

P8529 ACADEMIC CAMPUS - BOUNDARY WALLS 2023					
THE UNIVERSITY OF MANCHESTER			Prep:	CMc	Version:
			Rev:		Date: 28-Nov-23
ID	Description	Qty	Unit	Rate	Total
BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
<u>C EXISTING SITE/BUILDINGS/SERVICES</u>					
<u>C20: DEMOLITONS</u>					
<u>Conservation works. Note prior to the works the Contractor will be requested to demonstrate that the works will be carried out by an experienced contractor or subcontractor with recognised competence in heritage/conservation works minimum standard of accreditation is to be a member of the Stone Federation</u>					
<u>Carefully take down brickwork walls; cut out, select and isolate facing bricks, remove mortar, snots etc, clean down and set aside for reuse; remove and dispose off surplus material off site</u>					
Walls					
10	one brick thick, English bond, built entirely with facings bricks (passageway main wall - exposed above ground both sides)	6	m2		
20	one brick thick, English bond, built entirely with facing bricks (end wall - exposed above ground both sides)	1	m2		
30	one brick thick, English bond, built in commons (passageway main wall - one side below upper ground level ground, plinth double course opposite side)	2	m2		
40	one and half brick thick, English bond, one exposed face built with facing bricks, reverse face assumed part built in commons (passageway main wall - one side below upper ground level)	2	m2		
50	two brick thick, English bond, exposed face built with facing bricks, reverse face assumed part built in commons (passageway main wall - one side below upper ground level)	27	m2		
Extra over carefully removing					
60	special plinth bricks, laid in one course; remove all traces of mortar, snots etc, clean down and set aside for reuse (passageway side)	15	m		

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70	special plinth bricks, laid in one course; remove all traces of mortar, snots etc, clean down and set aside for reuse (End wall passageway side)	2	m		
80	special plinth bricks, laid in two courses remove all traces of mortar, snots etc, clean down and set aside for reuse (passageway side)	15	m		
90	special plinth bricks, laid in two courses remove all traces of mortar, snots etc, clean down and set aside for reuse (End wall passageway side)	2	m		
100	copings, specials, twice weathered, reeded, throated copings stones, remove all traces of mortar, snots etc, clean down and set aside for reuse	15	m		
110	copings, specials, twice weathered, reeded, throated copings stones, remove all traces of mortar, snots etc, clean down and set aside for reuse (end wall above ground level)	2	m		
	<u>Carefully take down hexagonal ornamental pier, comprising both base and stem sections with ornamental features, remove mortar, snots etc, clean down and set aside sections, component parts or individual bricks and set aside for reuse</u>				
	Feature Piers				
120	approximate dimensions - 1.75 above overall height above ground x 0.60 maximum base/0.5 m maximum stem width	3	nr		
130	approximate dimensions - 2.2 below upper ground level x 0.60 maximum, facing bricks to exposed faces, cut out, remove snots and mortar select , set aside for reuse	3	nr		
	Extra over carefully removing				
140	special ornamental feature cappings	3	nr		
150	hexagonal plinth to pier, built up in sections, maximum approximate 0.60 m base width on plan reducing to 0.50 m at the stem	3	nr		

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BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
160	Carefully removing metal ornamental balustrades 1900 length x 800 high set in coping mortices; include for removing brackets set in feature piers and take to store for refurbishment	5	nr		
<u>C30: SHORING/FACADE RETENTION</u>					
<u>SPECIFIC TEMPORARY WORKS - CONTRACTORS RISK ITEM</u>					
<u>Prior to the works taking place the contractor is to determine the need for any temporary works that may be deemed necessary to protect the existing retaining wall and adjacent Whitworth Art gallery as mentioned on the structural Engineer's drawings 078255-CUR-XX-XX-D-S-20001-P01. If the Contractors deems necessary the following items should if and where relevant be priced. Should shoring deemed not necessary any risks of damage to adjacent buildings will remain with the Contractor.</u>					
Temporary works - (contractor's risk)					
170	shoring works where necessary designed by contractors appointed Structural Engineer to support the existing retaining wall and protect the Whitworth Art gallery whilst the works proceeds. All to comply and be carried out in accordance with all relevant current Health and Safety legislation and codes of practice (BS 5975)	1	Item		
180	If necessary any costs in associated in liaison with the Local Authority	1	Item		
190	Any cost if necessary for providing any calculations to meet the local Authority requirements	1	Item		
200	If necessary, indemnify the UoM to a limit of £1,000,000.00 from any expense, liability, loss, claim or proceedings which the employer may incur or sustain by reason of injury or damage to any property caused by collapse, subsidence, heave, vibration, weakening or removal of support or lowering ground water arising out of or in the course of carrying out the works excluding injury of damage other than items indicated in clause 6.5.1.1to 9).	1	Item		

