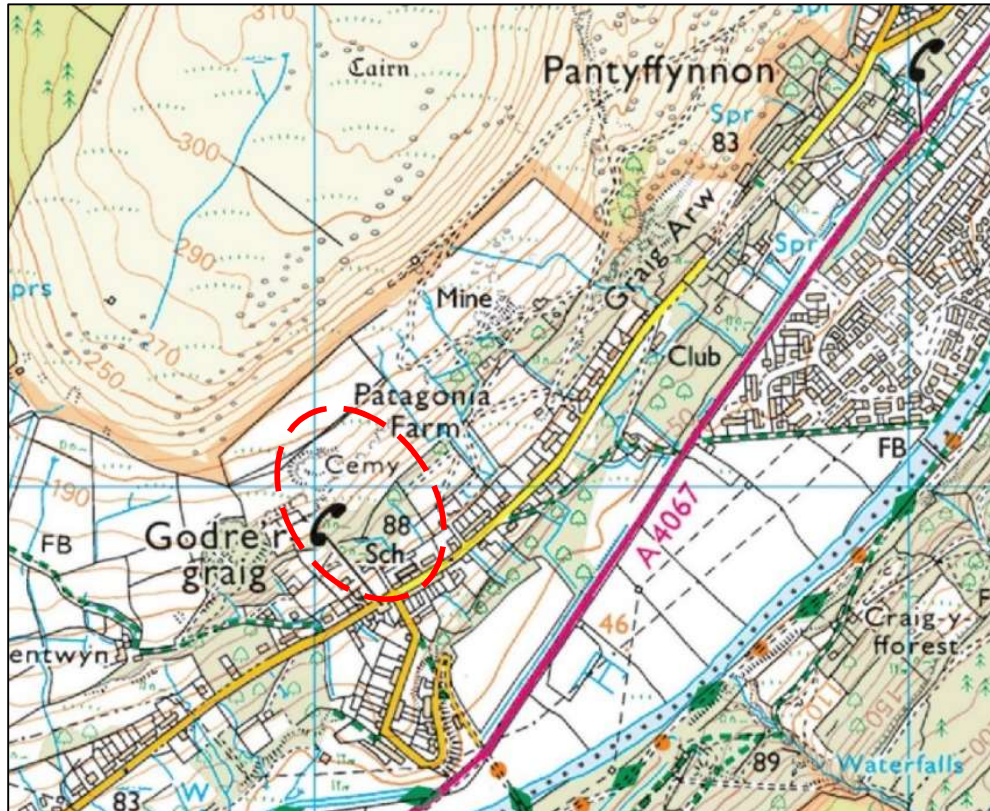
## General Notes

# 1 Introduction

## 1.1 Background

Neath Port Talbot County Borough Council (NPTCBC), hereafter known as the Client, have instructed Earth Science Partnership Ltd (ESP) to undertake an assessment of remediation options for the Quarry Spoil Tip that is located on slopes above Godre'r Graig Primary School (the School), located in the Tawe Valley.

The general location of the school and tip are shown in Insert 1 below.



*Insert 2: School and surrounding area with tip above shown by red circle.  
1:10,000 (Ordnance Survey License No.: AL100015788).*

ESP have undertaken previous assessments for the area that included consideration of risks to school users and separately, village residents. The details of the previous reports are provided below:

### Godre'r Graig School

- Preliminary Landslide Hazard and Risk Assessment – ESP.7234e.3221 Rev 1 (August 2019); and
- Preliminary Investigation and Additional Assessment – ESP.7234e.02.3302 Rev 2 (February 2020)

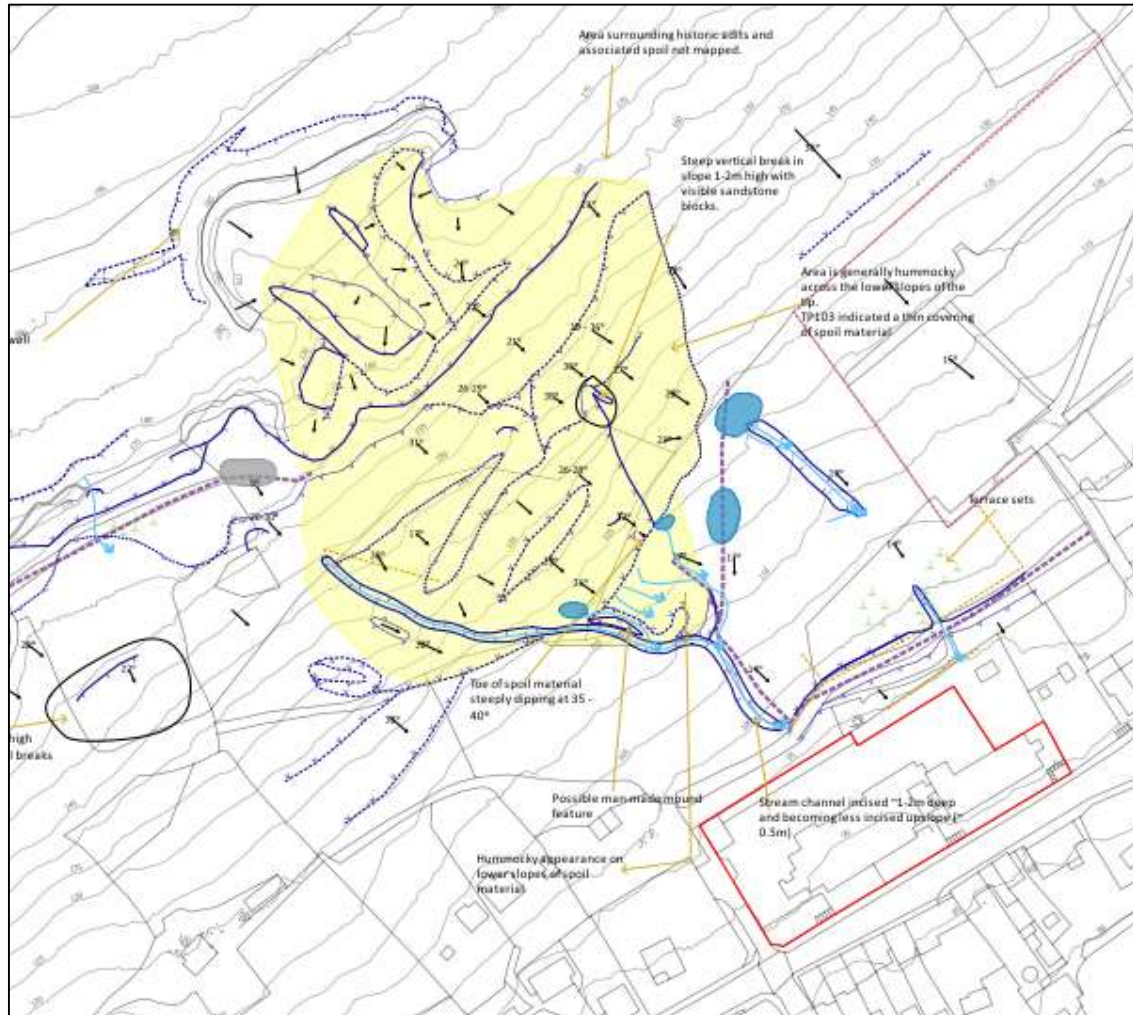
### Wider Godre'r Graig Village

- Preliminary Landslide Hazard and Risk Assessment - ESP.7372e.3337 Rev 2 (June 2020)



Executive summaries for the above assessments have also been produced and issued to avoid repetition and for clarity they are not referred to in this document. In addition, a Land Stability Summary was prepared that combined all the above information, again, this is not discussed in this report for clarity.

The extents of the Quarry Spoil Tip are shown in Insert 2 below. The Tip is located on relatively steeply sloping ground above the school, and it is well vegetated. There are no formal or easy access routes to the Tip, and we understand that all access is via private land.



*Insert 2: Quarry Spoil Tip boundary plan – Tip shown by yellow shaded area*

The previous work included a risk management or mitigation options assessment, where different options were scored for effectiveness, durability, practicability, sustainability, and cost. The scoring system was given +1, for a positive impact, 0 (or zero) for a neither negative or positive impact and a -1 for a negative impact, all relative to the other options. The risk management or mitigation options that scored the highest were:

1. A combined approach of incorporating drainage to create betterment only, install monitoring points and produce warning system, 2 points; or
2. Close the school such that the tip no longer represents a risk to school users, 1 point.

In addition, the assessment showed that physically removing the tip or some combination of hard engineered structure(s) were unfavourable, with -1 point and -4 points respectively.

## 1.2 Updated Monitoring

### 1.2.1 Introduction

As discussed in Section 1.1, an intrusive investigation of the Quarry Spoil Tip was carried out in 2019 and early 2020. This investigation included the installation of ground movement monitoring equipment, inclinometers, which were installed in three boreholes (BH01, BH04 and BH05).

In addition to the previous phase, the inclinometers were recently monitored on three occasions, between May 2021 and July 2021, the full inclinometer results are provided in Appendix A and the data from each position described below.

### 1.2.2 BH01

The inclinometer was installed to a depth of 5.3m and the base of the Quarry Spoil Tip in this borehole is at 4m depth. Monitoring has shown movement between depths of about 3.5m to 2.5m toward the valley floor (downhill), in the order of 14mm.

### 1.2.3 BH04

The inclinometer in BH04 was installed to a depth of 7.2m and the quarry Spoil Tip extends to a depth of 6m. The data from the monitoring is not conclusive; it may be that the base of the installation is moving with surrounding soils. The graphs do however suggest movement, in the region of 25mm, and for the lower half to be moving more than the upper half.

### 1.2.4 BH05

The quarry Spoil Tip material extends to a depth of 5.2m in BH05 and the inclinometer extends to a depth of 11.2m. Monitoring has shown movement toward the base of the Quarry Spoil Tip and potentially in the underlying soils at a depth of around 5m to 6m, where it has cumulatively moved approximately 18mm. Movement has also been measured at shallow depth in the installation, within the body of the Quarry Spoil Tip material.

### 1.2.5 Summary

The results from BH04 are not conclusive; however, the two other installations clearly show downward movement of the Quarry Spoil Tip (towards the school).

Our previous assessment suggested that the Quarry Spoil Tip was *Marginally Stable*, i.e., that it was likely to fail at some time in response to destabilising forces reaching a certain level of activity. The information from the inclinometers suggest that the Quarry Spoil Tip is moving and is *Actively Unstable*, i.e., destabilising forces are producing continuous or intermittent movements.

### 1.3 Objective and Scope of Works

An option from our previous assessment (ESP.7234e.02.3302 Rev 2 (February 2020)) was a combined approach of incorporating drainage to create betterment, installing monitoring points and producing a warning system. NPTCBC have confirmed this option has been discounted due to:

- Uncertainties at this stage in achieving a 'stable' condition that meets modern design standards.
- Confidence in the efficacy of a warning system, and safeguarding of school users, without significant investment in supplementary investigation, long-term ground monitoring and assessment. It is likely the school would remain displaced until defined.
- The unknown scale of remedial work following any future ground movement with a remaining risk of future displacement of the school.

In June 2021 NPTCBC instructed ESP to investigate design options and produce budget estimates for works associated to the tip, to include, but not limited to:

1. The development of a design and production of a budget estimate for the removal of the spoil materials associated with Cilmaengwyn tip (Godre'r Graig Tip).
2. The development of a design and production of a budget estimate for a hard engineering solution in the form of bunds, catch walls etc., to protect Godre'r Graig Primary School from the slip of any spoil material associated with Cilmaengwyn Tip (Godre'r Graig Tip); and
3. The development of a design and production of a budget estimate for demolition of Godre'r Graig Primary School building and reusing the site with a community benefit. This option will have to take into account the effect on properties downhill of the school from the slip of any spoil material associated with Cilmaengwyn Tip (Godre'r Graig Tip).

To achieve the above, ESP commenced with a review of our previous assessments and formed a project team with other specialists (Civil and Structural Engineers, Earthworks and demolition Contractors) to provide robust and current commercial information on possible cost and design.

### 1.4 Report Format

The report provides information required by the brief in separate sections. The option for removing the tip and all associated works and costs are provided in Section 2. The selection process and anticipated costs for a hard engineered solution is provided in Section 3 and Section 4 discussed demolition costs and a risk assessment for houses down gradient of the school. The report concludes with a discussion as Section 5.

This report is issued in a digital format only.

### 1.5 Limitations of Report

This report represents the findings of the brief as detailed in Section 1.1. It should be appreciated that only a limited intrusive investigation has been undertaken to date. Should an alternative current land use or structure be considered, the findings of the assessment should be

re-examined relating to the new proposals or land uses. Where preventative, ameliorative or remediation works are required, professional judgement will be used to make recommendations that satisfy the site-specific requirements in accordance with good practice guidance.

Consultation with regulatory authorities will be required with respect to proposed works as there may be overriding regional or policy requirements which demand additional work to be undertaken. It should be noted that both regulations and their interpretation by statutory authorities are continually changing.

This report represents the findings and opinions of experienced geo-environmental and geotechnical specialists. Earth Science Partnership does not provide legal advice and the advice of lawyers may also be required.

## 2 Removal of Quarry Spoil Tip

The remediation option to remove the tip was discussed in our February 2020 report (ESP.7234e.02.3302 Rev 2) and removes the risk from school users, such that the school could continue to be used once removal is complete.

Practicalities, sustainability and cost were negative reasons for this option, however, it probably proved the most effective and durable solution as the hazard and risk is removed and also retains the school.

### 2.1 Removal Method

Suitably experienced contractors were asked to assist in preparing an outline scheme to remove the tip and their assessment follows site inspections.

Initial proposals suggest that access to the tip could be made via two points, and both will be required to remove all the Quarry Spoil Tip safely; the details of such access points are provided in Appendix A.

A compound could be set up in the school, largely utilising existing access routes. Some betterment to existing routes would be required and costs to achieve this has been estimated.

The exact method of removal would be subject some further investigation, which is allowed for but will generally comprise removing spoil from the top down. Temporary barriers have been allowed for to protect from small detachments, rocks and small boulders.

Conventional plant will be used, including 20t and 30t tracked excavators, D6 bulldozer, a25 articulated trucks and road lorries.

There would be a pre-commencement period of around 6 weeks to ensure risk assessments are completed and removal is estimated to take 51 weeks, based on 40 lorry loads of material removed from site per day.

### 2.2 Costs

The costs are provided in Table 1 below, which outlines the main items covered and the general process of the tip removal.

**Table 1:** Work items and costs for Tip removal

| Description  | Quantity | Unit            | Rate (£)   | Amount (£) |
|--|----------|-----------------|------------|------------|
| Additional Investigation and Assessment for production of safe method of work. | 1        | Provisional Sum | 60,000     | 60,000     |
| Preliminaries (inc. supervision and accommodation)                             | 1        | No              | 210,082.66 | 210,082.66 |
| Security   | 1        | No              | 71,253.14  | 71,253.14  |
| Road Sweeping  | 1        | No              | 86,014.31  | 86,014.31  |
| Site Clearance   | 17,479   | m <sup>2</sup>  | 4.35       | 76,033.65  |
| Stockproof fencing   | 550      | m               | 10.88      | 5,984.00   |
| Excavate and dispose to on site stockpile                                      | 87,395   | m <sup>3</sup>  | 10.54      | 921,143.30 |



| Description   | Quantity | Unit            | Rate (£)   | Amount (£)          |
|---|----------|-----------------|------------|---------------------|
| Dispose off-site from stockpile   | 87,395   | m <sup>3</sup>  | 44.91*     | 3,924,909.45        |
| Access tracks, widening for road and site lorries   | 1        | Provisional Sum | 500,000.00 | 500,000.00          |
| Full Time Engineer Supervision and Support including reporting                                    | 1        | Provision Sum   | 205,720.00 | 205,720.00          |
| Contamination and Geotechnical testing  | 1        | Provisional Sum | 10,000     | 10,000              |
| Reinstatement of original ground surface, streams etc. Investigation to check remaining stability |          |                 | TBC        | TBC                 |
| Access through third-party land   |          |                 | Client     | Client              |
| <b>Estimated Total (exc VAT)</b>  |          |                 |            | <b>6,071,140.51</b> |
| <b>Notes:</b>   |          |                 |            |                     |
| *Inert waste classification and rate assumed. To be confirmed with further testing.               |          |                 |            |                     |

### 2.3 Assumptions

Calculations were made to estimate the volume of the Quarry Spoil Tip. This was achieved by using the mapped area of the tip (Insert 2), a combination of the topographical information and LiDAR information and an assumed general thickness of 5m. This allowed a digital model to be generated and the assumed volume of the tip is 87,395m<sup>3</sup>. Additional work has been allowed to confirm this quantity before commencement.

The cost has been prepared on the assumption that the Quarry Spoil Tip is to be removed to landfill, at an inert rate. In reality, there may be some soils that will not be inert but quantities at this stage are not known, or easily estimated. Thus, the landfill cost could be higher.

The proposed access routes pass through private land and agreements would need to be made by the client with specific landowners on access, and possible compensation agreed. No rate has been included in the above costing for these agreements and works associated with third party land access or any reinstatement requirements.

The whole Quarry Spoil Tip would need to be cleared of vegetation and access routes would be made that would impact local ecology. No assessment to this regard has been made and it is assumed that such impacts will be acceptable, or off set with other schemes. The costs for such impacts are not considered.

It may be possible to reduce the landfill costs through processing the material as a recycled aggregate. Permits, exemptions or management plans would be required to enable this.

### 3 Engineered Structure

Some form of hard engineered solution was discussed in our February 2020 report (ESP.7234e.02.3302 Rev 2). There are numerous types of hard engineering solutions available that could provide betterment, but not all are suitable.

The quantity of material that could fail is not predictable without robust site investigation and assessment. Modern-day structures are designed to resist a set amount of force and there are uncertainties and limitations in selecting structure types. It must be appreciated that there is a great deal of uncertainty on how much soil and rock material may move downslope and therefore the effectiveness of this method of protection is unknown.

Ongoing monitoring of the condition of the tip and structure are critical. Continuing maintenance and repair are likely to be required due to damage from falling material and reconstruction is likely to be required following large ground movements.

The current wall/engineered structure design is not intended to protect the school from a failure of the whole Quarry Spoil Tip. The initial design of the wall is to provide some protection for the school users from early and small ground failures/detachments; if a failure occurred it would be necessary to vacate the school until a safety assessment is made. The duration of any remedial works will influence the timescales of reoccupation of the school following ground movement; school staff and pupils will be temporarily displaced.

Engineered solutions fared poorly in our previous remediation options assessment; however, it is considered below as part of the brief provided by NPTCBC. This assessment has been implemented with suitably qualified and experienced civil and structural engineer partners.

#### 3.1 Engineered Solution Selection

##### 3.1.1 Introduction

Several options for the form of the retaining structure have been considered and these can be grouped into the following categories:

- Gravity retaining;
- Reinforced concrete cantilever;
- Reinforced soil retaining; and
- Embedded wall.

Gravity retaining walls rely on their self-weight to retain the wall behind, they are designed such that their mass prevents them from overturning, and they also rely on the friction between the underside and the soil beneath.

Reinforced concrete cantilever walls act in a similar manner but partially rely on the self-weight of the soil that is retaining. The bases of both of these types of walls are shallow and considering the potentially considerable depth of quarry spoil, these types of wall will bear on to the soil that has the potential to slide. Therefore, these types of walls have been discounted.

Reinforced soil walls utilise a system of anchors embedded into the retained earth but the quarry spoil is of a significant depth so the anchors will be within the soil that has the potential to slip

and therefore this type of wall has also been discounted. The soil anchors would require to be embedded into the weathered bedrock and in the event of a landslide the nails may bend and fail.

Embedded retaining walls will pass through the quarry spoil (if located on the tip) and penetrate the underlying competent strata and would be designed such that it is not reliant on the quarry spoil. Embedded retaining walls may be designed as a continuous line of bored piled or as a 'King Post' wall using steel columns spaced at centres commonly between 1m and 3m with the space between infilled with precast concrete panels. It has therefore been concluded that the embedded retaining wall option is the most viable option for the retaining structure solution and with the need for the structure to project above the existing ground surface to catch any potential landslip overtopping the structure and reaching the school, a King Post wall is considered the preferred solution.



*Insert 3: King Post Retaining wall example*

### 3.1.2 King Post Retaining Wall

King Post walls involve drilling a hole with a continuous flight auger (CFA) large diameter piling rig, then inserting a steel column and infilling with concrete. The steel column will protrude above the ground and precast concrete panels will be inserted into the spaces between them. Their advantages include:

- They are fast to construct;
- They are generally more cost effective than other types of embedded retaining walls;
- Their installation is generally vibration free due to the use of a CFA rig;
- The steel sections require little or fixings thus reducing the requirement or working space on site;

- They are suitable for use in hard ground (the ground investigation indicated underlying bedrock);
- There is little or no spoil generated on site; and
- They are less affected by groundwater.

The main disadvantage of this type of wall is the limited site access, however this will be common to all solutions. The location of the proposed wall is shown in red on the insert below, and measures some 110m in length.



*Insert 4: Possible location of wall*

### 3.1.3 Other Options Discounted

Consideration was given to some form of netting with soil nailing. Specialist installers confirm that both options would be unsuitable for the site due to the morphology of the tip and variable thickness circa 5 to 19m.

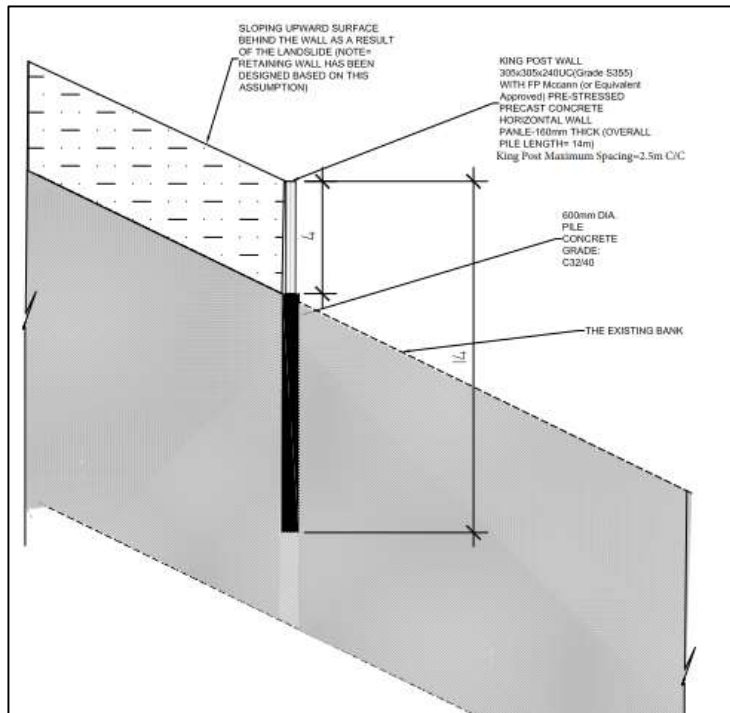
Rock netting has been considered as an infill between the king posts as an alternative to precast concrete panels as they will have less of a visual impact and will reduce the construction period. However, at this stage, this option has been discounted for two reasons. Firstly, there is a concern that in the event of a landslide occurring after a prolonged period of rainfall then the quarry spoil may act as a slurry so netting will be less effective. Secondly, rock netting is generally suited for local loads such as rocks and boulders travelling at high speed and not a larger landslide failure. Examples of rock netting are provided below:



*Insert 5: Rock Netting examples*

### 3.2 Design of Barrier

A retained height of 4m has been estimated for the purposes of this design and has been derived from the geophysical survey that shows the depth of spoil reducing near the bottom of the embankment. Detailed analysis may inform that a height of greater than 4m is required and if that is found to be the case, then a different form of retaining wall may be required with an associated increase in cost that is likely to more than double what is considered within this assessment. With an overall retaining height of 4m, the embedded retaining wall is comprised of steel king posts with the pre-stressed precast horizontal wall panels. The normal maximum spacing of the king post is 2.5m (centre to centre). The minimum embedment depth of the king post section is 10m therefore the overall length of the king post is about 14m. The steel king post section is 305x305x240 UC (grade S355). The thickness of the horizontal wall panel is 160mm and should be satisfactory to resist and transfer the lateral actions as a result of the earth pressure. Preliminary scheme design calculations of the proposed retaining wall are provided in Appendix B, and are illustrated below in Insert 6.



*Insert 6: Typical Section view of King Post Wall.*



### 3.3 Construction Method Including Temporary Works

It is considered that the existing primary school could be used as the site compound for site welfare and material storage. The existing access road could be widened to form the main access to the site, see insert 7 below.



Insert 7: Existing School Entrance to be widened.

The improved and widened access road would also provide access to the work area for operatives and large plant (such as a piling rig and craneage). The location near the proposed retaining wall would need to be cleared of topsoil, vegetation and levelled for works to commence. A suitable working platform would need to be constructed prior to piling and lifting activities (in the area shown in the photograph below). Following piling, the wall would then be installed utilising a crane, after installation the site would be demobilised and the car park returned to normal operation. It is proposed (if acceptable), that the widened road (school access ) would be left as a permanent install.



Insert 8: Existing School Entrance to be widened.

### 3.4 Costs

The budget costs make some assumptions at this stage and are indicative only. However, they are accurate enough for this assessment.

A detailed site investigation would need to be carried out to enable accurate design of the wall, and this is based upon a 10m embedded depth of the wall and the ground conditions we expect at this stage.

**Table 2:** Work items and costs for Wall

| Description   | Quantity                    | Unit            | Rate (£)     | Amount (£)          |
|---|-----------------------------|-----------------|--------------|---------------------|
| Additional Investigation and Assessment for production of safe method of work.      | 1                           | Provisional Sum | 250,000      | 250,000.00          |
| Site Surveys  | See breakdown in Appendix C |                 |              | 10,000.00           |
| Site Establishment and Clearance  | See breakdown in Appendix C |                 |              | 67,100.00           |
| Site Access roads and Working Platforms   | See breakdown in Appendix C |                 |              | 103,039.96          |
| Piling  | See breakdown in Appendix C |                 |              | 91,500.00           |
| Retaining Structure   | See breakdown in Appendix C |                 |              | 484,262.00          |
| Landscaping   | See breakdown in Appendix C |                 |              | 28,160.00           |
| Preliminaries   | See breakdown in Appendix C |                 |              | 117,609.29          |
| Professional Costs and inc. 10% project contingency on construction.                | See breakdown in Appendix C |                 |              | 234,434.52          |
| Possible variation due to emerging conditions                                       |                             |                 |              | Unknown variable    |
| Access through third-party land   |                             |                 | Client       | Client              |
| Diversion of overhead cable   |                             |                 | Client       | Client              |
| Regular Inspections by Qualified Person   |                             |                 | 2,000 / year | TBC                 |
| Ongoing Maintenance   |                             |                 | TBC          | TBC                 |
| <b>Estimated Total (Exc. VAT)</b>   |                             |                 |              | <b>1,386,105.77</b> |
| <b>Notes:</b>   |                             |                 |              |                     |
| *Inert waste classification and rate assumed. To be confirmed with further testing. |                             |                 |              |                     |
| Assuming no reinstatement of school access road                                     |                             |                 |              |                     |
| Assuming no planning fees, regulatory actions/responses.                            |                             |                 |              |                     |

### 3.5 Programme

The programme for the construction of this retaining structure options is estimated as 8 to 10 months, as detailed below:

- Procurement Period: 6-8 weeks.
- Pre-Construction: 12-16 weeks (predominantly led by material lead in times for the retaining structure). No programme allowance has been made for the following:

- Liaising with local authority and acceptance of highway alterations.
- Managing and delivery of service diversion to overhead power line.
- Land ownership disputes.
- Construction: 16 weeks (see below):
  - Site establishment: 4 weeks.
  - Working platform and muck away: 4 weeks.
  - Construction of wall: 6 weeks.
  - Site Demobilisation: 2 weeks.

### 3.6 Assumptions

There are some design assumptions/risks, as detailed below:

- The proposed solution is based on high level information and will require a detailed analysis to inform the final design.
- A detailed design involving a finite element analysis to model the ground characteristics of the quarry spoil in a flow state and the underlying strata may require a more robust wall with a significantly greater construction cost than what is currently estimated.
- The proposed solution is based on an estimated volume of quarry spoil. The final design will require an accurate assessment of the volume of spoil that has the potential to move.
- Further ground investigation will be required to determine soil and rock parameters to inform the final design of the retaining wall.
- No planning permission costs are allowed, and specialists should be consulted if these will be required for any items of the scheme, such as the road widening, or permanent structure.

