

Appendix 5 – United Utilities Assets

ENZYGO LTD
Samuel House,
5 Fox Valley Way

SHEFFIELD
S36 2AA

FAO: Richard Hughes

Dear Sirs

Location: PLOT TEMP SUPPLY QUEENS WHARF LIVERPOOL

I acknowledge with thanks your request dated 03/01/17 for information on the location of our services.

Please find enclosed plans showing the approximate position of our apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read our access statement before you start work to check how it will affect our network.

<http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please telephone us on 0370 7510101.

Yours Faithfully,



Amanda Simmonds
Property Searches Manager

United Utilities Water Limited
Property Searches
Ground Floor Grasmere House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP
DX 715568 Warrington
Telephone 0370 751 0101

Property.searches@uu plc.co.uk

Your Ref: SHF 1380 001
Our Ref: 16/ 1258801
Date: 4/1/2017

TERMS AND CONDITIONS - WASTERWATER & WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self-construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

1. This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
2. This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
3. In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only and given in accordance with the best information available. The nature of the relevant system and/or its actual position may be different from that shown on the plan and UUWL is not liable for any damage caused by incorrect information provided save as stated in section 199 of the Water Industry Act 1991. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
4. The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
5. The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
6. This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
7. No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
8. If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
9. This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Extract from Map of Public Sewers

The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available.

The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded.

United Utilities will not accept any liability for any damage caused by the actual positions being different from those shown.

United Utilities Water Limited 2014

The plan is based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown and United Utilities copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

PLOT TEMP SUPPLY QUEENS WHARF LIVERPOOL

Printed By: Property Searches Date: 04/01/2017

DO NOT SCALE

Approximate Scale: 1:2500



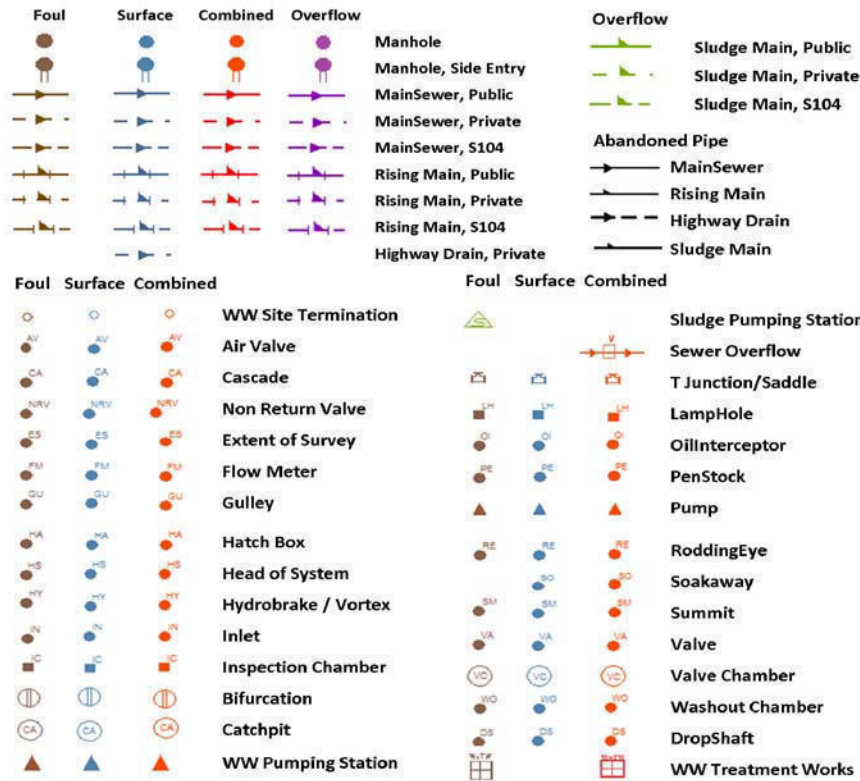
TERMS AND CONDITIONS - WASTERWATER & WATER DISTRIBUTION PLANS

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9. This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

WASTE WATER SYMBOLOGY



Legend			
MANHOLE FUNCTION		SEWER SHAPE	
FO	Foul	CI	Circular
SW	Surface Water	EG	Egg
CO	Combined	OV	Oval
OV	Overflow	FT	Flat Top
		RE	Rectangular
		SQ	Square
		TR	Trapezoidal
		AR	Arch
		BA	Barrel
		HO	HorseShoe
		UN	Unspecified
SEWER MATERIAL			
AC	Asbestos Cement	DI	Ductile Iron
BR	Brick	VC	Vitrified Clay
CO	Concrete	PP	Polypropylene
CSB	Concrete Segment	PF	Pitched Fibre
CSU	Concrete Segment	MA	Masonry, Coursed
CC	Concrete Box Culverted	MA	Masonry, Random
PSC	Plastic / Steel	RP	Reinforced Plastic
GR	Glass Reinforced	CI	Cast Iron
GRP	Glass Reinforced	SI	Spun Iron
PVC	Polyvinyl Chloride	ST	Steel
PE	Polyethylene	U	Unspecified

CLEAN WATER SYMBOLOGY

PIPE WORK



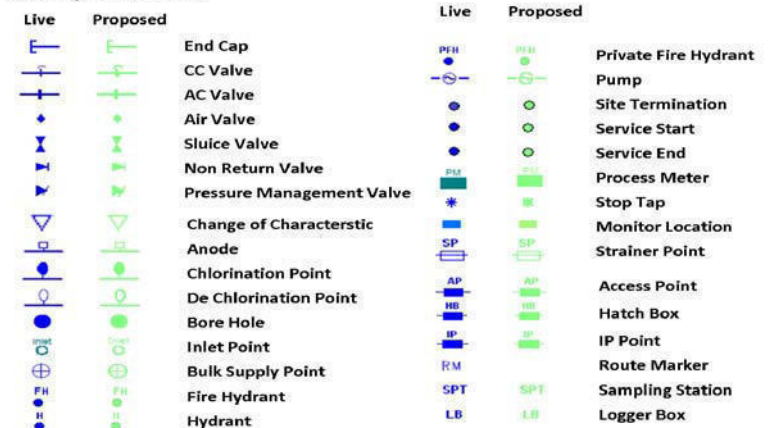
ABANDONED PIPE



PROPERTY TYPES



NODES/FURNITURES



Legend	
MATERIAL TYPES	LINING TYPES
AC ASBESTOS CEMENT	CL CEMENT LINING
CI CAST IRON	TB TAR OR BITUMEN
CU COPPER	ERL EPOXY RESIN
CO CONCRETE	
DI DUCTILE IRON	INSERTION TYPES
GI GALVANISED IRON	DD DIE DRAWN
GR GREY IRON	DR DIRECTIONAL DRILLING
OT OTHERS	MO MOLING
PB LEAD	PI PIPELINE
PV UPVC	SL SLIP LINED
SI SPUN IRON	
ST STEEL	
UN UNKNOWN	
PE POLYETHYLENE	

Richard Hughes

Subject: FW: (UU Ref: PDE 4200018200) Monarchs Quay, Liverpool

From: Lunt, John [<mailto:John.Lunt@uuplc.co.uk>]
Sent: 06 September 2017 11:57
To: Scott McLean <scott.mclean@enzygo.com>
Cc: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Subject: (UU Ref: PDE 4200018200) Monarchs Quay, Liverpool

Hi Scott,

In reply, I would advise that as far as UU are concerned the sewers in question will still remain under private ownership as there are no buildings communicating with the same.

In lieu of the above, UU would not be able to comment upon any proposed discharge rates as that would be a matter for the LLFA.

