



Lidl, Briton Ferry Road, Neath

Hydraulic Modelling Report

June 2022



Scheme Information	
Scheme:	Lidl, Briton Ferry Road, Neath
Report Title:	Hydraulic Modelling Summary Note
Client:	Lidl UK GmbH
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Approval Record	
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Revision	Date	Comment
1	08/06/2022	First issue

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This report will remain valid for a period of twelve months (from the date of last issue) after which the source data should be reviewed in order to reassess the findings and conclusions on the basis of latest available information.

Form Ref:

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Contents

Introduction.....	1
Hydraulic Model Build	1
Model Results... ..	3
Recommendations.....	4

Tables

Table 1: Glossary of Technical Terms	iii
Table 2: Modelling Short Codes.....	iv
Table 3: Simulated event combinations	2

Appendices

Appendix A	Location Plan and Aerial Image
Appendix B	1D/2D Model Extent
Appendix C	Simulated Flood Maps

Glossary and Modelling Short Codes

Table 1: Glossary of Technical Terms

Term / Acronym	Definition
1D (model)	One dimensional – A type of model typically built using watercourse cross-section survey data to represent the watercourse and adjacent floodplain
2D (model)	Two dimensional – A type of hydraulic model typically built using LiDAR and site-specific topographic data to represent the wider floodplain
1D-2D (model)	A combination of 1D and 2D modelling (i.e. typically a representation of the watercourse and floodplain respectively)
AEP	Annual Exceedance Probability – the probability that a storm event will occur in any given year
Defra	Department for Environment, Food and Rural Affairs
DfI	Department for Infrastructure – one of nine departments in Northern Ireland responsible for regional strategic planning and development policy
EA	Environment Agency – non-departmental public body responsible for the protection and enhancement of the environment in England
ESTRY	Industry standard flood modelling software (1D engine built into TUFLOW)
FCA	Flood Consequence Assessment
FRA	Flood Risk Assessment
FFL	Finished Floor Level

Term / Acronym	Definition
Flood risk	The product of the frequency or likelihood of a flood event and the consequences (such as loss, damage, harm, distress and disruption)
FMP	Flood Modeller Pro – industry standard flood modelling software
HMR	Hydraulic Modelling Report
IDB	Internal Drainage Board
LA	Local authority
LiDAR	Light Detection and Ranging (i.e. Ground elevation data)
LLFA	Lead Local Flood Authority
Main river	A watercourse on which the relevant regulatory body (e.g. EA/NRW/SEPA/DfI) has permissive powers, but not a duty, to carry out maintenance, improvement, or construction work.
MIKE (11/21/FLOOD)	Industry standard flood modelling software
NGR	National Grid Reference
NRW	Natural Resources Wales – Welsh Government sponsored body responsible for managing the environment and natural resources of Wales
Ordinary watercourse	A river, stream, ditch, cut, sluice, dyke or non-public sewer that is not a designated main river, and for which the LA has flood risk management responsibilities and powers.
SEPA	Scottish Environment Protection Agency – non-departmental public body responsible for the protection and enhancement of the environment in Scotland
TN	Technical Note
TUFLOW	Industry standard flood modelling software

Short codes are used in the naming and referencing of model files, events and scenarios to ensure a consistent, high-quality naming convention is followed and to simplify communication of model results.

Table 2: Modelling Short Codes

Model Short Code	Definition
ABC	Model identifier
BL[x]-[y]	A y% blockage at location x (e.g. BL1-67 – 67% blockage at location “1”)
BR[x]-[y]	A y metre wide breach scenario at location x (e.g. BR2-50 – 50m wide breach at location “2”)
CC	Climate change
DEV	Post-development site layout
EXG	Existing (pre-development) site layout
MIT	Flood mitigation option

Model Short Code	Definition
NC	"Normal conditions" A model setup representative of present channel and floodplain conditions throughout the study area – no additional structure blockages, defence breaches or pump failures
OPT	Development option
Q[x]	1 / x % AEP fluvial event
R[x]	1 / x % AEP pluvial event
ST[x]	Sensitivity test x (e.g. ST1 – channel and floodplain roughness +20%)
T[x]	1 / x % AEP tidal event

Introduction

Waterco has been commissioned to undertake a hydraulic modelling study of the River Neath in support of the proposed demolition of two commercial buildings, and the construction of a replacement Lidl food store at Briton Ferry Road, Neath, SA11 1AS, herein referred to as the site.

The main objective of this hydraulic modelling study is to quantify existing fluvial and tidal flood risk from the River Neath and its tributaries to the site, and the change in flood risk elsewhere (if any) as a result of the development. A linked 1D/2D¹ hydraulic model of the River Neath provided by NRW has been used to enable this. This report summarises the hydraulic modelling works completed and should be read in conjunction with the Flood Consequences Assessment (FCA) & Drainage Strategy prepared by Waterco (Doc ref: 13099-FCA & Drainage Strategy-04.pdf), known as the FCA hereon.

A detailed description of the site, topographic survey, proposed development plans and existing flood risk data is available in the FCA.

A location plan and an aerial photograph of the site are included in Appendix A.

Hydraulic Model Build

An existing ESTRY-TUFLOW model of the River Neath was provided by NRW for use in this study, known as the NRW model hereon. The NRW model includes a representation of more than 17km of the River Neath between the village of Resolven (NGR 281870 202280) and Swansea Bay (NGR 271750 192320) as well as several tributaries and nearby water bodies. It was last updated in March 2017 as part of the NRW WEM framework to provide a greater understanding of the flood risks and interactions between the River Neath, River Clydach, Cryddan Brook, River Dulais, Melincourt Brook and the Neath and Tennant Canals.

The site is situated near to Crythan Brook, a tributary modelled from 100m south-east of Crythan Road (NGR 275000 196510) to its confluence with the River Neath (NGR 274490 196920).

As part of the works completed by Waterco, climate change allowances relating to fluvial inflows within the NRW model have been updated to reflect more recent guidance updates, applying an uplift of +30% and +75% to the necessary fluvial events. Initial test simulations showed significant model instabilities during the 0.1% AEP +CC simulations due to the considerable depth of water present across some of the model links along the Neath Canal, upstream of Aberdulais (approx. instability location NGR 278750 199590), causing the simulation to crash around the event peak.

Due to the nature of the instability and the difficulties faced in resolving them, it was decided to trim the NRW model at Aberdulais (NRW model cross-section: NEAT_3689) and apply new inflow boundary conditions. The trimmed model is known as the Waterco model hereon. Inflows for the Waterco model were extracted directly from stable NRW model results up to the 0.1% AEP fluvial event, at the trim location. For the 0.1% AEP +30%CC and 0.1% AEP +75%CC simulations, the stable present day 0.1% AEP simulation outputs were extracted and multipliers of 1.3 and 1.75 applied respectively. This approach was considered acceptable

¹ A 1D/2D hydrodynamic model is comprised of a 1-Dimensional (1D) river network model (based on surveyed river cross-sections) coupled with a 2-Dimensional (2D) Digital Terrain Model (DTM) of the potential floodplain (created from LiDAR).

for this study as early test simulations suggested minimal floodplain retention.

Tide curves and sea level rise allowances have been updated in line with UKCP18 guidance, for the years 2022 and 2100.

The Waterco model was set up for the fluvial and tidal event combinations listed in Table 3. Extreme fluvial events have been paired with the MHWS tide levels, whilst extreme tidal events are paired with the Q_{med} fluvial event.

Table 3: Simulated event combinations

	Fluvial Event (AEP)	Tidal Event (AEP)
-	50%	MHWS (2022)
Fluvially Dominant	2%	MHWS (2022)
	1%	MHWS (2022)
	0.1%	MHWS (2022)
	50% +30%CC	MHWS (2100)
	2% +30%CC	MHWS (2100)
	1% +30%CC	MHWS (2100)
	1% +75%CC	MHWS (2100)
	0.1% +30%CC	MHWS (2100)
	0.1% +75%CC	MHWS (2100)
Tidally Dominant	50%	2% (2022)
	50%	0.5% (2022)
	50%	0.1% (2022)
	50% +30%CC	2% (2100)
	50% +30%CC	0.5% (2100)
	50% +30%CC	0.1% (2100)
	50% +30%CC	0.1% (2100)

During initial testing of the Waterco model, minor instabilities were noted at the downstream end of a large box culvert underneath Milland Road (NGR 274690 196710). The culvert type was adjusted from irregular (based on an almost rectangular height-width table), to rectangular in an attempt to resolve the minor model instability in the area.

Topographic survey of the site (Doc ref: 14433_Topographic and Services Survey_Final_Rev A.dwg, dated August 2014) was stamped on top of the underlying LiDAR DTM, and key details such as the FFL of the existing commercial property and loading bay levels were reinforced using TUFLOW z-shapes. Levels outside of the topographic survey coverage are based on the latest NRW 1m LiDAR DTM (tile 1m_res_SS79_dtm, downloaded from the Lle Geo-portal in April 2022).

TUFLOW HPC “Quadtree” was utilised to reduce the cell size on site and in the immediate surrounding area from the existing resolution of 4m (NRW model) to 1m. The cell size elsewhere remains at 4m. This is adequate to represent the key flow mechanisms without negatively impacting simulation run times.

In post-development simulations, the proposed FFL was applied using a TUFLOW z-shape at a level of 7.87m AOD and the land use was altered accordingly.

Each of the events listed in Table 3 has been simulated for both the existing and proposed site layouts.

The Waterco model was run using the latest build of TUFLOW HPC available at the time of simulation; 2020-10-AD. A model extent plan is included in Appendix B.

Model Results

This section of the report discusses the results obtained from the hydraulic model simulations.

Maximum flood depth, depth difference, velocity and hazard mapping has been provided for each primary simulation in Appendix C. Flood hazard ratings have been calculated in accordance with DEFRA document 'FD2320: Flood Risks to People' and EA guidance document 'Supplementary Note on Flood Hazard Ratings and Thresholds'.

Fluvially Dominant Simulations

Existing Site Layout

The site is shown to remain mostly dry during all present day, fluvially dominant flood events up to and including the 0.1% AEP event with flooding occurring in the existing loading bay west of the existing Lidl Store and to the south of the existing car park. During the 0.1% AEP event with a +75% allowance for climate change, the existing commercial properties remain dry, however much of the car park to the south and east of the site experiences shallow depth flooding.

Proposed Site Layout

The proposed Lidl store is shown to be flood free in each simulated return period. Flood extents and mechanisms across the remainder of the site are similar to the existing scenario for all return periods.

Offsite Impact

No significant (+/-5mm) offsite impact is seen as a result of the development. A maximum depth increase of 6mm is recorded adjacent to the south-western boundary of the site during the 0.1% AEP +75%CC event.

A maximum of 15mm increase is shown at the downstream extent of the Milland Road Culvert. However, the increase is most likely associated with a minor instability at the downstream extent of the culvert. Attempts have been made at stabilising the model at this location, however given the scale and nature of the development, and given that it is unlikely that the increase is due to the proposed development, the model results have been deemed reasonable.

Tidally Dominant Simulations

Existing Site Layout

During the present day tidal scenario, the majority of the site is shown to be flood free. Floodwaters encroach on the southern and western extent of the site with flood extents slightly increasing with return period.

During the climate change scenario (year 2100), the majority of the site is shown to be flood free during the MHWS event. Flood extents are shown to increase as the return period increases, with approximately 50% of the site shown to be flooded during the 2% AEP event and 0.5% AEP event. The majority of the site is

shown to flood in the 0.1% AEP year 2100 event.

Proposed Site Layout

During the proposed development scenario, the proposed Lidl store is shown to be flood free during each modelled return period. Flood extents for the remainder of the site remain similar to those shown in the existing scenario.

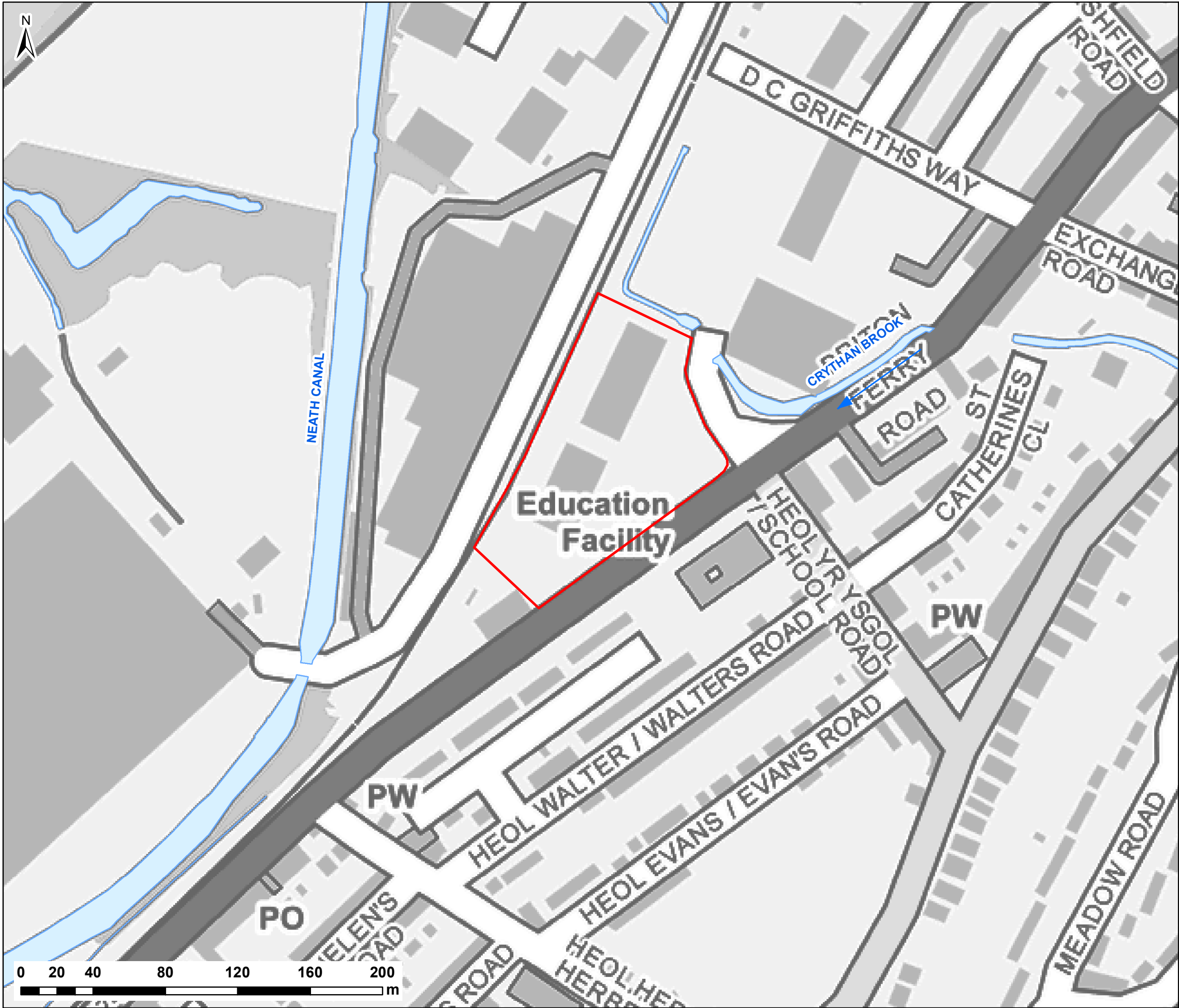
Offsite Impact

No significant (+/-5mm) offsite impact is shown as a result of the proposed development.

Recommendations

This hydraulic model is considered suitable to support the FCA being prepared by Waterco for the proposed development at Briton Ferry Road, Neath and should be submitted to NRW for their review.

Appendix A Location Plan and Aerial Image



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Watercourses / Water Bodies

CLIENT:

www.waterco.co.uk

SCHEME:

LIDL - BRITON FERRY ROAD, NEATH

PLOT TITLE:

LOCATION PLAN

PLOT STATUS:			DATE:
FINAL			04/10/2021
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
VJ	AW	VG	1:2,000 (UNLESS STATED OTHERWISE)

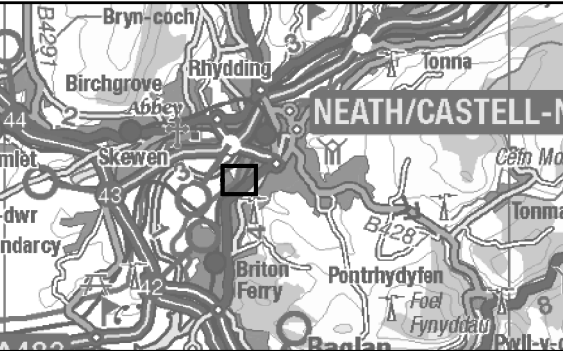
PLOT NAME:		REV:
13099-Location_Plan		-



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary



CLIENT:



www.waterco.co.uk

SCHEME:

**LIDL - BRITON FERRY ROAD,
NEATH**

PLOT TITLE:

AERIAL PLAN

PLOT STATUS:

FINAL

DATE:

04/10/2021

DRAWN:

VJ

CHECKED:

AW

APPROVED:

VG

PLOT SCALE @ A3:

1:2,000

(UNLESS STATED OTHERWISE)

PLOT NAME:

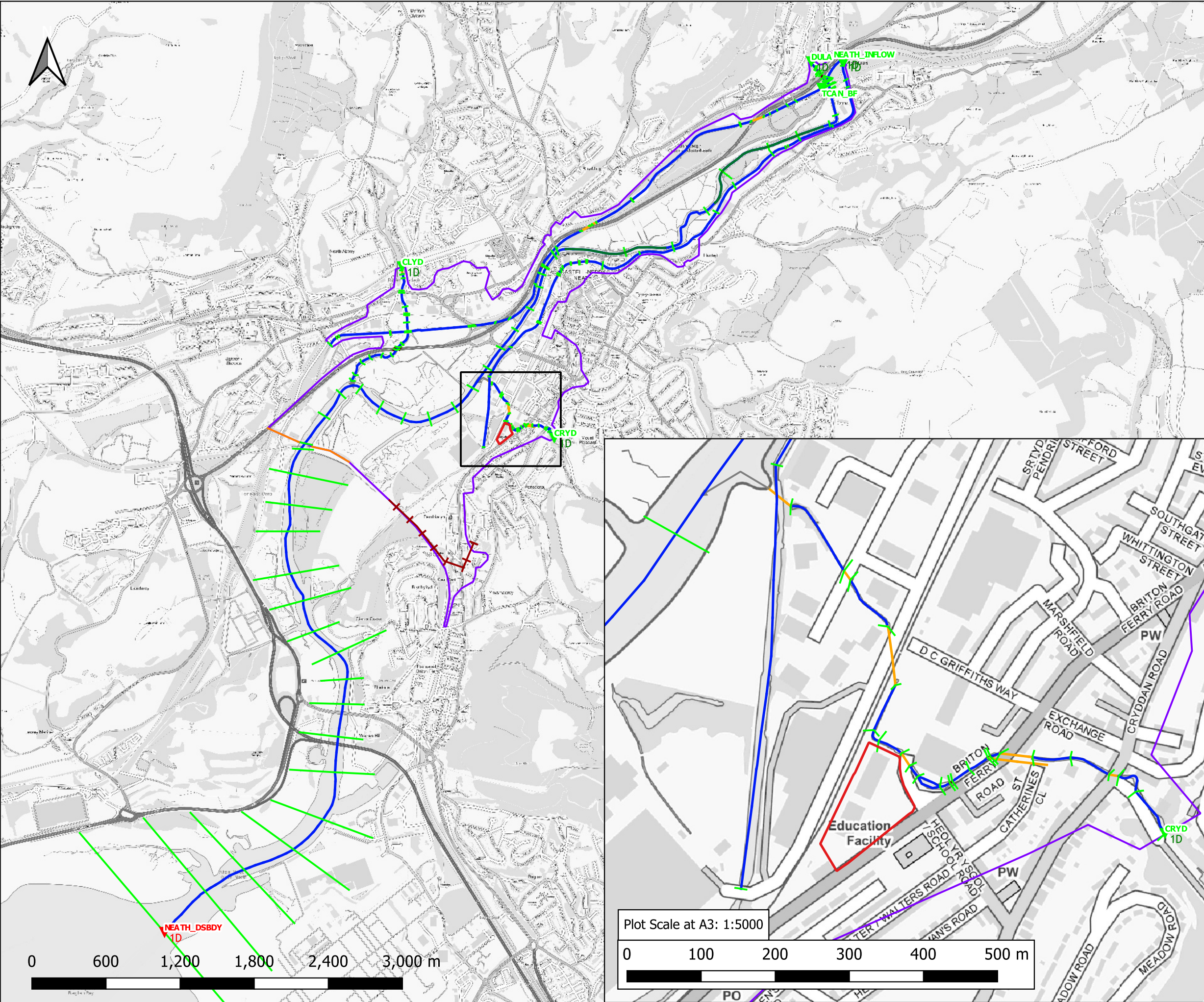
13099-Aerial_Plan

REV:

-

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

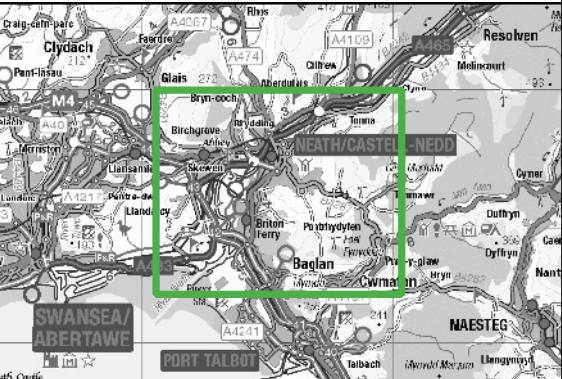
Appendix B 1D/2D Model Extent



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

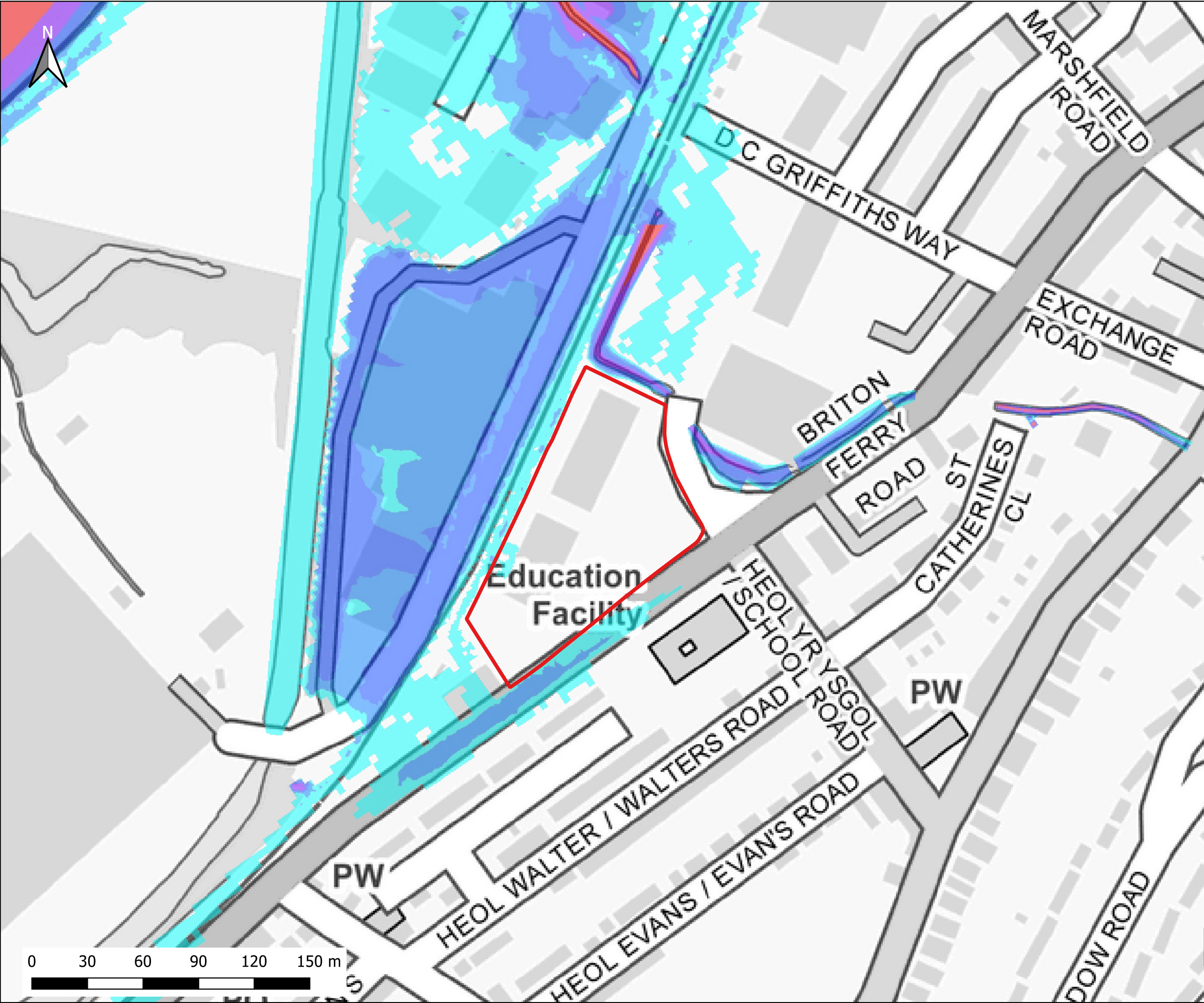
- Site Boundary
- 1D Flow Boundary
- 1D Water Level Boundary
- Channel
- Bridge
- Culvert
- Weir
- 1D Cross Sections
- 2D Model Extent
- 2D Water Level (H) vs Flow Boundary (Q)
- 1D-2D Link (HX)



CLIENT:			
		www.waterco.co.uk	
SCHEME:		Lidl - Briton Ferry Road, Neath	
PLOT TITLE:		Model Extent	
PLOT STATUS:		FINAL	DATE: 07-06-2022
DRAWN: AP	CHECKED: SB	APPROVED: AW	PLOT SCALE AT A3: 1:30000
PLOT NAME: 13099-Model_Extent			REVISION: -

Appendix C Simulated Flood Maps

Fluvial Simulations



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

≤ 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

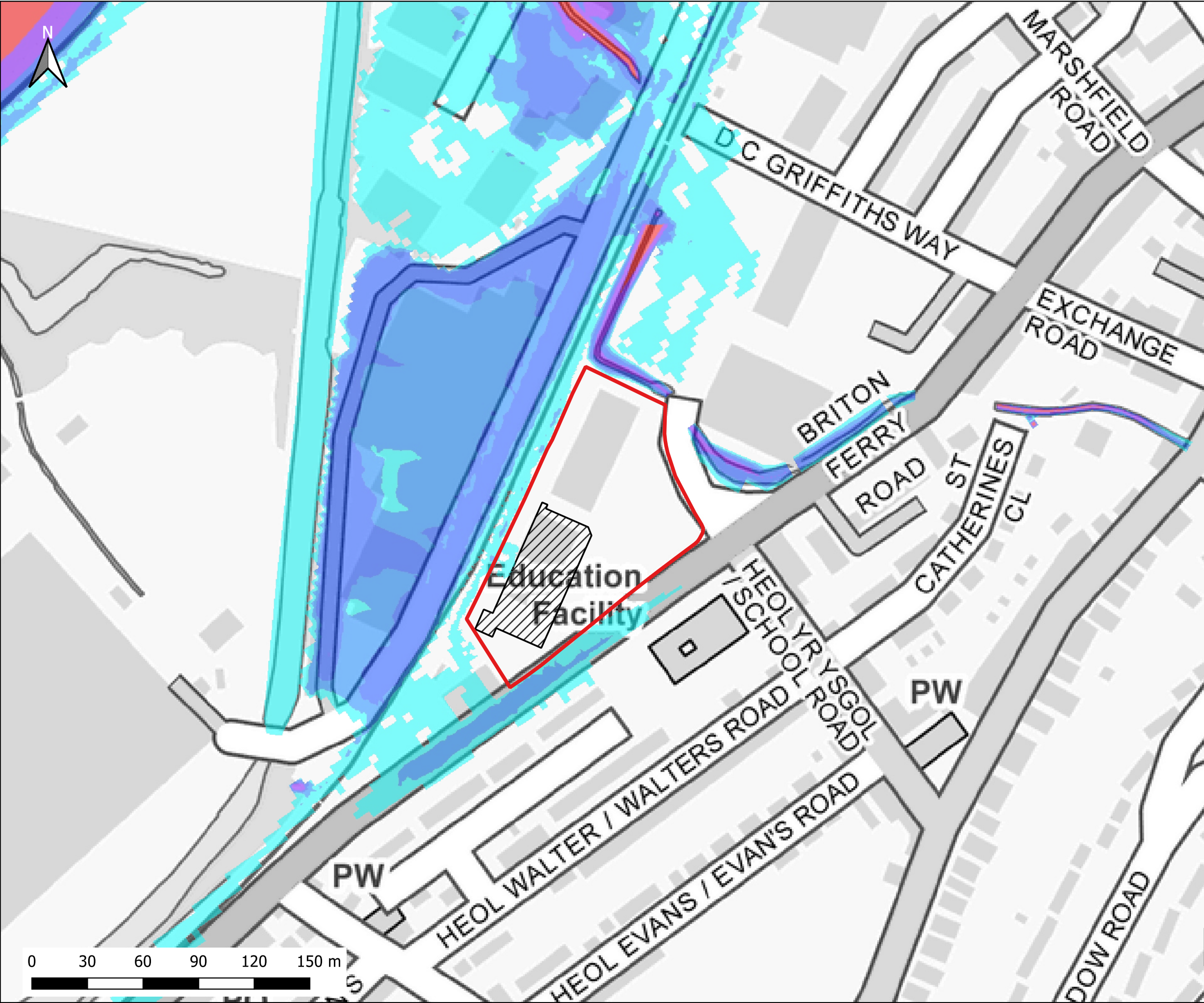
PLOT TITLE:

Maximum Flood Depth
50% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2_MHWS_EXG_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

waterco

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

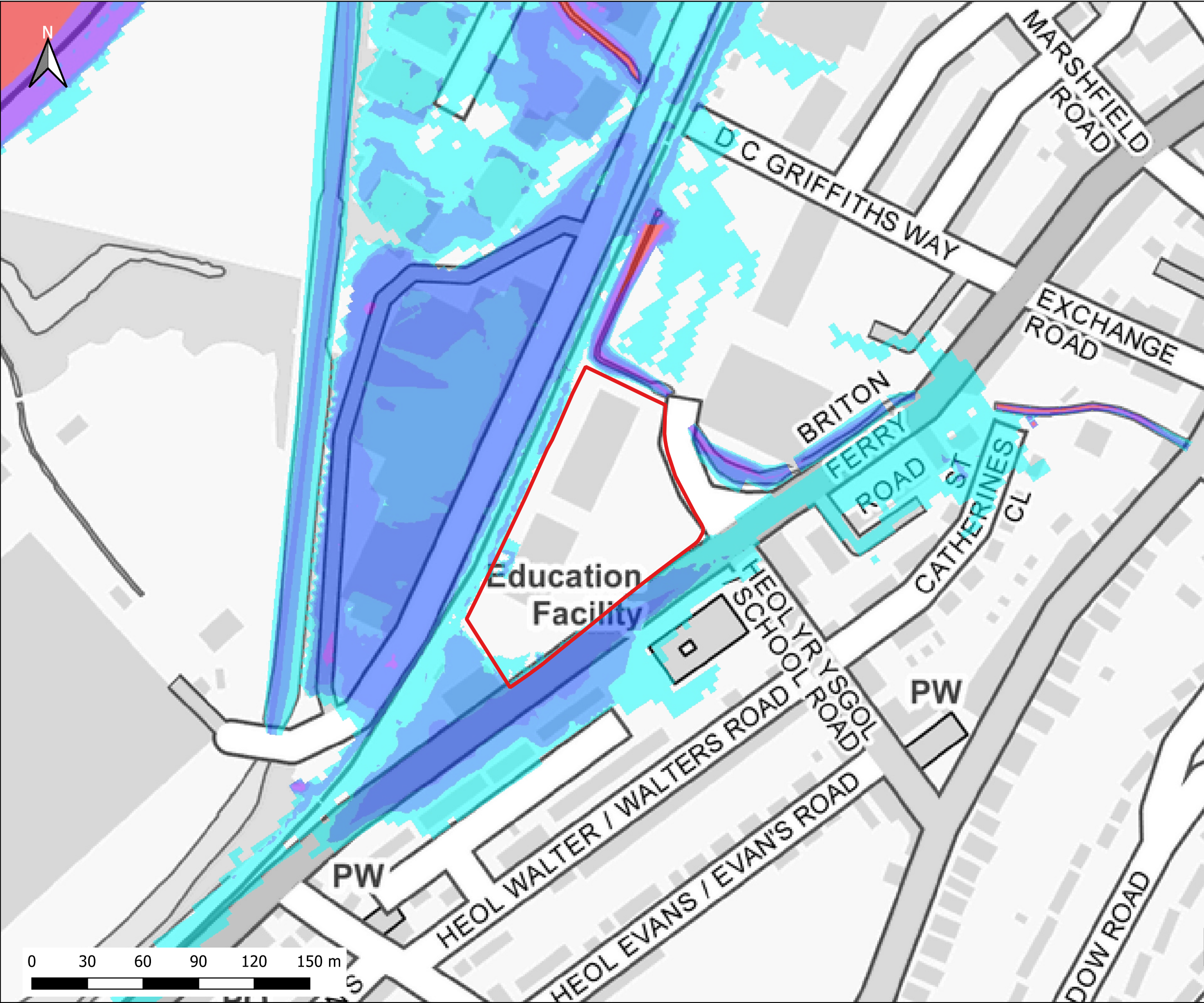
PLOT TITLE:

Maximum Flood Depth
50% AEP Plus MHWS 2022
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2_MHWS_DEV_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

≤ 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

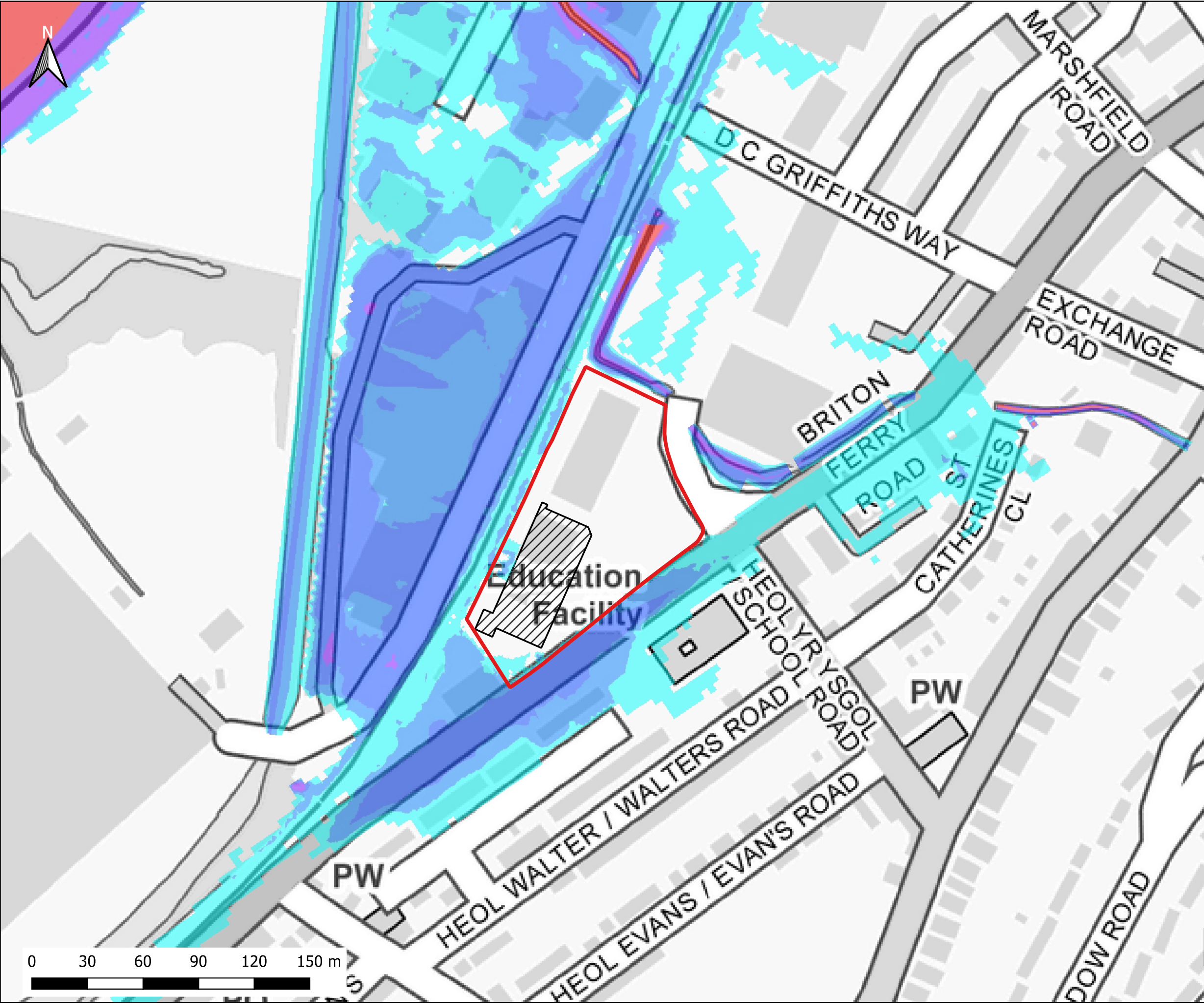
PLOT TITLE:

Maximum Flood Depth
50%+CC30 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2CC30_MHWS_EXG_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension

Maximum Flood Depth

- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

waterco
www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

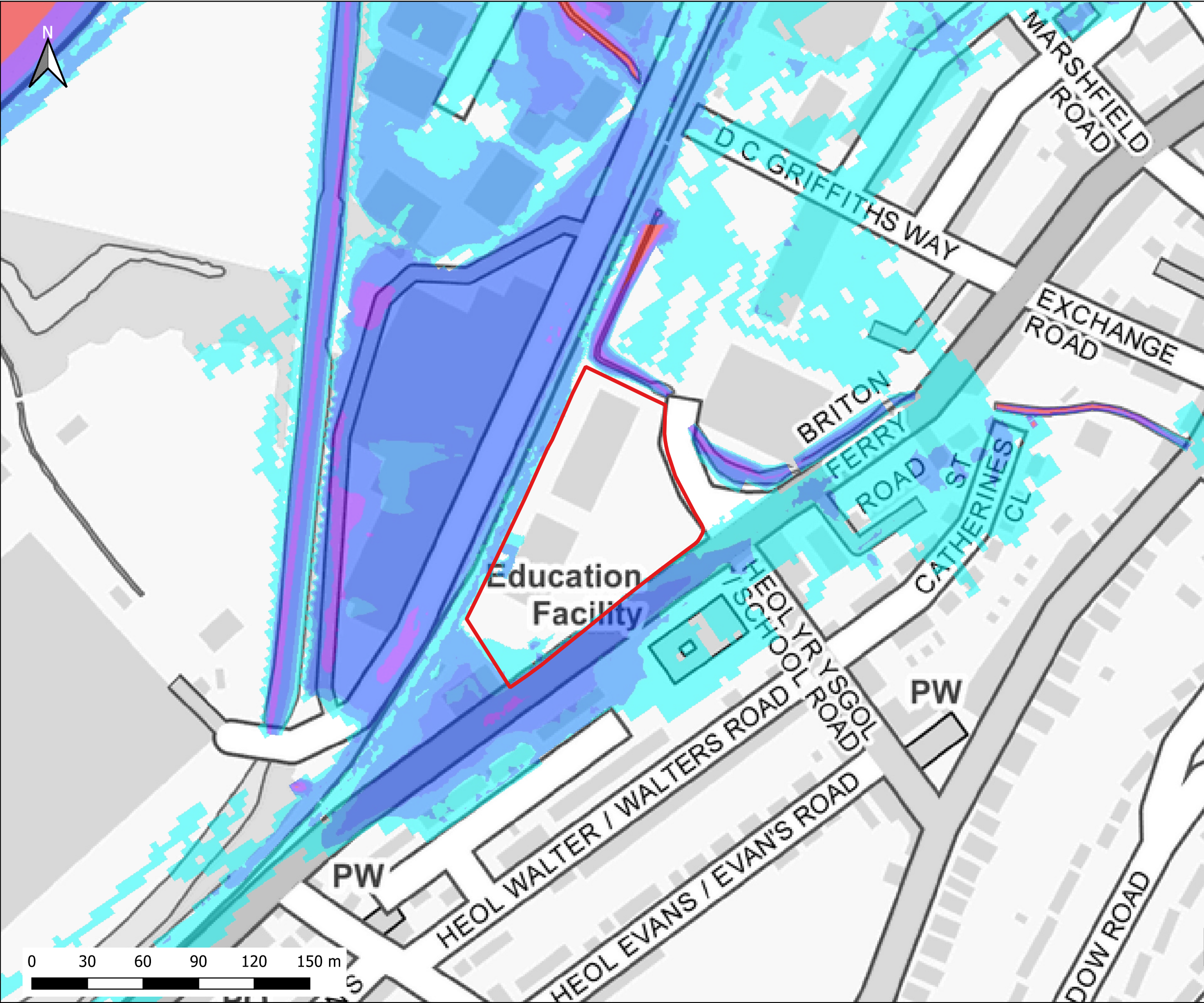
PLOT TITLE:

Maximum Flood Depth
50%+CC30 AEP Plus MHWS 2100
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2CC30_MHWS_DEV_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

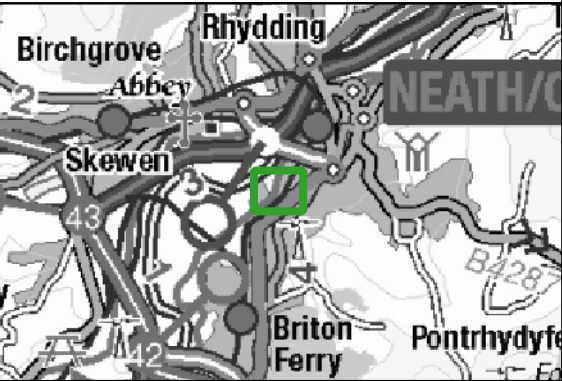
≤ 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m



CLIENT:



SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Depth
2% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

