

BL Canada Quays Ltd

Site Utilities Infrastructure Strategy

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SITE UTILITIES INFRASTRUCTURE STRATEGY



AUDIT SHEET

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SITE UTILITIES INFRASTRUCTURE STRATEGY



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1.0 INTRODUCTION

This report has been established to review the existing Statutory Utility services and to describe the development of new utility supplier/connections primarily focused on the development parcels A and B, with account taken of the wider development where utility information is available.

The objective of the final report is to provide a comprehensive record of the existing services and the new proposed services to enable the scheme to be submitted for outline planning.

At the time of writing, this report includes responses received to date from statutory authorities and service providers regarding their existing infrastructure. We will continue to pursue the utility companies for responses where none have been received.

This report will continue to be updated to include notes of meetings and relevant correspondence received from Utilities Companies.

2.0 OVERVIEW OF EXISTING SERVICES

In order to establish the extent and nature of the existing services, record information was requested from the various utility companies, as described within Appendix C.

Copies of all the utility company records (letters and drawings) are contained in Appendix D of this report. The utility companies concerned are:

- EDF Energy (Electricity)
- Telecommunications Service Providers
 - o British Telecom
 - o Cable & Wireless
 - o Colt Telecom Services
- Thames Water (water and sewers)
- Gas
 - o Transco (Blackwater G Ltd)
 - Southern Gas Networks Ltd

Conversations with a number of telecommunication companies have established that some companies have their plant and equipment maintained by other telecom service providers or by independent agencies;

- Cable & Wireless have an association with WS Atkins Consultants for their infrastructure.
- McNicholas Construction Services are managing agents for Colt Communications, TYCO and KPN.
- Mercury Communications now operates as Cable and Wireless

Conversations with Thames Water, British Waterways and The London Borough of Southwick has established that LBS are the owners of the area of water known as Canada Water and the Albion Channel.

2.1 ASSESSMENT OF EXISTING SERVICES

The information received from individual utility service providers have been consolidated by Hoare Lea on a single services drawing produced using urban strategies drawing as background. Some adjustments have been made to the service record drawings received from the individual utilities to avoid service routing on top of each other. This drawing is included in Appendix F.

Services that will be affected by the new development will fall into the following categories:

- Services running adjacent to the site boundary/building line.
- Services that serve the existing building within the site boundary that require isolation, disconnection and removal prior to demolition and/or construction works can commence
- Services that are routed adjacent the site boundary that will require to be relocated, temporarily diverted or enhanced protection provided to allow demolition and/or construction works to proceed
- Services that are derived from or connected to the existing building within the site boundary that serve
 other developments outside the site boundary. Such services will require to be disconnected and re-routed
 outside the site boundary before being connected to alternative sources.
- Services to be connected temporarily to the building site during construction
- New permanent services to be laid to serve the completed development

As expected, Statutory Utility companies have expressed concern for any works carried out within the vicinity of their plant. Therefore should the edge of the building or any other major construction be formed adjacent to the site boundary, the Utility companies are expected to be informed and safe working practices adopted by the contractors. Transco have stated specifically that;

- No mechanical digging should be carried out within 1 metre of a gas main once found by hand,
- No piling, pipe bursting, welding or works involving naked flames be carried out within 15 metres,
- No explosive works within 33 metres,
- No heavy machinery to cross over the line of Transco apparatus unless at agreed points.

Therefore a distance of 1000mm has been assumed as a safe working distance between any construction or piling works and the utility services. This safe-working zone may increase depending on the utility service provider's final assessment. Each utility company holds records of their services for viewing as required by the New Roads and Streets Act 1991, **however the accuracy of these records cannot be guaranteed**. All Utility companies have qualified their records and state that their drawings are for information only and exact locations might be different on site.

Assessment of existing services can be considered in three stages of detail. The first stage for investigating external services is by acquiring and compiling the record drawings from all known utility companies is the first stage, this is referred to as the desk-top study as detailed in this report. The second stage is to carry out a radar survey, which is non-intrusive but not absolutely accurate. However, it will indicate services and locations not shown on the record information. Accuracy and quality of radar surveys depend on the extent of services congestion. The third stage is to carry out trial trenches/pits which is intrusive but the information obtained from this is definite and accurate. This will be a costly exercise if carried out properly using trenches, photographic, sketch and drawings to determine depths, widths, positions and routes. This exercise would require extensive liaison with Utilities Companies.

We have only carried out the desk-top study in this report and would advise that prior to the demolition or construction works that ground radar and trail pits exercises should be undertaken accompanied by a further topographical survey of the surrounding area to accurately confirm and identify the locations, depths, widths and the physical condition of all Utilities Services within the site boundary.

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3.0 PARTICULAR UTILITY COMPANY REQUIREMENTS

3.1 EDF ENERGY

EDF have provided record drawings of their buried services and plant within the area of the new development. These drawings can be found in Appendix D of this report.

The EDF record drawings show that there are existing buried 11kV service cables crossing the B2 Parcel supplying Canada Water Tube Station. The service cables may require to be diverted or re-positioned, subject to the detailed design of the buildings and landscape on the development Parcel

Service connection cables and un-metered street lighting cables and street furniture cables are not always indicated on the EDF record plans. These cables are laid adjacent to the sites, connecting existing buildings, street lighting, telephone kiosks, road signs etc. Where required, these services should be traced using cable detectors and site surveys, cables can then be exposed by the Contractor using hand tools for subsequent diversion or disconnection.

Before digging within 1 metre of EDF cables and plant, EDF must be informed by telephone (08701 963797). EDF have stated in their covering letter that they DO NOT offer an on site cable location service to Contractors. However, EDF will attend site to identify their plant once exposed by others and to agree details of works required for the development works to progress.

For outline planning purposes we have assumed that each residential, community service and retail tenant will be served from individual metered supplies installed by the local network operator, EDF. Each of the development parcels A1,A2,A3,B1 and B2 will require a network substation on the site to provide low voltage service supplies to the consumer. Each substation would occupy a plant room space of 5m x 4m with 24 hour level access for plant and EDF personnel and with louvered openings for natural ventilation. The basis of the site loads and supply capacities can be found in Appendix A of this report.

An EDF design engineer has recently been allocated this project by the EDF major projects division, the design engineer has assessed the impact of the new development on the network infrastructure and will be developing servicing proposals for the sites. Conversations with the engineer has established that the local infrastructure does not have capacity to support a development on this scale and that new 11kV supply cables will be required from the network primary substation. A total of 3 new 11kV service cables will be required to support the development load from the existing bulk substation in Deptford approx 3.5 km from the site, new switchgear will also be required to be fitted in the bulk substation. EDF have advised a budget cost of £1.8M for the installation cost of the new service cables and switchgear and a further £60/70k for distribution substations required in each land parcel. The cost of the final connections to the residential and retail unit service connection meters will be dependant on detail design.

The new infrastructure will have sufficient capacity to support the adjacent development proposed for the land parcels C and F. The developers of Plots A1, A2, A3 ,B1 and B2 will incur the full £1.8M cost of the infrastructure upgrade that will subsequently be used to supply the later phase developments. EDF will a rebate a proportion of the Infrastructure costs to the first phase developers as and when the later developments are commissioned and constructed. This report will be updated when further information is made available by EDF.

De-regulation of the Electrical Supply Industry will enable the developer to employ Accredited Contractors registered with Lloyds of London, to undertake the contestable portion of the Infrastructure upgrade and new connection services. We would recommend that the element of contestable work within the new Electrical Infrastructure Scheme is competitive tendered between the host license Network Operator EDF and accredited Utility Contractors. The contestable work will be required to comply with the standard framework specifications published by the Energy Network Associations and EDF's requirements for adoption of the new infrastructure.

3.2 BRITISH TELECOM/CABLE AND WIRELESS

BT and Cable and Wireless have provided record drawings of their buried services and plant within the area of the new development. These drawings can be found in Appendix D of this report.

BT have ducts within the footpaths adjacent to the parcels A1, A2, A3, B1 and B2.

BT and Cable and Wireless have ducted services laid along Deal Porters Way that may require to be diverted or re-positioned subject to the detail design of land parcels G.

BT is unable to provide a service plan at this stage as the buildings are insufficiently detailed. They will require details of the proposed building layouts on the site. When the scheme is further developed and the layouts fixed.

The new comms and Broadband service ducts will be connected to the existing ducts in the public footpaths and laid along new footpaths and across new roads in the parcels to provide comms and broadband services to all residential, community and retail users. Ducts and plant would be provided free of charge by BT with BT responsible for the installation in the public footpath and the developers contractor responsible for all on site civil work on the land parcels.

3.3 WATER

Thames Water have provided details of the mains water services located within the vicinity of the site and a copy of this asset map can be found in Appendix D of this report.

The Thames water map shows that there are existing 200mm mains running in Surrey Quays Road and Needleman Street. There are no Thames Water mains indicated as running within the A1, A2, A3, B1 or B2 development Parcels and therefore it is not anticipated that any diversions will be required.

Thames Water have confirmed via email that at present their existing infrastructure has the capacity to serve the proposed development without reinforcement being needed. They have also noted that the development Parcels should all be able to be supplied from the existing carriageway. We have requested that Thames Water confirm this to us in a letter, together with budget estimates for the mains water supply and infrastructure charges for each development Parcel.

For the outline planning purposes and until the Building design is further developed we have assumed that each development parcel will have a single bulk metered water supply, which will be boosted around the development via storage tanks and a package booster set. On this basis we have estimated the likely water supply to each development parcel and this information can be found in Appendix A of this report.

3.4 DRAINAGE

Thames Water have provided details of surface and foul water sewers located within the vicinity of the site and a copy of this asset map can be found in Appendix D of this report.

Foul Water

The Thames Water map shows that there is a 150mm foul sewer in Needleman Street connecting into a 150/225mm foul sewer in Surrey Quays Road. There are two capped branches from these sewers shown, one at the boundary of the A development plots and the other at the boundary of the B development plots. Subject to detail design using these branches would be the most economical way of connecting the development to the Utility sewer.

There are no Thames Water foul water sewers indicated as running within the A1, A2, A3, B1 or B2 Development parcels and therefore it is not anticipated that any diversions will be required.

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Thames Water have confirmed, via their letter of the 13th May 2005, that the foul trunk (main) sewer infrastructure should have capacity to accept the additional foul flow from the proposed development sites.

We have estimated the foul flows the likely foul flows from each development parcel and this information can be found in Appendix A of this report.

The Infrastructure charge estimate will be included as part of the overall Thames Water Infrastructure charges discussed within section 3.3 of this report. This is because the method of calculating the charge is on a 'water in', 'water out' basis and Thames water will calculate this charge as part of the clean water application process.

To connect to the capped branches discussed above will incur a 'indirect connection charge' of £80.00 per branch, although this excludes the cost of the actual drainage works, which can be carried out by the developers own contractor. 'Direct Connections' cost £445.00 each, again with the actual drainage work by the developer.

Surface Water

The Thames Water services record drawings show that there is a 600mm surface water sewer in Needleman Street connecting into a 600/750mm surface water sewer in Surrey Quays Road. There are capped branches onto both the 'A' and 'B' sites similar to the foul sewer arrangements discussed above.

There are no Thames Water surface water sewers indicated as running within the A1, A2, A3, B1 or B2 development parcels and therefore it isn't anticipated that any diversions will be required.

In their letter of the 13th May 2005, Thames Water have stated that on new ('Greenfield') sites, surface water discharge should be restricted to 5 litres/second/hectare (pro-rata for developments less than a hectare). On a redevelopment ('Brownfield Site') the discharge should be restricted on a 'like for like' basis to match the original site. On this basis, Thames Water are treating this site as a Greenfield site, as there was no original discharge to the public sewer, (previously the site drained to the docks) and are imposing the 5-litres/second/hectare rule. We have challenged the this position with Thames Water, not on the basis of 'Greenfield' or 'Brownfield', but because the existing infrastructure appears to be designed to accommodate unrestricted flows from the 'A' and 'B' sites. In their letter of the 13th June 2005, Thames water have rejected this on the basis that further downstream, their infrastructure will not be adequate, although they have stated that 'Thames Water would only be prepared to accept a higher discharge from the sites if the developer can prove via a flood risk assessment incorporating a hydraulic model that a higher discharge would not cause flooding elsewhere'!

For the present strategy and until the building design is more fixed, we have assumed that the 5 litre/second/hectare rule will apply. Within Appendix A we have shown our estimates for the 'unrestricted flow' from each site, together with the necessary on site storage volume needed to comply with the 5-litres/second/hectare rule. The method of achieving the storage will need to be resolved once detailed consideration of the development proceeds.

Surface Water- Alternative Strategy

Given the proximity of the site to the Canada Water basin and Albion Channel, we have researched into the ownership of this water with the view to obtaining permission to the discharge of surface water into it.

We now have confirmation from the London Borough of Southwark that they are the owners and that in principle they would grant permission to discharge subject to detailed resolution as to the quality of the water discharged.

In addition to meeting whatever quality criteria LBS eventually require, there is also the question of site levels compared to the water level of Canada Water itself. As the water quality and levels cannot be determined until detailed design, we propose that this strategy be considered as a alternative 'Plan B' approach to surface water drainage and should be further investigated at the next stage of design.

3.5 GAS

Transco have pipework distribution around the site including low pressure mains, medium pressure mains and intermediate pressure mains.

Some of the distribution pipework passes within the site boundary and may require diversions subject to the detailed layouts of the buildings within the site.

Initial loadings have been based on an allowance of 100W/m², which is based on heating and hot water being derived from a gas-fired source. This will provide flexibility in building design to enable compliance with future versions of Part L. Additionally the infrastructure design assumes that each block will have a central heating plant, as this will facilitate future efficiency enhancements (e.g. CHP) more easily than a distributed gas scheme.

Transco have advised that there is a medium pressure main with sufficient capacity within 5m of the site boundary and specific reinforcement of their systems is not anticipated.

Each building will require space for gas intake/meters and central heating plant as follows:

PLOT	MAX. LOAD	METER ROOM SIZE	HEATING PLANT SIZE
A1	1,441 kW	6m x 2.5m	120m² x 4m high
A2	1,385 kW	6m x 2.5m	120m² x 4m high
A3	1,827 kW	6m x 2.5m	120m² x 4m high
B1	661 kW	5m x 2m	80m² x 4m high
B2	1,715 kW	6m x 2.5m	120m² x 4m high

For the present purposes and until the building design is more fixed we have assumed that each plot will only have one gas supply. These can be modified to suit at a later date and the overall load will not increase. The costs will increase due to the larger number of smaller supplies and meters

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APPENDIX A UTILITIES DESIGN NOTE REPORT





BL Canada Quays Ltd

AUDIT SHEET

REVISION	DESCRIPTION First Issue	DATE	ISSUED BY ESJ	REVIEWED BY GED
1	Revised issue	16 May 2005 23 rd June 2005	ESJ	GED

Utility System Design Note

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May 2005

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- 12.0 FOUL DRAINAGE

1.0 **INTRODUCTION**

The purpose of this design note is to set down the principle Electrical, Mechanical and Public Health design assumptions that form the basis of the initial enquiries with the Utility Services providers. The Utility capacity, budget costs and service strategies for Plots A and B will be based on the assessed loads using the design principles detailed in this report and the development plans listed.

The Utility Service providers will be notified of the approximate design capacities for the future plots J, C, F and G to determine the effect on the local infrastructure. Design capacities will be based on simple calculations using elemental floor loadings applied to the areas scheduled on the 26th April Masterplan, pending better and further information on the services requirements in relation to these plots.

2.0 SCHEME DESCRIPTION

The British Land/Canada Quays Ltd consortium, have been selected by Southwark Council to develop a 40-Acre site on the Rotherhithe Peninsular around Canada Water basin.

The first stages of the master plan, plots A and B, are due for submission to the planners in July 2005. This stage of the plan include approximately 1081 new homes in mixed styles and tenures on an 8-acre site.

Site A abuts the Canada Water underground station, but is clear of any structures. Site B overlooks the Canada Water basin and the Albion Channel and has an existing emergency escape for the Jubilee Station within the plot. Refer to the Appendix A for a master plan layout.

3.0 AREA SCHEDULES

The Utility Strategy for Plots A and B will be based on the area and number of Units scheduled on the Urban Strategies masterplans dated 26th April and 10th May 2005 and detailed in Table 1



Table 1 Infrastructure and Area Calculations

		Plots												Totals
		Α	В	С	F	G	J							
Use	Sub- plot	Area m2	Area m2	Area m2	Area m2	Area m2	Area m2	Total Apartments /townhouses	studio	2 room	3 room	4 room	Town- house	Area m2
Podium Parking		4740	1610	0	0	0	0							6350
Residential		46220	19440	37610	0	59730	14690							177690
Community		440	0	3540	0	0	0							3980
Office		0	0	0	12080	0	0							12080
Retail		1170	2450	4040	0	23330	0							30990
Residential defined in units	A1							253	19	199	25	10	0	
Residential defined in units	A2							167	19	125	18	5	21	
Residential defined in units	A3							300	36	240	18	6	0	
Residential defined in units	B1							105	86	12	7	0	0	
Residential defined in units	B2							256	127	102	22	5	0	
Residential defined in units	J1							129	45	72	8	4	0	
Residential defined in units	J2							112	51	52	5	4	0	
Totals								1322	383	802	103	34	21	

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4.0 **DESIGN CRITERIA/ASSUMPTIONS**

Utility loads and capacities have been developed based on the following Residential Services Specification.

Heating Gas systems only, central or individual distribution gas boilers, for compliance

with Part L 2005 Building Regulations and ECO Homes "Very Good "standard.

Hot Water Gas system with electric immersion as secondary heat source (summer only).

Cooking Electric ovens and Hobs

Cooling Natural ventilation only, no electric air conditioning/cooling units.

Car Parking Natural ventilation, no mechanical ventilation or smoke control.

Fire Protection Sprinkler system not required.

4.1 Electricity Allowances

1 Bed Studio Apartment	3.5kW
2 Bed Apartment	3.5kW
3 Bed Apartment	4kW
4 Bed Apartment	4kW
4 Bed Town Houses	4 kW
Podium	10W/m ²
Common Areas	75 W/m ²
Retail Areas	200 W/m ²
Common Landlord Areas (including Lifts)	75 W/m ²

Street Lighting Unmetered supply from utility

company

Street Furniture Unmetered supply from utility

company

4.2 Gas Allowances

Residential Units 100 W/m²

A development Gas allowance of 100 W/m² will be sufficient to support an alternative Utility strategy comprising a CHP central community-heating scheme for the development blocks A and B, providing heating and hot water to the residential apartments and providing a proportion of the sites electrical demand.

