



CLIENT: SWIP PROPERTY TRUST

**4 ROUNDWOOD AVENUE,
STOCKLEY PARK**

066267-C7001

REV C

ISSUED – FEB 2016—

STATUS: CONSTRUCTION

**SPECIFICATION
FOR**

HARD LANDSCAPE FINISHES

**TO BE READ IN CONJUNCTION WITH
066267-C7002 SOFT LANDSCAPE SPECIFICATION**

This Specification Covers:
Kerbs / Edging / Paving
& Site Furniture

CAPITA

**PROPERTY AND INFRASTRUCTURE
75 WELLS STREET
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SCHEDULE OF REVISIONS

Revision	Date	Notes
A	19.11.2015	Construction issue
B	02.02.2016	Construction issue
C	24.02.2016	Planning issue

1.0 GENERAL CLAUSES

- a) This specification is to be read in conjunction with the Preliminaries and General Conditions prepared by the architects (ESA)
- b) Where the Specification makes note of 'notification to the Employer this shall also mean notification to the CA'
- c) The materials and workmanship section of this specification have been prepared utilising the National Building Specification framework adapted by Capita.
- d) The design, fabrication and performance requirements specified are intended to establish a minimum performance level and general principles. The Contractor shall be responsible for achieving or surpassing the design criteria for all components.
- e) The Contractor is to make themselves fully aware of the location of all existing and proposed service runs.
- f) The Contractor is to make themselves fully aware of the location of all contamination and capping layers.
- g) Recessed Service / Manhole Covers
 - Manhole openings must be parallel or perpendicular to the paving orientation. It is the ground workers responsibility to ensure they are aware of the paving finishes.
- h) All works and materials are to comply with all relevant British Standards (BS)

Contractor shall coordinate with and refer to the Specification contained elsewhere within these Requirements and in particular the following:

- Specifications prepared by ESA
- The Structural Specifications
- The Mechanical and Electrical Engineering Systems

2.0 SCOPE OF WORKS

The scope of works includes, but is not limited to the following items:

GENERALLY

The construction of a prestigious landscape scheme as part of the refurbishment of 4 Roundwood Avenue in Stockley Park. The scheme includes proposed plaza and new planting to enhance the scheme in order to create a legible landscape.

WORK INCLUDES THE FOLLOWING:

1. All necessary earthworks
2. All paving finishes, paving, setts, kerbs, banding.
Note: The Contractor is to provide cutting sheets for bespoke products, for approval by landscape architect – prior to placing order.
3. Concrete and reconstituted concrete block paving, kerbs and edgings.
4. Linear slot drains, channel drains, spot gullies and beany block. Subterranean connections and below slab level connections by others.
5. Cycle stands, bollards, benches.
6. Metal tree grilles.
7. Paving to recessed covers. Subterranean service chambers by others. Recessed service covers free issue from ground workers.
8. Incorporation of subsurface conduiting through pavement build ups to achieve seamless co-ordination of services trades into landscape areas – to include ducting for external lighting and irrigation system.

3.0 SUBMITTALS

- a) Written confirmation of acceptance of waterproof treatments by others before proceeding
- b) Method Statements and specifications to include laying and jointing of pavings and any additives to mortar mixes
- c) Samples of all surfacing finishes to be submitted for approval of concrete sett paving, including mortars – along with all relevant technical data and test sheets
- d) Samples of channel drains and tree grilles
- e) Contractor will construct onsite, a sample panel strip of all ground pavement types, in a 4m x 2m area. The sample panel will show pavement types abutting kerbs/ edgings and include a line of slot drainage.
- f) Full Specification/Drawings/information/method statements for the works, to include but shall not be limited to, the following elements:
 - i) Automatic Irrigation System – Contractor to appoint specialist
 - ii) All paving build ups and bedding
 - iii) All structural elements noted on the drawings – eg. Retaining walls, footings, foundations etc.