In addition, there are some possible construction risks, as discussed below:

- There is an existing retaining wall at the rear boundary of the school. No site traffic is to traverse, or no works are to be carried out within the zone of influence. The zone of influence will be determined at detailed design stage.
- The wall is to be constructed at the base of a slope that has been shown to be at risk from movement. Monitoring of the slope is to be in place prior to any construction work and shall remain in place for the full duration of the works.
- The works will traverse existing streams. The Contractor is to provide a method statement to ensure that these streams are not contaminated during the works.



## 4 Demolition of School and Assessment

The option to mitigate the risk from the Quarry Spoil Tip by abandoning the school was discussed in our February 2020 report (ESP.7234e.02.3302 Rev 2). This option was scored negatively on cost, but the option is effective and durable. Social and economic impacts were not easily assessed and should also be considered carefully by the client.

The closure of the school would lead to its requirement for demolition. A demolition contractor has been consulted to help provide budget costs for the school demolition.

Once the school is demolished, there is a possible increased risk to properties and people down gradient of the school from the Quarry Spoil Tip and this is assessed in Section 4.5.

### 4.1 Method of Demolition

Following an asbestos survey, suitably trained and qualified asbestos removal operatives should work to a specific Plan of Work to remove all remaining asbestos-containing materials identified on the Demolition Asbestos Survey provided in strict accordance with the Control of Asbestos Regulations 2012. The works should be undertaken concurrently with the soft strip.

Material arising from the internal clearance and soft strip works should be processed and segregated at the source and transported to a controlled waste collection zone.

Movements on and off the site should always be fully supervised by a Banksman operative and our site entrance/exit will be attended by a Gateman.

All demolition works will be planned and executed following BS6187:2011 'Code of practice for full and partial demolition' and following specific timescale within the tender documents.

A demolition specification excavator should work utilising specialist hydraulic demolition attachments to carefully remove the roof structure and then carefully reduce the exterior and interior walls on a section by section basis and all works carried out in a controlled methodical manner.

Extreme caution will be taken during the demolition of the building to ensure that all demolition arisings are brought inside the confines of the site and that no material goes out over the site boundary.

Once the superstructure demolition works are complete, the slabs and foundations of the building will be removed. Dust suppression should be applied to ensure that dust does not become an issue for neighbouring properties.

Trained and qualified demolition operatives should always be on hand to marshal the demolition excavator throughout this process whilst ensuring they are a safe distance away from the face of the demolition work.

The programme for the whole demolition works is about 11 weeks, and a detailed plan is provided in Appendix D.

## 4.2 Cost of Demolition

and costs anticipated for this option are provided in Table 3 below.

**Table 3:** Work items and budget costs for School Building Demolition.

| Description   | Quantity | Unit            | Rate (£) | Amount (£)        |
|---|----------|-----------------|----------|-------------------|
| Asbestos Survey   | 1        | Provisional sum | 5,000    | 5,000             |
| Asbestos Removal  | 1        | Provisional sum | 25,000   | 25,000            |
| Ecology Works   | 1        | Provisional sum | 5,000    | 5,000             |
| Demolition Costs  | 1        | Provisional sum | 160,000  | 160,000           |
| Cost of assessment and design works for site reinstatement – for ongoing landslide protection and ecological value <sup>1</sup> | 1        | Provisional sum | 50,000   | 50,000            |
| Costs for site reinstatement/construction   |          |                 |          | TBC               |
| <b>Estimated Total (exc VAT)</b>  |          |                 |          | <b>245,000.00</b> |
| <b>Notes:</b>   |          |                 |          |                   |
| 1. Not including any investigation work required.   |          |                 |          |                   |
| 2. Consideration to any drainage/surface water management options not considered.   |          |                 |          |                   |
| 3. Costs of service disconnections/realignments not considered.   |          |                 |          |                   |

## 4.3 Assumptions

The costs for asbestos surveys and removal are approximate only and no access to the school was made to provide the costs, full access should be made to allow a final price to be provided.

The programme and costs allow to crush and leave material on site (e.g., 6F2 fill).

The end use of the area is not known and costs for this are not foreseeable. There will be some ecological costs, survey work and consultation that is not provided as a detailed budget and will need to be reviewed once proposal details are known.

## 4.4 Future Use

We understand that there are no development proposals for the site and consideration is being given to the use of the site for community and ecological benefit.

The use of the site will need to limit or prevent public access and we suggest it be landscaped by a suitable qualified and experienced ecologist to provide significant ecological benefit to Godre'r Graig.

As discussed below in Section 4.4, the future design of the site will need to incorporate some risk mitigation measures for properties downslope of the school, and this should be designed in parallel to any ecological scheme.

## 4.5 Risk Assessment

### 4.5.1 Introduction

Our previous reports have provided risk assessments for both Godre'r Graig Primary School (ESP.7234e.3221 Rev 1 August 2019 and ESP.7234e.02.3302 Rev 2 February 2020) and the Wider Godre'r Graig Village (ESP.7372e.3337 Rev 2 June 2020).

If the tip were to fail, detached material would move downhill perpendicular to the contours and thus only impacted the school. Removal of the school structure would remove a barrier for any downward moving failed material from the tip. This section provides an updated risk assessment for the properties down-gradient of the school.

There are other landslide hazards in the Godre'r Graig area; our Wider Village assessment showed that residential properties in Godre'r Graig are at a very low to low risk.

### 4.5.2 Updated Assessment – Quarry Spoil Tip impacting residential houses

The below assessment is qualitative, and generally based on a degree of believe assessment using the Australian Geomechanics Society (AGS, 2007), and subsequent papers to standardise its use worldwide (Fell et al 2008); as used in previous assessment for the site. It draws on previous knowledge of the site which is held in previous reports.

Table 4 provides a qualitative measure of likelihood and Table 5 presents a qualitative measure of consequences.

**Table 4:** Qualitative Measures of Likelihood

| Approx. Annual Probability |                    | Implied Indicative Landslide Recurrence Interval (years) |        | Description   | Descriptor     | Level |
|----------------------------|--------------------|--|--------|---|----------------|-------|
| Indicative Value           | Notional Boundary  |  |        |   |                |       |
| 10 <sup>-1</sup>           |                    | 10   |        | The event is expected to occur over the design life                         | Almost Certain | A     |
|                            | 5x10 <sup>-2</sup> |  | 20     |   |                |       |
| 10 <sup>-2</sup>           |                    | 100  |        | The event will probably occur under adverse conditions over the design life | Likely         | B     |
|                            | 5x10 <sup>-3</sup> |  | 200    |   |                |       |
| 10 <sup>-3</sup>           |                    | 1,000  |        | The event could occur under adverse conditions over the design life         | Possible       | C     |
|                            | 5x10 <sup>-4</sup> |  | 2,000  |   |                |       |
| 10 <sup>-4</sup>           |                    | 10,000   |        | The event might occur under very adverse circumstances over the design life | Unlikely       | D     |
|                            | 5x10 <sup>-5</sup> |  | 20,000 |   |                |       |
| 10 <sup>-5</sup>           |                    | 100,000  |        | The event is conceivable but only under exceptional                         | Rare           | E     |

| Approx. Annual Probability |                    | Implied Indicative Landslide Recurrence Interval (years) |         | Description  | Descriptor      | Level |
|----------------------------|--------------------|--|---------|--|-----------------|-------|
| Indicative Value           | Notional Boundary  |  |         |  |                 |       |
|                            |                    |  |         | circumstances over the design life.                          |                 |       |
|                            | 5x10 <sup>-6</sup> |  | 200,000 |  |                 |       |
| 10 <sup>-6</sup>           |                    | 1,000,000  |         | The event is inconceivable or fanciful over the design life. | Barely Credible | F     |

**Notes:**  
 1. The above table is adapted from the AGS 2007 Appendix C tables.

**Table 5:** Qualitative Measures of Consequence

| Description   | Descriptor    | Level |
|---|---------------|-------|
| Structure(s) completely destroyed and/or large-scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.           | Catastrophic  | 1     |
| Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage. | Major         | 2     |
| Moderate damage to some of structure, and/or significant part of the site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.             | Moderate      | 3     |
| Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works.  | Minor         | 4     |
| Little damage.  | Insignificant | 5     |

**Notes:**  
 1.The above table is adapted from the AGS 2007 Appendix C tables.  
 2.The table primarily considered risk to property.

The associated levels from Table 4 and 5 are then used in Table 6 to provide a qualitative risk ranking and Table 7 provides example implications for each risk ranking.

**Table 6:** Qualitative Risk Analysis Matrix

| LIKELIHOOD                 | CONSEQUENCE (TO PROPERTY) |            |               |            |                            |
|----------------------------|---------------------------|------------|---------------|------------|----------------------------|
|                            | 1<br>Catastrophic         | 2<br>Major | 3<br>Moderate | 4<br>Minor | 5<br>Insignificant         |
| <b>A – Almost Certain</b>  | Very High                 | Very High  | Very High     | High       | Medium or Low <sup>2</sup> |
| <b>B – Likely</b>          | Very High                 | Very High  | High          | Medium     | Low                        |
| <b>C – Possible</b>        | Very High                 | High       | Medium        | Medium     | Very Low                   |
| <b>D – Unlikely</b>        | High                      | Medium     | Low           | Low        | Very Low                   |
| <b>E - Rare</b>            | Medium                    | Low        | Low           | Very Low   | Very Low                   |
| <b>F – Barely Credible</b> | Low                       | Very Low   | Very Low      | Very Low   | Very Low                   |

**Notes:**  
 1.The above table is adapted from the AGS 2007 Appendix C tables.  
 2.Further consideration required, see AGS 2007 Appendix C tables for clarification.

**Table 7: Risk Level Implications**

| Risk Level   | Example Implications <sup>1</sup>  |
|--|--|
| <b>Very High</b>   | Unacceptable without treatment. Extensive detailed investigation, research, planning and implementation of treatment options essential to reduce risk to low. May be too expensive or impractical. Work likely to cost more than value of property.                              |
| <b>High</b>  | Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to low. Work would cost a substantial sum in relation to the value of the property.   |
| <b>Medium</b>  | May be tolerated in certain circumstances (subject to regulator approval) but requires investigation, planning and implementation of treatment options to reduce the risk to low. Treatment options to reduce the risk to low risk should be implemented as soon as practicable. |
| <b>Low</b>   | Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.   |
| <b>Very Low</b>  | Acceptable. Manage by normal slope maintenance procedures.   |
| <b>Notes:</b><br>1.The above table is adapted from the AGS 2007 Appendix C tables. |  |

Our previous assessment suggested that movement of the Quarry Spoil Tip was possible and that if a detachment were to reach the school, moderate damage would occur. This resulted in a medium risk.

There are 12 residential houses located immediately downslope of the primary school, on the opposite site of Graig Road. These are terraced and semi-detached properties which front directly onto Graig Road, gardens are to the rear of the properties, i.e., to the south. The approximate horizontal distance between the toe of the Quarry Spoil Tip and these houses is 100m or more.

In comparison, the houses are located at a greater distance from the Quarry Spoil Tip to the school and there are no gardens between the Quarry Spoil Tip and houses. On this basis, a failure of the Quarry Spoil Tip has been assumed to cause minor damage to the residential properties, which using a possible likelihood, results in a medium risk. This medium risk is unlikely to be acceptable to the client and some risk mitigation measures will be required.

The simplest method of reducing the risk to the residential houses is to incorporate some landslide protection and this could be achieved by some form of barrier or bund on the lower and level school site. A possible outcome could be to use the (processed) demolition arisings of the school to create a 2m to 3m high engineered bund on the school site which would present an informal barrier. The bund would need to be designed and include adequate drainage for long term stability.

If an engineered bund were to be created on the school site and be situated between the Quarry Spoil Tip and the 12 residential houses, the anticipated damage to residential houses would be lowered, and we would assume that little damage would occur.

Assuming little damage were to occur, and a possible likelihood, the risk to the residential houses would be very low, which we assume would likely be acceptable by the Client. Based on similar studies, the risk to traffic and pedestrians is likely to be lower due to their transient nature. We recommend no public access to the school site and be designed such that it need no or very little maintenance. It is unlikely to be suitable to construct a similar soil/earth bund feature on the slope above the school for long term protection due to stability issues.

## 5 Discussion

### 5.1 Introduction

The brief provided by NPTCBC was to undertake an assessment of different mitigation options for the Quarry Spoil Tip that is located on slopes above Godre'r Graig Primary School. Previous work included risk management or mitigation options assessment; different options were scored for effectiveness, durability, practicability, sustainability, and cost. The highest scoring (most favourable) options were:

- A combined approach of incorporating drainage to create betterment only, install monitoring points and produce warning system, 2 points. This option has been discounted by NPTCBC, as described earlier in Section 1.3.
- Close the school such that the tip no longer represents a risk to school users, 1 point.

The assessment showed that physically removing the tip or some combination of hard engineered structure(s) were unfavourable, with -1 point and -4 points respectively.

Recent monitoring of the Quarry Spoil Tip has indicted clear ground movement towards the school (~15mm downhill movement to date, see results Appendix A). Our previous assessment suggested that the Quarry Spoil Tip was *Marginally Stable*, i.e., that it was likely to fail at some time in response to destabilising forces reaching a certain level of activity. The information from the inclinometers suggest that the Quarry Spoil Tip is moving and may be **Actively Unstable, i.e., destabilising forces are producing continuous or intermittent movements.**

Our brief from NPTCBC was to consider, and provide budget estimates for, works associated with the tip on the following three options:

1. The development of a design and production of a budget estimate for the removal of the spoil materials associated with Cilmaengwyn tip (Godre'r Graig Tip).
2. The development of a design and production of a budget estimate for a hard engineering solution in the form of bunds, catch walls etc., to protect Godre'r Graig Primary School from the slip of any spoil material associated with Cilmaengwyn Tip (Godre'r Graig Tip); and
3. The development of a design and production of a budget estimate for demolition of Godre'r Graig Primary School building and reusing the site with a community benefit. This option will have to take into account the effect on properties downhill of the school from the slip of any spoil material associated with Cilmaengwyn Tip (Godre'r Graig Tip).

## 5.2 Outcomes

The table overleaf summaries the main costs for each of the three options and provides high level comments on unknowns, assumptions, and other areas for potential costs.

**Table 8:** Review of three chosen remediation options

| Option  | Estimated Cost (Exc. VAT) | ESP Comments   |
|---|---------------------------|--|
| Remove Quarry Spoil Tip   | £6,071,140.51             | <ul style="list-style-type: none"> <li>Long timescale, possible for unforeseen (un-investigated) ground hazard issues.</li> <li>Most costly but retains the school.</li> <li>Some unknowns with access; costs only known through further investigation, design, and consultation.</li> </ul>   |
| Landslide barrier/engineered solution   | £1,386,105.77             | <ul style="list-style-type: none"> <li>Detailed investigation and design required to ensure allowed wall sufficient to meet Client expectations on school protection.</li> <li>Costs will increase significantly if a larger structure required.</li> <li>Unknowns on access and costs only known through further investigation, design, and consultation.</li> <li>Ongoing inspection and maintenance costs (school and barrier).</li> <li>We do not consider this a technically feasible option at present.</li> </ul> |
| Demolition of school and Risk Assessment  | £245,000.00               | <ul style="list-style-type: none"> <li>Socio-economic impacts unknown.</li> <li>Remediation/earthworks are required to lower risk to houses downslope of school.</li> <li>Work could be done in tandem with ecological betterment.</li> <li>Ongoing prevention of access is required unless further slope stability analysis undertaken.</li> </ul>  |
| <p><b>Notes:</b><br/>           No planning or third-party costs included unless discussed in separate estimates.<br/>           Successful planning permissions for each option are assumed and fees to achieve this are not included.</p> |                           |  |

## 6 References

AUSTRALIAN GEOMECHANICS SOCIETY. 2007 Practice Note Guidelines for Landslide Risk Management 2007. Volume 42 No 1 March 2007.

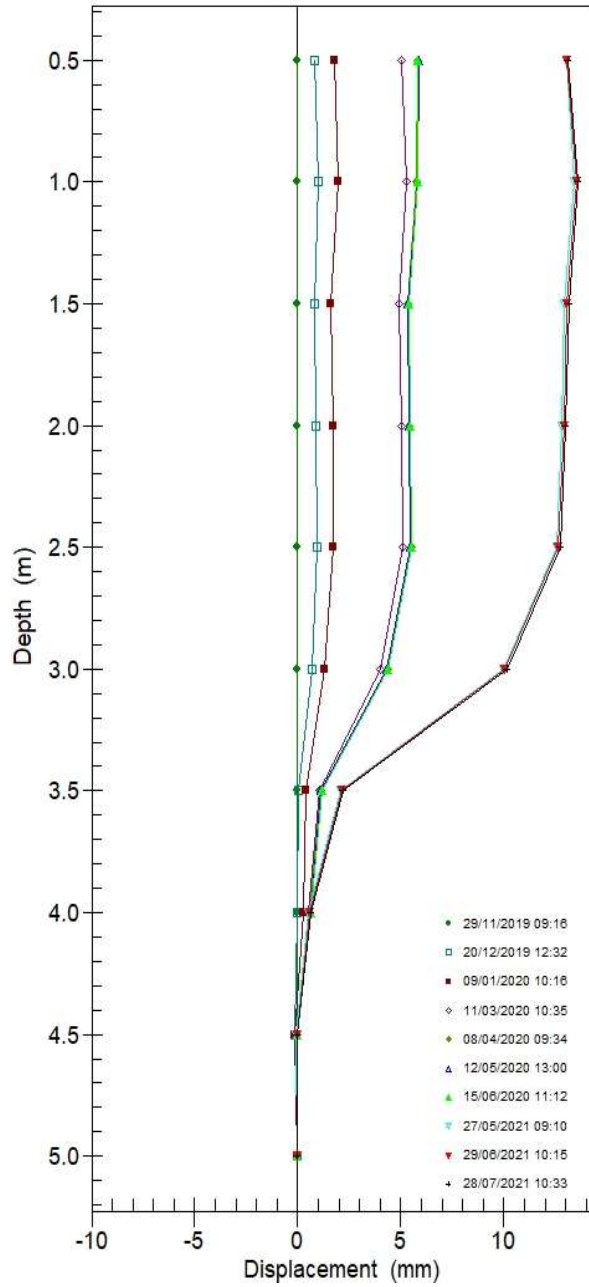
BRITISH STANDARDS INSTITUTION (BSI). 2015. Code of Practice for Ground Investigation. BS5930:2015. HMSO, London.

FELL, R., CORMNINAS. J., BONNARD, C., SAVAGE, W.Z., CASCINI, L., LEROI, E. 2008. Guidelines for landslide susceptibility, hazard and risk zoning for land-use planning Commentary. Engineering Geology. 102 (58-98)



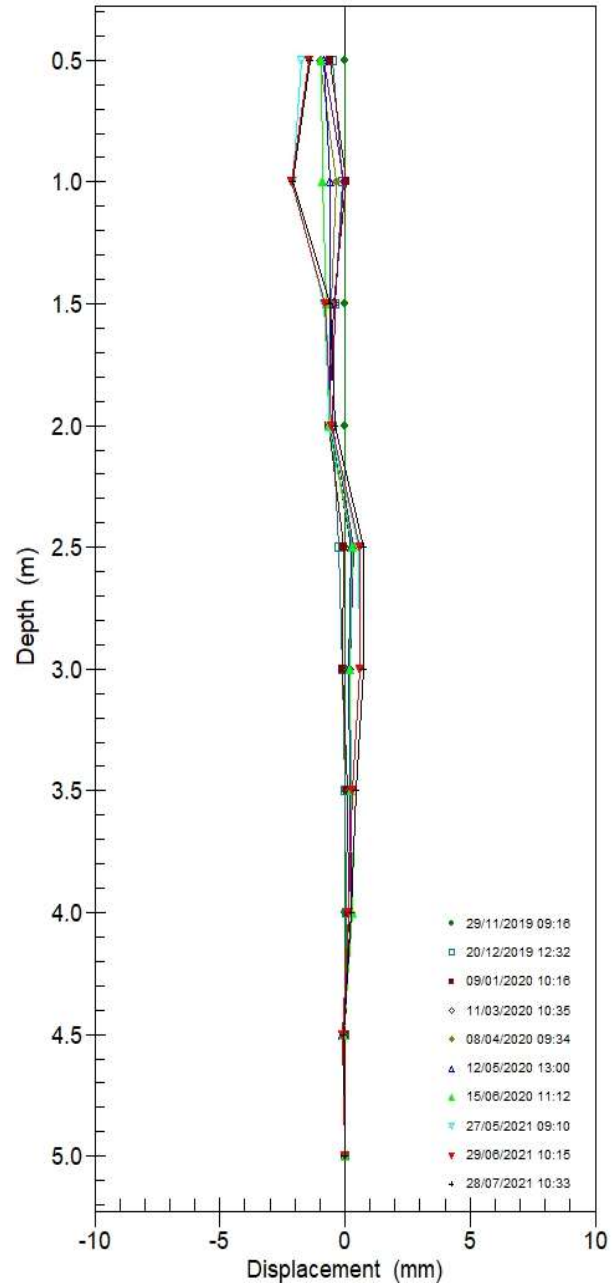
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### 7234e:BH01 - B Axis Cumulative

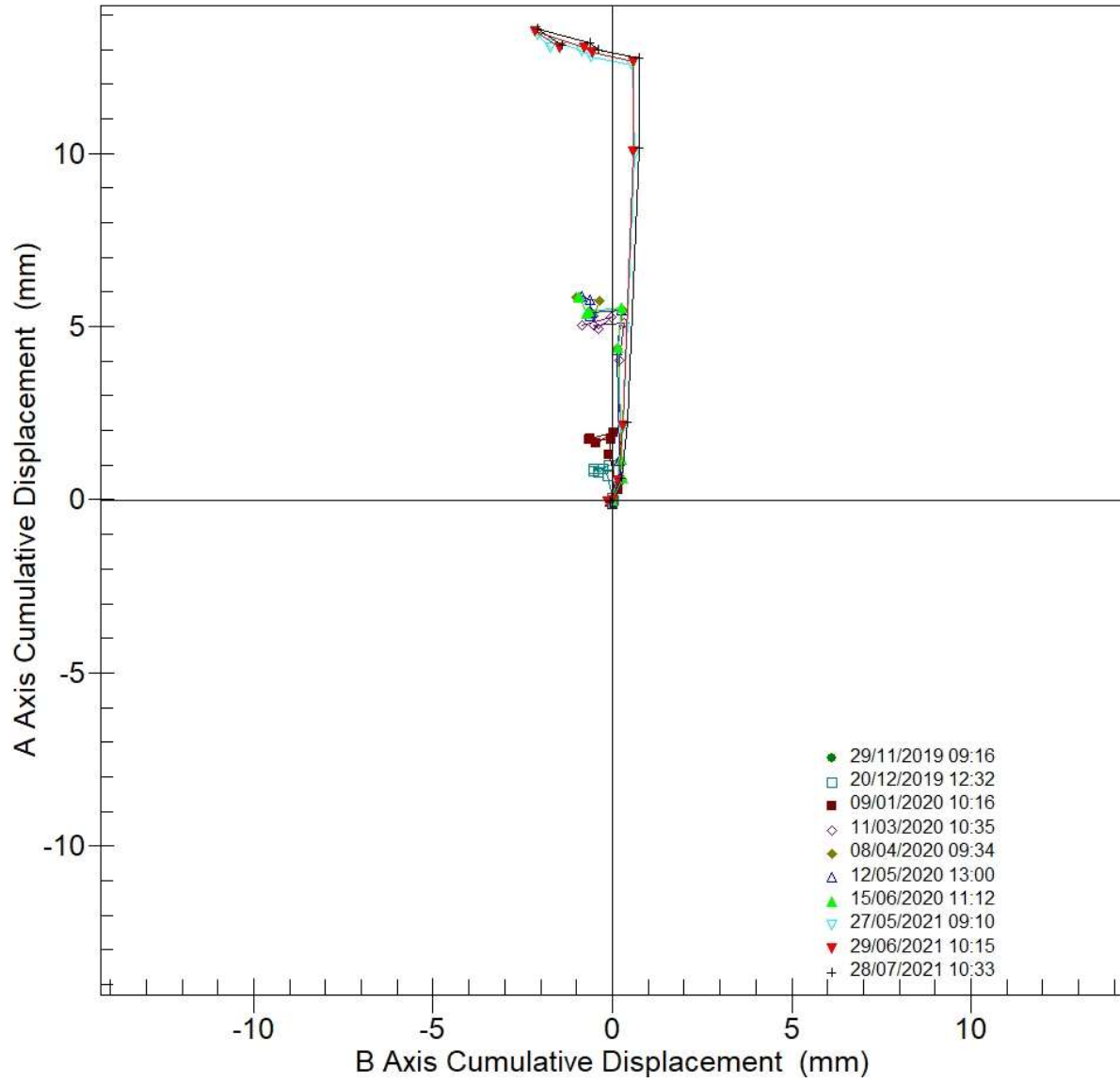
Initial survey: 29/11/2019 09:16



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INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

# 7234e:BH01 - A Axis vs B Axis

Initial survey: 29/11/2019 09:16



PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH01  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:16:45<br>(mm) | 20/12/2019<br>12:32:58<br>(mm) | 09/01/2020<br>10:16:57<br>(mm) | 11/03/2020<br>10:35:31<br>(mm) | 08/04/2020<br>09:34:53<br>(mm) | 12/05/2020<br>13:00:55<br>(mm) | 15/06/2020<br>11:12:12<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | 0.83                           | 1.79                           | 5.03                           | 5.85                           | 5.87                           | 5.84                           |
| 1.0          | 0.00                           | 1.01                           | 1.95                           | 5.28                           | 5.74                           | 5.79                           | 5.84                           |
| 1.5          | 0.00                           | 0.79                           | 1.63                           | 4.92                           | 5.31                           | 5.31                           | 5.38                           |
| 2.0          | 0.00                           | 0.90                           | 1.74                           | 5.04                           | 5.42                           | 5.40                           | 5.43                           |
| 2.5          | 0.00                           | 0.90                           | 1.74                           | 5.10                           | 5.49                           | 5.46                           | 5.53                           |
| 3.0          | 0.00                           | 0.69                           | 1.31                           | 4.03                           | 4.35                           | 4.33                           | 4.38                           |
| 3.5          | 0.00                           | 0.04                           | 0.39                           | 1.05                           | 1.13                           | 1.13                           | 1.15                           |
| 4.0          | 0.00                           | -0.03                          | 0.28                           | 0.54                           | 0.60                           | 0.62                           | 0.61                           |
| 4.5          | 0.00                           | -0.13                          | -0.16                          | -0.09                          | -0.06                          | -0.05                          | -0.02                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:10:48<br>(mm) | 29/06/2021<br>10:15:03<br>(mm) | 28/07/2021<br>10:33:06<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 13.06                          | 13.04                          | 13.11                          |
| 1.0          | 13.42                          | 13.53                          | 13.60                          |
| 1.5          | 12.95                          | 13.06                          | 13.18                          |
| 2.0          | 12.78                          | 12.91                          | 13.00                          |
| 2.5          | 12.55                          | 12.64                          | 12.75                          |
| 3.0          | 9.96                           | 10.04                          | 10.15                          |
| 3.5          | 2.05                           | 2.13                           | 2.23                           |
| 4.0          | 0.50                           | 0.56                           | 0.62                           |
| 4.5          | -0.10                          | -0.06                          | -0.03                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH01  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:16:45<br>(mm) | 20/12/2019<br>12:32:58<br>(mm) | 09/01/2020<br>10:16:57<br>(mm) | 11/03/2020<br>10:35:31<br>(mm) | 08/04/2020<br>09:34:53<br>(mm) | 12/05/2020<br>13:00:55<br>(mm) | 15/06/2020<br>11:12:12<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -0.51                          | -0.60                          | -0.84                          | -1.01                          | -0.86                          | -0.95                          |
| 1.0          | 0.00                           | -0.09                          | 0.05                           | -0.03                          | -0.35                          | -0.62                          | -0.92                          |
| 1.5          | 0.00                           | -0.40                          | -0.44                          | -0.40                          | -0.53                          | -0.61                          | -0.72                          |
| 2.0          | 0.00                           | -0.51                          | -0.64                          | -0.51                          | -0.58                          | -0.60                          | -0.66                          |
| 2.5          | 0.00                           | -0.25                          | -0.03                          | 0.32                           | 0.29                           | 0.26                           | 0.27                           |
| 3.0          | 0.00                           | -0.12                          | -0.10                          | 0.18                           | 0.13                           | 0.13                           | 0.17                           |
| 3.5          | 0.00                           | -0.01                          | 0.12                           | 0.23                           | 0.19                           | 0.20                           | 0.26                           |
| 4.0          | 0.00                           | 0.02                           | 0.16                           | 0.27                           | 0.25                           | 0.24                           | 0.30                           |
| 4.5          | 0.00                           | 0.00                           | -0.01                          | -0.04                          | -0.07                          | -0.08                          | -0.03                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