A centralised hot water buffer tank will be required within the CHP scheme to limit gas flow rates at peak demand periods.

Data/Comms Allowances

Residential Units Telephone Service provided via buried ducts and service

riser distribution all by comms provider.

The clean water inflow requirement per land parcel will initially be assessed on the basis of number of residential units, allowing an average inflow rate of 0.02l/s per dwelling for bulk supply to central storage.

Voice and facility for broadband connection per resident. Voice and Facility for broadband connection per common

area/retail area.

4.5 Surface Water

4.4

The surface water run-off rate from each land parcel will be based upon a flat rate rainfall intensity of 0.016 l/sec/m² as BS EN 752-4.

4.6 Foul Drainage

The foul water discharge rate from each land parcel will be assessed on the basis of 4000l/day/dwelling.

4.3 Water



5.0 **POWER LOADS**

Table 2 Summary of Loads for Canada Water, Parcels A1, A2, A3, B1, B2, J1 and J2

		No. of Residential	Floor	Number of	Service capacity	Estimated demand		Estimated demand	Substation
Development	Description	units	area m2	services	Amps/Phase	Kw	pf	kVA	kVA rating
Parcel A1	Residential	253		253	100A SP&N	903	0.95	951	
Parcel A1	Podium Parking		1580)1	200A TP&N	16	0.95	17	
Parcel A1	Common Landlord		770)		58	0.95	61	
Parcel A1	Retail		0			0	0.95	0	
Parcel A1	Community		345	2	100A SP&N each	26	0.95	27	
Sub-Total								1055	1500
Parcel A2	Residential	167		167	100A SP&N	680	0.95	716	
Parcel A2	Podium Parking		1580)1	200A TP&N	16	0.95	17	
Parcel A2	Common Landlord		770)		58	0.95	61	
Parcel A2	Retail		170	1	100A TP&N	34	0.95	36	
Parcel A2	Community		205	1	100A SP&N	15	0.95	16	
Sub-Total								845	1000
Parcel A3	Residential	300		300	100A SP&N	1062	0.95	1118	
Parcel A3	Podium Parking		1580)1	200A TP&N	16	0.95	17	
Parcel A3	Common Landlord		770)		58	0.95	61	
Parcel A3	Retail		640	1	300A TP&N	128	0.95	135	
Parcel A3	Community		0			0		0	
Sub-Total								1330	1500
Parcel B1	Residential	105		105	100A SP&N	371	0.95	391	
Parcel B1	Podium Parking		0)1	200A TP&N			0	
Parcel B1	Common Landlord		324)		24	0.95	26	
Parcel B1	Retail		920	1	400A TP&N	184	0.95	194	
Parcel B1	Community		0					0	
Sub-Total								610	800
Parcel B2	Residential	256		256	100A SP&N	910	0.95	957	
Parcel B2	Podium Parking		1610)1	200A TP&N	16	0.95	17	
Parcel B2	Common Landlord		648)		49	0.95	51	
Parcel B2	Retail		2310	1	1000A TP&N	462	0.95	486	
Parcel B2	Community		0					0	
Sub-Total								1512	1500
Parcel J1	Residential	129		129	100A SP&N	458	0.95	482	
Parcel J1	Podium Parking		0			0		0	
Parcel J1	Common Landlord		367	1	200A TP&N	28	0.95	29	
Parcel J1	Retail		0			0		0	
Parcel J1	Community		0			0		0	
Sub-Total								511	800
Parcel J2	Residential	112		112	100A SP&N	397	0.95	417	
Parcel J2	Podium Parking		0			0		0	
Parcel J2	Common Landlord		367			28	0.95	29	
Parcel J2	Retail		0			0		0	





Development	Description	No. of Residential units	Floor area m2	Number of services	Service capacity Amps/Phase	Estimated demand Kw	pf	Estimated demand kVA	Substation kVA rating
Parcel J2	Community		0			0		0	
Sub-Total								446	800
Totals								6309	

Notes

- 1. Assumes heating is by gas
- 2. Assumes no cooling
- 3. Natural Ventilation for parking podium areas
- 4. No A3 retail loads allowed

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GAS LOADS 6.0

Table 3 Infrastructure and Area Calculations

		Plots																Totals	
		Α	Α	Α	В	В	В	С	F	G	J								
Use	Sub- plot	Area m2	Gas Load (kW)	Annual (kWH)	Area m2	Gas Load (kW)	Annual (kWH)	Area m2	Area m2	Area m2	Area m2	Apart- ments	studio	2 room	3 room	4 room	Town- house	Area m2	
Podium Parking		4740			1610			0	0	0	0							6350	3%
Residential		46220			19440			37610	0	59730	14690							177690	77%
Community		440			0			3540	0	0	0							3980	2%
Office		0			0			0	12080	0	0							12080	5%
Retail		1170			2450			4040	0	23330	0							30990	13%
		52570			23500													231090	
Residential defined in units	A1	14,410	1,441	1,801,250								253	19	199	25	10	0		
Residential defined in units	A2	13,850	1,385	1,731,250								167	19	125	18	5	21		
Residential defined in units	А3	18,270	1,827	2,283,750								300	36	240	18	6	0		
Residential defined in units	B1				6,610	661	826,250					105	86	12	7	0	0		
Residential defined in units	B2				17,510	1,751	2,188,750					256	127	102	22	5	0		
Residential defined in units	J1											129	45	72	8	4	0		
Residential defined in units	J2											112	51	52	5	4	0		
Totals		46,530	4,653	5,816,250	24,120	2,412	3,015,000					1322	383	802	103	34	21		

Gas Loads

W/m2 (no

50 diversity) W/m2 (based on 100W with 50% Resi heating

50 Resi HWS

diversity) W/m2 (no

Retail 100 diversity)

W/m2 (no 100 diversity) Community

Annual gas requirement (based on 1250hrs at full load) = 125kWh/m2

(£112/annum for typical 60m2 apartment)



7.0 **TELECOMS**

Telecom and Data Services are based on the provision of Telephone and Broadband services to each residential dwelling, community area and Retail Space.

8.0 WATER SUPPLY

Initial water supply inflow rates are as scheduled below.

Development Land	Number Residential	Inflow Rate I/s				
Parcel	Units					
A1	253	5l/s				
A2	167	3.5l/s				
A3	300	6l/s				
B1	105	2l/s				
B2	256	5l/s				

An initial enquiry has been sent to Thames Water Utilities and we are awaiting their response.

9.0 **SURFACE WATER**

Initial surface water run-off rates are as scheduled below.

Development Land	Area	Run-off I/s	On Site Storage
Parcel			m^3
A1	3,560	57l/s	86*
A2	4,120	66l/s	99*
A3	3,730	60l/s	90*
B1	970	14l/s	21*
B2	3,350	54l/s	80*

(* Note - on site surface water requirement based a 5 litre/sec/hectare flow restriction. Storage estimates provided by Condor Products Ltd, based upon a 1 in 30 year storm return period)

An initial enquiry has been sent to Thames Water Utilities and we are awaiting their response. We are also pursuing the possibility of discharging surface water to either Canada Water or Albion Channel with the London Borough of Southwark, who we understand to be the owners.

10.0 **FOUL DRAINAGE**

Initial foul drainage discharge rates are as scheduled below.

Development Load	Number Residential	Discharge Rate I/s
Parcel	Units	
A1	253	11.6l/s
A2	167	7.7l/s
A3	300	13.8l/s
B1	105	4.8l/s
B2	256	11.8l/s

An initial enquiry has been sent to Thames Water Utilities and we are awaiting their response.

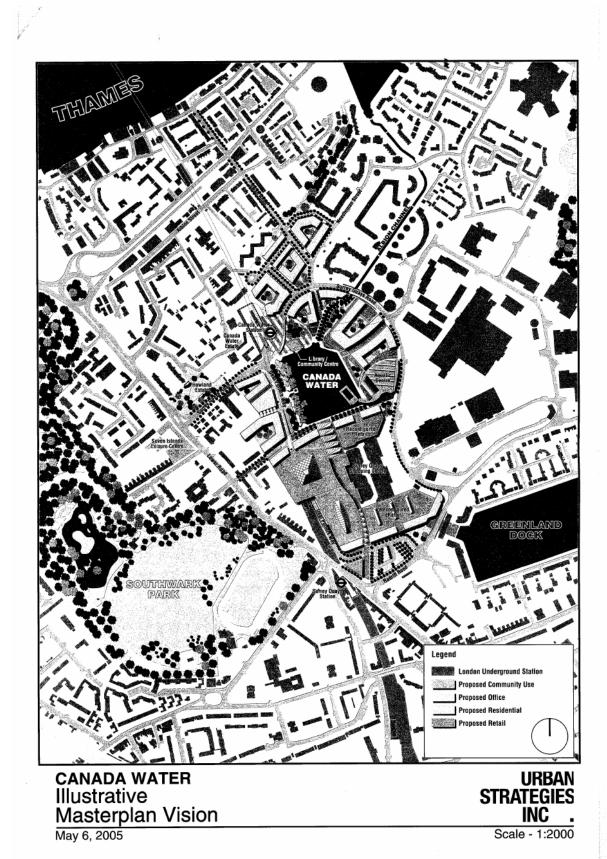
SITE UTILITIES INFRASTRUCTURE STRATEGY



APPENDIX A

Master Plan – Urban Strategies inc 6th May 2005





July 2005 ESJ/NM/0208179/11/Utilities Report REP-0208179-Site Utilities Infrastructure Strategy-ESJ-250705-1 sophie

SITE UTILITIES INFRASTRUCTURE STRATEGY



APPENDIX B – UTILITIES/UTILITIES PLANT AREA

	SERVICE	METER ROOM SIZE	PLANT AREA	NOTES
A1	GAS	6m X 2.5m	120m ² X 4m high	Each plot assumed to have a ingle metered supply with central heating plant with facility for future efficiency enhancements.
A2	GAS	6m X 2.5m	120m ² X 4m high	Each plot assumed to have a ingle metered supply with central heating plant with facility for future efficiency enhancements
А3	GAS	6m X 2.5m	120m ² X 4m high	Each plot assumed to have a ingle metered supply with central heating plant with facility for future efficiency enhancements
B1	GAS	5m X 2.5m	80m ² X 4m high	Each plot assumed to have a ingle metered supply with central heating plant with facility for future efficiency enhancements
B2	GAS	6m X 2.5m	120m ² X 4m high	Each plot assumed to have a ingle metered supply with central heating plant with facility for future efficiency enhancements
A1	ELECTRICITY	2500mm X 1500mm Service Entry and Riser For EDF Ryefield Distribution Units	5m X 4.5m	GRP or Brick built substation with supplies distributed to individual meters via a Electrical riser and distribution system
A2	ELECTRICITY	2500mm X 1500mm Service Entry and Riser For EDF Ryefield Distribution Units	5m X 4.5m	GRP or Brick built substation with supplies distributed to individual meters via a Electrical riser and distribution system.
А3	ELECTRICITY	2500mm X 1500mm Service Entry and Riser For EDF Ryefield Distribution Units	5m X 4.5m	GRP or Brick built substation with supplies distributed to individual meters via a Electrical riser and distribution system
B1	ELECTRICITY	2500mm X 1500mm Service Entry and Riser For EDF Ryefield Distribution Units	5m X 4.5m	GRP or Brick built substation with supplies distributed to individual meters via a Electrical riser and distribution system
B2	ELECTRICITY	2500mm X 1500mm Service Entry and Riser For EDF Ryefield Distribution Units	5m X 4.5m	GRP or Brick built substation with supplies distributed to individual meters via a Electrical riser and distribution system





	SERVICE	METER ROOM SIZE	PLANT AREA	NOTES
A1	COMMS	N/A	Frame Room/termination cupboard 2m X 2m	Frame room linked to Comms Riser through building. Incoming duct to be terminated in frame room.
A2	COMMS	N/A	Frame Room/termination cupboard 2m X 2m	Frame room linked to Comms Riser through building. Incoming duct to be terminated in frame room.
А3	COMMS	N/A	Frame Room/termination cupboard 2m X 2m	Frame room linked to Comms Riser through building. Incoming duct to be terminated in frame room.
B1	COMMS	N/A	Frame Room/termination cupboard 2m X 2m	Frame room linked to Comms Riser through building. Incoming duct to be terminated in frame room.
B2	COMMS	N/A	Frame Room/termination cupboard 2m X 2m	Frame room linked to Comms Riser through building. Incoming duct to be terminated in frame room.
A1	CLEAN WATER	Single and Bulk meters		Dependant on detail design. Mixed services comprising single meters to individual low rise properties and bulk meter, boosted system for medium to high rise properties. Plant area will be dependant on required storage capacity.
A2	CLEAN WATER	Single and Bulk meters		Dependant on detail design. Mixed services comprising single meters to individual low rise properties and bulk meter, boosted system for medium to high rise properties. Plant area will be dependant on required storage capacity.
A3	CLEAN WATER	Single and Bulk meters		Dependant on detail design. Mixed services comprising single meters to individual low rise properties and bulk meter, boosted system for medium to high rise properties. Plant area will be dependant on required storage capacity.
B1	CLEAN WATER	Single and Bulk meters		Dependant on detail design. Mixed services comprising single meters to individual low rise properties and bulk meter, boosted system for medium to high rise properties. Plant area will be dependant on required storage capacity.
B2	CLEAN WATER	Single and Bulk meters		Dependant on detail design. Mixed services comprising single meters to individual low rise properties and bulk meter, boosted system for medium to high rise properties. Plant area will be dependant on required storage capacity.

Notes

- Schedule applies to development plots A1, A2, A3, B1 and B2 Canada Water as Urban Strategies inc masterplan dated June 2 nd 2005.
 Refer to utility record drawings in appendix D for details of existing services.
 Landlord Plant Areas and service risers will be subject to detail design.
 Refer to Utility conditions of supply for details of all service intakes and terminations

SITE UTILITIES INFRASTRUCTURE STRATEGY



APPENDIX C – STATUTORY AUTHORITY CORRESPONDENCE STATUS/ACTION/CONTACT DETAILS

REF	ADDRESS	CONTACT	HL CORRESPONDENCE	UTILITY RESPONSE	REMARKS/ ACTION
1.0	ELECTRICITY PROVIDER				
1.1	EDF ENERGY				
	PLAN PROVISION, FORE HAMLET, IPSWICH SUFFOLK IP3 8AA TEL:08701-963797 FAX:08701-963782 www.edfenergy.com General Enquiries, London Area Tel: 08701-963090	LYNN THORN, PLAN PROVISION DL:0870 1962735	Letter dated 26/04/2005 - existing plant enquiry with search fee 58.75	Response received on 06/05/2005 with records plan and sections EDF Ref: NS/COMP LON/2005/205519	Formal letter for new supply/ load demand to be submitted following load analysis and scheme plan issue by architects.
	LONDON AREA WAYLEAVES DEPARTMENT	TEL:0208-298-8672			
	DIVERSIONS/ BUDGET ESTIMATES	TEL:08701-964599 FAX:08456-500248			
	NETWORK LOADING	FAX:08456-500248			
	NEW CONNECTIONS Metropolitan House Drakes Lane Potters Bar Hertz EN6 1AG	TEL:08456-500247	Letter dated10/05/2005 - Initial loads submitted with request for new services proposal and budget costs . Telephoned to chase up 17/05/05 and faxed copy of enquiry to project gateway fax no 0845 6500 248	Project Administrator-Nicola Martin tel no 0208 298 8612 project no 300533039. Design eng to be appointed. Further development plans requested 7th June 05 Passed on to Major Projects 15th June to Ian Washington tel 0870 196 4516	Further plans issued by letter 8th June 2005 . Plans sent by courier 14th June as posted plans not rec'd by EDF
	GENERAL INQUIRIES	TEL:08701 963090			
	SUPPLY FAULT INFORMATION (Power cut help line)	TEL:08000 280247			
	MAJOR PROJECTS NETWOKS BRANCH EDF ENERGY 255 Broadway Bexelyheath Kent DA6 8ET	Colin Terry - 07879 808089 EDF Project No confirmed as 300533039	Telephone conversation with Colin Terry on 24th June. EDF advise that 3 No. 11kV mains cabling required from Deptford s/s 3.5 km from site to reinforce the local infrastructure. Each plot will require network substations.		Email enquiry dated 13t July 2005 to Colin Terry of EDF to determine threshold of existing 11kV infrastructure capacity.