4.0 MATERIALS SCHEDULE

Key		Supplier	Material / Item	Colour	Finish	Size (in mm)	Comments
	PAVING						
ITEM P 1	A	Tobermore	Fusion	Silver	Textured	200x100x60mm in pedestrian areas	Laid in stretcher bond referred to drawings 066267-C5004, 066267-C5005 To be laid as header course edging to treepits, benches and other street furniture.
	B			Mid Grey		200x100x60mm in pedestrian areas	
	C			Granithe		300 x200x60mm in pedestrian areas	
ITEM P 2	A	Tobermore	Fusion	Silver	Textured	200x100x80mm in vehicular areas	Laid in stretcher bond referred to drawings 066267-C5004, 066267-C5005 To be laid as header course edging to treepits, benches and other street furniture
	B			Mid Grey		200x100x80mm in vehicular areas	
	C			Granithe		300 x200x80mm in vehicular areas	
ITEM P 3	A	Tobermore	Fusion	Silver	Textured	200x100x60mm in pedestrian areas	Laid in stretcher bond.
	B			Mid Grey		200x100x60mm in pedestrian areas	
ITEM P 4		Tobermore	Eco Pedesta	Heather	To match existing	To match existing, 200x100x85mm to be confirmed by contractor	Laid as herringbone (laid to Marshall's recommendations) to match existing
ITEM P 5		Existing car park paving	n/a	n/a	n/a	n/a	Paving to be jet washed and made good. Any broken and / or damaged blocks to be replaced. Contractor to carry out site condition of existing paving
ITEM P 6		CED Natural Stone	Cedek	Silver	Flame textured	Treepit size	
	EDGING						
ITEM E 1		Charcon or similar approved	'Conservation Kerb'	Silver grey	Square, Textured	915 long x 205 high x 255 wide	Standard kerb
ITEM E 2		Charcon or similar approved	'Conservation Kerb'	Silver grey	Square, Textured	915 long x 205 high x 255 wide	Drop kerb
ITEM E 3		Charcon or similar approved	'Conservation Kerb'	Silver grey	Square, Textured	915 long x 150 high x 63 wide	Pin kerb

Key		Supplier	Material / Item	Colour	Finish	Size (in mm)	Comments
ITEM E 4	B	Tobermore	Fusion	Mid Grey	Textured	200x100x60mm in vehicular areas	To bench perimeter – Feature edging
ITEM E 5		Kinley Systems	Borderline Steel Edging	Silver Grey	Galvanised	2000 mm long x 100mm high	
	LIGHTING						
ITEM L 1		Woodhouse	Illuminated Bollard. GEO 140mm 26W Illuminated Dual Cone Bollard	Natural Stainless steel	Brushed	Width: 140mm Height: 1100mm Weight: 13kg	Lighting Bollard
ITEM L 2		Woodhouse	GEO Lightstack, GE-LS-00013	Natural Stainless steel	Brushed	Height: 4000mm	Feature Lighting Column
ITEM L 3		Aquila or ACDA	Linea or Vista II	Stainless steel finishing plates or Aluminium	n/a	Various lengths: 800, 1200, 1600mm or 750, 1000, 1250mm	Feature Inset Lighting Strips, detailed specification to M&E engineers, lighting to be water proof (not water resistant). Two products specified; both to be costed separately.
ITEM L 4		Existing Lighting Columns	n/a	n/a	n/a	n/a	Existing Lighting Columns to be refurbished (new RAL paint, bulb and head to be replaced)
	FURNITURE						
ITEM F 1		Woodhouse	GEO Illuminated Bollard – Lighting Bollard	Natural Stainless steel	Brushed	Width: 140 - 204mm Height: 1000mm Weight: 10 - 18kg	Submerged fixing to manufacturer's specification
ITEM F 1	A	Woodhouse	GEO Bollard – Lift Out Bollard	Natural Stainless steel	Brushed	Width: 140mm Height: 1000mm Weight: 10 - 18kg	Submerged fixing to manufacturer's specification
ITEM F 1	B	Woodhouse	GEO Bollard – PAS68	Natural Stainless steel	Brushed	Width: 140mm Rhino Guard PAS 68 15/30 core	Submerged fixing to manufacturer's specification
ITEM F 1	C	Woodhouse	GEO Bollard – Lift Out Bollard	Natural Stainless steel	Brushed	Width: 140mm Height: 1000mm Weight: 10 - 18kg	Submerged fixing to manufacturer's specification
ITEM F 3		Marshall's	Sheffield Ollerton Cycle	Galvanised 316L Item F&S/S finish	Grit brushed	Width: 750mm Height: 750mm/250mm	Fixing: Buried root to manufacturer's recommendation

