

Athlone House

Athlone House,  
Hampstead Lane, London N6:

Restoration of historic landscape:  
Conservation of the Pulhamite  
artificial rockwork and other  
associated historic garden  
landscape structures

Discharge of planning condition  
9b (ref: 2017/4156/P)

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## CONTENTS

1	INTRODUCTION .....	1
2	PULHAMITE ARTIFICIAL ROCKWORK .....	3
3	PRINCIPAL FINDINGS AND RECOMMENDATIONS FROM SURVEY OF PULHAM ITE .....	5
4	RESTORATION OF PULHAMITE .....	6
5	RESTORATION OF ASSOCIATED PULHAM FEATURES .....	9
6	MILNER FOLLY .....	12
7	SUNK GARDEN AND ORCHARD.....	13
8	STEPS FROM SUNK GARDEN TO WESTERN BOUNDARY .....	15
9	OTHER HISTORIC PATHS AND WALLS .....	16
10	PHASING PLAN FOR RESTORATION OF THE HISTORIC LANDSCAPE .....	18
	REFERENCES.....	19
	APPENDIX 1: PULHAMITE POND AREA REFERENCE PLAN .....	21
	APPENDIX 2: PULHAMITE REPAIR SPECIFICATION .....	22
	DRAWINGS.....	28
	APPENDIX 3: CONDITION SURVEY AND RESORATION .....	29

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## **1 INTRODUCTION**

### **Introduction and scope**

- 1.1 This document seeks to discharge planning condition 9 b in relation to planning consent 2017/4156/P for the restoration works for the historic landscape at Athlone House. Condition 9 states that:

*Details in respect of the following shall be submitted to and approved in writing by the Council before the relevant part of the work is begun:*

*b) full details of how the restoration of the historic landscape will be conducted. The scheme shall set out how the Pulhamite features, the Milner Folly, the bridge, the lake and the historic path network will be restored and managed. The restoration scheme shall also include a phasing plan, to show how the restoration works will be completed within two years of the commencement of said works.*

*Prior to occupation a landscape management plan for a minimum period of 10 years post-occupation shall be submitted to and approved in writing by the Council.*

The management of the restored historic landscape will be covered in a subsequent document and integrated with the landscape and the wildlife landscape management required as part of condition 9 and condition 13.

## Outline

- 1.2 The history of the landscape associated with Athlone House, Hampstead is provided in the report Historic landscape appraisal for Athlone House, Hampstead Lane, London N6 June 2016 (Catherine Bickmore Associates) submitted as part of the approved planning application. By way of background to the proposals for the restoration of the historic landscape, a summary description of Pulham artificial rock work is provided in section 2, and is followed in section 3 of the main the findings of the survey of the Pulhamite 'Fern-clad Ravine and Dropping Well, Waterfall and Stream'. Section 4 discusses the restoration proposals for the Pulhamite with the restoration of associated Pulham features presented in Section 5.
- 1.3 Sections 6 – 9 relate to the restoration the other elements of the historic landscape structure: the Milner Folly, Sunk Garden and Orchard, steps, and other historic paths and walls, and parish marker posts. Section 10 provides an overall phasing plan for the restoration works.
- 1.4 To aid the identification of specific areas and relevant /repairs, the Pulhamite scheme has been subdivided into areas shown on the reference sketch plan Appendix 1. Appendix 2 provides a general specification for the repair of the Pulhamite, with Appendix 3 (separately bound) detailing the findings of the conservator's survey and restoration actions.
- 1.5 Drawings referenced in the report are located after Appendix 2.
- 1.6 The findings presented in this report are based on 2018 topographic mapping, and a site condition survey of the historic landscape structures in the grounds of Athlone House including the Pulhamite, well head, Milner folly, southern drive retaining walls, woodland paths and boundary markers, and Jekyll/Guthrie steps (Appendix 3).
- 1.7 The condition survey was undertaken on the 17th January 2018 by an Accredited Conservator-Restorer with the Institute of Conservation (ICON) and having a specialist knowledge of Pulhamite.
- 1.8 Restoration proposals for the boat house, bridge and Milner folly have been designed by SHH based of documentary sources, with landscape proposals by RSL including for the Jekyll/Guthrie sunk garden and steps.
- 1.9 Where historic landscape structures are affected by works an electronic photographic record of the structure with supporting information will be collated for deposit in Camden Local Studies and Archives Centre (based at Holborn Library, 32-38 Theobalds Road, London WC1X 8PA).