2.0	TELECOMMUNICATIONS SYSTEM PROVIDERS				
2.1	BT PLC pp 404B, TELECOM HOUSE TRINITY STREET HANLEY STOKE ON TRENT ST1 5ND		Letter dated 26/04/2005 - existing plant enquiry		
2.2	BT PLC pp 308 192 South Street Romford Essex RM1 1TR	Mark Benjamin tel 0800 7317346	Letter dated 11/05/2005 -new plant enquiry	Letter from BT Wholesale dated 18th June 2005 with record information. BT advise no anticipated problems in serving the new development and require detailed plans for network design.	
2.3	NTL TELECOM SERVICES TEL; 01924-508-297; FAX:01924508939 Plant Protection Department, NTL Tower, Jagger Lane, Emley Moor, Huddersfield, West Yorkshire HD8 9PQ Note NTL also responsible for TYCO and KPN plant	Sharon McDonald Tel:01924 508297 Fax:01924 508939 email:sharon.mcdonald@ntl.com Local Area Office Couris Clarke Tel:0207 967 4668	Fax dated 26/04/205	NTL response letter dated 04/05/2005, Ref: 168142 confirming NO Network cables within the search area, however local infrastructure may be affected. NTL have passed inquiry to local Area Office.	NFA
2.4	CABLE & WIRELESS PLANT ENQUIRIES FAX: 0870-240-3012	Cable & Wireless 2A Battersea Park Road, London SW8 5BJ Tel:01454 288808 Fax: 0870 2403012	Letter dated 26/04/2005 and Fax dated 26/04/2005	Cable and Wireless Response vis Atkins Telecoms, PO Box 290, 220 Aztec West, Park Avenue, Almondsbury. Bristol BS 32 4SY. Apparatus in the Vicinity of the proposed masterplan scheme but No Apparatus in the vicinity of Plots A and B.	Diversionary works will be necessary if Poerter Dealers way alignment is changed. Special Requirements guidance, relating to the protection of external network apparatus requested.
2.5	MCI WORLDCOM UK Field Operations Room 2.37, 2-6 St. Pancas Way London NW1 1AO Tel:0207-984-2640 Fax:0207-984-2632		Fax dated 26/04/205	MCI WORLDCOM response letter dated 04/05/2005, confirming NO Apparatus within the search area.	NFA
2.6	Fibrenet Group PLCConstruction Department, Rosalind House, Jays Close, Basingstoke, Hamps RG22 4BS	AboveNet Communications LtdAnchorage House, 2 Clove CrescentLondon E14 2BE tel 0207 531 2200	Letter dated 26/04/2005 - existing plant enquiry	Response 09/05/2005, HL Letter returned with stamped responseconfirming NO network plant within the search area.	NFA





		1	1	1	
2.0	TELECOMMUNICATIONS SYSTEM PROVIDERS				
2.7	COLT TELECOM SERVICES Colt Plant Protection Centre, c/o McNicholas Construction (COLT Managing Agents), 117 Bushey Lane, Watford, Herts WD24 7UN	Paul Turberfield Tel:0208 236 6612	Fax dated 26/04/205	Letter and Plan 13th May 2005. Plant running in ducts via Lower street to the south of The quays shopping centre. No network plant within the search area.	NFA
2.8	KPN Plant Enquiries	FAX:0208 236 6600	Fax dated 26/04/205	NTL response 28/04/2005, Ref: 0404/05with stamped response confirming KPN Apparatus within the search area.	NFA
2.9	TYCO Plant Enquiries	FAX:0208 236 6600	Fax dated 26/04/205	NTL response 03/05/2005, Ref: 2751 with stamped response confirming NO TYCO Apparatus within the search area.	NFA
2.10	AboveNet Communications UK Ltd Anhorage House 2 Clove Cresent London, E14 2BEMercury		Fax dated 26/04/205	AboveNet Communications UK Ltd letter dated 06/04/2004 confirming no apparatus in the vicinity of the proposed works.	NFA
2.11	Mercury Communications P O Box 117 129 Ashman Street Midland, MI 48640-0117	Contact via e-mail only Email: noc@mercury.net Email: support@mercury.net Tel:0207 941 2010			





3.0	WATER/ DRAINAGE				
3.1	THAMES WATER Asset Data Services, Blake House, Manor Farm Road, Reading RG2, OJN Tel:0118923-6664 Fax:0118923-6669 E: searches@thameswater.co.uk www.thames- water.com/MainsAndDrains	Oliver Arthurs; Asset Location Services Tel: 0118-9236-664 General Inquiries Tel:0845 9200 800	Letter dated 26/04/2005 - existing plant enquiry		
	THAMES WATER Developer Services Thames Water Utilities Ltd. Rose Kiln Court Rose Kiln Lane Reading RG2 0HP	Mr P. Bergin	Letter dated11/05/2005 - Initial loads submitted with request for new services proposal and budget costs	Response letter dated 13th May . Foul drainage infrastructure has capacity for the development. Surface water capacity limited to 5l/sec/hectacre. Email dated 9th June reconfirming limit on surface water discharge. Response email from TWU 9th June re-confirming limits to surface water run off from the new sites.	Letter 7th June with updated development discharge rates requesting review of the limited surface water discharge.
	Clean Water Design Thames Water, 1 Kew Bridge Road, Brentford TW8 0EF	Tel:0845-850-27777 Karl Tuchscherer	Letter dated11/05/2005 - Initial loads submitted with request for new services proposal and budget costs	Email 9th June stating capacity in the clean water infrastructure to serve the development	Email 13th June resubmitting request for scheme budget costs
	London Borough of Southwark	Adam Faulkner Max Houseago-Waterways Manager LBS	Email requesting agreement in principle to discharging surface water into Canada Water/Albion Channel and confirmation of ownership	Email 18th May with agreement subject to environmental treatment and protection from pollutants. Parking run off will be a concern	Take forward as alternative strategy to Thames Water connection. Risk that conditions may be expensive/impractical

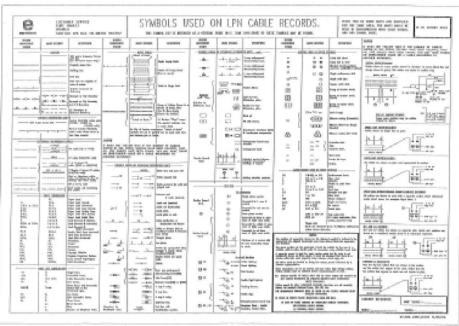




4.0	GAS				
4.1	GTC Gas Transportation Company Woolpit Business Park, Woolpit, Suffolk IP30 9UP TEL:01359-242113 FAX:01359244046	James Willsher, Planning Assistant TEL:01359-242113 FAX:01359-244046			
4.2	Transco plc/Blackwater G Ltd 2 Leesons Hill Orpington Kent BR5 2TN	Blackwater G Ltd 2 Leesons Hill Orpington Kent BR5 2TN tel 01689 881 562	Letter dated11/05/2005 - Initial loads submitted with request for new services proposal and budget costs. Enquiry acknowledged 17th May and service ref no. E3785952 allocated.	Letter Reply from Blackwater G Ltd dated 18/05/05 confirming medium pressure mains within 5m of site with sufficient capacity. Specific reinforcement is not anticipated. Diversionary work may be required. Record drawings attached.	
4.3	Fulcrum Connections (new connections)	Charlie Mutie 01293 646408		Quotation received from South East LDZ dated 13th July 2005 for new bulk supplies to plots A and B. Project reference R3792218. Contact- South East LDZ, Central Court, Station Way, Crawley, West Sussex RH10 1JA tel 01293646400	
4.4	Southern Gas Networks Diversions (address as Transco above)	Phil Charmwers 01689 881 533			



APPENDIX D – UTILITY SERVICES DRAWINGS



Advice to Civil Contractors on Avoiding Danger

From Buried Electricity Services

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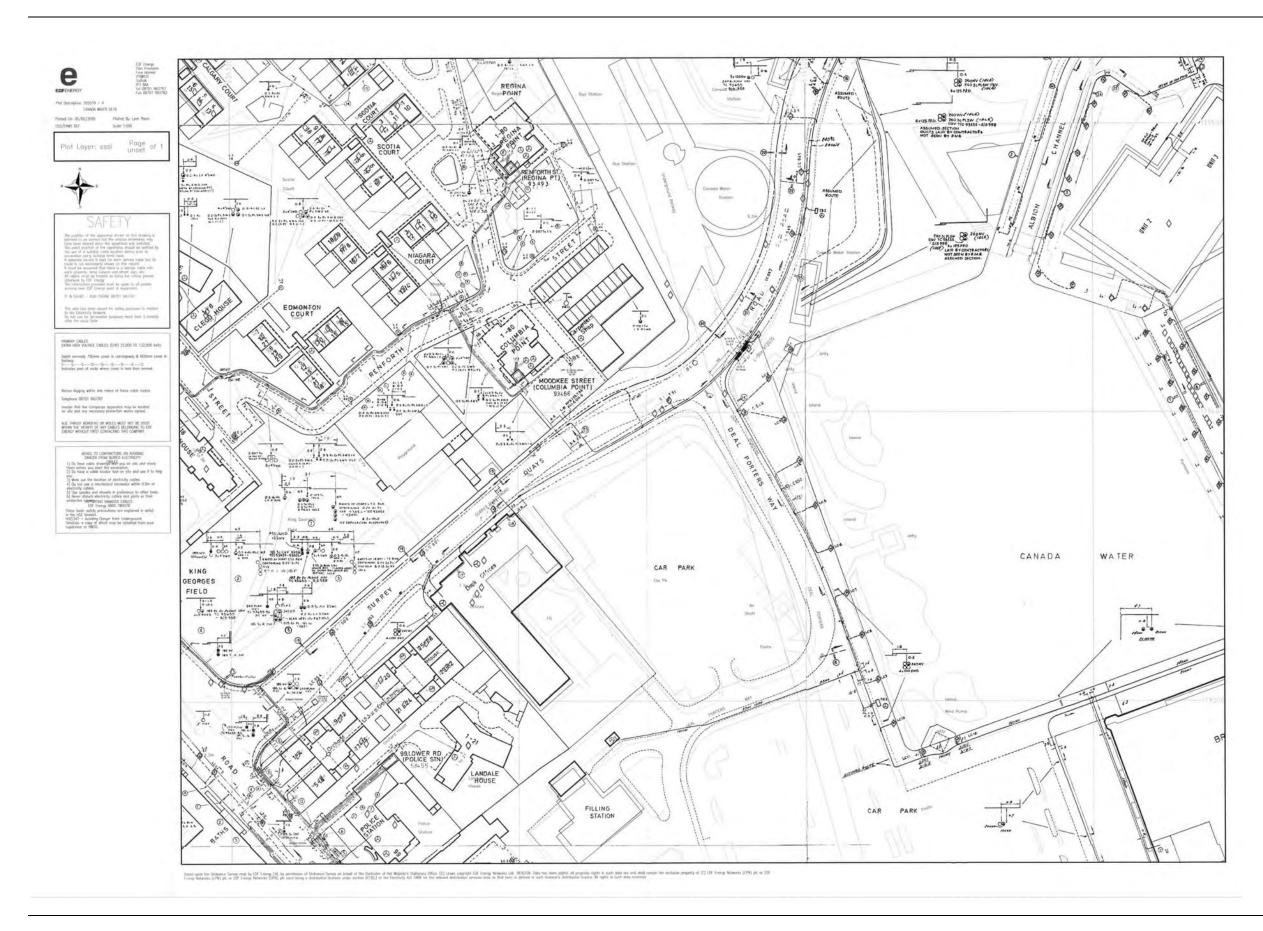
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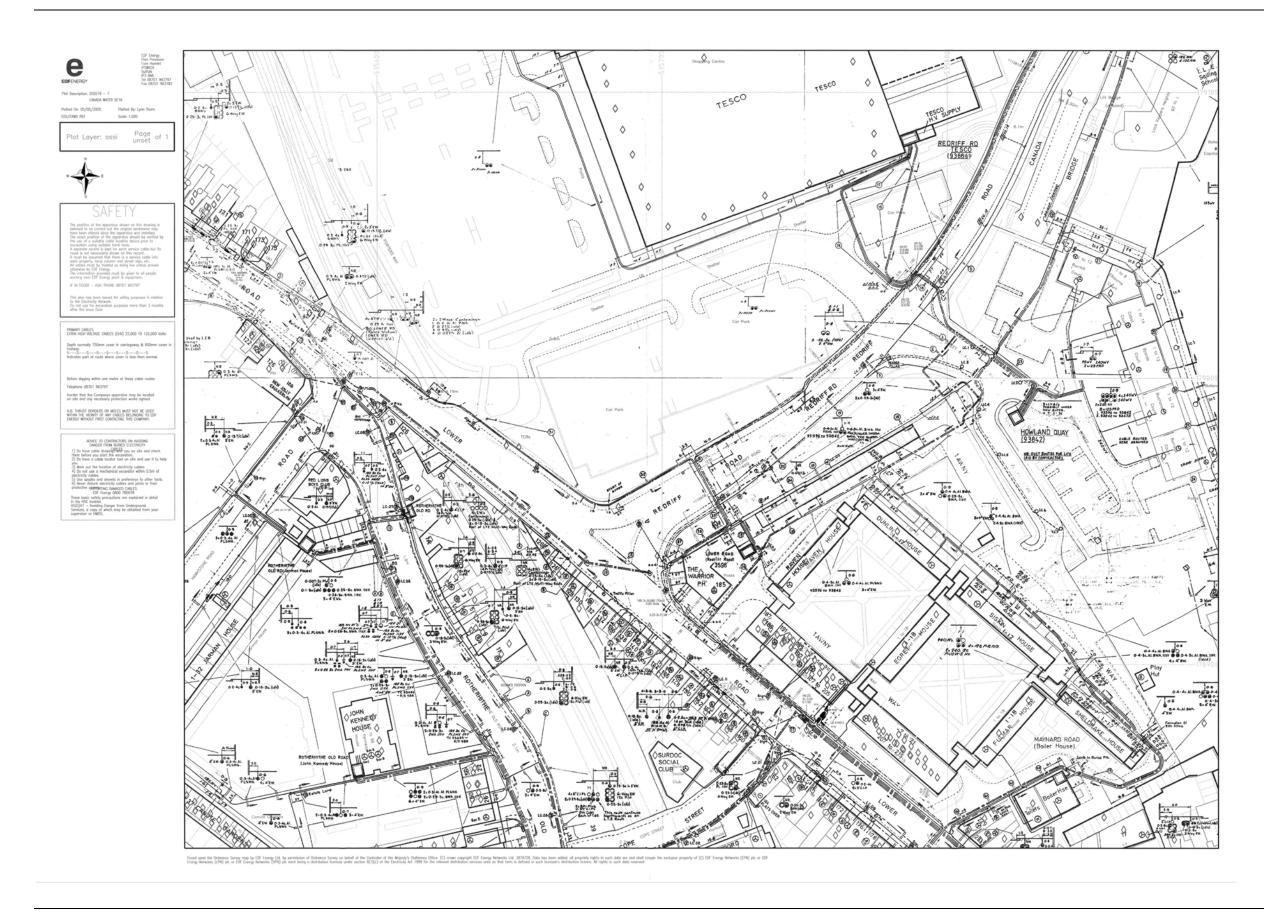
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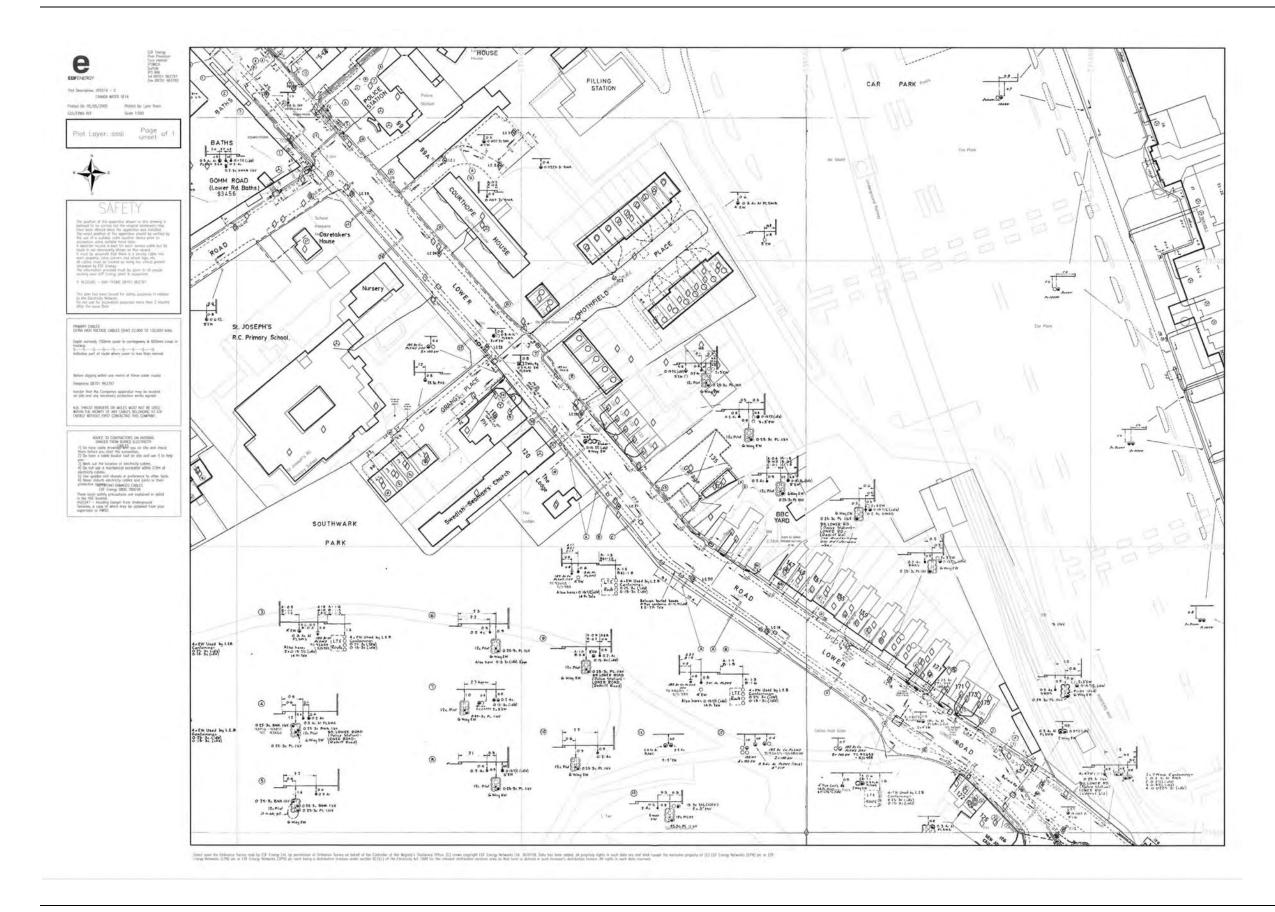