Key		Supplier	Material / Item	Colour	Finish	Size (in mm)	Comments
			Stand with Tapping Bart			below ground	For total number refer to Archtiects documentation
ITEM F 4		TBC	Green Roof Cycle Shelter			Height at front: 2450mm Height at rear: 2000mm Width: 3200mm Depth: 2250 mm	
ITEM F 5		Marshalls	Ollerton Bin, M3 Flat top 40 Litre	Stainless steel	Satin Polished	Height: 620mm Diameter: 345mm	
ITEM F6		Refer to Architects drawings and specification					
ITEM F7		Schwegler				Model 1SP or 1B and 2H	Refer to BREEAM Refurbishment (2008) Assessment

- CONTRACTOR TO CARRY OUT SITE SURVEY TO CONFIRM SPECIFICATION OF EXISTING ELEMENTS.
- LIGHTING TO M&E SPECIFICATION, WE HAVE PROVIDED FINISHES AND APPEARANCE ONLY. LIGHTING MUST BE WATER PROOF.
- GRADE OF STAINLESS STEEL TO BE SPECIFIED BY OTHERS.
- DRAINAGE TO BE SPECIFIED BY OTHERS.

5.0 SPECIFICATION CLAUSES

D20 EXCAVATING AND FILLING

To be read with Preliminaries/General conditions.

GENERALLY

- 180 SITE CLEARANCE
- Clear site of rubbish produced during works.
- 181 BURNING ON SITE WILL NOT BE PERMITTED.
- 195 USE OF CHEMICALS GENERALLY
- The Contractor must use a certified operator, take appropriate safety precautions and comply with the Control of Pesticides Regulations 1986, the conditions of approval for the chemical and any relevant Code of Practice issued by the Ministry of Agriculture, Fisheries and Food.
 - The Contractor must dispose of empty or unwanted containers and chemicals, including unused diluted tank mixture, in a safe way in accordance with the methods approved by the Control of Pesticides Regulations and relevant Codes of Practice. - Disposal will be off site unless prior arrangements have been made.
 - The Contractor must notify the CA of his intention to apply chemicals, the product to be used and the dose rates.

EXCAVATING

- 210 MATERIALS ARISING
- From the excavations and surplus to requirements for filling are to remain the property of the Employer unless the Contractor:
 - Is instructed to remove them from site.
 - Purchases them at a price to be agreed.
- 260 FORMATIONS GENERALLY
- The Contractor should carry out a detailed level survey prior to commencing any backfilling works on site in order to verify the as-built site situation.
 - Refer to structural engineer's documentation for CBR test requirements

FILLING

- 510 **HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS**
- Do not import or use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling.
- 530 **PLACING FILL GENERALLY**
- Ensure that excavations and areas to be filled are free from loose soil, rubbish and standing water.
 - Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces.
 - Take all necessary precautions to ensure stability of adjacent structures. Place and compact fill against structures, membranes or buried services in a sequence and manner that will ensure stability and avoid damage.
 - Plant employed for transporting, laying and compacting must be suited to the type of material.
 - Lay differing materials separately so that only one type of material occurs in each layer.
- 531 **BENCHING IN FILL**
- Where, during the progress of the work, the difference in level between adjacent areas of filling exceeds 600 mm, cut into edge of higher filling to form benches having a minimum width of 600 mm and a height equivalent to the depth of a layer of compacted filling. Spread and compact new filling to ensure maximum continuity with the previous filling.
- 610 **GENERAL LANDSCAPE SUBSOIL FILLING**
- Materials arising from the excavations, but excluding the following:
 - Material from marshes or bogs
 - Peat, logs, stumps, slurry, mud and perishable material
 - Material susceptible to spontaneous combustion
 - Material in a frozen condition
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55
 - Material with excessive moisture content
 - Material with a high chalk content.
 - Lay in layers not more than 200 mm thick and consolidate each layer with the earthmoving plant. The requirements for compacted subsoil filling do not apply.
- 611 **GENERAL LANDSCAPING FILLING**
- Suitable materials arising from demolition works comprising the following; bricks, concrete, tarmac, sub-base hardcore to a maximum 250mm in any dimension.
 - Materials not suitable; toxic waste, plaster, wood, organic material, metal, rubbish.
 - Lay in layers not more than 300mm thick and consolidate each layer with the earthmoving plant. The requirements for compacted subsoil filling do not apply.
- 710 **HARDCORE/GRANULAR FILL**
- To Engineers specification.