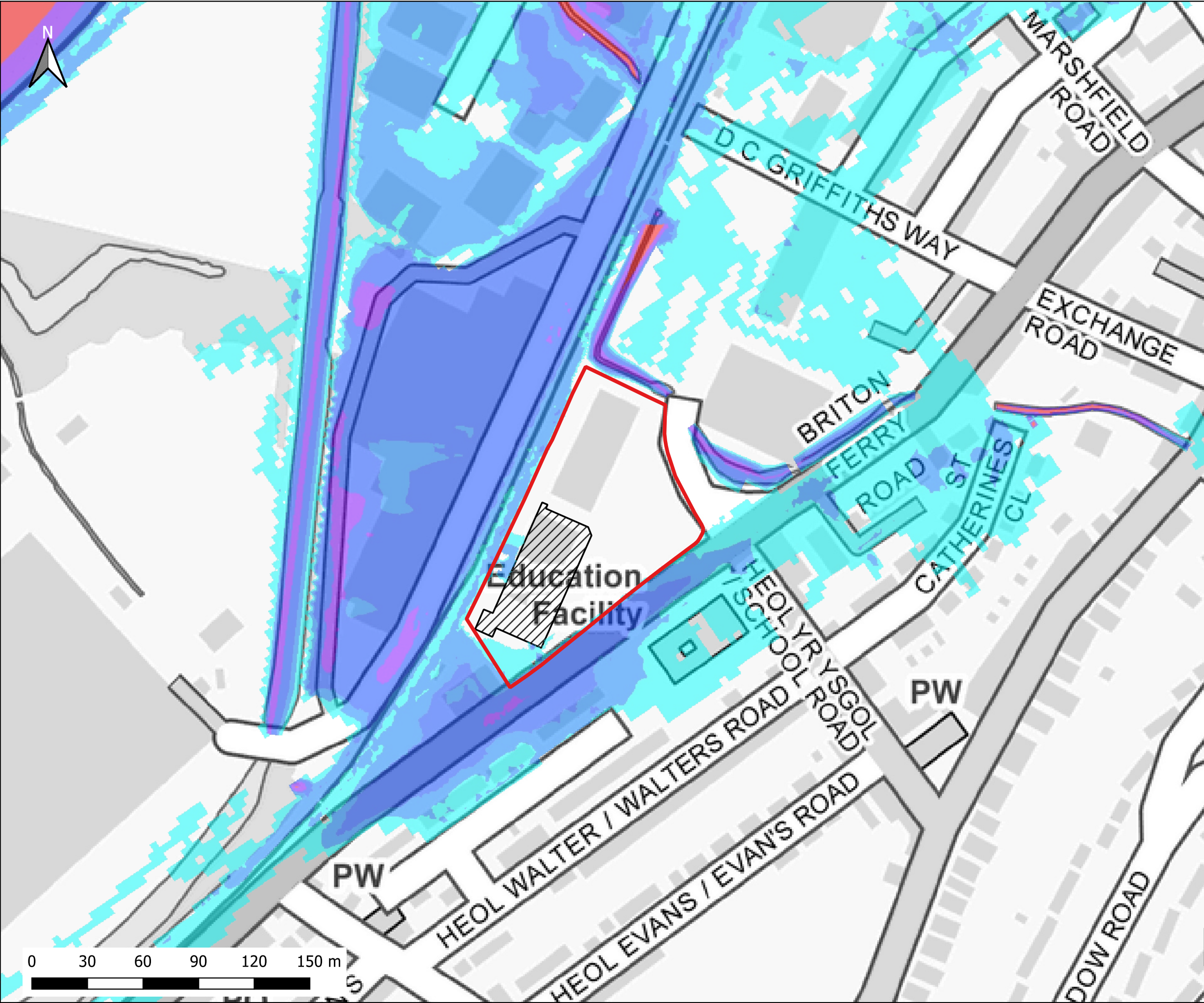
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PLOT NAME:

13099-Q50_MHWS_EXG_NC_d

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension

Maximum Flood Depth

- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

waterco
www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

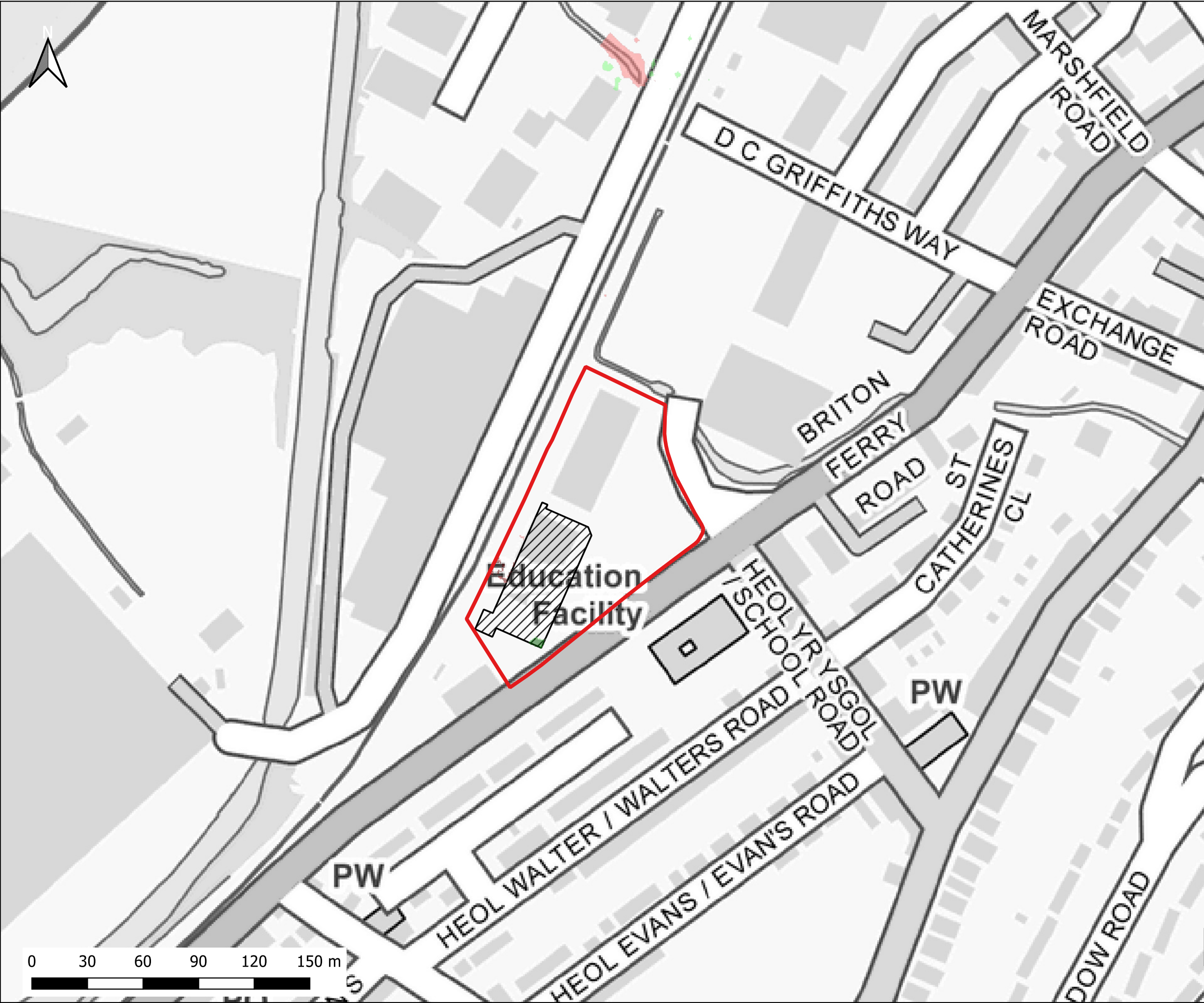
PLOT TITLE:

Maximum Flood Depth
2% AEP Plus MHWS 2022
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q50_MHWS_DEV_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

Maximum Depth Variation

> -100mm

-50mm to -100mm

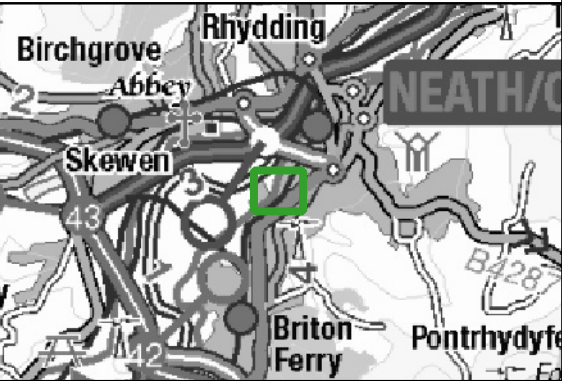
-5mm to -50mm

No Change (+/- 5mm)

+5mm to +50mm

+50mm to +100mm

> +100mm



CLIENT:





www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
2% AEP Plus MHWS 2022
DEV vs EXG

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

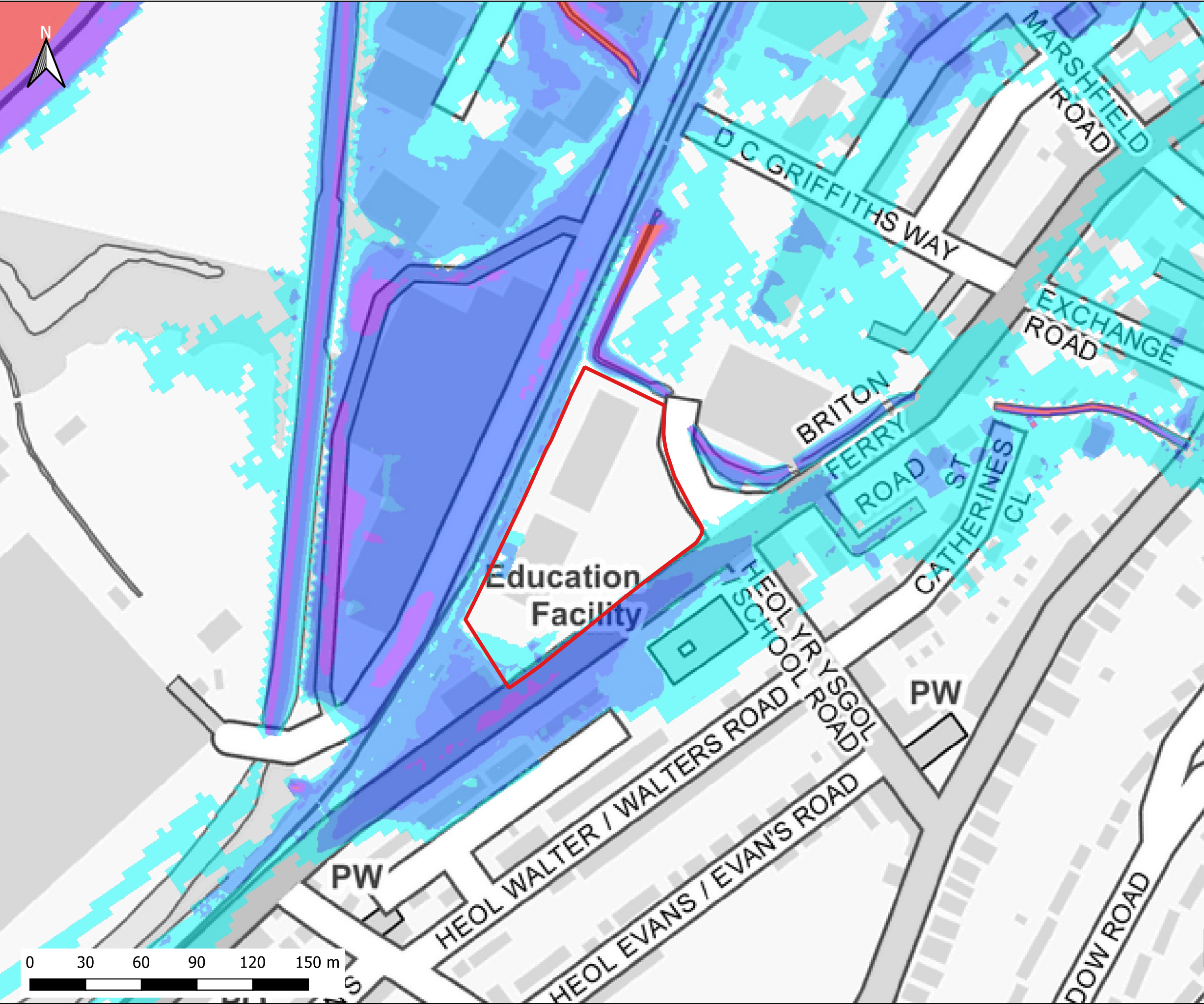
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PLOT NAME:

13099-Q50_MHWS_DEV_EXG_NC_d

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

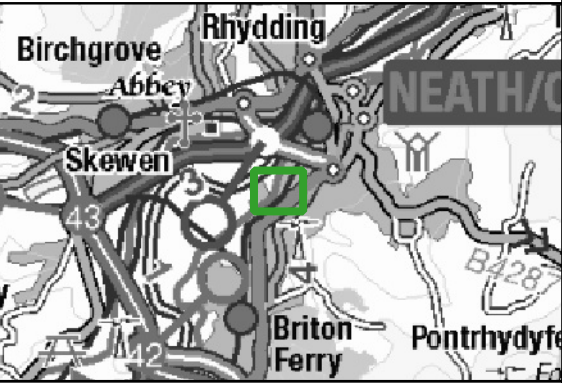
<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m



CLIENT:



www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Depth
2%+CC30 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

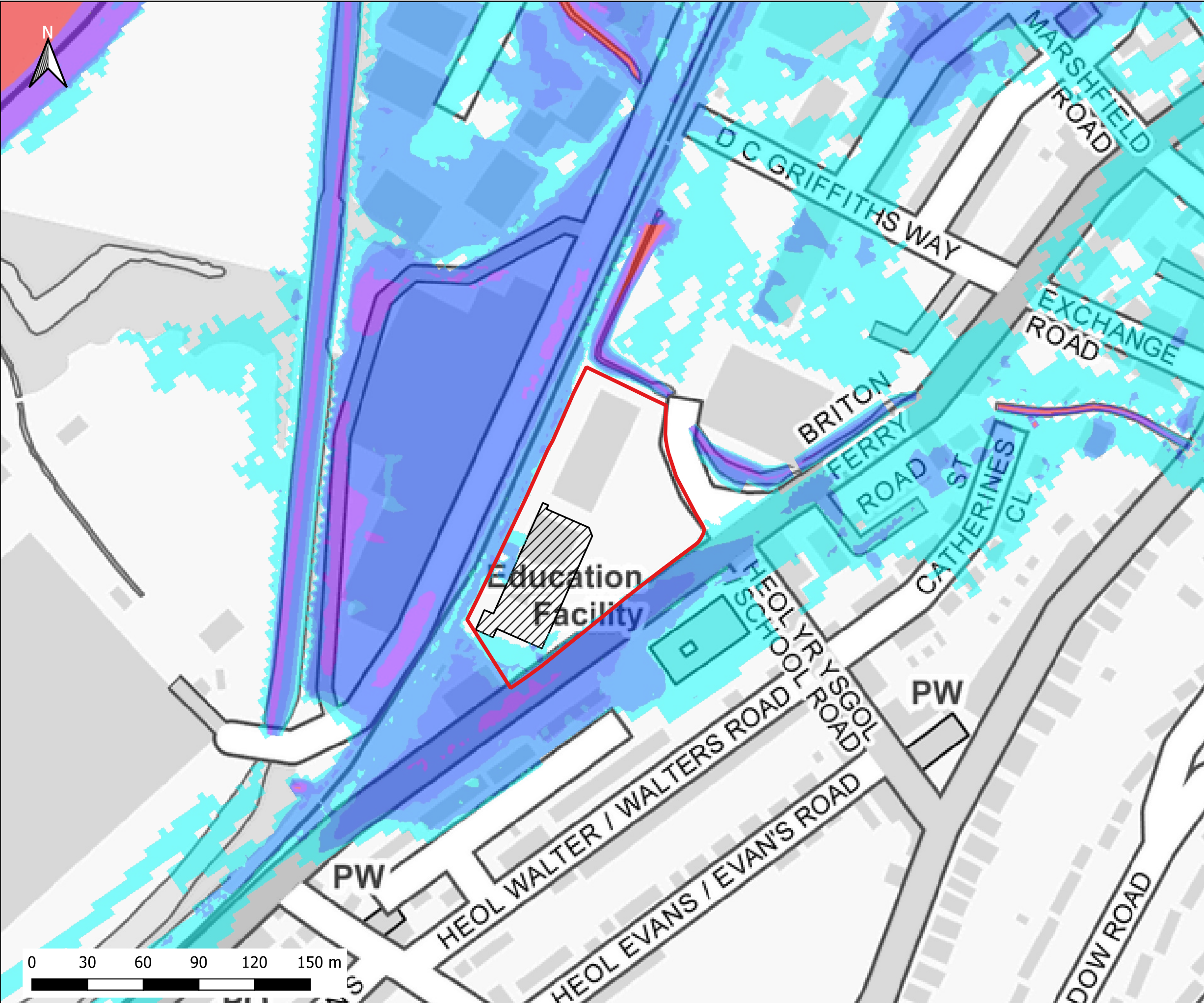
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PLOT NAME:

13099-Q50CC30_MHWS_EXG_NC_d

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary
Proposed Store Extension

Maximum Flood Depth

≤ 0.3m
0.3m - 0.6m
0.6m - 1.2m
1.2m - 2.4m
> 2.4m

Inset Map: A small map showing the location of the site (green square) in the Neath area, near Birchgrove, Rhydding, Abbey, Skewen, Briton Ferry, and Pontrhydyf.

CLIENT: LIDL

waterco
www.waterco.co.uk

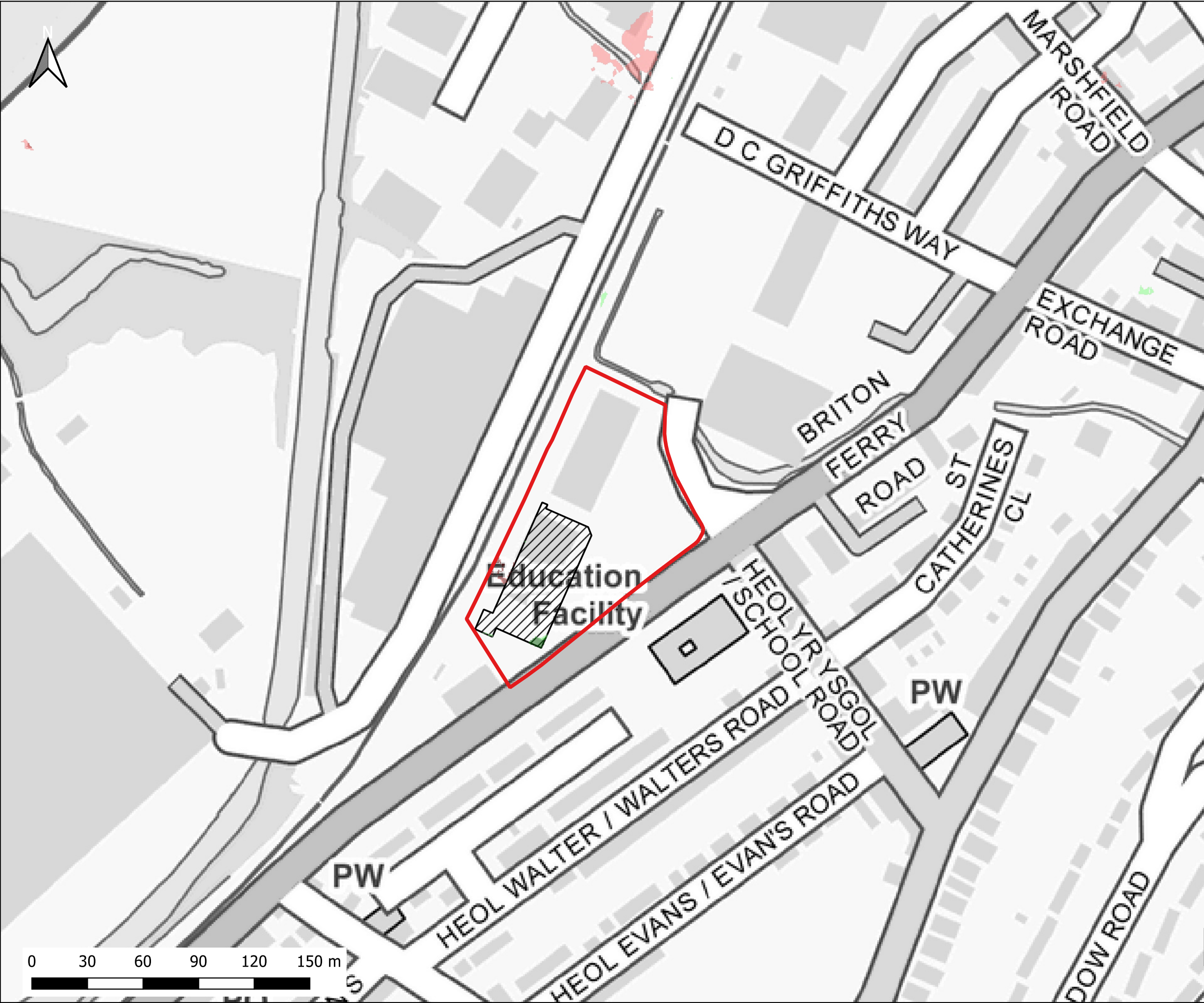
SCHEME: Briton Ferry Road, Neath

PLOT TITLE: Maximum Flood Depth
2%+CC30 AEP Plus MHWS 2100
Development Site Layout (DEV)