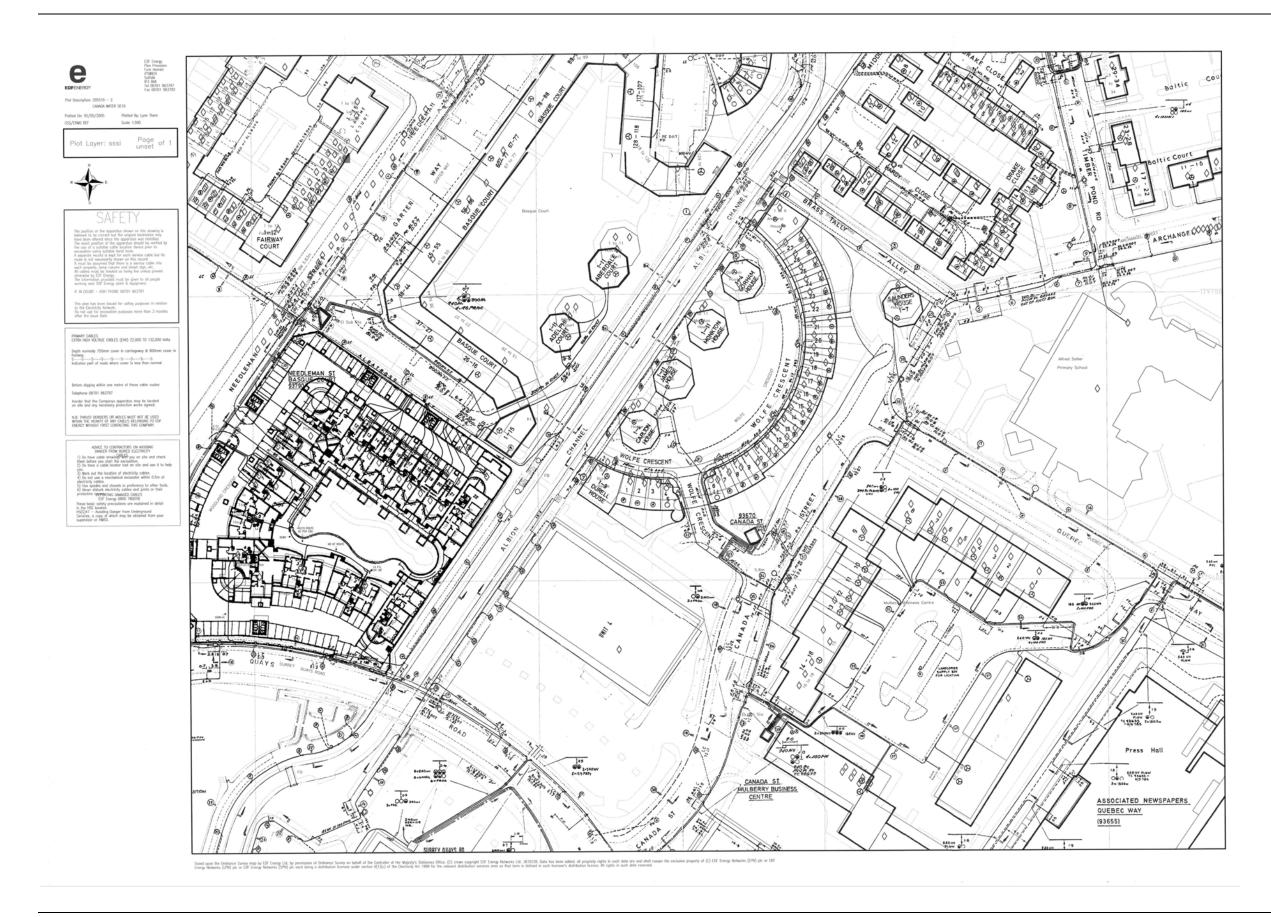




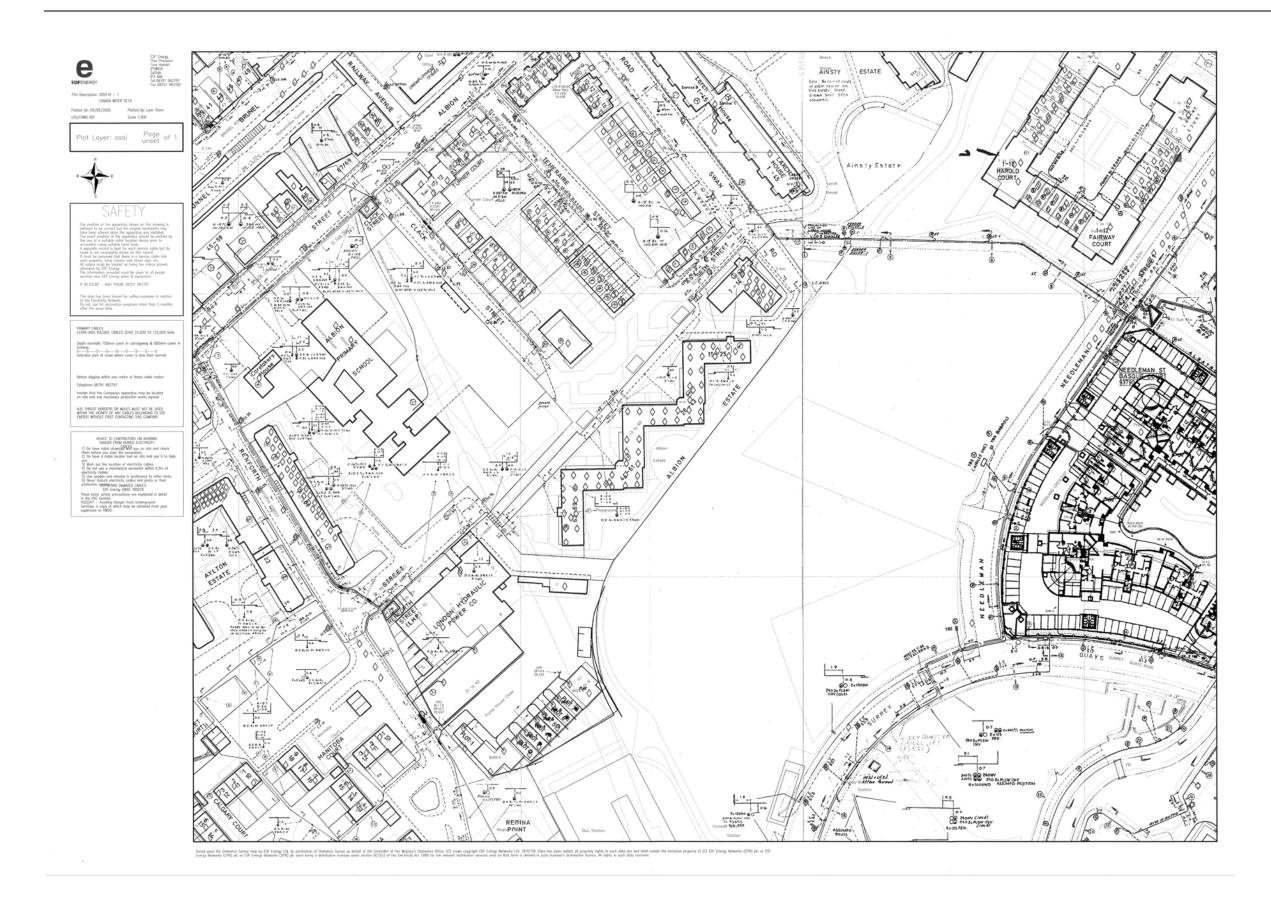






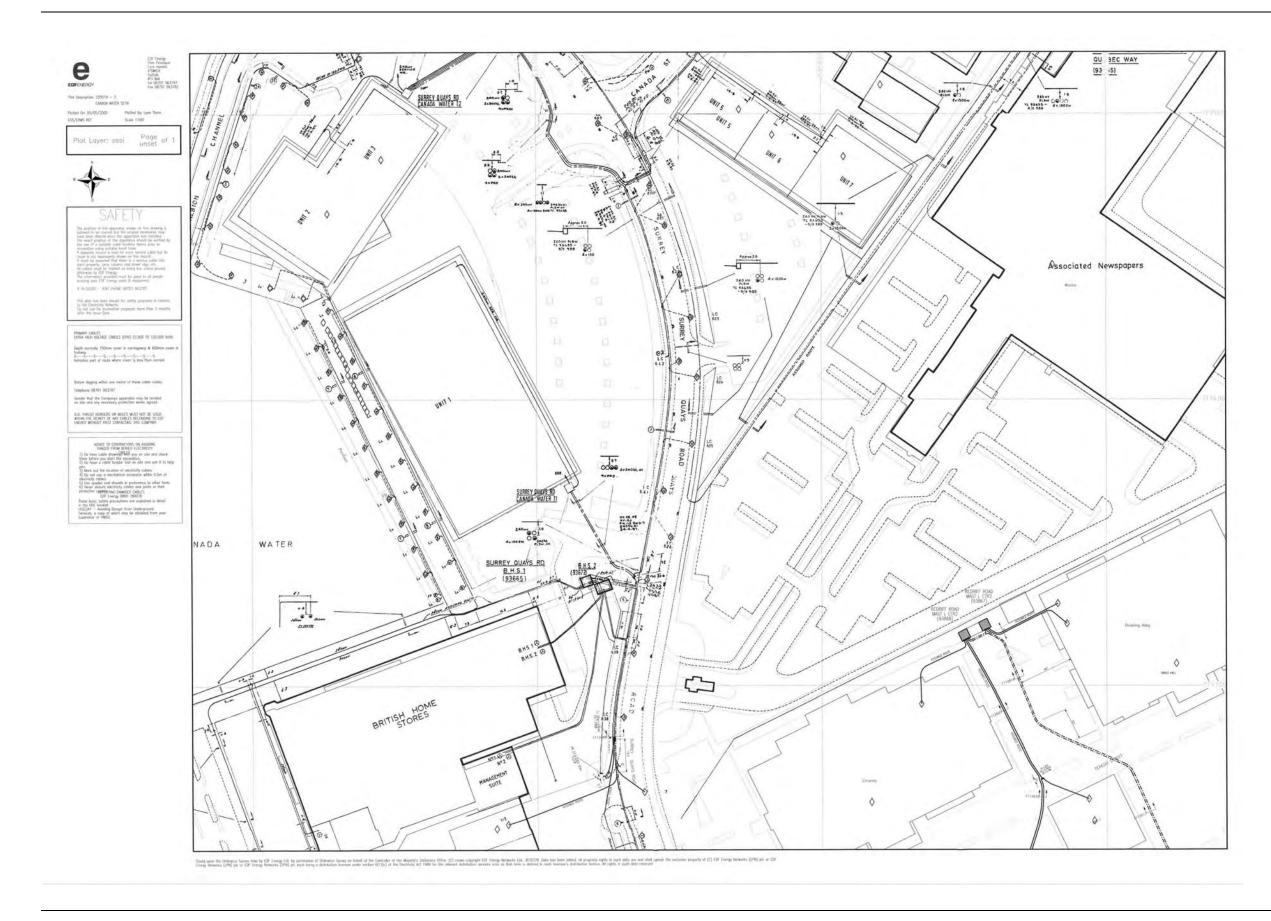




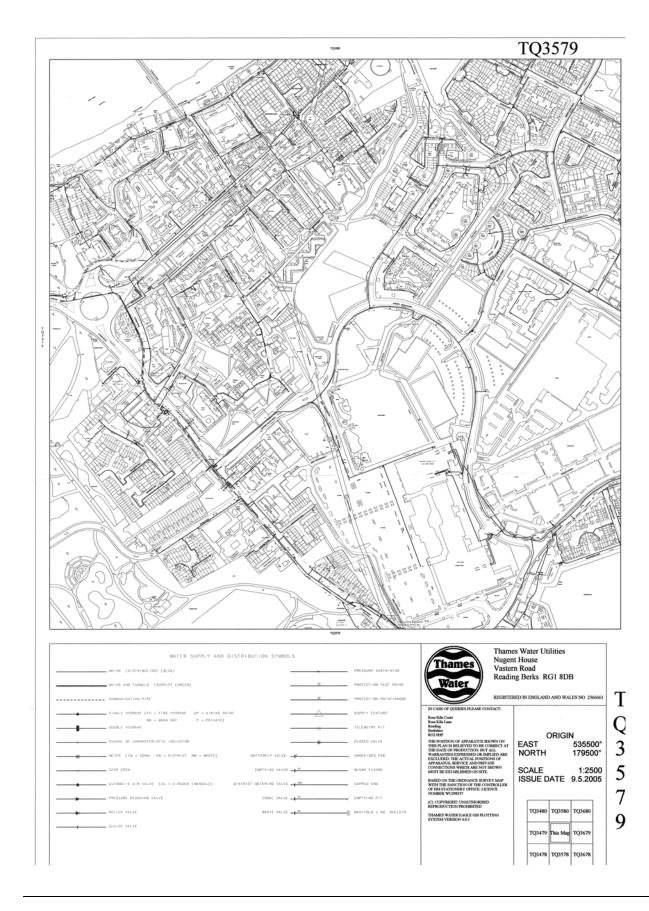


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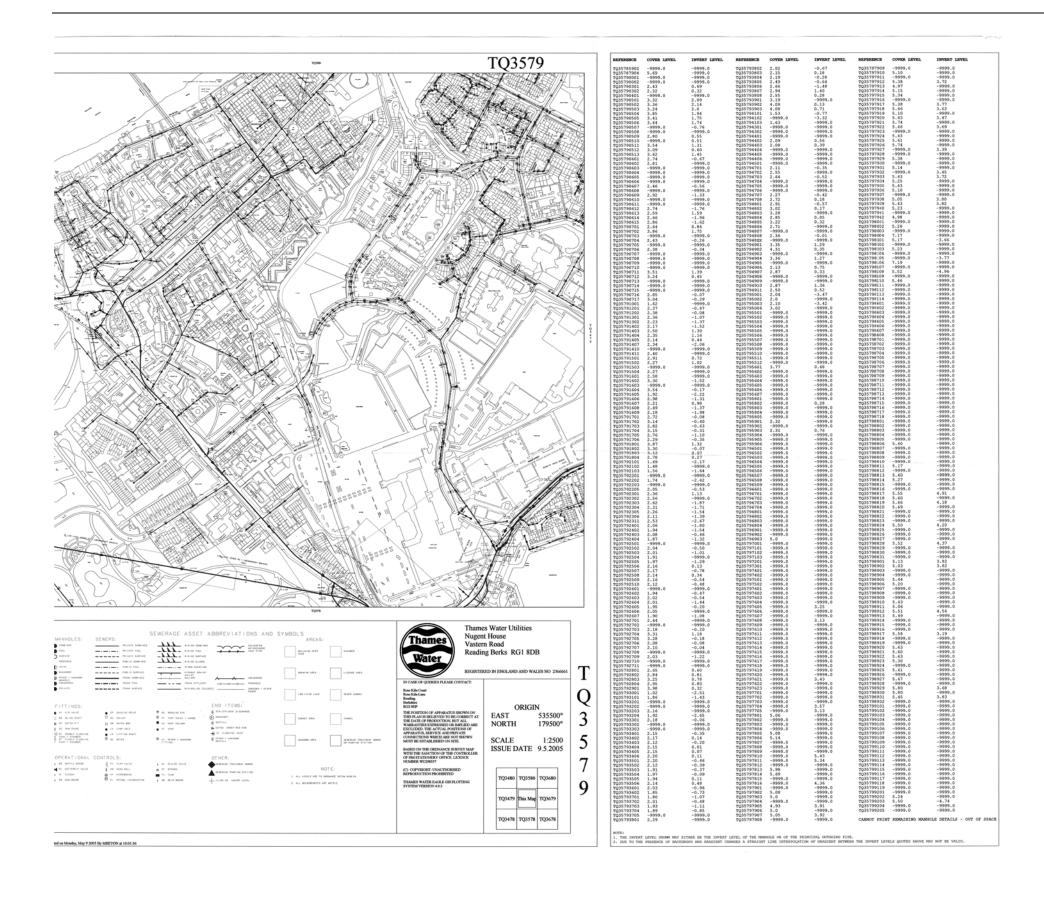