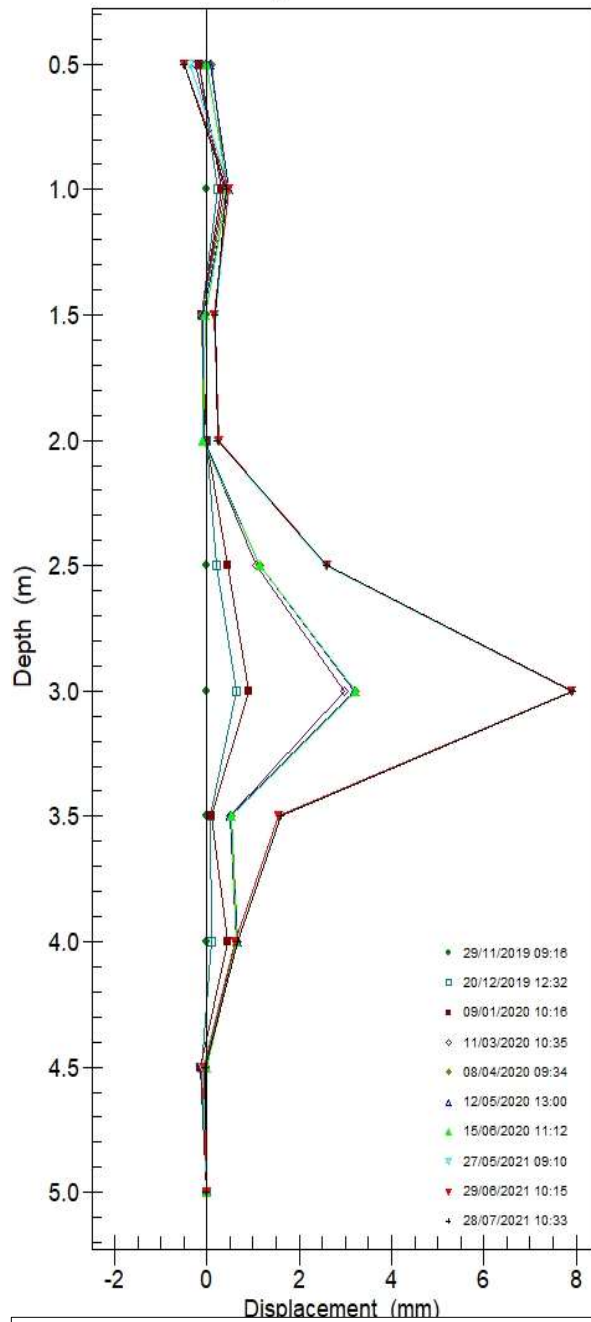
PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:10:48<br>(mm) | 29/06/2021<br>10:15:03<br>(mm) | 28/07/2021<br>10:33:06<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -1.72                          | -1.46                          | -1.39                          |
| 1.0          | -2.10                          | -2.15                          | -2.08                          |
| 1.5          | -0.85                          | -0.79                          | -0.62                          |
| 2.0          | -0.60                          | -0.55                          | -0.41                          |
| 2.5          | 0.56                           | 0.59                           | 0.73                           |
| 3.0          | 0.60                           | 0.60                           | 0.75                           |
| 3.5          | 0.30                           | 0.30                           | 0.42                           |
| 4.0          | 0.14                           | 0.15                           | 0.25                           |
| 4.5          | -0.10                          | -0.12                          | -0.07                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           |

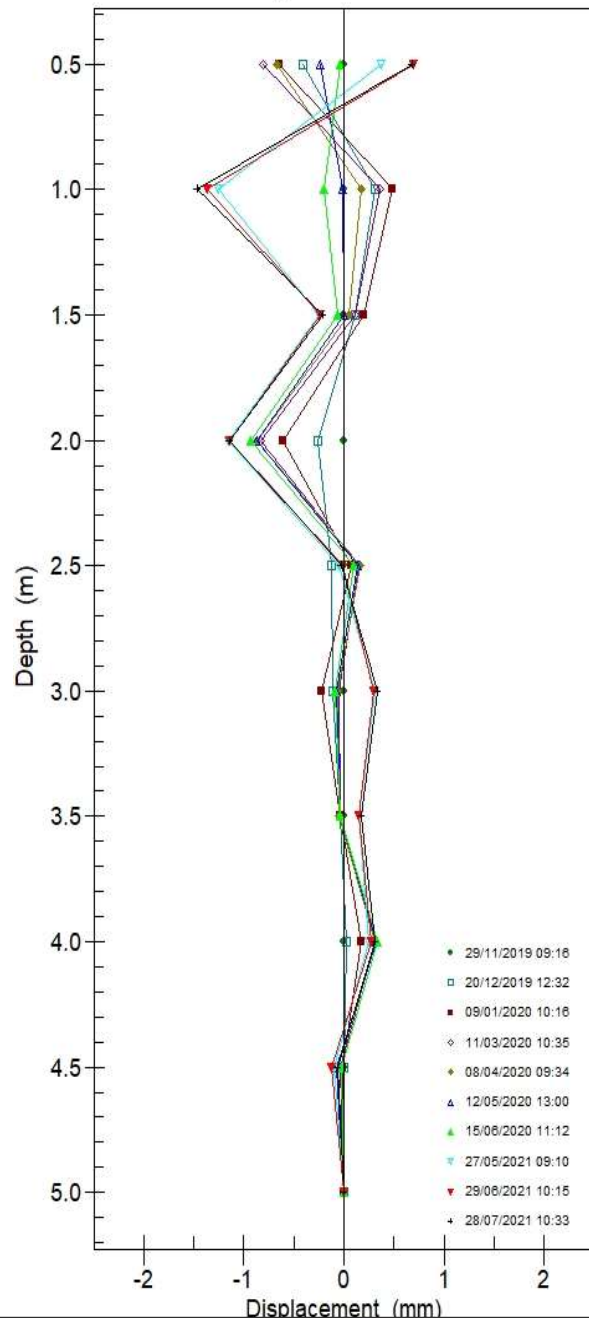
### 7234e:BH01 - A Axis Incremental

Initial survey: 29/11/2019 09:16



### 7234e:BH01 - B Axis Incremental

Initial survey: 29/11/2019 09:16



PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH01  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:16:45<br>(mm) | 20/12/2019<br>12:32:58<br>(mm) | 09/01/2020<br>10:16:57<br>(mm) | 11/03/2020<br>10:35:31<br>(mm) | 08/04/2020<br>09:34:53<br>(mm) | 12/05/2020<br>13:00:55<br>(mm) | 15/06/2020<br>11:12:12<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -0.18                          | -0.16                          | -0.26                          | 0.11                           | 0.08                           | 0.00                           |
| 1.0          | 0.00                           | 0.22                           | 0.32                           | 0.36                           | 0.43                           | 0.48                           | 0.46                           |
| 1.5          | 0.00                           | -0.11                          | -0.11                          | -0.12                          | -0.11                          | -0.10                          | -0.05                          |
| 2.0          | 0.00                           | 0.00                           | 0.00                           | -0.06                          | -0.06                          | -0.06                          | -0.10                          |
| 2.5          | 0.00                           | 0.22                           | 0.43                           | 1.07                           | 1.14                           | 1.14                           | 1.15                           |
| 3.0          | 0.00                           | 0.65                           | 0.91                           | 2.99                           | 3.22                           | 3.20                           | 3.23                           |
| 3.5          | 0.00                           | 0.07                           | 0.11                           | 0.50                           | 0.53                           | 0.51                           | 0.53                           |
| 4.0          | 0.00                           | 0.09                           | 0.44                           | 0.63                           | 0.65                           | 0.67                           | 0.63                           |
| 4.5          | 0.00                           | -0.13                          | -0.16                          | -0.09                          | -0.06                          | -0.05                          | -0.02                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |



PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:10:48<br>(mm) | 29/06/2021<br>10:15:03<br>(mm) | 28/07/2021<br>10:33:06<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -0.35                          | -0.49                          | -0.49                          |
| 1.0          | 0.46                           | 0.47                           | 0.42                           |
| 1.5          | 0.18                           | 0.15                           | 0.18                           |
| 2.0          | 0.23                           | 0.27                           | 0.25                           |
| 2.5          | 2.58                           | 2.60                           | 2.60                           |
| 3.0          | 7.91                           | 7.91                           | 7.93                           |
| 3.5          | 1.55                           | 1.57                           | 1.61                           |
| 4.0          | 0.60                           | 0.62                           | 0.65                           |
| 4.5          | -0.10                          | -0.06                          | -0.03                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH01  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:16:45<br>(mm) | 20/12/2019<br>12:32:58<br>(mm) | 09/01/2020<br>10:16:57<br>(mm) | 11/03/2020<br>10:35:31<br>(mm) | 08/04/2020<br>09:34:53<br>(mm) | 12/05/2020<br>13:00:55<br>(mm) | 15/06/2020<br>11:12:12<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -0.42                          | -0.65                          | -0.81                          | -0.66                          | -0.24                          | -0.03                          |
| 1.0          | 0.00                           | 0.31                           | 0.49                           | 0.36                           | 0.18                           | -0.02                          | -0.19                          |
| 1.5          | 0.00                           | 0.11                           | 0.20                           | 0.12                           | 0.05                           | -0.01                          | -0.06                          |
| 2.0          | 0.00                           | -0.27                          | -0.61                          | -0.84                          | -0.86                          | -0.86                          | -0.93                          |
| 2.5          | 0.00                           | -0.13                          | 0.07                           | 0.14                           | 0.16                           | 0.13                           | 0.10                           |
| 3.0          | 0.00                           | -0.11                          | -0.22                          | -0.06                          | -0.07                          | -0.08                          | -0.09                          |
| 3.5          | 0.00                           | -0.03                          | -0.04                          | -0.03                          | -0.05                          | -0.03                          | -0.04                          |
| 4.0          | 0.00                           | 0.03                           | 0.17                           | 0.31                           | 0.31                           | 0.32                           | 0.33                           |
| 4.5          | 0.00                           | 0.00                           | -0.01                          | -0.04                          | -0.07                          | -0.08                          | -0.03                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

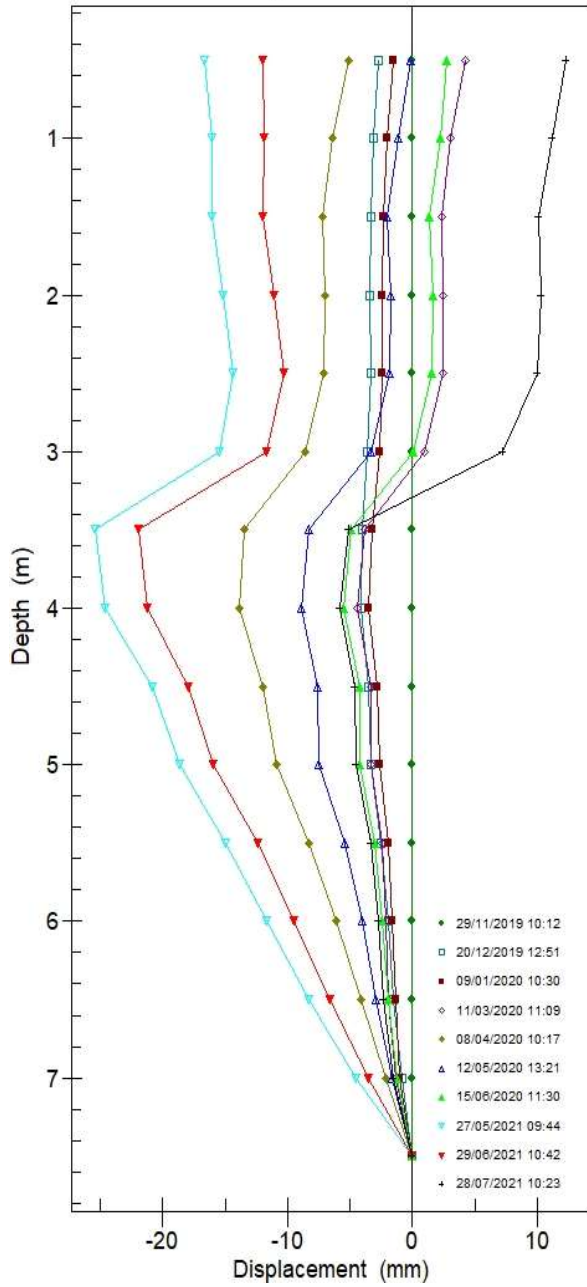
PROJECT:  
SITE: 7234e  
INSTALLATION: BH01  
COMPANY:  
CLIENT:  
NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:10:48<br>(mm) | 29/06/2021<br>10:15:03<br>(mm) | 28/07/2021<br>10:33:06<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.38                           | 0.69                           | 0.68                           |
| 1.0          | -1.25                          | -1.36                          | -1.46                          |
| 1.5          | -0.24                          | -0.23                          | -0.21                          |
| 2.0          | -1.16                          | -1.14                          | -1.14                          |
| 2.5          | -0.05                          | -0.01                          | -0.02                          |
| 3.0          | 0.31                           | 0.30                           | 0.33                           |
| 3.5          | 0.16                           | 0.16                           | 0.18                           |
| 4.0          | 0.24                           | 0.27                           | 0.31                           |
| 4.5          | -0.10                          | -0.12                          | -0.07                          |
| 5.0          | 0.00                           | 0.00                           | 0.00                           |

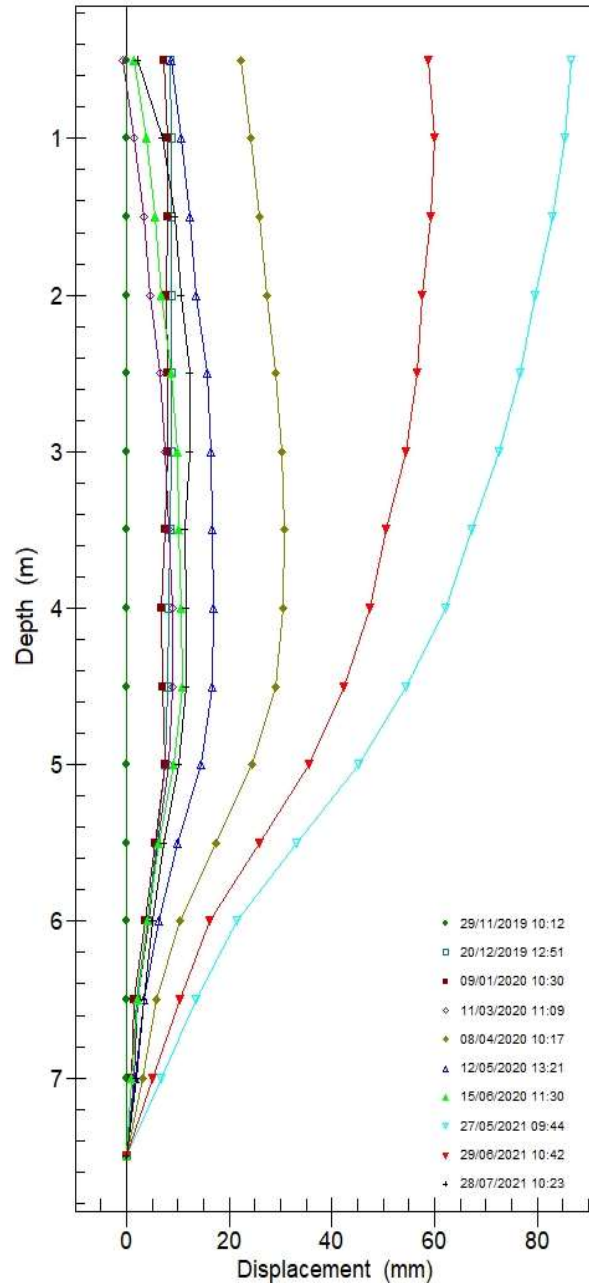
### 7234e:BH04 - A Axis Cumulative

Initial survey: 29/11/2019 10:12



### 7234e:BH04 - B Axis Cumulative

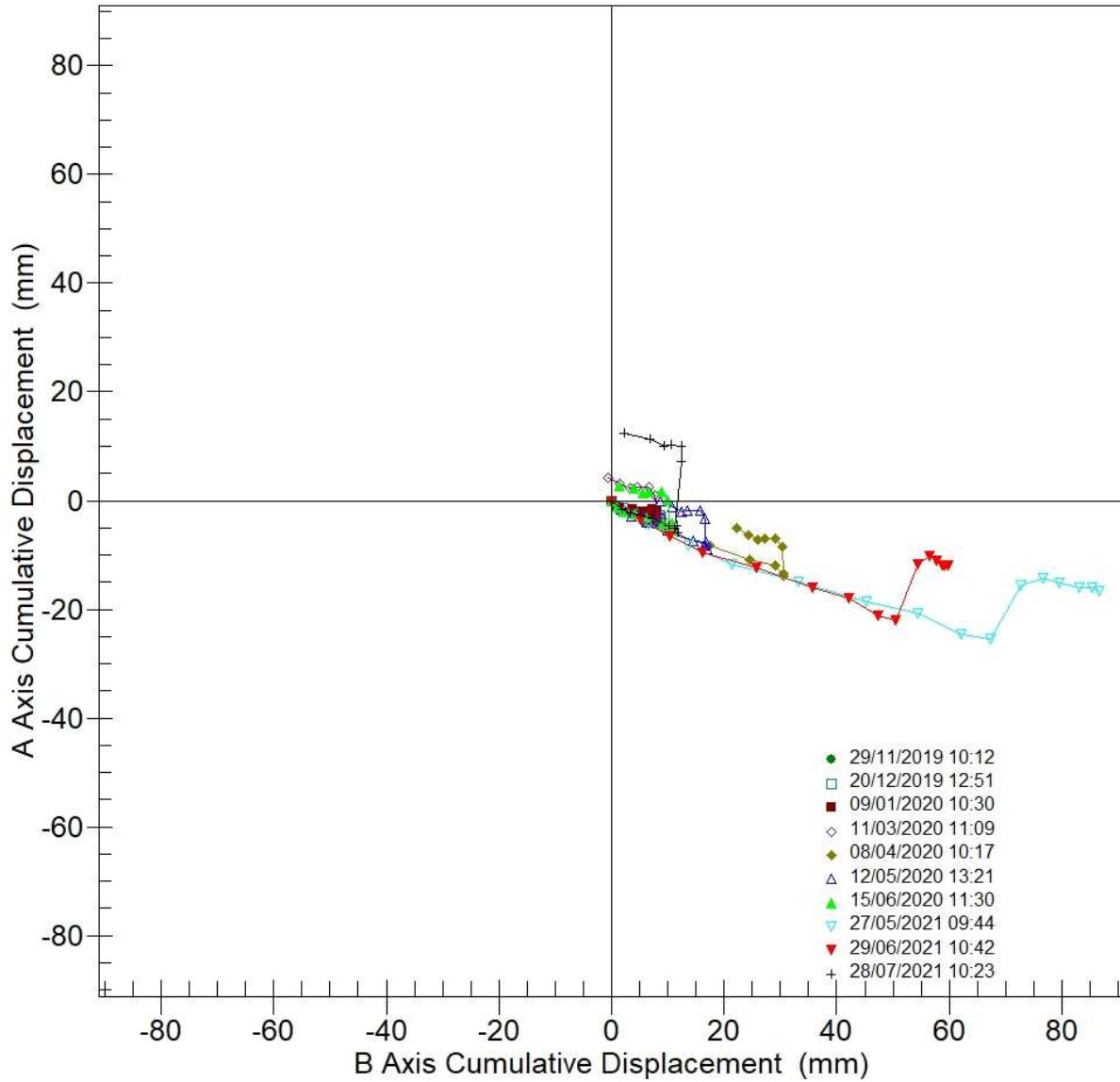
Initial survey: 29/11/2019 10:12



PROJECT:  
SITE: 7234e  
INSTALLATION: BH04  
COMPANY:  
CLIENT:  
NOTE:

# 7234e:BH04 - A Axis vs B Axis

Initial survey: 29/11/2019 10:12



PROJECT:  
SITE: 7234e  
INSTALLATION: BH04  
COMPANY:  
CLIENT:  
NOTE:

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>10:12:34<br>(mm) | 20/12/2019<br>12:51:19<br>(mm) | 09/01/2020<br>10:30:19<br>(mm) | 11/03/2020<br>11:09:35<br>(mm) | 08/04/2020<br>10:17:18<br>(mm) | 12/05/2020<br>13:21:05<br>(mm) | 15/06/2020<br>11:30:40<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -2.74                          | -1.52                          | 4.26                           | -5.08                          | -0.13                          | 2.76                           |
| 1.0          | 0.00                           | -3.13                          | -2.00                          | 3.07                           | -6.42                          | -1.17                          | 2.21                           |
| 1.5          | 0.00                           | -3.29                          | -2.31                          | 2.34                           | -7.24                          | -2.03                          | 1.31                           |
| 2.0          | 0.00                           | -3.40                          | -2.39                          | 2.48                           | -6.99                          | -1.75                          | 1.60                           |
| 2.5          | 0.00                           | -3.38                          | -2.41                          | 2.40                           | -7.08                          | -1.81                          | 1.53                           |
| 3.0          | 0.00                           | -3.61                          | -2.62                          | 0.92                           | -8.55                          | -3.32                          | 0.05                           |
| 3.5          | 0.00                           | -4.04                          | -3.24                          | -3.87                          | -13.50                         | -8.30                          | -4.90                          |
| 4.0          | 0.00                           | -4.16                          | -3.55                          | -4.45                          | -13.86                         | -8.93                          | -5.55                          |
| 4.5          | 0.00                           | -3.55                          | -2.78                          | -3.29                          | -11.97                         | -7.61                          | -4.26                          |
| 5.0          | 0.00                           | -3.32                          | -2.62                          | -3.32                          | -10.88                         | -7.47                          | -4.18                          |
| 5.5          | 0.00                           | -2.49                          | -1.98                          | -2.46                          | -8.25                          | -5.44                          | -3.04                          |
| 6.0          | 0.00                           | -1.98                          | -1.67                          | -2.13                          | -6.08                          | -4.06                          | -2.42                          |
| 6.5          | 0.00                           | -1.50                          | -1.38                          | -1.90                          | -4.13                          | -2.97                          | -1.97                          |
| 7.0          | 0.00                           | -0.88                          | -1.04                          | -1.31                          | -2.18                          | -1.66                          | -1.24                          |
| 7.5          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:44:06<br>(mm) | 29/06/2021<br>10:42:19<br>(mm) | 28/07/2021<br>10:23:16<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -16.70                         | -11.94                         | 12.33                          |
| 1.0          | -16.06                         | -11.86                         | 11.20                          |
| 1.5          | -16.05                         | -11.94                         | 10.10                          |
| 2.0          | -15.21                         | -11.04                         | 10.32                          |
| 2.5          | -14.33                         | -10.26                         | 10.04                          |
| 3.0          | -15.50                         | -11.66                         | 7.20                           |
| 3.5          | -25.45                         | -21.97                         | -5.07                          |
| 4.0          | -24.61                         | -21.27                         | -5.84                          |
| 4.5          | -20.82                         | -17.94                         | -4.57                          |
| 5.0          | -18.64                         | -15.95                         | -4.53                          |
| 5.5          | -14.94                         | -12.43                         | -3.33                          |
| 6.0          | -11.73                         | -9.49                          | -2.78                          |
| 6.5          | -8.28                          | -6.61                          | -2.33                          |
| 7.0          | -4.51                          | -3.52                          | -1.51                          |
| 7.5          | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth<br>(m) | 29/11/2019<br>10:12:34<br>(mm) | 20/12/2019<br>12:51:19<br>(mm) | 09/01/2020<br>10:30:19<br>(mm) | 11/03/2020<br>11:09:35<br>(mm) | 08/04/2020<br>10:17:18<br>(mm) | 12/05/2020<br>13:21:05<br>(mm) | 15/06/2020<br>11:30:40<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | 8.42                           | 7.37                           | -0.63                          | 22.31                          | 8.67                           | 1.37                           |
| 1.0          | 0.00                           | 8.78                           | 8.05                           | 1.47                           | 24.32                          | 10.74                          | 3.85                           |
| 1.5          | 0.00                           | 8.77                           | 8.01                           | 3.33                           | 26.04                          | 12.45                          | 5.53                           |
| 2.0          | 0.00                           | 8.69                           | 7.76                           | 4.55                           | 27.33                          | 13.61                          | 6.74                           |
| 2.5          | 0.00                           | 8.73                           | 7.92                           | 6.58                           | 29.17                          | 15.77                          | 8.87                           |
| 3.0          | 0.00                           | 8.68                           | 7.99                           | 7.65                           | 30.36                          | 16.57                          | 10.00                          |
| 3.5          | 0.00                           | 8.49                           | 7.62                           | 8.35                           | 30.65                          | 16.65                          | 10.30                          |
| 4.0          | 0.00                           | 8.18                           | 6.93                           | 8.88                           | 30.61                          | 17.06                          | 10.80                          |
| 4.5          | 0.00                           | 7.93                           | 7.17                           | 8.89                           | 29.15                          | 16.80                          | 10.85                          |
| 5.0          | 0.00                           | 7.65                           | 7.50                           | 8.29                           | 24.44                          | 14.45                          | 9.16                           |
| 5.5          | 0.00                           | 5.76                           | 5.51                           | 6.12                           | 17.42                          | 9.97                           | 6.25                           |
| 6.0          | 0.00                           | 4.24                           | 3.73                           | 4.40                           | 10.41                          | 6.22                           | 4.21                           |
| 6.5          | 0.00                           | 2.06                           | 1.47                           | 2.30                           | 5.94                           | 3.52                           | 2.16                           |
| 7.0          | 0.00                           | 1.06                           | 0.92                           | 1.39                           | 3.14                           | 1.70                           | 1.09                           |
| 7.5          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |



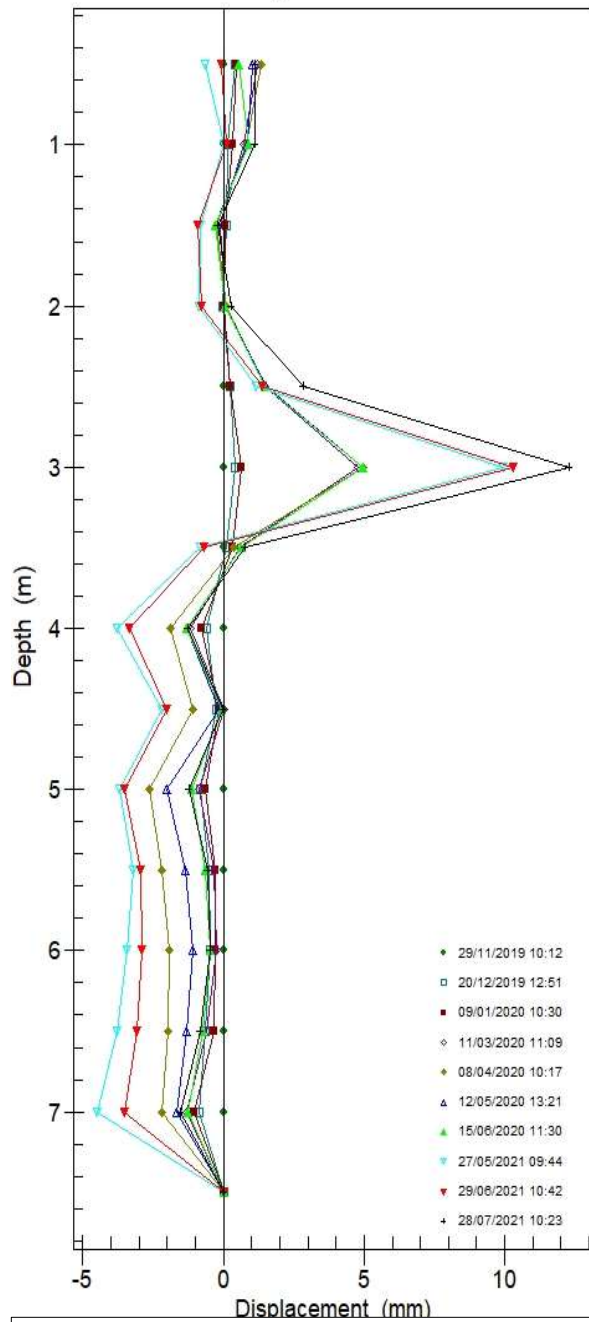
PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:44:06<br>(mm) | 29/06/2021<br>10:42:19<br>(mm) | 28/07/2021<br>10:23:16<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 86.75                          | 58.73                          | 2.26                           |
| 1.0          | 85.33                          | 59.94                          | 6.95                           |
| 1.5          | 83.07                          | 59.24                          | 9.38                           |
| 2.0          | 79.64                          | 57.68                          | 10.65                          |
| 2.5          | 76.61                          | 56.56                          | 12.39                          |
| 3.0          | 72.70                          | 54.49                          | 12.45                          |
| 3.5          | 67.35                          | 50.50                          | 11.30                          |
| 4.0          | 62.21                          | 47.44                          | 11.75                          |
| 4.5          | 54.40                          | 42.27                          | 11.64                          |
| 5.0          | 45.37                          | 35.65                          | 10.09                          |
| 5.5          | 33.28                          | 25.84                          | 7.28                           |
| 6.0          | 21.50                          | 16.21                          | 5.14                           |
| 6.5          | 13.65                          | 10.47                          | 3.38                           |
| 7.0          | 6.72                           | 5.13                           | 1.91                           |
| 7.5          | 0.00                           | 0.00                           | 0.00                           |

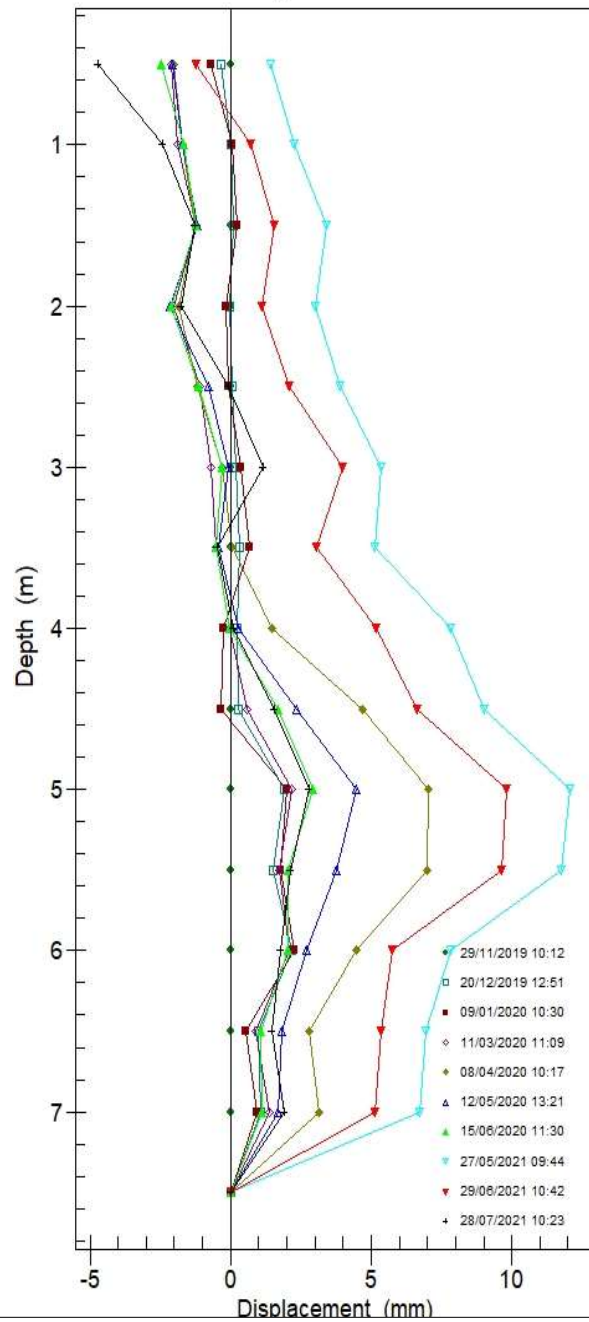
### 7234e:BH04 - A Axis Incremental

Initial survey: 29/11/2019 10:12



### 7234e:BH04 - B Axis Incremental

Initial survey: 29/11/2019 10:12



PROJECT:  
SITE: 7234e  
INSTALLATION: BH04  
COMPANY:  
CLIENT:  
NOTE:

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>10:12:34<br>(mm) | 20/12/2019<br>12:51:19<br>(mm) | 09/01/2020<br>10:30:19<br>(mm) | 11/03/2020<br>11:09:35<br>(mm) | 08/04/2020<br>10:17:18<br>(mm) | 12/05/2020<br>13:21:05<br>(mm) | 15/06/2020<br>11:30:40<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | 0.40                           | 0.48                           | 1.19                           | 1.34                           | 1.04                           | 0.55                           |
| 1.0          | 0.00                           | 0.16                           | 0.32                           | 0.73                           | 0.82                           | 0.86                           | 0.91                           |
| 1.5          | 0.00                           | 0.11                           | 0.08                           | -0.14                          | -0.25                          | -0.28                          | -0.30                          |
| 2.0          | 0.00                           | -0.02                          | 0.02                           | 0.08                           | 0.09                           | 0.07                           | 0.08                           |
| 2.5          | 0.00                           | 0.23                           | 0.22                           | 1.48                           | 1.48                           | 1.51                           | 1.48                           |
| 3.0          | 0.00                           | 0.43                           | 0.62                           | 4.79                           | 4.94                           | 4.98                           | 4.95                           |
| 3.5          | 0.00                           | 0.11                           | 0.31                           | 0.58                           | 0.36                           | 0.64                           | 0.65                           |
| 4.0          | 0.00                           | -0.61                          | -0.77                          | -1.16                          | -1.89                          | -1.32                          | -1.29                          |
| 4.5          | 0.00                           | -0.23                          | -0.17                          | 0.03                           | -1.08                          | -0.14                          | -0.08                          |
| 5.0          | 0.00                           | -0.83                          | -0.63                          | -0.86                          | -2.63                          | -2.03                          | -1.14                          |
| 5.5          | 0.00                           | -0.51                          | -0.31                          | -0.33                          | -2.17                          | -1.38                          | -0.63                          |
| 6.0          | 0.00                           | -0.48                          | -0.29                          | -0.23                          | -1.95                          | -1.10                          | -0.45                          |
| 6.5          | 0.00                           | -0.63                          | -0.34                          | -0.60                          | -1.95                          | -1.31                          | -0.72                          |
| 7.0          | 0.00                           | -0.88                          | -1.04                          | -1.31                          | -2.18                          | -1.66                          | -1.24                          |
| 7.5          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:44:06<br>(mm) | 29/06/2021<br>10:42:19<br>(mm) | 28/07/2021<br>10:23:16<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -0.64                          | -0.08                          | 1.13                           |
| 1.0          | 0.00                           | 0.09                           | 1.11                           |
| 1.5          | -0.84                          | -0.90                          | -0.22                          |
| 2.0          | -0.88                          | -0.79                          | 0.28                           |
| 2.5          | 1.17                           | 1.40                           | 2.84                           |
| 3.0          | 9.96                           | 10.31                          | 12.28                          |
| 3.5          | -0.84                          | -0.70                          | 0.77                           |
| 4.0          | -3.79                          | -3.32                          | -1.26                          |
| 4.5          | -2.18                          | -1.99                          | -0.04                          |
| 5.0          | -3.70                          | -3.52                          | -1.21                          |
| 5.5          | -3.21                          | -2.93                          | -0.55                          |
| 6.0          | -3.45                          | -2.88                          | -0.45                          |
| 6.5          | -3.77                          | -3.09                          | -0.82                          |
| 7.0          | -4.51                          | -3.52                          | -1.51                          |
| 7.5          | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH04  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 29/11/2019<br>10:12:34<br>(mm) | 20/12/2019<br>12:51:19<br>(mm) | 09/01/2020<br>10:30:19<br>(mm) | 11/03/2020<br>11:09:35<br>(mm) | 08/04/2020<br>10:17:18<br>(mm) | 12/05/2020<br>13:21:05<br>(mm) | 15/06/2020<br>11:30:40<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -0.36                          | -0.68                          | -2.10                          | -2.01                          | -2.07                          | -2.48                          |
| 1.0          | 0.00                           | 0.01                           | 0.04                           | -1.87                          | -1.72                          | -1.71                          | -1.68                          |
| 1.5          | 0.00                           | 0.09                           | 0.25                           | -1.22                          | -1.29                          | -1.16                          | -1.22                          |
| 2.0          | 0.00                           | -0.04                          | -0.16                          | -2.03                          | -1.84                          | -2.16                          | -2.13                          |
| 2.5          | 0.00                           | 0.05                           | -0.07                          | -1.07                          | -1.19                          | -0.79                          | -1.13                          |
| 3.0          | 0.00                           | 0.19                           | 0.37                           | -0.71                          | -0.28                          | -0.08                          | -0.30                          |
| 3.5          | 0.00                           | 0.31                           | 0.69                           | -0.53                          | 0.03                           | -0.42                          | -0.50                          |
| 4.0          | 0.00                           | 0.25                           | -0.24                          | -0.01                          | 1.47                           | 0.26                           | -0.05                          |
| 4.5          | 0.00                           | 0.28                           | -0.33                          | 0.60                           | 4.71                           | 2.35                           | 1.68                           |
| 5.0          | 0.00                           | 1.89                           | 2.00                           | 2.17                           | 7.02                           | 4.48                           | 2.92                           |
| 5.5          | 0.00                           | 1.52                           | 1.78                           | 1.72                           | 7.01                           | 3.75                           | 2.04                           |
| 6.0          | 0.00                           | 2.18                           | 2.27                           | 2.11                           | 4.47                           | 2.71                           | 2.05                           |
| 6.5          | 0.00                           | 1.00                           | 0.54                           | 0.91                           | 2.81                           | 1.82                           | 1.06                           |
| 7.0          | 0.00                           | 1.06                           | 0.92                           | 1.39                           | 3.14                           | 1.70                           | 1.09                           |
| 7.5          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

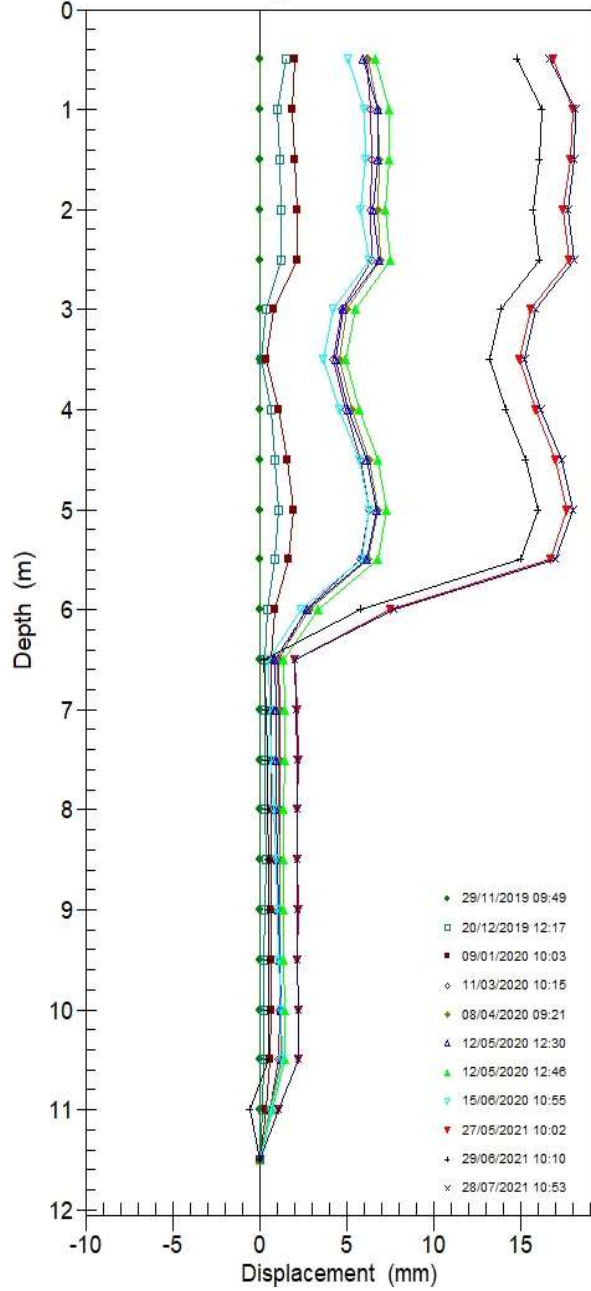
PROJECT:  
SITE: 7234e  
INSTALLATION: BH04  
COMPANY:  
CLIENT:  
NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 27/05/2021<br>09:44:06<br>(mm) | 29/06/2021<br>10:42:19<br>(mm) | 28/07/2021<br>10:23:16<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 1.43                           | -1.21                          | -4.70                          |
| 1.0          | 2.26                           | 0.70                           | -2.43                          |
| 1.5          | 3.43                           | 1.56                           | -1.27                          |
| 2.0          | 3.03                           | 1.12                           | -1.74                          |
| 2.5          | 3.91                           | 2.07                           | -0.05                          |
| 3.0          | 5.35                           | 3.99                           | 1.15                           |
| 3.5          | 5.15                           | 3.06                           | -0.45                          |
| 4.0          | 7.81                           | 5.17                           | 0.11                           |
| 4.5          | 9.03                           | 6.63                           | 1.55                           |
| 5.0          | 12.09                          | 9.81                           | 2.81                           |
| 5.5          | 11.78                          | 9.63                           | 2.14                           |
| 6.0          | 7.85                           | 5.73                           | 1.76                           |
| 6.5          | 6.93                           | 5.35                           | 1.47                           |
| 7.0          | 6.72                           | 5.13                           | 1.91                           |
| 7.5          | 0.00                           | 0.00                           | 0.00                           |

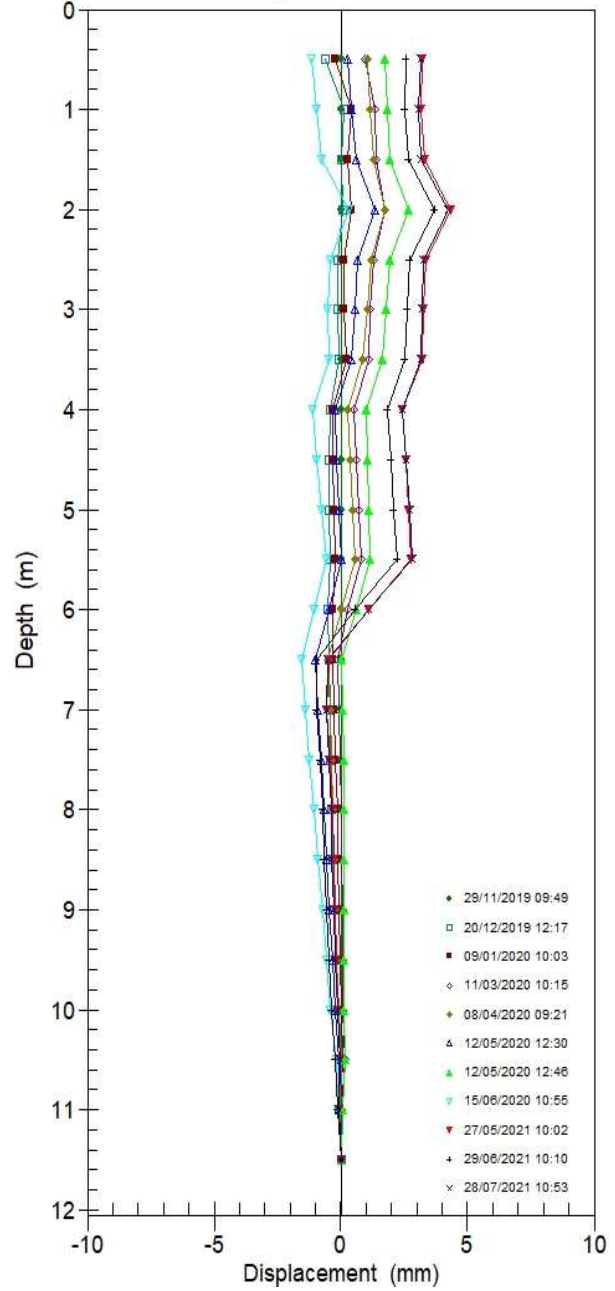
### 7234e:BH05 - A Axis Cumulative

Initial survey: 29/11/2019 09:49



### 7234e:BH05 - B Axis Cumulative

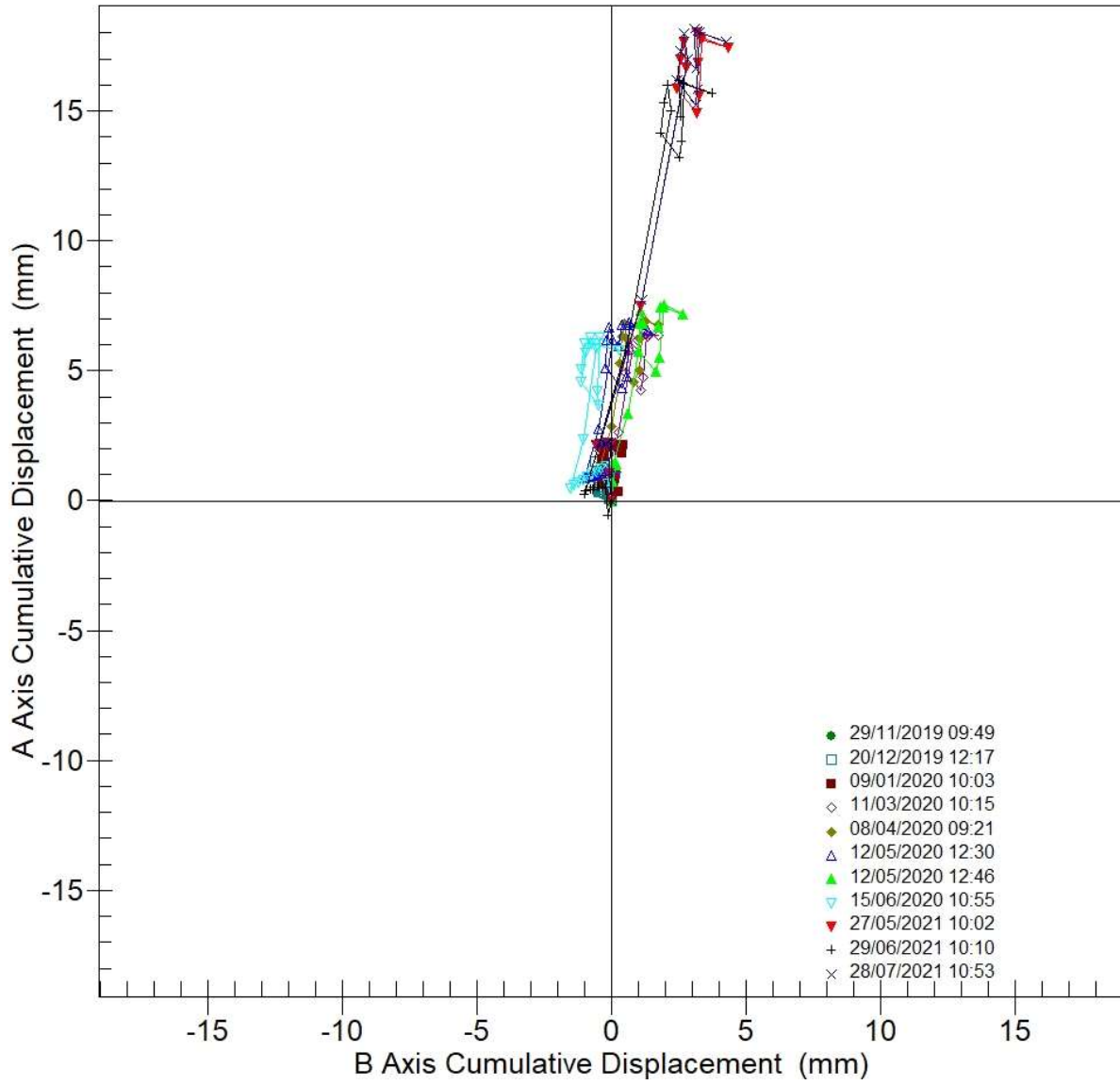
Initial survey: 29/11/2019 09:49



PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

# 7234e:BH05 - A Axis vs B Axis

Initial survey: 29/11/2019 09:49



PROJECT:  
SITE: 7234e  
INSTALLATION: BH05  
COMPANY:  
CLIENT:  
NOTE:



PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:49:09<br>(mm) | 20/12/2019<br>12:17:52<br>(mm) | 09/01/2020<br>10:03:42<br>(mm) | 11/03/2020<br>10:15:02<br>(mm) | 08/04/2020<br>09:21:32<br>(mm) | 12/05/2020<br>12:30:47<br>(mm) | 12/05/2020<br>12:46:58<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | 1.52                           | 2.04                           | 6.17                           | 6.24                           | 5.97                           | 6.68                           |
| 1.0          | 0.00                           | 1.04                           | 1.84                           | 6.33                           | 6.82                           | 6.75                           | 7.43                           |
| 1.5          | 0.00                           | 1.17                           | 2.03                           | 6.40                           | 6.89                           | 6.76                           | 7.45                           |
| 2.0          | 0.00                           | 1.25                           | 2.13                           | 6.39                           | 6.77                           | 6.53                           | 7.20                           |
| 2.5          | 0.00                           | 1.25                           | 2.13                           | 6.43                           | 6.92                           | 6.84                           | 7.53                           |
| 3.0          | 0.00                           | 0.35                           | 0.83                           | 4.73                           | 5.01                           | 4.78                           | 5.51                           |
| 3.5          | 0.00                           | 0.08                           | 0.35                           | 4.24                           | 4.59                           | 4.34                           | 4.96                           |
| 4.0          | 0.00                           | 0.63                           | 1.09                           | 4.95                           | 5.30                           | 5.10                           | 5.74                           |
| 4.5          | 0.00                           | 0.89                           | 1.60                           | 5.79                           | 6.31                           | 6.17                           | 6.81                           |
| 5.0          | 0.00                           | 1.11                           | 1.94                           | 6.26                           | 6.80                           | 6.68                           | 7.31                           |
| 5.5          | 0.00                           | 0.86                           | 1.65                           | 5.82                           | 6.24                           | 6.17                           | 6.81                           |
| 6.0          | 0.00                           | 0.44                           | 0.85                           | 2.62                           | 2.84                           | 2.75                           | 3.33                           |
| 6.5          | 0.00                           | 0.33                           | 0.63                           | 1.11                           | 1.03                           | 0.87                           | 1.36                           |
| 7.0          | 0.00                           | 0.33                           | 0.66                           | 1.18                           | 1.12                           | 0.94                           | 1.43                           |
| 7.5          | 0.00                           | 0.33                           | 0.66                           | 1.16                           | 1.11                           | 0.97                           | 1.42                           |
| 8.0          | 0.00                           | 0.33                           | 0.64                           | 1.13                           | 1.12                           | 0.96                           | 1.36                           |
| 8.5          | 0.00                           | 0.34                           | 0.64                           | 1.13                           | 1.16                           | 1.01                           | 1.36                           |
| 9.0          | 0.00                           | 0.30                           | 0.64                           | 1.12                           | 1.17                           | 1.07                           | 1.39                           |
| 9.5          | 0.00                           | 0.26                           | 0.62                           | 1.13                           | 1.17                           | 1.15                           | 1.40                           |
| 10.0         | 0.00                           | 0.25                           | 0.65                           | 1.14                           | 1.22                           | 1.22                           | 1.42                           |
| 10.5         | 0.00                           | 0.22                           | 0.62                           | 1.11                           | 1.23                           | 1.28                           | 1.43                           |
| 11.0         | 0.00                           | 0.13                           | 0.35                           | 0.58                           | 0.60                           | 0.65                           | 0.74                           |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in A Axis (mm):

| Depth<br>(m) | 15/06/2020<br>10:55:20<br>(mm) | 27/05/2021<br>10:02:01<br>(mm) | 29/06/2021<br>10:10:54<br>(mm) | 28/07/2021<br>10:53:25<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 5.06                           | 16.85                          | 14.78                          | 16.64                          |
| 1.0          | 6.04                           | 18.01                          | 16.17                          | 18.15                          |
| 1.5          | 6.05                           | 17.82                          | 16.08                          | 18.05                          |
| 2.0          | 5.77                           | 17.43                          | 15.69                          | 17.66                          |
| 2.5          | 6.28                           | 17.74                          | 16.03                          | 18.02                          |
| 3.0          | 4.22                           | 15.58                          | 13.84                          | 15.83                          |
| 3.5          | 3.67                           | 14.91                          | 13.23                          | 15.22                          |
| 4.0          | 4.55                           | 15.85                          | 14.13                          | 16.16                          |
| 4.5          | 5.71                           | 16.99                          | 15.30                          | 17.31                          |
| 5.0          | 6.27                           | 17.64                          | 15.99                          | 17.98                          |
| 5.5          | 5.88                           | 16.69                          | 15.01                          | 16.98                          |
| 6.0          | 2.36                           | 7.51                           | 5.79                           | 7.73                           |
| 6.5          | 0.48                           | 2.03                           | 0.26                           | 2.03                           |
| 7.0          | 0.61                           | 2.13                           | 0.38                           | 2.12                           |
| 7.5          | 0.69                           | 2.19                           | 0.42                           | 2.17                           |
| 8.0          | 0.79                           | 2.17                           | 0.44                           | 2.15                           |
| 8.5          | 0.91                           | 2.18                           | 0.50                           | 2.18                           |
| 9.0          | 1.01                           | 2.21                           | 0.52                           | 2.18                           |
| 9.5          | 1.10                           | 2.18                           | 0.51                           | 2.17                           |
| 10.0         | 1.23                           | 2.22                           | 0.53                           | 2.22                           |
| 10.5         | 1.33                           | 2.19                           | 0.52                           | 2.21                           |
| 11.0         | 0.64                           | 1.06                           | -0.56                          | 1.06                           |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth (m) | 29/11/2019<br>09:49:09<br>(mm) | 20/12/2019<br>12:17:52<br>(mm) | 09/01/2020<br>10:03:42<br>(mm) | 11/03/2020<br>10:15:02<br>(mm) | 08/04/2020<br>09:21:32<br>(mm) | 12/05/2020<br>12:30:47<br>(mm) | 12/05/2020<br>12:46:58<br>(mm) |
|-----------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5       | 0.00                           | -0.60                          | -0.21                          | 0.94                           | 1.03                           | 0.28                           | 1.75                           |
| 1.0       | 0.00                           | 0.15                           | 0.40                           | 1.36                           | 1.17                           | 0.40                           | 1.82                           |
| 1.5       | 0.00                           | 0.04                           | 0.27                           | 1.41                           | 1.28                           | 0.59                           | 1.93                           |
| 2.0       | 0.00                           | 0.08                           | 0.42                           | 1.73                           | 1.74                           | 1.34                           | 2.67                           |
| 2.5       | 0.00                           | -0.10                          | 0.13                           | 1.29                           | 1.19                           | 0.66                           | 1.95                           |
| 3.0       | 0.00                           | -0.10                          | 0.13                           | 1.18                           | 1.05                           | 0.55                           | 1.77                           |
| 3.5       | 0.00                           | -0.07                          | 0.25                           | 1.09                           | 0.84                           | 0.41                           | 1.66                           |
| 4.0       | 0.00                           | -0.43                          | -0.34                          | 0.52                           | 0.29                           | -0.24                          | 0.98                           |
| 4.5       | 0.00                           | -0.48                          | -0.33                          | 0.64                           | 0.39                           | -0.16                          | 1.04                           |
| 5.0       | 0.00                           | -0.45                          | -0.27                          | 0.72                           | 0.46                           | -0.07                          | 1.10                           |
| 5.5       | 0.00                           | -0.44                          | -0.24                          | 0.79                           | 0.55                           | 0.04                           | 1.17                           |
| 6.0       | 0.00                           | -0.52                          | -0.33                          | 0.28                           | 0.00                           | -0.49                          | 0.61                           |
| 6.5       | 0.00                           | -0.48                          | -0.34                          | -0.14                          | -0.51                          | -1.02                          | 0.02                           |
| 7.0       | 0.00                           | -0.44                          | -0.28                          | -0.07                          | -0.43                          | -0.89                          | 0.07                           |
| 7.5       | 0.00                           | -0.41                          | -0.23                          | -0.03                          | -0.36                          | -0.78                          | 0.10                           |
| 8.0       | 0.00                           | -0.36                          | -0.15                          | 0.02                           | -0.29                          | -0.68                          | 0.14                           |
| 8.5       | 0.00                           | -0.31                          | -0.12                          | 0.04                           | -0.27                          | -0.57                          | 0.14                           |
| 9.0       | 0.00                           | -0.26                          | -0.07                          | 0.07                           | -0.22                          | -0.46                          | 0.14                           |
| 9.5       | 0.00                           | -0.19                          | -0.04                          | 0.06                           | -0.16                          | -0.34                          | 0.13                           |
| 10.0      | 0.00                           | -0.11                          | 0.01                           | 0.09                           | -0.09                          | -0.25                          | 0.12                           |
| 10.5      | 0.00                           | -0.05                          | 0.07                           | 0.16                           | 0.03                           | -0.06                          | 0.18                           |
| 11.0      | 0.00                           | -0.06                          | -0.01                          | 0.04                           | -0.05                          | -0.08                          | 0.05                           |
| 11.5      | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