I can state on behalf of UU that as it's obvious the said sewerage system was installed in readiness for the future development, we would have no objection in principle to the perceived wastewater flows ultimately communicating with the respective public sewerage systems.

If I can be of any further assistance at all then please don't hesitate to get in touch.

Regards,

John

John Lunt
Developer Query Engineer
Developer Services and Planning
Operational Services
T: 01925 679411 (Int: 79411)
E-mail: wastewaterdeveloperservices@uuplc.co.uk
United Utilities.com

From: Scott McLean [<mailto:scott.mclean@enzygo.com>]
Sent: 24 August 2017 16:29
To: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Cc: Richard Hughes <Richard.Hughes@enzygo.com>; Mark Jarvis <Mark.Jarvis@enzygo.com>
Subject: 1348-Monarchs Key Pre-development Application

Dear Sir/Madam

Please find attached the Pre-development application for connecting to your assets in the Kings Dock in Liverpool.

As seen from the attached drawing (05-01 OPTION-D) it is proposed to build a multiple owner, multiple structure, multiuse development on the site next to the Liverpool Exhibition Centre. An existing drainage survey (drawing SHF.1380.001.HY.D.008) of the area has identified a series of new drainage assets, that we have identified as being constructed (By ISG plc) with the Exhibition centre (around 2012-2015) to allow for drainage of existing roads and

carparks and for future connections from this development area into your foul and surface assets located in the Kings Parade. This system is currently live and we had initially assumed was already adopted by yourselves but we are looking to confirm this, as it is not currently shown on your asset plans.

Can we confirm what is adopted in this area and that the existing connections are all with your approval, could you also confirm if any restrictions would be placed on the proposed connections from each development or from the main connection into your sewer as it appears your surface water outfall is only 150mm for this corner of the development.

regards

Scott McLean
Principal Engineer - Drainage



Enzygo Ltd,
Samuel House
5 Fox Valley Way
Stocksbridge
Sheffield
S36 2AA

Offices in Bristol, Sheffield and Manchester

Planning and EIA, Waste & Environmental Permitting, Noise and Vibration, Flood Risk and Hydrology, Hydrogeology, Landscape and Visual Impact, SI and Geo environmental, Ecology, Traffic.& Transport

Tel: +44 (0) 7872 461357

Email: scott.mclean@enzygo.com

Web: www.enzygo.com

Registered Office: Stag House, The Chipping, Wotton under Edge, GL12 7AD
Registered in England & Wales registered number: 06525159 **VAT number:** 931520846



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Richard Hughes

From: Property Searches <property.searches@uuplc.co.uk>
Sent: 30 August 2017 13:53
To: Richard Hughes
Subject: RE: Assets at Monarchs Quay, Liverpool.

In response to your below request I can confirm the size shown on our plan is the information we have on record. If you are developing the site can you please contact our developer services or arrange a CCTV survey to confirm the details you require.

<https://www.unitedutilities.com/services/builders-developers/new-connection-charges-consultation/>

Susan McManus
Team Leader Operations
Property Searches
Operational Control
United Utilities
T: 0370 7510101 (internal 31011)
M: 07827238627 (mobex 69818)
unitedutilities.com

Property Searches, Ground Floor, Grasmere House, Lingley Mere Business Park, Great Sankey, Warrington WA5 3LP
E-mail – property.searches@uuplc.co.uk

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Visit: unitedutilities.com/wow

From: Richard Hughes [mailto:Richard.Hughes@enzygo.com]
Sent: 23 August 2017 10:26
To: Property Searches <property.searches@uuplc.co.uk>
Subject: Assets at Monarchs Quay, Liverpool.

Hi,

In January, you provided me with the above asset plan for a Site in Liverpool. I have highlighted (in yellow) the pipe sizes that I am querying. Is the surface water sewer a 150mm diameter pipe? I also attached a drawing from a report conducted in 2013 (Document 0), in which the same surface water sewer is shown as being a 600mm diameter pipe.

Our proposed development Site has an existing drainage system (shown as dotted lines within half tide wharf in Document 0) which connects to the public sewer network at the junction of Half Tide Wharf and Kings Parade. It seems strange that the Site drainage (525mm diameter pipe) would connect to a 150mm diameter public sewer.

Can you confirm if the public surface water sewer located on Kings parade (between the connection location and outfall to the River Mersey) is a 150mm diameter pipe, as shown on the supplied asset plans, or a 600mm diameter pipe.

Regards

Richard

Richard Hughes BSc (Hons), MSc, MCIWEM
Senior Hydrologist



Enzygo Ltd,
Samuel House
5 Fox Valley Way
Stocksbridge
Sheffield
S36 2AA

Offices in Bristol, Sheffield and Manchester

Planning and EIA, Waste & Environmental Permitting, Noise and Vibration, Flood Risk and Hydrology, Hydrogeology, Landscape and Visual Impact, SI and Geo environmental, Ecology, Traffic.& Transport

Tel: +44 (0) 114 321

Email: richard.hughes@enzygo.com

Web: www.enzygo.com

Registered Office: Stag House, The Chipping, Wotton under Edge, GL12 7AD
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Appendix 6 – Canal and River Trust

Richard Hughes

From: Alan Daines <Alan.Daines@canalrivertrust.org.uk>
Sent: 15 September 2017 12:28
To: Richard Hughes
Cc: Nilam Jassi
Subject: RE: TPW-NOR-1617-497-Monarchs Quay Liverpool

Richard,

I have taken advise on this one from our Principal hydrologist and he has confirmed that it will have to go through the 2 stage process outlined to you previously see below:

The Canal and River Trust undertakes a staged process to review the impact of all new or modified discharges to its network, in addition to any considerations that are made by the Environment Agency and/or the Local Planning Authority via the normal planning process. This initial mail constitutes Stage 1 of our process. We will need to ensure you are formally signed onto our system before we can progress for licenses to undertake operations that may affect the Canal and River Trust assets. In order to register you as a customer we need you to be aware of our 'Code of Practice for Works Affecting the Canal and River Trust' this link will gain you access to the code which is in 3 parts and can be located at the bottom of the page. <https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice>

Stage 2 of our process requires the applicant to complete Forms 1, and 6 from the Code of Practice so that consistent information about the proposal is provided by all applicants, the relevant documents are attached. Section 3 of Part 2, the Detailed Information section of the Code of Practice provides details on the surface water discharge process including guidance on how to undertake the Outline Impact Assessment. Table 3 provides a list of the required information that should be submitted at the Outline and Detailed Impact Assessment stages and should be read in conjunction with Form 6 and used as a check list for submission. The initial submission must be accompanied by the relevant Administration Fee of £380 plus vat (£456) and Forms 1 & 6.

To commence Stage 3 requires that once this documentation is received, logged and checked for completeness, a further contribution of £2000+VAT (£2400) is required along with a Cost Undertaking (Form 2) towards the cost of a technical review by the Canal and River Trust of the impacts of the proposed discharge on the flood risk and water quality of the receiving Waterway.

Depending on the outcome of this review (which normally takes around 4 weeks), further work may be required (by the Applicant) to enable a more detailed consideration to be completed (Stage 4) or the proposal may be accepted in principle at that point. Further guidance can be found in the Code of Practice and your attention is brought to the fact that a commercial agreement will always be sought before any discharge to our network can take place, an estimation of this can be provided by our Utility Surveyor. The Canal and River Trust is not a drainage authority and we have no obligation to accept discharges.

In addition to completed Forms 1 and 6, we will also need the following information from you for invoicing purposes:

- Company name, or individual responsible for receiving invoices.

- Address to which invoices should be sent.

- Company Registration Number (if applicable).

- Company VAT Registration Number (if applicable).

- Your Purchase Order Number included on the Cost Undertaking (if not please state in writing that you do not issue PO number).