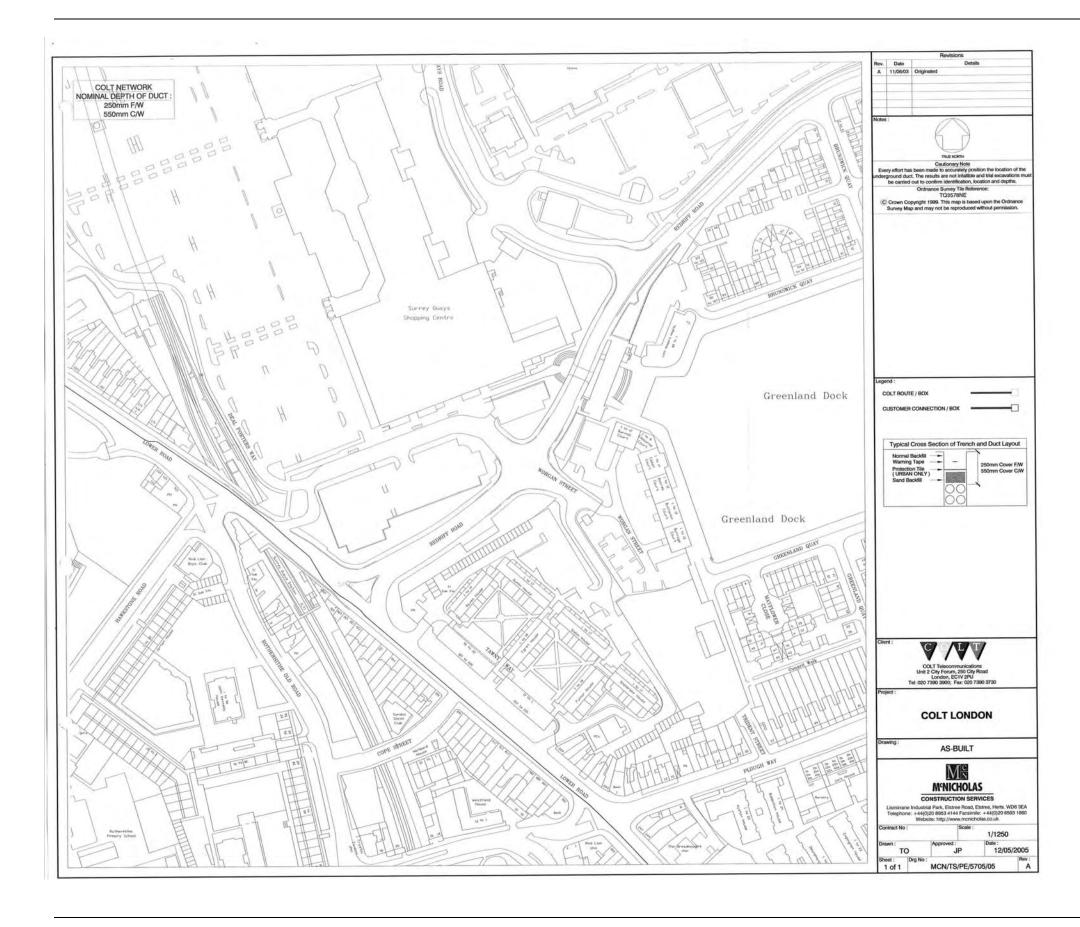




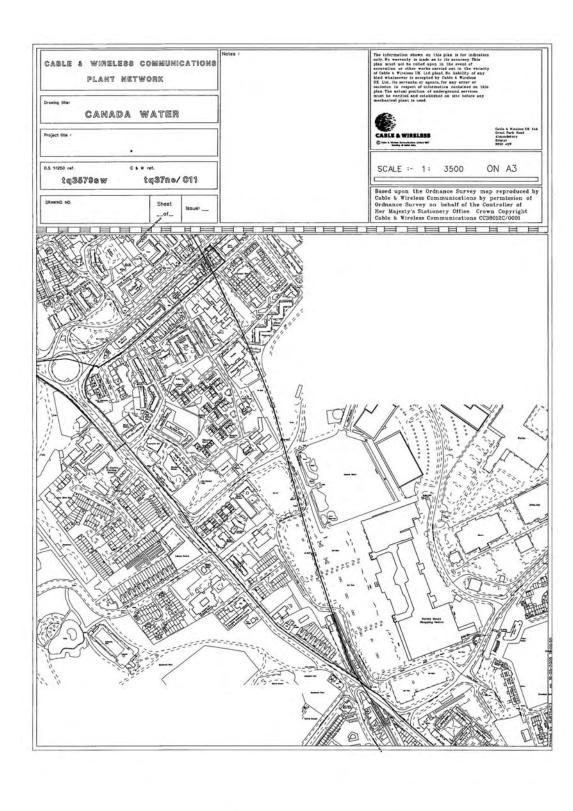




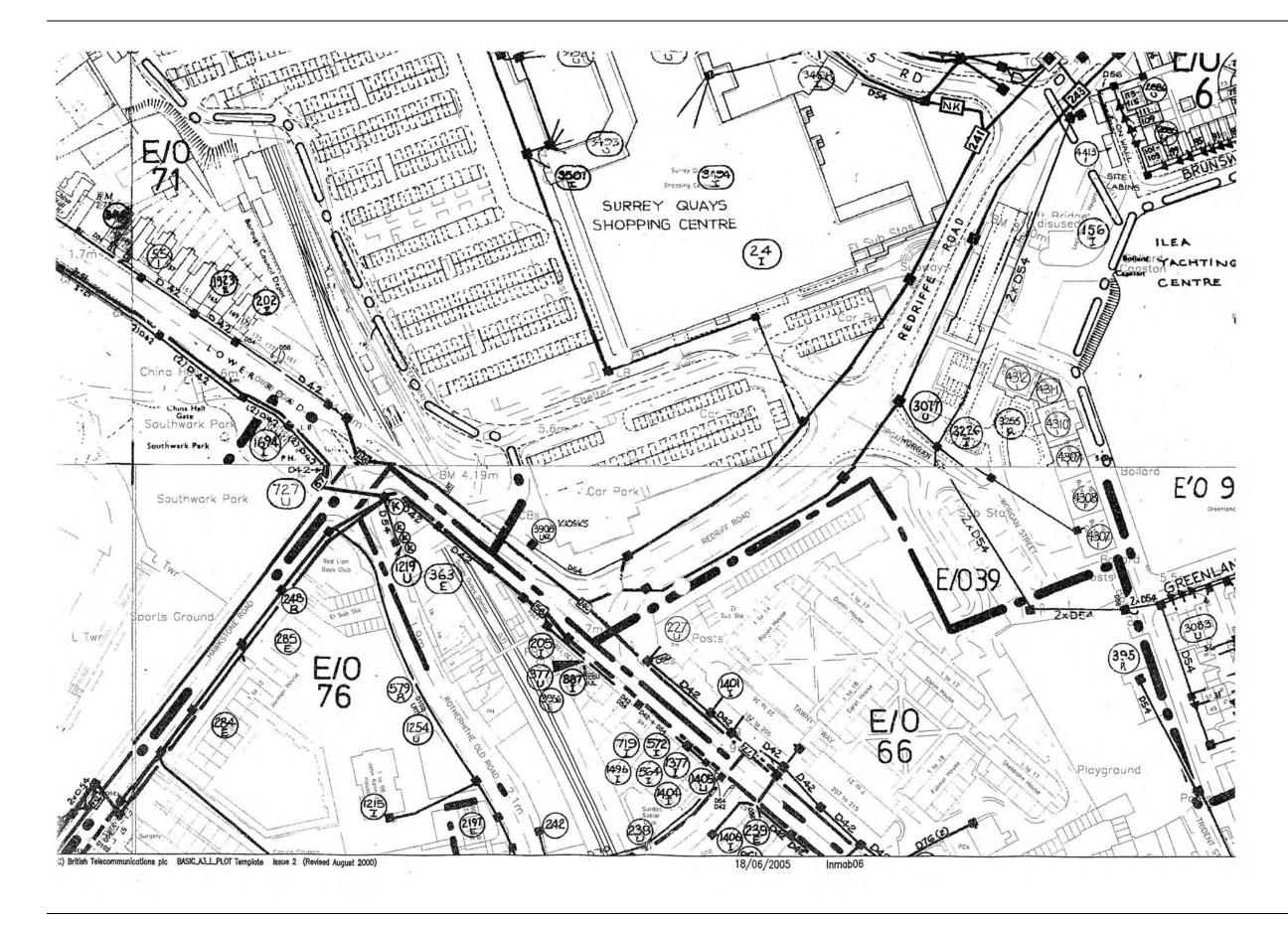




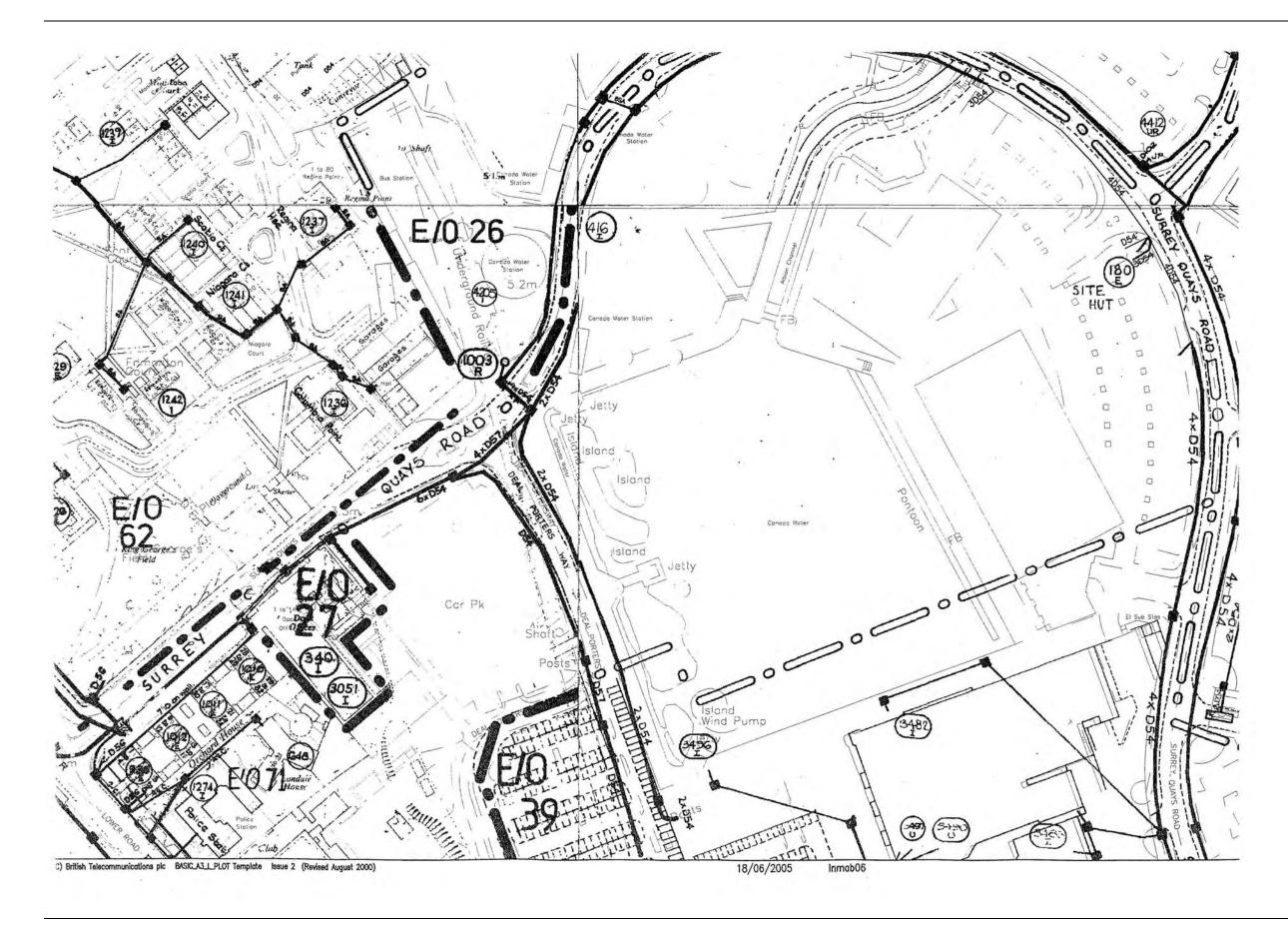




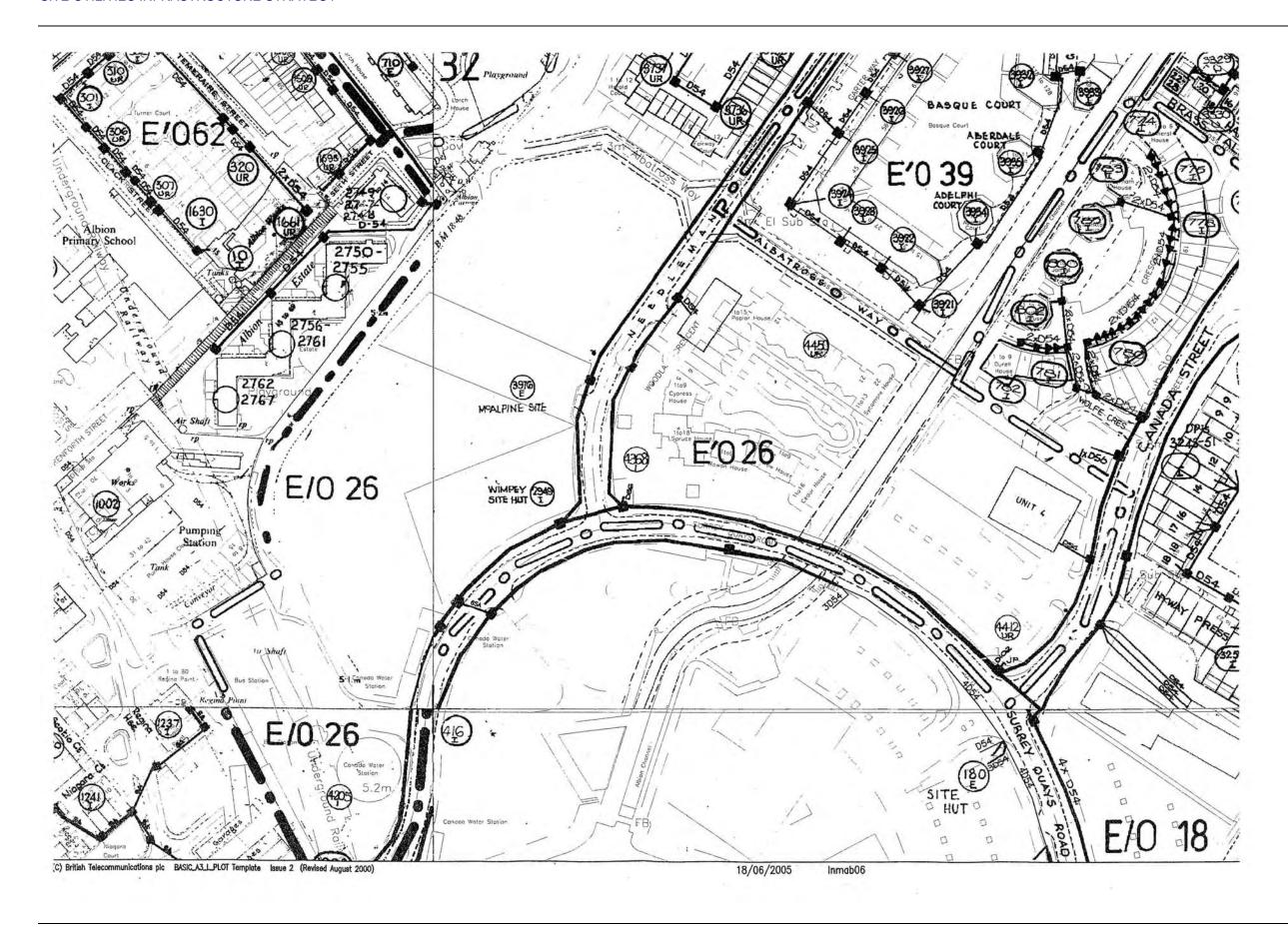




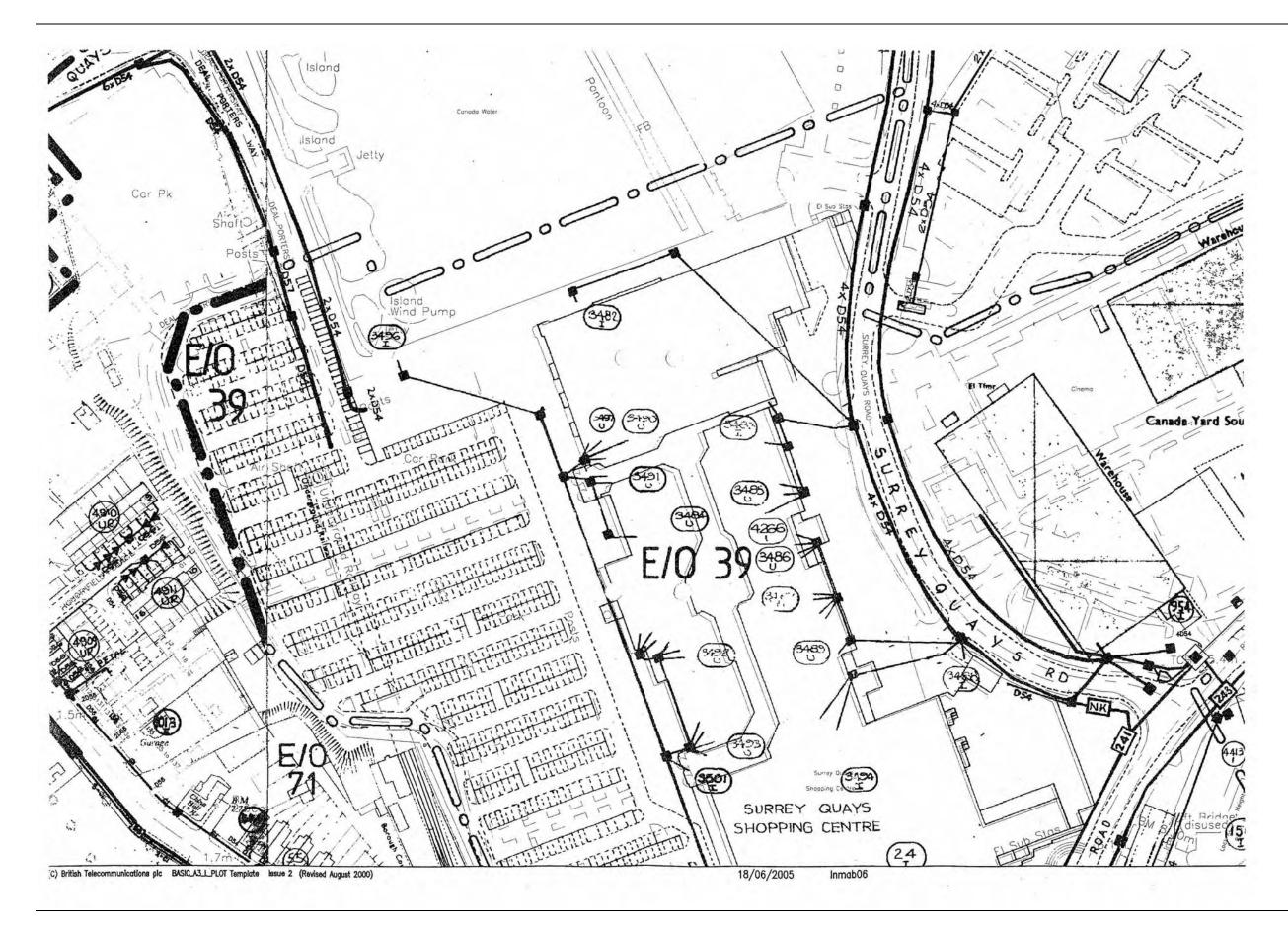




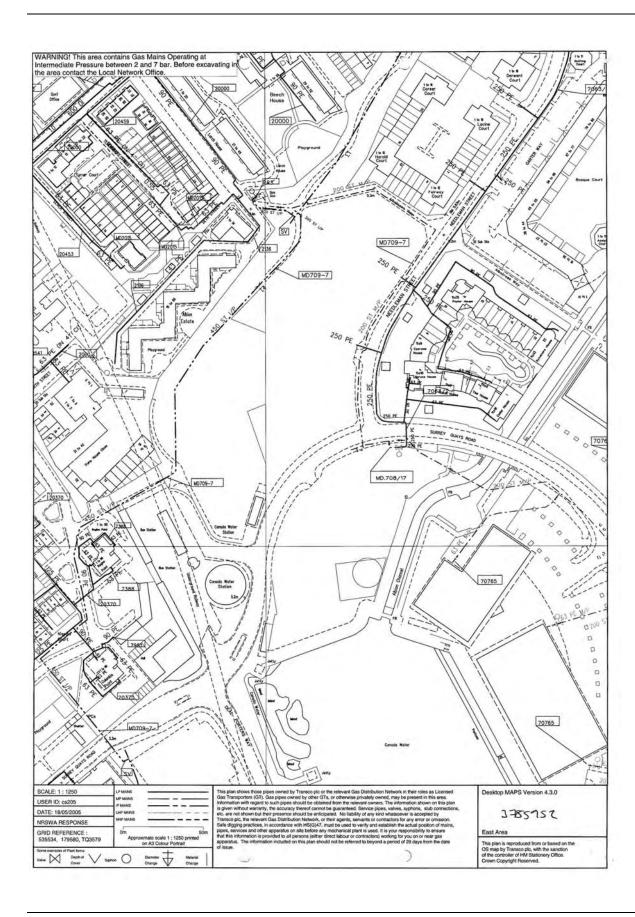










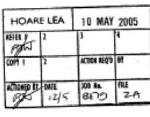


SITE UTILITIES INFRASTRUCTURE STRATEGY



ADE/237441

POW/CG/0208179/2A WHITE PETER 9th May 2005





Hoare Lea & Partners Glen House 200-208 Tottenham Court Road London WIT 7PL

Dear Sirs,

-CANADA WATER SE16

In response to your enquiry dated 26th April 2005 concerning the above property, I am able to comment as follows:-

An invoice for the sum of forty-two pounds and thirty pence (£42.30), inclusive of VAT will be forwarded to you in due course.

None of the charges made for this report relate to the provision of

Ordnance Survey mapping information.

Enclosed is a map showing the approximate positions of our water mains

and associated apparatus.

Please note that records are not kept of the positions of individual

domestic supplies.

If you need advice concerning any clean water operational issues please contact our Kew Service Desk on TEL: 0845 850 2777. Alternatively write to :

Clean Water Design Thames Water 1 Kew Bridge Road Brentford TWB OBF

Enclosed is a map showing the approximate lines of our sewers. If you have any questions regarding diversions or any other questions regarding operational issues please direct them to our service desk which can be contacted on TEL: 0845 850 2777. Alternatively write to:

Developer Services Waste Thames Water, 1 Kew Bridge Road, Brentford,



Middlesex, TW8 OEF.

Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Mater unless specifically annotated otherwise. Records of such "private" pipework are in some cases available from the building control department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Limited, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

If you require to verify the invert levels of the public sewers by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our main customer call centre number 0845 9200 800.

Your questions relating to wayleaves and easements that could affect the site could possibly be dealt with by Karen Cutler who can be contacted by telephone on 0118 373 8019.

Any general questions you have should be directed to our Customer Call Centre on 0845 9200 800 (all calls are charged at local rates).

If you have any difficulties with the map information that might have been provided for this site, please contact me, Mark Beton on 0118 964 2876.
Yours Faithfully

Mark Beton

Asset Location Services Blake House Reading



HOARE LEA 23 JUN 2005 ACTIONED BY J08 Ho. 8179

BT wholesale

newSite BT ROMFORD SOUTH TEL EXCH 192 SOUTH STREET ROMFORD

STEWART JONES

HOARE LEA CONSULTING ENGINEERS GLEN HOUSE 200-208 TOTTENHAM COURT ROAD LONDON

Your Ref: newSite BT Ref: L/BER/252

18 June 2005

RE: CANADA WATER

Dear SinMadam

Thank you for your enquiry received:- 18/06/2005
To obtain the location of the existing BT plant in the vicinity of the site please go to http://www.btwholesale.com/btplant.comtecting.stake.incoming.ngtces@bt.com for access.
The information is given for assistance and is intended for guidance only, no guarantee is given of its accuracy. The information should not be relayed to any third party.
To obtain a more precise location contact 'Dial Before You Dig' (Tel: 0800 917 3993 Fax: 020 8326 4050 e-mail: doi: 10.1007/dibt.com), whereby a BT representative will then visit the site and mark existing BT apparatus.

Where a proposed development will affect existing BT apparatus in the public highway, the cost of any protection or diversionary work required must be borne by the developer. If you require diversionary costs or similar, our Repayments group will require a clear, scaled plan of proposed works. Details can

be found at www.btmbolesgie.com/btreadworks.

BT usually meets the costs of removing or disconnecting redundant BT apparatus located within the proposed site and does not anticipate any problems in providing network services to a development on this site. BT may, if appropriate, be prepared to enter into a contract that will allow a contributory payment for installation of our plant on site.

To progress the enquiry when the Developer has obtained a contract and/or planning permission, BT would request a scaled Site Layout, Location Map and a covering letter be sent to the above address (at least 1 copy of your site layout should be free from landscaping and other services). BT would ideally require 3 months notice before work commences.

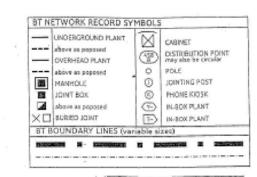
Should you require any further assistance, please do not hesitate to contact us in the newSite office, quoting the above newSite BT reference.

MARK BENJAMIN howSite BI

Tell No.: 08007317346 Pax No: 01708752403 E-Mail: newsitelst.com

Please visit our website of www.btuholasale.com/tenevis-to give feedback on our service via the HSF questionnain

British Telecommunications pic Pogistered Office Progistered Office 81 Newgate Street, London, EC1A 7AJ Ragistaned in England no. 1800000 BT is on ISO 5001 Registered Company



BT%

IMPORTANT WARNING

Information concerning the location of BT Telecommunication apparatus is given for your assistance and is intended for general guidance only; no guarantee is given of its accuracy. It should not be reflect upon in the event of escaretions or other works made near to BT apparatus which may exist at various depths and may deviate from the marked route.



160

For free on-site apparatus location and marking DIAL 0800 616955 GT

FREEFONE: 3993 Dial Before You Dig

ESJ/NM/0208179/11/Utilities Report REP-0208179-Site Utilities Infrastructure Strategy-ESJ-250705-1 sophie

43

SITE UTILITIES INFRASTRUCTURE STRATEGY



Our Reference

E3785952 ND/NM/0208179/2A

SOUTH EAST LDZ 2 LEESONS HILL ORPINGTON KENT BRS 2TN

FAO: MR NEIL DALGATY HOARE LEA (LONDON) GLEN HOUSE 200-208 TOTTENHAM COURT ROAD LONDON WIT 791, 18/05/2005 CLARE STI

CLARE STIFF 01689 881 562 01689 881 588

Fax:

Date:

Contact:

Dear MR DALGATY,

Land Enquiry Re : "CANADA WATER DEVELOPMENT, SURREY QUAYS ROAD, LONDON, SE16 7PJ

Thank you for your enquiry dated 11-May-2005, which we received on 17-May-2005.

The nearest main with sufficient capacity is 5 metres from the site boundary and it is a Medium Pressure main.

Plans Attached: YES

Specific reinforcement is not anticipated, Diversionary works may be required.

If you have any queries, please contact CLARE STIFF on the number above.

Yours sincerely.

CLARESTIFF (NETWORK ASSISTANT) for Colv. folder Corr. 0129) 606 900

HOARE LEA 19 MAY 2005

REFER 1 2 3 4

EST. 3 4

COPY 1 2 ACTION SEQUE BY

ACTION ED BY BUTE 300 No. FILE

GOT 2.4

Registered No. 5167921 Registered Address 1-3 Strand, London, WC2N 5EH

Q80045

Hoare Lea Consulting Engineers Glen House 290-298 Tottenham Court Road London WIT 7PL

> Our Ref: NS/COMP L.D/2005/205519 Your Ref:ESJ/208179/2A

Dear Mr Jones

Canada Water (leb) London SE16

Thank you for your recent enquiry regarding the above works. Please find enclosed copies of our mains records plans showing the position of our equipment within your indicated area of interest.

If you have asked questions regarding any of the following subjects a copy of your request has been sent to the appropriate department who will contact you in due course. The Plan Provision team is not able to answer these questions and any further contact should be with the department concerned.

London area Waytenves Tel. 0208 298 8672
Diversions including budgetary estimates Tel. 08701 964599. Fax. 08456 500248.
For network loading KVA etc. Send all details by Fax only to 08456 500248.
New Connections 08456 500247.
General Experience London and OSTOL 061000.

General Enquiries, London area 08701 963090 Supply Fault Information (Power cut help line) 08000 280247.

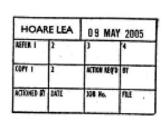
Any work near overhead plant represents a serious risk to life if safe clearances are not maintained. All work should be carried out in accordance with the Electricity at Work Regulations and the Health and Safety Executive guidance document GS6.

Work shall not commence on site until we have agreed the necessary safety precautions in writing. GS6 site visits can be arranged via our General Enquiries Line on 08701 963090.

Service cables and Street lighting cables are not always shown on plans for the London area. These cables must be assumed to exist to any nearby property or street lights/reed signs in the vicinity. The contractor is held responsible for locating these cables by hand before using any machinery and for any of the damage caused to our network. EDF Energy DO NOT offer an on site cable location service to contractors.

Yours sincerely

Lynn Thorn - Direct Line: 08701962735 Networks Service



Contact: Plan Provision, KDF Energy, Fore Hamlet, Ipowich IP3 SAA EDF Energy Networks Ltd. Registered in England and Wales Registered No 2166832 Registered office: 40 Giosmone Place, Victoria, London, SWIX ZEN

SITE UTILITIES INFRASTRUCTURE STRATEGY



HOARE LEA 2 B MAY 2005 7850 ACTION NEWS 879 24

Hoare Lea

200-208 Tottenham Court Road

London

W1T 7PL

FA.O: STEWART JONES

18 May 2005

Our Ref: NRSWA/544/284031

YourRef: ESJ/0208179/2A

Email: osm.enquiries@atkinsglobal.com

Atkins Telecoms PO Box 290 220 Aziec West Park Avenue

BRISTOL BS32 4SY

Tel: 01454 288808 Fax: 0870 2403012

Dear Sirs.

New Roads and Street Works Act 1991 C2 Plant Enquiry re: Highway Land only - Plant Affected

Thank you for your enquiry regarding works at CANADA WATER, SE16, for proposed WORKS.

Cable and Wireless UK have apparatus in the vicinity of your proposed scheme. We have enclosed plans

A copy of the current special requirements guidance process OSM.060, relating to the protection of external network apparatus when working in it's vicinity, is available upon request.

Diversionary works may be necessary if the existing line of the highway / railway or it's levels are altered, where apparatus is affected.

Where apparatus is affected and requires diversion, you must submit draft details of the proposed scheme with a written request for a 'C3 Budget Estimate' to the address below. These estimates should be provided normally within 20 working days from receipt of your written request. Please quote our reference above when requesting a C3 Budget Estimate. Failure to submit your request to the address below may lead to delays in processing it.

'C3 Diversionary Works Budget Estimates Coordinator'

Atkins Telecoms
O Box 290
D Aztec West
Park Avenue

BRISTOL BS32 45Y

Please note: If your enquiry relates to works affecting rail transport authority land, we have assumed that only apparatus in the highway may be affected. Please resubmit your angulry clearly stating that the works affect railway, in order that we can check against apparatus records for the railway.

Yours Faithfully

OSM , U.K. and Ireland

Acting as agent for and on behalf of Cable and Wireless UK

Please note. To enable us to process your application as quickly as possible, please ensure that you include a post code afor an Ordnance Servey Grid Reference. Thank you for your co-operation.

Issue 2.66 17 September 2002

You have been sending plant enquiries to the wrong address, please amend your records to the following:

ATKINS NRSWA DEPARTMENT **WORKING ON BEHALF OF** CABLE & WIRELESS UK.

PLEASE NOTE OUR NEW TELEPHONE NUMBER: 01454 288808

ADDRESS:

ATKINS OSM Plant Enquiry Team

Working on behalf of Cable & Wireless UK

PO BOX 290

220 AZTEC WEST

ALMONDSBURY

BRISTOL

BS32 4WE

FAX:

0870 240 3012

EMAIL: OSM.ENQUIRIES@ATKINSGLOBAL.COM

USE OF OTHER NUMBERS MAY DELAY OR PREVENT AN EFFICIENT RESPONSE TO YOUR ENQUIRY

THE PROVISION OF OS GRID REFERENCES AND/OR POST CODES WILL ASSIST US IN A PROMPT RESPONSE

SITE UTILITIES INFRASTRUCTURE STRATEGY



Our Reference

: R3792218

Your Reference : ESJ/NM/0208179/2A

FAO: MR STEWART JONES HOARE LEA (WIT) GLEN HOUSE 200 TO 208 TOTTENHAM COURT ROAD LONDON W1T 7PL SOUTH EAST LDZ CENTRAL COURT STATION WAY CRAWLEY WEST SUSSEX RH10 1JA

Date: Contact: Tel:

Fax:

13/07/2005 CHIRAG MODI 01293 646400

01293 646611

Dear MR JONES,

Re: NEW CONNECTIONS AT, CANADA WATER DEVELOPMENT, SURREY QUAYS ROAD, LONDON, SE16 7PJ

I am pleased to provide you with a Quotation for Works based on the Siteworks Terms referred to below. Your request for these works was received on 22-Jun-2005.

The terms which apply to these works are the Siteworks Terms for Below 7 Barg Infrastructure Works(Version 1.0), and the relevant Annex for the purposes of the Siteworks Terms in respect of these works shall be Annex 1.

Please note, the quotation attached does not include for the provision of installation of gas meters. In order to request supply meter equipment you will need to contact a licensed gas shipper or supplier. A list of gas shippers is available from the Office for Gas and Electricity markets (OFGEM).

This quotation is produced on the basis, and is conditional upon the assumptions set out in the accompanying documentation being correct. Your acceptance of this quotation will be taken to mean that you also accept that the stated assumptions are correct. If it is later determined, by either party prior to works commencing on site, that any stated assumption is significantly incorrect, Southern Gas Networks Limited will determine whether the quotation shall be varied or withdrawn. Works will only then commence if any variation is agreed in line with the relevant Siteworks Terms.

Where Southern Gas Networks Limited carries out reinstatement within private property, it cannot guarantee to permanently reinstate specialist surfaces, e.g. a mosaic, specialist concrete surface, weathered stone flags etc., or replace growing plants which have been affected by the works.

To accept the quotation, please complete the enclosed Acceptance and Payment Agreement Form and return it to the address as specified.

For details of payment please refer to the attached payment Agreement Form.

Please note that this Quotation is valid for 90 days from the above date.

It may be possible to obtain competitive quotations from other Public Gas Transporters for the provision of this work. Please contact the Office for Gas and Electricity Markets for further details.

Our operational contact who will coordinate works for this development is on telephone number:

CHIRAG MODI (DESIGN & QUOTE ASSISTANT)

ours sincerely

HOARE LEA 19 JUL 2005

REFER 17 2 M7. 3 4 POST ACCEPTANCE
COPY I 2 ACTION REQ'D BY DAN HEWETT

ACTIONED BY DATE JOB No. FILE
STAP 2A. DETORN TO EST

Southern Gas Networks Limited Registered No.5167021 Registered Address 55, Vastern Road, Reading, Berks RG1 8BU

QS0259

Infrastructure Quotation Quotation Acceptance & Payment Agreement Form

Date: 13-Jul-	2005	Our Project Ref. No	R3792218
Customer Name	: HOARE LEA (WIT)	Customer Ref. No.	ESJ/NM/0208179/2
works detailed th	ehalf of my company, HOARE LEA (WIT), th herein, subject to relevant Siteworks Terms o additional terms and conditions (other thar	as set out in the Quotation and hereby cer	tify on behalf of my
detailed therein i	half of my Company, HOARE LEA (WIT), the is acceptable to my Company provided that is as set out in the Quotation are modified by	(in additions set out in the Quotation (if any	()) the relevant
(* Delete as app	ropriate)		
Certification (in accordance w	None Required / Enclosed / Anticipated a with the relevant Contract)	vailable/ (delete as appro	opriate)
Commencemen	at Earliest date site ready for work to comme Anticipated Date Gas Required on Site		
Site Contacts(s)	to arrange commencement date:		
1. Name:	Tel:	Fax:M	obile:
2 Name:	Tel:	Fax:Mo	bile:
Please forward	Certificate of Completion to(if different fro	om enquiring customer);	
Name(if different	t to first name above):		
Address:			
	is the sum of £ 32,522.40 is payable to Sou erenced quotation for the conduct of works d		EA (WIT) on acceptance
	above, I confirm that my Company, HOARE ks Terms applicable at the date of and amer		nection with the
I confirm my und and that before	derstanding that the works do not include the gas can flow I will need to make additional a	e design, procurement or installation of any and separate arrangements for a meter to b	Supply Meter Installation be installed.
Signed on behalf	f of HOARE LEA (WIT) :		
Please print Nan	ne :		
If you are signing your job title (if n	g this acceptance on behalf of a business, coot leave blank):	ompany, local authority or government bod	ly, please provide
Data: / /			

Southern Gas Networks Limited Registered No.5167021 Registered Address 55, Vastern Road, Reading, Berks RG1 8BU

QS0259

Limited :





Infrastructure Quotation and Proforma Invoice Information

Customer Reference No: ESJ/NM/0208179/2	Our Reference No : R3792218				
Customer Name: HOARE LEA (WIT)	Our Division : SOUTH EAST LDZ				
Date of Request: 22-Jun-2005			Date of Quotation: 13-Jul-2005		
Site Details :			Quotation Valid until: 11-Oct-200)5	
Site Name : NEW CONNECTIONS AT			The United States of the Control of		
Site Address: CANADA WATER DEVELOPM	MENT, SURREY	QUAYS RO	AD,LONDON,		
Site Post Code : SE16 7PJ				-	
Full Description of works to be completed by S From existing 250mm L/P main , lay new 125/ Single services. All services terminating @site	90mm PE L/P r	mains on foo	tpath, from new main lay 4 x 90mm	PE, 1 x 6 2" cappe	63mm PE ed valves.
Costing Details :					
Total Labour: £ 24908.31			Labour Management :	54.	0 %
2 2100101			Labour Management : Materials Management :	54. 10.5	
Total Material : £ 2623.40	£	27531.71		10.5	0 %
Total Material : £ 2623.40 Total Material & Labour	£	27531.71 146.93	Materials Management :	10.5	0 %
Total Material : £ 2623.40 Total Material & Labour Other : Design Charge		2010/00/07/20	Materials Management :	10.5	0 %
Total Material : £ 2623.40 Total Material & Labour Other : Design Charge Other :	£	146.93	Materials Management :	10.5	0 %
Total Material : £ 2623.40 Total Material & Labour Other : Design Charge Other : Meter Housing :	£	146.93 0.00	Materials Management :	10.5	0 % s)
2 2100101	£	0.00 0.00	Materials Management : (Inclusive of work managem	10.5	0 %

Details of the reinforcement costs are shown in the attached Reinforcement Scheme Information Template.

This is provided for Information Only.

Additional Information						
Southern Gas Networks Limite	d to Excavate :	No				
Daily Liquidated Damages Ame	ount: £100.00	Liqu	uidated Damage	s Cap: £5000.00		
Stage Payments: No (Please	e see attached Pa	lyment form for d	letails)			
puthern Gas Networks Limite	d Site Visit :	No	1, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,			
Meter Inlet Pressure : 21 mB	ar					
Total Number Of Properties :	5					
Property Type/Unit :	Plot-A1	Plot-A2	Plot-A3	Plot-B1	Plot-B2	TOTAL
Annual Quantity kWh:	1801250	1731250	2283750	826250	2188750	0004050
Supply Hourly Quantity kW	1441	1385	1827	661	1751	8831250 7065
Latest Date for Certification :	Not applicable					
Lead time from Certification / A	Acceptance to Phy	sical Commence	ement: 30	Days		
Lead time from Physical Comm	nencement to Sub	stantial Complet	tion: 5	Days		
Lead time from Substantial Co	mpletion to Comp	letion: 7	Days			
Works to be carried out by Cus		xcavation, back-f			ındary.To provide	suitable

QS0254

QS02

It may be possible to obtain competitive quotations from other Gas Transporters for the provision of this work. For further details please refer to the Office of Gas and Electricity Markets (Ofgem) by accessing their Internet site at www.ofgem.gov.uk or by contacting them direct by telephone on (0207) 901 7000.

