



STRUCTURAL
SOILS LTD

Technical Note

Project:	Arthur Hill Pool, Reading		
Prepared by:	A. Watts	Date:	31 May 2023
Approved by:	M.Hartford-Beynon	Checked by:	D. Lightfoot
Subject:	Preliminary Remediation Validation	Ref:	735829-2 (00)

1 Introduction

The purpose of this technical note is to outline the information collected to date by Feltham Construction to demonstrate progress on implementation of the agreed Remedial Strategy (ref. 735216-2 (00)) produced by Structural Soils Limited (SSL) for the redevelopment of the Arthur Hill Pool site.

The development is still underway and completion is anticipated within the coming weeks. Feltham Construction have provided a summary document presenting the relevant information available to date (See Appendix A).

2 Summary of Remedial Strategy Validation

Previous ground investigations at the site identified the presence of sporadic low level asbestos within the made ground soils on the site which posed a potential risk to future site users, and localised areas of hydrocarbons which could pose a risk to standard plastic water supply pipes lain within the ground. Accordingly, the broad recommendations of the Remedial Strategy were to;

- ensure that an adequate thickness of clean imported soil was used to create any future soft landscaping areas to break the contact pathway with future site users
- ensure the use of appropriate barrier pipe for water supply pipes within the ground

3 Review of Remedial Strategy Implementation

Section 2.3 of the SSL Remedial Strategy provides a summary table of the information required to demonstrate the remedial measures have been followed. This has been reproduced below with an additional column for relevant comments on the progress to date and to identify steps required to complete and validate the implementation.

Review of Validation				
Measure:	Data to be collated	Party to validate:	Comment on Progress	Next Steps
Removal of existing made ground / import of clean cover (>600mm thick) over existing made ground soils in areas proposed for soft landscaping.	Visual inspection, confirmatory soil analysis and photographic record.	Geo-environmental Consultant. (SSL)	Proposed landscaping beds and tree pits not yet constructed.	Maintain photographic records of landscaping bed construction with reduced dig prior to soil import and provide to SSL
	Where any soils are to be removed from site then waste disposal documentation (waste transfer and consignment notes) for impacted soils are required.	Principal Contractor to collate data for inclusion in validation report.	No soils have yet been removed to create soft landscaping areas.	Principal Contractor to collate waste transfer notes for disposal of arisings from construction of soft landscaping areas and provide to SSL.
Site staff are to be vigilant for other suspected contamination during the works.	General photographic records of works in the ground as a minimum.	Self-validation statement by Contractor's site team / Site Management if no suspected contamination is identified.	Feltham Construction confirm that no suspected contamination has been encountered to date. Self-validation statement will be needed on completion of the works.	Feltham Construction to maintain watching brief on site and notify any suspected contamination to SSL
	Additional records as required if unexpected contamination is encountered.	Geo-environmental Consultant (SSL) if unexpected contamination encountered.		
Quality of any imported soils.	Soil transfer notes/delivery tickets confirming the source and volume.	Principal Contractor to collate and provide to Geo-environmental Consultant (SSL) prior to post-import testing.	Proposed source of imported topsoil and Amsterdam Tree Sand identified. Suppliers certificates available for topsoil. The date of the certificate is December 2022, so quite old, but otherwise acceptable in terms of contamination.	Feltham Construction to maintain good records of topsoil deliveries (delivery notes, volumes and provenance) and provide to SSL SSL to undertake post import validation pits to view and sample imported soils within 600mm of final levels in the soft landscaping beds.
	Samples to be taken, tested for the suite of contamination analysis and frequencies set out in Section 2.2.4 and then assessed to confirm compliance.	Geo-environmental Consultant (SSL) to attend site to test and approve any types of imported soil	Not yet possible.	
Post-import validation of topsoil thickness	Depth of topsoil to be determined by means of hand-dug trial pits.	Principal Contractor to check depths and provide photographic records prior to SSL attendance.	Locations for Feltham Construction proposed pits appears reasonable.	Feltham to provide records of the construction of the soft landscaping beds to SSL.

Review of Validation				
Measure:	Data to be collated	Party to validate:	Comment on Progress	Next Steps
	Photographs.	Geo-environmental Consultant (SSL) to attend site to test and confirm soil thickness.	Not yet possible.	SSL to undertake additional post import validation pits to check soil thicknesses meet or exceed 600mm or are underlain by in-situ virgin natural soils.
Contractors and site management to ensure pipework is installed as specified by the water supply company.	Visual inspection, product information sheets and photographic record.	Principal Contractor to collate data for inclusion in validation report.	In-ground connections yet to be finalised.	Feltham Construction to provide photographic evidence of the use of appropriate barrier pipe in the ground on the scheme to SSL.

4 Closing Remarks

No additional contamination has been reported from the groundworks phase that would change the scope of the existing Remedial Strategy.

The proposed works and source of materials for the construction of the landscaping beds and tree pits are considered generally acceptable to achieve the aims of the Remedial Strategy. We would recommend completing sampling and testing of the imported soils as soon as they are available.

Photographic records of the use of barrier pipes is outstanding and should be forwarded once available.

This note was prepared by SSL for the sole and exclusive use of Feltham Construction Limited in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

Appendix A – Arthur Hill Pool Soil Validation Plan (Feltham Construction – May 2023)

Arthur Hill Pool Soil Validation Plan

Planning Application Number: 201135

Construction of 15no Dwellings

Arthur Hill Pool, 225 King's Road, Reading Berks RG1 4LS



Introduction

The development is to consist of the new construction of 15no dwellings complete with associated roads, parking and landscaped areas. It is located at Arthur Hill Pool, 225 King's Road, Reading Berks RG1 4LS a site location plan is provided in Appendix B

Planning Condition

This report is to coordinate relative reports and documentation and aid discharge of Condition 12 Planning Application Number: 201135, Condition 12 states the following:

The approved remediation scheme under Condition 2. shall be implemented in accordance with the approved timetable of works. A validation report (that demonstrates the effectiveness of the remediation carried out) shall be submitted to and approved by the Local Planning Authority prior to occupation.



Ground Investigation Reports

Ground Investigation reports were prepared by Structural Soils Ltd and can be found in Appendix A

- Structural Soils Ltd. Report no: 735216-2 (revision 1.2), received 23 February 2021
- Report No.: 735216-2 (00) Remedial Strategy Report, Dated September 2020
- Report 735829/AW Additional Investigation Arthur Hill Pool, Reading

Remediation Strategy,

The remediation strategy is set out in by Structural Soils Ltd. Report no: 735216-2 (revision 1.2), received 23 February 2021 (Appendix A) which recommends that a 600mm cover system should be adopted. Table 2 gives Summary of Roles & Responsibilities to be adhered to.