## **2 PULHAMITE ARTIFICIAL ROCKWORK**

### **Historic context and background**

- 2.1 Caen Wood Towers (now known as Athlone House) is referenced as being completed by the Pulham family firm in circa 1870 for the client E Brook and with the landscape design being associated with Edward Milner. The entry in Pulham's advertising manual Picturesque ferneries and rock garden scenery (c1877, p76) reads: 'E Brook, Esq, Fitzroy Park, Highgate, 1870; a Fern-clad Ravine and Dropping Well, Waterfall and Stream'.
- 2.2 The 1870 period was one of the high points in the period of the Pulham firm, and many of their major schemes are associated with this period and the following 30 years ("Durability Guaranteed, English Heritage 2008, and Picturesque Ferneries and Rock-Garden Scenery by Pulham c. 1877).
- 2.3 James Pulham ii (1820 to 1898) was the main manager and owner of the company during the period in which the rock work side of the business reaches its ascendancy. His work with the company started in 1838 and he was joined by his son J Pulham iii in 1865 when the firm became known as James Pulham and Son. The firm moved to Hoddesdon in Hertfordshire in 1841/42 and then established itself at Broxbourne in 1848; and then opens a London office in 1883. A royal warrant was granted to the company in 1895, James Pulham ii died in 1898 and James Pulham iii died in 1909. The firm closed in 1945 (English Heritage).
- 2.4 Pulhamite Artificial Rockwork (also referenced as PAR) is a form of imitation rockwork constructed by the Pulham family firm, usually constructed to imitate naturalistic rockwork, and employed in landscapes to provide "rock garden scenery". The principal building components of Pulhamite Artificial Rockwork are constructed masonry backgrounds and the Pulhamite artificial rockwork cementitious stucco coating or render. The constructed masonry backgrounds form the general shape of the scheme. These were usually constructed in brick or burrs with stone slabs to provide cantilever rock projections with the use of other materials if necessary. The entire construction was coated in a cementitious render which was normally of varying colour hues, with inclusions of specialist aggregates to give a distinct surface finish.

### **Geological features**

- 2.5 The main geological features were usually rock cliffs with projecting and overhanging rocks and recesses. Plant pockets were often formed in projecting rockwork, alongside water features, caves and related similar features. One of the main characteristics was the formation of rocks into geological strata, sometimes differentiated by colour or surface texture. These rock strata were clearly represented and were normally "inclined" or "dip" in one direction. Between rocks there could be clefts or fissures and all these features combine to give a naturalistic and geological quality to the artificial rockwork. The rendered surface of the rockwork was carefully worked to appear realistic, and could include impressed markings such as fern leaves, or visible shells as a significant part of the render aggregate, or features such as modelled faces (which were usually partially hidden), or visibly exposed brick burrs. Brick burrs (partially vitrified and molten bricks) were the predominant building material at the Athlone House site.

### **Materials**

- 2.6 There is no precise accurate materials definition for the identification of PAR; it is only possible to identify it by knowing who constructed it, and by reference to historical written evidence, or by making accurate comparisons with known Pulhamite sites. The range of materials used during its construction varied quite significantly, and research is still being accumulated on this. Even the techniques for construction of rockwork varied from area to area and periods in the life of the firm. Examples may include large amounts of natural stone or very little natural stone. Natural stone may be predominantly visible or not visible at all. Similarly, large amounts of molten materials may also be used. There is no definitive material analysis of Pulham's Portland Stone Cement, or its predecessor Lockwood's Portland Stone Cement, though it may well be an eminently hydraulic lime. A full historical understanding of the use of Pulham's Portland Stone Cement or when they adopted and used other binder types, has also not been

fully established. It is generally assumed that they moved to using Early Portland cements for the rock coating in the 1860 period. Hydraulic lime continued to be used in the masonry background constructions and internally in grottoes where tufa was being imitated.

- 2.7 “The Pulhamite System of forming Rocks” is a term that applies equally to “natural” i.e. a constructed scheme using just natural rocks, as well as “artificial” rockwork and is very much concerned with the naturalistic style of the rockwork. Pulham (circa 1877) describes this system as being “adopted during 28 years”, which would imply that the first Pulham rockwork was constructed around 1849. The year of 1848 being quoted by Pulham in his description of A Naturalistic Pulhamite Fernery, Conservatory, or Winter Garden (probably published circa 1873) because he writes that the system had been in use some 25 years). A possible precursor to this work may be Pulham’s work at Bayfordbury in Hertfordshire, in 1846. Earlier works may be cited but it should be remembered that the Pulhams were also engaged in architectural works such as building the castle ruin at Bennington Lordship 1838. The Pulham family firm continued landscaping rockwork well into the C20th, when much of their rockwork was based on natural stone. The key period for the production of the naturalistic artificial rockwork would appear to be during the second half of the C19th with a peak in the 1870 decade (when the Athlone House feature was built) and some substantial works being carried out in the 1890 decade.