All the above information is required so that we can issue a WBS number (your unique identifier) for use in all future communication. All submissions, other than payments, by commercial organisations should be in electronic format; hard copy presentations are not permissible unless in exceptional circumstances and then only by prior agreement.

A Discharge Consent or Environmental Permit from the Environment Agency does not confer the right to discharge to the waterways that are owned by the Canal and River Trust.

Can you please submit the initial application and complete forms 1, 2 and 6

Regards

Alan

Alan R Daines BSc. MSc.(Eng), C.WEM, IEng, FIWater, FCIWEM.

Infrastructure Services, Regional Manager (North)

(North East, North West, East Midlands, Manchester Pennine & Potteries and North Wales & Borders waterway areas)



Canal & River Trust | NE waterway | Fearn's Wharf | Neptune Street | Leeds LS9 8PB | Tel: 03030 404040 | Mob: 07827 873682 | Email: alan.daines@canalrivertrust.org.uk

For further information and a **copy of the 3rd Party Code of Practice** please follow the link below.

<https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice>

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The Canal & River Trust is a new charity entrusted with the care of 2,000 miles of waterways in England and Wales. Get involved, join us - Visit / Donate / Volunteer at www.canalrivertrust.org.uk - Sign up for our newsletter at www.canalrivertrust.org.uk/newsletter

Canal & River Trust is a charitable company limited by guarantee registered in England & Wales with company number 7807276 and charity number 1146792. Registered office address First Floor North, Station House, 500 Elder Gate, Milton Keynes MK9 1BB.

Mae'r e-bost hwn a'i atodiadau ar gyfer defnydd y derbynnydd bwriedig yn unig. Os nad chi yw derbynnydd bwriedig yr e-bost hwn a'i atodiadau, ni ddylech gymryd unrhyw gamau ar sail y cynnwys, ond yn hytrach dylech eu dileu heb eu copïo na'u hanfon ymlaen a rhoi gwybod i'r anfonwr eich bod wedi eu derbyn ar ddamwain. Mae unrhyw farn neu safbwynt a fynegir yn eiddo i'r awdur yn unig ac nid ydynt o reidrwydd yn cynrychioli barn a safbwyntiau Glandŵr Cymru.

Elusen newydd yw Glandŵr Cymru sy'n gofalu am 2,000 o filltiroedd o ddyfrffyrdd yng Nghymru a Lloegr. Cymerwch ran, ymunwch â ni - Ewch i Rhoddion a Gwirfoddoli yn www.glandwrcymru.org.uk

Mae Glandŵr Cymru yn gwmni cyfyngedig drwy warant a gofrestrwyd yng Nghymru a Lloegr gyda rhif cwmni 7807276 a rhif elusen gofrestredig 1146792. Swyddfa gofrestredig: First Floor North, Station House, 500 Elder Gate, Milton Keynes MK9 1BB.

Richard Hughes

From: Richard Hughes
Sent: 14 September 2017 11:57
To: 'Enquiries TPWNorth'
Subject: RE: TPW-NOR-1617-497-Monarchs Quay Liverpool

Hello Des,

Many thanks for your reply below, relating to my query about a staged proposed development at Monarchs Quay Liverpool.

Before entering into the staged process highlighted below, I would like to get your view on whether the process is required for the proposed development.

As part of the development, a 2 storey office building is proposed within the area shown below. The area is located at the northern end of the Queens Wapping bridge and constitutes a hardstanding promontory into the Queens Dock. The area is approximately 400 to 500 square metres and currently comprises a viewing area of the docks. The area is hardstanding with no formal surface water drainage. The location of the site means surface water would diffusely shed into the Docks. In terms of the proposed building, it is envisaged that existing, diffuse shedding of surface water to the docks would be maintained. The Site is located approximately 2 to 3 metres below the level of the bridge deck.

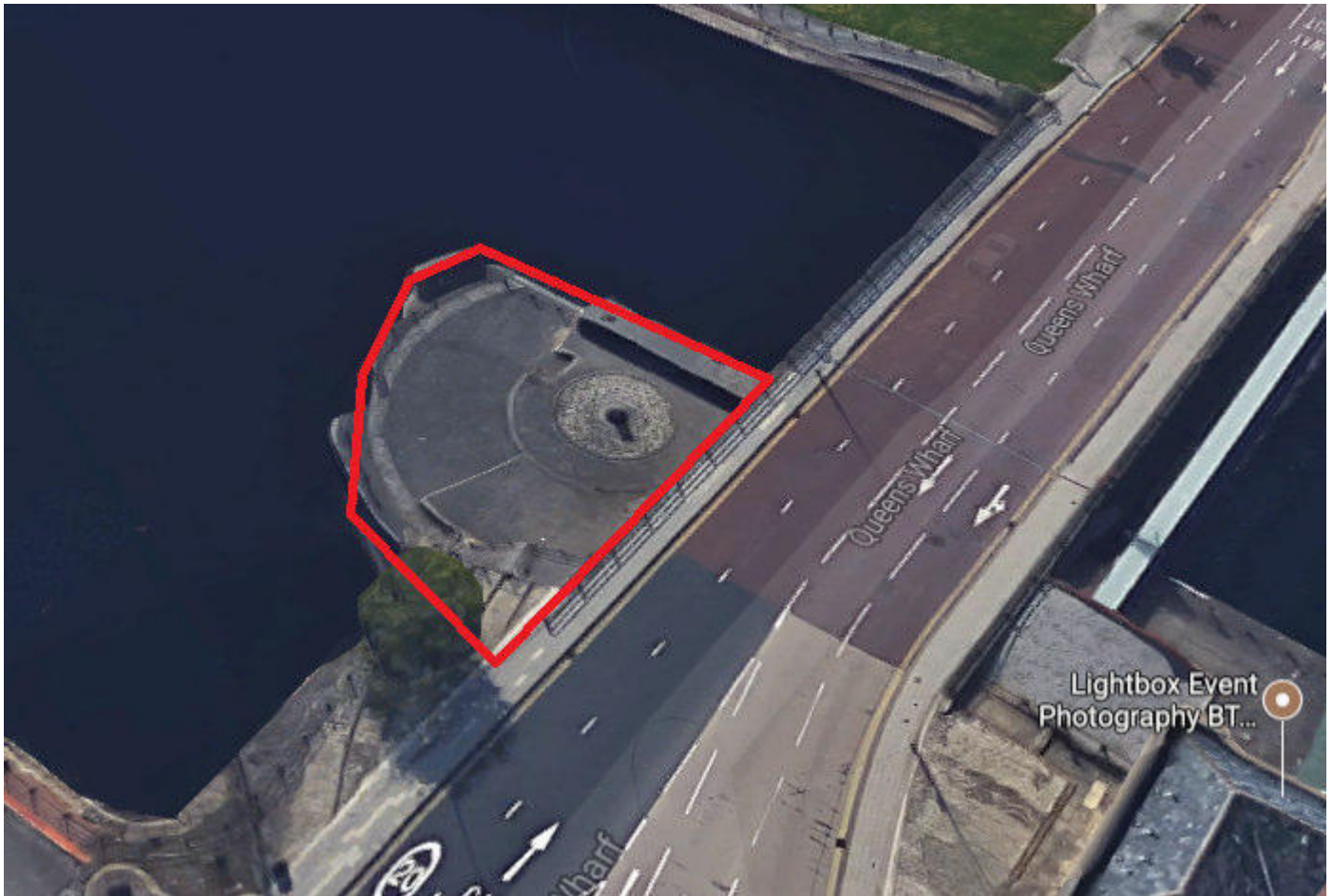
A new, point source discharge to the docks is not proposed.