Imported soil will be accompanied by Chemical test certificate and delivery ticket can be found in Appendix D

TABLE 2: SUMMARY OF VALIDATION AND RESPONSIBILITIES		
Measure:	Data to be collated	Party to validate:
Removal of existing made ground / import of clean cover record. (>600mm thick) over existing made ground soils in areas proposed for soft landscaping.	Visual inspection, confirmatory soil analysis and photographic	Geo- environmental Consultant. Principal Contractor to collate data for inclusion in validation report.
Site staff are to be vigilant for other suspected contamination during the works.	General photographic records of works in the ground as a minimum.	Self-validation statement by Contractor's site team / Site Management if no suspected contamination is identified.
Quality of any imported soils	Soil transfer notes/delivery tickets confirming the source and volume. Refer to Appendix E	Principal Contractor to collate and provide to Geo environmental Consultant prior to post-import testing.
Post-import validation of topsoil thickness	Depth of topsoil to be determined by means of hand-dug trial pits Photographs: Refer to Appendix C	Principal Contractor to collate and provide to Geo environmental Consultant prior to post-import testing
Contractors and site management to ensure pipework is installed as specified by the water supply company	Visual inspection, product information sheets and photographic record Refer to Appendix D	Principal Contractor to collate data for inclusion in validation report.

Feltham Construction Ltd - Self-validation statement

No further suspected contamination has been identified during the construction period

Feltham Construction Ltd - Site Management Team.



Appendices

Appendix A - SI reports

- Structural Soils Ltd. Report no: 735216-2 (revision 1.2), received 23 February 2021
- Report No.: 735216-2 (00) Remedial Strategy Report, Dated September 2020
- Report 735829/AW Additional Investigation Arthur Hill Pool, Reading

Appendix B - Site Plan

- Site Location Plan
- FCL_AHSV01 – Soil Validation Plan
- 114038-CAL-XX-XX-DR-D-0104 - Proposed Services Layout

Appendix C - Site Photographs

Appendix D – Thames Water Design & Product Information

Appendix E - Waste Advice/Transfer Note / Topsoil Certificate

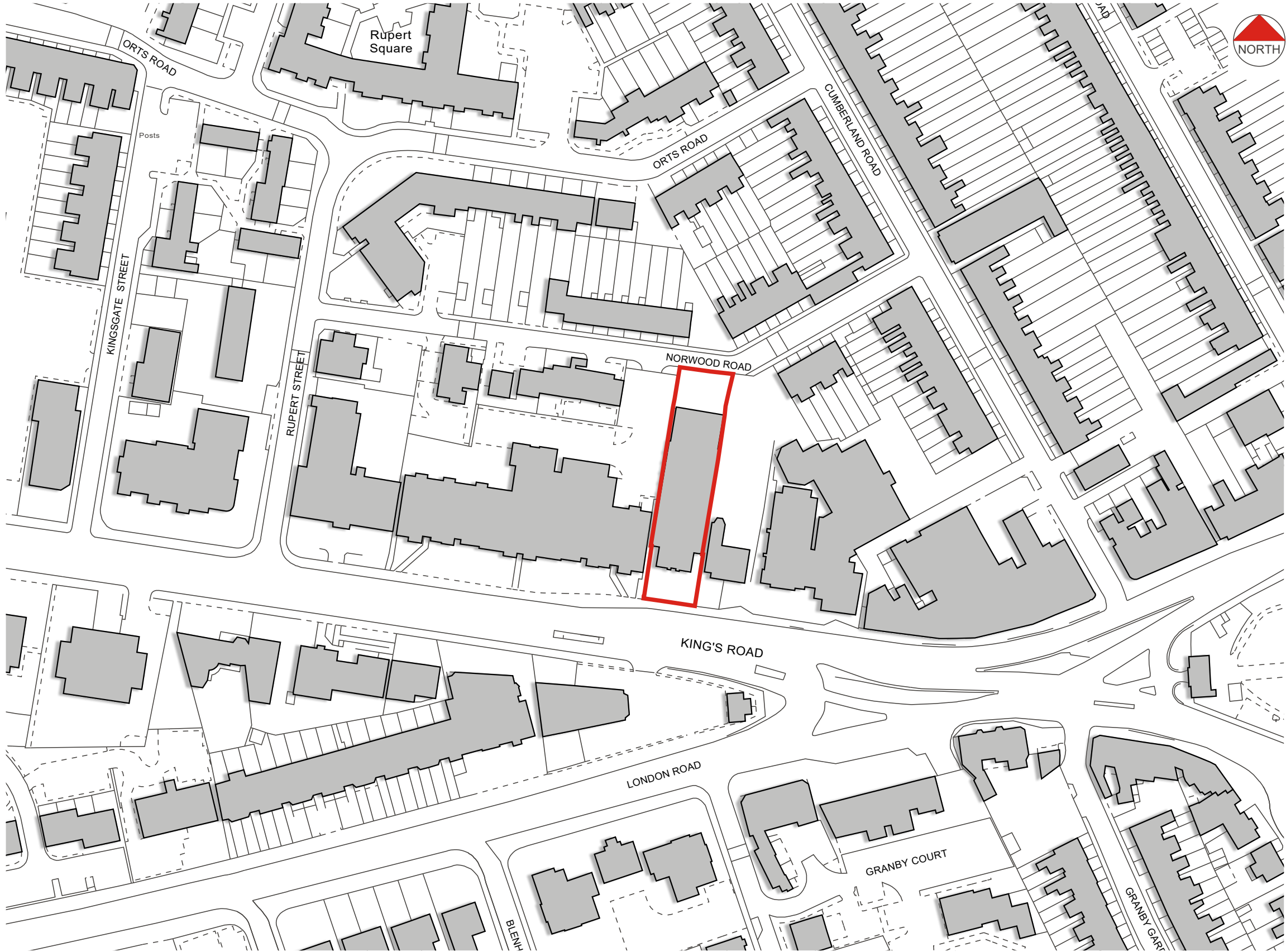
- Imported Topsoil Certificate
- Tree pit Amsterdam Tree Sand Certificate

Appendix A - SI reports



Appendix B - Site Plan





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NOTES

This drawing to be read in accordance with the specification/Bills of Quantities and related drawings. No Dimensions to be scaled from this drawing. All stated dimensions to be verified on site and the Architect notified of any discrepancies.