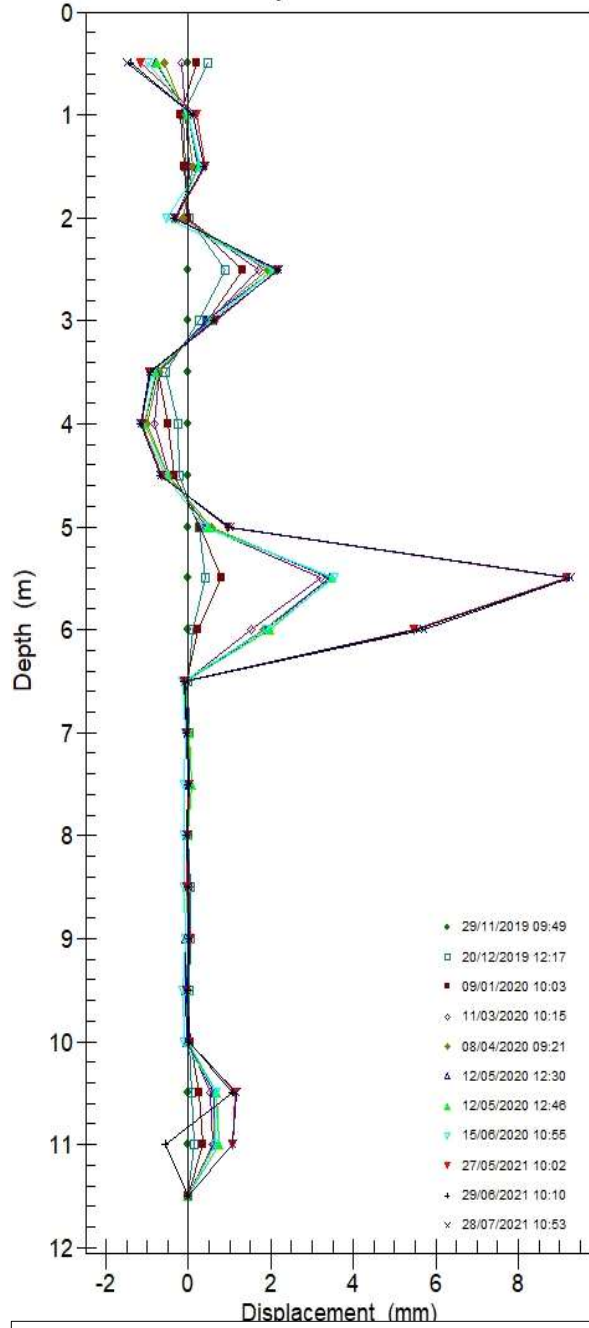
PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Cumulative Deflection Data in B Axis (mm):

| Depth<br>(m) | 15/06/2020<br>10:55:20<br>(mm) | 27/05/2021<br>10:02:01<br>(mm) | 29/06/2021<br>10:10:54<br>(mm) | 28/07/2021<br>10:53:25<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -1.14                          | 3.23                           | 2.55                           | 3.14                           |
| 1.0          | -0.98                          | 3.17                           | 2.54                           | 3.07                           |
| 1.5          | -0.75                          | 3.32                           | 2.66                           | 3.17                           |
| 2.0          | 0.30                           | 4.35                           | 3.73                           | 4.25                           |
| 2.5          | -0.42                          | 3.35                           | 2.71                           | 3.25                           |
| 3.0          | -0.51                          | 3.27                           | 2.62                           | 3.20                           |
| 3.5          | -0.46                          | 3.19                           | 2.55                           | 3.14                           |
| 4.0          | -1.12                          | 2.45                           | 1.83                           | 2.43                           |
| 4.5          | -0.96                          | 2.59                           | 1.97                           | 2.57                           |
| 5.0          | -0.78                          | 2.69                           | 2.10                           | 2.72                           |
| 5.5          | -0.58                          | 2.79                           | 2.23                           | 2.82                           |
| 6.0          | -1.06                          | 1.10                           | 0.54                           | 1.11                           |
| 6.5          | -1.52                          | -0.47                          | -0.98                          | -0.49                          |
| 7.0          | -1.38                          | -0.55                          | -0.95                          | -0.57                          |
| 7.5          | -1.24                          | -0.42                          | -0.80                          | -0.45                          |
| 8.0          | -1.06                          | -0.31                          | -0.70                          | -0.37                          |
| 8.5          | -0.91                          | -0.26                          | -0.64                          | -0.35                          |
| 9.0          | -0.73                          | -0.20                          | -0.54                          | -0.27                          |
| 9.5          | -0.57                          | -0.17                          | -0.48                          | -0.23                          |
| 10.0         | -0.40                          | -0.13                          | -0.36                          | -0.15                          |
| 10.5         | -0.16                          | -0.04                          | -0.22                          | -0.04                          |
| 11.0         | -0.13                          | -0.09                          | -0.14                          | -0.09                          |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

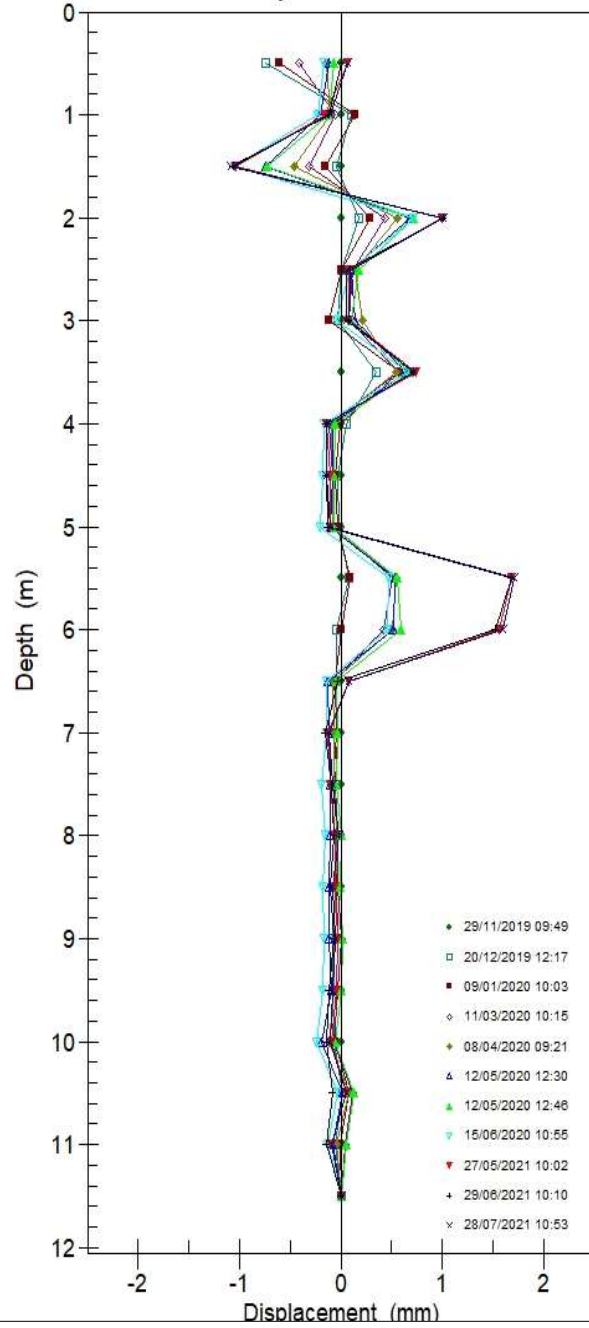
### 7234e:BH05 - A Axis Incremental

Initial survey: 29/11/2019 09:49



### 7234e:BH05 - B Axis Incremental

Initial survey: 29/11/2019 09:49



PROJECT:  
SITE: 7234e  
INSTALLATION: BH05  
COMPANY:  
CLIENT:  
NOTE:

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:49:09<br>(mm) | 20/12/2019<br>12:17:52<br>(mm) | 09/01/2020<br>10:03:42<br>(mm) | 11/03/2020<br>10:15:02<br>(mm) | 08/04/2020<br>09:21:32<br>(mm) | 12/05/2020<br>12:30:47<br>(mm) | 12/05/2020<br>12:46:58<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | 0.48                           | 0.20                           | -0.16                          | -0.57                          | -0.78                          | -0.75                          |
| 1.0          | 0.00                           | -0.14                          | -0.19                          | -0.07                          | -0.07                          | 0.00                           | -0.01                          |
| 1.5          | 0.00                           | -0.08                          | -0.10                          | 0.01                           | 0.12                           | 0.23                           | 0.25                           |
| 2.0          | 0.00                           | 0.01                           | 0.00                           | -0.05                          | -0.15                          | -0.31                          | -0.33                          |
| 2.5          | 0.00                           | 0.90                           | 1.30                           | 1.70                           | 1.91                           | 2.06                           | 2.02                           |
| 3.0          | 0.00                           | 0.27                           | 0.48                           | 0.50                           | 0.43                           | 0.44                           | 0.55                           |
| 3.5          | 0.00                           | -0.56                          | -0.74                          | -0.71                          | -0.71                          | -0.76                          | -0.78                          |
| 4.0          | 0.00                           | -0.26                          | -0.50                          | -0.84                          | -1.01                          | -1.07                          | -1.07                          |
| 4.5          | 0.00                           | -0.22                          | -0.34                          | -0.48                          | -0.49                          | -0.51                          | -0.50                          |
| 5.0          | 0.00                           | 0.25                           | 0.28                           | 0.44                           | 0.56                           | 0.51                           | 0.50                           |
| 5.5          | 0.00                           | 0.42                           | 0.81                           | 3.20                           | 3.41                           | 3.42                           | 3.48                           |
| 6.0          | 0.00                           | 0.10                           | 0.22                           | 1.51                           | 1.81                           | 1.88                           | 1.97                           |
| 6.5          | 0.00                           | 0.00                           | -0.03                          | -0.07                          | -0.09                          | -0.07                          | -0.07                          |
| 7.0          | 0.00                           | 0.01                           | 0.00                           | 0.02                           | 0.01                           | -0.02                          | 0.01                           |
| 7.5          | 0.00                           | -0.01                          | 0.02                           | 0.02                           | -0.01                          | 0.01                           | 0.06                           |
| 8.0          | 0.00                           | 0.00                           | 0.00                           | 0.00                           | -0.04                          | -0.06                          | 0.00                           |
| 8.5          | 0.00                           | 0.03                           | 0.01                           | 0.01                           | -0.01                          | -0.06                          | -0.03                          |
| 9.0          | 0.00                           | 0.04                           | 0.02                           | -0.01                          | -0.01                          | -0.08                          | -0.02                          |
| 9.5          | 0.00                           | 0.01                           | -0.03                          | -0.01                          | -0.05                          | -0.08                          | -0.02                          |
| 10.0         | 0.00                           | 0.03                           | 0.03                           | 0.03                           | -0.01                          | -0.06                          | 0.00                           |
| 10.5         | 0.00                           | 0.09                           | 0.26                           | 0.53                           | 0.62                           | 0.63                           | 0.69                           |
| 11.0         | 0.00                           | 0.13                           | 0.35                           | 0.58                           | 0.60                           | 0.65                           | 0.74                           |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in A Axis (mm):

| Depth<br>(m) | 15/06/2020<br>10:55:20<br>(mm) | 27/05/2021<br>10:02:01<br>(mm) | 29/06/2021<br>10:10:54<br>(mm) | 28/07/2021<br>10:53:25<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -0.98                          | -1.16                          | -1.39                          | -1.50                          |
| 1.0          | -0.01                          | 0.19                           | 0.09                           | 0.10                           |
| 1.5          | 0.28                           | 0.39                           | 0.38                           | 0.38                           |
| 2.0          | -0.51                          | -0.31                          | -0.33                          | -0.35                          |
| 2.5          | 2.07                           | 2.16                           | 2.19                           | 2.19                           |
| 3.0          | 0.55                           | 0.68                           | 0.61                           | 0.61                           |
| 3.5          | -0.88                          | -0.94                          | -0.91                          | -0.93                          |
| 4.0          | -1.16                          | -1.14                          | -1.17                          | -1.15                          |
| 4.5          | -0.56                          | -0.66                          | -0.69                          | -0.67                          |
| 5.0          | 0.39                           | 0.95                           | 0.99                           | 1.00                           |
| 5.5          | 3.53                           | 9.18                           | 9.22                           | 9.25                           |
| 6.0          | 1.88                           | 5.47                           | 5.53                           | 5.70                           |
| 6.5          | -0.13                          | -0.10                          | -0.12                          | -0.09                          |
| 7.0          | -0.08                          | -0.06                          | -0.04                          | -0.05                          |
| 7.5          | -0.10                          | 0.02                           | -0.02                          | 0.02                           |
| 8.0          | -0.12                          | -0.01                          | -0.06                          | -0.04                          |
| 8.5          | -0.10                          | -0.03                          | -0.02                          | 0.00                           |
| 9.0          | -0.09                          | 0.03                           | 0.01                           | 0.02                           |
| 9.5          | -0.13                          | -0.05                          | -0.03                          | -0.06                          |
| 10.0         | -0.10                          | 0.03                           | 0.01                           | 0.01                           |
| 10.5         | 0.69                           | 1.14                           | 1.08                           | 1.15                           |
| 11.0         | 0.64                           | 1.06                           | -0.56                          | 1.06                           |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 29/11/2019<br>09:49:09<br>(mm) | 20/12/2019<br>12:17:52<br>(mm) | 09/01/2020<br>10:03:42<br>(mm) | 11/03/2020<br>10:15:02<br>(mm) | 08/04/2020<br>09:21:32<br>(mm) | 12/05/2020<br>12:30:47<br>(mm) | 12/05/2020<br>12:46:58<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | 0.00                           | -0.74                          | -0.61                          | -0.42                          | -0.14                          | -0.12                          | -0.07                          |
| 1.0          | 0.00                           | 0.11                           | 0.14                           | -0.05                          | -0.11                          | -0.20                          | -0.11                          |
| 1.5          | 0.00                           | -0.04                          | -0.15                          | -0.32                          | -0.47                          | -0.75                          | -0.74                          |
| 2.0          | 0.00                           | 0.17                           | 0.28                           | 0.43                           | 0.55                           | 0.68                           | 0.72                           |
| 2.5          | 0.00                           | 0.00                           | 0.00                           | 0.11                           | 0.13                           | 0.11                           | 0.18                           |
| 3.0          | 0.00                           | -0.03                          | -0.11                          | 0.09                           | 0.21                           | 0.14                           | 0.11                           |
| 3.5          | 0.00                           | 0.36                           | 0.59                           | 0.57                           | 0.55                           | 0.65                           | 0.68                           |
| 4.0          | 0.00                           | 0.05                           | -0.01                          | -0.11                          | -0.09                          | -0.08                          | -0.05                          |
| 4.5          | 0.00                           | -0.03                          | -0.05                          | -0.08                          | -0.07                          | -0.09                          | -0.07                          |
| 5.0          | 0.00                           | -0.01                          | -0.03                          | -0.07                          | -0.09                          | -0.11                          | -0.07                          |
| 5.5          | 0.00                           | 0.09                           | 0.09                           | 0.51                           | 0.55                           | 0.53                           | 0.56                           |
| 6.0          | 0.00                           | -0.04                          | 0.01                           | 0.42                           | 0.51                           | 0.53                           | 0.59                           |
| 6.5          | 0.00                           | -0.05                          | -0.06                          | -0.07                          | -0.08                          | -0.13                          | -0.05                          |
| 7.0          | 0.00                           | -0.03                          | -0.05                          | -0.04                          | -0.07                          | -0.12                          | -0.03                          |
| 7.5          | 0.00                           | -0.05                          | -0.09                          | -0.05                          | -0.07                          | -0.10                          | -0.04                          |
| 8.0          | 0.00                           | -0.04                          | -0.03                          | -0.02                          | -0.02                          | -0.11                          | 0.00                           |
| 8.5          | 0.00                           | -0.05                          | -0.05                          | -0.03                          | -0.05                          | -0.11                          | -0.01                          |
| 9.0          | 0.00                           | -0.07                          | -0.03                          | 0.01                           | -0.06                          | -0.11                          | 0.02                           |
| 9.5          | 0.00                           | -0.08                          | -0.05                          | -0.03                          | -0.07                          | -0.10                          | 0.01                           |
| 10.0         | 0.00                           | -0.07                          | -0.06                          | -0.07                          | -0.12                          | -0.19                          | -0.06                          |
| 10.5         | 0.00                           | 0.01                           | 0.07                           | 0.12                           | 0.07                           | 0.02                           | 0.13                           |
| 11.0         | 0.00                           | -0.06                          | -0.01                          | 0.04                           | -0.05                          | -0.08                          | 0.05                           |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

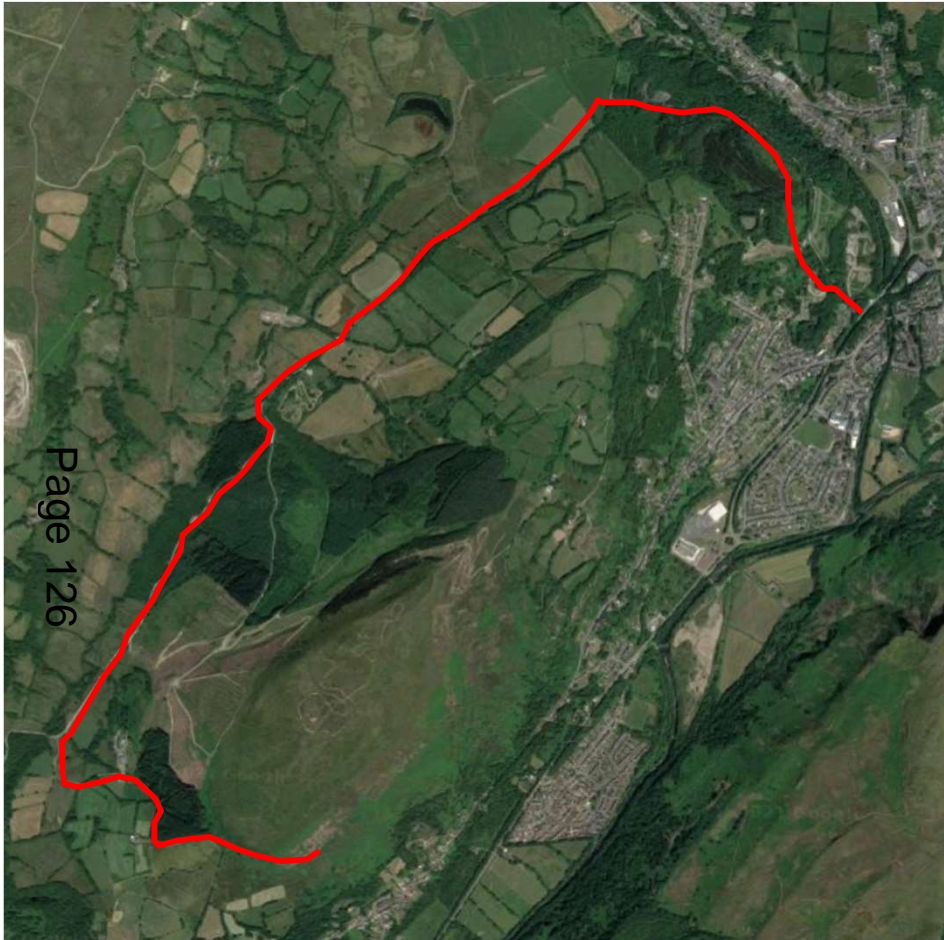


PROJECT:  
 SITE: 7234e  
 INSTALLATION: BH05  
 COMPANY:  
 CLIENT:  
 NOTE:

Incremental Deflection Data in B Axis (mm):

| Depth<br>(m) | 15/06/2020<br>10:55:20<br>(mm) | 27/05/2021<br>10:02:01<br>(mm) | 29/06/2021<br>10:10:54<br>(mm) | 28/07/2021<br>10:53:25<br>(mm) |
|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0.5          | -0.16                          | 0.07                           | 0.01                           | 0.07                           |
| 1.0          | -0.23                          | -0.15                          | -0.12                          | -0.10                          |
| 1.5          | -1.05                          | -1.04                          | -1.07                          | -1.08                          |
| 2.0          | 0.72                           | 1.00                           | 1.02                           | 1.01                           |
| 2.5          | 0.09                           | 0.09                           | 0.09                           | 0.05                           |
| 3.0          | -0.05                          | 0.08                           | 0.08                           | 0.06                           |
| 3.5          | 0.66                           | 0.74                           | 0.72                           | 0.72                           |
| 4.0          | -0.16                          | -0.13                          | -0.13                          | -0.15                          |
| 4.5          | -0.18                          | -0.10                          | -0.13                          | -0.15                          |
| 5.0          | -0.20                          | -0.10                          | -0.13                          | -0.10                          |
| 5.5          | 0.47                           | 1.69                           | 1.69                           | 1.71                           |
| 6.0          | 0.47                           | 1.57                           | 1.52                           | 1.61                           |
| 6.5          | -0.15                          | 0.08                           | -0.03                          | 0.08                           |
| 7.0          | -0.14                          | -0.13                          | -0.15                          | -0.12                          |
| 7.5          | -0.18                          | -0.11                          | -0.09                          | -0.07                          |
| 8.0          | -0.15                          | -0.05                          | -0.07                          | -0.02                          |
| 8.5          | -0.18                          | -0.06                          | -0.10                          | -0.08                          |
| 9.0          | -0.16                          | -0.03                          | -0.06                          | -0.05                          |
| 9.5          | -0.18                          | -0.04                          | -0.12                          | -0.08                          |
| 10.0         | -0.24                          | -0.09                          | -0.14                          | -0.11                          |
| 10.5         | -0.04                          | 0.05                           | -0.08                          | 0.05                           |
| 11.0         | -0.13                          | -0.09                          | -0.14                          | -0.09                          |
| 11.5         | 0.00                           | 0.00                           | 0.00                           | 0.00                           |

# Proposed Access Route 1



**Proposed access route 1 from A4067 using existing quarry entrance and track, plus additional track across farm land. The majority of the tip material will be excavated and transported by articulated trucks to a temporary stockpile before being loaded onto road lorries and sent to tip.**

**Project Title:** Godre'r Graig Primary School Tip Assessment

**Drawing Name:** Proposed Access Route 1

**Client:** Neath Port Talbot County Borough Council

**Drawn:** MF      **Checked:** KL      **Date:** 13/07/2021

**Approved:** KL      **Scale:** NTS      **DWG Ref:** SK001

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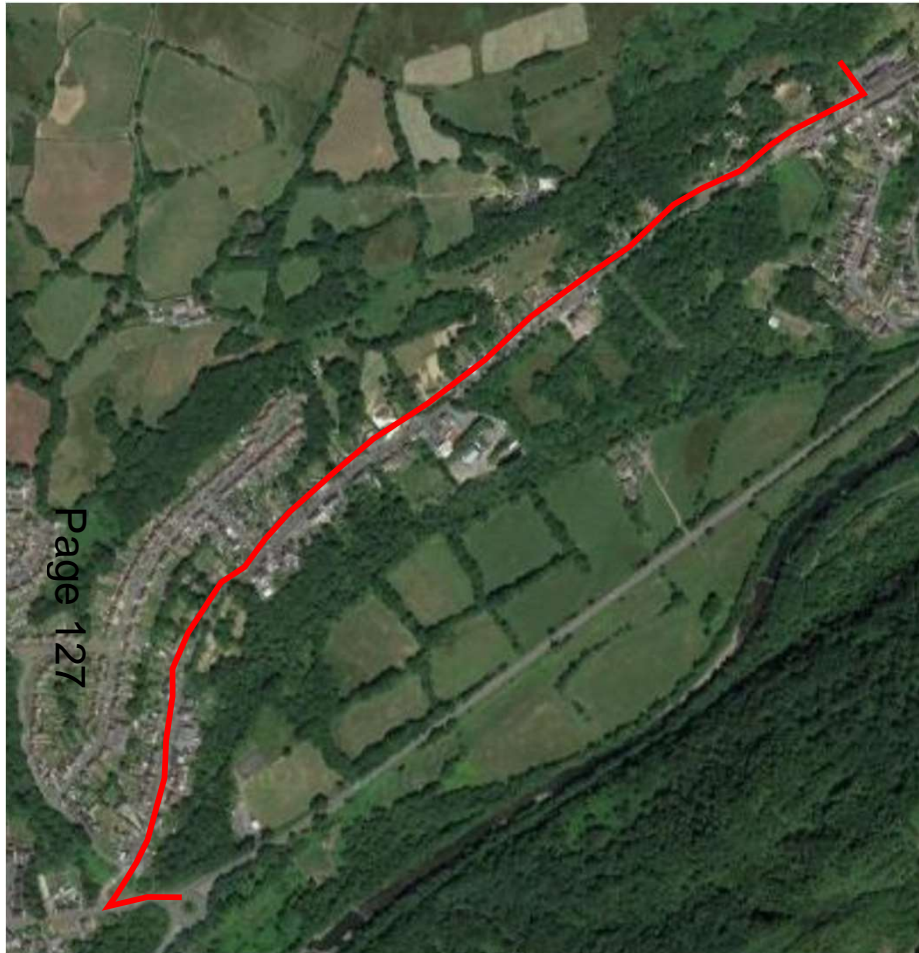
**T:** 01685 815 100

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**W:** WALTERS-GROUP.CO.UK  
**E:** MAIL@WALTERS-GROUP.CO.UK



## Proposed Access Route 2



Proposed access route 2 along Cilmaengwyn/Graig Road and up the widened primary school car park access road. This access will be utilised to remove any tip material that can't be transported up to route 1. The primary school car park will be used for turning and stacking lorries ready for loading to ensure the highway is kept clear.