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210	If necessary and in connection with the last item the Contractor will be required to take out the necessary insurance with an insurer approved by the Employer to meet the requirements of clause 6.5	1	Item		
220	If necessary any Structural Engineer fees in providing the shoring design	1	Item		
230	If necessary design warranty from the Contractor's Structural Engineer in connection with the design for the shoring works	1	Item		
	<u>END OF SPECIFIC TEMPORARY WORKS - CONTRACTORS RISK ITEM</u>				
	<u>D GROUNDWORKS</u>				
	<u>D20: EXCAVATING AND FILLING</u>				
	<u>Site preparation</u>				
	Protect existing trees				
240	as shown on Bartlett tree protection plan drawing	1	Item		
	<u>Excavating</u>				
	Topsoil for preservation				
250	0.15 average depth (for tree root protection system)	150	m2		
260	0.25 average depth	46	m2		
	Extra over				
270	Hand digging around tree roots (based on 50 % of 0.25 thick topsoil removal area - measured in m3)	6	m3		
280	Extra over for - Note: in order to protect the tree root system the contractor may consider vacuum excavation in lieu of hand digging, the contractor should include the extra over price for hand digging against this item	6	m3		
	Reduce levels (passageway slab)				
290	1 m maximum depth starting from existing concrete slab (passageway)	4	m3		

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	Basements and the like (retaining wall)				
300	4 m maximum depth starting from reduced level	126	m3		
	Extra over				
310	Hand digging around tree roots (based on 25% of 4 m deep excavation removal)	32	m3		
320	Extra over for - Note: in order to protect the tree root system the contractor may consider vacuum excavation in lieu of hand digging, the contractor should include for the extra over price of vacuum excavation for hand digging	32	m3		
	Pits				
330	1 metre maximum depth starting from reduced level excavation (passageway)	1	m3		
340	Trial pits 1.5 x 1.5 x 1.00 m approximate pit size; disposing surplus material off site (passageway)	2	m3		
350	Pits, 3.00 m x 3.00 m x 0.30 m approximate pit size; (5 nr in total) (random points to the site to accommodate vehicular access)	14	m3		
	Extra over excavation irrespective of depth for				
360	breaking up pcc path edgings	34	m		
370	saw cutting concrete, 200 thick	6	m		
380	existing concrete slab (passageway)	4	m3		
390	brickwork foundations walls (APPROXIMATE QUANTITIES)	5	m3		
400	concrete (APPROXIMATE QUANTITIES)	5	m3		
410	coated macadam or asphalt paving; 100 thick; disposing off site (APPROXIMATE QUANTITIES)	25	m2		
	Extra over excavation irrespective of depth for excavating for services crossing excavation				
420	existing drainage (APPROXIMATE QUANTITIES)	2	nr		

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BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
430	Extra over excavation irrespective of depth for excavating alongside services uncovered in excavations alongside existing drainage (APPROXIMATE QUANTITIES)	5	m		
440	Working space to reduced levels, backfilling with imported granular material to BS 6031, type J, (no limestone or chalk) clean course gravel, depositing in layers 150 maximum thickness; compacting	67	m2		
450	to pits, backfilling with imported hardcore, depositing in layers 150 maximum thickness; compacting (passageway	4	m2		
<u>Earthwork Support</u>					
460	To faces of excavations 1 m maximum depth; distance between opposing faces not exceeding 2 m (passageway)	4	m2		
470	4 m maximum depth; distance between opposing faces not exceeding 2 to 4 m	67	m2		
<u>Disposal</u>					
480	Surface Water generally	1	Item		
490	Ground Water generally	1	Item		
500	Excavated material off-site, inactive non hazardous waste	148	m3		
510	Excavated topsoil on site; 100m average distance & depositing in temporary spoil heaps	46	m3		
520	on site; 100m average distance & depositing in temporary spoil heaps (for reuse in tree root protection	23	m3		