0

50

Scale bar 50mm at 1:1

- NOTES:
- TREES SHOWN OUTSIDE OF THE APPLICATION BOUNDARY ARE SHOWN INDICATIVELY.
 - EXISTING LEVELS HAVE BEEN TAKEN FROM ORDINANCE SURVEY AND TOPOGRAPHICAL INFORMATION PROVIDED BY OTHERS.
 - HIGHWAYS ARRANGEMENT IS SHOWN INDICATIVELY ONLY; REFER TO HIGHWAY ENGINEERS AGREEMENT WITH LOCAL HIGHWAYS AUTHORITY.
 - LANDSCAPING IS SHOWN INDICATIVELY ONLY; REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR DETAILED LANDSCAPE PROPOSALS.

KEY:

SITE APPLICATION BOUNDARY

REV	DATE	NOTE	IN



Drawing Status: **PLANNING ISSUE**

Project

**ARTHUR HILL POOL
REGENERATION
READING**

Title

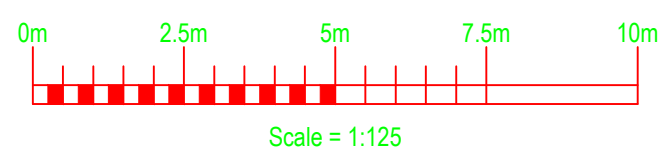
SITE LOCATION PLAN

Scale 1:1250 @A3	Date MAY 2020
Drawn SC	Checked DF
Drawing Number 8129_P100	Revision -

Saunders
Architecture + Urban Design

Services Legend

- BT BT Ducts
- WM Water Main Ducts
- SM Sprinkler Main Ducts
- VIR Virgin Media Ducts
- SSE SSN Ducts



Notes:
Refer to drawing 114038-CAL-XX-
XX-DR-D-0100 rev T3, planning
application 211570/NMA for drainage
information

Notes:

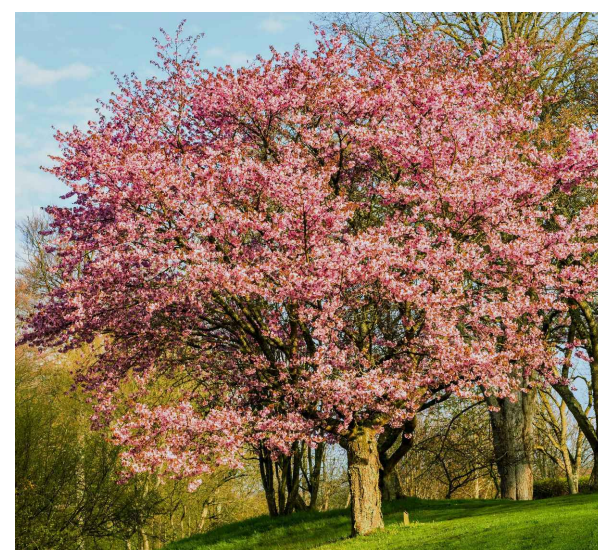
1. This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.



1 - Prunus Padas 'Albertii'



2 - Pyrus-Chanticleer



3 - Prunus sargentii 'Rancho'



4 - Betula Pendula Fastigiata



5.1 - Acer platanoides 'Obelisk'



5.2 - Carpinus betulus
'Frans Fontaine' (Hornbeam)



6 - Magnolia Kobus

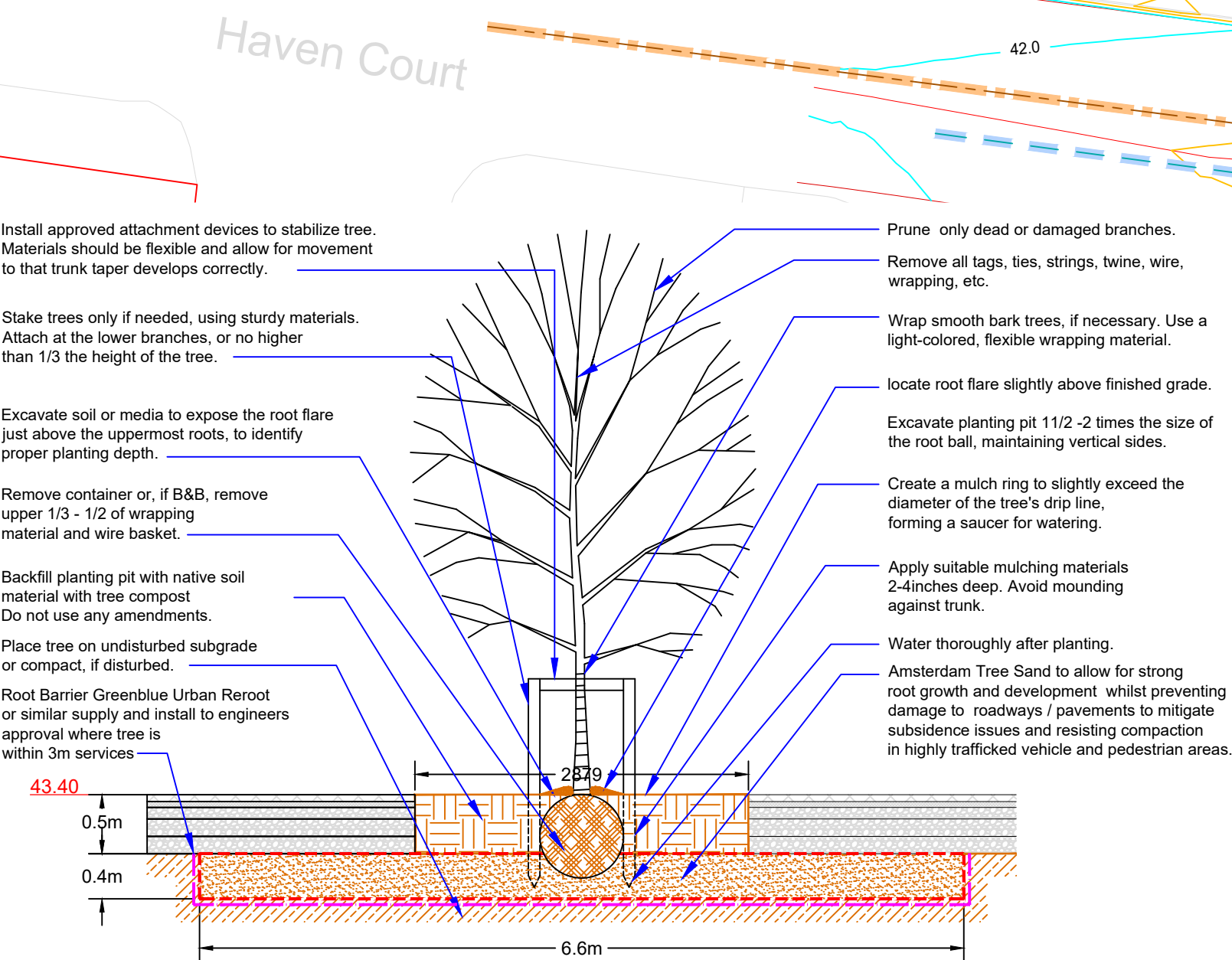
A 18.04.23 Information
Rev Date Description

