

Archaeology Wales

Hendre Lake Footpath, St Mellons, Cardiff

Archaeological Watching Brief



By
Jennifer Muller


Report No. 1724


Archaeology Wales

Hendre Lake Footpath, St Mellons , Cardiff

Archaeological Watching Brief

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Report No. 1724

March 2019

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Non-Technical Summary

This report results from an archaeological watching brief undertaken by Archaeology Wales Ltd (AW) for Cardiff City Council on land from Cemaes (ST 23362 80020) to Hendre Lake (ST 24153 80128). The archaeological watching brief took place to ensure the preservation by record of any archaeological remains encountered during groundworks associated with a new foot path link and two new bridges over Pil-du-Reen.

The Rumney Level is a good example of a piecemeal Medieval reclaimed landscape with a wealth of medieval documents relating to the creation, repair and amendments to the sea defences and land drainage. The area is composed of irregular shaped fields, a medieval water mill and dispersed settlement.

Near the eastern end of the scheme there is a Grade II Listed Building which is a sixteenth/seventeenth century Pill Du Farm.

All work was undertaken to the Standards and Guidance for an Archaeological Watching Brief as set by the Chartered Institute for Archaeologists (2014).

1. Introduction

1.1 Location and scope of work

Archaeology Wales Ltd (AW) was commissioned by Cardiff City Council to undertake an archaeological watching brief on the land from Cemaes (ST 23362 80020) to Hendre Lake (ST 24153 80128) (Fig 1). This work relates to groundworks associated with a new foot path link and two new bridges.

An approved Written Scheme of Investigation (WSI) was produced by AW in accordance with the *Standard and Guidance for Archaeological Watching Briefs* (CIfA 2014) and was designed to provide an approved methodology of archaeological work to be implemented during the construction works.

The watching brief took place from 19th – 20th July 2018 under the supervision of Jennifer Muller. The project was managed by Rowena Hart of Archaeology Wales.

1.2 Topography and Geology

The site lies on level marshy ground in northeast Cardiff which is part of the Rumney Levels. The site lies just under 2km northwest of the Bristol Channel.

The underlying geology of the area comprises St. Maughans Formation, which is composed of argillaceous rocks and sandstone, interbedded. This is overlain by tidal flat deposits of clay, silt and sand (BGS 2017).

1.3 Archaeological and Historical Background

The Rumney Levels represent the largest and most significant example of a man-made landscape in Wales. This landscape was both inundated by and reclaimed from the sea for at least the last two thousand years. The area has distinctive drainage systems devised over successive periods of use. The Levels have proven the potential for extensive, well-preserved, buried, waterlogged, archaeological and palaeoenvironmental deposits surviving from earlier landscapes (Cadw and ICOMOS 1998, GGAT 2005, GGAT 2013).

The Rumney Levels is a good example of a piecemeal medieval reclaimed landscape with a wealth of medieval documents relating to the creation, repair and amendments to the sea defences and land drainage. The area is composed of irregular shaped fields, a medieval water mill and dispersed settlement.

Toward the eastern end of the scheme there is a Grade II Listed Building which is the sixteenth/seventeenth century Pill Du Farm.

A watching brief at Rumney great wharf was undertaken by GGAT in 2005. Roman pottery, along with some coal and animal bone, was found at 0.6m below the current land surface (GGAT 2013). Two Desk Based Assessments were written in the 1990s by GGAT (Wilkinson 1993 and Maynard 1993 and 1995). These were centred on sites within 2km of the proposed development area.

2. Methodology

A watching brief complying with the Chartered Institute for Archaeologists (*CIfA Standard and Guidance for Archaeological Watching Briefs* (2014) was undertaken during all intrusive ground work on the site.

The watching brief was undertaken to allow the preservation by record of any archaeological deposits, the presence and nature of which could not be in advance of works. The watching brief also provides an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard (CIfA, 2014).

The excavation consisted of four trenches, on either side of the Pil-du-Reen, to create holes for abutments for two new bridges. Three trenches measured 2.4m in length, c. 0.6m in width and c. 1.28m in depth with the exception of trench 4, which was 2.9m in length (see Figure 2). The trenches were not entered due to their depth and proximity to the Pil-du-Reen.

The works were carried out by removing the overburden with a 1.3 tonne mechanical excavator and 0.28m wide toothless bucket. The entire process was monitored by a suitably trained archaeologist. Sections and plans of the excavation were photographed using a 12MP digital camera. All the deposits encountered were recorded by means of a continuous context numbering system and recorded on pro-forma context sheets. All features and deposits are described in accordance with ClfA conventions. A register of all contexts and photographs was also made.

3. Watching Brief Results

Four trenches were excavated to accommodate the concrete abutments for two new bridges to be installed along the Pil-du-Reen.

The footpaths were excavated before the watching brief began, however a section of a path was excavated under watching brief conditions adjacent to Trench 3 (Plate 1). This demonstrated that only c. 0.10m had been removed from the ground surface for the construction of the footpaths.

Trench 1 (Plate 2):

Trench 1 measured 0.6m wide, 2.4m long and 1.28m deep. The basal layer was (004). Deposit (004) was alluvium, a firm, blue grey clay approximately 0.4m deep. Deposit (004) was overlaid by (003), a firm, mid-blue brown clay deposit c. 0.35m deep. Deposit (003) was overlaid by deposit (002), which was the subsoil, a firm, mid-orange brown silty clay c. 0.3m deep. The topsoil (001) was approximately 0.15m deep and overlaid (002). Topsoil (001) was a loose mid-grey brown silt.

Trench 2 (Plate 3):

Trench 2 measured 0.6m wide, 2.4m long and 1.28m deep. The basal layer was (007), which was alluvium, a firm, mid-blue grey clay approximately 0.4m deep. Overlying (007) was (006), a firm, mixed mid-brown and grey blue clay deposit approximately 0.35m deep. Deposit (006) was overlaid by (005), which was a firm, mid-orange brown silty clay subsoil approximately 0.3m deep. Deposit (005) was overlaid by the topsoil (001), a loose mid-grey brown silt approximately 0.15m deep.

Trench 3 (Plate 4):

Trench 3 measured 0.6m wide, 2.4m long and 1.28m deep. The basal layer encountered was (011), an alluvium, a firm, blue grey clay approximately 0.33m deep. Deposit (011) was overlaid by (010), a firm, mid-orange brown clay deposit approximately 0.45m deep. One piece of glazed red ware was found in this deposit. Deposit (010) was overlaid by the subsoil (009) that was a firm, mid-brown silty clay approximately 0.2m deep. Subsoil (009) was

overlaid by the topsoil (008), which was a loose, mid-grey brown silt approximately 0.15m deep.