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BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
	<u>Granular material; BS 6031, type J, clean coarse gravel, selected, (no limestone or chalk content allowed), graded</u>				
	Filling to make up levels				
530	exceeding 250 thickness; obtained off site; depositing in layers 150 maximum thickness, compacting	89	m3		
540	exceeding 250 thickness; obtained off site; depositing in layers 150 maximum thickness, compacting (passageway)	3	m3		
550	exceeding 250 thickness; obtained off site; depositing in layers 150 maximum thickness, compacting (random access points - 5nr)	14	m3		
	<u>Topsoil, selected, obtained from on site spoil heaps</u>				
	Filling to make up levels				
560	not exceeding 250 thickness; depositing and packing in Tree Raft units, in layers 150 maximum thickness, compacting	23	m3		
570	not exceeding 250 thickness; depositing within 100 m of the works, in layers 150 maximum thickness, compacting	46	m3		
	<u>Imported Topsoil. BS 3882</u>				
	Filling to make up levels				
580	over 250 thick; obtained off site; depositing in layers 250 maximum thickness; firming (APPROXIMATE QUANTITIES)	68	m3		
	<u>Surface Treatments</u>				
	Compacting				
590	bottoms of excavations	46	m2		
600	bottoms of excavations (passageway)	7	m2		
	Grading/trimming				
610	bottoms of excavations, sloping (for tree root protection system	150	m2		

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	<u>Tree root protection system, GreenTech or equal approved, laid and fitted in accordance with the Manufacturer's instructions</u> Root protection units, including bracket, clamps, fittings etc				
620	150 thick, reference 170UR7065 laid on Geotextile membranes (for tree root protection system)	150	m2		
	SW Geotextile 20/20 50mm membrane				
630	reference 170UR7061 laid on bottoms of excavations, sloping (for tree root protection system)	150	m2		
	<u>Herbicide</u>				
640	Apply weed killer to sub base	46	m2		
650	bottoms of excavations (passageway)	7	m2		
	<u>E IN SITU CONCRETE/LARGE PRECAST CONCRETE</u>				
	<u>E10 INSITU CONCRETE</u>				
	<u>Plain insitu concrete; BS 8500-2 and EN 206, designated mix, GEN 3, 20 size nominal aggregate, slump class S3, Chloride class CL 1,0</u> Beds				
660	not exceeding 150 thick, poured on earth or unblinded hardcore	2	m3		
	Filling hollow walls				
670	not exceeding 150 thick, poured on earth or unblinded hardcore	1	m3		
	<u>Reinforced insitu concrete; BS 8500-2, 2015, Table 5, designated mix, RC25, 20 size nominal aggregate, slump class S3, Chloride class CL 0.4</u> Isolated foundations				
680	not exceeding 150 thick poured on blinded concrete (passageway)	1	m3		

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	Beds				
690	not exceeding 150 thick poured on blinded concrete	18	m3		
700	150 to 450 thick, poured on blinded concrete (passageway)	1	m3		
<u>Reinforced insitu concrete; BS 8500-2, 2015, Table 5, designated mix, RC40, XF, 20 size nominal aggregate, slump class S3 Chloride class CL 0.4</u>					
	Walls				
710	150 to 450 thick	9	m3		
<u>E20 FORMWORK FOR INSITU CONCRETE</u>					
<u>Formwork; basic finish</u>					
	Sides of foundations				
720	not exceeding 250 high	33	m		
730	250 to 500 high (passageway isolated pad foundations)	9	m		
	Walls				
740	vertical one side	73	m2		
	Kickers				
750	generally	17	m		
<u>E30 - REINFORCEMENT FOR INSITU CONCRETE</u>					
<u>Reinforcement bars; BS 4449, Grade B500B hot rolled, high yield steel.</u>					
	Bars				
760	10 diameter nominal size; bent (APPROXIMATE QUANTITIES)	0.504	t		