FELTHAM
CONSTRUCTION

Client
Reading Borough Council
Project
Arthur Hill Swimming Pool
Drawing Title
Soil Validation Layout

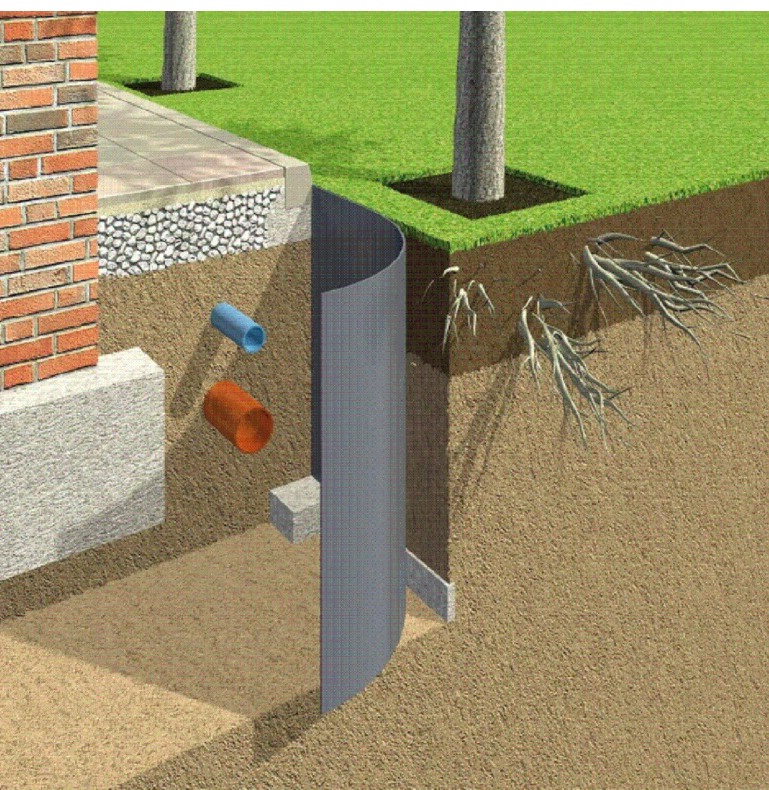
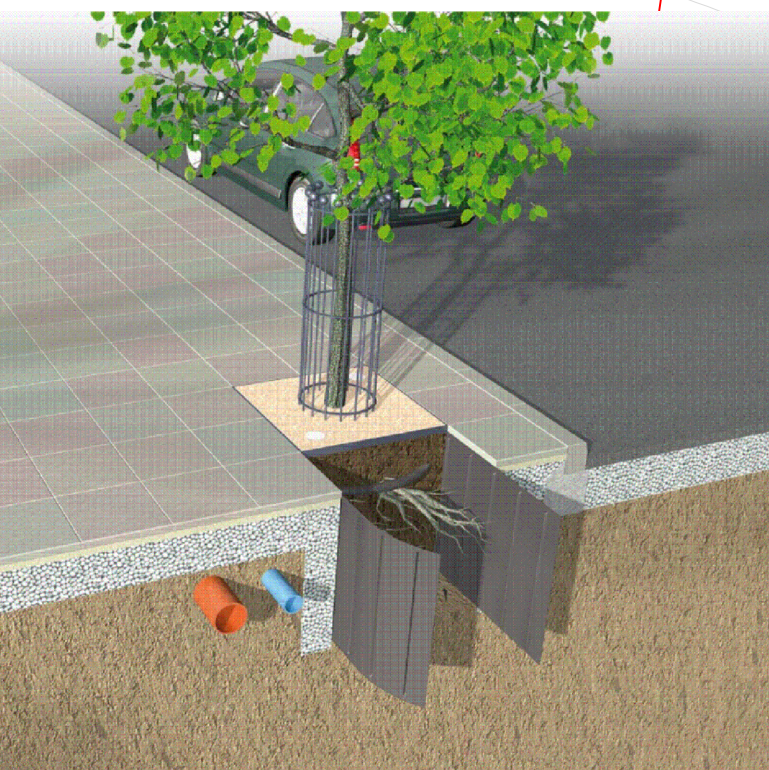
Drawing Status
For Information
P21-009 | EH | Chk. by: JL | Scale: 1:125 @A1

PROJECT | ORIGINATOR | ZONE | LEVEL | TYPE | ROLE | Revision
FCL_AHSV01 | A



Tree Pit 1

Tree pit 1	Tree Species	Tree Pit Size	Soil Volume	size (cm)	Planted Height
1	Prunus Padas 'Albertii'	0.640 x 2.880 x 0.500	0.922	WRB Std 12-14	4
	Underground	2.0 x 6.6 x 0.400	5.280		
	Total	-	6.202		
2	Pyrus-Chanticleer	3.011 x 1.842 x 1.04	5.768	WRB Std 12-14	4
3	Prunus sargentii 'Rancho'	0.960 x 1.559 x 0.500	0.748	WRB Std 12-14	4
	Underground	3.000 x 1.380 x 0.400	1.656		
	Total	-	2.404		
4	Betula Pendula Fastigiata	1.020 x 1.020 x 0.970	1.009	WRB Std 12-14	4
	Underground	3.600 x 3.600 x 0.4	5.184		
	Total	-	6.193		
5.1	Acer platanoides 'Obelisk'	0.807 x 3.107 x 0.500	1.254	WRB Std 12-14	4
	Underground	1.680 x 2.000 x 0.400	1.003		
	Total	-	2.257		
5.2	Carpinus betulus 'Frans Fontaine' (Hornbeam)	1.680 x 1.330 x 0.500	2.167	WRB Std 12-14	4
	Underground	3.000 x 1.680 x 0.400	1.129		
	Total	-	3.296		
6	Magnolia Kobus	2.280 x 2.080 x 0.500	2.371	WRB Std 12-14	4
	Underground	3.600 x 3.60 x 0.400	5.184		
	Total	-	7.555		