Modifications of an existing discharge are not proposed

The proposal would not increase impermeability and would not increase surface water runoff to the docks.

The current diffuse runoff to the docks is proposed to be maintained.

SUDS features such as a green roof could be incorporated into the design.



Please could you provide some steer on this proposal please, with regards to surface water drainage.

Regards

Richard

From: Enquiries TPWNorth [mailto:Enquiries.TPWNorth@canalrivertrust.org.uk]

Sent: 30 January 2017 10:30

To: Richard Hughes <Richard.Hughes@enzygo.com>

Subject: TPW-NOR-1617-497-Monarchs Quay Liverpool

Thank you for your enquiry regarding the surface water discharge proposals from the planned development at Monarchs Quay. The Canal and River Trust undertakes a staged process to review the impact of all new or modified discharges to its network, in addition to any considerations that are made by the Environment Agency and/or the Local Planning Authority via the normal planning process. This initial mail constitutes Stage 1 of our process. We will need to ensure you are formally signed onto our system before we can progress for licenses to undertake operations that may affect the Canal and River Trust assets. In order to register you as a customer we need you to be aware of our 'Code of Practice for Works Affecting the Canal and River Trust' this link will gain you access to the code which is in 3 parts and can be located at the bottom of the page. <https://canalrivertrust.org.uk/business-and-trade/undertaking-works-on-our-property-and-our-code-of-practice>

Stage 2 of our process requires the applicant to complete Forms 1, and 6 from the Code of Practice so that consistent information about the proposal is provided by all applicants, the relevant documents are attached. Section 3 of Part 2, the Detailed Information section of the Code of Practice provides details on the surface water discharge process including guidance on how to undertake the Outline Impact Assessment. Table 3 provides a list of the required information that should be submitted at the Outline and Detailed Impact Assessment stages and should be read in conjunction with Form 6 and used as a check

list for submission. The initial submission must be accompanied by the relevant Administration Fee of £380 plus vat (£456) and Forms 1 & 6.

To commence Stage 3 requires that once this documentation is received, logged and checked for completeness, a further contribution of £2000+VAT (£2400) is required along with a Cost Undertaking (Form 2) towards the cost of a technical review by the Canal and River Trust of the impacts of the proposed discharge on the flood risk and water quality of the receiving Waterway.

Depending on the outcome of this review (which normally takes around 4 weeks), further work may be required (by the Applicant) to enable a more detailed consideration to be completed (Stage 4) or the proposal may be accepted in principle at that point. Further guidance can be found in the Code of Practice and your attention is brought to the fact that a commercial agreement will always be sought before any discharge to our network can take place, an estimation of this can be provided by our Utility Surveyor. The Canal and River Trust is not a drainage authority and we have no obligation to accept discharges.

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A Discharge Consent or Environmental Permit from the Environment Agency does not confer the right to discharge to the waterways that are owned by the Canal and River Trust.

Des Harris
IENG AMICE
Principal Works Engineer



Canal & River Trust | West Midlands Waterway | Peel's Wharf | Lichfield Street | Fazeley | Tamworth | B78 3QZ | Tel: 01827 252 038 | Mob: 07710175227 | Fax: 01827 252 052 | Email: des.harris@canalrivertrust.org.uk

<http://canalrivertrust.org.uk/about-us/for-businesses/undertaking-works-on-our-property>

Please visit our website www.canalrivertrust.org.uk to find out more and download our 'Shaping our Future document' on the About Us page.

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Elusen newydd yw Glandŵr Cymru sy'n gofalu am 2,000 o filltiroedd o ddyfrffyrdd yng Nghymru a Lloegr. Cymerwch ran, ymunwch â ni - Ewch i Rhoddion a Gwirfoddoli yn www.glandwrcymru.org.uk








Mae Glandŵr Cymru yn gwmni cyfyngedig drwy warant a gofrestrwyd yng Nghymru a Lloegr gyda rhif cwmni 7807276 a rhif elusen gofrestredig 1146792. Swyddfa gofrestredig: First Floor North, Station House, 500 Elder Gate, Milton Keynes MK9 1BB.

Appendix 7 – Topographic and Culvert/Drainage Survey

MH Ref	Easting's	Northing's	Cover Level
SW01	334440.614	389161.202	7.525
SW02	334441.594	389166.486	7.456
SW03	334418.921	389218.573	7.506
SW04	334421.881	389218.528	7.544
SW05	334397.896	389270.176	7.154
SW06	334392.421	389293.705	7.411
SW07	334364.450	389194.689	8.351
SW08	334368.014	389192.202	8.492
SW09	334340.715	389252.583	7.522
SW10	334371.753	389175.997	8.037
SW11	334385.742	389139.658	7.383
SW12	334401.833	389097.244	7.003
SW13	334413.188	389068.223	6.840
SW15	334347.780	389237.263	7.731
SW16	334350.156	389240.055	7.708
SW17	334417.477	389057.190	6.787
SW18	334450.192	389068.016	6.693
SW19	334446.205	389069.326	6.718
SW20	334397.134	389058.205	6.828
SW23	334360.655	389039.301	6.812
SW24	334362.752	389042.611	6.829
SW25	334317.418	389172.590	7.713
SW26	334299.486	389165.304	7.947
SW27	334313.928	389173.930	7.794
SW28	334300.086	389169.601	7.959
SW29	334471.534	389239.357	8.041
SW30	334471.178	389237.527	8.066
SW31	334517.443	389258.420	8.084
SW32	334565.106	389285.254	7.058
UTR01	334258.646	389009.320	7.415
UTR02	334256.060	389005.268	7.394
UTR03	334477.811	389243.316	8.153
UTR04	334476.446	389237.958	8.201
UTR05	334482.435	389232.783	8.169
UTR06	334523.803	389258.545	8.091
UTR07	334520.563	389249.847	8.195

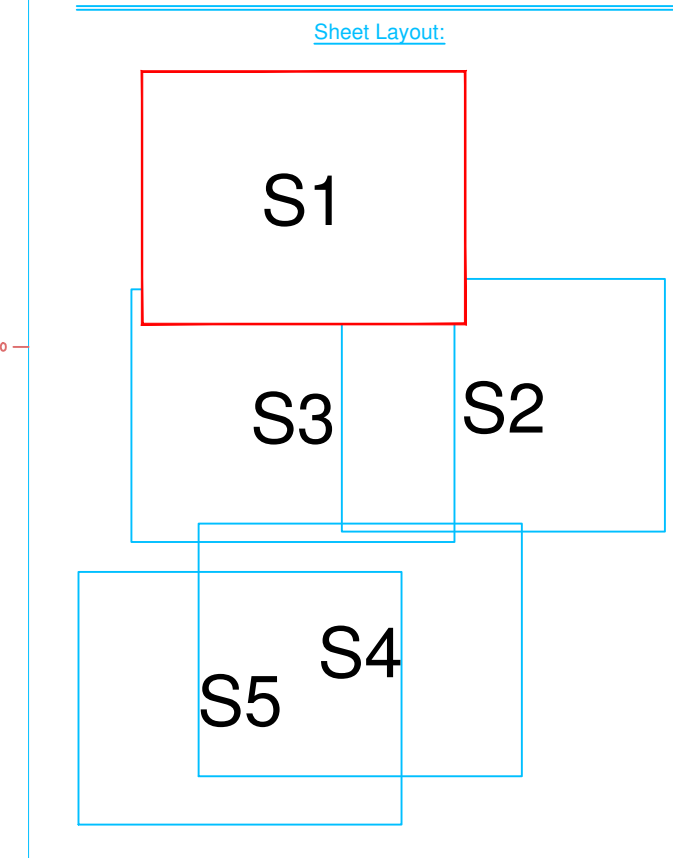
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General Legend:

	Tree		Survey Station		OSBWTM
(0.35M544)		STNX			
	Gully		Hedge		Borehole
					Trial Pit

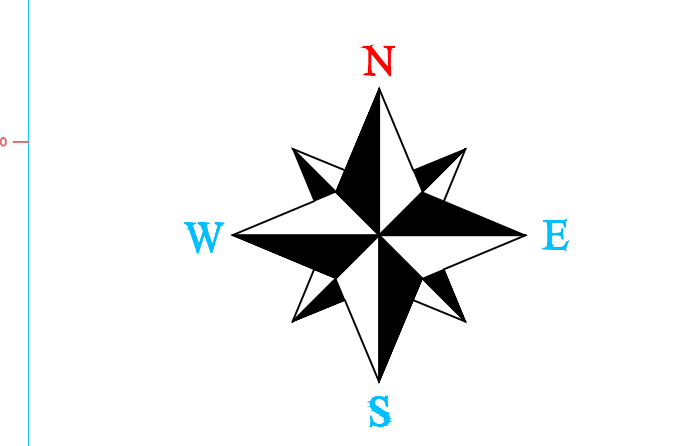
	<u>Survey Control:</u>		
	-EX-	-NY-	-WZ-
STN1	334438.866	389075.925	7.047
STN1A	334348.050	389043.728	6.816
STN1B	334269.091	389007.196	7.376
STN2	334378.014	389101.103	7.631
STN6A	334553.641	389196.706	8.077
STN7	334338.005	389242.102	7.648
STN8	334317.870	389289.165	7.181
STN9	334378.558	389346.249	7.185
STN10	334402.173	389280.771	7.227
STN11	334419.273	389206.027	7.484
STN12	334417.000	389253.853	7.484
STN15	334453.456	389279.016	7.356
STN16	334542.002	389299.309	7.274

Relative to Ordnance Survey grid via Active Network RTK GPS
Plane Table Grid




Disclaimer - West Coast Geomatics Limited 2017:
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Additional Notes:



Amendments:



WEST COAST GEOMATICS

LAND & MEASURED BUILDING SURVEYORS

Address:
 25/26 & 24 Orchard House
 Hazelt Business Centre
 Llanharau
 Llanelli SA11 1BB

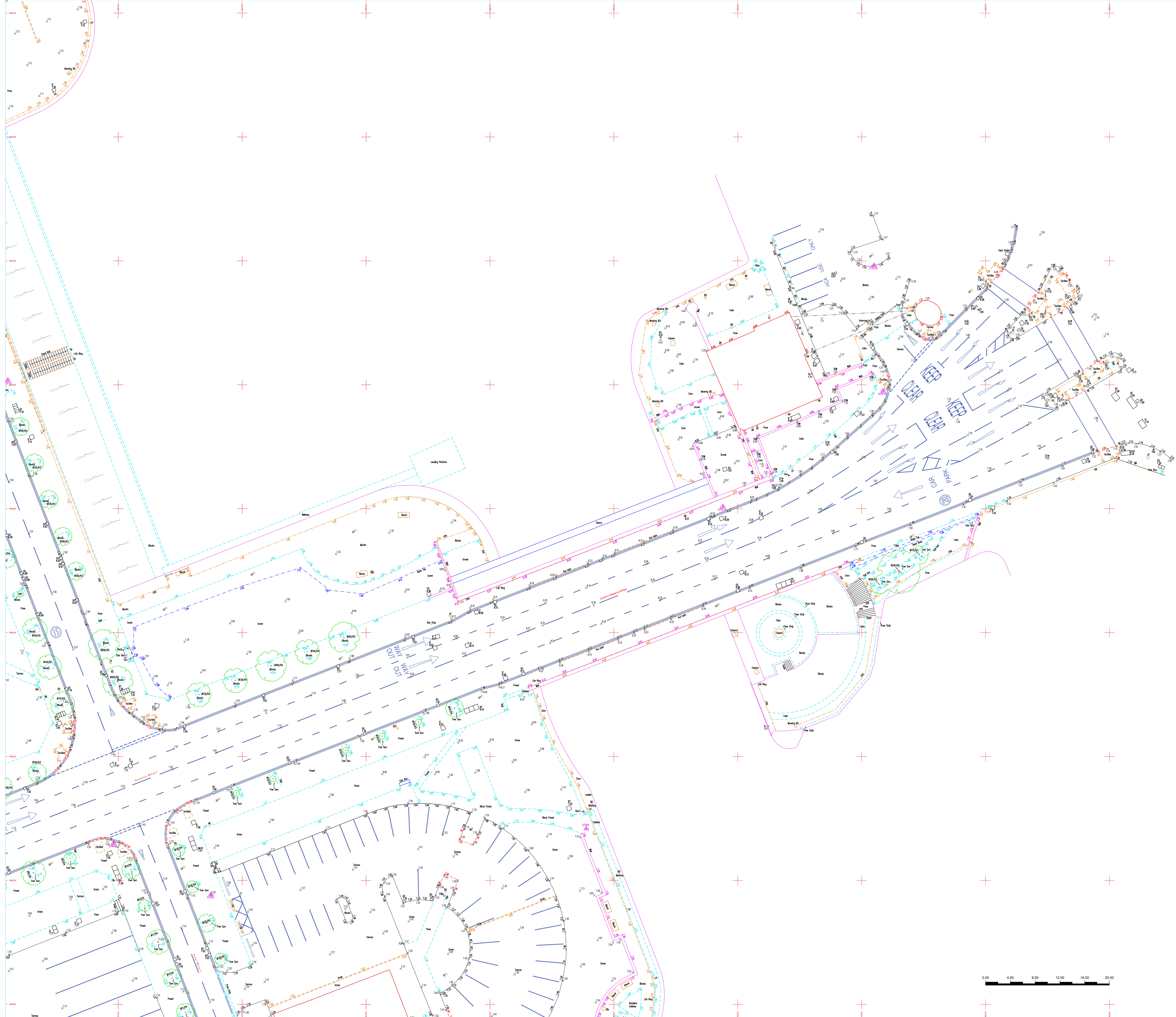
Contact details:
 Tel: +44 (0) 1704 840 938
 Email: info@wcg.co.uk
 www.wcg.co.uk

Client:
 YPG Developments









Drawing Title:
Topographical Survey S 1:5

Surveying & Design Reference:
 Keel Wharf
 Kings Dock
 Liverpool - L3 4FP

Surveyed by GK	Document No 1	WCG 17-000-11-20
Processed by SN	Partial Scale Date of Issue	ISO A0 @ 1:200 July 2017
Drawn by NF		

[illegible]

General Legend:

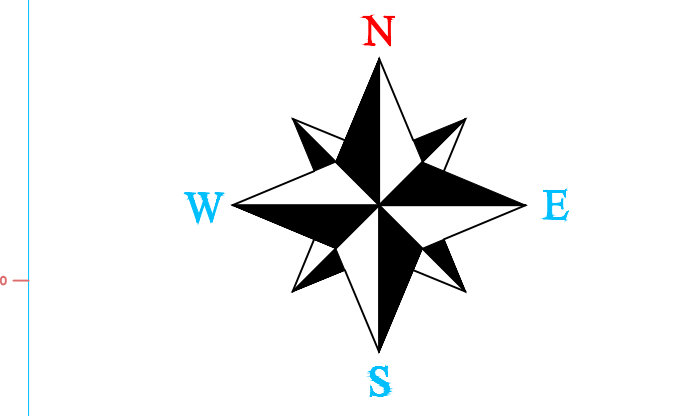
 Tree (0.35M2/H)	 STNX	 Survey Station	 OSBM/TEM
 Gate	 Hedge	 Borehole	 Trial Pit

