

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



THE STRUCTURE GROUP

FORMER WYEVALE GARDEN CENTRE, HILLINGDON

FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY

MAY 2021

DATE ISSUED: 27th May 2021
JOB NUMBER: BM12222
REPORT NUMBER: 0001
VERSION: V1.0
STATUS: Final

THE STRUCTURE GROUP

FORMER WYEVALE GARDEN CENTRE, HILLINGDON

FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY

MAY 2021

PREPARED BY:

Hamed Mir Civil Engineer



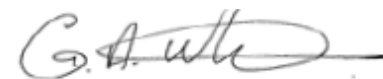
REVIEWED BY:

Kerry Whitehouse Associate Director



APPROVED BY:

Graham Whitehouse Regional Director



This report has been prepared by Wardell Armstrong LLP with all reasonable skill, care and diligence, within the terms of the Contract with the Client. The report is confidential to the Client and Wardell Armstrong LLP accepts no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be reproduced without the prior written approval of Wardell Armstrong LLP.



Wardell Armstrong is the trading name of Wardell Armstrong LLP, Registered in England No. OC307138.

Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

UK Offices: Stoke-on-Trent, Birmingham, Bolton, Bury St Edmunds, Cardiff, Carlisle, Edinburgh, Glasgow, Leeds, London, Newcastle upon Tyne, Shefford and Truro. International Offices: Almaty and Moscow

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
1.2 Acknowledgement	2
2 EXISTING SITE CONDITIONS AND DEVELOPMENT PROPOSALS	3
2.1 The Site and Surrounding Area	3
2.2 Development Proposals	3
2.3 Existing Topography	4
2.4 Proximity to Watercourses	4
2.5 Geology and Ground Conditions	4
2.6 Hydrogeology	5
3 ASSESSMENT OF FLOOD RISK	7
3.1 National Planning Policy	7
3.2 Fluvial Flood Risk	7
3.3 Flood Risk Vulnerability	8
3.4 The Sequential and Exception Tests	8
3.5 Tidal Flooding	10
3.6 Surface Water Flooding	10
3.7 Groundwater Flooding	11
3.8 Existing Sewers and Drains	11
3.9 Reservoirs, Canals and Lakes	11
4 PROPOSED SURFACE WATER DRAINAGE STRATEGY	12
4.1 Existing Surface Water Drainage	12
4.2 Surface Water Drainage Strategy	12
6 RESIDUAL FLOOD RISK AND MITIGATION MEASURES	14
6.1 Finished Floor Levels	14
6.2 Safe Access and Egress	14
7 CONCLUSIONS	15

APPENDICES

Appendix A Sewer Records

DRAWINGS	TITLE	SCALE
2720-SK-101	Proposed Block Plan	As shown
110241/Topo	Topographical Survey	1:500

SUPPORTING DOCUMENTS

- National Planning Policy Framework (2018)
- Planning Practice Guidance (PPG) (2014)
- Hillingdon Preliminary Flood Risk Assessment (2017)
- Hillingdon Strategic Flood Risk Assessment (SFRA) (2008)
- Hillingdon Local Flood Risk Management Strategy (LFRMS) (2015)
- Hillingdon Local Plan (2012)

EXECUTIVE SUMMARY

Wardell Armstrong have been commissioned by The Structure Group to produce a Flood Risk Assessment and Drainage Strategy to accompany a planning application for the temporary change use and temporary workshop buildings on the site. Table 1 summarises the details of the development, flood risk to the site and proposed drainage strategy.

Table 1: Site Summary	
Site Location	The site is located at the former Wyevale Garden Centre , Pield Heath Rd, Hillingdon UB8 3NP NGR: 506267, 182105
Proposed Development	The development proposals are for use of the former Wyevale Garden Centre as a temporary film production facility for one year. The existing buildings on site will be used for film production, in addition to this, five temporary workshop units are proposed to be located on the existing car park.
Environment Agency Flood Zone	Primarily located in Flood Zone 1 with a small area in the south west corner of the site in Flood Zone 2.
Flood Risk Vulnerability Classification	Less Vulnerable
Fluvial Flood Risk	Low Risk
Tidal Flood Risk	Low Risk
Surface Water Flood Risk	Low Risk
Groundwater Flood Risk	Low Risk
Reservoir, Canal and Lake Flood Risk	Low Risk
Sequential and Exception Test	Sequential and Exception Test Not Required
Surface Water Drainage Strategy	There is no additional impermeable area proposed by the development. The temporary workshops will be sited on the existing hardstanding car park. As the development is temporary, runoff from the roofs of the workshops will be discharged into the existing surface water network on site, resulting in no increase in surface water flow from the development.
Foul Water Drainage Strategy	There is no requirement for any additional foul disposal from the site.