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	<u>Fabric reinforcement; BS 4483, hard drawn mild steel wire, welded; 300 minimum side and end laps</u>				
	Fabric				
770	reference A393; vertical, to retaining walls	73	m2		
780	reference A393; horizontal, to retaining walls	92	m2		
790	reference A393; horizontal (passageway)	17	m2		

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	<u>F MASONRY</u> <u>F10 BRICK/BLOCK WALLING (APPROXIMATE QUANTITIES)</u> <u>Conservation works. Note prior to the works the Contractor will be requested to demonstrate that the works will be carried out by an experienced contractor or subcontractor with recognised competence in heritage/conservation works minimum standard of accreditation is to be a member of the Stone Federation. Note: where new facings are required the match of the bricks shall be agreed with the Architect/CA before any works proceed</u> Rebuild brickwork walls in new common brickwork to BS BS EN 771-3, solid, compressive strength 10.4N/mm ² ; (size to accommodate imperial facing brick); where indicated as extra over, exposed faced to be built from cleaned down selected bricks set aside for reuse (unless alternatively described as built entirely of reusable selected facings in the full item description); imperial brick 228 x 108 x 68 (measured metrically); bedded and jointed in and pointing in coloured (CPI Euromix, or equivalent (medium cost range), cement mortar (1:3) below or (1:1:6) above ground; <u>pointing in 2.5 Leighton buzzard sand, 0.5 Nosterfield washed rivers sand and 1 NHL 3.5 lime, crushed coal ash or where equivalent subject to the conservation officer's approval</u> , neat flush joint as work proceeds Walls				
800	one brick thick, english bond, built entirely with selected facing bricks previously set aside, pointing both sides (passageway main wall - exposed above ground both sides) Extra over for selected facings	6	m2		
810	built entirely with facing brick (£650/1000 supply price), english bond; pointing both sides	6	m2		
820	one brick thick, english bond, built entirely with selected facings bricks previously set aside; pointing both sides (end wall - exposed above ground both sides)	1	m2		

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830	one brick thick, english bond, built entirely in commons (passageway main wall - one side below upper ground level ground, plinth double course opposite side)	2	m2		
840	one and half brick thick, english bond, built entirely in commons (passageway main wall - one side below upper ground level)	2	m2		
	Extra over common brickwork for				
850	one exposed face built with selected facing bricks previously set aside for reuse; pointing one side	2	m2		
860	one exposed face built with facing brick (£650/1000 supply price), english bond; pointing one side	2	m2		
870	two brick thick, english bond, built entirely in commons (passageway main wall-one side below upper ground level)	27	m2		
	Extra over for				
880	one exposed face built with selected facing bricks previously set aside for reuse; pointing one side	27	m2		
890	one exposed face built with facing brick (£650/1000 supply price), english bond; pointing one side	27	m2		
	Feature Piers				
900	octagonal on plan, approximate dimensions - 2.2 below upper ground level down to passageway lower ground level x 0.60 maximum width	3	nr		
	Extra over for				
910	exposed faces to 3 sides of octagon built with selected facings previously set aside for reuse; pointing	3	nr		
	Facework ornamental bands and the like				
920	plinth bricks, specials, previously set aside for reuse and refurbished, laid in one course (passageway side)	15	m		
930	plinth bricks, specials, previously set aside for reuse and refurbished, laid in one course (end wall passageway side)	2	m		