#### **Documentary sources**

- 2.8 The 1881 sales particulars for Caenwood Towers make reference to the ‘miniature lake’ (extant), with weeping willows and rockwork. At the northern end of the lake there was a ‘Walk through the Rocks’, with a dingle and a rustic bridge. The map in the 1881 sales particulars shows indicative rock work although it is not clear. Also it indicates a bridge at the northern most end with a further crossing, possibly a bridge, just north of the boat house. The walk led to a Wellingtonia Walk, which ran west-east, below the lawns to the west of the house. The view west from this walk terminated at a boathouse (demolished c.1920s) on the west shore of the lake with a photo in the 1881 sale catalogue showing its step gable end in the distance - however no further details of it have come to light. A path circumnavigated the pond.
- 2.9 The pond was fed by a spring over which was the rustic bridge and picturesque boat house (1910 sales particulars).
- 2.10 Examination of mapping in the 1881 sales particulars /1894 OS mapping with that for 1936 OS mapping shows that the original shape of the lake (stream) was changed including reducing the length and rounding off the southern end. Such alterations may have been undertaken by Guthrie at the same time as the formation of the sunk garden. An article in the Gardeners Chronicle of 1928, and the contemporary photographs from 1881 provide useful sources in this respect, showing the bridge and describing the type of planting; although the planting was not the essential part with Pulham making reference to works by Robinson and others for suggestions as to the type of planting. An Appendix to the Pulham catalogue of 1877 provides a list of ‘the most choice plants (but was intended for amateurs rather than ‘professed and experienced gardeners’ p61).

### **3 PRINCIPAL FINDINGS AND RECOMMENDATIONS FROM SURVEY OF PULHAM ITE**

#### **General**

- 3.1 There is a substantial survival of the Pulhamite scheme at the pond/lake most of which is in good condition (photo 4 & 5) though some has been lost through being buried under debris, alteration, damage and decay. Some areas of Pulhamite require urgent attention (condition survey Appendix 3).
- 3.2 The principal concerns are the extent to which trees and ivy have invaded the Pulhamite and caused damage by their root growth. This generally results in cracking, especially where they have established in plant pockets. The loss of the PAR surface coating has occurred in some locations as a result of ivy growth being established in the rockwork, and subsequent root expansion causing the surface to detach and fall.
- 3.3 Some areas have been changed or apparently altered. The source of the pond at the north end (area 1 of the condition survey Appendix 3), appears to have radically changed in design when reference is made to more historic plans and maps. A bridge was located in this area with several options for its possible location given in the condition survey. It is also considered possible that a small cascade might have been located here, near the stepping stone.
- 3.4 The area referenced as the ravine or water fall (area 4c) also appears to have been altered, or possibly much detail is buried behind the rubble retaining wall. Certainly, the water fall has been subject to quite extensive surface erosion and decay, partially at least due to tree root growth.
- 3.5 The extent to which Pulhamite (low level designs) might survive to the west and south of the pond have not been determined due to the extent of vegetation in this area. Though there are indications that some may be present, there is also much natural stone in this area. More vegetation clearing will be undertaken to determine this.
- 3.6 Most areas are at least partially covered with excess soil or growth as well as by a concrete path. The extent of the extant Pulhamite will be defined by careful under covering and delineation of the PAR edges so as to avoid undermining the foundations etc., and risking destabilisation.

#### **Treatment of typical decays and defects**

- 3.7 The most typical defect is the cracking of plant pockets mainly due to the expansion of tree root growth. Such trees will be cut down and treated with suitable herbicide; though the stumps may have to remain in the plant pockets due to the danger of possible further damage. The cracking damage can be divided into "structural types", i.e. those which might result in the collapse of a plant pocket, and those cracks which are largely secure but open. Where the cracking appears to be "structural" a distinction will be made as to whether the plant pocket cantilever is also cracked, or whether it is just the plant pocket walling (this being an important distinction). Where the walling is cracked, and the plant pocket can be emptied the walling will be re-fixed in its original allocation using appropriate mortars and A4/316 grade stainless steel pins. Where the cantilever is also damaged a bespoke solution will be devised to allow for minimal intervention into the extant Pulhamite rockwork.
- 3.8 Cracking generally will be filled with matching mortar, and if necessary the cracks will be bonded across with hidden A4 /316 grade stainless steel pins or helical bars inserted internally in the excavated plant pocket. Islands of loose Pulhamite materials will be consolidated with suitable mortar and pins accordingly.
- 3.9 Any areas of poorly bonded brickwork or brick burrs (found potentially on the interior of plant pocket walls, where not coated with render), will be carefully repointed with hydraulic lime mortar.
- 3.10 Areas of lost surface coating will be made up with matching surface coatings (subject to trials and colour/texture matching trials); using appropriate mortar and techniques to carefully match the existing surfaces.