This Quotation is for Mains and Services only (excluding meters) and is subject to relevant Siteworks

Terms as set out in the Quotation

SITE UTILITIES INFRASTRUCTURE STRATEGY



Customer Reference Number: ESJ/NM/0208179/2A Our Reference Number: R3792218

SOUTHERN GAS NETWORKS LIMITED OPERATES A SCHEME WHEREBY CUSTOMERS RECEIVING INACCURATE QUOTATIONS MAY RECEIVE COMPENSATION IN RESPECT OF THE INACCURACY. SHOULD YOU CONSIDER THAT YOU NEED TO MAKE A CLAIM PLEASE CONTACT THE ASSET CUSTOMER SERVICE DESK FOR A FORM ON TELEPHONE No. 01689 881502 OR BY FAX ON 01689 88100

Section From	Section To	Diameter	Length	Pipe Specification	Method of Lay	Surface	Jointing
Α	A1	125.00 mm	33.8 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion
A1	В	90.00 mm	33.2 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion
С	D	90.00 mm	2.2 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion
D	E	90.00 mm	6 m	Mdpe Sdr17	Open Cut Network excavate	Surfaced Rd Tarmac	Electro-fusion
E	F	90.00 mm	6.1 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion
F	G	90.00 mm	1.4 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion
٠				Single Service@A2			
Н	t	90.00 mm	3.5 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion
Ĺ	J	90.00 mm	7.2 m	Mdpe Sdr17	Open Cut Network excavate	Surfaced Rd Tarmac	Electro-fusion
J	К	90.00 mm	3.5 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion
ķ	L	90.00 mm	20.8 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion
L	М	90.00 mm	1.7 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion
•				Single Service@A3			
N	0	90.00 mm	2.2 m	Mdpe Sdr17	Open Cut Network excavate	Surfaced Rd Tarmac	Electro-fusion
0	Р	90.00 mm	7.5 m	Mdpe Sdr17	Open Cut Network excavate	Surfaced Rd Tarmac	Electro-fusion
Р	Q	90.00 mm	3.6 m	Mdpe Sdr17	Open Cut Network excavate	Unmade and Cultivated	Electro-fusion
Q	R	90.00 mm	4.4 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion
R	s	90.00	1.9	Mdpe Sdr17	Open Cut Cust	Open Trench	Electro-fusion

		mm	m		excavate					
				Single Service@A4						
т	U	63.00 mm	1.2 m	Mdpe Sdr11	Open Cut Network excavate	Footway	Electro-fusion			
U	V	63.00 mm	2.5 m	Mdpe Sdr11	Open Cut Cust excavate	Open Trench	Electro-fusion			
*				Single Service@A5						
х	Y	90.00 mm	1.3 m	Mdpe Sdr17	Open Cut Network excavate	Footway	Electro-fusion			
Y	z	90.00 mm	2 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion			
) Z	Z1	90.00 mm	2 m	Mdpe Sdr17	Open Cut Cust excavate	Open Trench	Electro-fusion			
Connecti	ion Type :		1 x 250mm Ins	sert Tee from Ex 250mm L/	P main @ Footpath in	n SURREY QU	AYS ROAD			
	Termination	Diameter :		LP capped c/v's.			110110110,			
Governo	r Required :		No							
Governo	r Type :		n/a. If the proposed your revised m	d location, is inappropriate theter location.	hen you will need to re	e-submit a new r	equest, specif			
Governo	r Configurat	ion :		sued under Southern Gas N			nditions" locat			
Governo	r Housing:		n/a	n/a						
Type of N	Meter box(s)	/Housing.	5 x Kiosks.							
Meter Lo	cation.		It is the end us	Per Plan/request. sers responsibility to have the	ne suitability of the pro	posed meter loc	ation assesse			
ineering Difficulties.			Sensure meter positions comply with Industry Standards.2)Road crossing involved & traffic control will be required.							
Assumptions.			1)Fulcrum connections to do all excavations & reinstatement in public .2) Standard design pressures have been used, refer to www.transco.uk.com.3)Assume all meter positions are external,customer provide suitable meter housing.4)*.							
Easements.			Providing new Mains are laid within carriage ways, drive ways & permanent footpaths, easements will not be required. If Easements are required, additional costs (and possible time delays) may be incurred by the developer.							

CONFIDENTIALITY

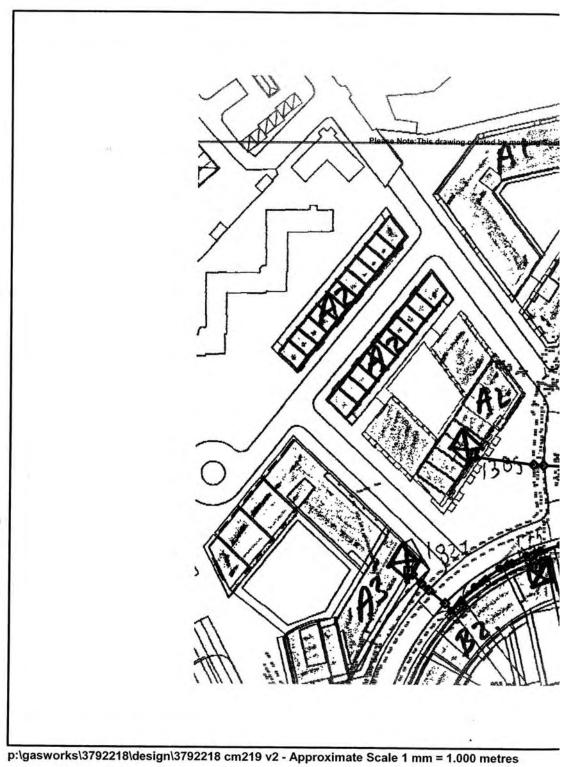
THE INFORMATION IN ANY PLAN PROVIDED WITH THIS QUOTATION IS THE PROPERTY OF SOUTHERN GAS NETWORKS LIMITED AND IS TO BE HELD STRICTLY IN CONFIDENCE BY THE RECIPIENT. NO COPY IS TO BE MADE WITHOUT THE WRITTEN PERMISSION OF SOUTHERN GAS NETWORKS LIMITED.

DISCLOSURE OF ANY SUCH INFORMATION IS TO BE MADE ONLY TO THOSE EMPLOYEES OF THE RECIPIENT WHONEED TO USE THE INFORMATION AND IT IS THE RESPONSIBILITY OF THE RECIPIENT WHO NEED TO USE SUCH INFORMATION TO BIND ANY SUCH EMPLOYEES.

QS025

QS0254









APPENDIX E SCHEDULE OF SERVICE DIVERSIONS/RISKS

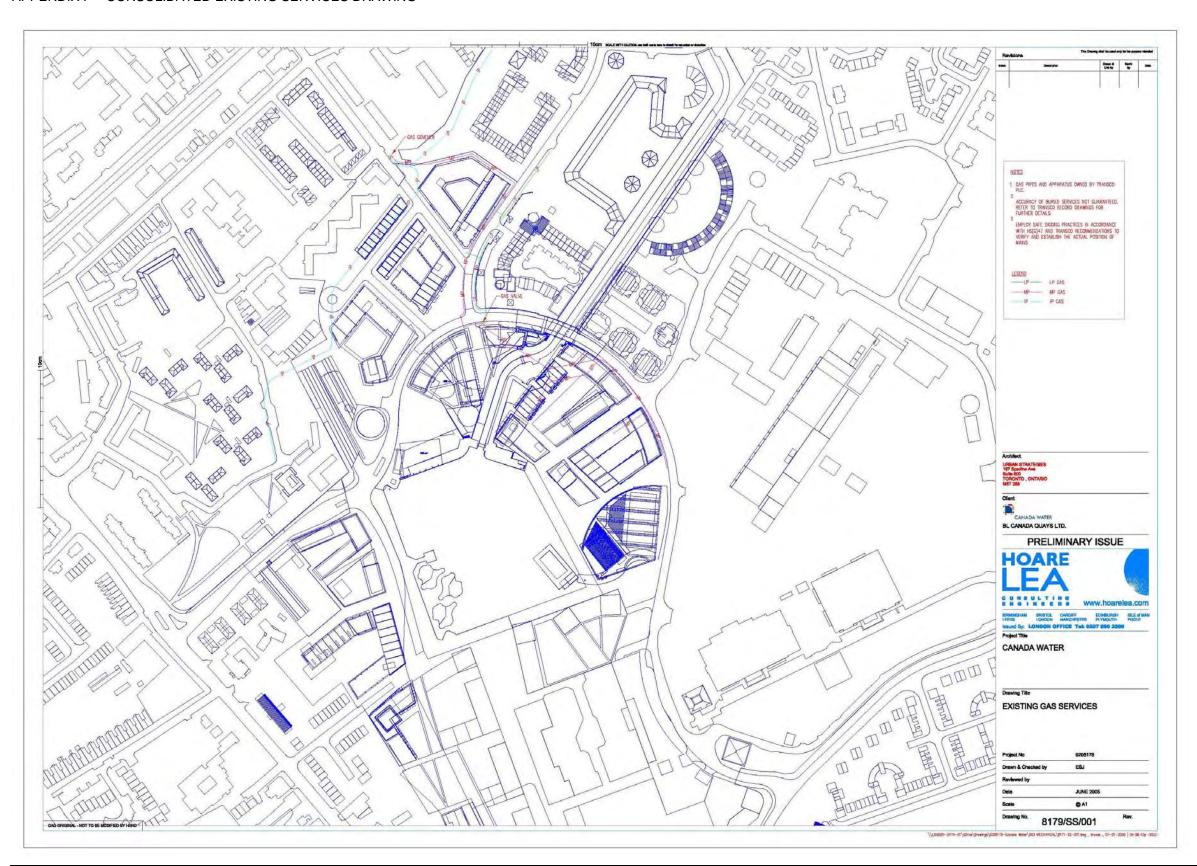
	PROVIDER	PLANT/APPARATUS	PLOTS	COMMENT
		AFFECTED		
Gas	Transco plc Blackwater Gas Ltd	Buried Intermediate Pressure 450mm diameter gas pipeline	A1, A2, A3	Approximately 200m of Intermediate Pressure gas pipeline cross the development plots A1, A2 and A3. Allow for the gas main to be diverted away from Building line to footpath. New IP gas main to be laid 2m from building line.
Gas	Transco plc Blackwater Gas Ltd	Buried Medium Pressure 200mm diameter gas pipeline	B1	Approximately 50m of Medium Pressure gas pipeline crosses plot B1. Allow for the Gas main to be diverted away from building construction line.
Gas	Transco plc Blackwater Gas Ltd	Buried Low Pressure 250mm diameter gas pipeline	A, A2, A3	Private gas service connection on the site is possible. Transco do not record these services and there are no records of the private gas pipeline on the site. Undertake detailed survey of the site using radar, detection and trail pits.
Electricity	EDF	Buried 11kV mains cable	B2	Approximately 70m of multi- way 11 kV cable and duct routed to Canada Water Tube station. The route and line of the cables is unknown, installed by private contractors and not surveyed by EDF. Multi-duct 11kV service cables to be diverted to footpath and landscape park area of plot B2.
Electricity	EDF	Un-metered services to street lights/Marina moorings and street traffic controls and furniture.	All Plots	Existing buried un-metered supplies in footpath to be diverted and re-laid along new roadways and footpaths.
Electricity	EDF	Supply Infrastructure	All Plots	Limited substation capacity in the development area. New distribution substations and 11Kv network required for each plot to support additional demand. Final requirements to be confirmed by EDF
Surface Water Drainage	Thames Water	Supply Infrastructure	All Plots	Discharge into the surface drains from the site limited to 5ltrs/sec/hectacre. On site storage required to attenuate flow, refer to proposals in strategy report.
Communications	Cable and Wireless	Buried Fibre Duct	A3	Cable and Wireless fibre duct Adjacent to plot A3. Protection may be required to the service during construction works subject to new site levels

Notes

- Schedule applies to development plots A1,A2,A3,B1 and B2 Canada Water as Urban Strategies inc masterplan dated June 2nd 2005.
 Refer to utility record drawings in appendix D for details of existing services.
 Street furniture not included ie phone boxes, parking meters, traffic controls etc