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940	plinth bricks, specials, previously set aside for reuse and refurbished, laid in two courses (passageway side)	15	m		
950	plinth bricks, specials, previously set aside for reuse and refurbished, laid in two courses (End wall passageway side)	2	m		
Facework copings					
960	copings, specials, twice weathered, reeded, throated copings stones, previously set aside for reuse and refurbished	15	m		
<u>Rebuild hexagonal ornamental pier, comprising both base and stem sections with ornamental features, bedded and jointed in and pointing in coloured (CPI Euromix, or equivalent (medium cost range), cement mortar (1:3) below or (1:1:6) above ground; pointing in 2.5 Leighton buzzard sand, 0.5 Nosterfield washed rivers sand and 1 NHL 3.5 lime, crushed coal ash or where equivalent subject to the conservation officer's approval, neat flush joint as work proceeds</u>					
Feature Piers (previously set aside for reuse)					
970	approximate dimensions - 1.75 above overall height above ground x 0.60 maximum base/0.5 m maximum stem width	3	nr		
980	approximate dimensions - 2.2 below upper ground level x 0.60 maximum, facing bricks to exposed faces, cut out, remove snots and mortar select , set aside for reuse	3	nr		
Extra over carefully removing					
990	special ornamental feature capping's	3	nr		
1000	hexagonal plinth to pier, built up in sections, maximum approximate 0.60 m base width on plan reducing to 0.50 m at the stem	3	nr		
Refixing refurbished ornamental balustrades previously set aside for reuse and refurbished					
1010	1900 length x 800 high, set in coping mortices fixed at the discretion of the contractor; include for new brackets to match existing set in feature piers	5	nr		

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	<u>Reclaimed facing bricks; selected, previously cleaned down, refurbished and set aside for reuse, bedded and jointed in and pointing in coloured in coloured (CPI Euromix, or equivalent (medium colour cost range) equal or approved, cement mortar (1:3) below or (1:1:6) above ground; pointing in 2.5 Leighton buzzard sand, 0.5 Nosterfield washed rivers sand and 1 NHL 3.5 lime, crushed coal ash or where equivalent subject to the conservation officer's approval, stretcher bond; weathered joint as work proceeds</u>				
	Walls				
1020	half brick thick; pointing one side (in cement mortar (1:1:6) APPROXIMATE QUANTITIES)	41	m2		
	Extra over for				
1030	built in facing bricks (£650/1000 supply price), stretcher bond; pointing one side	41	m2		
	Isolated Piers				
1040	660 thick; (440 wide) built against existing wall; pointing to exposed faces (3 sides) in cement mortar (1:3)	8	m2		
	Extra over for				
1050	built in facing bricks (£650/1000 supply price), stretcher bond; pointing one side	8	m2		
	Bonding				
1060	two brick wide x 3 brick thick, built against existing wall, cut tooth and bonding	8	m		
	<u>Common brickwork; BS EN 771-3, 440 x 215 solid, compressive strength 10.4N/mm²; thermal conductivity 1.38 W/mK in cement lime mortar (1:3); stretcher bond</u>				
	Walls				
1070	half brick thick	5	m2		
1080	two brick thick	5	m2		

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1090	Isolated Piers 660 thick; 440 wide) built against existing wall/footing; pointing to exposed faces (3 sides) in cement mortar (1:3)	1	m2		
1100	Bonding two brick wide x 3 brick thick, built against existing wall, cut tooth and bonding	1	m		
1110	Feature Piers octagonal on plan, approximate dimensions - 0.35m below ground level down to passageway x 0.60 maximum width	3	nr		
<u>F30 ACCESSORIES/SUNDRY ITEMS FOR BRICK/BLOCK/STONEWALLING</u>					
<u>Sundries</u>					
1120	Forming cavities in hollow walls 150 wide; approved stainless steel ties at 900 centres horizontally and 450 centres vertically	5	m2		
<u>Stainless steel accessories; Ancon (APPROXIMATE QUANTITIES)</u>					
1130	Wall starter ties reference staifix Universal wall starter system, 140 wide, building ties into masonry piers as the work proceeds; plugging; screwing	18	m		
<u>Stainless steel; Ancon Clark; SDB cramps</u>					
1140	Forming cavities in hollow walls 20 x 3 thick to suit 50 wide cavity; one end fixed to concrete with M6 expansion bolts, drilling concrete; one end fixed to masonry, plugged and screwed; set at 900 horizontal and 450 vertically staggered centres	30	m2		