PLOT STATUS: FINAL
DATE: 08-06-2022

DRAWN: MF
CHECKED: SB
APPROVED: AW
PLOT SCALE AT A3: 1:2000

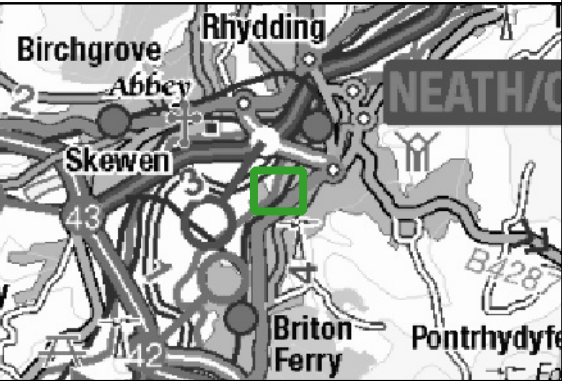
PLOT NAME: 13099-Q50CC30_MHWS_DEV_NC_d
REVISION: -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth
- Maximum Depth Variation
 - > -100mm
 - 50mm to -100mm
 - 5mm to -50mm
 - No Change (+/- 5mm)
 - +5mm to +50mm
 - +50mm to +100mm
 - > +100mm



CLIENT:



www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
2%+CC30 AEP Plus MHWS 2100
DEV vs EXG

PLOT STATUS:

FINAL

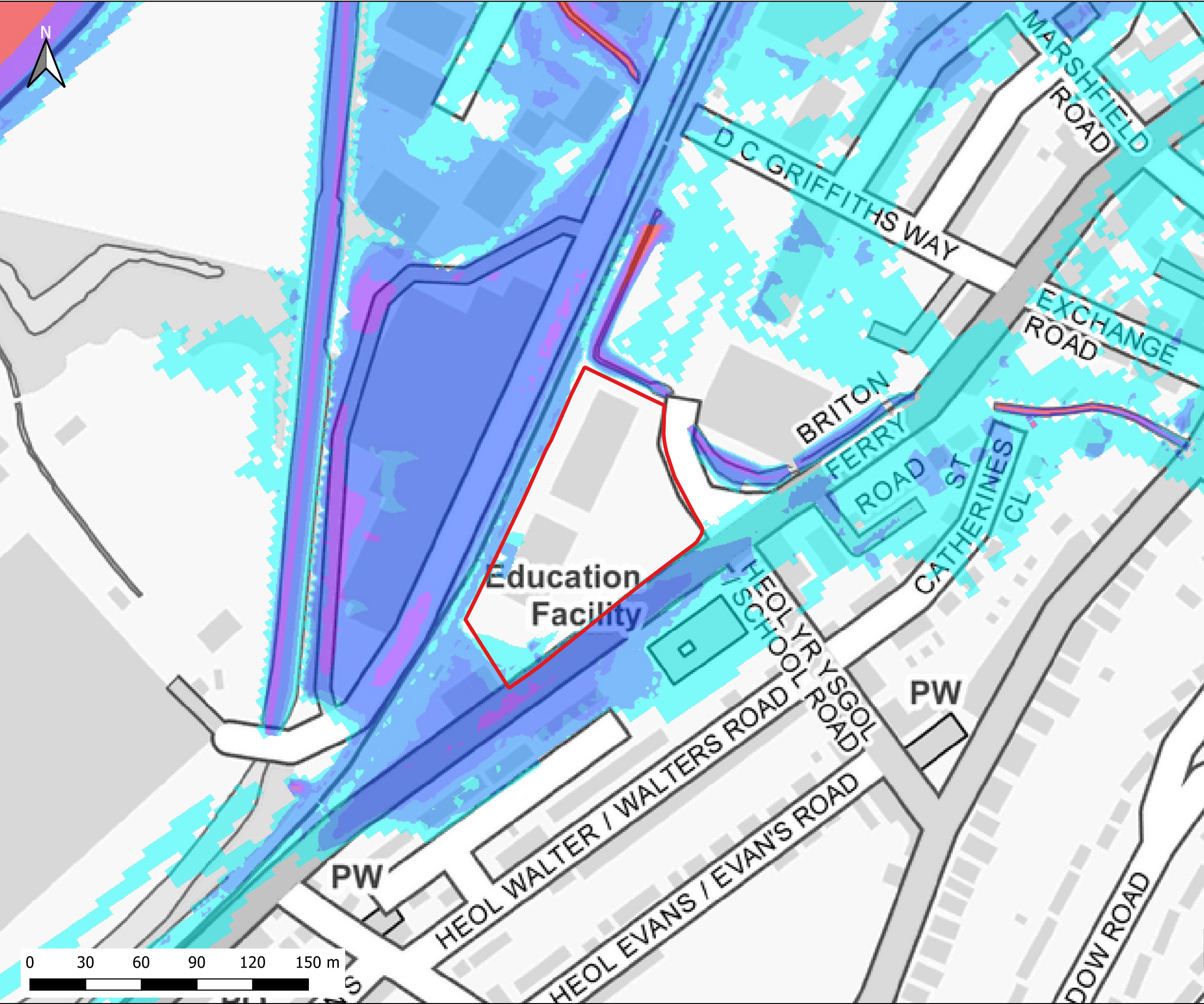
DATE:

08-06-2022

DRAWN: MF
CHECKED: SB
APPROVED: AW
PLOT SCALE AT A3:
1:2000

PLOT NAME:
13099-Q50CC30_MHWS_DEV_EXG_NC_DIFF

REVISION:
-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

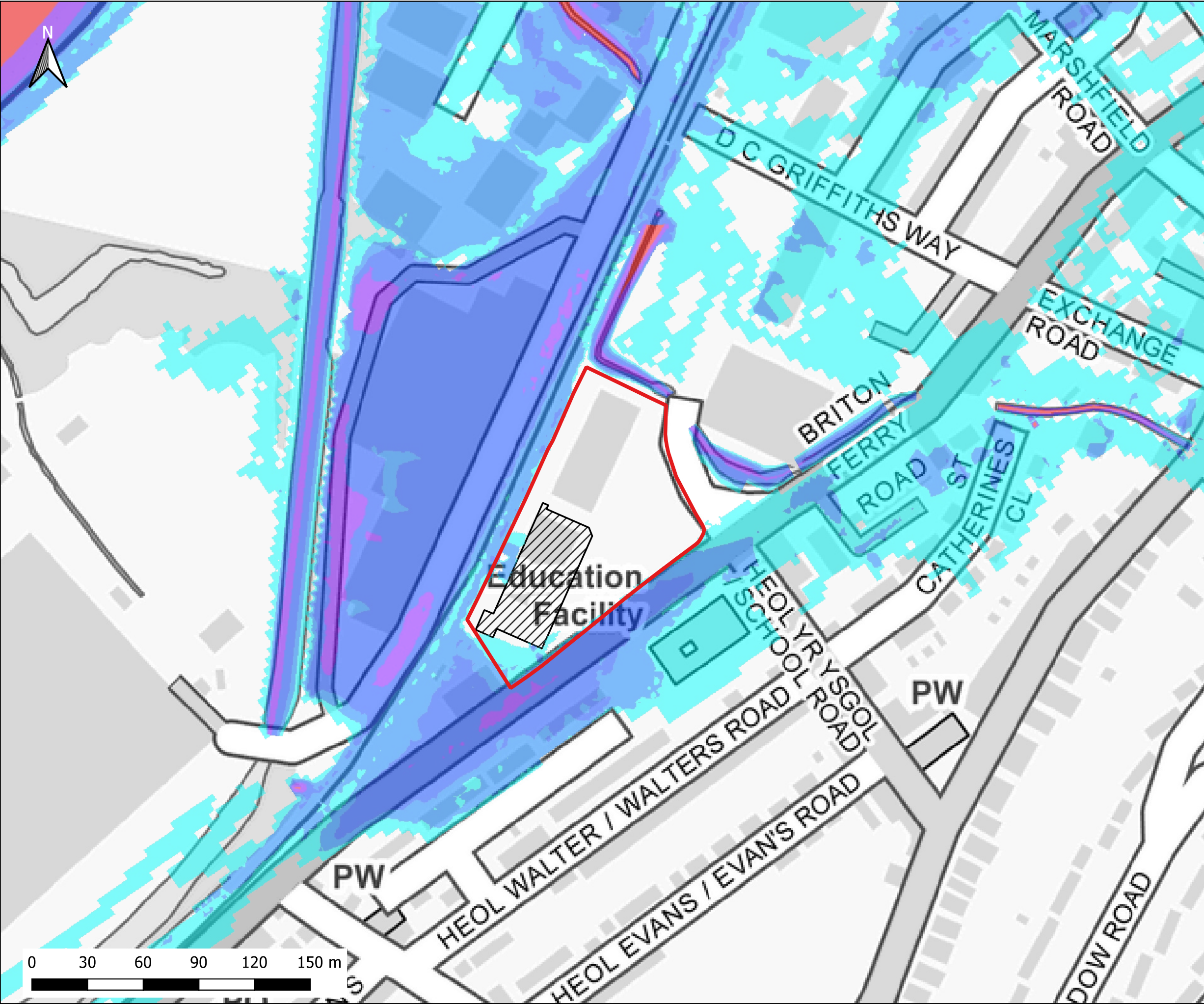
PLOT TITLE:

Maximum Flood Depth
1% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

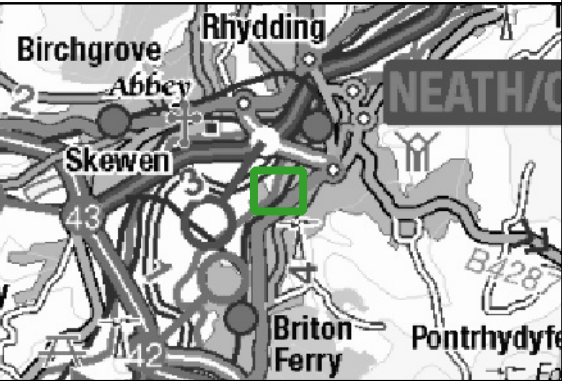
PLOT NAME:	REVISION:
13099-Q100_MHWS_EXG_NC_d	-



Notes:
 1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth**
 - ≤ 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m



CLIENT:



SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Depth
 1% AEP Plus MHWS 2022
 Development Site Layout (DEV)

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

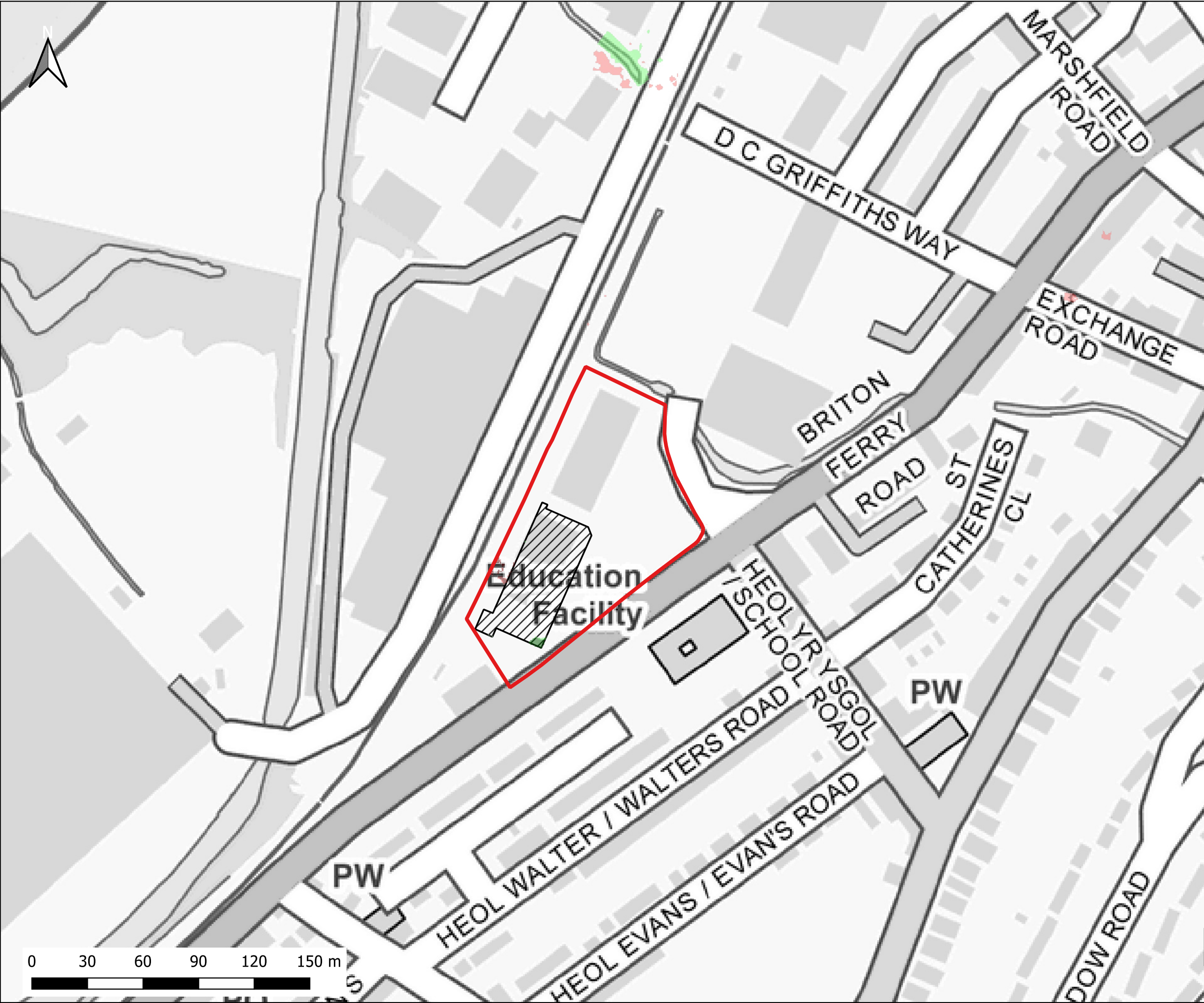
1:2000

PLOT NAME:

13099-Q100_MHWS_DEV_NC_d

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

Maximum Depth Variation

> -100mm

-50mm to -100mm

-5mm to -50mm

No Change (+/- 5mm)

+5mm to +50mm

+50mm to +100mm

> +100mm

CLIENT:

waterco
www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

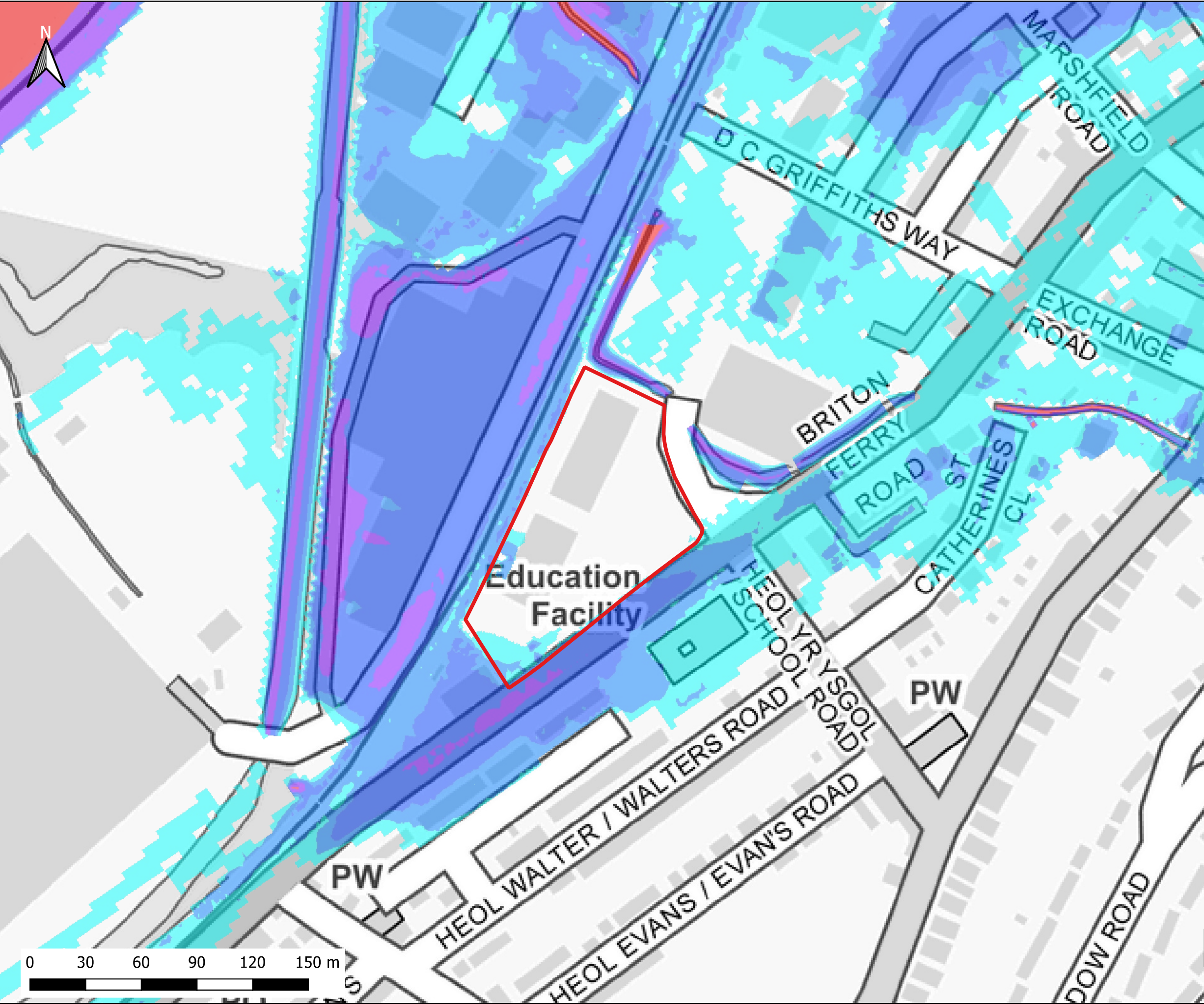
PLOT TITLE:

Maximum Depth Difference
1% AEP Plus MHWS 2022
DEV vs EXG

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:		REVISION:	
13099-Q100_MHWS_DEV_EXG_NC_DIFF		-	



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

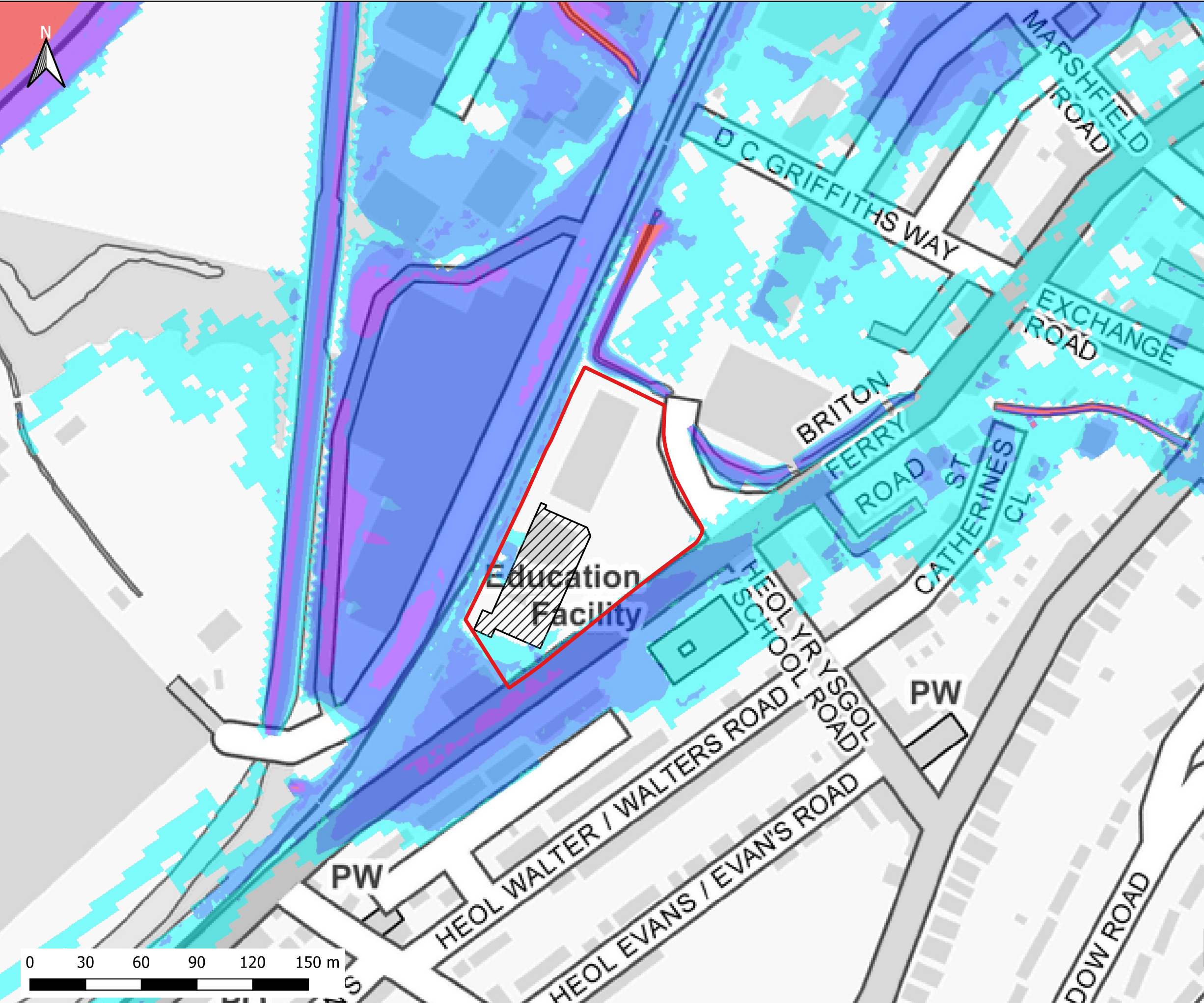
PLOT TITLE:

Maximum Flood Depth
1%+CC30 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q100CC30_MHWS_2100_EXG_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary
Proposed Store Extension

Maximum Flood Depth

≤ 0.3m
0.3m - 0.6m
0.6m - 1.2m
1.2m - 2.4m
> 2.4m

Inset Map: Shows the location of the site (green box) in the Neath area, near Rhydding, Birchgrove, Abbey, Skewen, Briton Ferry, and Pontrhydyf.