1 INTRODUCTION

- 1.1.1 Wardell Armstrong have been instructed by The Structure Group to complete a Flood Risk Assessment (FRA) and Drainage Strategy for the proposed development at the former Wyevale Garden Centre, Hillingdon.
- 1.1.2 As part of the site appraisal process it is necessary to demonstrate that the proposed development has an acceptable risk of flooding over the development's lifetime, taking climate change into account, acknowledging this is a one year temporary planning application.
- 1.1.3 This FRA assesses the risk of flooding from all sources, including fluvial, tidal, surface water, groundwater, existing and proposed drainage infrastructure and other artificial sources in accordance with the National Planning Policy Framework and Planning Practice Guidance.
- 1.1.4 In addition, this report provides a surface water and foul drainage strategy, demonstrating the principles of sustainable surface water management and foul treatment disposal.
- 1.1.5 This report will form part of a larger suite of information to support a temporary planning application for the proposed development of the site.

1.2 Acknowledgement

- 1.2.1 Within this report data from the British Geological Survey (BGS) website has been 'Reproduced with the permission of the British Geological Survey © NERC. All rights reserved'. Reproduction of any BGS materials does not amount to an endorsement by NERC or any of its employees of any product or service and no such endorsement should be stated or implied.
- 1.2.2 Data from the Environment Agency (EA) has been included within this report. Flood Zone data is now classed as open data. 'Open Data can be accessed, used and shared by anybody. It allows access to our data under the Open Government Licence – free of charge and free of restriction, even for commercial use.'

2 EXISTING SITE CONDITIONS AND DEVELOPMENT PROPOSALS

2.1 The Site and Surrounding Area

- 2.1.1 The 1.7ha site is located in Hillingdon, London. The nearest postcode is UB8 3NP and an approximate grid reference at the centre of the site is 506267, 182105. The site is wholly located within the administrative area of Hillingdon Borough Council.
- 2.1.2 The site is located within Hillingdon and is the former Wyevale Garden Centre. The site is bounded to the north, south and west by undeveloped land/woodland. To the east is Pield Heath House School. The site is accessed from Pield Heath Road to the south. Refer to Figure 1 for a site boundary plan.



Figure 1 – Site Location Plan
(Source: www.google.co.uk/maps)

2.2 Development Proposals

- 2.2.1 The development proposals are for use of the former Wyevale Garden Centre as a temporary film production facility for a duration of one year.
- 2.2.2 The total site area is 1.7ha, the existing buildings on site will remain and be used for film production. In addition to this, five temporary workshop units, with a total plan area of 0.3ha are proposed to be located on the existing car park.
- 2.2.3 The latest block plan 2720-SK-101 accompanies this report.

2.3 Existing Topography

2.3.1 A topographical survey was carried out by Survey and Engineering Services in April 2021, which shows levels fall from 36.4mAOD in the north west of the site to 31.02mAOD in the south west corner of the site, please refer to Drawing 110421/Topo for further detail.

2.4 Proximity to Watercourses

2.4.1 The nearest watercourse to the site is River Pinn which is located approx. 65m west of the site boundary. This watercourse is classified as a Main River. The River Pinn joins Fray's River which runs approximately 1.6km south west of the site.

2.4.2 The Grand Union Canal is located approximately 1.4km south west of the site.

2.5 Geology and Ground Conditions

2.5.1 According to the BGS, bedrock geology in the area comprises 'London Clay Formation'. See Figure 2.

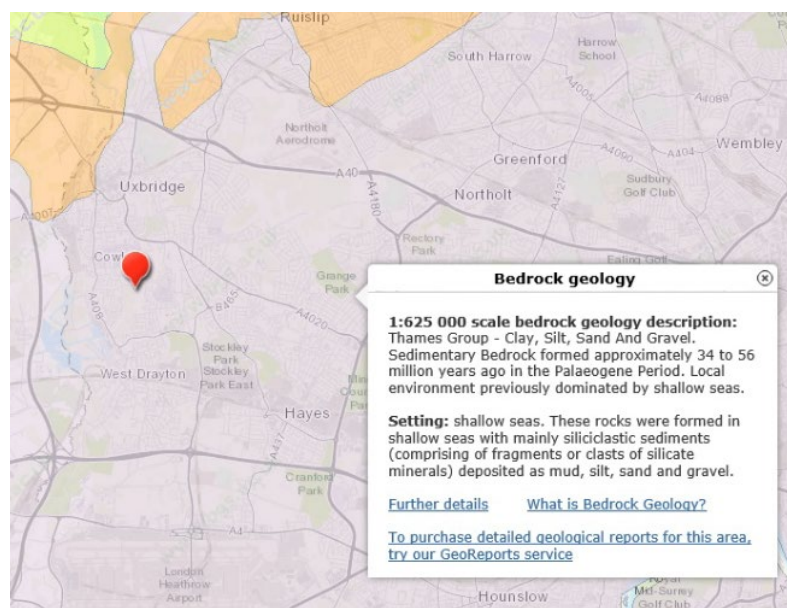


Figure 2 – Bedrock Geology

(Source: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)

2.5.2 BGS records show superficial deposits for the western corner of the site to comprise 'Langley Silt Member'. However, there are no records of superficial deposits underlying for the eastern corner of the site. See Figure 3.