Trench 4 (Plate 5):

Trench 4 measure 0.6m wide, 2.9m long and 1.28m deep. The basal layer encountered was (014), a firm, mid-brown clay with a small amount of blue grey deposit approximately 0.63m deep. Overlying (014) was the subsoil (013), a firm, mid-brown clayey silt. Deposit (013) was approximately 0.45m deep and contained a large amount of modern rubbish. It was overlaid by the topsoil (012), which was defined as a loose, mid-grey brown silt approximately 0.25m deep.

4. Finds

One fragment of a glazed, post-medieval pot rim was recovered from Trench 3 in (010) during the excavation. It was too small to be further diagnostic.

5. Conclusion

The excavation revealed no archaeological features or deposits and only a single fragment of post-medieval pottery was recovered. Deposits (004), (007) and (011) were alluvial deposits from past flooding of the levels. The excavation in Trench 4 did not reach the alluvium. This may be an indication that this south side of the Pil-du-Reen was built up more with modern deposits, proven more likely by the presence of the road running along next to the trench.

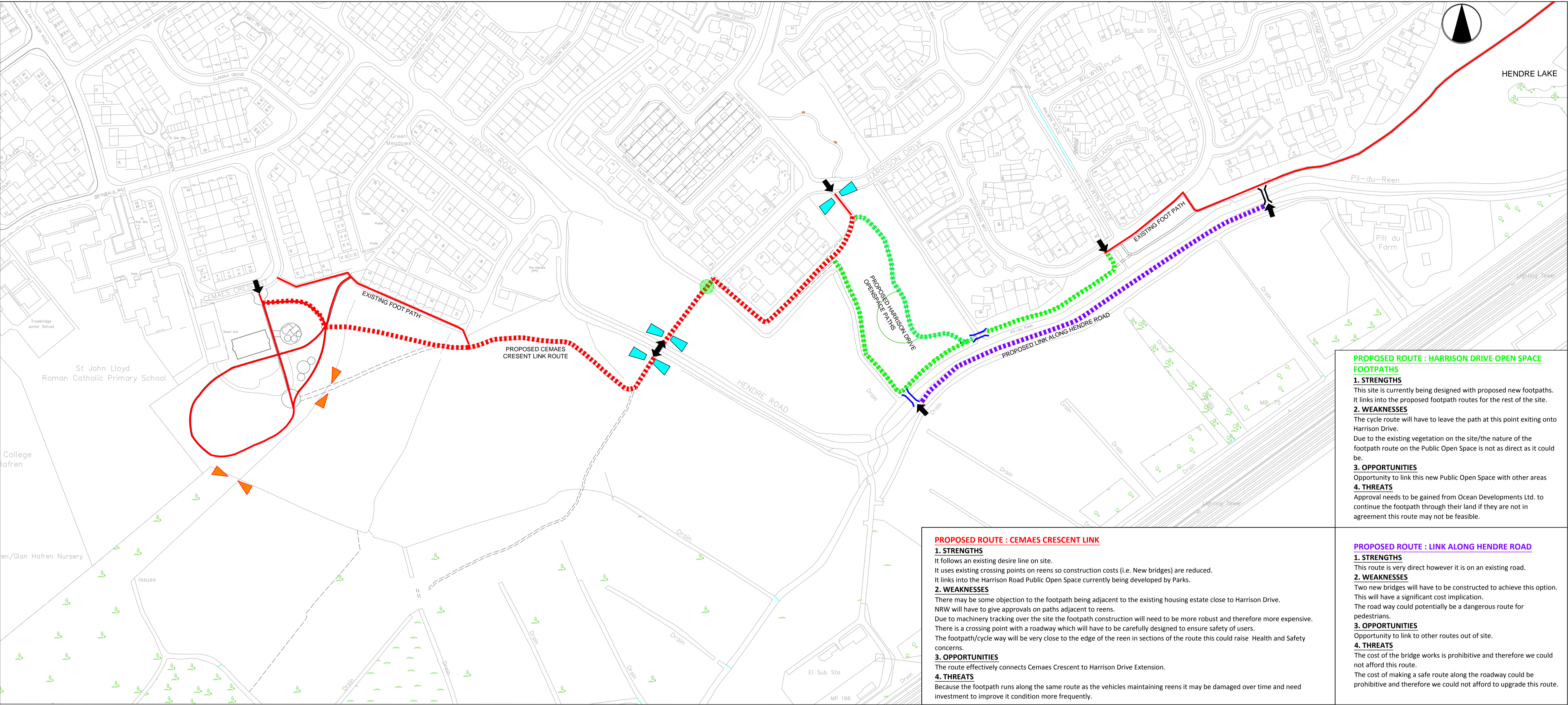
6. Bibliography

CIfA. (2015) *Standard and Guidance for Archaeological Watching Briefs* (Unpublished Guidance accessible at www.archaeologists.net)

NERC. (2016) British Geological Survey Maps (accessed at www.bgs.ac.uk)

Appendix 1: Context Register

<i>No.</i>	<i>Type</i>	<i>Description</i>	<i>Relationship</i>
001	Deposit	Topsoil	Above (002), (005)
002	Deposit	Mid orange/brown silty clay	Below (001)
003	Deposit	Mid blue/brown clay	Below (002)
004	Deposit	Blue/grey clay	Below (003)
005	Deposit	Mid orange/brown silty clay	Below (001)
006	Deposit	Mixed mid brown and grey/blue clay	Below (005)
007	Deposit	Mid blue/grey clay	Below (006)
008	Deposit	Mid grey/brown silt	Above (009)
009	Deposit	Mid brown silty clay	Below (008)
010	Deposit	Mid orange/brown clay	Below (009)
011	Deposit	Blue/grey clay	Below (010)
012	Deposit	Mid grey/brown silt	Above (013)
013	Deposit	Mid brown clayey silt	Below (012)
014	Deposit	Mid brown clay with some alluvium	Below (013)



PROPOSED ROUTE : HARRISON DRIVE OPEN SPACE FOOTPATHS

1. STRENGTHS
This site is currently being designed with proposed new footpaths. It links into the proposed footpath routes for the rest of the site.

2. WEAKNESSES
The cycle route will have to leave the path at this point exiting onto Harrison Drive.
Due to the existing vegetation on the site/the nature of the footpath route on the Public Open Space is not as direct as it could be.

3. OPPORTUNITIES
Opportunity to link this new Public Open Space with other areas

4. THREATS
Approval needs to be gained from Ocean Developments Ltd. to continue the footpath through their land if they are not in agreement this route may not be feasible.

PROPOSED ROUTE : CEMAES CRESCENT LINK

1. STRENGTHS
It follows an existing desire line on site.
It uses existing crossing points on reens so construction costs (i.e. New bridges) are reduced.
It links into the Harrison Road Public Open Space currently being developed by Parks.