#### **4 RESTORATION OF PULHAMITE**

- 4.1 Mortar samples have been taken and these are being analysed to provide a basis for the mortar matching process.
- 4.2 Most areas of Pulhamite will be carefully excavated to define their limits (Photo 1 & 2). Also the excavation of plant pockets will be undertaken (where feasible) with the removal of any soil or trees which overlay the Pulhamite.
- 4.3 The dredging of the pond (also required to remove contamination) should enable the pond depth and the original water levels to be accurately established as far as possible, and appropriate drainage levels established. The upper north section will be carefully dredged, possibly by hand to establish if there was a height differential between the two sections, i.e. at the stepping stones which may have formed a cascade.
- 4.4 If there is a need to dredge below the footings (wall bases) of the Pulhamite then appropriate advice will be sought on how to maintain the stability of the rockwork during this period and on completion of works (using techniques such as under pinning and propping etc). During dredging work, any vulnerable plant pocket will be appropriately propped or retained for future conservation.
- 4.5 A condition re-assessment may be necessary once excavations and dredging have taken place, so that further defects can be identified.
- 4.6 Most of the restoration work will be on the pond faces of the Pulhamite therefore it will be necessary to erect suitable scaffold platforms in the dredged and drained pond to allow for access to undertake such works (Photo 3). Protection from mortar falling into the pond will be built into the scaffold design.
- 4.7 As part of the preparation for any of the conservation works to the Pulhamite the tasks listed below will be carried out (Appendix 3 provides the detailed condition survey of each area and the associated for the PAR conservation. Reference should also be made to the PAR specification outlining the procedures, and repair types and methodologies to be used (Appendix 2);

All plant pockets emptied (except where this is destructive due to large established tree roots).

All root systems in the plant pockets, especially ivy root, will be treated to prevent re-growth of these plants.

All trees in the locality will have suitable root growth control or be totally removed.

Any proposed planting of shrubs/trees in the vicinity of the rockwork will include a suitable root barrier to avoid any root invasion of the PAR.

All PAR will be defined by suitable careful excavation, ensuring that none of the PAR is undermined and all investigation work completed. All loose masonry will be carefully retained.

All dredging will take place (to remove hydrocarbons) with the necessary protections noted in this report for the PAR.

All PAR plant pockets that have fractured cantilever slabs and are in danger of collapse will be carefully propped for repair.

A suitable scaffold will be designed/erected to access the PAR from the pond side to all levels of the PAR face.

At this stage trial cleaning with a suitably qualified operator using either the Therma Tec system or the Doff system will be employed in cleaning the PAR; subject to initial trials and approval.

Existing ferns will be retained where practicable.



Records of PAR structures will be deposited within the Camden Local Studies and Archives Centre.

#### PAR landscape strategy

- 4.8 The landscape strategy for the PAR are indicative of the type of planting that was associated with PAR with planting details yet to be produced.
- 4.9 Trees and shrubs (mostly sycamore and ivy) that have seeded into the Pulhamite including in plant pockets will be removed with cut stumps/roots chemically treated to prevent re growth.
- 4.10 The planting proposals for planting pockets and adjacent to areas of rock (Table 4.1) are based on contemporary lists provided by Pulham and others with the retention of some of the extant rhododendron to the higher land to the east (RSL 2157-S4-020-005).
- 4.11 The Pulhamite will be used to display small form plants to their advantage in the historic plant pockets with larger form plants used adjacent to the rocks. The planting will aim to provide a mix of colour and interest all year round and will have an emphasis on use of ferns. The planting habits will be a combination of erect, climbing, and trailing. There will be contrasting shapes, foliage textures and sizes; added with bulbs for spring interest and annuals in the summer. Tree root barriers will be installed to the east side of the Pulhamite to prevent root encroachment into the rock work.
- 4.12 Larger planting pockets will be lined if they are within the vicinity of rooting areas of adjacent trees and shrubs. Planting details have yet to be provided.