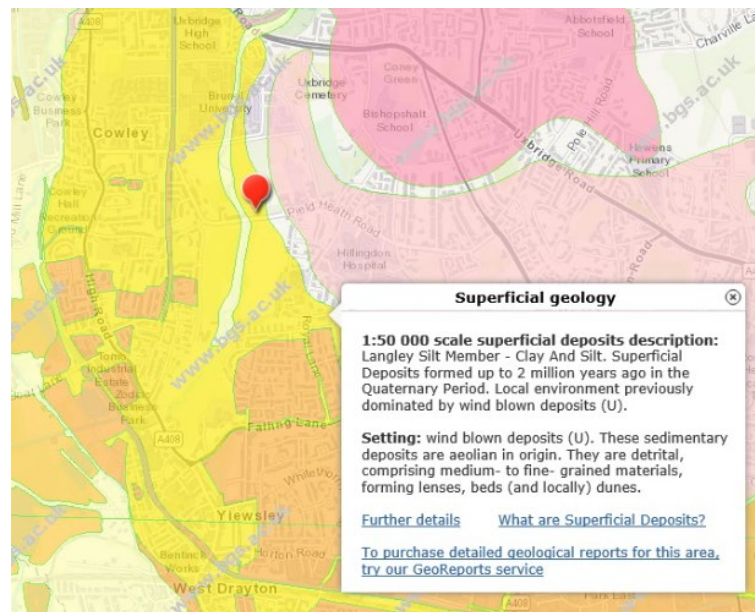


Figure 3 – Superficial Deposits

(Source: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)

2.5.3 Borehole records are also available from the BGS. The closest borehole to the site is TQ08SE17 located approx. 80m, north west to the site. The soil description indicates 0.9m of the disturbed topsoil on top of clay and gravel up to 1.5m. From 1.5m to 11.9m London clay; from 11.9m to 33.5m reading beds on top of upper chalk up to 105.7m. Groundwater was encountered at depth of 11m, 39m and 53m.

2.5.4 Given the temporary nature of the development and that the site is already served by a surface water drainage system, infiltration testing is not proposed at this site.

2.6 Hydrogeology

Source Protection Zones

2.6.1 Groundwater provides a third of drinking water in England and Wales, and maintains the flow in many of our rivers. The EA have defined Source Protection Zones (SPZ's) for 2000 groundwater sources such as springs, boreholes and wells used for the public drinking supply. These zones show the risk of contamination from any activities that might cause pollution in the area – the closer the activity the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which occasionally applies to a groundwater source.

2.6.2 EA mapping shows that the site is not within a SPZ.

Aquifers

- 2.6.3 Aquifers are underground layers of water-bearing permeable rock or drift deposits from which groundwater can be extracted. Aquifer designations reflect their importance in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the BGS, which is updated regularly to reflect ongoing improvements.
- 2.6.4 EA mapping indicates that the site is not underlain by a bedrock aquifer. The site is also not underlain by a superficial aquifer.

3 ASSESSMENT OF FLOOD RISK

3.1 National Planning Policy

- 3.1.1 The National Planning Policy Framework (NPPF) was first published in 2012 and revised by the Ministry of Housing, Communities and Local Government (MHCLG) in February 2019. It sets out the Government's national policies on flood risk management in relation to land use planning in England.
- 3.1.2 NPPF is accompanied by Planning Practice Guidance (PPG) 'Flood Risk and Coastal Change' which was published in March 2014. PPG is a web-based resource which advises how planning can take account of the risks associated with flooding and coastal change, both in plan making and the planning application process.
- 3.1.3 This section will review the risk of flooding at the site from all sources, both pre- and post-development. Reference will be made to local and strategic policies and documents as relevant.

3.2 Fluvial Flood Risk

- 3.2.1 Fluvial (river) flooding occurs when the capacity of watercourses (including streams, brooks and ditches etc.) are exceeded due to intense or prolonged rainfall events. The Environmental Agency have produced mapping to indicate areas which may be at risk of fluvial flooding, called Flood Zones, depicted on the Flood Map for Planning.
- 3.2.2 The PPG states that all development within Flood Zones 2 or 3, and/or are over 1ha in size must be accompanied by a site-specific FRA undertaken as part of the planning application process.
- 3.2.3 This site is located primarily within Flood Zone 1 - 'Low Probability'. This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%). A small area in the south west corner of the site is located within Flood Zone 2 – 'Medium Probability'. This zone is land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1%-0.1%).
- 3.2.4 Based on the topographical survey this would correlate to a 1 in 1000 year (0.1%) flood level of approximately 31.6mAOD. Existing ground levels for the proposed workshops range between 32.4mAOD and 33.3mAOD. See Figure 4.