Q10 KERBS/ EDGINGS

To be read with Preliminaries/General conditions.

TYPES OF KERB

- 112A PRECAST CONCRETE KERBS: ITEM E1, E2, E3
- Drawing reference(s): 066267-C3001/ 066267-C3002
 - Sub-base: to Contractor design
 - Bedding: to Contractor design
 - Nominal thickness of bed: to Contractor design
 - Designations/ Specials/ Radii: refer to Engineer's drawings.
 - Concrete finish: Textured
 - Colour: Silver grey
 - Supplier: Charcon
 - Size(s): Various as per drawings / Material Schedule
 - Joints: Butt jointed mortar to Engineer's specification 2-3mm (+/- 1mm)
 - Standard: Complete design in accordance with BS EN 1340
- 112B BORDERLINE STEEL EDGING: ITEM E5,
- Drawing reference(s): 066267-C3001
 - Sub-base: to Contractor design
 - Bedding: to Contractor design
 - Nominal thickness of bed: to Contractor design
 - Designations/ Specials/ Radii: refer to Engineer's drawings.
 - Edging finish: Galvanised
 - Colour: Silver grey
 - Supplier: Kinley Systems
 - Size(s): Material Schedule
 - Standard: Complete design in accordance with BS EN 1340

LAYING

- 510A LAYING GENERALLY:
- Where necessary cut units neatly and accurately with a masonry saw and without spalling to give neat junctions.
 - Bed units in mortar, true to line and level along top and front faces, on accurately cast foundations and secure with a continuous haunching of concrete (to structural engineer's details) where over natural ground. Also refer to structural engineer's documents for kerb fixing details where over podium. Allow bedding to set before placing haunching.
 - Keep exposed faces of units clean and free from concrete and mortar droppings.
- 520 ADVERSE WEATHER
- Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.
- 530A CONCRETE FOR FOUNDATIONS AND HAUNCHING
- To Contractor design
- 540A MORTAR BEDDING
- Cement mortar on rigid concrete footing to Contractor design

620 ACCURACY

- Maximum deviations:
- Level: +/- 6 mm
- Horizontal and vertical alignment: 3 mm in 3m.

630 NARROW MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
 - Joint width: 2-3 mm (+/- 1mm).

Q25 SLAB/ BRICK/ SETT PAVINGS**To be read with Preliminaries/ General Conditions.****TYPES OF SURFACING GENERALLY**

- 120A CONCRETE PAVING: ITEM P1, P2, P3, E4
- Drawing reference(s): 066267-C3001/066267-C3001, 066267-C5002, 066267-C5004, 066267-C5005
 - Sub-base: to Contractor design. Thoroughly compacted to prevent settlement differentiation – particularly where paving straddles junction between paving laid over hard base and paving over natural ground
 - Bedding: Sand bedding, to Contractor design
 - Nominal thickness of bed: to Contractor design.
 - Type: FUSION
 - Finish: Textured
 - Colour: Various, refer to Materials Schedule
 - Supplier: TOBERMORE
 - Size(s): As per drawings / Material Schedule
 - Joints: 2-5mm (+/- 1mm) sand swept mortar joints
 - Bond: As per drawings
- 120B CONCRETE PAVING: ITEM P4
- Drawing reference(s): 066267-C3001/ 066267-C3002
 - Sub-base: to Contractor design. Thoroughly compacted to prevent settlement differentiation
 - Bedding: Sand bedding, to Contractor design
 - Nominal thickness of bed: to Contractor design.
 - Type: Keyblock
 - Finish: Product to match existing
 - Colour: Brindle
 - Supplier: Tobermore or similar (to match existing material – contractor to confirm)
 - Size(s): As per drawings / Material Schedule
 - Joints: 2-5mm (+/- 1mm) sand swept mortar joints
 - Bond: As per drawings
- 120C CEDEC SURFACING: ITEM P6
- Drawing reference(s): 066267-C3001/ 066267-C3002, 066267-C5003
 - Sub-base: to Contractor design. Thoroughly compacted to prevent settlement differentiation
 - Bedding: to Contractor design
 - Nominal thickness of bed: to Contractor design.
 - Type: CEDEC
 - Finish: Flame textured
 - Colour: Silver
 - Supplier: CED Natiral Stones
 - Size(s): As per drawings / Material Schedule
 - Bond: As per drawings, Suppliers technical specification