Table 4.1 Species list proposed for planting use around the Pulhamite

Please note that the plant list is subject to availability.			
Item	Species	Specification	Pot size
1	<i>Ilex spp</i>	2 – 3L pot	9/m <sup>2</sup>
2	<i>Dwarf Rhododendron</i>	2 – 3L pot	9/m <sup>2</sup>
3	<i>Euonymous spp</i>	2 – 3L pot	9/m <sup>2</sup>
4	<i>Cryptomeria elegans</i>	2 – 3L pot	9/m <sup>2</sup>
5	<i>Osmanthus ilicifolius</i>	2 – 3L pot	9/m <sup>2</sup>
6	<i>Juniperus japonica</i>	2 – 3L pot	9/m <sup>2</sup>
7	<i>Arbutus unedo</i>	2 – 3L pot	9/m <sup>2</sup>
8	<i>Grevillea rosmarinifolia</i>	2 – 3L pot	9/m <sup>2</sup>
9	<i>Iberis jucunda</i>	2 – 3L pot	9/m <sup>2</sup>
10	<i>Alyssum saxatile</i>	2 – 3L pot	9/m <sup>2</sup>
11	<i>Eryngium bromeliifolius</i>	2 – 3L pot	9/m <sup>2</sup>
12	<i>Doronicum austriacum</i>	2 – 3L pot	9/m <sup>2</sup>
13	<i>Sambucus racemosa</i>	2 – 3L pot	9/m <sup>2</sup>
14	<i>Azalea amoena</i>	2 – 3L pot	9/m <sup>2</sup>
15	<i>Acer palmatum</i>	2 – 3L pot	9/m <sup>2</sup>
16	<i>Tamarix gallica</i>	2 – 3L pot	9/m <sup>2</sup>
17	<i>Camelias</i>	2 – 3L pot	9/m <sup>2</sup>
18	<i>Forsythia viridissima</i>	2 – 3L pot	9/m <sup>2</sup>
19	<i>Viburnum sieboldii</i>	2 – 3L pot	9/m <sup>2</sup>
20	<i>Weigelia spp</i>	2 – 3L pot	9/m <sup>2</sup>
21	<i>Vinca major</i>	2 – 3L pot	9/m <sup>2</sup>
22	<i>Vinca minor</i>	2 – 3L pot	9/m <sup>2</sup>
23	<i>Lonicera japonica</i>	2 – 3L pot	9/m <sup>2</sup>
24	<i>Wisteria sinensis</i>	2 – 3L pot	9/m <sup>2</sup>
25	<i>Soldanella alpina</i>	2 – 3L pot	9/m <sup>2</sup>
26	<i>Ficaria grandiflora</i>	2 – 3L pot	9/m <sup>2</sup>
27	<i>Oxalis lobate</i>	2 – 3L pot	9/m <sup>2</sup>

28	<i>Spiraea japonica</i>	2 – 3L pot	9/m <sup>2</sup>
29	<i>Acanthus latifolius</i>	2 – 3L pot	9/m <sup>2</sup>
30	<i>Carex divulsa</i>	2 – 3L pot	9/m <sup>2</sup>
31	<i>Scilla siberica</i>	2 – 3L pot	9/m <sup>2</sup>
32	<i>Hypericum calycinum</i>	2 – 3L pot	9/m <sup>2</sup>
33	<i>Helleborus niger / foetidus</i>	2 – 3L pot	9/m <sup>2</sup>
34	<i>Eranthis hyemalis</i>	2 – 3L pot	9/m <sup>2</sup>
35	<i>Pulmonaria siberica / officinalis / grandiflora</i>	2 – 3L pot	9/m <sup>2</sup>
36	<i>Asplenium adiantum Nigrum</i>	2 – 3L pot	9/m <sup>2</sup>
37	<i>Asplenium marinum</i>	2 – 3L pot	9/m <sup>2</sup>
38	<i>Asplenium fontanum</i>	2 – 3L pot	9/m <sup>2</sup>
39	<i>Athyrium filix femina</i>	2 – 3L pot	9/m <sup>2</sup>
40	<i>Blechnum spicant</i>	2 – 3L pot	9/m <sup>2</sup>
41	<i>Cyrtomium falcatum</i>	2 – 3L pot	9/m <sup>2</sup>
42	<i>Lastrea filix mas crispa</i>	2 – 3L pot	9/m <sup>2</sup>
43	<i>Osmunda spp</i>	2 – 3L pot	9/m <sup>2</sup>
44	<i>Polypodium dryopteris</i>	2 – 3L pot	9/m <sup>2</sup>
45	<i>Polypodium cristatum</i>	2 – 3L pot	9/m <sup>2</sup>
46	<i>Polypodium pulcherrimum</i>	2 – 3L pot	9/m <sup>2</sup>
47	<i>Polypodium elegantissima</i>	2 – 3L pot	9/m <sup>2</sup>

## **5 RESTORATION OF ASSOCIATED PULHAM FEATURES**

### **Introduction**

- 5.1 The dropping well, lake, ravine/waterfall, rustic bridge and boat house and associated paths are integral components to the original design by Pulham. The approach to their restoration is described below.