**Project Title:** Godre'r Graig Primary School Tip Assessment

**Drawing Name:** Proposed Access Route 2

**Client:** Neath Port Talbot County Borough Council

**Drawn:** MF      **Checked:** KL      **Date:** 13/07/2021

**Approved:** KL      **Scale:** NTS      **DWG Ref:** SK002

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**E:** MAIL@WALTERS-GROUP.CO.UK

**WALTERS**

|   |                          |                  |              |                              |               |
|---|--------------------------|------------------|--------------|------------------------------|---------------|
| Project<br>Godre'graig School Spoil Options |                          |                  |              | Job no.<br>50084             |               |
| Calcs for<br>Embedded Retaining Wall        |                          |                  |              | Start page no./Revision<br>1 |               |
| Calcs by<br>BG                              | Calcs date<br>08/07/2021 | Checked by<br>KJ | Checked date | Approved by                  | Approved date |

## EMBEDED PILE WALL ANALYSIS & DESIGN

In accordance with BS EN1997-1:2004 - Code of Practice for Geotechnical design and the UK National Annex

Tedds calculation version 2.0.02

### Design summary

#### Combination 1

| Description  | Unit | Provided | Required | Utilisation | Result |
|--|------|----------|----------|-------------|--------|
| Total length required  | mm   | 14000    | 11069    | 1.265       | PASS   |
| Maximum moment in pile 458.8 kNm/mx2.5m(King Post spacing)=1147KNm |      |          |          |             |        |
| Maximum shear in pile 395.6 kN/mx2.5m(King Post spacing)=989KN     |      |          |          |             |        |

#### Combination 2

| Description  | Unit | Provided | Required | Utilisation | Result |
|--|------|----------|----------|-------------|--------|
| Total length required  | mm   | 14000    | 12038    | 1.163       | PASS   |
| Maximum moment in pile 431.2 kNm/mx2.5m(King Post spacing)=1078KNm |      |          |          |             |        |
| Maximum shear in pile 353.6 kN/mx2.5m(King Post spacing)=884KN     |      |          |          |             |        |

### Geometry

|                           |                       |                                |                    |
|---------------------------|-----------------------|--------------------------------|--------------------|
| Length of pile provided   | $H_{pile} = 14000$ mm | No. of different types of soil | $N_s = 2$          |
| Retained height           | $d_{ret} = 4000$ mm   | Unplanned excavation depth     | $d_{ex} = 0$ mm    |
| Total retained height     | $d_s = 4000$ mm       | Angle of retained slope        | $\beta = 30.0$ deg |
| Water depth retained side | $d_w = 8000$ mm       | Water depth retaining side     | $d_{wp} = 4000$ mm |

### Loading

Variable surcharge  $p_{o,Q} = 5.0$  kN/m<sup>2</sup>

### Soil characteristic properties table

| Soil | $\phi'_k$ (deg) | $\delta_k$ (deg) | $\gamma_m$ (kN/m <sup>3</sup> ) | $\gamma_s$ (kN/m <sup>3</sup> ) | h (mm) |
|------|-----------------|------------------|---------------------------------|---------------------------------|--------|
| 1    | 28.0            | 18.7             | 10.0                            | 19.0                            | 10000  |
| 2    | 30.0            | 20.0             | 15.0                            | 20.0                            | 7000   |

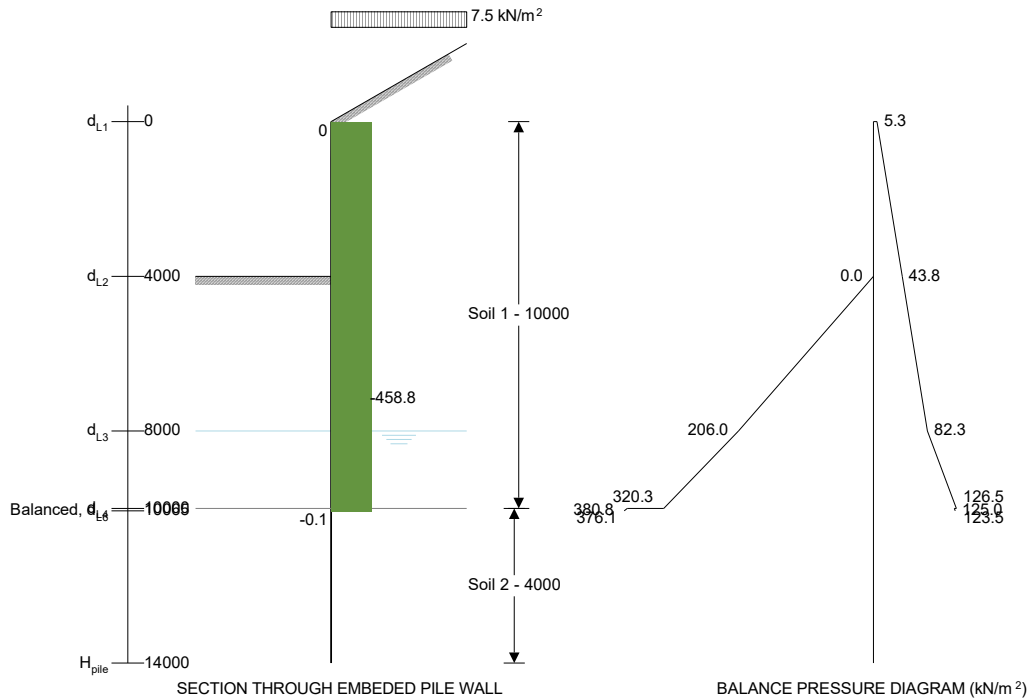
### Partial factors on actions - Section A.3.1 - Combination 1

|                              |                      |                         |                        |
|------------------------------|----------------------|-------------------------|------------------------|
| Perm. unfavourable action    | $\gamma_G = 1.35$    | Perm. favourable action | $\gamma_{G,f} = 1.00$  |
| Vari. unfavourable action    | $\gamma_Q = 1.50$    |                         |                        |
| Angle of shearing resistance | $\gamma_\psi = 1.00$ | Weight density          | $\gamma_\gamma = 1.00$ |

### Design properties table - combination 1

| Soil | $\phi'_d$ | $\delta_d$ | $\gamma_{m,d}$ | $\gamma_{s,d}$ | $K_a$ | $K_p$ |
|------|-----------|------------|----------------|----------------|-------|-------|
| 1    | 28.0      | 18.7       | 10.0           | 19.0           | 0.823 | 5.151 |
| 2    | 30.0      | 20.0       | 15.0           | 20.0           | 0.798 | 6.105 |

|  |                                 |                         |              |                                     |               |
|--|---------------------------------|-------------------------|--------------|-------------------------------------|---------------|
| Project<br><b>Godre'graig School Spoil Options</b> |                                 |                         |              | Job no.<br><b>50084</b>             |               |
| Calcs for<br><b>Embedded Retaining Wall</b>        |                                 |                         |              | Start page no./Revision<br><b>2</b> |               |
| Calcs by<br><b>BG</b>                              | Calcs date<br><b>08/07/2021</b> | Checked by<br><b>KJ</b> | Checked date | Approved by                         | Approved date |



**Overburden on active side**

|                         |  |                         |  |
|-------------------------|--|-------------------------|--|
| OB at 0 mm - soil 1     | OB' <sub>a11</sub> = <b>7.5 kN/m<sup>2</sup></b>   | OB at 4000 mm - soil 1  | OB' <sub>a21</sub> = <b>61.5 kN/m<sup>2</sup></b>  |
| OB at 8000 mm - soil 1  | OB' <sub>a31</sub> = <b>115.5 kN/m<sup>2</sup></b> | OB at 10000 mm - soil 1 | OB' <sub>a41</sub> = <b>140.3 kN/m<sup>2</sup></b> |
| OB at 10000 mm - soil 2 | OB' <sub>a42</sub> = <b>140.3 kN/m<sup>2</sup></b> | OB at 10065 mm - soil 2 | OB' <sub>a51</sub> = <b>141.2 kN/m<sup>2</sup></b> |

**Overburden on passive side**

|                         |   |                         |   |
|-------------------------|---|-------------------------|---|
| OB at 4000 mm - soil 1  | OB' <sub>p21</sub> = <b>0.0 kN/m<sup>2</sup></b>  | OB at 8000 mm - soil 1  | OB' <sub>p31</sub> = <b>40.0 kN/m<sup>2</sup></b> |
| OB at 10000 mm - soil 1 | OB' <sub>p41</sub> = <b>58.4 kN/m<sup>2</sup></b> | OB at 10000 mm - soil 2 | OB' <sub>p42</sub> = <b>58.4 kN/m<sup>2</sup></b> |
| OB at 10065 mm - soil 2 | OB' <sub>p51</sub> = <b>59.0 kN/m<sup>2</sup></b> |                         |   |

**Pressure on active side**

|                             |   |                             |   |
|-----------------------------|---|-----------------------------|---|
| Active at 0 mm - soil 1     | p' <sub>a11</sub> = <b>5.3 kN/m<sup>2</sup></b>   | Active at 4000 mm - soil 1  | p' <sub>a21</sub> = <b>43.8 kN/m<sup>2</sup></b>  |
| Active at 8000 mm - soil 1  | p' <sub>a31</sub> = <b>82.3 kN/m<sup>2</sup></b>  | Active at 10000 mm - soil 1 | p' <sub>a41</sub> = <b>126.5 kN/m<sup>2</sup></b> |
| Active at 10000 mm - soil 2 | p' <sub>a42</sub> = <b>123.5 kN/m<sup>2</sup></b> | Active at 10065 mm - soil 2 | p' <sub>a51</sub> = <b>125.0 kN/m<sup>2</sup></b> |

**Pressure on passive side**

|                              |   |                              |   |
|------------------------------|---|------------------------------|---|
| Passive at 4000 mm - soil 1  | p' <sub>p21</sub> = <b>0.0 kN/m<sup>2</sup></b>   | Passive at 8000 mm - soil 1  | p' <sub>p31</sub> = <b>206.0 kN/m<sup>2</sup></b> |
| Passive at 10000 mm - soil 1 | p' <sub>p41</sub> = <b>320.3 kN/m<sup>2</sup></b> | Passive at 10000 mm - soil 2 | p' <sub>p42</sub> = <b>376.1 kN/m<sup>2</sup></b> |
| Passive at 10065 mm - soil 2 | p' <sub>p51</sub> = <b>380.8 kN/m<sup>2</sup></b> |                              |   |

**By iteration the depth at which the active moments equal the passive moments has been determined as 10065 mm as follows:-**

**Active moment about 10065 mm**

|                |                                       |                |                                       |
|----------------|---------------------------------------|----------------|---------------------------------------|
| Moment level 1 | M <sub>a11</sub> = <b>93.3 kNm/m</b>  | Moment level 1 | M <sub>a12</sub> = <b>648.5 kNm/m</b> |
| Moment level 2 | M <sub>a21</sub> = <b>414.8 kNm/m</b> | Moment level 2 | M <sub>a22</sub> = <b>559.5 kNm/m</b> |
| Moment level 3 | M <sub>a31</sub> = <b>115.1 kNm/m</b> | Moment level 3 | M <sub>a32</sub> = <b>92.6 kNm/m</b>  |
| Moment level 4 | M <sub>a41</sub> = <b>0.2 kNm/m</b>   | Moment level 4 | M <sub>a42</sub> = <b>0.1 kNm/m</b>   |

**Passive moment about 10065 mm**

|                |                                       |                |  |
|----------------|---------------------------------------|----------------|--|
| Moment level 2 | M <sub>p21</sub> = <b>0.0 kNm/m</b>   | Moment level 2 | M <sub>p22</sub> = <b>1400.5 kNm/m</b> |
| Moment level 3 | M <sub>p31</sub> = <b>288.2 kNm/m</b> | Moment level 3 | M <sub>p32</sub> = <b>234.5 kNm/m</b>  |

|   |                          |                  |              |                              |               |
|---|--------------------------|------------------|--------------|------------------------------|---------------|
| Project<br>Godre'graig School Spoil Options |                          |                  |              | Job no.<br>50084             |               |
| Calcs for<br>Embedded Retaining Wall        |                          |                  |              | Start page no./Revision<br>3 |               |
| Calcs by<br>BG                              | Calcs date<br>08/07/2021 | Checked by<br>KJ | Checked date | Approved by                  | Approved date |

Moment level 4  $M_{p41} = 0.5 \text{ kNm/m}$       Moment level 4  $M_{p42} = 0.3 \text{ kNm/m}$

**Total moments about 10065 mm**

Total active moment  $\Sigma M_a = 1924.0 \text{ kNm/m}$       Total passive moment  $\Sigma M_p = 1924.0 \text{ kNm/m}$

**Required pile length**

Length reqd to balance mnts  $H = 10065 \text{ mm}$       Depth of equal pressure  $d_{contra} = 5046 \text{ mm}$

Add 20% below this point  $d_{e\_add} = 6023 \text{ mm}$       Minimum required pile length  $H_{total} = 11069 \text{ mm}$

**Pass - Provided length of pile greater than minimum required length of pile**

**Partial factors on actions - Section A.3.1 - Combination 2**

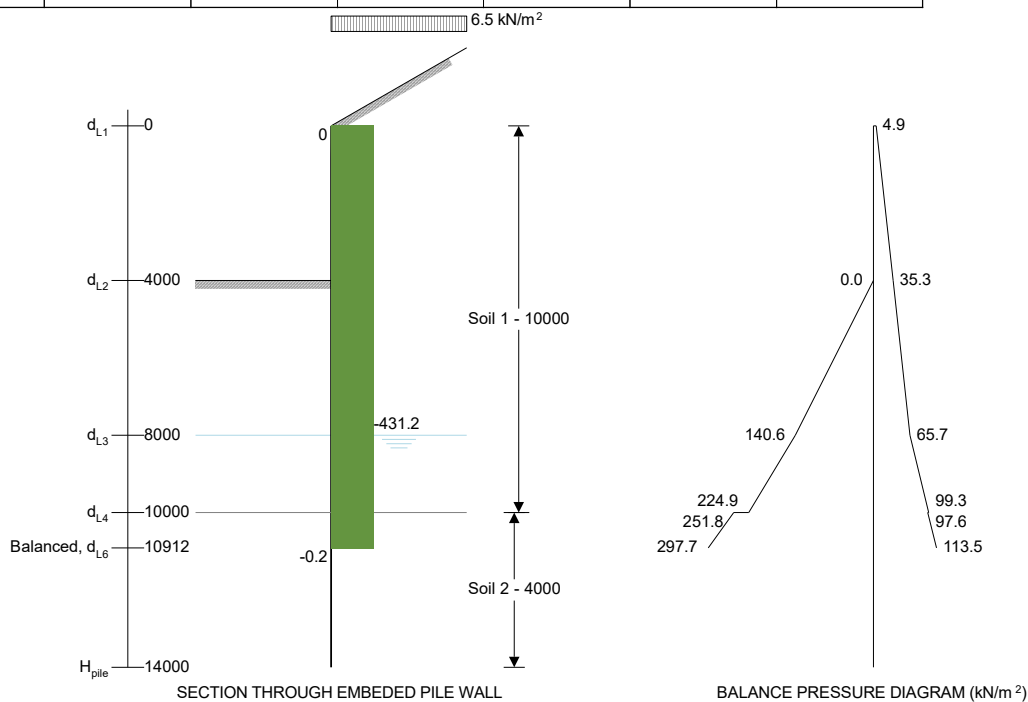
Perm. unfavourable action  $\gamma_G = 1.00$       Perm. favourable action  $\gamma_{G,f} = 1.00$

Vari. unfavourable action  $\gamma_Q = 1.30$

Angle of shearing resistance  $\gamma_\psi = 1.25$       Weight density  $\gamma_\gamma = 1.00$

**Design properties table - combination 2**

| Soil | $\phi'_d$ | $\delta_d$ | $\gamma_{m,d}$ | $\gamma_{s,d}$ | $K_a$ | $K_p$ |
|------|-----------|------------|----------------|----------------|-------|-------|
| 1    | 23.0      | 15.1       | 10.0           | 19.0           | 0.877 | 3.516 |
| 2    | 24.8      | 16.2       | 15.0           | 20.0           | 0.858 | 3.977 |



**Overburden on active side**

OB at 0 mm - soil 1  $OB'_{a11} = 6.5 \text{ kN/m}^2$       OB at 4000 mm - soil 1  $OB'_{a21} = 46.5 \text{ kN/m}^2$

OB at 8000 mm - soil 1  $OB'_{a31} = 86.5 \text{ kN/m}^2$       OB at 10000 mm - soil 1  $OB'_{a41} = 104.9 \text{ kN/m}^2$

OB at 10000 mm - soil 2  $OB'_{a42} = 104.9 \text{ kN/m}^2$       OB at 10913 mm - soil 2  $OB'_{a51} = 114.2 \text{ kN/m}^2$

**Overburden on passive side**

OB at 4000 mm - soil 1  $OB'_{p21} = 0.0 \text{ kN/m}^2$       OB at 8000 mm - soil 1  $OB'_{p31} = 40.0 \text{ kN/m}^2$

OB at 10000 mm - soil 1  $OB'_{p41} = 58.4 \text{ kN/m}^2$       OB at 10000 mm - soil 2  $OB'_{p42} = 58.4 \text{ kN/m}^2$

OB at 10913 mm - soil 2  $OB'_{p51} = 67.7 \text{ kN/m}^2$

**Pressure on active side**

Active at 0 mm - soil 1  $p'_{a11} = 4.9 \text{ kN/m}^2$       Active at 4000 mm - soil 1  $p'_{a21} = 35.3 \text{ kN/m}^2$

|   |                          |                  |              |                              |               |
|---|--------------------------|------------------|--------------|------------------------------|---------------|
| Project<br>Godre'graig School Spoil Options |                          |                  |              | Job no.<br>50084             |               |
| Calcs for<br>Embedded Retaining Wall        |                          |                  |              | Start page no./Revision<br>4 |               |
| Calcs by<br>BG                              | Calcs date<br>08/07/2021 | Checked by<br>KJ | Checked date | Approved by                  | Approved date |

Active at 8000 mm - soil 1  $p'_{a31} = 65.7 \text{ kN/m}^2$       Active at 10000 mm - soil 1  $p'_{a41} = 99.3 \text{ kN/m}^2$   
 Active at 10000 mm - soil 2  $p'_{a42} = 97.6 \text{ kN/m}^2$       Active at 10913 mm - soil 2  $p'_{a51} = 113.5 \text{ kN/m}^2$

**Pressure on passive side**

Passive at 4000 mm - soil 1  $p'_{p21} = 0.0 \text{ kN/m}^2$       Passive at 8000 mm - soil 1  $p'_{p31} = 140.6 \text{ kN/m}^2$   
 Passive at 10000 mm - soil 1  $p'_{p41} = 224.9 \text{ kN/m}^2$       Passive at 10000 mm - soil 2  $p'_{p42} = 251.8 \text{ kN/m}^2$   
 Passive at 10913 mm - soil 2  $p'_{p51} = 297.7 \text{ kN/m}^2$

**By iteration the depth at which the active moments equal the passive moments has been determined as 10912 mm as follows:-**

**Active moment about 10912 mm**

|                |                                 |                |                                 |
|----------------|---------------------------------|----------------|---------------------------------|
| Moment level 1 | $M_{a11} = 94.6 \text{ kNm/m}$  | Moment level 1 | $M_{a12} = 582.5 \text{ kNm/m}$ |
| Moment level 2 | $M_{a21} = 394.1 \text{ kNm/m}$ | Moment level 2 | $M_{a22} = 558.0 \text{ kNm/m}$ |
| Moment level 3 | $M_{a31} = 147.6 \text{ kNm/m}$ | Moment level 3 | $M_{a32} = 156.8 \text{ kNm/m}$ |
| Moment level 4 | $M_{a41} = 27.1 \text{ kNm/m}$  | Moment level 4 | $M_{a42} = 15.7 \text{ kNm/m}$  |

**Passive moment about 10912 mm**

|                |                                 |                |                                  |
|----------------|---------------------------------|----------------|----------------------------------|
| Moment level 2 | $M_{p21} = 0.0 \text{ kNm/m}$   | Moment level 2 | $M_{p22} = 1194.3 \text{ kNm/m}$ |
| Moment level 3 | $M_{p31} = 315.9 \text{ kNm/m}$ | Moment level 3 | $M_{p32} = 355.1 \text{ kNm/m}$  |
| Moment level 4 | $M_{p41} = 69.9 \text{ kNm/m}$  | Moment level 4 | $M_{p42} = 41.3 \text{ kNm/m}$   |

**Total moments about 10912 mm**

|                     |                                     |                      |                                     |
|---------------------|-------------------------------------|----------------------|-------------------------------------|
| Total active moment | $\Sigma M_a = 1976.5 \text{ kNm/m}$ | Total passive moment | $\Sigma M_p = 1976.5 \text{ kNm/m}$ |
|---------------------|-------------------------------------|----------------------|-------------------------------------|

**Required pile length**

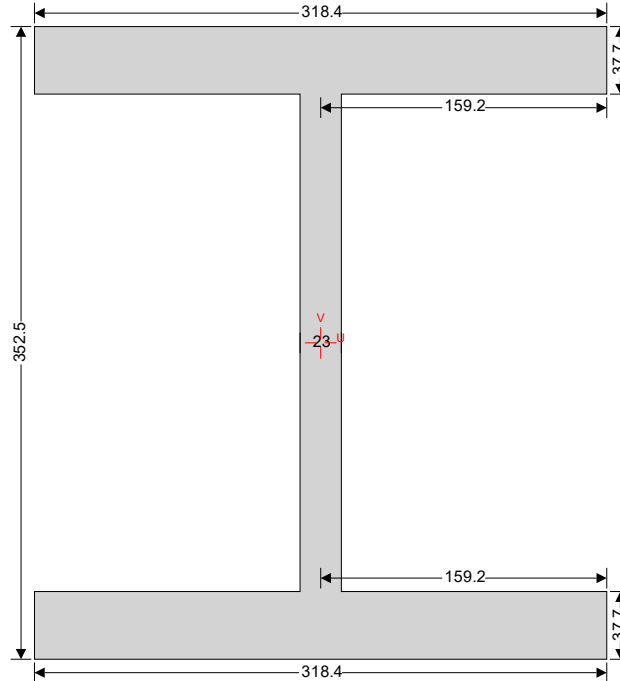
|                             |                                |                              |                                |
|-----------------------------|--------------------------------|------------------------------|--------------------------------|
| Length reqd to balance mnts | $H = 10912 \text{ mm}$         | Depth of equal pressure      | $d_{contra} = 5282 \text{ mm}$ |
| Add 20% below this point    | $d_{e\_add} = 6757 \text{ mm}$ | Minimum required pile length | $H_{total} = 12038 \text{ mm}$ |

**Pass - Provided length of pile greater than minimum required length of pile**

|  |                          |                  |              |                              |               |
|--|--------------------------|------------------|--------------|------------------------------|---------------|
| Project<br>Godre'graig School Spoil Options    |                          |                  |              | Job no.<br>50084             |               |
| Calcs for<br>King Pspot Steel Section Property |                          |                  |              | Start page no./Revision<br>5 |               |
| Calcs by<br>BG                                 | Calcs date<br>08/07/2021 | Checked by<br>KJ | Checked date | Approved by                  | Approved date |

**CALCULATION OF SECTION PROPERTIES-305x305x240UC (Grade S355)**

Tedds calculation version 2.0.07



**Area**

$A = 303.81 \text{ cm}^2$

**2<sup>nd</sup> moment of area**

$I_{uu} = 63.8 \times 10^3 \text{ cm}^4$

$I_{vv} = 20.3 \times 10^3 \text{ cm}^4$

$I_{xx} = 63.8 \times 10^3 \text{ cm}^4$

$I_{yy} = 20.3 \times 10^3 \text{ cm}^4$

**Radius of gyration**

$r_{uu} = 145.0 \text{ mm}$

$r_{vv} = 81.8 \text{ mm}$

$r_{xx} = 14.5 \text{ cm}$

$r_{yy} = 8.2 \text{ cm}$

**Plastic section modulus (only shapes with all rectangles at 90 degs)**

$S_{xx} = 4.22 \times 10^3 \text{ cm}^3$

$S_{yy} = 1.95 \times 10^3 \text{ cm}^3$

**Distance to combined centroid**

$X_e = 0.0 \text{ mm}$

$Y_e = 0.0 \text{ mm}$

Design bending resistance moment - eq 6.13;  $M_{c,Rd} = M_{pl,Rd} = W_{pl,y} \cdot f_y / \gamma_{M0} = 1465.2 \text{ kNm}$

Design shear resistance - cl 6.2.6(2);  $V_{c,Rd} = V_{pl,Rd} = A_v \cdot (f_y / \sqrt{3}) / \gamma_{M0} = 1710 \text{ kN}$

Based on the embedded retaining wall design calculation presented in the previous pages, the maximum bending and shear force as a result of the ULS design value of actions are as follows:

Med:1147KNm <  $M_{pl,Rd} = 1465.2 \text{ kNm}$  Bending Check OK

Ved:989 KN <  $V_{pl,Rd} = 1710 \text{ kN}$  Shear Check OK

Deflection check for the pile section to be undertaken by the pile designer.