Root Barrier Illustration
Greenblue Urban Reroot or similar supply and install to engineers approval where tree is within 3m of services

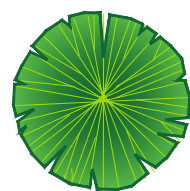
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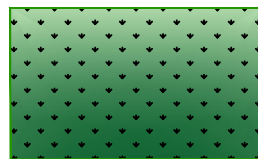
Tree Pit Extents



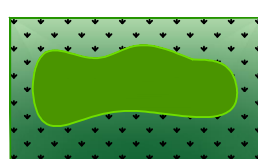
Underground Tree Pit Extents



Tree Position

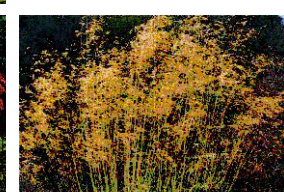


Non Tree Planting
Herbaceous Mix Area



Proposed Low Level Hedge

AREA: HERBEROUS PLANTING MIX
Achillea fil. 'Gold Plate', Agapanthus camp. 'Albus', Rudbeckia f. 'Goldsturm',
Sedum 'Autumn Joy', Stipa giganteae



LOW LEVEL HEDGE TO FRONT OF BLOCK C & D
Ligustrum Ovalfolium



Appendix C - Site Photographes



Thames Water Connection Pipework Photographs

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Thames Water Connection King's Road Block's C & D

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Thames Water Connection Norwood Road Block's A & B

Soil Validation Pit locations Photographs –
Please refer to drawing FCL_AHSV01 for Pit locations

SVP01

Photo to be added

Photo to be added

SVP02

Photo to be added

Photo to be added

SVP03*Photo to be added**Photo to be added***SVP04***Photo to be added*

SVP05*Photo to be added**Photo to be added***SVP06***Photo to be added**Photo to be added*

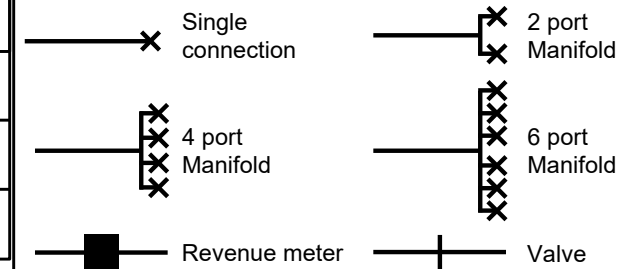
Appendix D Thames Water Design & Product Information





SITE LOCATION: Arthur Hill Pool, 221-225 Kings Road, Reading, RG1 4LS

Reference number:	DS6080078	Service pipe material:	MDPE
Order number:	81103812	Designer:	Simon Wheeler
Co-ordinates:	X: 473038.67 Y: 173249.13	Date:	02/03/2021



Thames Water Point of Entry Plan - Not To Scale

Plot(s) and Connection Objects (CO)

New Domestic – New Flats

Plot 1: 1x50mm MDPE Domestic Unmetered Bulk Supply with 8x20mm Internal Fit Meters off 3" CI
CO: 7334959

Plot 2: 1x50mm MDPE Non Revenue Metered Fire Supply off 3" CI
CO: 7334960

Plot 3: 1x25mm MDPE Domestic Metered Supply off 3" CI
CO: 7334961

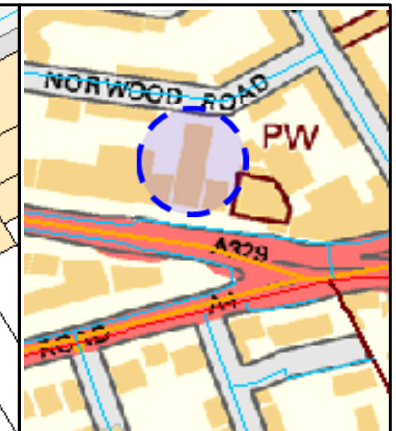
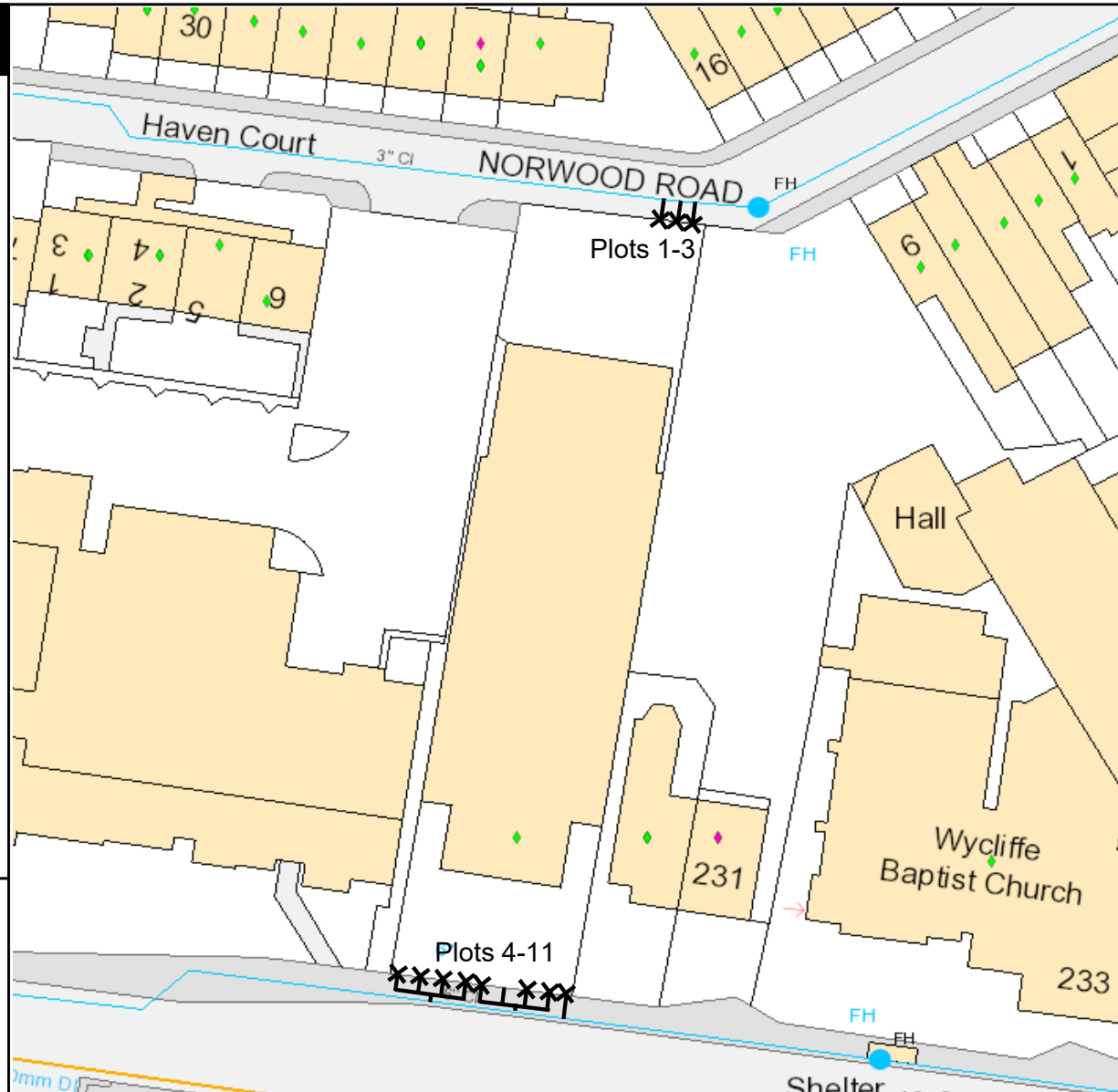
Plots 4-10: 7x25mm MDPE Domestic Metered Supplies in 2x4 Port Manifolds with one capped off 6" CI
CO: 7334962 - 7334968