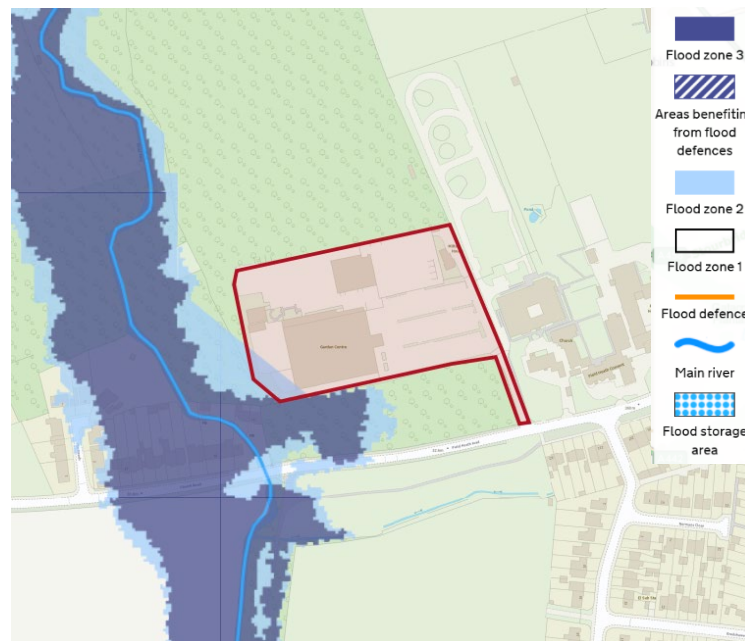


Figure 4 – Flood Map for Planning
(Source: <https://flood-map-for-planning.service.gov.uk/>)

3.2.5 Flood risk originates from the River Pinn and affects the west of the site. The proposed temporary workshops are in Flood Zone 1, approximately 800-1700mm above the 1 in 1000 year (0.1%) flood level.

3.3 Flood Risk Vulnerability

3.3.1 The PPG identifies the Flood Risk Vulnerability Classification of development types. Development types are classed as 'Essential Infrastructure', 'Highly Vulnerable', 'More Vulnerable', 'Less Vulnerable' and 'Water Compatible Development' depending on their use and vulnerability.

3.3.2 As temporary use a film production facility is proposed this development is classified as Less Vulnerable.

3.4 The Sequential and Exception Tests

3.4.1 The PPG details the Sequential and Exception Tests. The Sequential Test ensures that a sequential approach is followed to steer new development to areas with the lowest probability of flooding, i.e. Flood Zone 1. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 (areas with a high probability of river or sea flooding) be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

3.4.2 The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.4.3 PPG identifies when the Exception Test should be applied, and is reproduced as Table 2 below. As this Less Vulnerable will be located in Flood Zone 1, the Sequential Test is considered to be passed and the Exception Test does not need to be applied.

Table 2: Flood Risk Vulnerability Classification					
Flood Zones	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required	✗	Exception Test Required	✓	✓
Zone 3b	Exception Test Required	✗	✗	✗	✓
✓ Development is appropriate ✗ Development should not be permitted					

3.4.4 The Hillingdon Strategic Flood Risk Assessment (SFRA) and Preliminary Flood Risk Assessment (PFRA) have been reviewed.

3.4.5 The SFRA states that over 6000 properties are at risk of fluvial flooding within Hillingdon. There has been significant flooding in the last few years, key events have included August 1977 and May 1978. The events recorded in the last 15 years were in 2000, 2001, 2003, 2007, 2009, 2013 and 2014. These events were mainly located in discrete locations across the Borough. The most recent event recorded is in 2016 caused by a combination of surface water and heavy rainfall, where over 63 homes and 25 commercial premises in the Borough have been significantly affected in 36 different locations. The closest record of fluvial flooding to the site is in Church Road, Cowley, Uxbridge UB8 3N, approximately 20m from the site. However, there are no records of historical fluvial flooding affecting the site. Church Road sits lower than the former Wyevale Garden Centre.

3.4.6 Dry vehicle and pedestrian routes are available to the east of the site.

3.4.7 It is therefore considered that the site is at low risk of fluvial flooding.

3.5 Tidal Flooding

3.5.1 Tidal flooding is caused by exceptionally high sea levels and extreme wave heights. Tidal flooding is incorporated into the Environment Agency Flood Map for Planning and Flood Zone designation.

3.5.2 Due to the site inland location, tidal flooding is not considered to be a risk at this site.

3.6 Surface Water Flooding

3.6.1 Surface water flooding is caused by rain falling onto the surface which does not reach watercourses or drainage infrastructure. The Environment Agency 'Risk of Flooding from Surface Water' mapping examines the risk of flooding from surface water assuming local estimates of sewer infiltration losses. The likelihood of surface water flooding is split into four categories; 'Very Low', 'Low', 'Medium' and 'High' risk.

3.6.2 The 'Risk of Flooding from Surface Water' mapping is shown in Figure 5.



Figure 5 – Flood Risk from Surface Water

(Source: <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>)

3.6.3 Environment Agency mapping identifies the site to be at 'Very Low' risk of flooding from surface water. There is a small region close to the existing building to be at 'Low' risk from surface water, this is likely to be associated with the topography of the site.

3.6.4 The SFRA and PFRA have been reviewed, there are no records of historical surface water flooding affecting the site.

3.6.5 It is therefore the risk of flooding from surface water is considered to be Low

3.7 Groundwater Flooding

- 3.7.1 Groundwater flooding can occur anywhere where groundwater levels rise above the ground surface. Groundwater flooding can be difficult to predict and identify and is often associated with surface water flooding.
- 3.7.2 The risk of groundwater flooding was assessed in SFRA and PFRA. There are no records of groundwater flooding affecting the site.
- 3.7.3 The nearest BGS borehole record to the site, borehole TQ08SE17 located approximately 80m north west from the site recorded that water struck at 11m, 39m and 53m.
- 3.7.4 Based upon information provided within the SFRA, PFRA and BGS borehole records the site is considered to be at low risk of groundwater flooding.