|              |                                 |       |            |  |
|--------------|---------------------------------|-------|------------|--|
|              | Sheet No:                       | 1     | Rev:       |  |
| Job Title:   | Godre'r Graig Spoil Options     |       |            |  |
| Sheet Title: | Retaining Wall Budget Cost Plan |       |            |  |
| Made by:     |                                 | Date: | 13/07/2021 |  |

| Ref         | Description   | QTY    | Unit                           | Rate     | Amount                        | Totals           |
|-------------|---|--------|--------------------------------|----------|-------------------------------|------------------|
| <b>0.00</b> | <b>Site Surveys</b>   |        |                                |          | £                             |                  |
| 0.01        | Arboricultural Report   |        |                                |          | 5000.00                       |                  |
| 0.02        | Topographical, PAS128 Type B and Utility Search                             |        |                                |          | 3000.00                       |                  |
| 0.03        | WAC Testing   |        |                                |          | 2000.00                       |                  |
|             |   |        |                                |          |                               | <u>10000.00</u>  |
| <b>1.00</b> | <b>Site Establishment &amp; Clearance</b>                                   |        |                                |          | £                             |                  |
| 1.01        | Tree Removal (assumed 50no)   | 50     | nr                             | 300.00   | 15000.00                      |                  |
| 1.02        | Top Soil temporary displacement (assumed 300mm)                             | 250    | m3                             | 2.00     | 500.00                        |                  |
| 1.03        | Removal of Material (assumed inert average 300mm across 6m for full length) | 250    | m3                             | 200.00   | 50000.00                      |                  |
| 1.04        | Vegetation Clearance  | 800    | m2                             | 2.00     | 1600.00                       |                  |
|             |   |        |                                |          |                               | <u>67100.00</u>  |
| <b>2.00</b> | <b>Site Access Roads and Working Platforms</b>                              |        |                                |          | £                             |                  |
| 2.01        | Widening of road (in line with Walters Costs - semi permanent)              |        | In line with Walters Quotation |          | 65039.96                      |                  |
| 2.02        | Crane and Piling Platform (600mm 6F5 material)                              | 550    | m3                             | 60.00    | 33000.00                      |                  |
| 2.03        | CBR testing   | 2      | visits                         | 2500.00  | 5000.00                       |                  |
|             |   |        |                                |          |                               | <u>103039.96</u> |
| <b>3.00</b> | <b>Piling</b>   |        |                                |          | £                             |                  |
| 3.01        | Mobilisation of plant (provisional sum)                                     | 1      | item                           | 20000.00 | 20000.00                      |                  |
| 3.02        | 50 no piles   | 50     | nr                             | 1430.00  | 71500.00                      |                  |
|             |   |        |                                |          |                               | <u>91500.00</u>  |
| <b>4.00</b> | <b>Retaining Structure</b>  |        |                                |          | £                             |                  |
| 4.01        | Mobilisation of plant   | 1      | item                           | 14942.00 | 14942.00                      |                  |
| 4.02        | Retaining Walls - King Post Retaining Wall Precast Panels (supply only)     | 440    | m2                             | 53.00    | 23320.00                      |                  |
| 4.03        | Retaining Wall - Precast Labour + Plant                                     | 4      | weeks                          | 6500.00  | 26000.00                      |                  |
| 4.04        | Retaining Walls - King Post Retaining Wall Steel Structure                  | 168000 | kg                             | 2.50     | 420000.00                     |                  |
|             |   |        |                                |          |                               | <u>484262.00</u> |
| <b>5.00</b> | <b>Landscaping</b>  |        |                                |          | £                             |                  |
| 5.01        | Reinstatement of topsoil  | 880    | m2                             | 2.00     | 1760.00                       |                  |
| 5.02        | Planting  | 880    | m2                             | 30.00    | 26400.00                      |                  |
|             |   |        |                                |          |                               | <u>28160.00</u>  |
| <b>X.XX</b> | <b>EXCLUSIONS</b>   |        |                                |          |                               |                  |
| X.01        | Land ownership  |        |                                |          |                               |                  |
| X.02        | Diversion of overhead cable   |        |                                |          | Not included within cost plan | 0.00             |
| X.03        | Classification of waste - costs assume as inert                             |        |                                |          | Not included within cost plan | 0.00             |
| X.04        | Reinstatement of school access road to previous state                       |        |                                |          | Not included within cost plan | 0.00             |
| X.05        | Assumed no inflation. Start date unknown                                    |        |                                |          | Not included within cost plan | 0.00             |
|             |   |        |                                |          | £                             | <u>0.00</u>      |

|              |                                    |           |                   |      |  |
|--------------|------------------------------------|-----------|-------------------|------|--|
| Job No:      |                                    | Sheet No: |                   | Rev: |  |
| Job Title:   | <b>Godre'r Graig Spoil Options</b> |           |                   |      |  |
| Sheet Title: | <b>Scope of Works</b>              |           |                   |      |  |
| Made by:     |                                    | Date:     | <b>13/07/2021</b> |      |  |

| Ref               | Description                                | Totals             |                      |
|-------------------|--|--------------------|----------------------|
| SUMMARY OF COST   |  | £                  |                      |
| 0.00              | Site Surveys                               | 10000.00           |                      |
| 1.00              | Site Establishment and Clearnace           | 67100.00           |                      |
| 2.00              | Site Access Roads and Working Platforms    | 103039.96          |                      |
| 3.00              | Piling                                     | 91500.00           |                      |
| 4.00              | Retaining Structure                        | 484262.00          |                      |
| 5.00              | Landscaping & Reinstatement                | 28160.00           |                      |
| X.XX              | Exclusions (see cost schedule)             | 0.00               |                      |
| <b>Sub Total</b>  |  | <b>£784,061.96</b> | <b>= £784,061.96</b> |
| <b>TOTAL COST</b> |  |                    |                      |
|                   | <b>Preliminaries @ 15%</b>                 |                    | <b>£117,609.29</b>   |
|                   | <b>SUB TOTAL</b>                           |                    | <b>£901,671.25</b>   |
|                   | <b>Overheads and Profit</b>                | <b>5.00%</b>       | <b>£45,083.56</b>    |
|                   | <b>TOTAL CONSTRUCTION COSTS</b>            |                    | <b>£946,754.82</b>   |
|                   | <b>Project Contingency</b>                 | <b>10%</b>         | <b>£94,675.48</b>    |
|                   | <b>Professional Fees</b>                   | <b>10%</b>         | <b>£94,675.48</b>    |
|                   | <b>TOTAL PROJECT COST</b><br>excluding VAT |                    | <b>£1,136,105.78</b> |

| Item          | Description   | Quantity | Unit | Rate      | Amount                         |                  |
|---------------|---|----------|------|-----------|--------------------------------|------------------|
|               | <b><u>Godre'r Graig Primary School Road Widening</u></b>  |          |      |           |                                |                  |
| 1             | Prelims including road sweeping and security  | 1        | sum  | 24,009.66 | 24,009.66                      |                  |
| 2             | Traffic management  | 1        | sum  | 1,128.40  | 1,128.40                       |                  |
| 3             | Excavate to formation 450mm thick and disposal  | 245      | m2   | 50.69     | 12,419.05                      |                  |
| 4             | PCC gully + 150mm 6m long connection to existing MH in access road  | 2        | no   | 1,199.14  | 2,398.28                       |                  |
| 5             | HB2 kerbs   | 70       | m    | 40.36     | 2,825.20                       |                  |
| 6             | Type 1 sub-base 250mm thick   | 245      | m2   | 33.56     | 8,222.20                       |                  |
| 7             | Base course 100mm thick   | 245      | m2   | 22.57     | 5,529.65                       |                  |
| 8             | Binder course 60mm thick  | 245      | m2   | 16.93     | 4,147.85                       |                  |
| 9             | Surface course 40mm thick   | 245      | m2   | 14.11     | 3,456.95                       |                  |
| 10            | Road Markings   | 1        | item | 902.72    | 902.72                         |                  |
|               | <b>Pricing Notes</b><br>Service diversions by other (telegraph pole adjacent to school car park gates)<br>Inert waste |          |      |           |                                |                  |
| <b>Page 1</b> |   |          |      |           | <b>Total to Series Summary</b> | <b>65,039.96</b> |

| Item                                 | Description   | Quantity | Unit | Rate | Amount    |
|--------------------------------------|---|----------|------|------|-----------|
|                                      | <p><u>Godre'r Graig Primary School Road Widening (Cont'd)</u></p> <p>Series Summary</p> <p>Page 1</p> |          |      |      | 65,039.96 |
| <p>Page 3 Total to Grand Summary</p> |   |          |      |      | 65,039.96 |

| Item      | Description                                | Quantity           | Unit | Rate | Amount           |
|-----------|--|--------------------|------|------|------------------|
|           | <b><u>GRAND SUMMARY</u></b>                |                    |      |      |                  |
|           | Godre'r Graig Primary School Road Widening |                    |      |      | 65,039.96        |
| <b>GS</b> | <b>Page 1</b>                              | <b>GRAND TOTAL</b> |      |      | <b>65,039.96</b> |



## Integrated Impact Assessment (IIA)

This Integrated Impact Assessment considers the duties and requirements of the following legislation in order to inform and ensure effective decision making and compliance:

- Equality Act 2010
- Welsh Language Standards (No.1) Regulations 2015
- Well-being of Future Generations (Wales) Act 2015
- Environment (Wales) Act 2016

### Version Control

| Version   | Author       | Job title                            | Date       |
|-----------|--------------|--------------------------------------|------------|
| Version 1 | Paul Ransome | Bridges & Highway Structures Manager | 16/09/2021 |
|           |              |                                      |            |
|           |              |                                      |            |

### 1. Details of the initiative

|           |   |
|-----------|---|
|           | <b>Title of the Initiative:</b> Design Options for the Remediation of Cilmaengwyn Tip above Godre'r Graig Primary School          |
| <b>1a</b> | <b>Service Area:</b> Engineering and Transport  |
| <b>1b</b> | <b>Directorate:</b> Environment and Regeneration  |
| <b>1c</b> | <b>Summary of the initiative:</b> To decide on Options for the Remediation of Cilmaengwyn Tip above Godre'r Graig Primary School. |
| <b>1d</b> | <b>Is this a 'strategic decision'?</b> No   |
| <b>1e</b> | <b>Who will be directly affected by this initiative?</b> Members of the public that live, work or visit Godre'r Graig.            |
| <b>1f</b> | <b>When and how were people consulted? If allowed to proceed.</b> No formal consultation has taken place.                         |
| <b>1g</b> | <b>What were the outcomes of the consultation?</b> N/A  |

## 2. Evidence

### What evidence was used in assessing the initiative?

Earth Science Partnership Tip Remediation Assessment Report ESP.7234e.04.3564

## 3. Equalities

a) How does the initiative impact on people who share a **protected characteristic**?

| Protected Characteristic     | + | - | +/- | Why will it have this impact? |
|------------------------------|---|---|-----|-------------------------------|
| Age                          |   |   | √   |                               |
| Disability                   |   |   | √   |                               |
| Gender reassignment          |   |   | √   |                               |
| Marriage & civil partnership |   |   | √   |                               |
| Pregnancy and maternity      |   |   | √   |                               |
| Race                         |   |   | √   |                               |
| Religion or belief           |   |   | √   |                               |
| Sex                          |   |   | √   |                               |
| Sexual orientation           |   |   | √   |                               |



**What action will be taken to improve positive or mitigate negative impacts?**

Local members will be consulted following the feasibility work to agree which option is implemented.

b) How will the initiative assist or inhibit the ability to meet the **Public Sector Equality Duty**?

| <b>Public Sector Equality Duty (PSED)</b>                   | <b>+</b> | <b>-</b> | <b>+/-</b> | <b>Why will it have this impact?</b> |
|---|----------|----------|------------|--------------------------------------|
| To eliminate discrimination, harassment and victimisation   |          |          | √          |                                      |
| To advance equality of opportunity between different groups |          |          | √          |                                      |
| To foster good relations between different groups           |          |          | √          |                                      |

**What action will be taken to improve positive or mitigate negative impacts?**

Local members will be consulted following the feasibility work to agree which option is implemented.

#### 4. Socio Economic Duty

| Impact                | Details of the impact/advantage/disadvantage |
|-----------------------|--|
| Positive/Advantage    |  |
| Negative/Disadvantage |  |
| Neutral               |  |

| What action will be taken to reduce inequality of outcome  |
|--|
| Local members will be consulted following the feasibility work to agree which option is implemented. |

#### 5. Community Cohesion/Social Exclusion/Poverty

|                    | + | - | +/- | Why will it have this impact? |
|--------------------|---|---|-----|-------------------------------|
| Community Cohesion |   |   | √   |                               |
| Social Exclusion   |   |   | √   |                               |
| Poverty            |   |   | √   |                               |

**What action will be taken to improve positive or mitigate negative impacts?**

Local members will be consulted following the feasibility work to agree which option is implemented.

**6. Welsh**

|  | + | - | +/- | Why will it have this effect? |
|--|---|---|-----|-------------------------------|
| What effect does the initiative have on:<br>- people's opportunities to use the Welsh language |   |   | √   |                               |
| - treating the Welsh and English languages equally   |   |   | √   |                               |

**What action will be taken to improve positive or mitigate negative impacts?**

Local members will be consulted following the feasibility work to agree which option is implemented.

## 7. Biodiversity

How will the initiative assist or inhibit the ability to meet the **Biodiversity Duty**?

| Biodiversity Duty  | + | - | +/- | Why will it have this impact?   |
|--|---|---|-----|---|
| To maintain and enhance biodiversity   | √ |   |     | During the design of the options the potential for creating enhanced biodiversity will be considered.                     |
| To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc. | √ |   |     | The design of any remediation works will take into account the existing ecosystem and the creation of wider biodiversity. |

| What action will be taken to improve positive or mitigate negative impacts?   |
|---|
| The design of any remediation works will take into account the existing ecosystem and the creation of wider biodiversity. |

## 8. Well-being of Future Generations

How have the five ways of working been applied in the development of the initiative?

| Ways of Working  | Details   |
|--|---|
| i. <b>Long term</b> – looking at least 10 years (and up to 25 years) ahead                       | The remediation work once completed will make the school site available to future generations to use & enjoy.                             |
| ii. <b>Prevention</b> – preventing problems occurring or getting worse                           | The remediation work once completed will help to prevent any damage from potential slippages from the tip material.                       |
| iii. <b>Collaboration</b> – working with other services internal or external                     | The Engineering Section are working with specialist geotechnical consultants & contractors.   |
| iv. <b>Involvement</b> – involving people, ensuring they reflect the diversity of the population | The Engineering Section will be involving the individual landowners in discussions to agree the best all round solution for all parties.  |
| v. <b>Integration</b> – making connections to maximise contribution to:                          | The remediation works will give the residents of Godre'r Graig a greater sense of security and will allow the school site to be utilised. |
| <b>Council's well-being objectives</b>   | The remediation works will give the residents of Godre'r Graig a greater sense of security and will allow the school site to be utilised. |
| <b>Other public bodies objectives</b>  | The remediation works will give the residents of Godre'r Graig a greater sense of security and will allow the school site to be utilised. |

## 9. Monitoring Arrangements

Provide information on the monitoring arrangements to:

Monitor the impact of the initiative on Equalities, Community Cohesion, the Welsh Measure, Biodiversity Duty and the Wellbeing Objectives.

Local members will be consulted following the feasibility work to agree which option is implemented.

## 10. Assessment Conclusions

Please provide details of the conclusions reached in relation to each element of the assessment:

|   | <b>Conclusion</b>   |
|---|---|
| <b>Equalities</b>                                       | Local members will be consulted following the feasibility work to agree which option is implemented                                       |
| <b>Socio Economic Disadvantage</b>                      | Local members will be consulted following the feasibility work to agree which option is implemented                                       |
| <b>Community Cohesion/<br/>Social Exclusion/Poverty</b> | Local members will be consulted following the feasibility work to agree which option is implemented                                       |
| <b>Welsh</b>  | Local members will be consulted following the feasibility work to agree which option is implemented                                       |
| <b>Biodiversity</b>                                     | The design of any remediation works will take into account the existing ecosystem and the creation of wider biodiversity                  |
| <b>Well-being of Future Generations</b>                 | The remediation works will give the residents of Godre'r Graig a greater sense of security and will allow the school site to be utilised. |

## Overall Conclusion

Please indicate the conclusion reached:

- **Continue** - as planned as no problems and all opportunities have been maximised
- **Make adjustments** - as potential problems/missed opportunities/negative impacts have been identified along with mitigating actions
- **Justification** - for continuing with the initiative even though there is a potential for negative impacts or missed opportunities
- **STOP** - redraft the initiative as actual or potential unlawful discrimination has been identified

Please provide details of the overall conclusion reached in relation to the initiative

The overall conclusion for the Integrated Impact Assessment (IIA) is to **Continue** with the direct award to Earth Science Partnership of work to investigate design options and produce budget estimates for works associated with the remediation of Cilmaengwyn Spoil Tip.

## 11. Actions

What actions are required in relation to obtaining further data/information, to reduce or remove negative impacts or improve positive impacts?

| Action | Who will be responsible for seeing it is done? | When will it be done by? | How will we know we have achieved our objective? |
|--------|--|--------------------------|--|
| None   |  |                          |  |
|        |  |                          |  |
|        |  |                          |  |
|        |  |                          |  |

## 12. Sign off

|                      | <b>Name</b>   | <b>Position</b>     | <b>Signature</b> | <b>Date</b> |
|----------------------|---------------|---------------------|------------------|-------------|
| <b>Completed by</b>  | Hasan Hasan   | Engineering Manager |                  | 16/09/21    |
| <b>Signed off by</b> | D.W.Griffiths | Head of Service     |                  | 16/09/21    |





Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

## **NEATH PORT TALBOT COUNTY BOROUGH COUNCIL**

### **Streetscene and Engineering Cabinet Board**

**5<sup>th</sup> November 2021**

**Report of the Head of Streetcare  
Mike Roberts**

#### **Matter for Decision**

**Wards Affected:** All Wards

#### **Three Yearly Grit Bin Policy Review**

#### **Purpose of the Report:**

To undertake a review of the Council's grit bin policy.

#### **Executive Summary:**

The current grit bin policy is required to be subject to a 'three year' review as determined at the Environment and Highways Cabinet Board of 29<sup>th</sup> October 2018 when the matter was last considered. The policy was originally agreed at a previous meeting of the Environment and Highways Cabinet Board on 6<sup>th</sup> September 2012, following consideration by a Scrutiny Task and Finish Group.

## **Background:**

The last review of the current grit bin policy was reported to the Streetscene & Engineering Cabinet Board of 7<sup>th</sup> September 2018. The policy was originally established following a Scrutiny Task and Finish Group which reported to the Environment and Highways Cabinet Board on 6<sup>th</sup> September 2012.

The policy is that:

- There is a cap on the number of grit bins at current levels, now totalling 511, with the exception of any provision as part of new housing developments, or requests for grit bins that are fully funded by third parties; and,
- There is provision for movement of existing grit bins within wards subject to all members in that ward being in agreement.

The purpose of capping the number of grit bins within the county borough was to ensure that the level of service provision was contained within the resources available for maintaining them.

Members previously asked that the policy is subject to a 'three year' review, and the last review was conducted by the Streetscene and Engineering Cabinet Board on 7<sup>th</sup> September 2018. At the last review it was concluded that as resources had not increased the policy should continue with another review in a further three years.

Further to the Scrutiny Task and Finish Group in 2012, the adopted guidelines for consideration of grit bins is as follows:

- Is the location on a bus route;
- Is the location a steep hill;
- Is the location in a known cold area;

- Is the grit bin likely to be used;
- Is the location on a precautionary salting route;
- Is the area prone to icing up; and,
- Is there already an existing salt bin nearby to serve the area.

In light of the continuing financial pressures with respect to the core funding of services, it remains the case that it would not be possible to accept and maintain ongoing requests for additional grit bins. It is therefore proposed that the current policy should continue.

It is accepted that some bins have been historically located and there may be a need for review in some cases from time to time. Furthermore, it has previously been agreed that ward members with their local knowledge are best placed to agree the location for grit bins within their ward, within the eligibility criteria. To this end provision is included within the current policy for existing grit bins to be relocated with the agreement of all members of the ward concerned.

### **Financial Impacts:**

No financial implications should the current policy be maintained

### **Integrated Impact Assessment:**

A first stage impact assessment has been undertaken to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment has indicated that a more in-depth assessment is not required. A summary is included below.

### **Valleys Communities Impacts:**

No implications

**Workforce Impacts:**

No implications if the current policy is maintained.

**Legal Impacts:**

No implications

**Risk Management Impacts:**

It is known that some Members would like further provisions in their Wards which they believe to be justified, however the Council's budgets and resource levels continue to be restricted and there is already expected to be a financial shortfall generally when it comes to the budget round without accounting for any service growth.

**Consultation:**

There is no requirement for external consultation on this item.

**Recommendations:**

Having had due regard to the first stage Integrated Impact Assessment, it is recommended that the existing policy be continued, subject to a review in a further three years.

**Reasons for Proposed Decision:**

To maintain service provision within resource levels.

**Implementation of Decision:**

The decision is proposed for implementation after the three day call in period'

## **Appendices:**

IIA

## **List of Background Papers:**

Task & Finish Team Report to the Chair of Environment & Highways Scrutiny Committee, 6<sup>th</sup> September 2012.

Report of the Head of Streetcare to the Environment & Highways Cabinet Board, 29<sup>th</sup> October 2015

Report of the Head of Streetcare to the Streetscene & Engineering Cabinet Board, 7<sup>th</sup> September 2018

## **Officer Contact:**

Colette Powney  
Streetscene Manager  
[c.powney@npt.gov.uk](mailto:c.powney@npt.gov.uk)

James Davies  
Waste & Neighbourhood Services Manager  
[j.davies19@npt.gov.uk](mailto:j.davies19@npt.gov.uk)

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## Impact Assessment - First Stage

### 1. Details of the initiative

|   |
|---|
| <b>Initiative description and summary:</b> 3 Year Review of Grit Bin Provision in Neath Port Talbot |
| <b>Service Area:</b> Streetcare Services  |
| <b>Directorate:</b> Environment & Regeneration  |

### 2. Does the initiative affect:

|                                      | Yes | No |
|--------------------------------------|-----|----|
| Service users                        | X   |    |
| Staff                                |     | X  |
| Wider community                      |     | X  |
| Internal administrative process only |     | X  |

### 3. Does the initiative impact on people because of their:

|                            | Yes | No | None/<br>Negligible | Don't<br>Know | Impact<br>H/M/L | Reasons for your decision (including evidence)/How<br>might it impact?                                       |
|----------------------------|-----|----|---------------------|---------------|-----------------|--|
| Age                        |     | X  |                     |               |                 | The proposed continuation of current policy will not have an impact on anyone with protected characteristics |
| Disability                 |     | X  |                     |               |                 |  |
| Gender Reassignment        |     | X  |                     |               |                 |  |
| Marriage/Civil Partnership |     | X  |                     |               |                 |  |
| Pregnancy/Maternity        |     | X  |                     |               |                 |  |
| Race                       |     | X  |                     |               |                 |  |
| Religion/Belief            |     | X  |                     |               |                 |  |
| Sex                        |     | X  |                     |               |                 |  |
| Sexual orientation         |     | X  |                     |               |                 |  |

**4. Does the initiative impact on:**

|   | Yes | No | None/<br>Negligible | Don't<br>know | Impact<br>H/M/L | Reasons for your decision (including evidence used) /<br>How might it impact? |
|---|-----|----|---------------------|---------------|-----------------|---|
| People's opportunities to use the Welsh language            |     | X  |                     |               |                 | No impact on the people's opportunity to use the Welsh language               |
| Treating the Welsh language no less favourably than English |     | X  |                     |               |                 | No impact on treating welsh language no less favourably than English          |

**5. Does the initiative impact on biodiversity:**

|  | Yes | No | None/<br>Negligible | Don't<br>know | Impact<br>H/M/L | Reasons for your decision (including evidence) /<br>How might it impact? |
|--|-----|----|---------------------|---------------|-----------------|--|
| To maintain and enhance biodiversity   |     | X  |                     |               |                 | The proposed continuation of policy will not affect biodiversity         |
| To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc. |     | X  |                     |               |                 | The proposed continuation of policy will not affect ecosystems           |



**6. Does the initiative embrace the sustainable development principle (5 ways of working):**

|  | Yes | No | Details  |
|--|-----|----|--|
| <b>Long term</b> - how the initiative supports the long term well-being of people                                | X   |    | Continuing to grow the amount of rock salt which is mined and spread on roads is ultimately not sustainable  |
| <b>Integration</b> - how the initiative impacts upon our wellbeing objectives                                    | X   |    | The principle of winter maintenance, as with highways gritting, is that it should be targeted at priority areas. Universal provision is not possible |
| <b>Involvement</b> - how people have been involved in developing the initiative                                  | X   |    | The policy makes provision for any movement of existing grit bins within wards subject to all members within a ward being in agreement               |
| <b>Collaboration</b> - how we have worked with other services/organisations to find shared sustainable solutions | X   |    | Neighbourhood Services collaborates with other service areas to provide grit bins where required, such as in schools.                                |
| <b>Prevention</b> - how the initiative will prevent problems occurring or getting worse                          | X   |    | The provision of grit bins for use by the public helps with maintaining highway safety in the priority areas they are provided.                      |

**7. Declaration - based on above assessment (tick as appropriate):**

|   |   |
|---|---|
| A full impact assessment (second stage) <b>is not</b> required  | X |
| Reasons for this conclusion   |   |
| The proposed continuation of policy will have no impact and ensure service provision remains manageable within budget and resources levels. |   |

|  |  |
|--|--|
| A full impact assessment (second stage) <b>is</b> required |  |
| Reasons for this conclusion                                |  |
|  |  |

Page 158

|               | <b>Name</b>    | <b>Position</b>     | <b>Signature</b> | <b>Date</b> |
|---------------|----------------|---------------------|------------------|-------------|
| Completed by  | Colette Powney | Streetscene Manager | CP               | 26/10/2021  |
| Signed off by | M Roberts      | Head of Service     | MR               | 27/10/2021  |

**NEATH PORT-TALBOT COUNTY BOROUGH COUNCIL  
STREETSCENE AND ENGINEERING CABINET BOARD**

**5<sup>th</sup> November 2021**

**Report of Head of Engineering & Transport – D.W.Griffiths**

**Matter for Decision**

**Wards affected: Aberdulais and Tonna**

**Traffic Calming Measures at Tonna:-**

**Proposed 20 mph speed limits at B4434 Dulais Fach Road, Station Road, Riverside, Taibanc and Brunel Close, Tonna traffic regulation order and**

**Proposed B4434 Dulais Fach Road, Tonna – Proposed speed cushions traffic regulation order.**

**Purpose of Report**

To obtain Members approval to advertise the above traffic regulation orders as indicated in Appendix A and Appendix B.

**Executive Summary**

The report outlines the proposed traffic regulation orders and the reason why the orders are required.

**Background**

The traffic regulation orders are required to help reduce traffic speed in the locality with specific reference to the area adjacent to the Active Travel Route Nos INM NEA C015, C014 and P016

Unfortunately visibility for pedestrians and cyclists on route No. INM NEA C015 is poor at the junction with the B4434 which means that by helping to reduce traffic speed it will make the route connection safer.

The proposed traffic regulation orders are required in the interest of road safety.

The proposed scheme is indicated in Appendix A and Appendix B.

### **Financial Impact**

The work will be funded by the Welsh Government.

### **Integrated Impact Assessment**

A first stage impact assessment has been undertaken to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment, attached at Appendix C, has indicated that a more in-depth assessment is not required. A summary is included below:-

A full impact assessment is not required as the proposed traffic regulation orders will provide a benefit to the Community.

### **Valleys Community Impacts**

There are '**No implications**' associated with this report.

### **Workforce Impacts**

There are '**No Implications**' associated with this report.

### **Legal Impacts**

The scheme is to be advertised for a 21 day period as part of the statutory process.

## **Risk Management Impacts**

There are no risk management impacts associated with this report.

## **Consultation**

A consultation exercise will be undertaken when the scheme is advertised.

## **Recommendations**

Having had due regard to the integrated impact assessment it is recommended that approval is granted to advertise the Traffic Calming Measures at Tonna:-

Proposed 20 mph speed limits at B4434 Dulais Fach Road, Station Road, Riverside, Taibanc and Brunel Close, Tonna traffic regulation order and

Proposed B4434 Dulais Fach Road, Tonna – Proposed speed cushions traffic regulation order. (As detailed in Appendix A to the circulated report) and if no objections are received that the proposals are to be implemented on site as advertised.

## **Reason for Proposed Decision**

To help reduce traffic speed in the interest of road safety.

## **Implementation of Decision:**

The decision is proposed for implementation after the three day call in period.

## **Appendices**

Appendix A – Plan – Active Travel B4434 Dulais Fach Road, Tonna Proposed 20 mph speed limit.

Appendix B – Plan Active Travel B4434 Dulais Fach Road, Tonna  
Proposed speed cushions.

Appendix C – Integrated Impact Assessment.

### **Background Papers**

None.