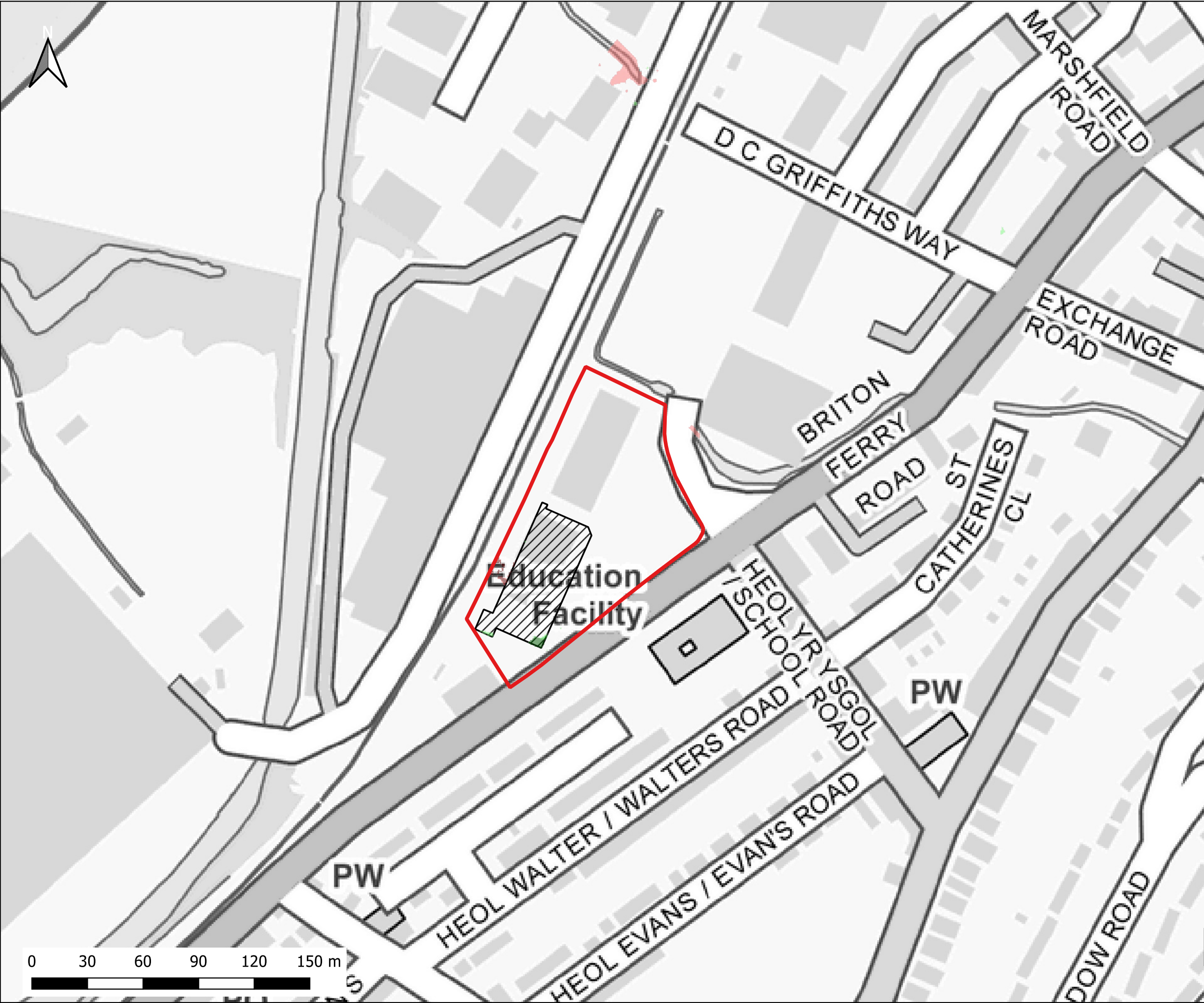
CLIENT:

waterco
www.waterco.co.uk

SCHEME: Briton Ferry Road, Neath

PLOT TITLE: Maximum Flood Depth
1%+CC30 AEP Plus MHWS 2100
Development Site Layout (DEV)

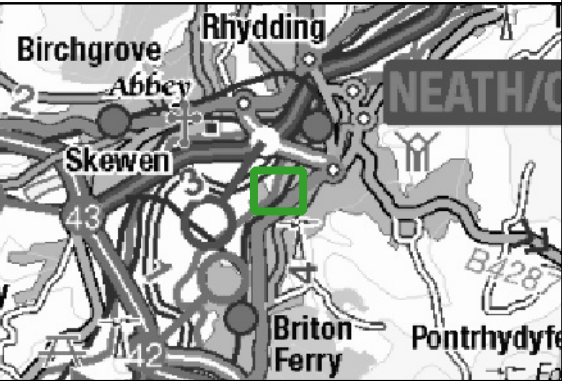
PLOT STATUS: FINAL		DATE: 08-06-2022	
DRAWN: MF	CHECKED: SB	APPROVED: AW	PLOT SCALE AT A3: 1:2000
PLOT NAME: 13099-Q100CC30_MHWS_2100_DEV_NC_d			REVISION: -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth
- Maximum Depth Variation
 - > -100mm
 - 50mm to -100mm
 - 5mm to -50mm
 - No Change (+/- 5mm)
 - +5mm to +50mm
 - +50mm to +100mm
 - > +100mm



CLIENT:



www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
1%+CC30 AEP Plus MHWS 2100
DEV vs EXG

PLOT STATUS:

FINAL

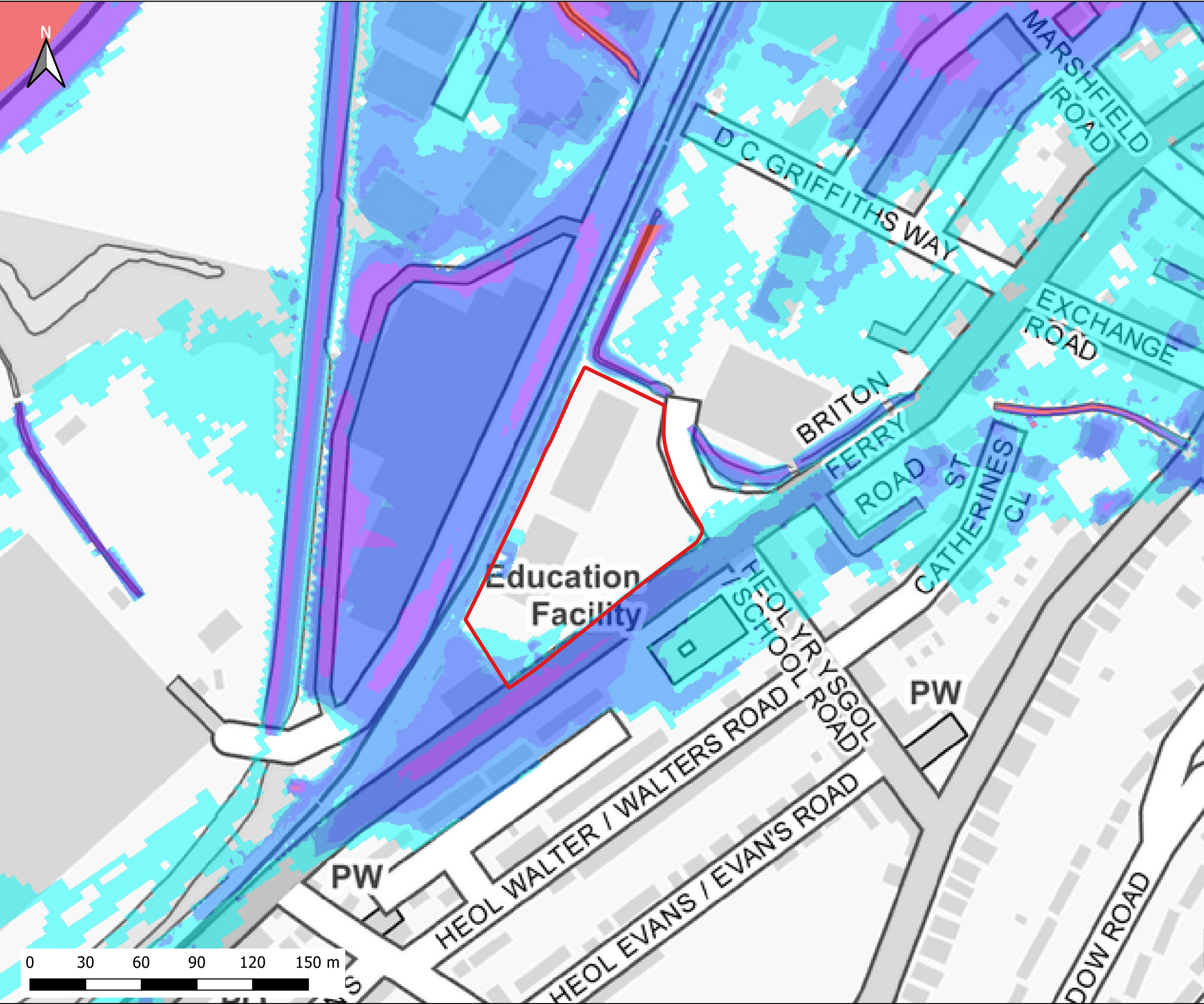
DATE:

08-06-2022

DRAWN: MF
CHECKED: SB
APPROVED: AW
PLOT SCALE AT A3:
1:2000

PLOT NAME:
13099-Q100CC30_MHWS_2100_DEV_EXG_NC_DIFF

REVISION:
-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

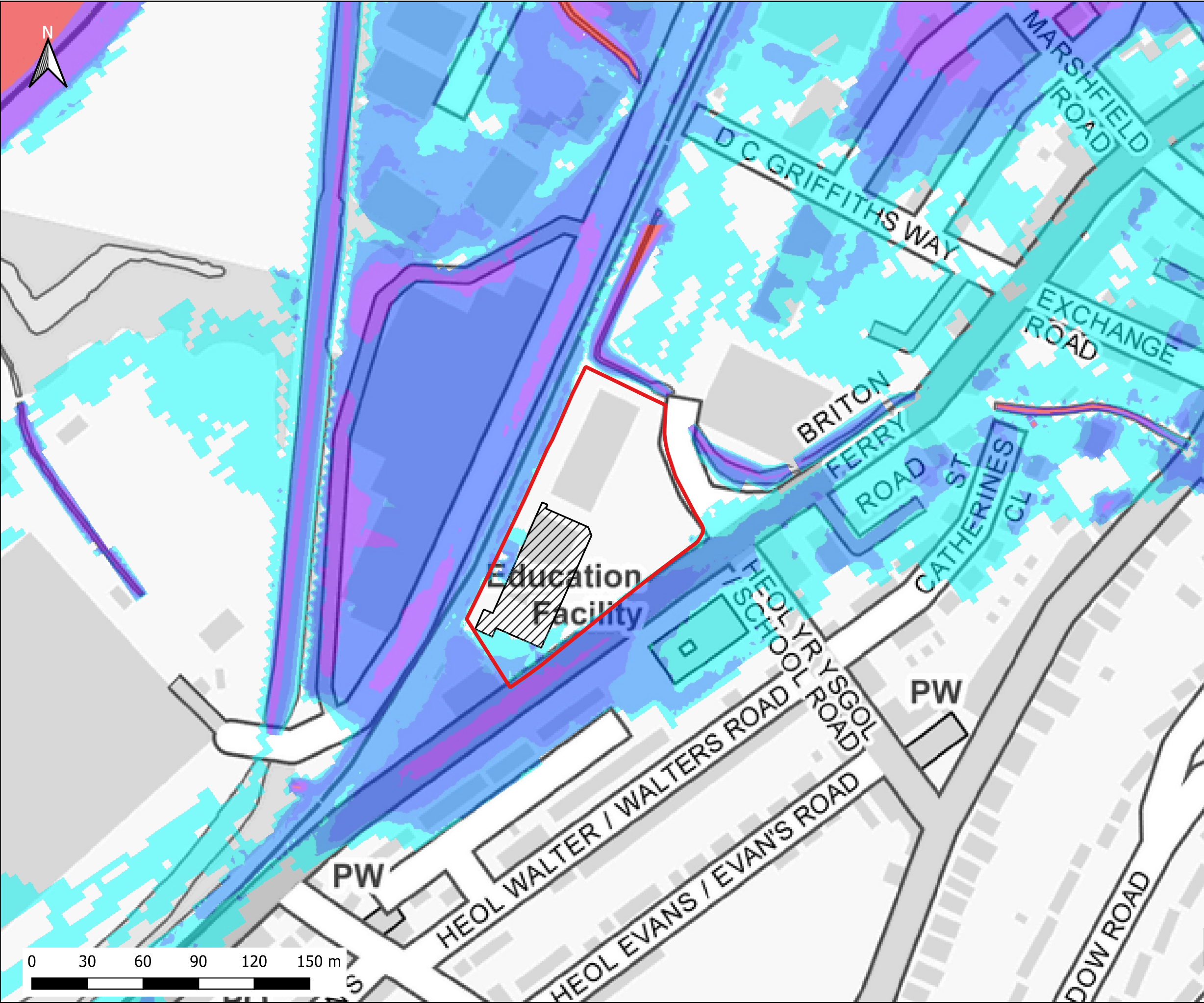
PLOT TITLE:

Maximum Flood Depth
1%+CC75 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:			DATE:
FINAL			08-06-2022

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

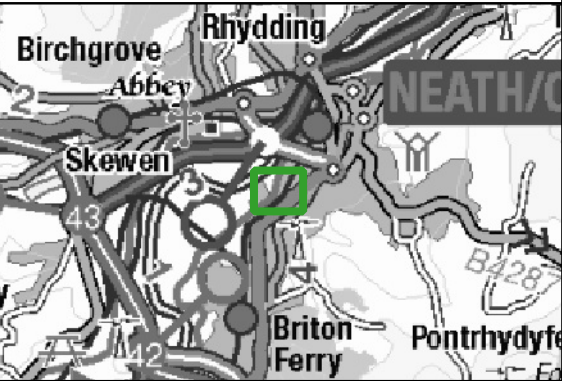
PLOT NAME:	REVISION:
13099-Q100CC75_MHWS_2100_EXG_NC_d	-



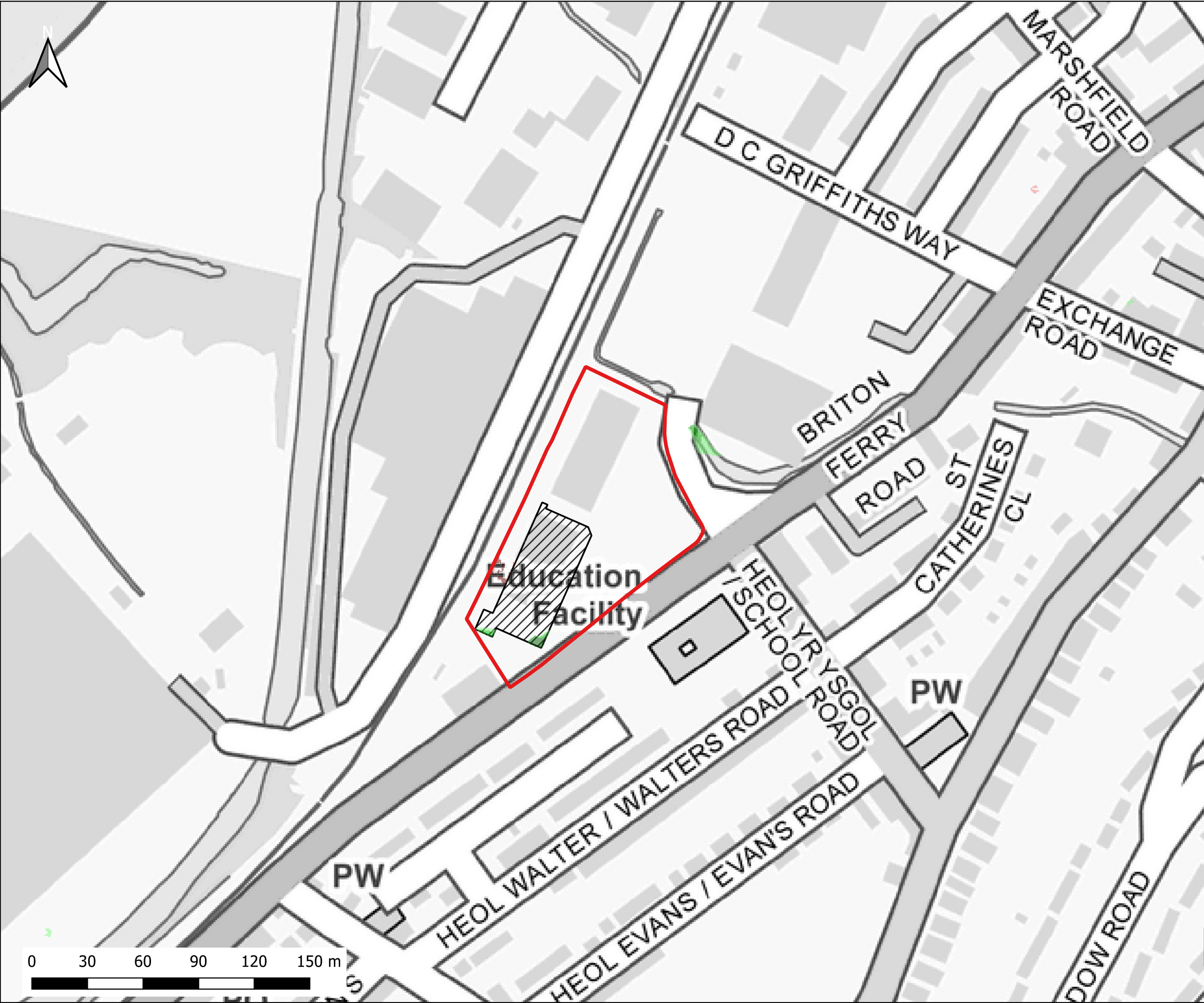
Notes:
 1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth**
 - <= 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m



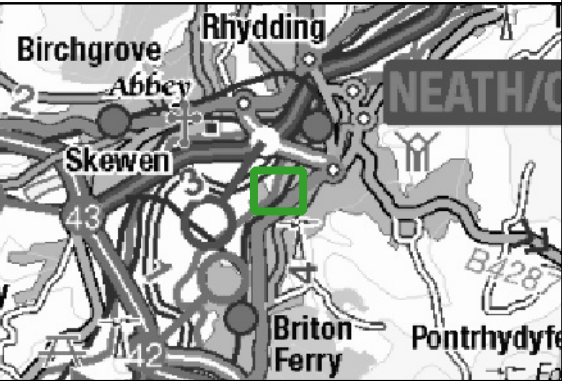
CLIENT:			
			
		www.waterco.co.uk	
SCHEME:			
Briton Ferry Road, Neath			
PLOT TITLE:			
Maximum Flood Depth 1%+CC75 AEP Plus MHWS 2100 Development Site Layout (DEV)			
PLOT STATUS:		DATE:	
FINAL		08-06-2022	
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000
PLOT NAME:			REVISION:
13099-Q100CC75_MHWS_2100_DEV_NC_d			-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth
- Maximum Depth Variation
 - > -100mm
 - 50mm to -100mm
 - 5mm to -50mm
 - No Change (+/- 5mm)
 - +5mm to +50mm
 - +50mm to +100mm
 - > +100mm



CLIENT:



www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
1%+CC75 AEP Plus MHWS 2100
DEV vs EXG

PLOT STATUS:

FINAL

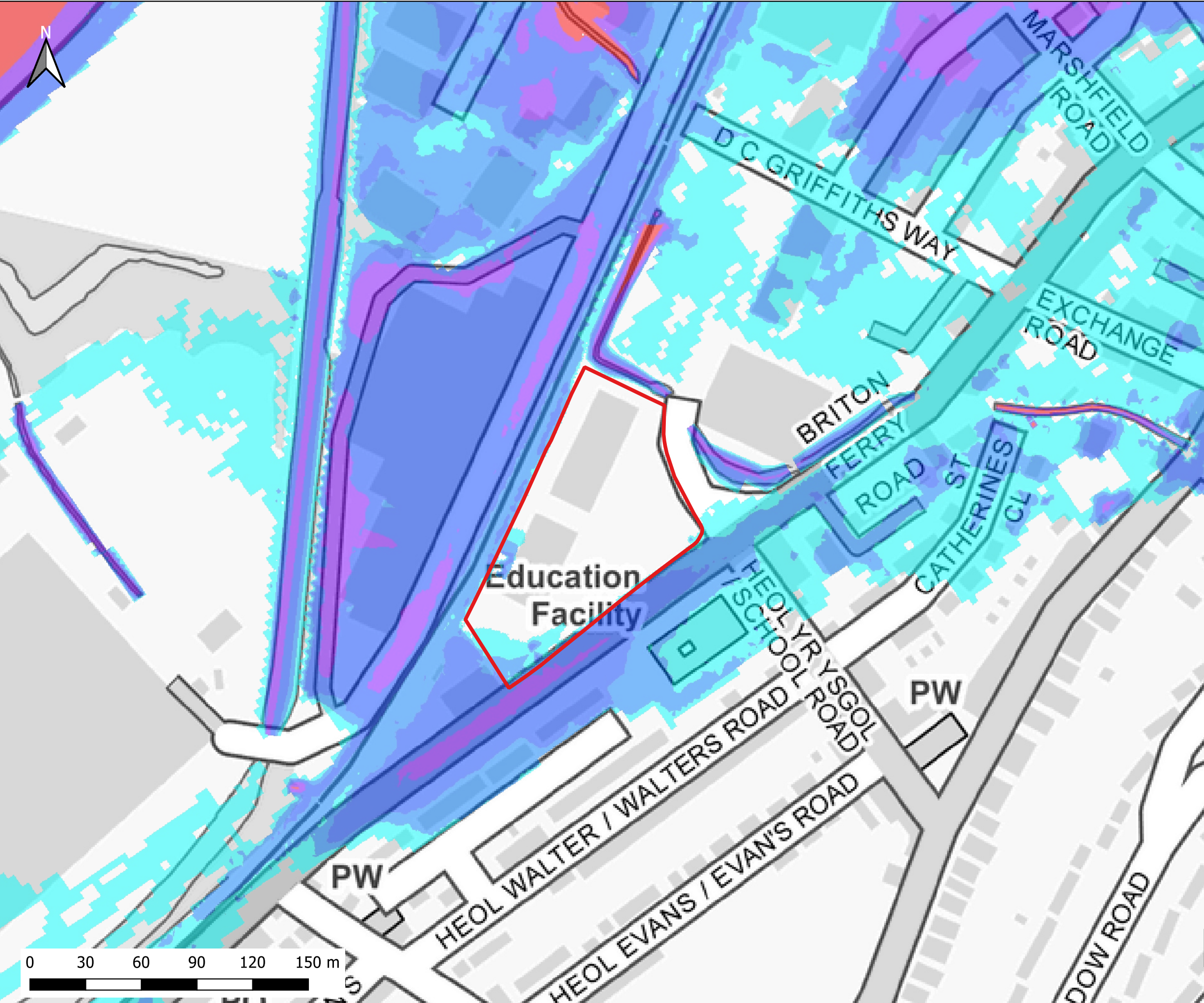
DATE:

08-06-2022

DRAWN: MF
CHECKED: SB
APPROVED: AW
PLOT SCALE AT A3:
1:2000

PLOT NAME:
13099-Q100CC75_MHWS_2100_DEV_EXG_NC_DIFF

REVISION:
-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

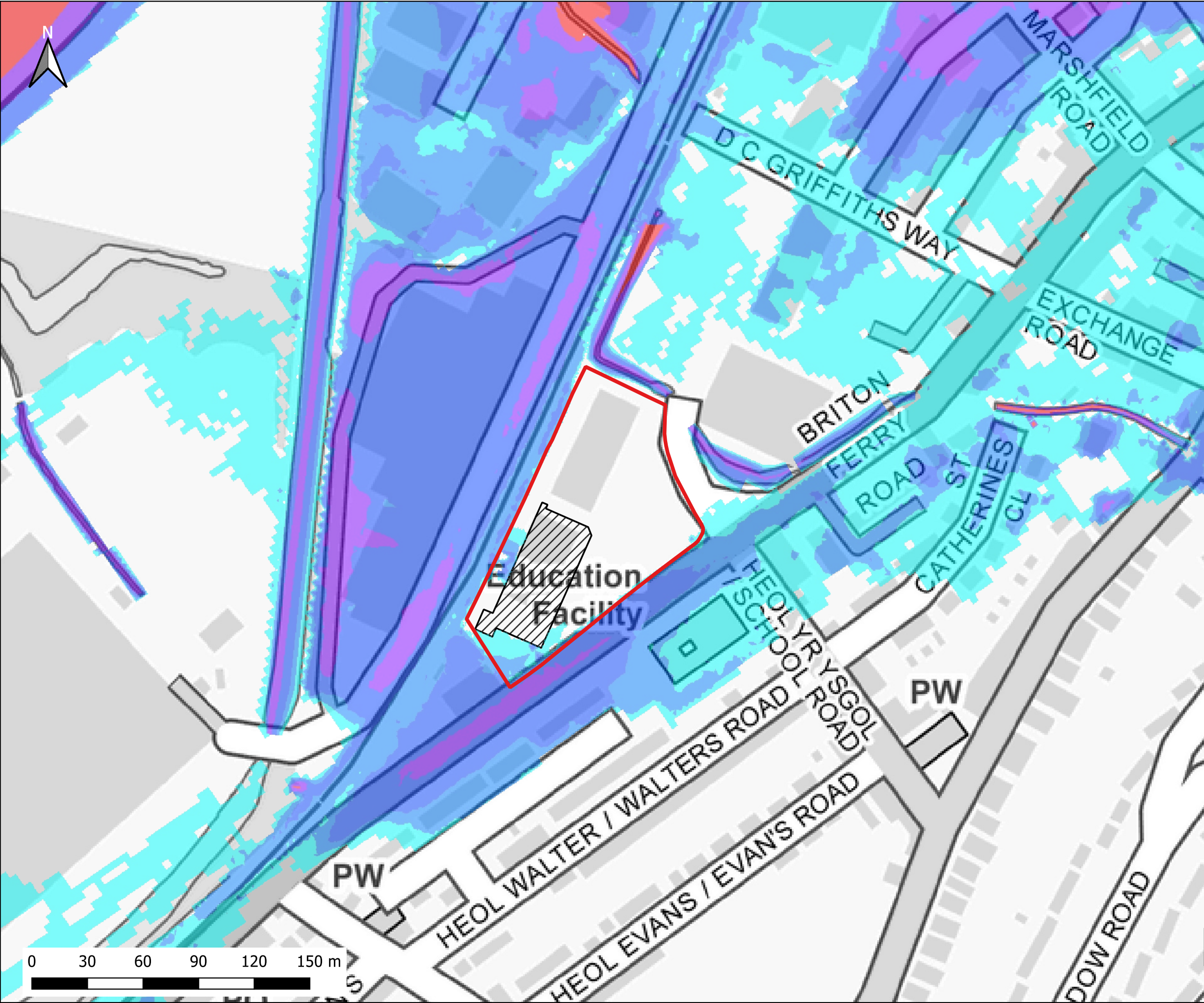
PLOT TITLE:

Maximum Flood Depth
0.1% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

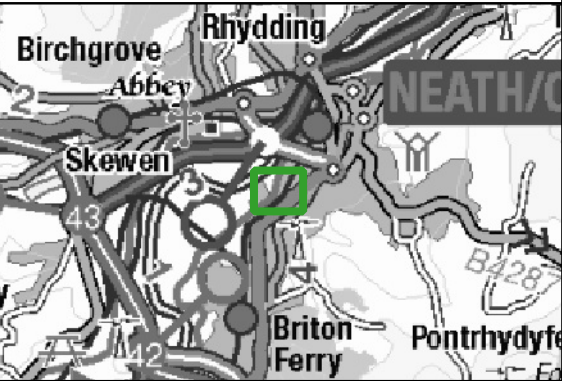
PLOT NAME:	REVISION:
13099-Q1000_MHWS_EXG_NC_d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth**
 - ≤ 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m



CLIENT:



SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Depth
0.1% AEP Plus MHWS 2022
Development Site Layout (DEV)

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

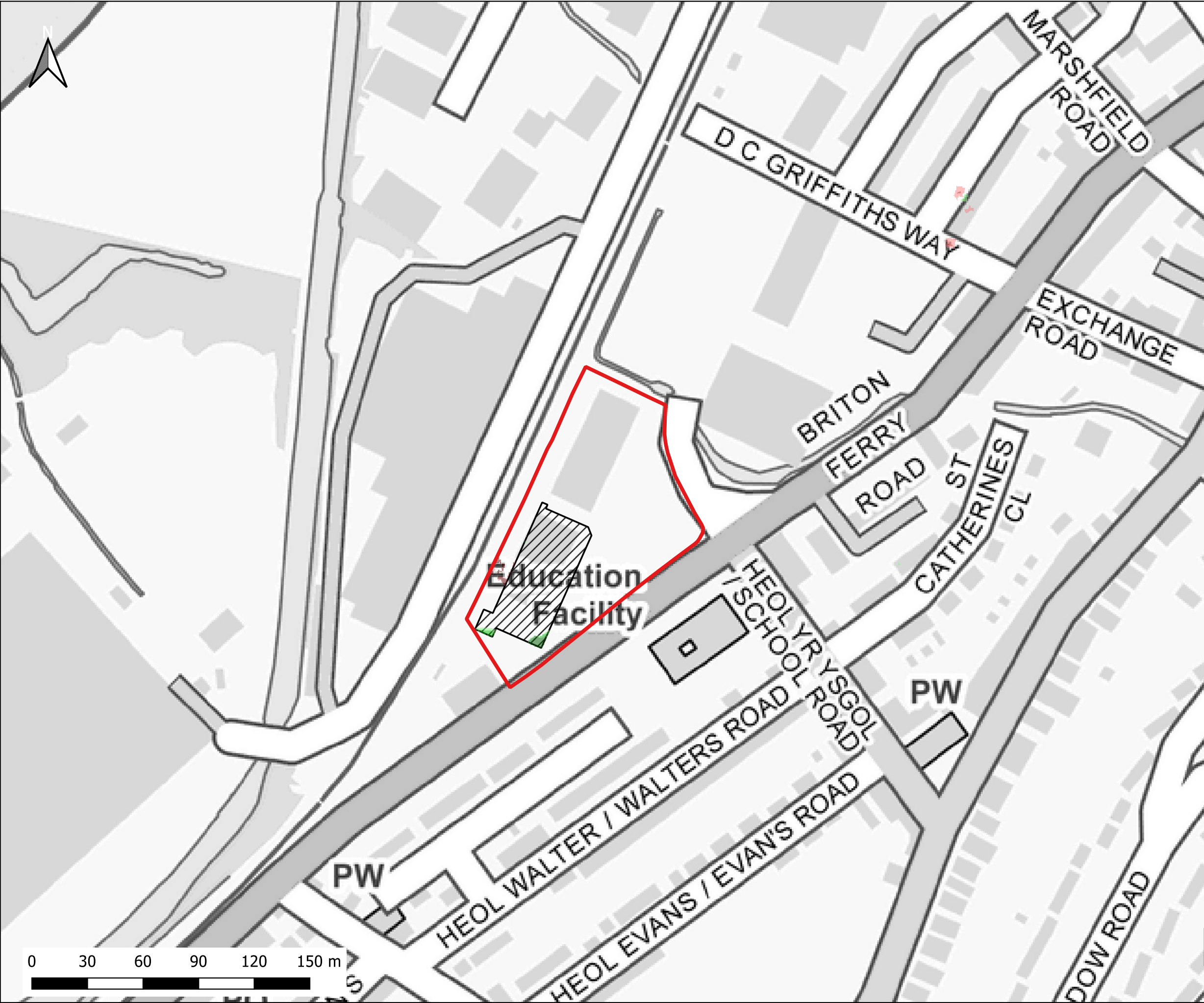
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PLOT NAME:

13099-Q1000_MHWS_DEV_NC_d

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

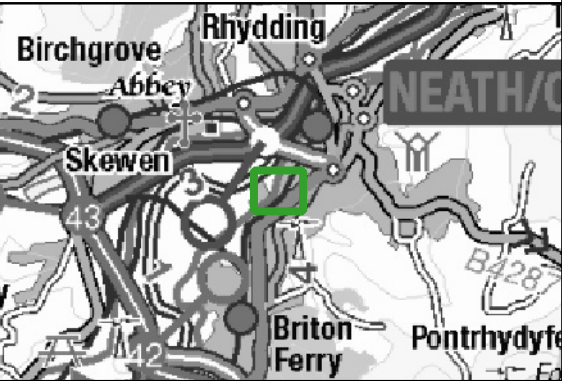
Site Boundary

Proposed Store Extension

Maximum Flood Depth

Maximum Depth Variation

- > -100mm
- 50mm to -100mm
- 5mm to -50mm
- No Change (+/- 5mm)
- +5mm to +50mm
- +50mm to +100mm
- > +100mm



CLIENT:





www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
0.1% AEP Plus MHWS 2022
DEV vs EXG

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

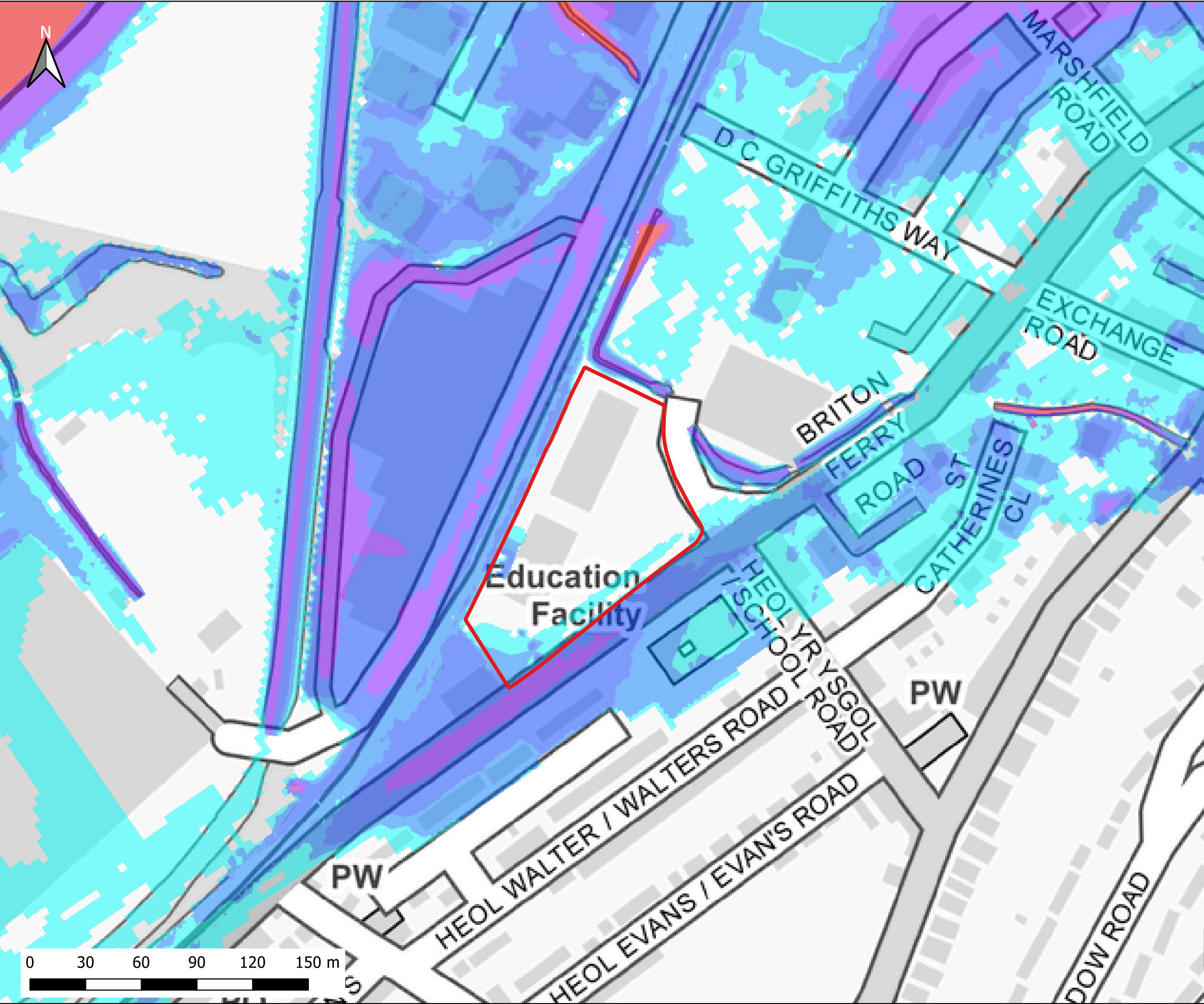
1:2000

PLOT NAME:

13099-Q1000_MHWS_DEV_EXG_NC_DIFF

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

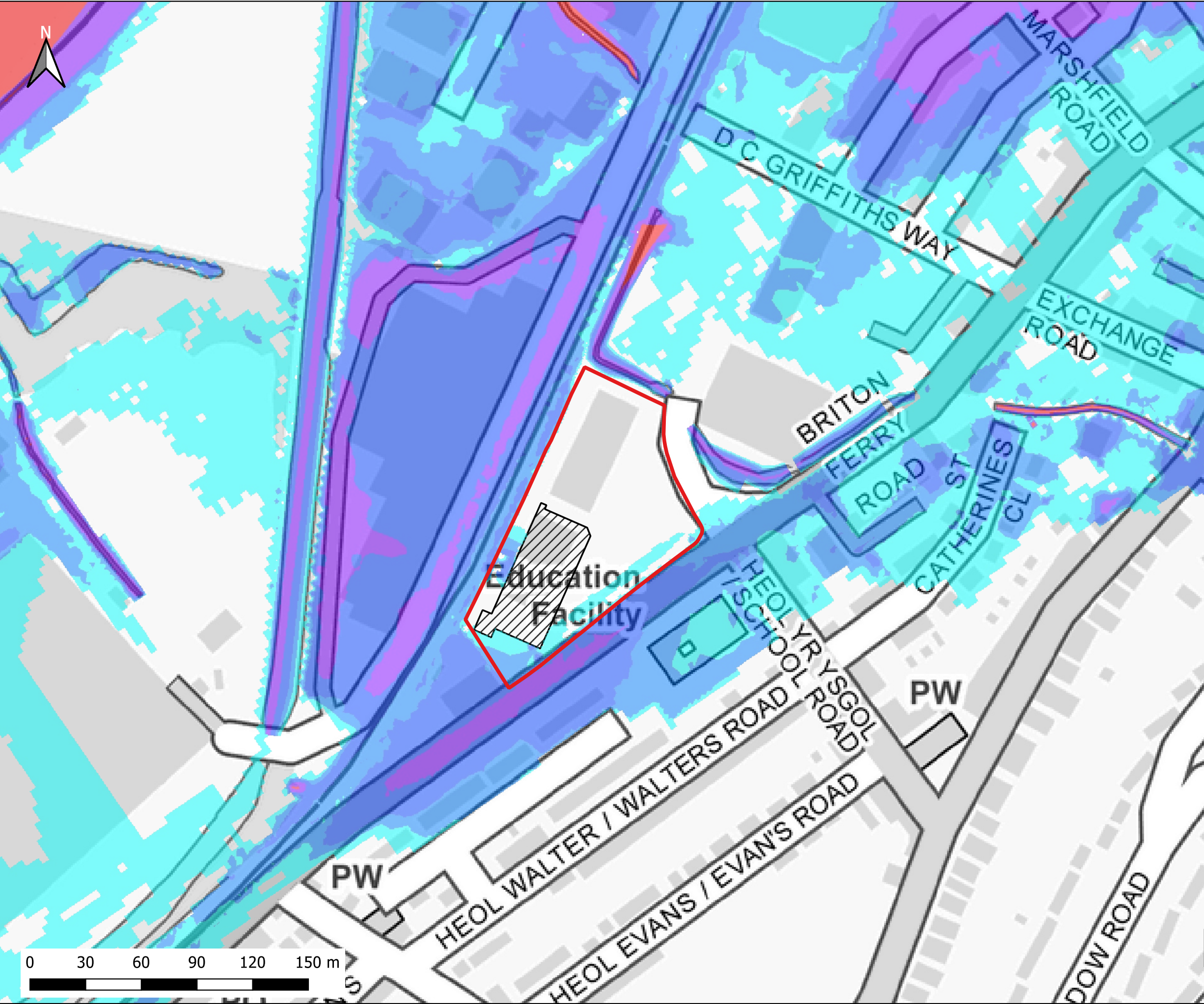
PLOT TITLE:

Maximum Flood Depth
0.1%+CC30 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

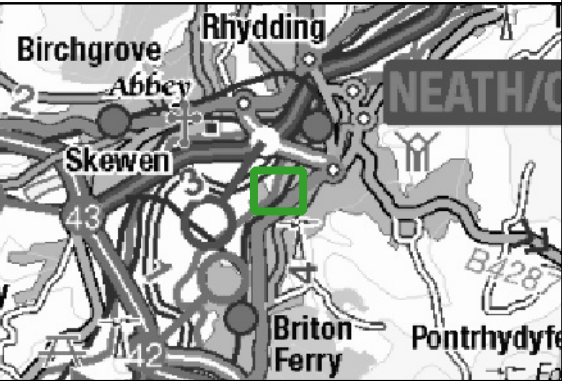
PLOT NAME:	REVISION:
13099-Q1000CC30_MHWS_2100_EXG_NC_d	-