3.8 Existing Sewers and Drains

- 3.8.1 Flooding from sewers and drains can occur when capacity is exceeded or there is a blockage or collapse in the network.
- 3.8.2 Sewer records have been obtained from Thames Water. Existing combined sewers are located Field Heath Road to the south of the site. Should flooding of these sewers occur, flows would head south west away from the site, following the topography of the area.
- 3.8.3 The SFRA and PFRA contains no records of historical sewer flooding affecting the site.

3.9 Reservoirs, Canals and Lakes

- 3.9.1 Flooding from reservoirs, canals and lakes occurs when their associated dams, embankments or other retaining structures fail or are breached.
- 3.9.2 There are no reservoirs near the site. The Environment Agency 'Risk of Flooding from Reservoirs' mapping indicates that the site is not at risk of reservoir flooding.
- 3.9.3 There are no canals or lakes near the site. Therefore, the risk of flooding from reservoirs, canals and lakes in this location is considered to be low.

4 PROPOSED SUSRFACE WATER DRAINAGE STRATEGY

4.1 Existing Surface Water Drainage

- 4.1.1 The topographical survey indicates that there are a number of rainwater down pipes and gullies on the site indicating that the surface water runoff from the existing buildings and car park are collected into a surface water network within the site. It is anticipated that these discharge to the River Pinn to the west of the site.

4.2 Surface Water Drainage Strategy

- 4.2.1 There is no additional impermeable area proposed by the development. The temporary workshops will be sited on the existing hardstanding car park. Given that the development is temporary for one year, runoff from the roofs of these workshops will be discharged into the existing surface water network serving the site, resulting in no increase in surface water flows from the development.
- 4.2.2 It is considered that it would be disproportionate to require a sustainable drainage system on what is expressly sought to be a one year temporary permission. To impose such a condition would therefore be contrary to the NPPF, which states that conditions should only be imposed where they are necessary, relevant to planning and to the development to be permitted, enforceable, precise and reasonable in all other respects.

5 PROPOSED FOUL DRAINAGE STRATEGY

5.1 Existing Foul Water Drainage

- 5.1.1 It is anticipated that foul flows from the development discharge to the public combined sewer is located in Pield Heath Road to the south of the site.

5.2 Proposed Foul Water Drainage

- 5.2.1 The development will utilise the existing toilet and washing facilities on site. There is no requirement for any additional foul disposal from temporary workshops. Therefore, no increase in foul flows is proposed.

6 RESIDUAL FLOOD RISK AND MITIGATION MEASURES

6.1 Finished Floor Levels

- 6.1.1 It is recommended that the Finished Floor Levels (FFL's) of the temporary workshops should be set 150mm above surrounding ground levels. This will provide some protection from extreme fluvial flood events or flooding of the drainage system due to blockages or collapse etc.

6.2 Safe Access and Egress

- 6.2.1 It is considered that safe access and egress will be provided to Pied Heath Road during all flood events. Based on data provided by the EA, the site is considered to be at low risk of flooding and will therefore have dry access and egress beyond the 1 in 1000yr + climate change event.