PREPARATION/ LAYING

- 615 CONTROL SAMPLES

- Complete sample areas, being part of the finished work, in approved locations as follows and obtain approval of appearance before proceeding:
Area not to be less than 4m²

620 ADVERSE WEATHER

- Do not lay or joint paving if the temperature is below 3 deg C on a falling thermometer or below 1 deg C on a rising thermometer.
- Do not use frozen materials or lay bedding on frozen or frost covered bases.
- Adequately protect paving with mortar joints and/or mortar bedding from frost damage, rapid drying out and saturation until mortar has hardened.

625A LAYING PAVINGS

- Cut paving units neatly and accurately with a masonry saw or disc cutter only to give neat junctions with edgings and adjoining finishes:
 - When cutting a notch from the corner of a slab, which exceeds 25% of the slab area, mitre cut the remaining shape from the internal corner of the notch to the opposite external corner
 - Diagonally cut slabs or portions of slabs to form a mitre at abrupt changes of level at the ends of ramped footpath crossings and the like
- Lines and levels of finished surface to be smooth and even with regular falls to prevent ponding.
- Bed paving units firmly so that rocking does not occur or develop.
- Lay paving units upwards from the bottom of slopes where creep may occur.
- Finished paving to have an even overall appearance with even joint widths and free of mortar and sand stains.
- Pavings to be free from vents, cracks, fissures, discolouration, or other defects, which may adversely affect strength, durability or appearance.

630A TOLERANCES GENERALLY

- Slab thickness dimensions shall not deviate more than 10% of the total specified thickness.
- Width and lengths of varying sizes shall not deviate more than +/- 2mm of the described size.

630B LEVELS OF PAVING

- Permissible deviation from specified levels to be ± 6 mm generally.

635 REGULARITY

- Sudden irregularities not permitted.
- Where appropriate in relation to the geometry of the surface, the variation in gap under a 3m straight edge placed anywhere on the surface to be not more than 10mm.
- The difference in level between adjacent paving units to be not more than 2mm.

645 PROTECTION

- Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Do not overload pavings with stacks of materials.
- Handle pavings with care to avoid damage to corners and arises, and to previously laid paving.
- Pavings bedded on mortar must be kept free from pedestrian traffic for 4 days and vehicular traffic for 10 days after laying.
- Restrict access to paved areas as necessary to prevent damage from site traffic and plant.

655A SUB BASE

- To Contractor design.
- Before starting work the points stated below shall be followed:
- The base shall be sound and clean
- The levels and falls of the base shall be as detailed, within the specification tolerance of $\pm 12\text{mm}$
- Drainage outlets shall be within ± 0 to -10mm of the required finished level.

Q50 SITE/ STREET FURNITURE/ ACCESSORIES

To be read with Preliminaries/General conditions.

GATES AND BARRIERS**190A BOLLARDS: ITEM F1**

- Manufacturer: Woodhouse or equal approved.
- Product reference: GEO Illuminated Bollard – Lighting Bollard
- Material: Stainless steel grade 316
- Finish: Brushed
- Size: refer to Material Schedule
- Special features: Supplied complete with stainless steel ground fixing socket, to suit in slab and natural ground conditions
- Method of fixing: Concrete footing to sleeve below grade to Manufacturer's specification

190A BOLLARDS: ITEM F1A

- Manufacturer: Woodhouse or equal approved.
- Product reference: GEO bollard – Drop Bollard
- Material: Stainless steel grade 316
- Finish: Brushed
- Size: refer to Material Schedule
- Special features: Supplied complete with stainless steel ground fixing socket, to suit in slab and natural ground conditions
- Method of fixing: Concrete footing to sleeve below grade to Manufacturer's specification

SITE AND STREET FURNITURE**210A CYCLE STANDS: ITEM F3**

- Refer to Materials Schedule
- For exact number, refer to Architects documentation

220 BENCHES: BESPOKE ITEM

- Refer to drawing 066267-L6001

END OF SPECIFICATION