	-E-X-	-N-Y-	-H-Z-
STN1	334438.866	389575.925	7.047
STN1A	334348.050	389593.728	8.816
STN1B	334269.091	389007.196	7.376
STN2	334378.014	389151.003	7.181
STN6A	334333.641	389196.706	8.077
STN7	334338.055	389242.102	7.648
STN8	334317.870	389289.165	7.181
STN9	334378.558	389046.249	7.185
STN10	334447.173	389271.771	7.227
STN11	334419.273	389206.027	7.484
STN14	334517.595	389260.353	8.191
STN15	334543.456	389279.016	7.356
STN16	334542.002	389299.309	7.274


Relative to Ordnance Survey grid via Active Network RTK GPS
Plane Table Grid

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Additional Notes:



Amendments:



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 L39 6ND

Contact details:
 Tel: +44 (0) 1704 848 938
 Email: info@wcg.co.uk
 www.wcgc.co.uk

Client:
 YPG Developments

Drawing Title:
Topographical Survey S 2:5

Surveying / Design Reference:

**Keel Wharf
 Kings Dock
 Liverpool - L3 4FP**

Surveyed by	GN	Document No.	WCG 17-900 T-21
Processed by	SN	Partial Scale	ISO A0 @ 1:250
Drawn by	ID	Date of Issue	July 2017

Appendix 8 – Borehole Scans

SUBSOIL SURVEYS LTD.
MANCHESTER

British Geological Survey

BOREHOLE No. **8**

Ref: _____

EXPLORATORY BORING RECORD

SITE Liverpool Docks Site Ref: 81/61

Boring Method Shell Ground Level 7.18m

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blow
							From	To	
17.6.81			0.1	Road Setts	1	D	1.0		
			0.4	Concrete					
			1.2	Sandstone - MADE GROUND					
			2.2	Red SANDSTONE with ash, brick, and coal, etc. - MADE GROUND	1A	X	1.35	1.65	4
					2	X	2.2	2.27	50
				Red SANDSTONE with concrete - MADE GROUND	3	D	2.8		
					4	X	3.4	3.45	50
					5	D	3.8		
			4.1		6	X	4.35	4.65	33
			4.65	Dense orange SAND with traces of clay - POSSIBLE MADE GROUND					
17.6.81									
18.6.81				Orange and yellow SANDSTONE - POSSIBLE MADE GROUND or BEDROCK	7	X	5.45	5.75	40

Con

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bul				Water Level in Cased/Uncased Borehole on Completion		
Water Observed at the Following Depths * - overnight seepage	Depth of Casing when Sealed (N.B. - Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Date	Water Level	Depth
1. 7.6	NS	Slow				
2.						
3.						
4.			DIA: OF CASING 150			
5.			m m. to depth of 4.5			
6.			m m. to depth of			

REMARKS:

1. Breaking out and excavating with compressor - 3½ hrs.
2. No initial penetration for SPT samples 2, 4 and 9

SUB SOIL SURVEYS LTD.
MANCHESTER

British Geological Survey

BOREHOLE No. **10**

Ref: _____

EXPLORATORY BORING RECORD

SITE Liverpool Docks Site Ref: 81/61

Boring Method Shell Ground Level 2.72m

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blows
							From	To	
1.8.81				Very soft dark grey organic very silty CLAY/clayey SILT - oily/tarry smell	1	B	1.0		
					2	B	2.0		
					3	B	3.5		
					4	B	4.5		
					5	B	6.0		
1.8.81	5.9		6.0						Cont

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bulk

Water Observed at the Following Depths * - overnight seepage	Depth of Casing when Sealed (N.B. - Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Water Level in Cased/Uncased Borehole on Completion		
				Date	Water Level	Depth
1.						
2.						
3.						
4.						
5.						
6.						

DIA. OF CASING 150 m m. to depth of 9.6 m
m m. to depth of m
m m. to depth of m

REMARKS:

No initial penetration for
SPT sample No's 8 and 9

SUB SOIL SURVEYS LTD.
MANCHESTER

British Geological Survey

BOREHOLE No. 20

Ref: _____

EXPLORATORY BORING RECORD

SITE South Docks - Liverpool

Site Ref: 85/147

Boring Method Light Cable Percussion

Ground Level _____

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blows
							From	To	
10.8.85			1.4	Ashes and peices of brick - MADE GROUND	1	D	0.5		
				Ashes, sand, stone, pieces of brick - MADE GROUND	2	X	1.65	1.95	7
					3	B	2.0		
					4	X	3.15	3.45	7
					5	B	3.5		
			4.5	Very soft grey silty sandy CLAY with sand lenses	6	X	4.65	4.95	35
					7	B	4.8		
				5.0	Dense brown SAND with numerous pieces of sandstone	8	X	6.15	6.25
					9	W	6.0		
					10	B	6.5		
					11	D	6.8		
					12	B	7.3		
7.0									

Contd

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bulk				Water Level in Cased/Uncased Borehole on Completion		
Water Observed at the Following Depths * - overnight seepage	Depth of Casing when Sealed (N.S. - Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Date	Water Level	Depth
1. 6.0	8.0	Slow				
2.						
3.						
4.						
5.						
6.						

DIA: OF CASING 150 m m. to depth of 8.0 met
_____ m m. to depth of _____ met
_____ m m. to depth of _____ met

REMARKS:

Water entry at 6.0m - no rise after 20 mins
Excavating by hand - 1 hour
No initial penetration for SPT sample No. 15

Waiting water level rise - 20
Time spent chseilling - 2½ ho

SUB SOIL SURVEYS LTD.
MANCHESTER

British Geological Survey

BOREHOLE No. 8

Ref:

EXPLORATORY BORING RECORD

SITE Liverpool Docks

Site Ref: 81/6

Boring Method Shell

Ground Level 7.18

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blo
							From	To	
17.6.81			0.1	Road Setts					
			0.4	Concrete					
			1.2	Sandstone - MADE GROUND	1	D	1.0		
				Red SANDSTONE with ash, brick, and coal, etc. - MADE GROUND	1A	X	1.35	1.65	
			2.2		2	X	2.2	2.27	50
				Red SANDSTONE with concrete - MADE GROUND	3	D	2.8		
			4.1		4	X	3.4	3.45	50
					5	D	3.8		
17.6.81				Dense orange SAND with traces of clay - POSSIBLE MADE GROUND	6	X	4.35	4.65	33
18.6.81			4.65	Orange and yellow SANDSTONE - POSSIBLE MADE GROUND or BEDROCK	7	X	5.45	5.75	40

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bu

Water Observed at the Following Depths - overnight seepage	Depth of Casing when Sealed (N.B. - Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Water Level in Cased/Uncased Borehole on Completion		
				Date	Water Level	Depth
1. 7.6	NS	Slow				
2.						
3.						
4.			DIA: OF CASING 150	m m. to depth of	4.5	m
5.				m m. to depth of		m
6.				m m. to depth of		m

REMARKS:

1. Breaking out and excavating with compressor - 3½ hrs.
2. No initial penetration for SPT samples 2, 4 and 9

British Geological Survey

SUB SOIL SURVEYS LTD.
MANCHESTER

British Geological Survey

British Geological Survey

BOREHOLE No. 8A

Ref: _____

EXPLORATORY BORING RECORDSITE Liverpool DocksSite Ref: 81/6Boring Method ShellGround Level 7.15

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blow
							From	To	
9.7.81			0.2	Road Setts	1	D	0.5		
			0.4	Concrete					
				Sand, brick, ash and wood, etc. MADE GROUND					
					2	X	1.5	1.52	50
					3	D	1.6		
			2.5						
			3.0	Compact brown, yellow and black SAND with traces of wood - POSSIBLE MADE OR DISTURBED GROUND	4	X	2.65	2.95	27
				Very dense dark grey and brown SAND with lenses of silty clay and sandstone fragments	5	X	3.75	4.05	90
					6	X	5.15	5.45	144

Cor

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bu

Water Observed at the Following Depths * - overnight seepage	Depth of Casing when Sealed (N.B. - Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Water Level in Cased/Uncased Borehole on Completion		
				Date	Water Level	Depth
1. NONE						
2.						
3.						
4.						
5.						
6.						