Plot 11: 1x50mm MDPE Non Revenue Metered Fire Supply off 6" CI
CO: 7342205

Existing to be used as TBS then retained as L/L

Connection to be made in Norwood Road & Kings Road

Please ensure that you have a copy of this plan when you are booking your water regulations and on site during the inspections. This will enable us to confirm with you the correct plot to be inspected.



Note: The position of the apparatus shown on this plan is believed to be correct at time of issuing this drawing. Thames Water accepts no responsibility in the event of any inaccuracy. The actual position of our apparatus, including existing service pipes which are not displayed on this plan must be established on site.

The proposed point of entry for the new service connections maybe subject to deviation due to unforeseen obstructions. Any variation from the designed position of the new water service connections may incur additional charges.

© COPYRIGHT: Unauthorised reproduction prohibited based on the ordnance survey map with the sanction of H.M Stationery Office, Licence Number: WU298557.



Site address: **221-225, KINGS ROAD, READING, RG1 4LS**

New water connection quote

Your details:

Name: Reading Borough Council

Address: Bridge Street

Email:

Phone:

DS Reference: DS6080078

Quote number: 20107813

Date: 02 March 2021

Work Description: 1x50mm MDPE Domestic Unmetered Bulk Supply with 8x20mm Internal Fit Meters, 2x50mm MDPE Fire Supplies, 7x25mm MDPE Domestic Metered Supplies in 2x4 Port Manifolds with one capped and 1x25mm MDPE Domes

Summary of charges

	Charge ex VAT(£)	VAT (£)	Charge inc VAT(£)
Excavation & connection charges	16,010.00	1,098.00	17,108.00
Infrastructure charges These cover the extra demands which new connections put on existing water mains, sewers and other infrastructure (this also includes Infrastructure credits, if any)	6,650.00	0.00	6,650.00
Income Offset on Infrastructure charges	4,560.00-	0.00	4,560.00-
Net Infrastructure charges	2,090.00	0.00	2,090.00
Network charges These cover the extra demands which new connections put on existing water mains, sewers and other infrastructure	0.00	0.00	0.00
Income Offset on Network charges	0.00	0.00	0.00
Net Network charges	0.00	0.00	0.00
Total balance due	18,100.00	1,098.00	19,198.00

There's a more detailed breakdown of the charges overleaf and our terms and conditions are included.

Please note if your pipes are being laid in ground that's classified as contaminated. This means that, to protect the quality of the water supply, you must use 'barrier pipe' when you lay the pipework within your property boundary. If you don't do this, we won't be able to connect you.

Validity

Quote expiry date: 29 August 2021

If your quote passes its expiry date, or your requirements change at any time, you'll need to ask us for a re-quote for which non-refundable upfront fees will apply. We update our charges on 1st April every year, so if you ask us for a re-quote in a new charging year our rates, and the way we calculate the charges may have changed.

We've calculated this quote in line with our 2020/21 Charging arrangements for new connection services.

You can find out the latest information here on <https://developers.thameswater.co.uk/New-connection-charging>

Detailed breakdown of charges

This section shows how the total balance due was calculated.

Work that may be completed by Thames Water or a self-lay provider	Qty	Unit rate (£)	VAT rate (%)	Charge ex VAT (£)	VAT(£)	Charge inc VAT (£)
50mm MDPE Connection Bulk Supply in Road	1.00	2,740.00	0.00	2,740.00	0.00	2,740.00
50mm MDPE pipe-lay in Road (per M)	1.00	390.00	0.00	390.00	0.00	390.00
50mm MDPE Single Connection in Road	1.00	2,740.00	20.00	2,740.00	548.00	3,288.00
50mm MDPE pipe-lay in Road (per M)	1.00	390.00	20.00	390.00	78.00	468.00
25mm MDPE Single Connection in Road	1.00	1,660.00	0.00	1,660.00	0.00	1,660.00
25mm MDPE pipe-lay in Road (per M)	1.00	360.00	0.00	360.00	0.00	360.00
50mm MDPE Single Connection in Footpath	1.00	2,060.00	20.00	2,060.00	412.00	2,472.00
50mm MDPE pipe-lay in Footpath (per M)	1.00	300.00	20.00	300.00	60.00	360.00
4-Port (1 Cap) MDPE Connection in Footpath	1.00	1,770.00	0.00	1,770.00	0.00	1,770.00
50mm MDPE pipe-lay in Footpath (per M)	1.00	300.00	0.00	300.00	0.00	300.00
4-Port MDPE Connection in Footpath	1.00	1,960.00	0.00	1,960.00	0.00	1,960.00
50mm MDPE pipe-lay in Footpath (per M)	1.00	300.00	0.00	300.00	0.00	300.00
Sub-total				14,970.00	1,098.00	16,068.00

These elements of the work could be done by a self-lay provider instead of us, should you choose to use one. For more details on self-lay, visit <http://www.lr.org/wirs>.