### **Dropping well**

#### Description

- 5.2 The dropping well formed part of the works provided by Pulham at Caen Wood Towers. The Well is likely to be formed of stone type that is generally referred to as Istrian Marble and may have been produced by J.P. White & Co. Acanthus leaf scrolls are carved on each corner. The metal well head is an arch with scrolling and an iron chain that has become detached from the stone work and has been set aside to enable its restoration.

#### Restoration

- 5.3 The stone well and plinth structure will be restored (Appendix 3 item 7) in situ. The metal well head will be restored separately by a specialist and re installed into its original position on the well. A small non- intrusive superficial water pool may be installed within the well head void to give an impression of water within the well.
- 5.4 To the west side of the well a small tank may need to be concealed in the ground to provide a head of water for circulation on the cascade. If required the tank will be positioned to avoid affecting the well structure or Pulhamite.
- 5.5 Planting will be undertaken round the well head (RSL 2157-S4-020-005) with details yet to be provided. Planting of willow will include a root barrier to avoid roots affecting near by Pulham.

### **Lake**

#### Description

- 5.6 The original shape of the lake appears to have been altered. A contemporary photograph shows rock work on the western shore which appears to be missing. On the eastern side PAR has become submerged/buried within the pond.
- 5.7 The lake/pond is contaminated with hydrocarbons. The water levels vary seasonally. Drying out occurs during summer periods.

#### Restoration

- 5.8 Dredging of the lake will be undertaken to remove hydro carbons and to provide improved water retention, in particular during the late summer period. This may reveal additional submerged rock work.
- 5.9 The technical proposals for water proofing of the pond have yet to be designed. A puddled clay solution is preferred. If required use of any artificial liner will need to avoid contact with the Pulham including undermining it.
- 5.10 A small jetty is proposed at the southern end of the lake. It will connect with a path from the pavilion and the existing path on eastern side of the pond so as to avoid affecting the Pulhamite features. A pump to circulate and maintain water levels in the pond will be obscured beneath the pontoon.
- 5.11 Native and exotic emergent plants will be established to provide ecological enhancement and amenity benefit around the lake (RSL Drawing 2157-S4-020-005) with the planting detail yet to be provided.

## **Ravine/waterfall**

### **Description**

- 5.12 Survey work to date suggests that the original ravine feature on the east side of the lake has been altered with possible remains beneath a subsequently constructed retaining wall (Appendix 3 s 6) and narrow outfall channel. There is a limited seasonal trickle of water in the channel.

### **Restoration**

- 5.13 Excavation will be undertaken to discover if there are any buried PAR remains of the ravine. Depending on what is found these will be integrated to re create a small cascade to the west side of the dropping well. This may require the addition of further rocks to match the geological integrity of the original Pulhamite using a combination of natural rock to reflect the Pulham character e.g. sandstone, or restored PAR. The small ravine is likely to include a shallow pool upper most gently cascading over exposed stone with small changes in levels. The detailed design will follow dependant on the findings of the exploratory excavations.
- 5.14 Stepping stones will be incorporated into the design of the ravine to provide a crossing by the eastern shore line path with details yet to be provided.

## **Rustic bridge and boat house**

### **Description**

- 5.15 The designs for the replacement rustic bridge and boat house are based on historic photographs (1881 sale catalogue). The location of each is not entirely clear but has been based on positions shown in historic mapping including sales particulars, the location of Pulham rock work (Appendix 3 item 1) and in relation to the present ownership boundary (the original position would have been likely to connect with the 'walk' along the Parish boundary forming the edge of Hampstead Heath towards Kenwood House). In addition, the bridge would have provided users with views along the length of the lake displaying the rock out crops.

