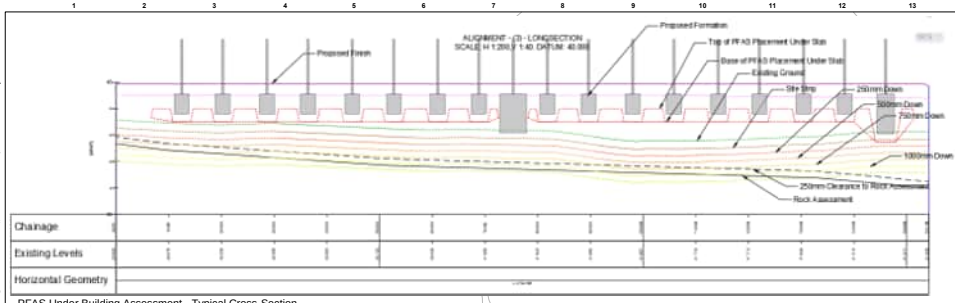


PFAS Under Building Assessment - Typical Cross-Section

Calculations - Proposed Placement of Subsoil

The calculated volume of potential PFAS volume below the proposed building is based on the following assumptions:

- Approximate volumes of PFAS within trapezoidal infill between foundations is based on a 1:1 batter originating from 300mm drop and 300mm outward offset from adjacent foundation pad, extending up to a level of 44.00mAOD.
- And the approximate volumes of PFAS between site strip and the underside of the trapezoids above.
- Baseline volume available based on current site strip and formation levels is 9206m³.
- Additional volumes resulting from reduction in site strip level (250mm increments) is presented within table below and illustrated on the cross-section above.
- Volumes presented account for minimum 250mm cover from weathered rock level to underside of PFAS fill.

The potential total volume of PFAS fill = **17,548m³.**

NOTE! volumes associated with mass fill to the underside of pad foundations have not been accounted for in these calculations. The associated volume of mass fill in PFAS zones is approx. 3000m³ with an estimated 80% volume impacting PFAS fill amounts.

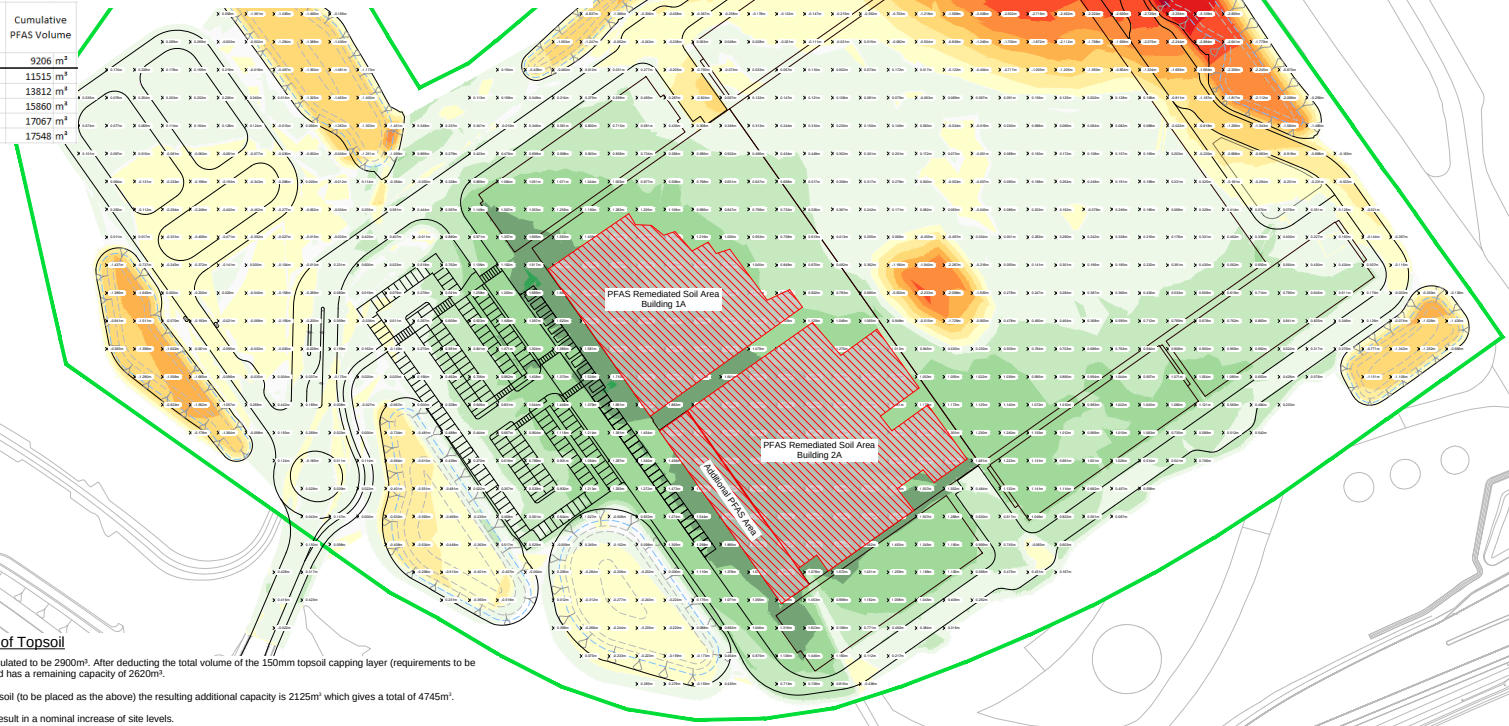
Total Per Layer	Excavation in Layer	Cumulative PFAS Volume
Top of PFAS Fill to Site Strip	9206 m³	9206 m³
Site Strip to -250mm	2309 m³	11515 m³
-250mm to -500mm	2297 m³	13812 m³
-500mm to -750mm	2048 m³	15860 m³
-750mm to -1000mm	1207 m³	17067 m³
-1000mm to Rock+250mm	481 m³	17548 m³