DIA: OF CASING 150 m m. to depth of 6.2 m

_____ m m. to depth of _____ m

_____ m m. to depth of _____ m

REMARKS:

No initial penetration for SPT samples 2 and 3

British Geological Survey

British Geological Survey

British Geological Survey

TRIAL PIT RECORDS

STRATA SURVEYS LTD.,

HOLMES CHAPEL ROAD,
MIDDLEWICH, CHESHIRE.

Telephone: Middlewich (STD 0606 84) 4637

British Geological Survey

British Geological Survey

Job No: 3488 Location: QUEENS AVENUE, SOUTH DOCKS, LIVERPOOL.Scale 1:50Client: MERSEYSIDE DEVELOPMENT CORPORATION.T.P. No. 2

Description of Strata

Ground Level

Reduced Level

Legend

Thick-
ness

Depth

Samples

from

to

Type

NMC

Apparent
Cohesion
kN/m²

φ degrees

Daily Progress
Water Levels
Remarks

TARMAC.

COBBLE SETS.

CONCRETE.

BRICK RUBBLE AND SAND FILL.

MEDIUM DENSE, BROWN, FINE
TO MEDIUM SAND WITH GRAVEL
AND COBBLES OF SANDSTONE
AND OCCASIONAL BRICK.

British Geological Survey

MADE GROUND.

British Geological Survey

(2.90)

3.50

0.60

1.00

B₁

3/11/86

TRIAL PIT COMPLETE AT 3.50M.

British Geological Survey

British Geological Survey

1 HR BREAKING
OUT OBSTRUCTIONST.P. No. 3

Description of Strata

Ground Level

Reduced Level

Legend

Thick-
ness

Depth

Samples

from

to

Type

NMC

Apparent
Cohesion
kN/m²

φ degrees

Daily Progress
Water Levels
Remarks

TARMAC

COBBLE SETS

CONCRETE

LOOSE, GREY/BROWN, SOILY
SAND WITH GRAVEL & COBBLES
OF SANDSTONE. MADE GROUND.

LARGE SANDSTONE BLOCKS.

UNABLE TO EXCAVATE BELOW 1.30M.

TRIAL PIT ABANDONED.

SKETCH PLAN.

BRICK WALL

SANDSTONE
BLOCKS.BRICK
WALL.

N

British Geological Survey

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1 HOUR BREAKING
OUT OBSTRUCTIONS

SKETCH PLAN.

BRICK WALL

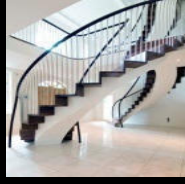
SANDSTONE
BLOCKS.BRICK
WALL.

N

U - undisturbed D - disturbed B - bulk W - groundwater P - standard penetration CP - cone penetration V - vane test

12/07/2017

Appendix 9 – Flood Risk Assessment Extract



Exhibition Centre Liverpool, Queens Wharf, Liverpool

Flood Risk Assessment

project number: 2593

date: 22.02.2013

revision: 2

scott hughes design

the flint glass works

64 jersey street

manchester

m4 6jw

Document Control Sheet

Client: ISG Construction Ltd

Project No.: 2593

Project Title: Exhibition Centre Liverpool, Queens Wharf, Liverpool

Report Title: Flood Risk Assessment

Version: 1

Status: Final

Control Date: 22nd February 2013

Document Revision Record:

Version	Status	Author	Approved	Date
1	Draft	Paul Graveney	Ian Scott	23/01/13
1	Final	Paul Graveney	Ian Scott	22/03/13

Document Distribution Record:

Version	Organisation	Quantity
1	ISG / BK / DCM	1
1	ISG / BK / DCM / TY / AMEC	1

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Scott Hughes Design certify that they have carried out the work contained herein with due skill, care and diligence to their best belief and knowledge based on the time and information available.

This report is made on behalf of Scott Hughes Design. By receiving it and acting on it, the client – or any third party relying on it – accepts that no individual is personally liable in contract, tort or breach of statutory duty or otherwise (including negligence).

Scott Hughes Design

6.0 Outline Drainage Strategy

6.1 Overview

- 6.1.1 As part of this study, United Utilities (UU) as the sewage undertaker for the district, the Environment Agency and Liverpool City Council have been consulted.

6.2 External Consultation

6.2.1 United Utilities

As discussed in Section 3, the UU sewer records have been reviewed and confirm that there are foul and surface water sewers within Kings Parade to the west of the site. Both foul and surface water private drains pass within and adjacent the development site and outfall to the respective public sewers. UU have confirmed (refer to section 2.6) that a free discharge of foul and surface water will be acceptable in principle.

6.2.2 Environment Agency

The Environment Agency (EA) has been consulted. They have confirmed that a free discharge to the public sewer is acceptable if UU agree. Testing would need to be carried out to consider flood impact for the 30yr and 100yr events. Any flooding that does occur should be retained on the site and directed away from buildings.

6.2.3 Liverpool City Council

Contact was made with Liverpool Council. However SHD were advised that the engineer who carried out the design of the drainage around the area had left and that all the information was now archived.

6.3 Existing Surface Water Runoff

- 6.3.1 The existing site was historically a number of docks with peripheral quay sides and warehousing. Over time these have been infilled to form the current tarmac parking areas. Therefore in terms of runoff characteristics the site can be considered as 'Brownfield'.
- 6.3.2 No specific runoff rates have been defined due to the number of connections from the existing site. However drawing 2593-FRA-001 in Appendix E clearly indicates the extent of the existing drainage, the impermeable areas and the connections from the site to the surrounding drainage infrastructure. The site is approximately 84% impermeable.

6.4 Outline Surface Water Drainage Strategy

- 6.4.1 The post development impermeable area footprint will increase from 84% to 88%. However, as noted in section 2.6 and 6.2, discussions with UU and the EA have confirmed that post development a free discharge of surface water flows to the surrounding drains that ultimately outfall into the public sewer and then immediately down stream to the Mersey Estuary is acceptable.
- 6.4.2 The general principal of the surface water drainage strategy is to collect the runoff from the roof and external pedestrian and yard areas, and direct to a series of new below ground surface water drainage networks connecting to the existing large diameter stubs that then pass out of the site. The exact drainage layout and position of the final connections will be confirmed as part of the detailed design.
- 6.4.3 The future private drainage layout for the new development site will be designed in accordance with BS EN 752: 2008 and Building Regulations part H guidance and if necessary in line with Sewers for Adoption (current edition). In both cases this is to provide no flooding up to the 30 year storm return period criterion.
- 6.4.4 Flooding can occur on a local scale beyond the 30yr criterion due to runoff exceeding the capacity of the minor system during extreme events and it can only be addressed on a site specific basis. Sewers for Adoption (SfA) 7th Edition (WRc, 2006) states that properties should be protected against flooding from extreme events (1 in 30 year) and that flood pathways are identified when the drainage system is exceeded.
- 6.4.5 In the case of this development, exceedance flows will be all those over and above the 30 year design criterion set by Building Regulations and SfA guidance. Using above ground storage within the lower lying eastern external yard areas would be achievable and would direct flood water away from the new building with flows directed back into the surface water drainage network as the water levels in the drainage networks recede. As connection is ultimately to the public sewer, exceedance flooding of these could occur in parallel with the drainage from the development site. However, as the external Kings Parade holds a lower ground level any flooding would occur at this location and not within the development site. During the detailed drainage design of the development, consideration will also be made to a surcharged outfall from a high tide scenario.
- 6.4.6 All future drainage calculations carried out for the development layouts themselves must include the appropriate increase in rainfall to satisfy the future Climate change allowances.