2. WEAKNESSES
There may be some objection to the footpath being adjacent to the existing housing estate close to Harrison Drive.
NRW will have to give approvals on paths adjacent to reens.
Due to machinery tracking over the site the footpath construction will need to be more robust and therefore more expensive.
There is a crossing point with a roadway which will have to be carefully designed to ensure safety of users.
The footpath/cycle way will be very close to the edge of the reen in sections of the route this could raise Health and Safety concerns.

3. OPPORTUNITIES
The route effectively connects Cemaes Crescent to Harrison Drive Extension.

4. THREATS
Because the footpath runs along the same route as the vehicles maintaining reens it may be damaged over time and need investment to improve it condition more frequently.

PROPOSED ROUTE : LINK ALONG HENDRE ROAD

1. STRENGTHS
This route is very direct however it is on an existing road.

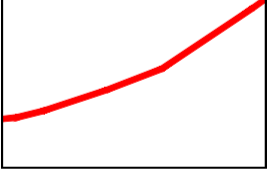
2. WEAKNESSES
Two new bridges will have to be constructed to achieve this option.
This will have a significant cost implication.
The road way could potentially be a dangerous route for pedestrians.

3. OPPORTUNITIES
Opportunity to link to other routes out of site.


4. THREATS
The cost of the bridge works is prohibitive and therefore we could not afford this route.
The cost of making a safe route along the roadway could be prohibitive and therefore we could not afford to upgrade this route.

KEY:

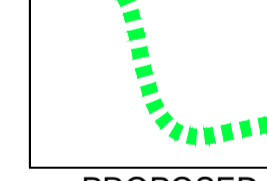
EXISTING AND PROPOSED ACCESS ROUTES



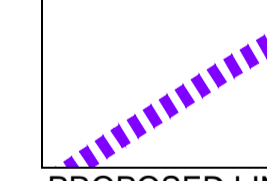
EXISTING FOOT PATHS



PROPOSED CEMAES CRESENT LINK ROUTE




PROPOSED HARRISON DRIVE OPENSACE PATHS

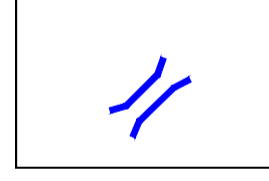


PROPOSED LINK ALONG HENDRE ROAD

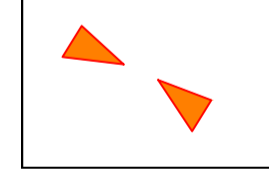
ACCESS AND ENTRANCE AREAS



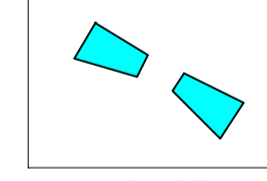
EXISTING BRIDGE



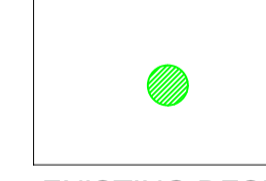
PROPOSED BRIDGE




EXISTING STILE GATE



PROPOSED KISSING GATE



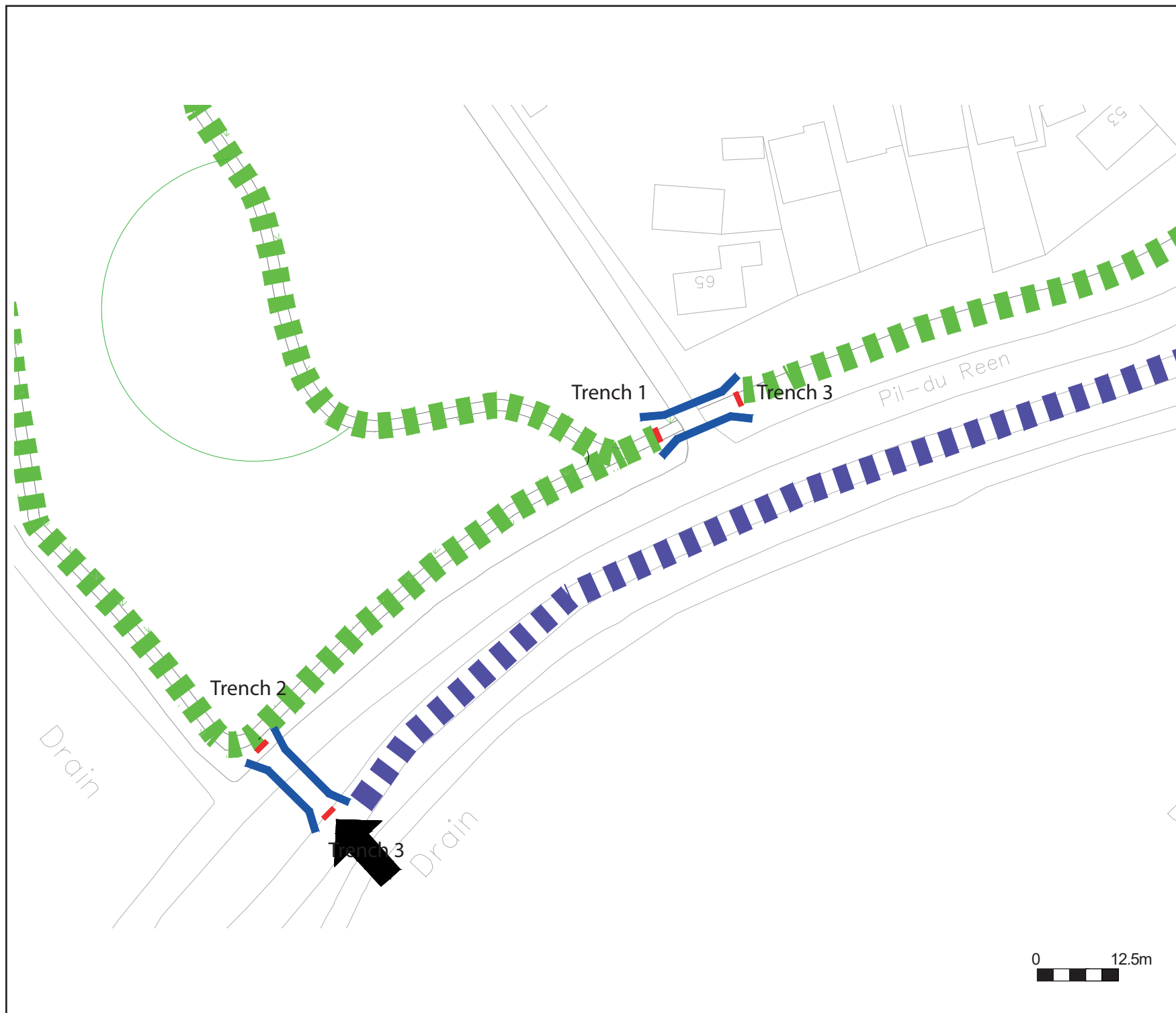
EXISTING DESIRE LINE INTERSECTION ON THE REEN



ENTRANCE

					<div>Datblygu Parciau Parciau, Chwaraeon a'r Harbwr Tŷ'r Frenhines Alexandra Cargo Rd, Bae Caerdydd, Caerdydd CF10 4LY Ffôn: 029 2068 4000 Ffacs: 029 2068 4001</div> <div></div> <div><div>Parks Development Parks, Sport & Harbour Queen Alexandra House, Cargo Rd, Cardiff Bay Cardiff CF10 4LY Tel: 029 2068 4000 Fax: 029 2068 4001</div></div>	Drawing Title / Teitl y Dyluniad			
						MASTERPLAN OF FOOT PATH LINK FROM CEMAES OPEN SPACE TO HENDRE LAKE			
						Scale / Graddfa	Date / Dyddiad	Checked / Gwiriwyd	Drawn by / Dyluniad Gan
Letter / Llythyren	Date / Dyddiad	Initials / Enw	Initials / Enw	Brief description / Disgrifiad Byr		1:1500@A1	14.11.2016	SC	RW
List of Amendments / Rhestr o Newidiadau						Drawing Number / Rhif Dyluniad			
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Trench locations

Figure 2. Trench locations. North to top of page



Plate 1: Working shot of Trench 3 with section of excavated path

Plate 2: Southeast facing section of Trench 1



Plate 3: Southwest facing section of Trench 2

Plate 4: Southwest facing section of Trench 3



Plate 5: Northwest facing section of Trench 4

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**SPECIFICATION FOR AN
ARCHAEOLOGICAL WATCHING BRIEF
AT**

Hendre Lake Footpath, St Mellons, Cardiff

Prepared for:

Cardiff City Council

July 2018



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Figure 1. Showing route of scheme.

Summary

This Specification details the methodology for an archaeological watching brief to be undertaken during the ground works associated with a new foot path link from Cemaes (ST 23362 80020) open space to Hendre Lake (ST 24153 80128).

The objective of the watching brief is to safeguard the archaeological resource through observation and recording during the course of the intrusive ground works associated with the scheme.

The development area lies on the Rumney Levels (HCLA 18), part of the Gwent Levels Historic Landscape Area.

This Specification document has been prepared by Archaeology Wales Limited for Cardiff City Council.

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists.

Specification

1. Project background

This Specification details the methodology for an archaeological watching brief to be undertaken during the ground works associated with a new foot path link from Cemaes (ST 23362 80020) open space to Hendre Lake (ST 24153 80128). Cardiff City Council have requested an archaeological watching brief to be undertaken during the work. The detail of this watching brief is set out in this Written Scheme of Investigation.

This work is being undertaken outside of the planning system and as a result there is no planning application number.

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists.

2. Archaeological background

This area represents the largest and most significant example of a man made landscape in Wales. The Levels represent a landscape inundated by, and reclaimed from the sea for at least the last two thousand years. The area has distinctive drainage systems devised over successive periods of use. The Levels have proven and the potential for extensive, well-preserved, buried, waterlogged, archaeological and palaeoenvironmental deposits surviving from earlier landscapes (Cadw and ICOMOS 1998, GGAT 2005, GGAT 2013).

The Rumney Level is a good example of a piecemeal Medieval reclaimed landscape with a wealth of Medieval documents relating to the creation, repair and amendments to the sea

defences and land drainage. The area is composed of irregular shaped fields, a Medieval water mill and dispersed settlement.

Near the eastern end of the scheme there is a Grade II Listed Building which is a sixteenth/seventeenth century Pill Du Farm.

A watching brief at Rumney great wharf was undertaken by GGAT in 2005. Roman pottery along with some coal and animal bone was found at 0.6m below the current land surface (GGAT 2013). Two Desk Based Assessments were written in the 1990s by GGAT (Wilkinson 1993 and Maynard 1993 and 1995). These were centred on sites within 2km of the proposed development area.

3. Specification objectives

This specification document sets out a program of works to ensure that the archaeological watching brief will meet the standard required by *The Chartered Institute for Archaeologist's Standard and Guidance For Archaeological Watching Briefs (2014)*.

The objective of the watching brief is to safeguard the potential archaeological resource through observation and recording during the course of the intrusive ground works associated with the ground investigation scheme.

A written report will be compiled following the fieldwork and an archive of all collected data will be produced and deposited with an appropriate receiving institution.

4. Timetable of works

4.1. Fieldwork

The fieldwork will commence on 16 July 2018.

4.2. Report delivery

The watching brief report will be submitted to Cardiff City Council and to Glamorgan Gwent Archaeological Trust Curatorial Division (advisors to the Local Planning Authority, henceforth GGAT-CD) within three months of the completion of the fieldwork. A copy of the report will also be sent to the regional HER.

5. Fieldwork

5.1. Scope of development

An archaeological watching brief will be undertaken during all intrusive ground works associated with the scheme. The activities that are known to require a watching brief include:

- Excavation for bridge construction
- Excavation to lay footpath

- Landscaping
- Excavation for signage/tables etc
- All intrusive groundworks

5.2. Methodology and contingency

All intrusive groundwork described in 5.1 above, will be subject to an archaeological watching brief conducted to meet the Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Watching Briefs* (revised 2014).

The site archaeologist undertaking the watching brief must be afforded the required access by the main contractor to observe and where necessary to record any archaeological remains revealed. Groundwork shall not be undertaken without the presence of the site archaeologist. The site archaeologist will record finds and less significant archaeological deposits and features without significant delay to the work program.

Where significant or complex archaeological deposits or features are encountered there will be a requirement for those areas to be fenced off and highlighted to all contractors employed on the site. Machines or contractors shall not enter this area until archaeological recording has been completed. If significant archaeological features are revealed during the work a meeting between the client, their agent, main contractor, GGAT-CD and the archaeological contracting company should be called at the earliest convenience.

To comply with professional guidelines, a contingency for further access to each such area with a suitably sized team should be provided. Contingency costs will be agreed in advance before any extension to the programme commences and will follow a site meeting between the archaeological contracting company, the client (or their agent) and GGAT Curatorial Division.

5.3. Recording

Archaeological recording will be undertaken to best current professional practice. Archaeological deposits, features and structures will be recorded by means of a continuous context numbering system. Where necessary site drawings will be made at a suitable scale usually 1:20 in plan, and 1:10 in section. All significant contexts will be photographed in digital at a minimum of 12mp.

5.4. Finds

The professional standards set in the Chartered Institute for Archaeologists' *Standard and guidance for the collection, documentation, conservation and research of archaeological (2014)* will form the basis of finds collection, processing and recording.

All manner of finds regardless of category and date will be retained.

Finds recovered that are regarded as Treasure under *The Treasure Act 1996* will be reported to HM Coroner for the local area.