Calculations - Proposed Placement of Topsoil

The total volume for the PFAS landscape bund is calculated to be 2900m³. After deducting the total volume of the 150mm topsoil capping layer (requirements to be confirmed), which is 280m³, the PFAS landscape bund has a remaining capacity of 2620m³.

Utilising the capacity below the bund for removed subsoil (to be placed as the above) the resulting additional capacity is 2125m³ which gives a total of 4745m³.

The additional 4745m³ of topsoil retained on site will result in a nominal increase of site levels.



CUT AND FILL SUMMUARY

NAME	CUT FACTOR	FILL FACTOR	2D AREA	CUT	FILL	NET
FORMATION LEVEL VS EXISTING SITE-STRIP	1.000	1.000	105339.942sq.m	46595.043 Cu. M.	46879.468 Cu. M.	1615.574 Cu. M. < CUT >
TOTALS			105339.942sq.m	46595.043 Cu. M.	46879.468 Cu. M.	1615.574 Cu. M. < CUT >

SURFACE LEVEL DATA

NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
1	-4.00	-3.50	
2	-3.50	-3.00	
3	-3.00	-2.50	
4	-2.50	-2.00	
5	-2.00	-1.50	
6	-1.50	-1.00	
7	-1.00	-0.50	
8	-0.50	-0.01	
9	-0.01	0.01	
10	0.01	0.50	
11	0.50	1.00	
12	1.00	1.50	
13	1.50	2.00	
14	2.00	2.50	
15	2.50	3.00	

VANTAGE DATA CENTERS

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10 Bishops Square, London E1 6AO, United Kingdom

Burroughs
4 Radnor Court, 258 Cowbridge Rd East, Cardiff CF5 1GZ, United Kingdom

DRAWING NOTES:

1. EARTHWORK ASSESSMENT
   - EXISTING GROUND LEVELS AND SITE STRIP ARE BASED ON TOPOGRAPHICAL SURVEY DRAWING 19052-SURV-Site_00-RevA1-10.dwg RECEIVED IN MARCH 2020
2. EXCAVATION OF DRAINAGE, SERVICES AND OTHER FOUNDATIONS HAVE NOT BEEN TAKEN INTO ACCOUNT WITHIN THIS ASSESSMENT
4. EXCAVATION OF FOUNDATIONS HAVE NOT BEEN TAKEN IN TO ACCOUNT WITHIN THIS ASSESSMENT, ONLY A DEPTH TO FORMATION UNDER THE FOOTPRINT OF THE BUILDING
5. OTHER THAN MATERIAL FROM INITIAL SITE-STRIP, ALL ARISINGS ON SITE HAVE BEEN ASSUMED TO BE RE-USABLE AS CLEAN EXCAVATED MATERIAL SUBJECT TO GEOTECHNICAL CONFIRMATION FROM AN APPROPRIATE QUALIFIED PERSON.
6. BULK FACTORS ARE ASSUMED TO BE 1.0 FOR THIS ASSESSMENT. ACTUAL MATERIALS MAY BULK ON EXCAVATION THUS INCREASING THEIR VOLUME.
7. FOLLOWING SITE INVESTIGATION WORKS, THE PRESENCE OF POLYFLUOROALKYL SUBSTANCES (PFAS) CONTAMINATION WAS IDENTIFIED IN THE MADE GROUND ACROSS PARTS OF THE SITE AT THE EDGE OF THE PROJECT. THE PFAS VOLUMES HAVE NOT BEEN CALCULATED. VOLUMETRIC CALCULATIONS OF CONTAMINATED ZONE SHALL BE DEVELOPED AS THE PROJECT PROGRESSES.
8. EARTHWORKS VOLUMES ARE PROVIDED FOR INFORMATION ONLY.
9. CONTRACTOR IS TO IS TO SATISFY THEMSELVES OF THE QUANTITIES OF CUT MODELLINGS. CUT: EARTH BALANCES ASSUME EXCAVATED MATERIAL IS FIT FOR REUSE, SUBJECT TO THE SPECIFICATION OF THE GEOTECHNICAL ENGINEER.

CALCULATIONS

1. EARTHWORKS AND CUT / FILL SUMMARY ARE BASED ON THE FOLLOWING SURFACES:
   EXISTING TOPOGRAPHICAL SURVEY (AFTER STRIP-OFF) AND **PROPOSED FORMATION LEVELS**
2. EXISTING TOPOGRAPHICAL SURVEY STRIP-OFF
   - TOP SOIL = 300mm
   - HARDSTANDING = 300mm
   - OTHER EXISTING SURFACES = 300mm
3. PROPOSED CONSTRUCTION DEPTHS (FOR FORMATION):
   - ROAD = 600mm
   - FOOTPATHS = 450mm
   - SOFT LANDSCAPING = 300mm
   - PLAY AREAS = 600mm
   - GRASS, YARD AREAS = 600mm
4. THE FOLLOWING ELEMENTS ARE NOT INCLUDED IN CALCULATION:
   - DRAINAGE
   - UNDERGROUND SERVICES
   - ABOVE GROUND SERVICES, LIGHTING, TRAFFIC SIGNS, SIGNALS, STREET FURNITURE ETC.
5. BULKING FACTORS FOR CUT AND FILL = 1.0
6. THE VOLUME ASSESSMENT ABOVE ACCOUNTS FOR THE BASE COURSE.
7. THE ABOVE CALCULATIONS ARE DYNAMIC AND WILL BE REVISED AS THE PROJECT ADVANCES AND MORE DETAIL IS FORTHCOMING AT DETAIL BALANCE.
8. FURTHER REVISION TO THIS CALCULATION IS REQUIRED TO ACCOUNT FOR THE PFAS ZONE ONCE CONFIRMED BY THE GEOTECHNICAL CONSULTANT.

IMPORTANT
THIS EARTHWORK CUT AND FILL VOLUMETRIC ASSESSMENT HAS BEEN PREPARED AT AN EARLY STAGE AND PRESENTS AN ESTIMATED VOLUME BASED ON THE CURRENT AVAILABLE INFORMATION. AS THE PROJECT ADVANCES AND MORE ACCURATE INFORMATION BECOMES AVAILABLE, THE ASSESSMENT AND ASSUMPTIONS MAY VOLUMES AND LEVELS ARE EFFECTIVE TO CHANGE IN ORDER TO ACHIEVE A ZERO BALANCE CUT AND FILL ASSESSMENT.

LEGEND:
DEVELOPER LEASEHOLD LAND BOUNDARY

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan

No.	Date	By	Ckd	Description
P1	19/12/23	AM	DR	ISSUED FOR WS3

Status: WS3
Date: 19/12/23
Scale: 1:500
Designed: A.MOHSIN
Checked: D.HICKMAN
Project Name: CWL21
Project Address: ST ATHAN, CF62 4QP WALES, UNITED KINGDOM
PFAS VOLUMETRICS STUDY SKETCH
Sheet Number: C-0601
File Code: CW21-BUR-WS3-SP-SK-C-0601
Model Origination: CW21-BUR-WS3-SP-SK-C-0601

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