6.5 Pollution Control

- 6.5.1 Silt is to be prevented from entering the drainage system by the use of trapped gullies, channels with silt traps, french drains with silt traps or by the use of Sustainable Drainage techniques. If appropriate, oil separators in line with Pollution Prevention Guidance 3 criteria will be provided.

6.6 Foul Water Strategy

- 6.6.1 The outline foul water drainage strategy is to construct a new private foul water drainage network to serve the new development building with connection to the nearest existing foul water stub connection outfalling to the surrounding foul drain and sewers, all of which would flow to the public sewer to the north west corner of the site in Kings Parade and which flows northwards towards the main trunk sewer in Liverpool City Centre. It is considered that the new foul flow rates will not impact on the existing large diameter foul water infrastructure.

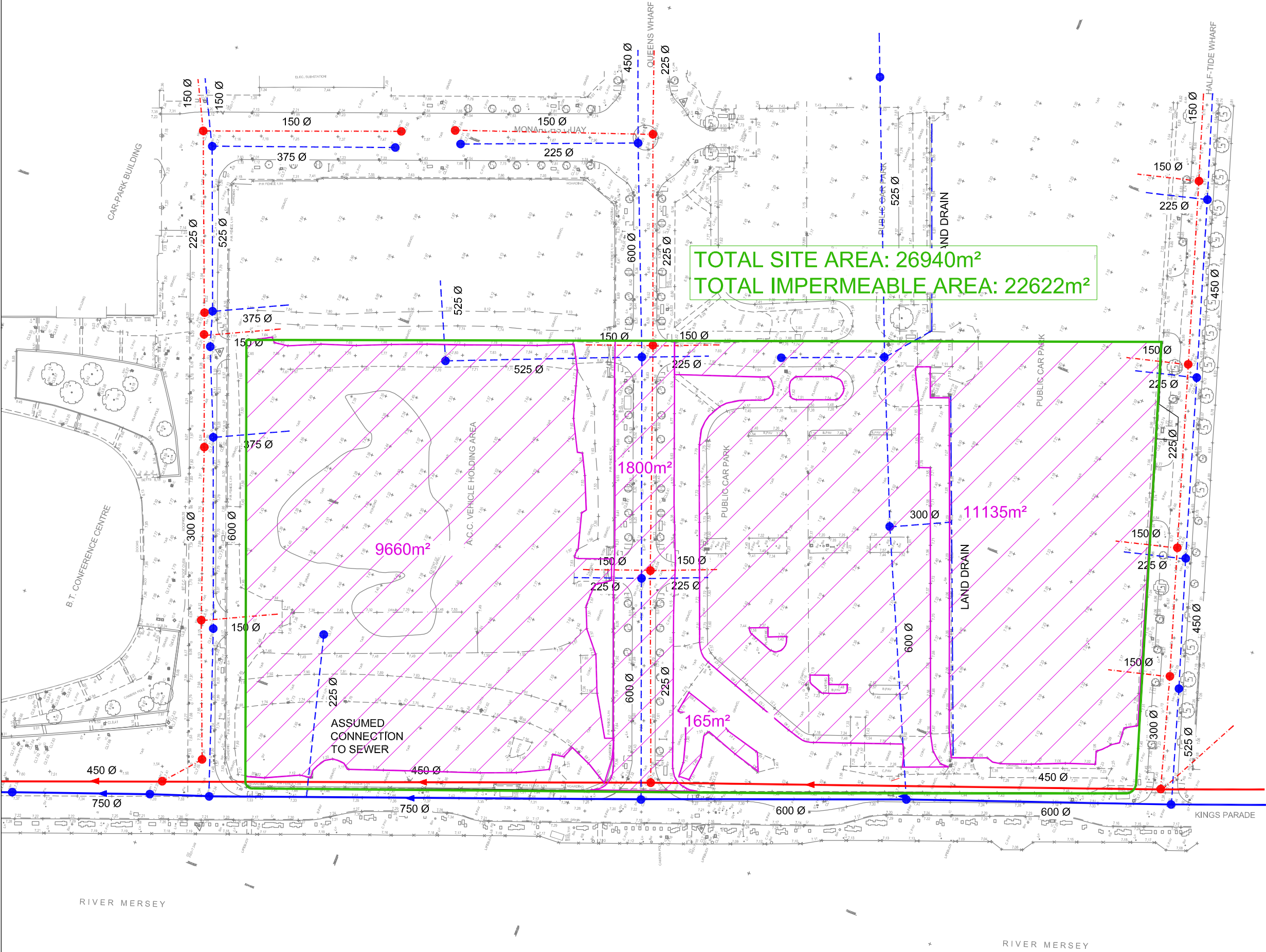
GENERAL NOTES

1. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT SPECIFICATIONS, ENGINEERS, ARCHITECTS & SERVICES DRAWINGS, INCLUDING APPROVED BUILDERS WORK DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS OR OTHER DRAWINGS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THE POSITION, SIZE AND LEVELS OF ALL EXISTING DRAINS ARE TO BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY DISCREPANCIES REPORTED IMMEDIATELY TO THE ENGINEER.
4. DO NOT SCALE FROM THIS DRAWING, WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED. ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS, SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.

KEY

- EXISTING SURFACE WATER PUBLIC SEWER
- EXISTING FOUL/COMBINED PUBLIC SEWER
- - - EXISTING SURFACE WATER DRAINAGE
- - - EXISTING FOUL WATER DRAINAGE
- SITE BOUNDARY
- EXISTING IMPERMEABLE AREAS

ALL EXISTING AND PROPOSED DRAINAGE RUNS ARE SHOWN APPROXIMATELY WITH EXACT LOCATION TO BE CONFIRMED



Richard Hughes

From: Scott McLean
Sent: 24 August 2017 14:14
To: NW-reception@ISGplc.com
Cc: Richard Hughes
Subject: Exhibition Centre Liverpool
Attachments: SHF.1380.001.HY.D.008
_ - Monarchs Quay Liverpool - Existing Drainage Network within the Wider Site.pdf

Dear Sir/Madam

We have been appointed by Knight Frank to look at the FRA and planning for the Monarch Key development site next door to the Exhibition centre Liverpool. Knight frank commissioned a survey to trace existing drainage assets in the area which highlighted that a new drainage system had been installed in the area connecting to the UU sewer in the Kings Parade.

We have been in contact with the exhibition centre who directed us to yourselves. We have also been in contact with David Jackson at Amey (acting on behalf of Liverpool council) who have limited information on the new roads and services built in that area.

We are looking for any information you have for the area shown on the drainage survey attached. The drainage system in the road all appears to be an adopted foul and surface water system installed in preparation for the proposed development plots (current used for parking). We are looking for any:

- As built site record plans for drainage and other services (ideally in dwg but any format would be acceptable) showing what was built and why, and any external feeds into the network from outside our clients area that needs to be accounted for.
- Drainage calculations supporting the as built design (ideally in microdrainge but any format would be acceptable)
- Correspondence with United utilities supporting any adoption or connection discussions as the system appears connected to the UU Sewer in Kings Parade.
- Highway design and build up drawings
- Any information you have for the substation and services connecting to it.

Many thanks

Scott McLean
Principal Engineer - Drainage



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