### **Restoration**

- 5.16 The bridge design in wood is shown on SHH drawings (817/BA 040/P06, 817/BA 301/P04, & P05, 817/BA 200/P03). The precise position is dependent on findings of further excavation of the PAR in this area including stepping stones and in relation to retaining an existing oak tree. If necessary, a notch will be taken out of the north side of the bridge such that it can be aligned closer to the trunk of the oak tree.
- 5.17 The design of the boat house is shown on SHH drawings (817/BA 41/P04, 817/BA 301/P04, & P05). It comprises a wooden structure with a shingle roof, small shuttered windows and a balcony over the water's edge by an entrance door on the east side. There is limited space available for the structure which could be used to internally house outdoor equipment.
- 5.18 Supplementary planting of medium to high shrubs with a tall green screen along the boundary railings form part of the landscape proposals for the narrow strip forming the western boundary/side of the lake with planting detail to be provided.

## **Paths**

### **Description**

- 5.19 A concrete surfaced path follows through the rock work on the eastern side of the pond and is a late 20th C addition.
- 5.20 Historic mapping shows a path circumnavigating the pond/lake with connections to the kitchen garden to the south and walks through the northern wooded area and the Wellingtonia walk. The path on the west side of the lake was shown as being narrow and similarly today there is relatively little space between the edge of the pond and the boundary fence.

#### Restoration

- 5.21 The eastern concrete path will be removed carefully (appendix 3 s10) and unless further Pulhamite is found below, the path surface will be replaced with a hoggin type surface to reflect a natural setting for the 'Ravine'. No path edging will be used.
- 5.22 Other than to the boathouse no formal path will be provided on the western side on account of space and landscape planting proposals.

## 6 MILNER FOLLY

### Background description

- 6.1 A folly in the form of a turreted tower was designed by the landscape gardener, Edward Milner (1819-1884) and was referred to in the 1881 Sale catalogue as an Observatory Tower '*a stone erection clad with ivy, and from the summit of which the full splendours of the view is obtained*'. Reference is made to the tower in an article in the 1928 Gardener's Chronicle when it was considered that its mantle of ivy contributed to the attractiveness of the 'turreted' tower. Other than these two references there is no more detail. Pulham (p 37) states that ivy clad ruins provided an element of the picturesque with their use for concealing unsightly objects.
- 6.2 The folly is located to the immediate north of the southern drive way with an entrance off the drive. The tower straddles a bank such that on the northern entrance is at a higher level than the southern and is accessible from the lawn although currently this side is much obscured by adjacent holly bushes.
- 6.3 The tower, gothic in style, and appears to be constructed using bath stone dressings with ragstone walling. Arrow loop crosses are present on both sides of the tower. Much of the upper part is obscured by vigorous ivy. Battlements surmounting tracery work round the tower are partially collapsed due to ivy.
- 6.4 Internally the tower includes two rooms: that on the southern side is a circular domed ceiling chamber with an open entrance and arrow loop crosses in the walls to either side. There is a wooden door lintel but no door. Above the wooden doorway frame is recessed herring bone red coloured brickwork. Internally, the room is faced with lime washed brickwork and a shallow concave ceiling.
- 6.5 The northern entrance has tracery round the doorway with a louvered wooden door and internal brickwork. Wooden shelving extant was in use as a fruit store in 1928 (Gardener's Chronicle) and it is implied that earlier access to the roof (as an observatory) had been removed /was not possible). The louvered wooden door is likely to be contemporary with use as a fruit store.

### Restoration

- 6.6 The holly and other shrubs on the northern side of the tower will be removed both to enable the erection of scaffolding, and subsequently to provide views of the tower itself.
- 6.7 The tower will be restored matching existing stone and mortar following recommendations in Appendix 3 s 10 and subsequent closer investigation following the erection of scaffolding and removal of ivy: for example this could require the entire rebuilding of the battlements depending on the investigations. Where suitable, the restoration will use retained bits of fallen stone.
- 6.8 A spiral stair may be installed to restore original use of the tower as an observatory. This will require the removal of fruit storage shelving with details deposited in Camden Local Studies and Archives Centre.
- 6.9 New wooden doors gothic in style will be erected in the southern and northern entrances of the tower (SHH plan 817MF-200-PL0).
- 6.10 Details of the adjacent retaining wall to the southern drive are included in section 8.