5.5. Environmental sampling strategy

Deposits with a significant potential for the preservation of palaeoenvironmental material will be sampled, by means of the most appropriate method (bulk, column etc). Where sampling will provide a significant contribution to the understanding of the site the archaeological contracting company will draw up a site-specific sampling strategy alongside a specialist environmental archaeologist. All environmental sampling and recording will follow English Heritage's *Guidelines for Environmental Archaeology* (2002).

5.6. Human remains

In the event that human remains are encountered, their nature and extent will be established and the coroner informed. All human remains will be left *in situ* and protected during backfilling. Where preservation *in situ* is not possible the human remains will be fully recorded and removed under conditions that comply with all current legislation and include acquisition of licenses and provision for reburial following all analytical work. Human remains will be excavated in accordance with the Chartered Institute for Archaeologists' *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains: Technical Paper Number 13* (1993).

A meeting with GGAT Curatorial, the client (or their agent) and the archaeological contracting company will be called if the human remains uncovered are of such complexity or significance that the contingency arrangement (5.2 above) would not be of sufficient scope.

5.7. Specialist advisers

In the event of certain finds, features or sites being discovered, the archaeological contracting company will seek specialist opinion and advice. A list of specialists is given in the table below although this list is not exhaustive and specialists listed here can be replaced with other suitable specialists.

Artefact type	Specialist
Flint	Kate Pitt (Archaeology Wales)
Animal bone	Richard Madgwick (Cardiff University)
CBM, heat affected clay, Daub etc.	Rachael Hall (APS)
Clay pipe	Hilary Major (Freelance)
Glass	Rowena Hart (Archaeology Wales)
Cremated and non-cremated human bone	Malin Holst (University of York)/Richard Madgwick (Cardiff University)

Metalwork	Kevin Leahy (University of Leicester)/ Quita Mold (Freelance)
Metal work and metallurgical residues	Dr Tim Young (GeoArch)
Neo/BA pottery	Dr Alex Gibson (Bradford University)
IA/Roman pottery	Jane Timby (Freelance)
Roman Pottery	Rowena Hart (Archaeology Wales)/ Peter Webster (Freelance)
Post Roman pottery	Stephen Clarke (Monmouthshire Archaeology)
Charcoal (wood ID)	John Carrot (Freelance)
Waterlogged wood	Nigel Nayling (University of Wales – Lampeter)
Molluscs and pollen	Dr James Rackham
Charred and waterlogged plant remains	Wendy Carruthers (Freelance)

5.7.1. Specialist reports

Specialist finds and palaeoenvironmental reports will be written by suitably qualified specialists within the archaeological contracting company, or sub-contracted to external specialists when required.

6. Monitoring

The archaeological contracting company will make its fieldwork available for monitoring by the client (and their appointed agents) and the Local Planning Authority. In both instances advance notice should be given. All site attendants should follow Health and Safety requirements.

7. Post-fieldwork programme

7.1. Archive assessment

7.1.1. Site archive

An archive of archaeological site records and an archive resulting from the post-excavation work will be prepared in accordance Historic England's MoRPHE guidance (Published May 2006, re-issued April 2015).

The site archive (including artefacts and samples) will be deposited with an appropriate receiving organisation, in compliance with the ICON and ClfA Guidelines (*Archaeological*

Archives: a guide to best practice in creation, compilation, transfer and curation (2007). The legal landowners consent will be gained for deposition of finds. Copies of the report and archive index will be deposited with the *National Monuments Record*, RCAHMW, Aberystwyth and the *Regional HER*.

In addition, an archive of records made during the post-fieldwork phase will be prepared to the specifications in *Management of Archaeological Projects*, (English Heritage, 1991) Appendix 6.

7.1.2. Analysis

Following a rapid review of the potential of the site archive, a programme of analysis and reporting will be undertaken. This will result in the following inclusions in the final report:

- Non-technical summary
- Location plan showing the area/s covered by the watching brief, all artefacts, structures and features found
- Plan and section drawings (if features are encountered) with ground level, ordnance datum and vertical and horizontal scales.
- Written description and interpretation of all deposits identified, including their character, function, potential dating and relationship to adjacent features. Specialist descriptions and illustrations of all artefacts and soil samples will be included as appropriate.
- An indication of the potential of archaeological deposits which have not been disturbed by the development
- A discussion of the local, regional and national context of the remains by means of reviewing published reports, unpublished reports, historical maps, documents from local archives and the regional HER as appropriate.
- A detailed archive list at the rear listing all contexts recorded, all samples finds and find types, drawings and photographs taken. This will include a statement of the intent to deposit, and location of deposition, of the archive.

7.2. Reports and archive deposition

7.2.1. Report to client

A report, comprising a synthesis of data gathered, will be submitted following completion of the watching brief, together with inclusion of supporting evidence in appendices as appropriate, together with photographs and illustrations.

7.2.2. Additional reports

After an appropriate period has elapsed, copies of the report will be deposited with the relevant county Historical Environment Record, the National Monuments Record and, if appropriate, Cadw, English Heritage or Historic Scotland.

7.2.3. Summary reports for publication

Short archaeological reports will be submitted for publication in relevant journals; as a minimum, a report will be submitted to the annual publication of the regional CBA group or equivalent journal.

7.2.4. Notification of important remains

Where it is considered that remains have been revealed that may satisfy the criteria for statutory protection, the archaeological contracting company will submit preliminary notification of the remains to the relevant national archaeological agency (Cadw, English Heritage or Historic Scotland).

7.2.5. Archive deposition

The research archive will, whenever appropriate, be deposited with a suitable receiving institution, usually the relevant Local Authority museums service. The site archive will be deposited with an appropriate institution. A copy of the digital archive will be sent to the RCAHMW in compliance with their guidelines.

7.2.6. Finds deposition

The finds, including artefacts and ecofacts, excepting those which may be subject to the Treasure Act, will be deposited with the same institution, subject to the agreement of the legal land owners.

A copy of the archive index will be deposited with the National Monuments Record, RCAHMW, Aberystwyth.

8. Staff

The Watching Brief will be undertaken by Jenniffer Muller of Archaeology Wales and the project managed by Rowena Hart MCIfA. Changes to the staffing involved in the project will be made known to the client and to GGAT-Curatorial Division at the earliest opportunity.

Additional Considerations**9. Health and Safety****9.1. Risk assessment**

Prior to the commencement of work the archaeological contracting company will carry out and produce a formal Health and Safety Risk Assessment in accordance with *The Management of Health and Safety Regulations 1992*. A copy of the risk assessment will be kept on site and be available for inspection on request. A copy will be sent to the client (or their agent as necessary) for their information. All members of site staff will adhere to the content of this document.

9.2. Other guidelines

The archaeological contracting company will adhere to best practice with regard to Health and Safety in Archaeology as set out in the FAME (Federation of Archaeological Managers and Employers) health and safety manual *Health and Safety in Field Archaeology* (2002).