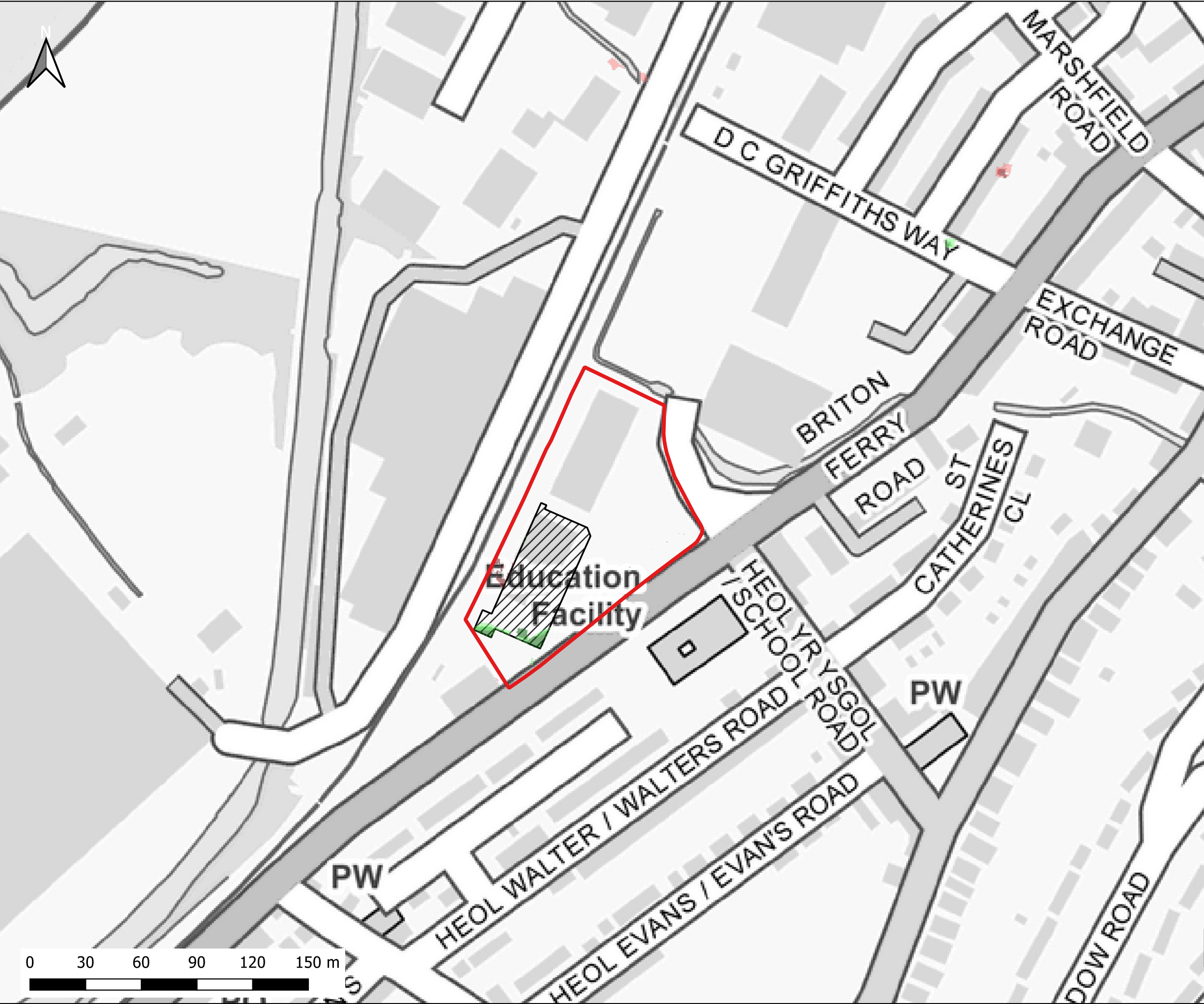
Notes:
 1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Flood Depth**
 - ≤ 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m



CLIENT:			
			
		www.waterco.co.uk	
SCHEME:			
Briton Ferry Road, Neath			
PLOT TITLE:			
Maximum Flood Depth 0.1%+CC30 AEP Plus MHWS 2100 Development Site Layout (DEV)			
PLOT STATUS:		DATE:	
FINAL		08-06-2022	
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000
PLOT NAME:			REVISION:
13099-Q1000CC30_MHWS_2100_DEV_NC_d			-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

Maximum Depth Variation

> -100mm

-50mm to -100mm

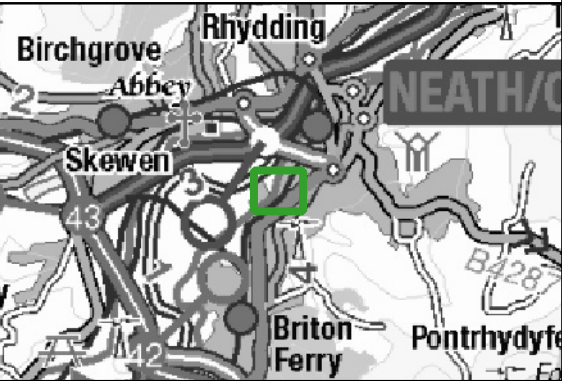
-5mm to -50mm

No Change (+/- 5mm)

+5mm to +50mm

+50mm to +100mm

> +100mm



CLIENT:





www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
0.1%+CC30 AEP Plus MHWS 2100
DEV vs EXG

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

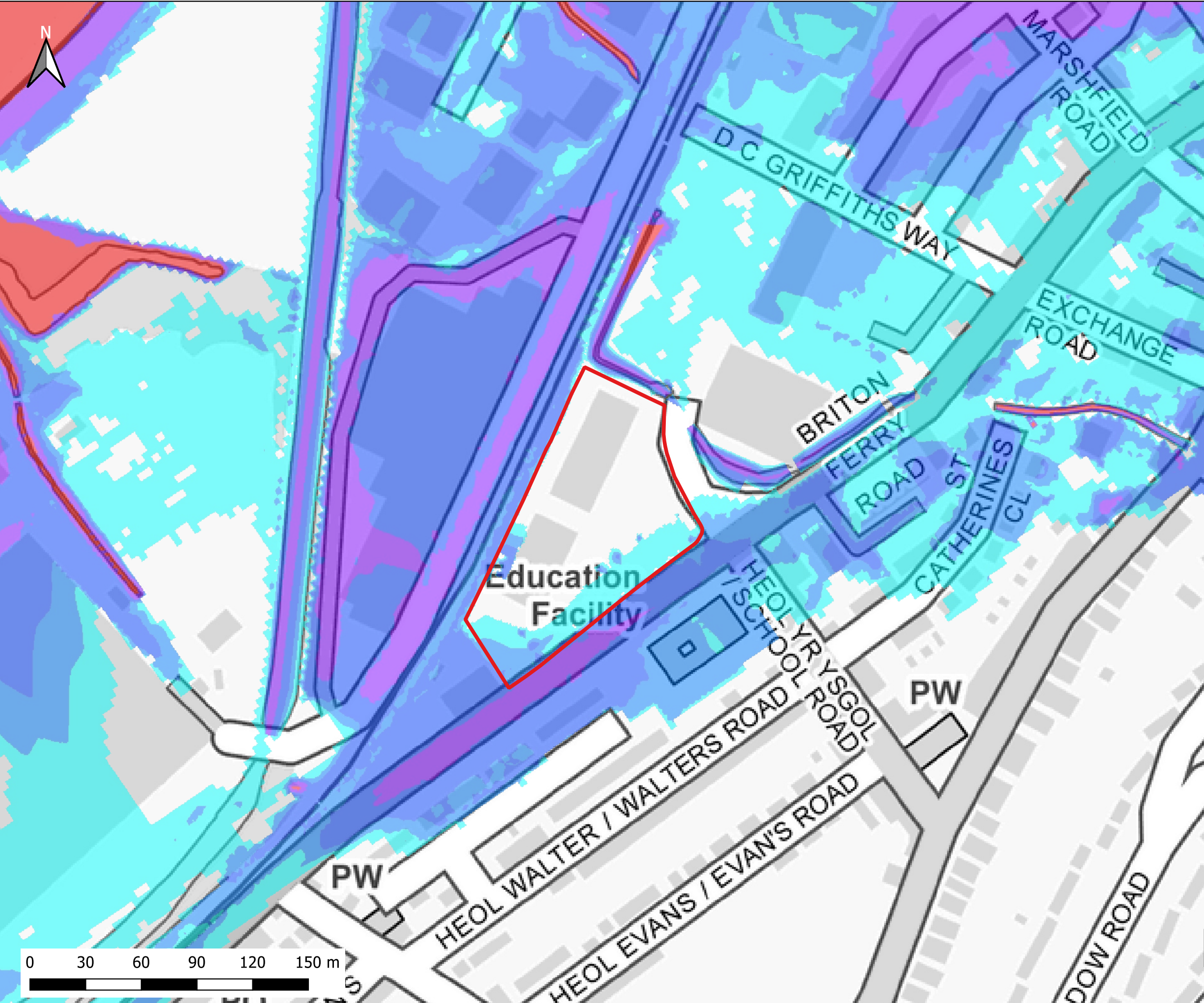
1:2000

PLOT NAME:

13099-Q1000CC30_MHWS_2100_DEV_EXG_NC_DIFF

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Flood Depth

≤ 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

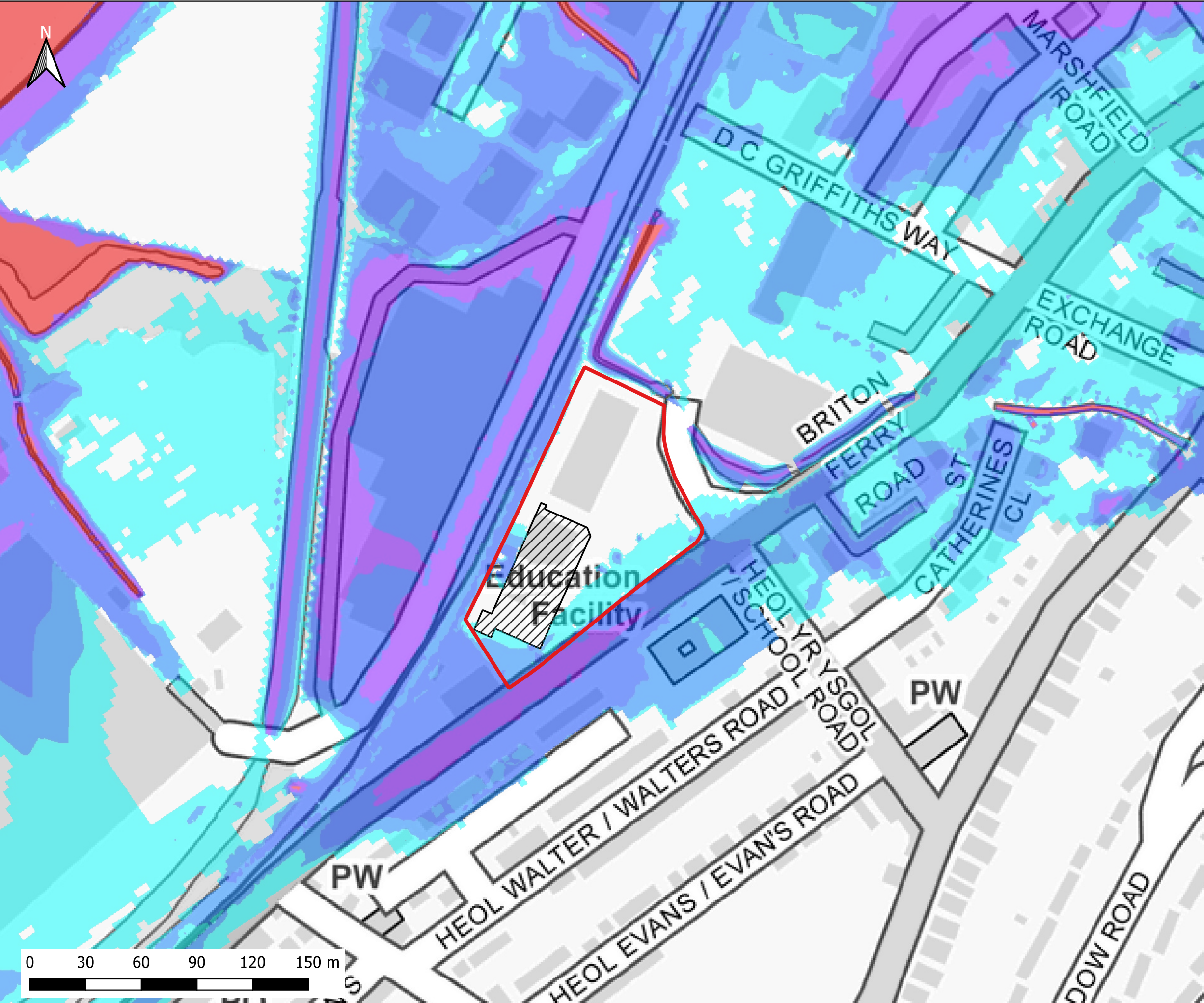
PLOT TITLE:

Maximum Flood Depth
0.1%+CC75 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q1000CC75_MHWS_2100_EXG_NC.d	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

waterco
www.waterco.co.uk

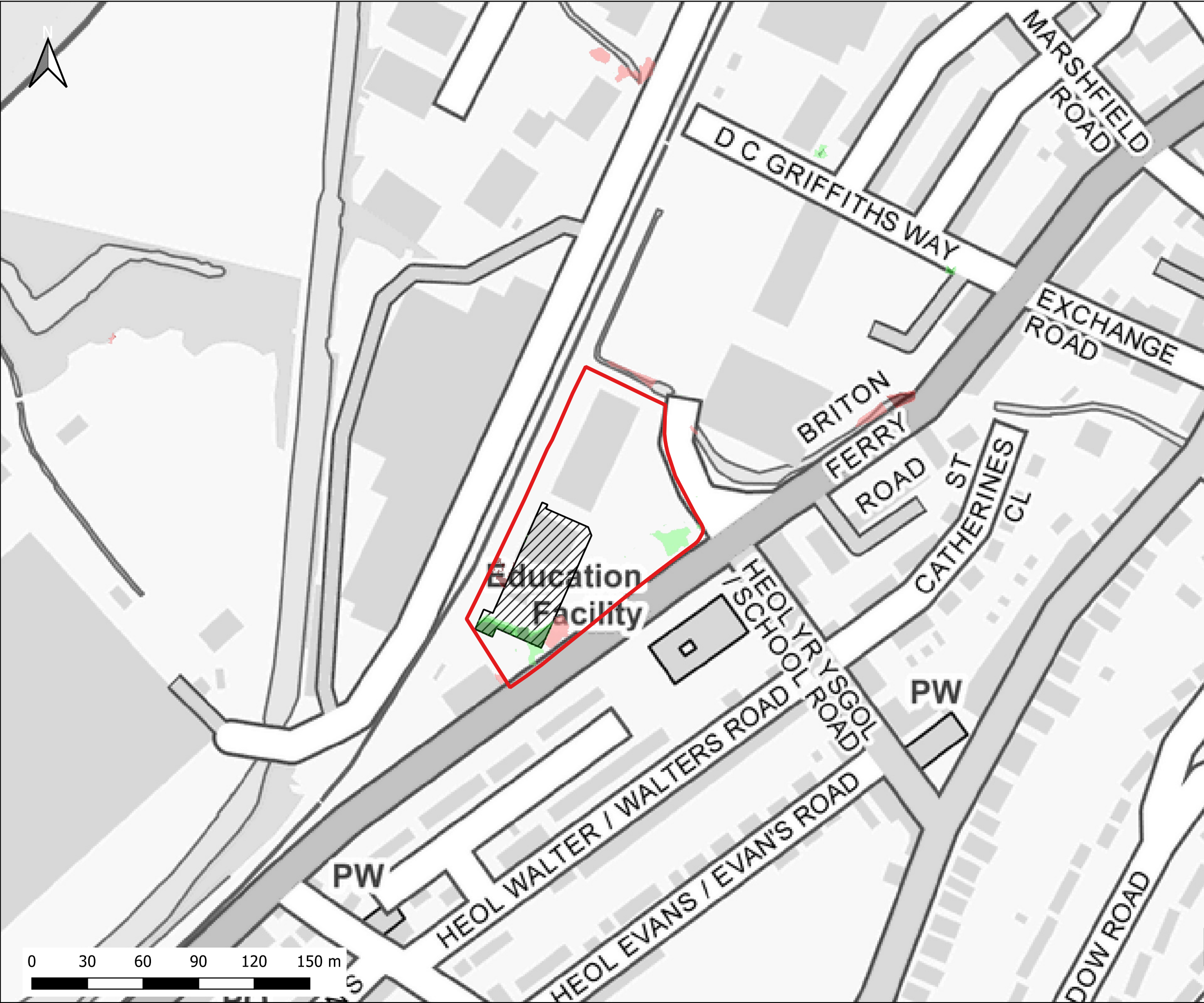
SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Depth
0.1%+CC75 AEP Plus MHWS 2100
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000
PLOT NAME:			REVISION:
13099-Q1000CC75_MHWS_2100_DEV_NC_d			-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Flood Depth

Maximum Depth Variation

> -100mm

-50mm to -100mm

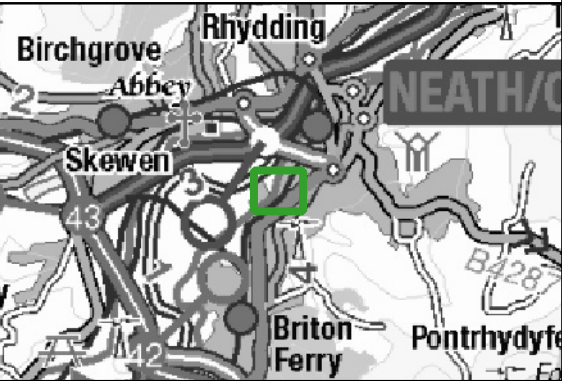
-5mm to -50mm

No Change (+/- 5mm)

+5mm to +50mm

+50mm to +100mm

> +100mm



CLIENT:





www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Depth Difference
0.1%+CC75 AEP Plus MHWS 2100
DEV vs EXG

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

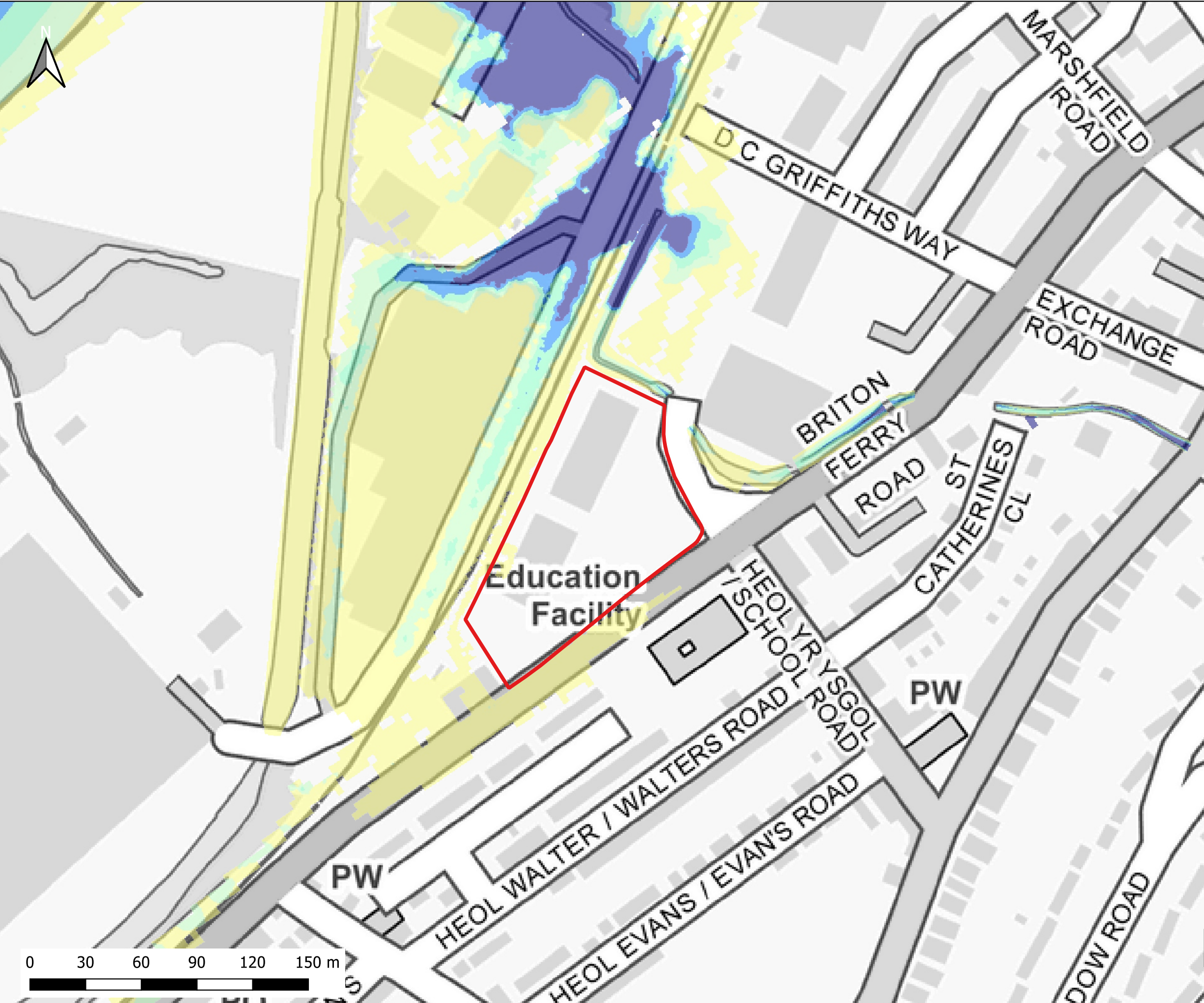
1:2000

PLOT NAME:

13099-Q1000CC75_MHWS_2100_DEV_EXG_NC_DIFF

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

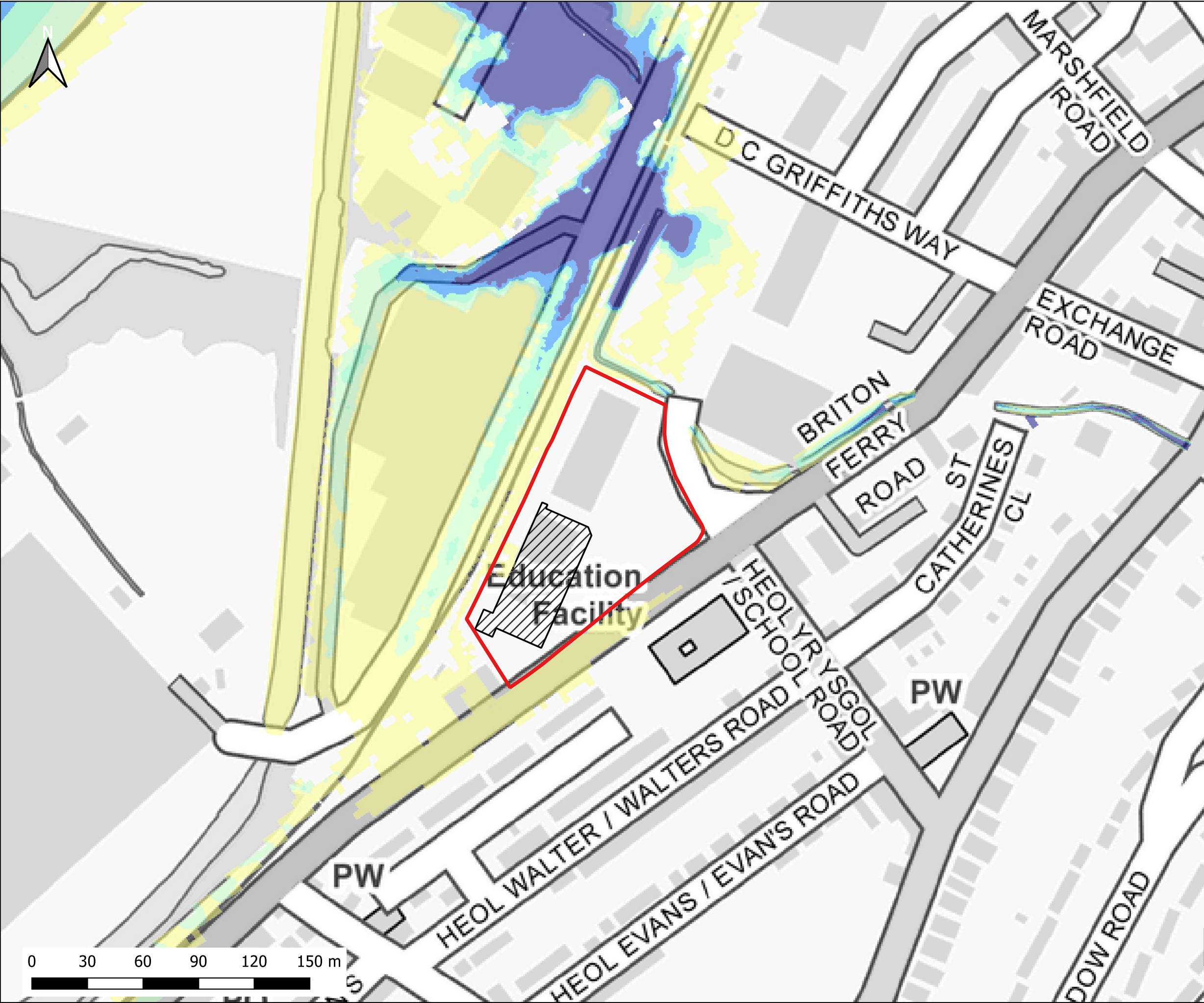
PLOT TITLE:

Maximum Flood Velocity
50% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

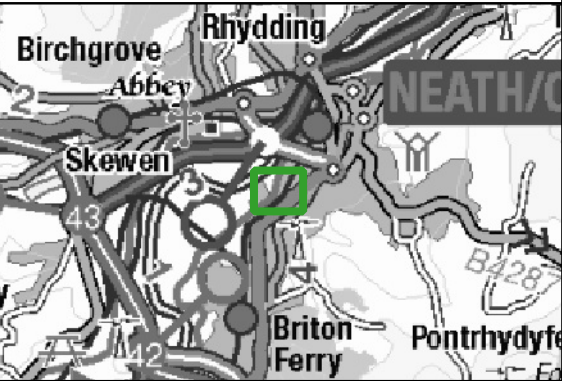
PLOT NAME:	REVISION:
13099-Q2_MHWS_EXG_NC_V	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension
- Maximum Velocity (m/s)
 - 0.0 - 0.3
 - 0.3 - 0.6
 - 0.6 - 0.9
 - 0.9 - 1.2
 - > 1.2



CLIENT:




www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Velocity
50% AEP Plus MHWS 2022
Development Site Layout (DEV)

PLOT STATUS:

FINAL

DATE:

08-06-2022

DRAWN:

MF

CHECKED:

SB

APPROVED:

AW

PLOT SCALE AT A3:

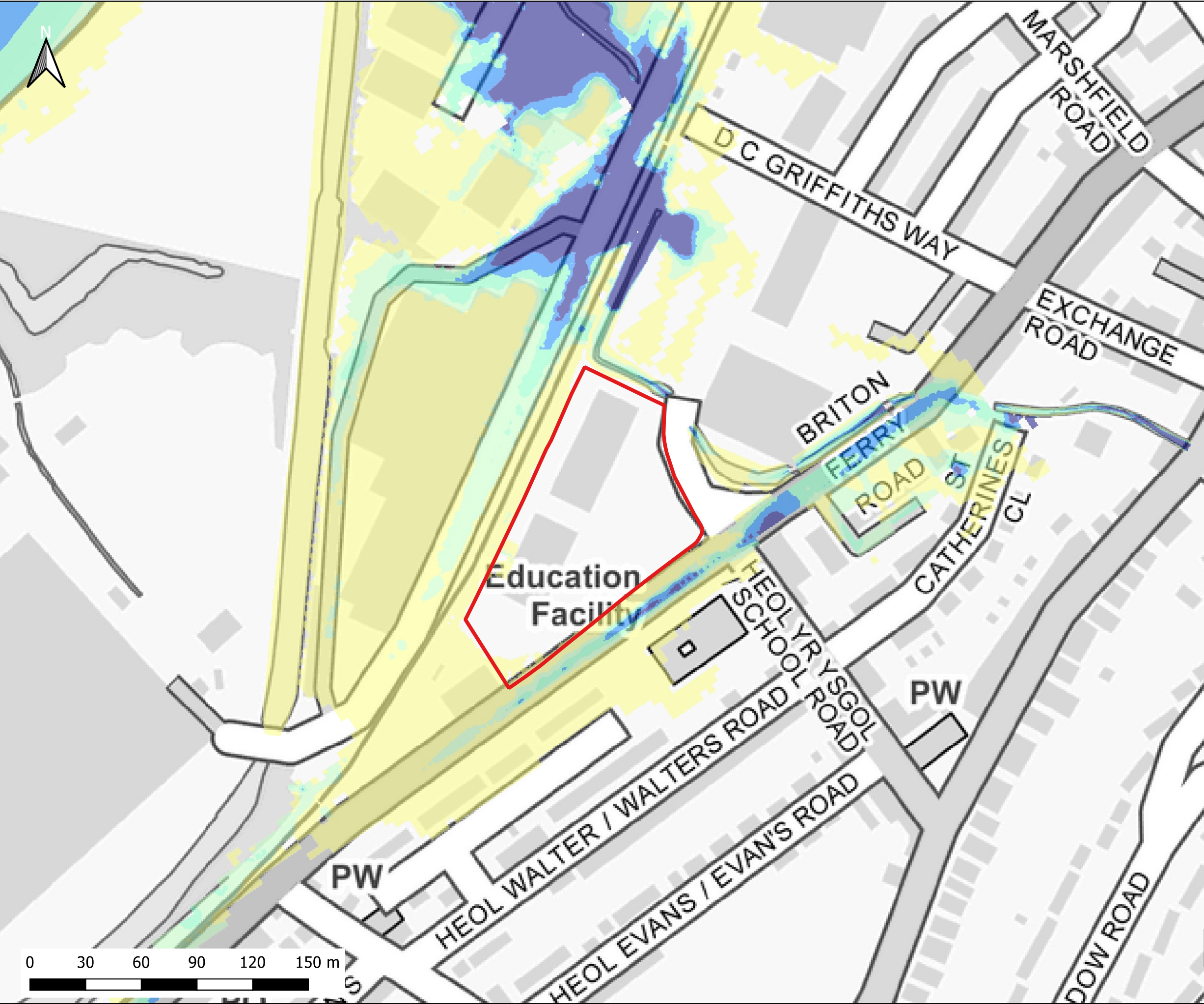
1:2000

PLOT NAME:

13099-Q2_MHWS_VEV_NC_V

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

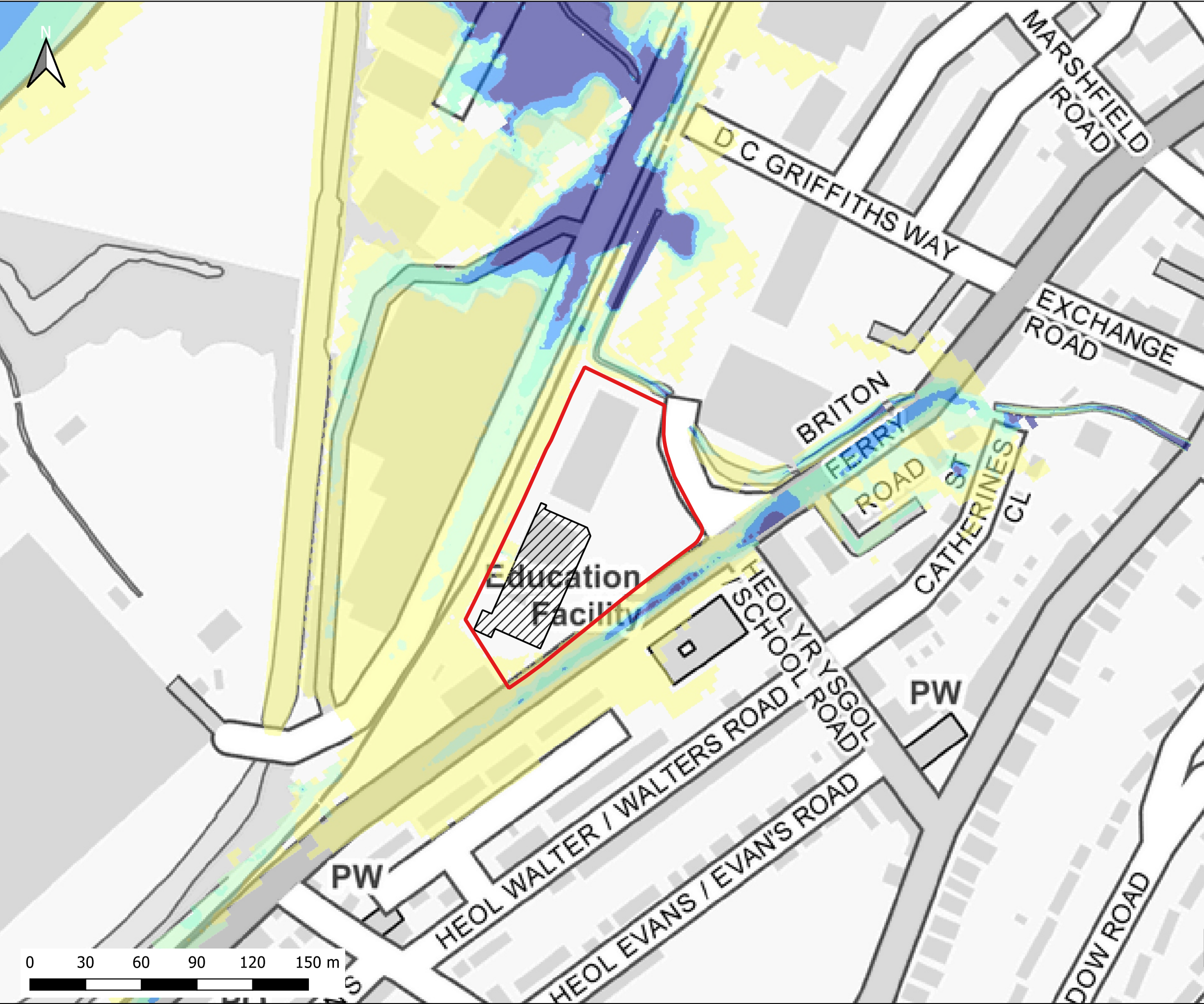
PLOT TITLE:

Maximum Flood Velocity
50%+CC30 AEP Plus MHWS 2100
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2CC30_MHWS_EXG_NC_V	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Proposed Store Extension

Maximum Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

waterco
www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

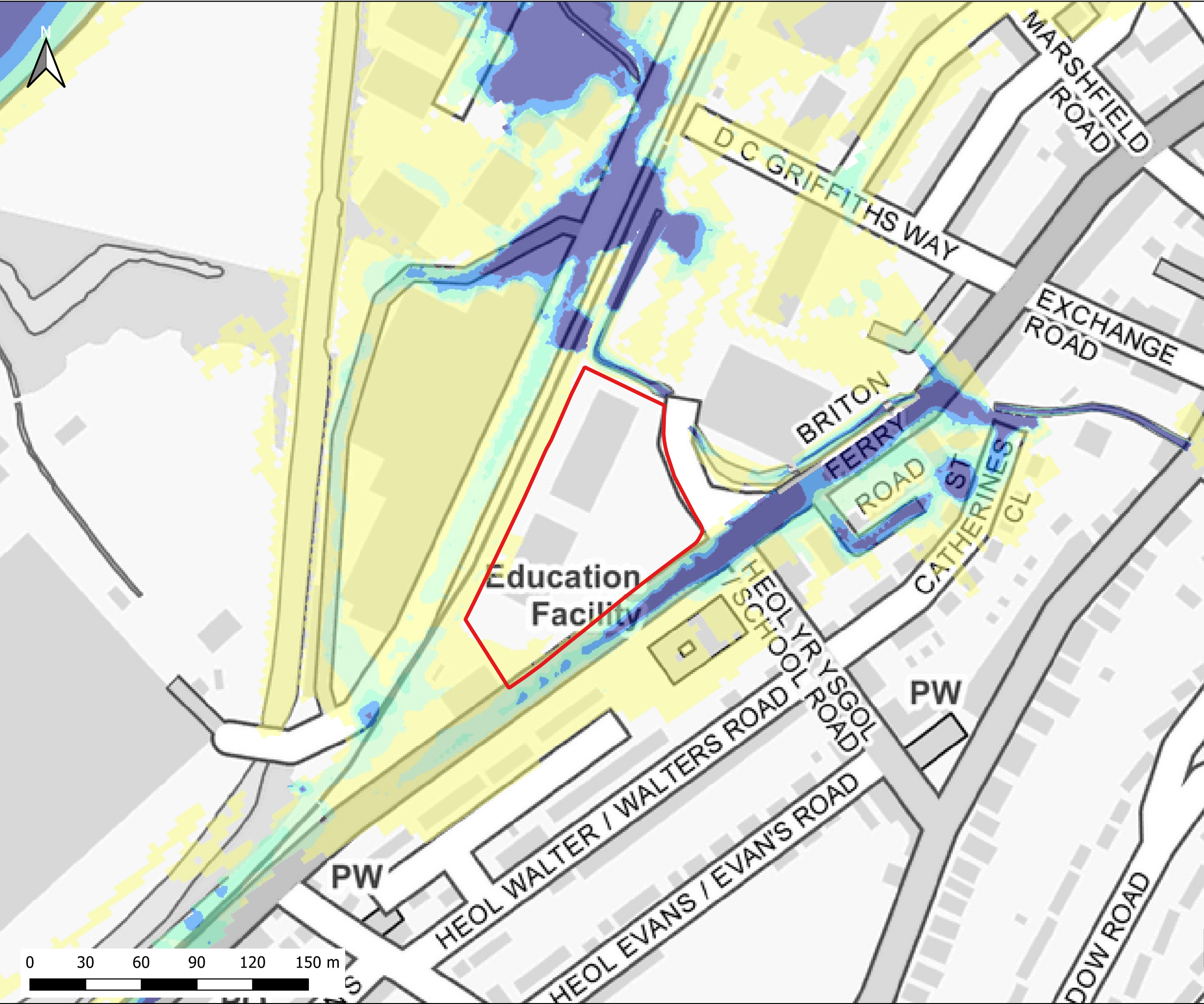
PLOT TITLE:

Maximum Flood Velocity
50%+CC30 AEP Plus MHWS 2100
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q2CC30_MHWS_VEV_NC_V	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Maximum Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

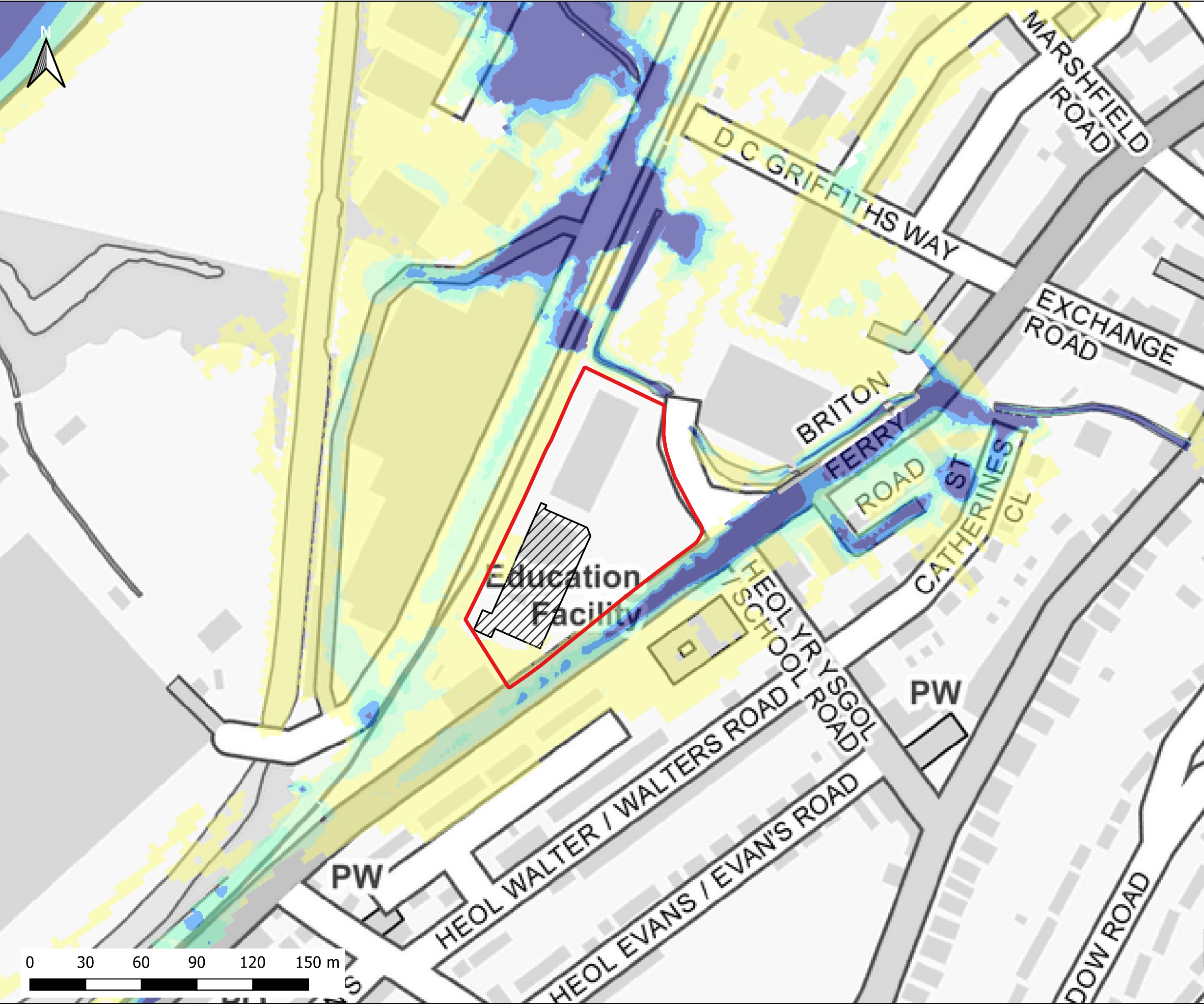
PLOT TITLE:

Maximum Flood Velocity
2% AEP Plus MHWS 2022
Existing Site Layout (EXG)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q50_MHWS_EXG_NC_V	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

Proposed Store Extension

Maximum Velocity (m/s)

0.0 - 0.3

0.3 - 0.6

0.6 - 0.9

0.9 - 1.2

> 1.2

CLIENT:

www.waterco.co.uk

SCHEME:

Briton Ferry Road, Neath

PLOT TITLE:

Maximum Flood Velocity
2% AEP Plus MHWS 2022
Development Site Layout (DEV)

PLOT STATUS:		DATE:	
FINAL		08-06-2022	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
MF	SB	AW	1:2000

PLOT NAME:	REVISION:
13099-Q50_MHWS_VEV_NC_V	-