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	<u>M SURFACE FINISHES</u>				
	<u>M60 PAINTING/CLEAR FINISHING</u>				
	Remove loose flaking rust material, clean down, sand, wash and apply approved build up primer to meet conservation officers requirements, apply weathershield metal paint system of two coats primer, two undercoats and two finishing coats				
	Metal surfaces				
1150	1900 length x 800 high metal ornamental balustrades	5	nr		
	<u>R DISPOSAL SYSTEMS</u>				
	<u>SURFACE WATER DRAINAGE</u>				
	<u>R12 DRAINAGE BELOW GROUND</u>				
	<u>WORK TO EXISTING DRAINS (APPROXIMATE QUANTITIES)</u>				
	<u>Note: Works are to the passageway</u>				
	Break out existing vitrified clay gulley and surround, backfilling with hardcore on completion, compacting in 150 layers				
1160	generally	1	nr		
	Excavate to locate and grub up existing 150 nominal size drain and surround; including earthwork support; disposal, backfilling trenches with hardcore, compacting in 150 layers				
1170	150 nominal size drain; 500 average depth	4	m		
	Extra over for				
1180	Breaking out neatly end of existing pipe, prepare joint to receive new connecting pipework	1	nr		
	<u>Granular material to BS 882; 14 down</u>				
1190	500 x 500 bed and surround; 150 thick bed to 150 nominal size pipe	4	m		

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	<u>Vitrified clay pipes and fittings; SuperSleve; push fit flexible coupling joints</u>				
	Pipework in trenches				
1200	100 nominal size	4	m		
	<u>Vitrified clay accessories; SuperSleve</u>				
	Access gully; flexible joint to pipe; form new 150 diameter inlet; insert 150 diameter pipe, make good; bedding and surrounding in concrete				
1210	150 outlet; hopper with alloy hinged grating and frame, low back P trap	1	nr		
	Maintaining flow				
1220	of existing live drains at all times; including temporary work and diversions as necessary	1	Item		
1230	of existing culvert at all times; including all temporary work, pumping and diversions works as necessary	1	Item		
	<u>Testing and commissioning</u>				
	As the work proceeds and on completion				
1240	by water	1	Item		

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<u>Q PAVING/PLANTING/FENCING/SITE FURNITURE</u> <u>Q30 SEEDING/TURFING</u>					
<u>Cultivating (APPROXIMATE QUANTITIES)</u>					
Surface of topsoil					
1250	100 deep; weeding; removing debris; preparing for fertilizer	150	m2		
1260	25 deep; raking to an even true surface; removing debris; preparing surfaces preparing for seeding	150	m2		
<u>Surface applications</u>					
Surface of ground prior to receiving topsoil					
1270	applying herbicide	150	m2		
Surface of topsoil					
1280	applying approved fertilizer	150	m2		
1290	applying approved grass seeds at rate of 40g/m2, two applications raking in	150	m2		
<u>Seeded areas</u>					
Watering; weeding; rolling; cutting; maintaining throughout the Defects Liability period; making good any failures (150 m2)					
1300	generally	1	Item		
<u>Turfing; imported</u>					
Imported turf, cultivated					
1310	generally surfaces (APPROXIMATE QUANTITIES)	100	m2		

P8529 ACADEMIC CAMPUS - BOUNDARY WALLS 2023					
THE UNIVERSITY OF MANCHESTER					
		Prep:	CMc	Version:	Tender
		Rev:		Date:	28-Nov-23
ID	Description	Qty	Unit	Rate	Total
BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
Q40 FENCING (APPROXIMATE QUANTITIES) <u>Open mesh fencing; Heras UK fencing Systems, BS 1722-14, category 1, polyester powder coated, RAL colour; 60 x 40 x 2.0 thick, 1800 long RHS capped posts at 2530 centres complete with clamp bar and M8 x 40 anti tamper security bolts generally; complete with 50 x 200 weld mesh (200 vertical x 50 horizontal and 6 vertical x 8 horizontal twin wires); bolting and fixing all in accordance with the manufacturer's instructions (APPROXIMATE QUANTITIES)</u>					
1320	Fencing 1830 high, above ground set in 450 x 450 x 450 post holes filling with plain insitu concrete to BS 5328, Designated Mix GEN 3	27	m		
1330	Extra over for End post	2	nr		
1340	Corner post	1	nr		
1350	Matching single gate 1265 clear opening x 1830 high complete with hinges, sliding locking bar/latch with locking plate-1, padlock-1	1	nr		
1360	Extra over for Gate posts	2	nr		
BILL NR 2.1 - SUBSTRUCTURE (RETAINING WALL)					
				£	-