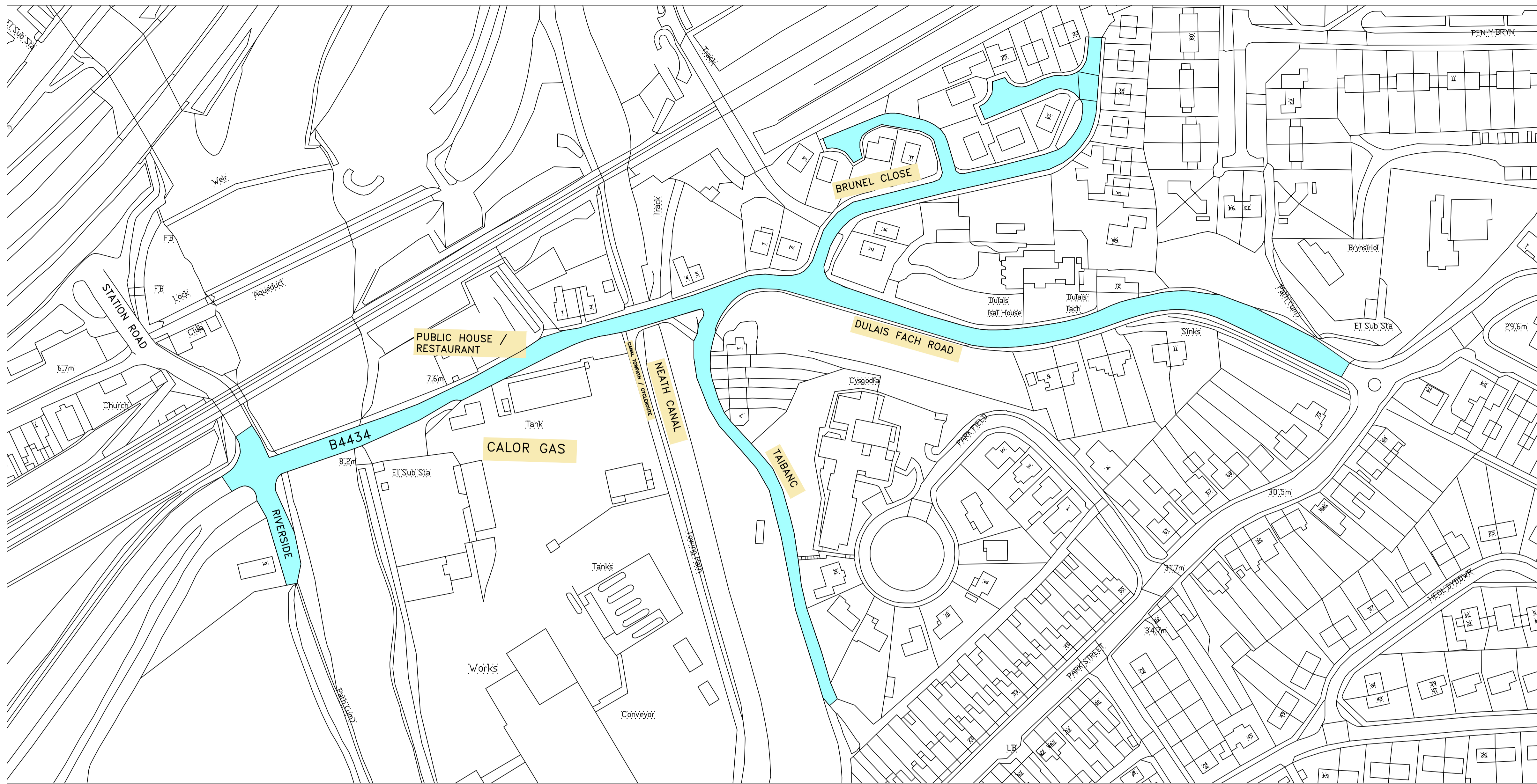
### **Officer Contact**

Mr Martin Brumby, Engineering & Transport

Tel. No. 01639 686013

Email [m.brumby@npt.gov.uk](mailto:m.brumby@npt.gov.uk)



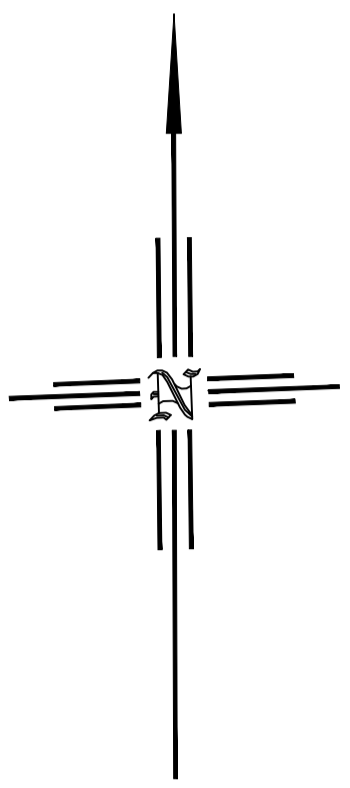


 Proposed 20mph Speed Limit

LAYOUT PLAN  
SCALE 1:1000

NOTES (A1)


1. All dimensions are in millimetres unless otherwise stated.



APPENDIX A

| Rev | Details | Dr | Ch | Ap | Date |
|-----|---------|----|----|----|------|
|     |         |    |    |    |      |

Client



**Cyngor Castell-nedd Port Talbot**  
Neath Port Talbot Council

ENGINEERING AND TRANSPORT




NICOLA PEARCE BSC (Hons), Dip TP, MRTPI  
DIRECTOR OF ENVIRONMENT AND REGENERATION  
THE QUAYS, BRUNEL WAY  
BAGLAN ENERGY PARK  
NEATH SA11 2GG

Job Title

Active Travel

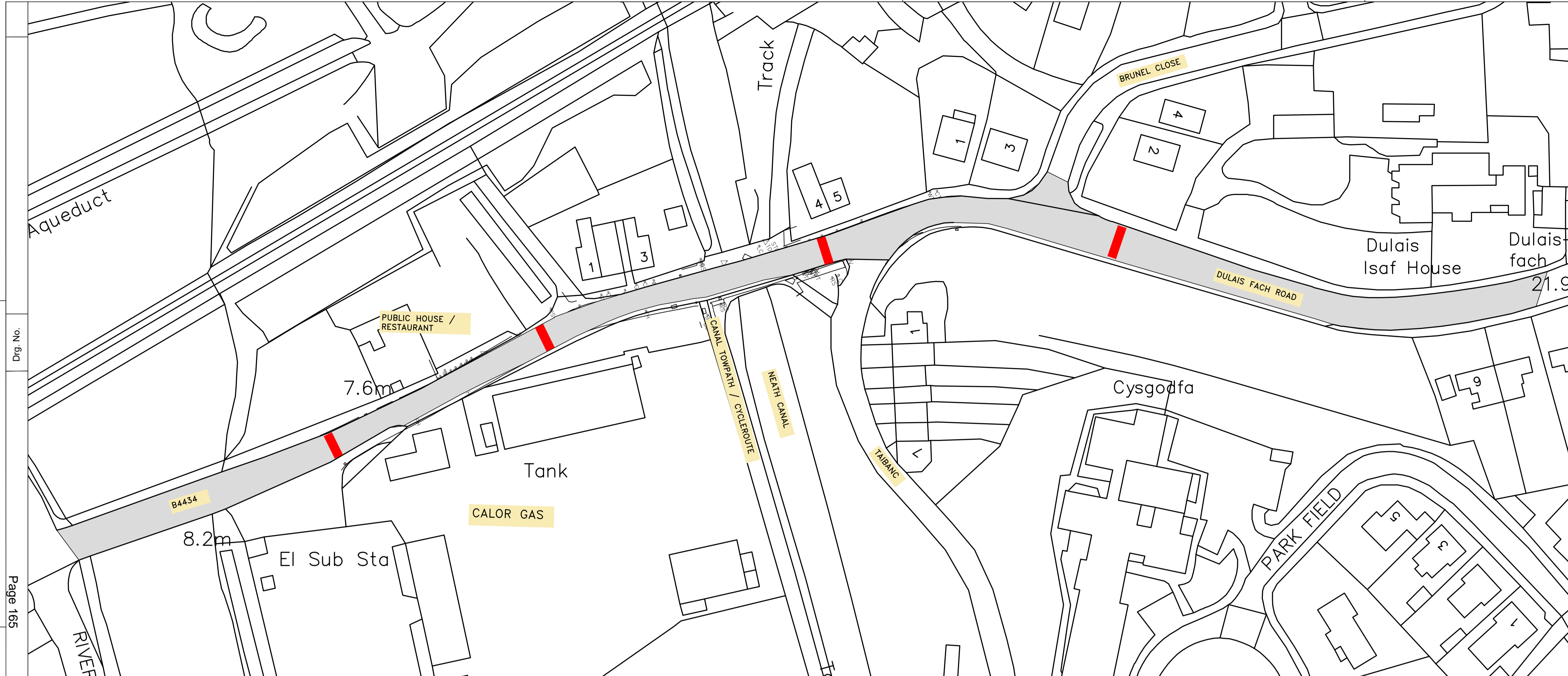
B4434 Dulais Fach Road, Tonna.

Proposed 20mph Speed Limit

|             |   |                    |   |
|-------------|---|--------------------|---|
| File No.    | DC3/284   | Financial Code No. | 26/007500/B054/266314   |
| Drawn       |  | Checked            |  |
| Date        | July 2021   | Approved           |  |
| Date        | July 2021   | Date               | July 2021   |
| Scales      | AS SHOWN  | Status             | PRELIM  |
| Drawing No. | C21040/DF/T1  |                    |   |

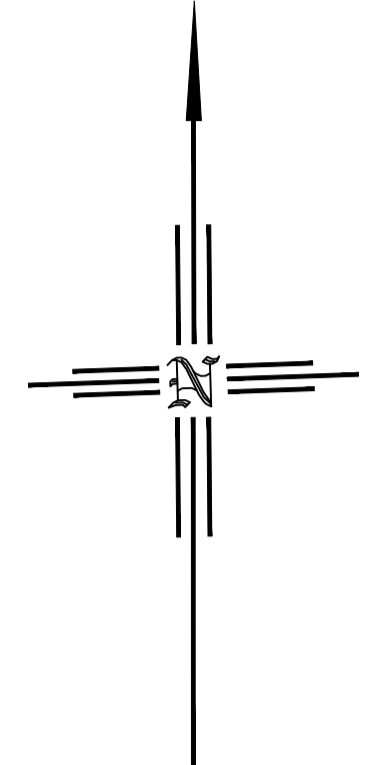
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NOTES (A1)

1. All dimensions are in millimetres unless otherwise stated.



Dwg. No.

Page 165

Job Title


LAYOUT PLAN  
SCALE 1:500

APPENDIX B

PROPOSED SPEED CUSHION LOCATIONS

| Rev | Details | Dr | Ch | Ap | Date |
|-----|---------|----|----|----|------|
|     |         |    |    |    |      |

Client



**Cyngor Castell-nedd Port Talbot**  
Neath Port Talbot Council

ENGINEERING AND TRANSPORT

NICOLA PEARCE BSC (Hons), Dip TP, MRTPI  
DIRECTOR OF ENVIRONMENT AND REGENERATION  
THE QUAYS, BRUNEL WAY  
BAGLAN ENERGY PARK  
NEATH SA11 2GG

Job Title

**Active Travel**

**B4434 Dulais Fach Road, Tonna.**

**Proposed Speed Cushions**

|             |                      |                    |                       |          |        |
|-------------|----------------------|--------------------|-----------------------|----------|--------|
| File No.    | DC3/284              | Financial Code No. | 26/007500/B054/266314 |          |        |
| Drawn       | RLJ                  | Checked            | MCB                   | Approved | HHH    |
| Date        | OCT'21               | Date               | OCT'21                | Date     | OCT'21 |
| Scales      | AS SHOWN             | Status             | PRELIM                |          |        |
| Drawing No. | C21040_001_02_TRO_DF |                    |                       |          |        |

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## Integrated Impact Assessment (IIA)

This Integrated Impact Assessment considers the duties and requirements of the following legislation in order to inform and ensure effective decision making and compliance:

- Equality Act 2010
- Welsh Language Standards (No.1) Regulations 2015
- Well-being of Future Generations (Wales) Act 2015
- Environment (Wales) Act 2016

### Version Control

| Version        | Author        | Job title                | Date       |
|----------------|---------------|--------------------------|------------|
| e.g. Version 1 | Martin Brumby | Project Manager Highways | 20/10/2021 |
|                |               |                          |            |
|                |               |                          |            |

### 1. Details of the initiative

|           |  |
|-----------|--|
|           | <p><b>Title of the Initiative</b> Traffic Calming Measures at Tonna:-<br/>Proposed 20 mph speed limits at B4434 Dulais Fach Road, Station Road, Riverside, Taibanc and Brunel Close, Tonna traffic regulation order and<br/>Proposed B4434 Dulais Fach Road, Tonna – Proposed speed cushions traffic regulation order.</p> |
| <b>1a</b> | <b>Service Area:</b> Engineering and Transport   |
| <b>1b</b> | <b>Directorate:</b> Environment and Regeneration   |
| <b>1c</b> | <b>Summary of the initiative:</b> To provide traffic regulation orders in order to protect the proposed Active Travel shared path connection adjacent to Dulais Fach Road from the Neath Canal tow path and to help reduce traffic speed in the locality in the interest of road safety.                                   |
| <b>1d</b> | <b>Is this a 'strategic decision'?</b> No  |
| <b>1e</b> | <b>Who will be directly affected by this initiative?</b> Members of the public that drive, pedestrians and cyclists using the Active Travel route.   |

|    |   |
|----|---|
|    |   |
| 1f | <b>When and how were people consulted? If allowed to proceed.</b> The scheme will be advertised for a period of 21 days as per the statutory process. |
| 1g | <b>What were the outcomes of the consultation?</b> N/A  |

## 2. Evidence

### What evidence was used in assessing the initiative?

The traffic regulation order is required to help reduce traffic speed in the interest of road safety.

## 3. Equalities

a) How does the initiative impact on people who share a **protected characteristic**?

| Protected Characteristic     | + | - | +/- | Why will it have this impact? |
|------------------------------|---|---|-----|-------------------------------|
| Age                          |   |   | √   |                               |
| Disability                   |   |   | √   |                               |
| Gender reassignment          |   |   | √   |                               |
| Marriage & civil partnership |   |   | √   |                               |
| Pregnancy and maternity      |   |   | √   |                               |

|                    |  |  |   |  |
|--------------------|--|--|---|--|
| Race               |  |  | √ |  |
| Religion or belief |  |  | √ |  |
| Sex                |  |  | √ |  |
| Sexual orientation |  |  | √ |  |

**What action will be taken to improve positive or mitigate negative impacts?**

Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

b) How will the initiative assist or inhibit the ability to meet the **Public Sector Equality Duty**?

| <b>Public Sector Equality Duty (PSED)</b>                   | <b>+</b> | <b>-</b> | <b>+/-</b> | <b>Why will it have this impact?</b> |
|---|----------|----------|------------|--------------------------------------|
| To eliminate discrimination, harassment and victimisation   |          |          | √          |                                      |
| To advance equality of opportunity between different groups |          |          | √          |                                      |
| To foster good relations between different groups           |          |          | √          |                                      |

**What action will be taken to improve positive or mitigate negative impacts?**

Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

**4. Socio Economic Duty**

| Impact                | Details of the impact/advantage/disadvantage |
|-----------------------|--|
| Positive/Advantage    |  |
| Negative/Disadvantage |  |
| Neutral               |  |

**What action will be taken to reduce inequality of outcome**

|  |
|--|
|  |
|--|

**5. Community Cohesion/Social Exclusion/Poverty**

|  | + | - | +/- | Why will it have this impact? |
|--|---|---|-----|-------------------------------|
|  |   |   |     |                               |

|                    |  |  |   |  |
|--------------------|--|--|---|--|
| Community Cohesion |  |  | √ |  |
| Social Exclusion   |  |  | √ |  |
| Poverty            |  |  | √ |  |

**What action will be taken to improve positive or mitigate negative impacts?**

Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

**6. Welsh**

|  | + | - | +/- | Why will it have this effect?   |
|--|---|---|-----|---|
| What effect does the initiative have on:<br>- people's opportunities to use the Welsh language | √ |   |     | We welcome all correspondence in Welsh and English when dealing with the wider community                      |
| - treating the Welsh and English languages equally   | √ |   |     | All permanent highway approved signage used in the traffic regulation order is Bilingual ( Welsh / English ). |

**What action will be taken to improve positive or mitigate negative impacts?**

Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

**7. Biodiversity**

How will the initiative assist or inhibit the ability to meet the **Biodiversity Duty**?

| <b>Biodiversity Duty</b>   | <b>+</b> | <b>-</b> | <b>+/-</b> | <b>Why will it have this impact?</b> |
|--|----------|----------|------------|--------------------------------------|
| To maintain and enhance biodiversity   |          |          | √          |                                      |
| To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc. |          |          | √          |                                      |

**What action will be taken to improve positive or mitigate negative impacts?**



Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

### 8. Well-being of Future Generations

How have the five ways of working been applied in the development of the initiative?

| Ways of Working  | Details   |
|--|---|
| i. <b>Long term</b> – looking at least 10 years (and up to 25 years) ahead                       | The traffic regulation order is required to help reduce traffic speed in the interest of road safety.                                   |
| ii. <b>Prevention</b> – preventing problems occurring or getting worse                           | The traffic regulation order is required to help reduce traffic speed in the interest of road safety.                                   |
| iii. <b>Collaboration</b> – working with other services internal or external                     | The various sections such as Highway Engineering, Active Travel officers and the Legal section have worked together on this initiative. |
| iv. <b>Involvement</b> – involving people, ensuring they reflect the diversity of the population | The various sections such as Highway Engineering, Active Travel officers and the Legal section have worked together on this initiative. |
| v. <b>Integration</b> – making connections to maximise contribution to:                          | The traffic regulation order is required to help reduce traffic speed in the interest of road safety.                                   |

|  |   |
|--|---|
| <b>Council's well-being objectives</b> | The traffic regulation order is required to help reduce traffic speed in the interest of road safety. |
| <b>Other public bodies objectives</b>  | The traffic regulation order is required to help reduce traffic speed in the interest of road safety. |

### 9. Monitoring Arrangements

Provide information on the monitoring arrangements to:

Monitor the impact of the initiative on Equalities, Community Cohesion, the Welsh Measure, Biodiversity Duty and the Wellbeing Objectives.

The scheme will be advertised for a period of 21 days as per the statutory process. Any written correspondence received to the proposed scheme will be considered and discussed with the local members.

Page 174

### 10. Assessment Conclusions

Please provide details of the conclusions reached in relation to each element of the assessment:

|                                    | <b>Conclusion</b>   |
|------------------------------------|---|
| <b>Equalities</b>                  | Any written correspondence received to the proposed scheme will be considered and discussed with the local members. |
| <b>Socio Economic Disadvantage</b> | Any written correspondence received to the proposed scheme will be considered and discussed with the local members. |

|   |   |
|---|---|
| <b>Community Cohesion/<br/>Social Exclusion/Poverty</b> | Any written correspondence received to the proposed scheme will be considered and discussed with the local members. |
| <b>Welsh</b>  | Any written correspondence received to the proposed scheme will be considered and discussed with the local members. |
| <b>Biodiversity</b>                                     | Any written correspondence received to the proposed scheme will be considered and discussed with the local members. |
| <b>Well-being of Future Generations</b>                 | The traffic regulation order is required to help reduce traffic speed in the interest of road safety.               |

### Overall Conclusion

Please indicate the conclusion reached:

- **Continue** - as planned as no problems and all opportunities have been maximised
- **Make adjustments** - as potential problems/missed opportunities/negative impacts have been identified along with mitigating actions
- **Justification** - for continuing with the initiative even though there is a potential for negative impacts or missed opportunities
- **STOP** - redraft the initiative as actual or potential unlawful discrimination has been identified

Please provide details of the overall conclusion reached in relation to the initiative

The overall conclusion for the Integrated Impact Assessment (IIA) is to **Continue** with advertising the scheme as per the statutory consultation process.

## 11. Actions

What actions are required in relation to obtaining further data/information, to reduce or remove negative impacts or improve positive impacts?

| Action                                    | Who will be responsible for seeing it is done?             | When will it be done by?    | How will we know we have achieved our objective?  |
|---|--|-----------------------------|---|
| The outcome of the statutory consultation | Local members and officers from Engineering and Transport. | Post statutory consultation | Recommendations will be reported to the Streetscene and Engineering Cabinet Board for decision. |
|   |  |                             |   |
|   |  |                             |   |
|   |  |                             |   |

## 12. Sign off

|                      | Name          | Position                 | Signature | Date     |
|----------------------|---------------|--------------------------|-----------|----------|
| <b>Completed by</b>  | Hasan Hasan   | Engineering Manager      |           | 20/10/21 |
| <b>Signed off by</b> | D.W.Griffiths | Head of Service/Director |           | 20/10/21 |



Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

## **NEATH PORT TALBOT COUNTY BOROUGH COUNCIL**

### **Streetscene and Engineering Cabinet Board**

**5<sup>th</sup> November 2021**

**Joint Report of  
The Head of Streetcare – M Roberts  
The Head of Engineering and Transport – D. W .Griffiths**

#### **Matter for Monitoring**

**Wards Affected: All Wards**

**Report Title: Key Performance Indicators 2021/2022 – Quarter 1  
(1<sup>st</sup> April 2021 – 30<sup>th</sup> June 2021)**

#### **Purpose of the Report:**

To report quarter 1 performance management data for the period 1 April 2021 to 30 June 2021 for Streetscene and Engineering Cabinet Board. This will enable the Streetscene and Engineering Cabinet Board and Scrutiny Members to discharge their functions in relation to performance management.

#### **Executive Summary:**

A list of quarter 1 Corporate Plan KPI's with progress comments on each indicator are attached as appendix 1, these do not include those KPI's collected on an annual basis, these will be reported in quarter

4. The full suite of Corporate Plan KPI's can be found in the [Corporate Plan 2018-2022](#).

KPI's that have improved on or achieved target are GREEN status, KPI's that have not achieved target but performance is within 5% are AMBER status and KPI's that are 5% or more below target are RED status.

Where available, performance indicators report quarter 1 target and 3 years of quarter 1 data for comparison.

Appendix 2 provides quarter 1 information for Compliments and Complaints data, collected in line with the [Council's Comments, Compliments & Complaints Policy](#) for Cabinet and relevant Cabinet Board purviews.

Appendices 1 and 2 are new reports from the Corporate Performance Management System (CPMS), which went live in August 2018.

**Background:**

Not applicable.

**Financial Impact:**

The performance described in the report is being delivered against a challenging financial backdrop.

**Integrated Impact Assessment:**

There is no requirement to undertake an Integrated Impact Assessment as this report is for monitoring / information purposes.

**Valleys Communities Impacts:**

No implications.

## **Workforce Impacts**

1. The progress described in the Quarter 1 report was achieved against a backdrop of an unprecedented emergency situation. This has involved a step change in workforce flexibility and innovation underpinned by enhanced use of data and digital technology. A significant number of the Council's workforce were redeployed temporarily to new duties.

## **Legal Impacts:**

This report is prepared under:

- 1) The Local Government (Wales) Measure 2009 and discharges the Council's duties to "make arrangements to secure continuous improvement in the exercise of its functions"
- 2) Well-being of Future Generations (Wales) Act 2015
- 3) The Neath Port Talbot County Borough Council Constitution requires each cabinet committee to monitor quarterly budgets and performance in securing continuous improvement of all the functions within its purview.

## **Risk Management Impacts:**

Failure to produce a compliant report within the timescales can lead to non-compliance with our Constitution. Also, failure to have robust performance monitoring arrangements could result in poor performance going undetected.

## **Consultation**

There is no requirement under the Constitution for external consultation on this item.

**Appendices:**

Appendix 1 – Key Performance Indicators 2021/2022 – Quarter 1 Performance (1 April 2021 – 30 June 2021)

Appendix 2 – Compliments and Complaints information – Quarter 1 2021/2022.

**Officer Contact:**

Joy Smith, Road Safety and Business Performance Manager.  
Telephone: 01639 686581. E-Mail: [j.smith@npt.gov.uk](mailto:j.smith@npt.gov.uk)





Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

Page 187

# Performance Indicators


Neath Port Talbot Council

Appendix 1 - Streetscene and Engineering Cabinet Board - Key Performance Indicators - Quarter 1 ( 1st April - 30th June ) - 2021/22



*Print Date: 26-Oct-2021*

## How will we know we are making a difference (01/04/2021 to 30/06/2021)?

| PI Title   | Actual<br>19/20 | Actual<br>20/21 | Actual<br>21/22 | Target<br>21/22 | Perf. RAG  |
|--|-----------------|-----------------|-----------------|-----------------|--|
| <b>Organisation</b>  |                 |                 |                 |                 |  |
| CP/067- PAM/030 - Percentage of waste, reused, recycled or composted   | 63.51           | 65.84           | 68.14           | 64.00           | <br>Green |
| <p>Quarter 1 2021/22: 11,799 of 17,317 tonnes.</p> <p>Our overall recycling performance increased to 68.14% in quarter 1 2021/22, which is an increase of 2.3% on quarter 1 2020/21. During quarter 1 2021/22 our Recycling Centres were open for the duration of the period when compared to the same period last year when the sites were closed throughout April and most of May; resulting in a significant increase in the recycling at the HWRCs (Household Waste Recycling Centres) this year. Booking arrangements and black bag splitting remain in place at our HWRCs. The Re-use Shop in the Briton Ferry HWRC also reopened during quarter 1.</p> <p>Kerbside recycling tonnage collected was slightly down on the same period last year which may reflect more people being restricted or working from home during quarter 1 last year compared to quarter 1 this year, however, further information would be needed to establish if this trend will continue.</p> <p>During quarter 1 2021/22, we continued to send our black bag waste collected at the kerbside to higher recycling outlets. The amount of IBA (Incinerator Bottom Ash) and recycling that can be claimed is dependent on the outlets available.</p> |                 |                 |                 |                 |  |
| CP/068 - PAM/043 - Kilograms of residual waste generated per person  | 44.02           | 49.22           | 53.04           |                 |  |
| <p>Quarter 1 2021/22: 7,601,220 kilograms/143,315 population.</p> <p>No target set for this measure.</p> <p>The increase in the figures may relate to behaviour change associated with COVID-19 with more home consumption and waste disposal in place of consumption in commercial premises, additional information is needed in the longer term to establish if this trend will continue.</p>  |                 |                 |                 |                 |  |
| PI/346 - WMT/010i - The percentage of local authority municipal waste prepared for re-use  | 0.23            | 0.00            | 0.16            |                 |  |
| <p>28.30 of 17316.99</p> <p>Full narrative breakdown can be found under CP/067.</p>  |                 |                 |                 |                 |  |
| PI/347 - WMT/010ii - The percentage of local authority municipal waste: incinerator bottom Ash/Residual waste recycling rate.  | 2.39            | 10.52           | 8.47            |                 |  |
| <p>1467.00 of 17316.00</p> <p>Full narrative breakdown can be found under CP/067.</p>  |                 |                 |                 |                 |  |

| PI Title   | Actual<br>19/20 | Actual<br>20/21 | Actual<br>21/22 | Target<br>21/22 | Perf. RAG |
|--|-----------------|-----------------|-----------------|-----------------|-----------|
| PI/348 - WMT/010ii - The percentage of local authority municipal waste: Kerbside dry recycling rate  | 21.20           | 25.12           | 21.87           |                 |           |
| 3787.00 of 17316.99<br>Full narrative breakdown can be found under CP/067.   |                 |                 |                 |                 |           |
| PI/349 - WMT/010ii - The percentage of local authority municipal waste: Household Waste Recycling Centres dry recycling rate   | 19.84           | 9.80            | 20.18           |                 |           |
| 3493.76 of 17316.99.<br>Full narrative breakdown can be found under CP/067.  |                 |                 |                 |                 |           |
| PI/350 - WMT/010iii - The percentage of local authority municipal waste collected as source segregated Bio-wastes and composted or treated biologically in another way | 19.85           | 20.39           | 17.46           |                 |           |
| 3022.95 of 17316.99.<br>Full narrative breakdown can be found under CP/067.  |                 |                 |                 |                 |           |

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Cyngor Castell-nedd Port Talbot  
Neath Port Talbot Council

Page 185

# Performance Indicators

Neath Port Talbot Council

Appendix 2 - Streetscene and Engineering - Compliments and Complaints - Quarter 1 ( 1st April - 30th June ) - 2021/22



*Print Date: 26-Oct-2021*

## How will we know we are making a difference (01/04/2021 to 30/06/2021)?

| PI Title  | Actual<br>19/20 | Actual<br>20/21 | Actual<br>21/22 | Target<br>21/22 | Perf. RAG |
|---|-----------------|-----------------|-----------------|-----------------|-----------|
| <b>Organisation</b>   |                 |                 |                 |                 |           |
| PI/272 - Streetscene and Engineering - % of complaints at Stage 1 that were upheld/partially upheld   | 16.67           |                 | 0.00            |                 |           |
| A total of eight Stage 1 complaints were received for this period with six being for parking Services and two for Passenger Transport, none of which were upheld. This compares with none being received for the same period last year. |                 |                 |                 |                 |           |
| PI/273 -Streetscene and Engineering - % of complaints at stage 2 that were upheld/partially upheld  | 0.00            |                 | 0.00            |                 |           |
| One Stage 2 complaint was received in this period for Parking Services which was not upheld. This compares to none for the same period last year.   |                 |                 |                 |                 |           |
| PI/274 -Streetscene and Engineering - % of complaints dealt with by the Public Services Ombudsman that were upheld/partially upheld   |                 |                 |                 |                 |           |
| No complaints were dealt with by the Ombudsman for this period as was the case for the the same quarter last year   |                 |                 |                 |                 |           |
| PI/275 - Streetscene and Engineering - Number of compliments received from the public   | 18.00           | 9.00            | 12.00           |                 |           |
| A total of twelve compliments were received for this period with six being for Streetcare, three for Road Safety, one for Highways & Engineering and one for Highways Maintenance.  |                 |                 |                 |                 |           |

**Streetscene and Engineering Cabinet Board - Immediately following Scrutiny Committees  
starting at 10am**

| <b>Meeting Date</b>    | <b>Agenda Item</b>                        | <b>Type</b> | <b>Contact Officer</b>        |
|------------------------|---|-------------|-------------------------------|
| 17 December            | 2021/22 Quarterly Performance – Quarter 2 | Monitor     | Mike Roberts / Dave Griffiths |
|                        | Traffic Regulation Orders (Various)       | Decision    | Dave Griffiths                |
|                        | Approved List of Contractors              | Decision    | Dave Griffiths                |
|                        |   |             |                               |
| <b>28 January 2022</b> | Traffic Regulation Orders (Various)       | Decision    | Dave Griffiths                |
|                        |   |             |                               |
|                        |   |             |                               |
|                        |   |             |                               |
| 11 March               | 2021/22 Quarterly Performance – Quarter 3 | Monitor     | Mike Roberts / Dave Griffiths |
|                        | Traffic Regulation Orders (Various)       | Decision    | Dave Griffiths                |
|                        |   |             |                               |
|                        |   |             |                               |
| 29 April               | Traffic Regulation Orders (Various)       |             | Dave Griffiths                |

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