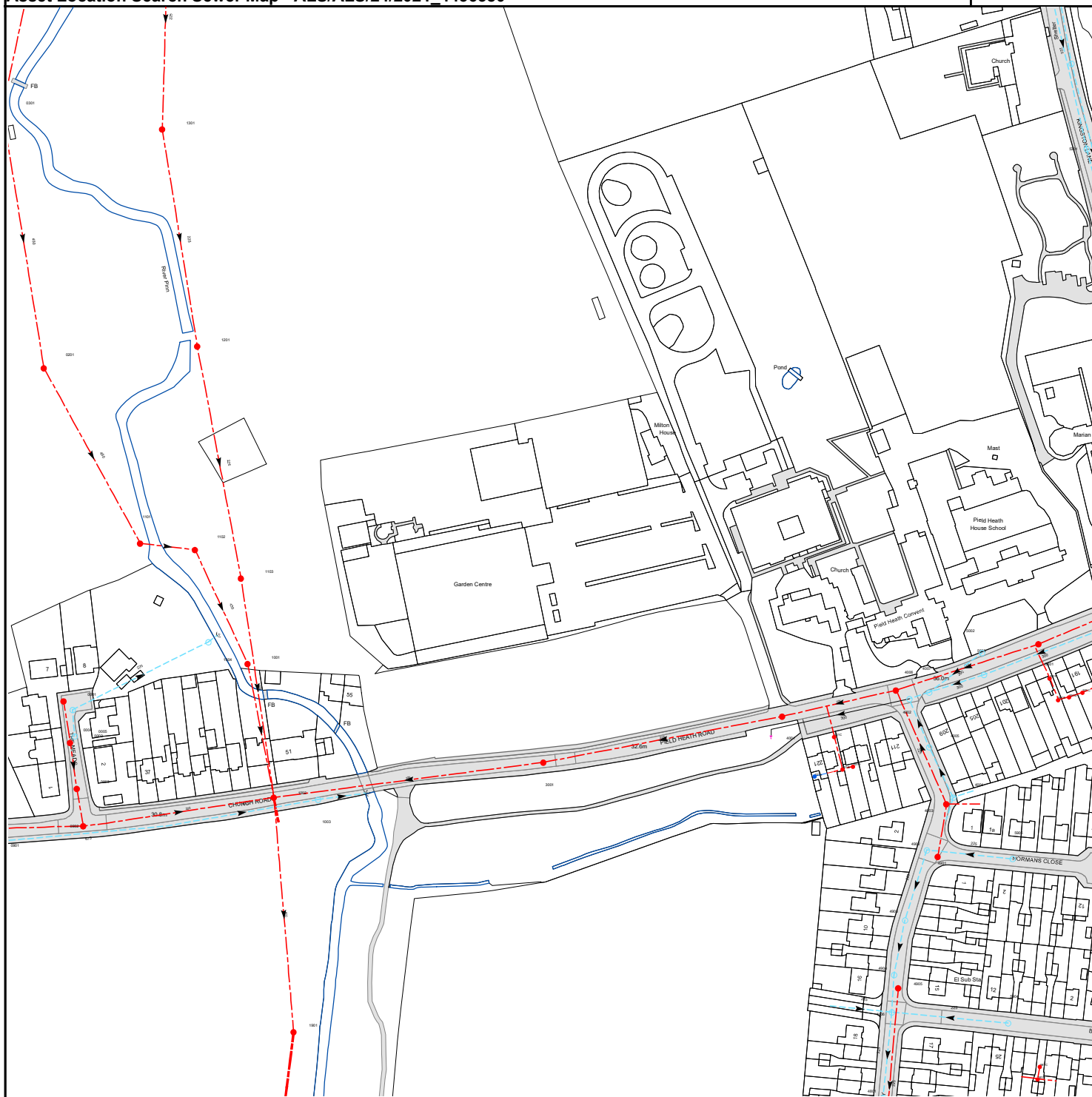
7 CONCLUSIONS

- 7.1.1 The proposed development at the former Wyevale Garden Centre, Hillingdon will comprise the construction of 5No. temporary workshops and use of the existing facilities as a temporary film production facility for one year.
- 7.1.2 Environment Agency mapping indicates that the site is primarily located in Flood Zone 1 with a small area in the south west corner of the site in Flood Zone 2. As no development is proposed in Flood Zone 2 the site is suitable for development in terms of fluvial flood risk. The site is at low risk of flooding from all other sources. The flood risk to the development is considered to be low overall.
- 7.1.3 As this 'Less Vulnerable' development is located wholly within Flood Zone 1, the Sequential Test is not required, and the site is therefore sequentially preferable. According to PPG Table 3, 'Less Vulnerable' uses are considered appropriate for Flood Zone 1 without the need to apply the Exception Test.
- 7.1.4 There is no additional impermeable area proposed by the development. The temporary workshops will be sited on the existing hardstanding car park. Given that the development is temporary for one year, runoff from the roofs of these workshops will be discharged into the existing surface water network serving the site, resulting in no increase in surface water flows from the development.
- 7.1.5 The development will utilise the existing toilet and washing facilities on site. There is no requirement for any additional foul disposal from temporary workshops. Therefore, no increase in foul flows is proposed.
- 7.1.6 In conclusion, it has been demonstrated that the proposals within this report are compliant with NPPF, PPG and local planning policy. Given the temporary nature of this development is for a one year permission it is not considered reasonable to require the installation of a new sustainable drainage systems, the re-use of existing infrastructure is more sustainable overall with a much reduced carbon footprint.

APPENDICES

APPENDIX A:
SEWER RECORDS

Asset Location Search Sewer Map - ALS/ALS/24/2021_4436380



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 506305,182124

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
5302	n/a	n/a
5301	42.15	40.46
5005	37.27	35.73
5002	36.31	35.63
5003	36.2	34.89
5906	n/a	n/a
5001	36.69	34.38
501F	n/a	n/a
501E	n/a	n/a
501D	n/a	n/a
501C	n/a	n/a
5004	37.17	35.76
501B	n/a	n/a
1004	n/a	n/a
1103	n/a	n/a
1001	n/a	n/a
1002	30.8	27.6
1901	30.18	27.33
1003	31.16	29.01
3001	31.18	29.18
4001	34.35	31.84
401A	n/a	n/a
401C	n/a	n/a
401B	n/a	n/a
401D	n/a	n/a
4801	33.72	31.93
4906	34.16	32.18
4904	34.33	32.41
4002	35.89	33.26
4905	34.25	32.66
4903	34.81	32.88
4006	35.5	34.44
4902	35.54	34.06
4007	35.83	34.63
4005	35.6	34.8
4901	35.57	33.53
4003	35.93	33.36
4004	36.03	34.87
0201	n/a	n/a
1101	n/a	n/a
1301	n/a	n/a
1102	n/a	n/a
1201	n/a	n/a
581D	n/a	n/a
581C	n/a	n/a
5904	n/a	n/a
0902	n/a	n/a
0003	31.41	29.23
0002	31.27	29.54
0005	31.2	30.23
0004	31.15	30.06
0001	31.07	29.7
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.		



ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

	Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Trunk Surface Water
	Trunk Foul
	Storm Relief
	Trunk Combined
	Vent Pipe
	Bio-solids (Sludge)
	Proposed Thames Surface Water Sewer
	Proposed Thames Water Foul Sewer
	Gallery
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Sludge Rising Main
	Proposed Thames Water Rising Main
	Vacuum

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve
	Dam Chase
	Fitting
	Meter
	Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Control Valve
	Drop Pipe
	Auxiliary
	Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Outfall
	Undefined End
	Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

	Public/private pumping station
	Change of characteristic indicator (C.O.C.I.)
	Invert Level
	Summit

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

	Foul Sewer		Surface Water Sewer
	Combined Sewer		Gully
	Culverted Watercourse		Proposed
			Abandoned Sewer

- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Searches on 0800 009 4540.

DRAWINGS



Revisions	

Drawings Notes

1. this is not a survey drawing - all dimensions to be checked on site.

2. do not scale off this drawing.

3. the copyright of this drawing is the property of TPA Design Ltd

4. all discrepancies to be reported to the architect

5. please ensure that this drawing is read together and cross referenced with all other relevant architectural drawings, schedules and specifications.

6. please ensure that this drawing is read in conjunction with all other consultants/specialist contractors relevant drawings, schedules and specifications.

7. TPARCHITECTS is a trading name of TPA Design Ltd Registered address 33a St Lukes Road, Maidenhead, Berkshire SL67DN.

Project	Wyevale Uxbridge	TPARCHITECTS 33a St Lukes Road Maidenhead Berkshire SL6 7DN + (44) 01628412388 enquiries@tparch.co.uk www.tparch.co.uk					
Title	Proposed Block Plan						
Drg. No.	2720 - SK - 101						
Rev		Drawn	Checked	Date	Scale	Status	
		CB	ED	April'21	As Shown	SK	

182250mN

182200mN

182150mN

182100mN

182050mN

182000mN

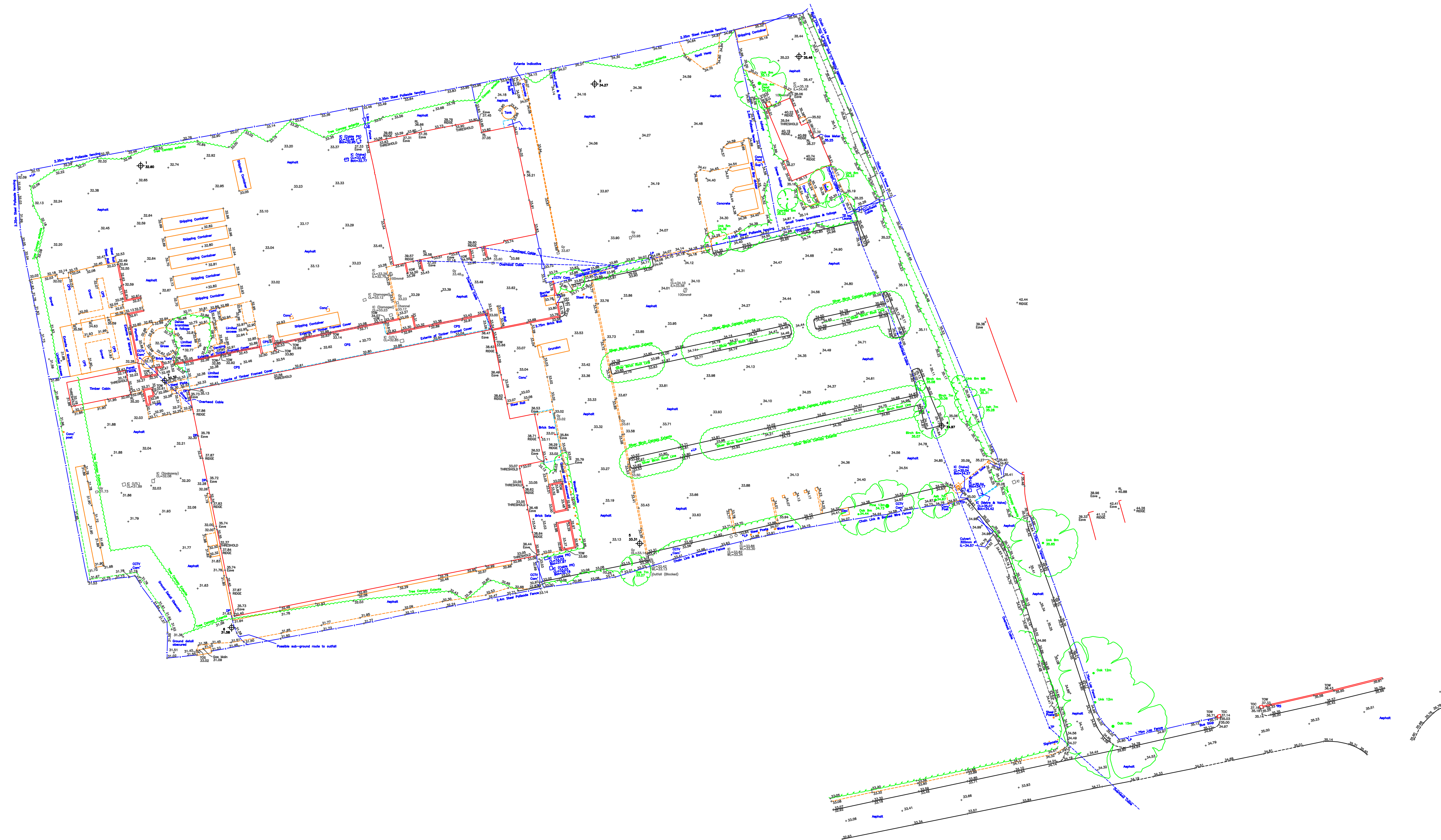
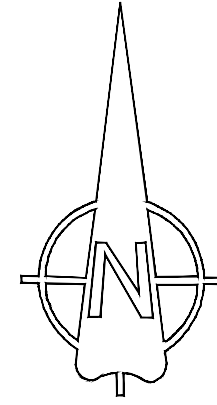
Nu