Work that must be completed by Thames Water	Qty	Unit rate (£)	VAT rate (%)	Charge ex VAT (£)	VAT(£)	Charge inc VAT (£)
20mm In-Line Internal Fit Meters	8.00	130.00	0.00	1,040.00	0.00	1,040.00
Sub-total				1,040.00	0.00	1,040.00

Infrastructure charges	Qty	Unit rate (£)	VAT rate (%)	Charge ex VAT (£)	VAT(£)	Charge inc VAT (£)
Infrastructure Charges Water	19.00	140.00	0.00	2,660.00	0.00	2,660.00
Infrastructure Charges Wastewater	19.00	210.00	0.00	3,990.00	0.00	3,990.00
Sub-total				6,650.00	0.00	6,650.00

Income Offset	Qty	Unit rate (£)	VAT rate (%)	Charge ex VAT (£)	VAT(£)	Charge inc VAT (£)
Income Offset on Infrastructure Charge Water	19.00	200.00-	0.00	3,800.00-	0.00	3,800.00-
Income Offset on Infrastructure Charge Wastewater	19.00	40.00-	0.00	760.00-	0.00	760.00-
Sub-total				4,560.00-	0.00	4,560.00-

	Charge ex VAT(£)	VAT(£)	Charge inc VAT(£)
Total balance due	18,100.00	1,098.00	19,198.00

What's included

This quote relates to the work we'll do between your property boundary and our water main - you're responsible for installing the pipework within your property boundary. We don't make any profit from what we charge for new water connections - our charges simply reflect what it costs us to do the work.

The charges outlined in this quote include:

- The Provision of a connection to our water main, laying a pipe from our water main to the boundary of your property, connecting to your supply pipe at the boundary and (usually) the installation of a boundary box, an outside stop valve and a water meter. This includes excavation, backfill and reinstatement if required.
- Any Traffic Management and highway authority charges we incur to ensure safe working in or near the road, if applicable. These could include permit fees to work in the street, parking bay suspensions, road or lane closures, temporary traffic lights, bus stop suspensions, and lane rental charges.

Terms and conditions

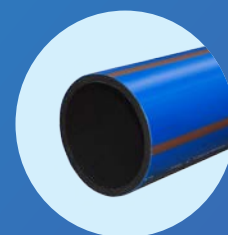
By paying this quote, you're accepting our terms and conditions below:

- 1 This quote has been produced in line with our charging arrangements. These can be found at <https://developers.thameswater.co.uk/New-connection-charging>.
- 2 This quote is valid for 180 calendar days. After this time you will need to apply for a requote (for which charges apply).
- 3 You must comply with the conditions of connection specified within these terms and conditions.
- 4 This quote has been calculated based on the information available to us, including the information you provided as part of your application for a service connection. In the event that the information you provided was incorrect or your requirements change, you will need to ask for a requote (for which charges apply) before we make the connection.
- 5 If you request a change to the design once we are on-site, you will be asked to sign a variation order to confirm you will pay the cost of the changes based on our fixed price charges applicable at the date of the works, or we will cancel the job and ask you to obtain a re-quote. Abortive charges and charges for additional site visits are not included in our quote and will increase the cost of your Service Connection where applicable.
- 6 Your payment options are set out in our charging arrangements. As detailed therein you can pay in advance or on completion of the new service connections. If you pay in advance you will be charged using the rates in effect on the day we issued our quotation. If you pay on completion of each connection, you will be charged using the rates in effect on the day we complete our works, which could be different from the charges detailed in this quotation. In order to pay on completion, you will need to provide us with an acceptable form of security before we carry out any work. The security will be equal to the expected total value of the charges for your new service connection(s). Details of the security we accept can be found in our charging arrangements.
- 7 We do not accept conditions which may be contained in your own order forms or other documents and which are not consistent with these conditions.
- 8 Unless otherwise agreed in writing by us, a separate service pipe must be provided for each house or building and for each part of a building that is separately occupied.
- 9 We will only lay the portion of the service pipe from the water main in the street to the boundary of your property and it is your responsibility to provide and pay for the portion of the service pipe from the boundary of your property up to and into your property.
- 10 The plumbing installations, both internally and externally within the boundary of your property, must be in such a condition as to allow the fitting of a water meter. We will visit the site to verify these requirements for all external pipe work installations and a random sample of internal pipe work installations. You must ensure that external pipe work is uncovered for this inspection before any connection can be carried out by us.
- 11 We require a minimum of five working days' notice to enable us to schedule the appropriate water regulations inspections. You must pass the Water Regulations inspection before any connection to our water main can be made. If you fail the Water Regulations inspection you must correct any faults identified in the inspection and ask us to make a re-inspection of the relevant pipework (additional visit charges apply). If you use a WaterSafe or Thames Water approved plumber / contractor we will not need to inspect the external underground pipework providing that a certificate of compliance (which they should provide you with) is sent to us.
- 12 Every service pipe connecting your property to our water main must be metered. The meter reading will be used by us to determine the charges we raise for water and sewerage services for your property.
- 13 In situations where your property contains parts that are separately occupied, but are not individually served by a separate service pipe, (if agreed by us under clause 8 above) each separately occupied part of your property must also be metered. The meter will be used by us to determine the charges we raise for water and sewerage services.