10. Insurance

AW is fully insured for this type of work, and holds Insurance with Aviva Insurance Ltd and Hiscox Insurance Company Limited through Towergate Insurance. Full details of these and other relevant policies can be supplied on request.

11. Quality Control

11.1. Professional standards

The archaeological contracting company will work to the standards and guidance provided by the *Chartered Institute for Archaeologists*. The archaeological contracting company must fully recognise and endorse the Chartered Institute for Archaeologists' *Code of Conduct*, *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* and the *Standard and Guidance for archaeological watching briefs* currently in force. All employees of the archaeological contracting company, whether corporate members of the Chartered Institute for Archaeologists or not, are expected to adhere to these Codes and Standards during their employment.

12. Arbitration

Disputes or differences arising in relation to this work shall be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Institute for Archaeologists* applying at the date of the agreement.

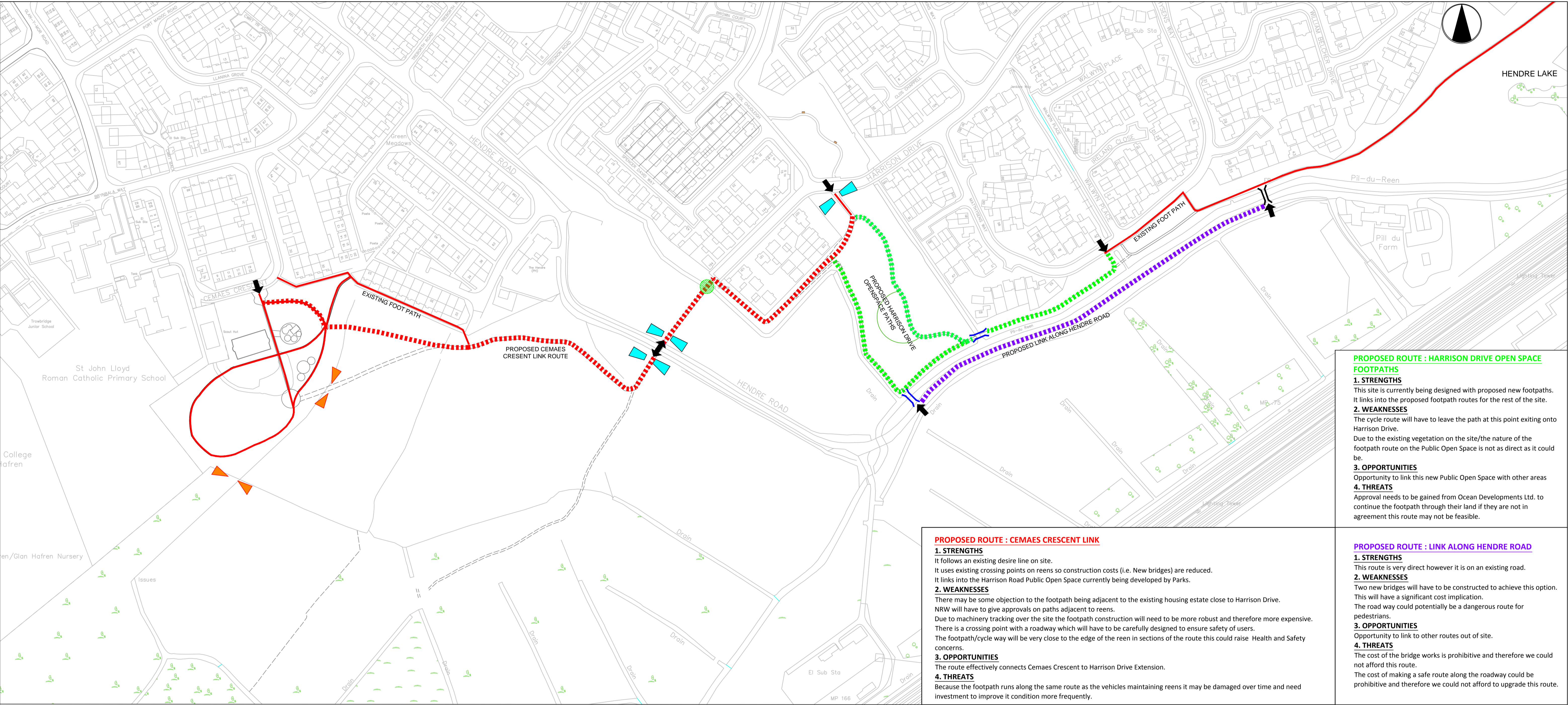
13. References

GGAT, 2005, *Rumney Great Wharf II, Cardiff: archaeological watching brief, Interim report*, GGAT Report No. **2005/040**

Maynard, D J, 1993 *Archaeological Desk-Based Assessment of Land South of the Brewery, Magor, Gwent*. Unpublished, GGAT Report **93/048**

Maynard, D, 1995, *Archaeological Desk-based Assessment: Cardiff Waste Water Treatment Works Environmental Assessment*

Wilkinson, P F, 1993 *Archaeological Desktop Study: Rumney Moors Landfill*. Unpublished, GGAT Report **93/033**



PROPOSED ROUTE : HARRISON DRIVE OPEN SPACE FOOTPATHS

1. STRENGTHS
This site is currently being designed with proposed new footpaths. It links into the proposed footpath routes for the rest of the site.

2. WEAKNESSES
The cycle route will have to leave the path at this point exiting onto Harrison Drive.
Due to the existing vegetation on the site/the nature of the footpath route on the Public Open Space is not as direct as it could be.

3. OPPORTUNITIES
Opportunity to link this new Public Open Space with other areas

4. THREATS
Approval needs to be gained from Ocean Developments Ltd. to continue the footpath through their land if they are not in agreement this route may not be feasible.

PROPOSED ROUTE : CEMAES CRESCENT LINK

1. STRENGTHS
It follows an existing desire line on site.
It uses existing crossing points on reens so construction costs (i.e. New bridges) are reduced.
It links into the Harrison Road Public Open Space currently being developed by Parks.

2. WEAKNESSES
There may be some objection to the footpath being adjacent to the existing housing estate close to Harrison Drive.
NRW will have to give approvals on paths adjacent to reens.
Due to machinery tracking over the site the footpath construction will need to be more robust and therefore more expensive.
There is a crossing point with a roadway which will have to be carefully designed to ensure safety of users.
The footpath/cycle way will be very close to the edge of the reen in sections of the route this could raise Health and Safety concerns.

3. OPPORTUNITIES
The route effectively connects Cemaes Crescent to Harrison Drive Extension.

4. THREATS
Because the footpath runs along the same route as the vehicles maintaining reens it may be damaged over time and need investment to improve it condition more frequently.