506160mE

506200mE506250mE506300mE506350mE

506400mE

506450mE



0m 10m 20m 30m 40m 50m

NOTES:

ABBREVIATION KEY - TOPOGRAPHIC SURVEY

AV	Air Valve
BO	Ballard
BO	Back Inlet Gully
BT	British Telecom
CPS	Cable Paving Slabs
CL	Cable Level
CATV	Cable Television Cover
DB	Double Yellow Line
DR	Double Red Line
DW	Dashed White Line
ECB	Electric Cable Cabinet
ECB	Electric Cable Pit
EP	Electricity Pole
ER	Earth Road
FI	Fire Inlet
FH	Fire Hydrant
F/B	Flower Bed
GI	Gas Valve
IL	Gully
IL	Invert Level
LC	Lamp Column
LP	Lamp Post
MB	Multi Stop
MK	Service Marker
PM	Parking Meter
RE	Rodding Eye
RS	Road Sign
RRP	Rain Water Pipe
SC	Stop Cock
SW	Single White Line
SY	Single Yellow Line
SV	Stop Valve
SVP	Soil and Vent Pipe
TCB	Telephone Cable Cabinet
TP	Telephone Pole
UTL	Unable To Lift
WG	Wet Gully
WM	Water Meter
WO	Wash Out

ABBREVIATION KEY - BUILDING SURVEY

○	Floor To Ceiling
□	Floor To False Ceiling
AB	Air Brick
DB	Double Socket
CH	Door Head Level
Cell HT	Ceiling Level
FL	Fire Alarm
FL	Floor Level
FL	Floor To Sill
FS	Fuse Box
GS	Ground Line
Height	Height
LS	Light Switch
RWP	Rain Water Pipe
SA	Smoke Alarm
SD	Smoke Detector
SH-	Sill To Head
SS	Single Socket
Stat	Thermostat
SW	Switch
TEL	Telephone/Outlet
UC	Under Cable Socket
UA=	Under Arch (center)
UD=	Under Opening
UP=	Under Opening
WS	Window Sill
WS=	Window Sill Level
WS=	Window Sill Level

Co-ordinate Table

ID	Easting	Northing	Height
1	506222.121	182165.989	32.602
2	506310.742	182181.943	34.266
3	506350.627	182187.329	35.464
4	506378.483	182115.183	34.973
5	506319.532	182092.226	33.306
6	506239.880	182075.805	31.582
7	506226.824	182124.031	32.322

[illegible]

LEVELING	DATUM
----------	-------

Related to Ordnance Survey National Grid Using GPS equipment

CAD OPERATOR	RFRC	APPROVED BY	BED	DATE	28.04.2021
--------------	------	-------------	-----	------	------------

Survey and Engineering Services Ltd



Terry Platt

LOCATION	
----------	--

*Wyevale Garden Centre
Field Heath Road
UB8 3NP*

DRAWING TITLE

Topographic Survey

ORIGINAL JOB No.	JOB No. 110421
DRAWING No. 110421/Topo	REVISION SUFFIX
SCALE 1:500 (A1 Sheet)	DATE 28th April 2021

The Granary
Lee Farm
Lee Lane
Pinkneys Green
Maidenhead
SL6 6PE

Registered Company No: 5366478

Registered Company No: 5366478

No / Fax: +44 (0) 1628 675 781

STOKE-ON-TRENT

Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM

Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BURY ST EDMUNDS

6 Brunel Business Court
Eastern Way
Bury St Edmunds
Suffolk
IP32 7AJ
Tel: +44 (0)1284 765 210

CARDIFF

Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE

Marconi Road
Burgh Road Industrial
Estate Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH

Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW

2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LEEDS

36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON

Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE

City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

SHEFFORD

Pl House
R/O 23 Clifton Road
Shefford
Bedfordshire
SG17 5AF
Tel: +44 (0)1462 850 483

TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY

29/6 Satpaev Avenue Regency
Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW

21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67