- 14 If we are installing a meter, we will install it on the part of the service pipe that we lay in the street (see clause 9) and as near as practicable to the boundary of your property. If for any reason the meter cannot be satisfactorily located underground in that position, you agree to us installing the meter on the part of the service pipe which you lay and which will be within the boundary of your property. Whilst we will try to fit the meter externally, if this is not practicable we will fit the meter inside your property. The need for us to install a meter within the boundary of your property may only become apparent after we have started work on the street. Any meter installed on a service pipe externally must be fitted by Thames Water or a self-lay provider. Any meters that are fitted internally, must be fitted by you or your contractor and can only be sourced from Thames Water. If the meter is being fitted by you or your contractor, you must adhere to our Water meter installation policy for property developers', which you can find at <https://developers.thameswater.co.uk/Developing-a-large-site/Connection-processes/Metering>
- 15 Where more than one service pipe is laid by the point of connection, the pipes must be suitably spaced to facilitate ease of connection. Where a manifold is being used, the pipes for those supplies should come out to the edge of the boundary together. Where two pipes are laid in the same trench, the pipes must be spaced no more than 50cm apart. Each pipe must also be tagged to indicate which unit or dwelling it serves.
- 16 Where new supplies are laid on new sites before completion of the roads:
 - i) You must take all reasonable steps to safeguard our apparatus against damage. You will be responsible for the cost of repair or replacement of any of our apparatus found damaged on site.
 - ii) Your meter boxes will be placed in position as accurately as is practical at the time of installation. You will keep these boxes clear of obstruction and adjust to suit finished levels. It must be considered that the meter boxes are integral, and only minimal vertical adjustment is possible. There is no provision for lateral adjustment.
 - iii) Ducts laid by you under new roads should be a minimum 100mm diameter UPVC, MDPE or salt glazed pipes only, and laid between 0.75m and 1.35m (to the crown of the pipe) below finished road level. The line of the duct must be clearly marked on the curb at each side for ease of identification. If we cannot find the ducts, you will be charged for any extra work we have to do.
- 17 If the quote includes connections for building supplies, you must contact us to disconnect this supply once you have used it for building works. If you want to convert the building supply connection into a permanent connection, you must contact us to arrange for the connection to be inspected. You must not use the connection as a permanent supply until all required inspection approvals have been granted by us and all additional charges, including but not limited to inspection and infrastructure charges have been paid.

Protecta-Line pipe

A multi-layered PE pipe with an embedded aluminium barrier layer. It is designed to safely transport drinking water in land which is contaminated or has the potential to be contaminated in the future.



Range / pressure rating

OD (mm)	SDR	Pressure rating	Material
25	11	12.5 bar	PE80
32			
63	11	16 bar	PE100
90 to 180	11	16 bar	PE100
	17	10 bar	PE100
225 to 630	11	16 bar	PE100
	17	10 bar	PE100

Colours

Material	Description	Colour
PE80	Black core and light blue outer with brown stripes.	 
PE100	Black core and dark blue outer with brown stripes.	 

Pipe diameter ≤ 180mm pipe has four brown stripes; > 180mm pipe has eight brown stripes.

Standards / approvals

The Water Supply Regulation 31/33	BS EN 12201-2	WRAS Approved	BS 8588
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Certification

		
1606501 1511343 1505514 1302025	BS EN 12201-2 KM 508224	BS 8588 KM 695717

Lengths

Pipes ≤ 180mm in diameter are available in coiled lengths of 25m, 50m or 100m.

Pipes 63mm – 630mm in diameter are also available in straight lengths of 6 or 12m.

Other lengths may be produced at customer's request.

Markings

As a minimum requirement, the following information is marked indelibly and linearly at intervals along the pipe:

• Manufacturers identification:	GPS	• Material designation:	PE100 or PE80
• System:	Protecta-Line	• Nominal size:	180mm (example)
• Pipe composition:	PE Pipe with AL Barrier	• SDR value:	Water
• Standard and pipe type::	BS 8588 TYPE A	• Continuous pressure rating at 20°C	10 bar (example)

The pipes are marked with the following three times per metre:

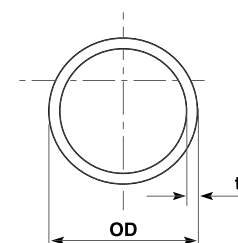
- Application: **Water**

Batch number format

8 Digit Code	Extruder Number	Shift Number	Week Number	Year
	1 & 2	3 & 4	5 & 6	7 & 8
	01-23	01-14	01-52	01-99

Pipe dimensions – water applications (BS EN 12201-2)

Size* (mm)	SDR	Mix OD (mm)	Max OD (mm)	Mean Bore (mm)	Min t (mm)	Max t (mm)	Approx Weight (kg/m)
25	11	26.2	27.4	20.0	3.0	3.7	0.3
32	11	33.3	34.5	26.0	3.7	4.4	0.4
63	11	64.3	65.6	50.9	6.5	7.6	1.3
90	11	92.2	93.5	72.9	9.3	10.7	2.6
	17	92.2	93.5	78.8	6.5	7.5	1.9
110	11	112.2	113.5	89.2	11.1	12.7	3.7
	17	112.2	113.5	96.3	7.7	8.8	2.7
125	11	127.2	128.5	101.2	12.5	14.2	4.7
	17	127.2	128.5	109.6	8.5	9.8	3.4
160	11	163.2	165.1	130.4	15.8	17.9	7.6
	17	163.2	165.1	141.1	10.7	12.4	5.4
180	11	183.3	185.4	146.8	17.6	20.0	9.5
	17	183.3	185.4	158.8	11.9	13.7	6.8
225	11	227.3	229.5	182.5	21.7	24.4	14.5
	17	227.3	229.5	197.4	14.6	16.6	10.3
250	11	252.3	254.9	203	23.9	26.8	17.7
	17	252.3	254.9	219.6	16.0	18.3	12.4
280	11	282.3	285.1	227.4	26.6	29.8	22.0
	17	282.3	285.1	245.9	17.8	20.1	15.4
315	11	317.3	320.2	255.7	29.8	33.3	27.6
	17	317.3	320.2	276.6	19.9	22.4	19.3
355	11	357.3	360.6	288.3	33.4	37.3	34.8
	17	357.3	360.6	311.6	22.3	25.1	24.3
400	11	402.3	405.8	324.8	37.5	41.8	43.9
	17	402.3	405.8	351.3	24.9	27.9	30.4
450	11	452.3	456.1	365.4	42.1	46.8	55.3
	17	452.3	456.1	395.2	27.9	31.2	38.2
500	11	502.3	506.4	406	46.6	51.8	67.9
	17	502.3	506.4	439.0	30.9	34.5	46.9
560	11	562.3	566.8	454.9	52.0	57.7	84.7
	17	562.3	566.8	491.8	34.4	38.4	58.4
630	11	632.3	637.2	511.6	58.4	64.8	106.9
	17	632.3	637.2	553.2	38.6	43.0	73.6



* The size is the nominal core pipe outside diameter. Other diameters, SDRs and lengths can be made subject to a minimum order value.

**Appendix E -
Tree pit Amsterdam Tree Sand Certificate**