PROPOSED ROUTE : LINK ALONG HENDRE ROAD

1. STRENGTHS
This route is very direct however it is on an existing road.

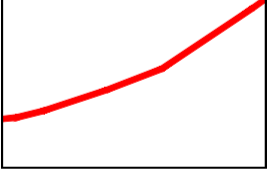
2. WEAKNESSES
Two new bridges will have to be constructed to achieve this option.
This will have a significant cost implication.
The road way could potentially be a dangerous route for pedestrians.

3. OPPORTUNITIES
Opportunity to link to other routes out of site.


4. THREATS
The cost of the bridge works is prohibitive and therefore we could not afford this route.
The cost of making a safe route along the roadway could be prohibitive and therefore we could not afford to upgrade this route.

KEY:

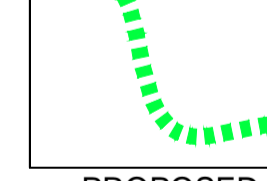
EXISTING AND PROPOSED ACCESS ROUTES



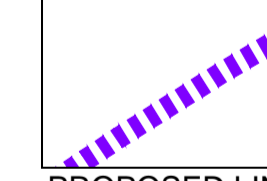
EXISTING FOOT PATHS



PROPOSED CEMAES CRESENT LINK ROUTE




PROPOSED HARRISON DRIVE OPENSACE PATHS

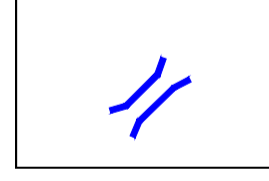


PROPOSED LINK ALONG HENDRE ROAD

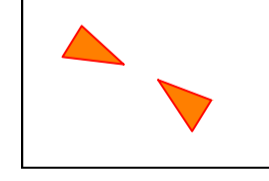
ACCESS AND ENTRANCE AREAS



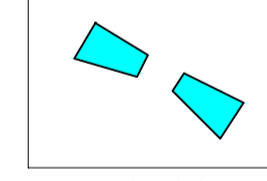
EXISTING BRIDGE



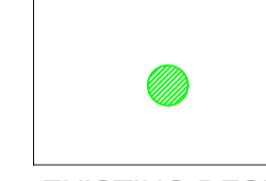
PROPOSED BRIDGE




EXISTING STILE GATE




PROPOSED KISSING GATE



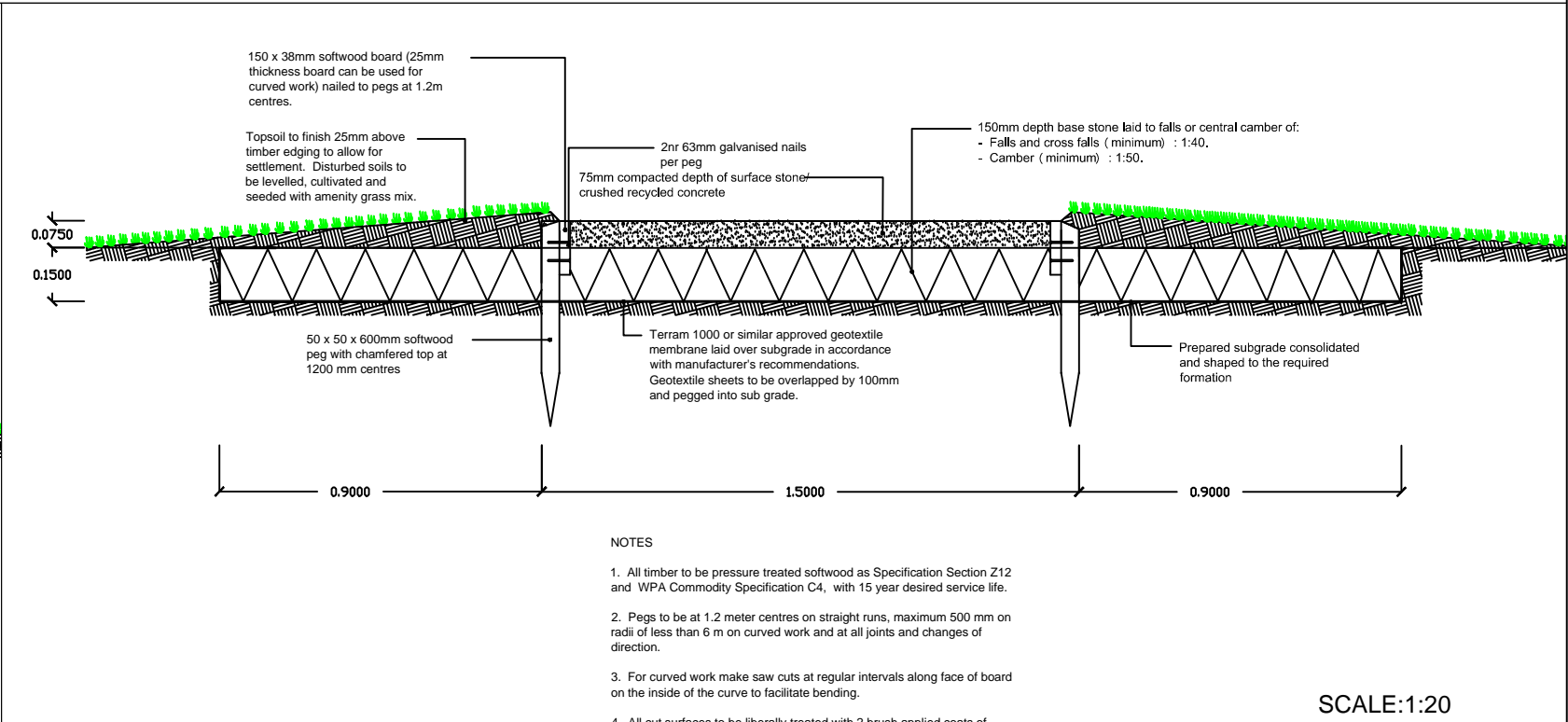
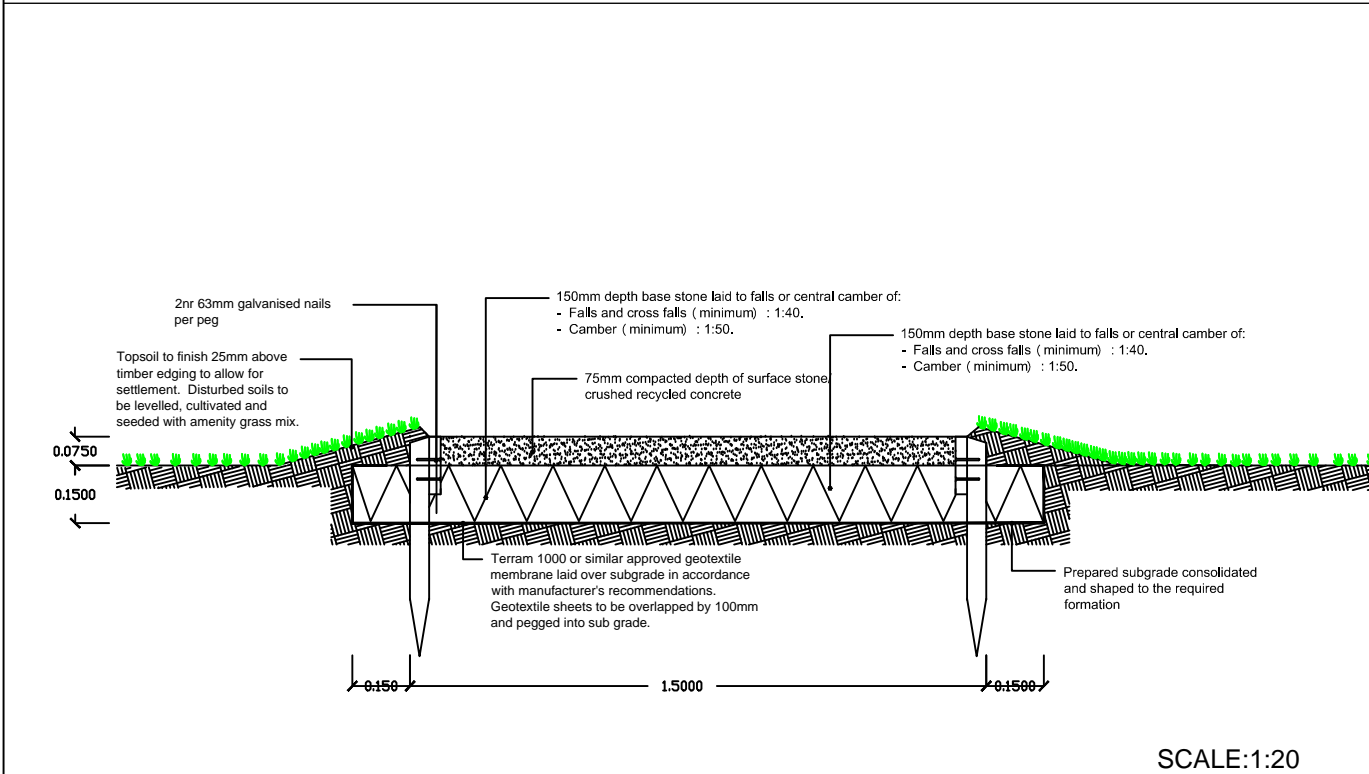
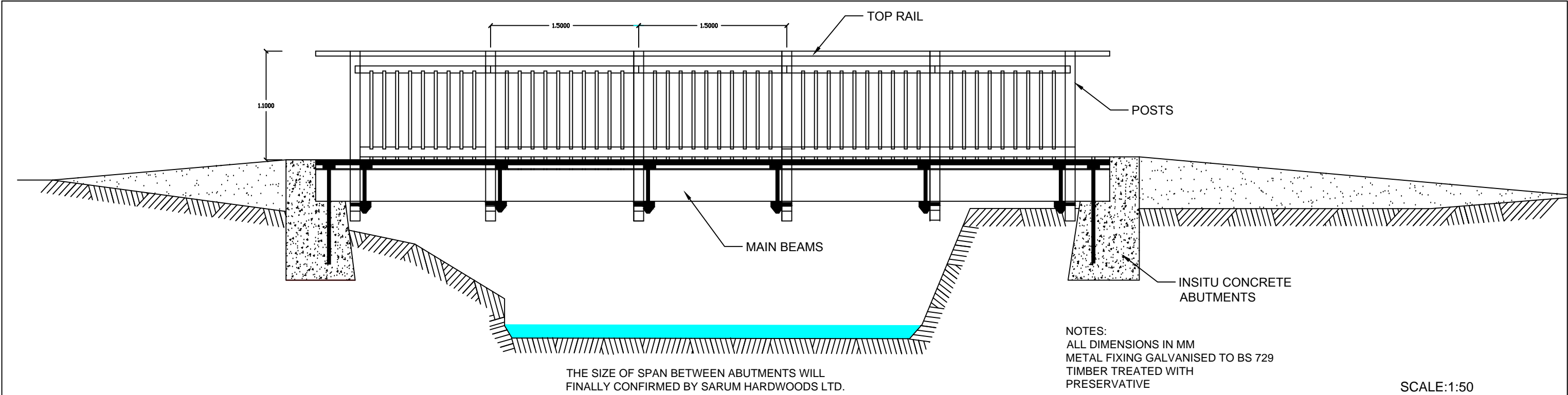
EXISTING DESIRE LINE INTERSECTION ON THE REEN