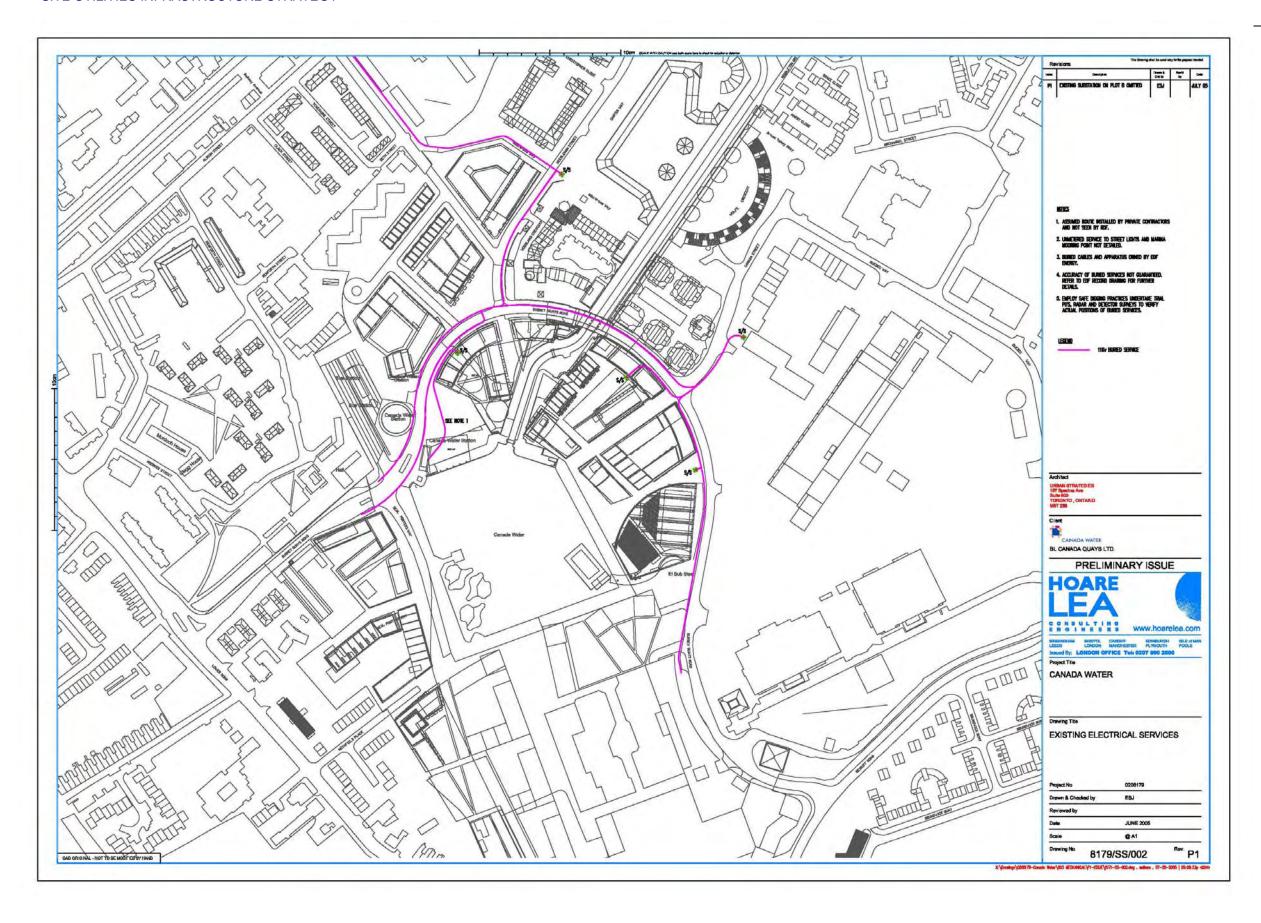


APPENDIX F – CONSOLIDATED EXISTING SERVICES DRAWING



SITE UTILITIES INFRASTRUCTURE STRATEGY

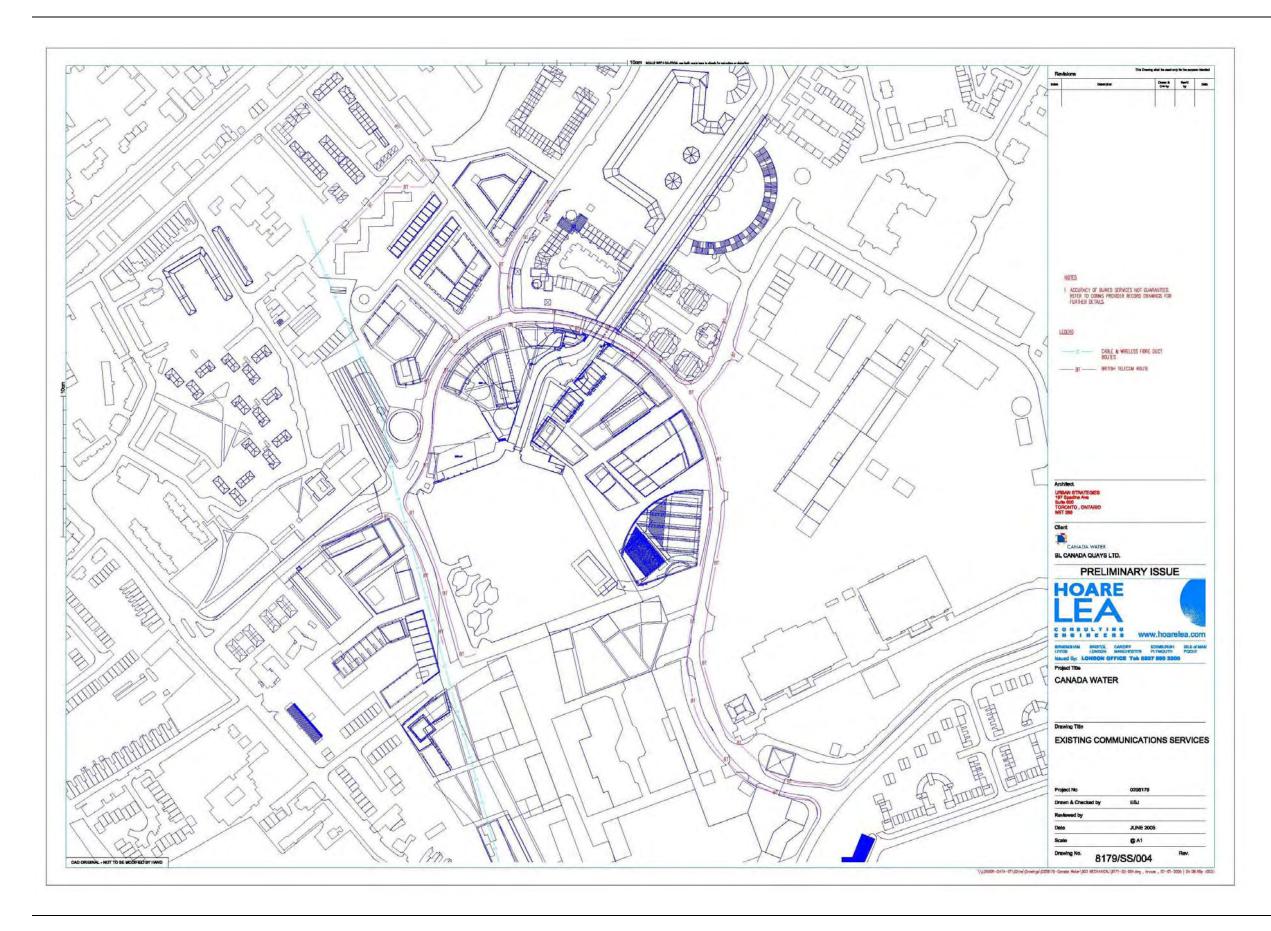




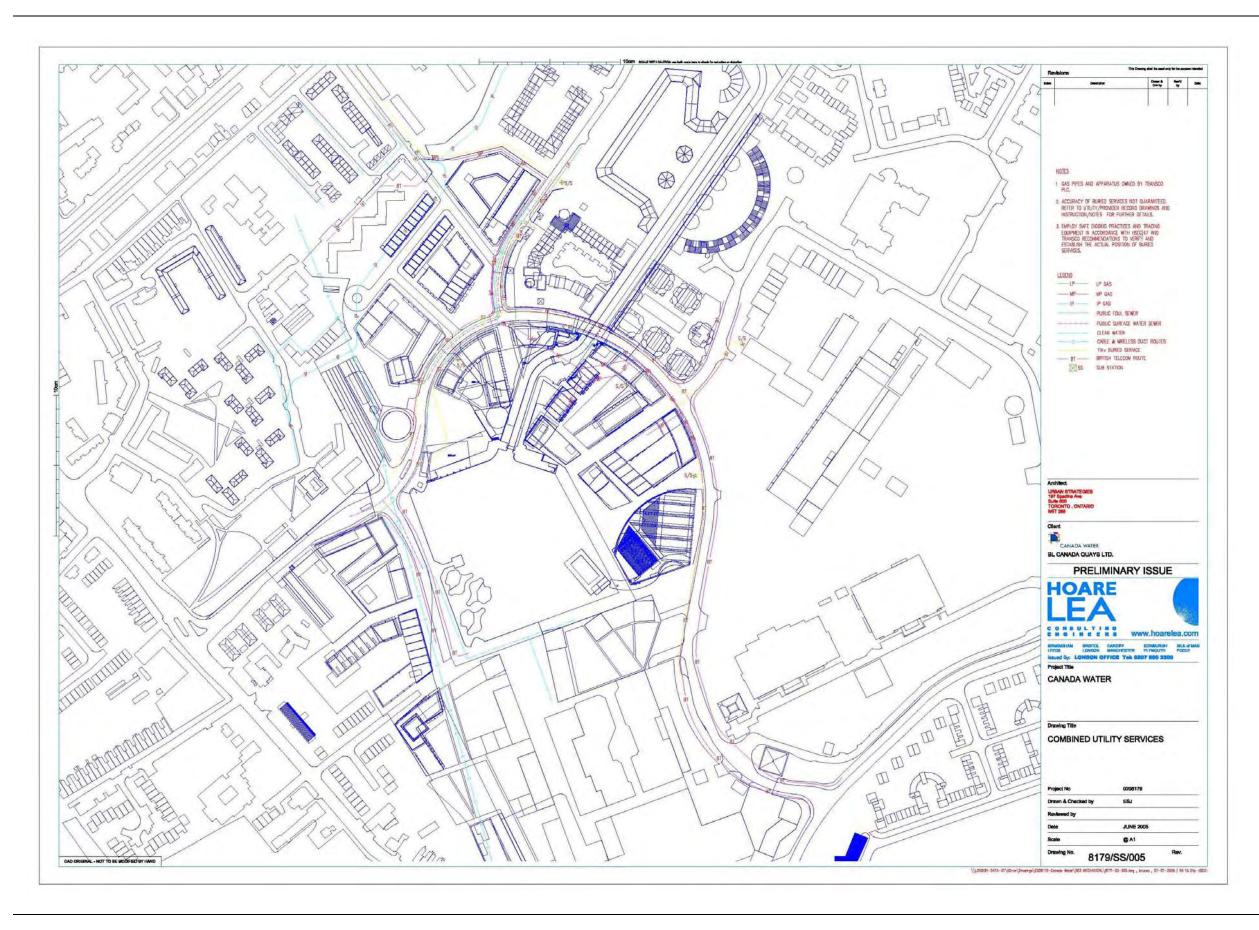






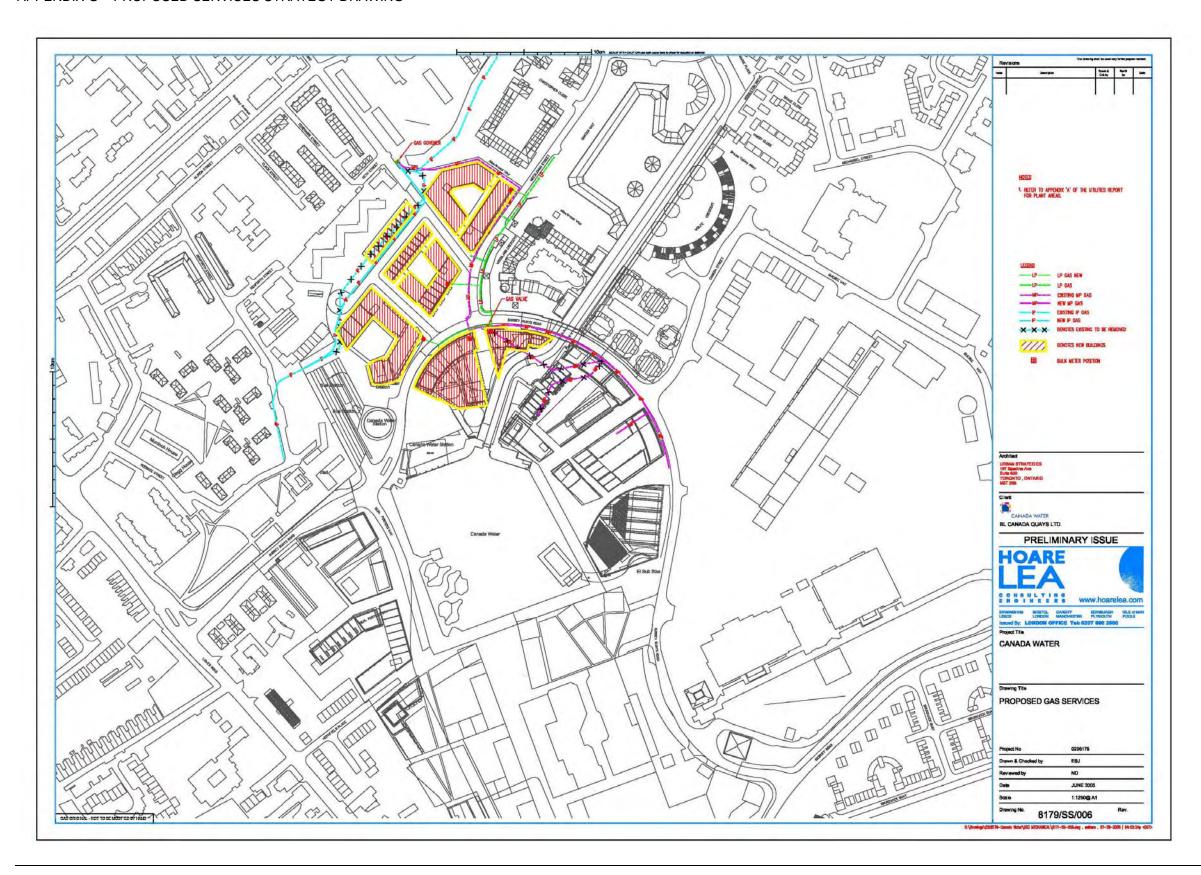




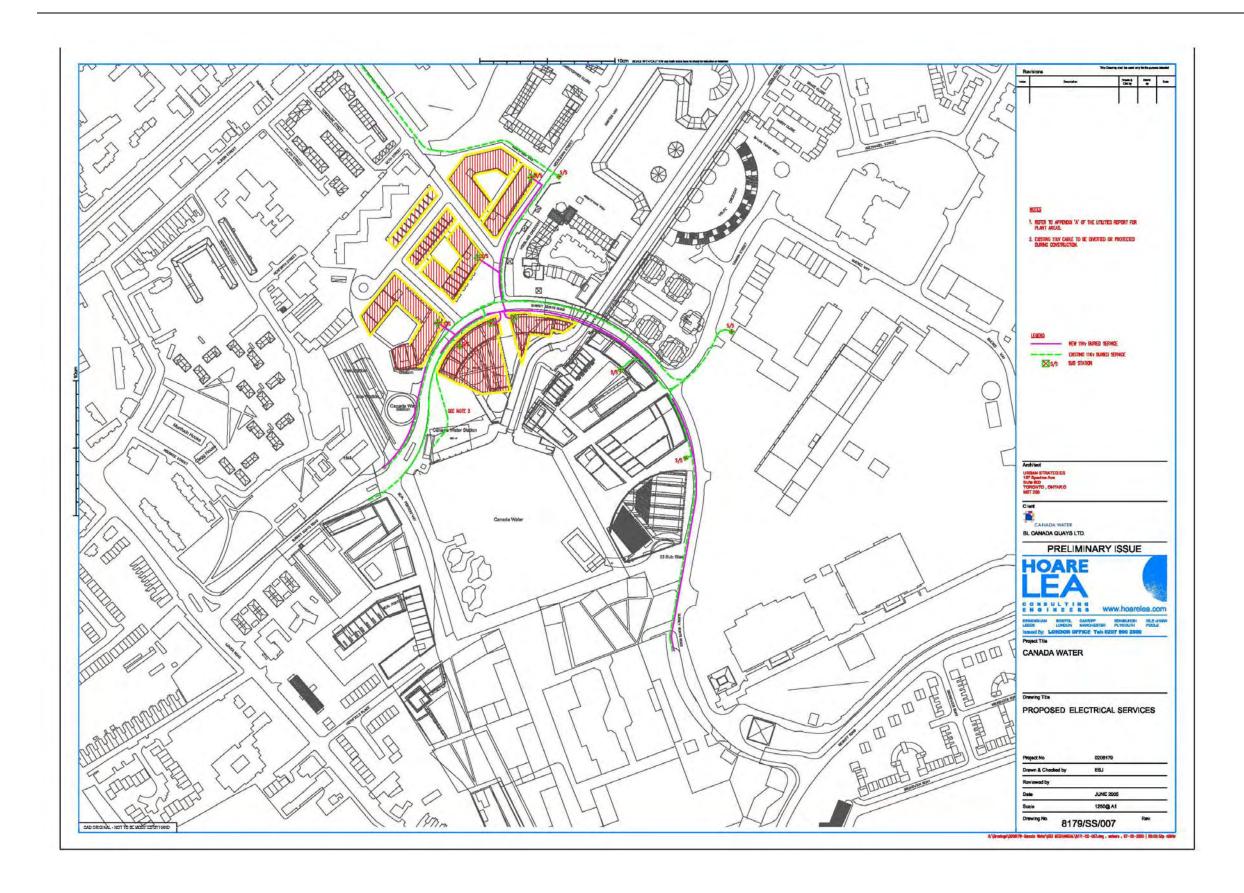




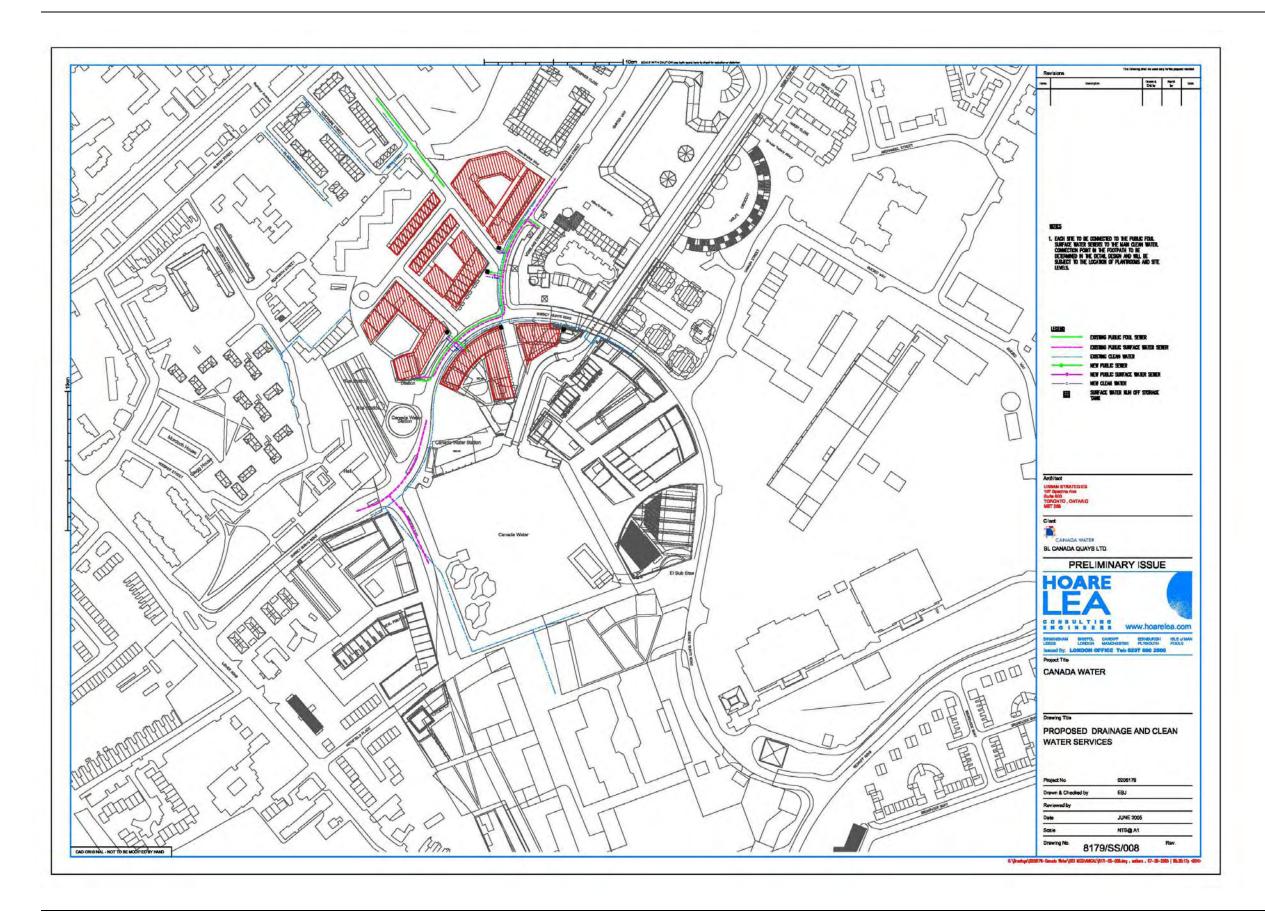
APPENDIX G - PROPOSED SERVICES STRATEGY DRAWING



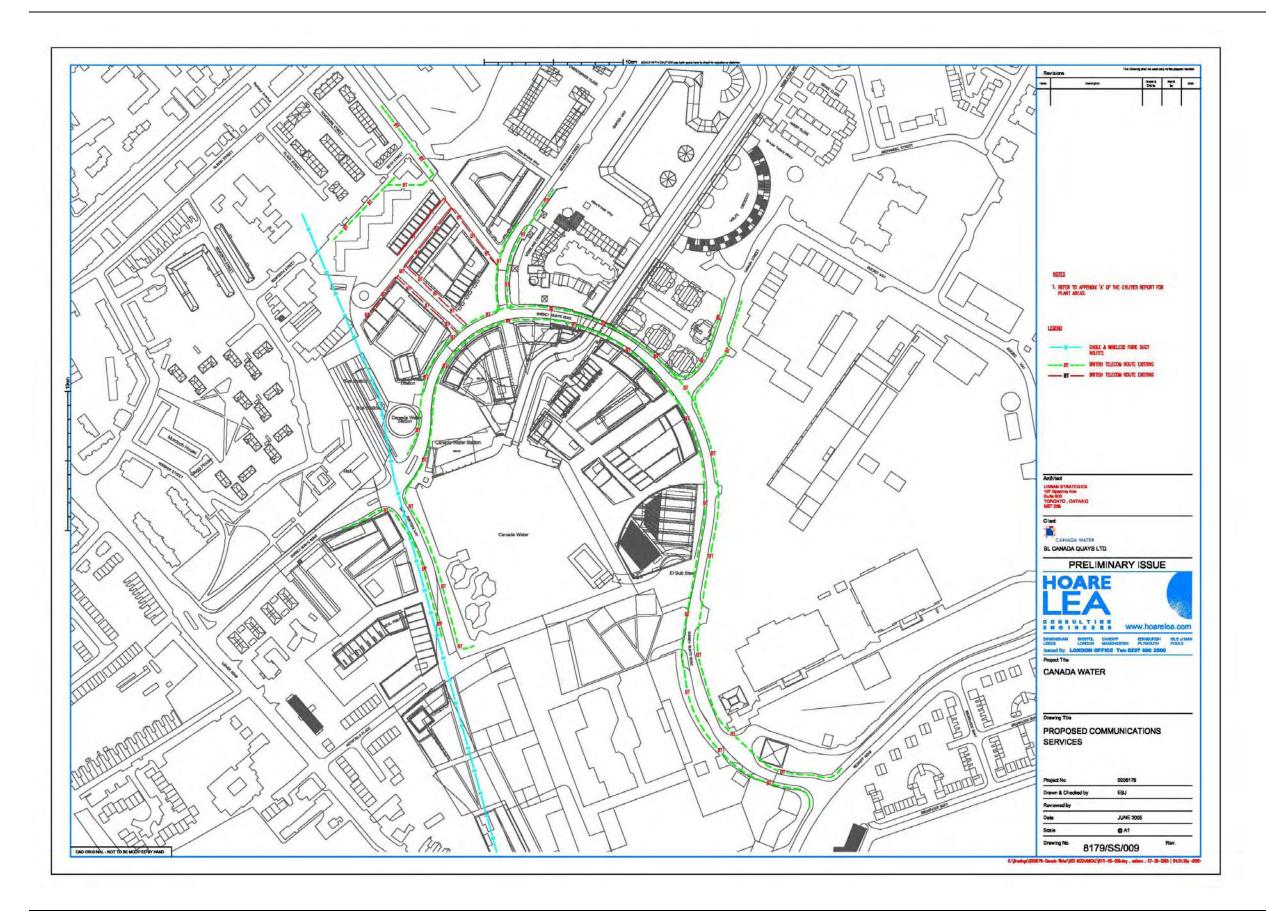












SITE UTILITIES INFRASTRUCTURE STRATEGY