ENTRANCE


					<div>Datblygu Parciau Parciau, Chwaraeon a'r Harbwr Tŷ'r Frenhines Alexandra Cargo Rd, Bae Caerdydd, Caerdydd CF10 4LY Ffôn: 029 2068 4000 Ffacs: 029 2068 4001</div> <div></div> <div><div>Parks Development Parks, Sport & Harbour Queen Alexandra House, Cargo Rd, Cardiff Bay Cardiff CF10 4LY Tel: 029 2068 4000 Fax: 029 2068 4001</div></div>	Drawing Title / Teitl y Dyluniad			
						MASTERPLAN OF FOOT PATH LINK FROM CEMAES OPEN SPACE TO HENDRE LAKE			
						Scale / Graddfa	Date / Dyddiad	Checked / Gwiriwyd	Drawn by / Dyluniad Gan
Letter / Llythyren	Date / Dyddiad	Initials / Enw	Initials / Enw	Brief description / Disgrifiad Byr		1:1500@A1	14.11.2016	SC	RW
List of Amendments / Rhestr o Newidiadau						Drawing Number / Rhif Dyluniad			
					TRO1604-006				

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Letter / Llythyren	Date / Dyddiad	Initials / Enw	Initials / Enw	Brief description / Disgrifiad Byr
List of Amendments / Rhestr o Newidiadau				
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Datblygu Parciau
Parciau, Chwaraeon a'r Harbwr
Tŷ'r Frenhines Alexandra
Cargo Rd, Bae Caerdydd,
Caerdydd CF10 4LY
Ffôn: 029 2068 4000
Ffacs: 029 2068 4001



CARDIFF
CAERDYDD

Parks Development
Parks, Sport & Harbour
Queen Alexandra House,
Cargo Rd, Cardiff Bay
Cardiff CF10 4LY
Tel: 029 2068 4000
Fax: 029 2068 4001

Drawing Title / Teitl y Dyluniad

HARRISON DRIVE OPEN SPACE EXTENSION
DETAILS DESIGN

Scale / Graddfa @A3	Date / Dyddiad 30.08.2016	Checked / Gwiriwyd	Drawn by / Dyluniad Gan RW
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Drawing Number / Rhif Dyluniad

TRO1406-01-02

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