## **7 SUNK GARDEN AND ORCHARD**

### **Background description**

- 7.1 In 1919, the architect Leonard Rome Guthrie (1880-1958) was asked to prepare designs for the layout of the gardens in an Italianate style. His plan dated December 1919 showed terraced gardens to the west of the house. The terraced gardens were executed largely as proposed and consisted of a lawn below the house, with a Sunk Garden to the west, and then at a lower level a terraced orchard divided from a garden (Iris Garden) on the lowest terrace by a long walk, which led to the existing gardens to the south.
- 7.2 The hard landscaping and overall scheme was conceived by Guthrie but in 1920 he asked garden designer Gertrude Jekyll (1843-1932) to prepare the planting plan for two of the areas: the symmetrical Sunk Garden and the asymmetrical Iris Garden at the southern end. The five beds in the Iris Garden were grouped around a well head and the two central beds had eulalia in the middle with planting predominantly of iris but including other plants such as heuchera and asters. The ten beds in the Sunk Garden were planted as borders of lilies, peonies, snapdragons, hollyhocks, hellebores, iris, acanthus, gypsophila, clematis, salvia, fuchsia etc. Shrubs backed the outer beds and the four central beds had a eulalia in the middle flanked by Blanc Double de Coubert roses. Jekyll sent the planting plans and lists in September and the planting was carried out in the autumn.
- 7.3 Guthrie's alterations to the gardens were shown on the 1935-36 edition of Ordnance Survey at 1:2,500 to include four small square beds in the centre, a centrally placed path with steps to the north, and an off set path with steps by the south east corner to the asymmetrical iris garden. The gardens around this date are described in an article in Gardeners' Chronicle (October 20 1928), which included illustrations of roses and paths in the Sunk Garden.
- 7.4 The overall form of the Sunk Garden remains with the rectangular area defined by a low retaining wall with a higher length of wall on the northern half of the eastern side. There are centrally placed steps on the western and eastern side of the garden. Paths of large irregular flagstone follow around the walls, however (based on photos in Gardeners Chronicle 1928) previously there was a narrow width of ground alongside the wall, and the flagstone path was narrower. In addition, to the path widening, at some stage concrete mortice has been added between the flagstones. Also the four central square beds were replaced by a central circular bed with a brick edge surround. At the northern end of the rectangular walled area is a further levelled area of garden.

### **Restoration proposals**

- 7.5 The landscape strategy (RSL Drawing 2157-S4-010-101) retains and restores the low walls forming the central part of the Sunk Garden together with adjacent steps. The existing paths will be restored to the original width re- using the flag stones and enable planting along side the base of the low retaining wall. The central more recent circular bed will be established as a water feature/ pond. The current areas of mown grass in the Sunk Garden will be established as flower beds with the addition of new paths to matt the setts. The planting strategy for the Sunk Garden aims to reflect the palate of plants used by Jekyll with the planting detail yet to be produced.
- 7.6 The removal of an outgrown eastern shrubbery including 'volunteer' trees along the eastern and southern sides of the Sunk Garden will provide a more open view of the Sunk Garden from the main lawn and the House.
- 7.7 The walling on the western side of the Sunk Garden includes some sections significant cracks and with partial collapse, possibly attributed to the growth of the nearby large horse chestnut trees. This walling will be repaired as part of the restoration proposals.
- 7.8 The northern and southern parts of the Sunk Garden make a departure from the original design through the establishment of symmetry with a rectangular garden at either end (RSL 2157-S4-000-009). The northern part retains the original path alignment. The southern part creates a new steps/crossing through the low sunk garden wall and extends a levelled area to the west through the realignment of a section of retaining wall (RSL 2157-S4-010-101). The

affected re aligned length which previously defined the curvious eastern side of the kitchen garden, will be reconstructed further to the east re using salvaged stones. A record will be made of the existing structures that are affected by these changes with details provided to Camden Local Studies and Archives Centre.

- 7.9 To the west of the Sunk Garden, an area will be established as orchard recalling that recorded in the 1920s. The east west alignment of the former kitchen garden path will be retained as a ghosted feature (stepping stones) (RSL 2157-S4-030-204).



## **8 STEPS FROM SUNK GARDEN TO WESTERN BOUNDARY**

### **Background**

- 8.1 The Guthrie/Jeykll alterations created a flight of stone steps linking the lower levels around the pond with the west side of the Sunk Garden entering it between horse chestnut trees.
- 8.2 The alternating convex and then concave plan to the lower steps forms an important element of the original design of the steps. The steps are in a variable condition including some poor condition. Some upper sections of the steps appear to have been replaced.

### **Restoration**

- 8.3 Relaying of some steps is required re using existing stone or similar to match. Prior to relaying detailed recording will be undertaken as outlined in Appendix 3 s 8 (details provided to Camden Local Studies and Archives Centre), with restoration following the recommendations.
- 8.4 On account of the boundary changes (land donated to Hampstead Heath) the landscape proposals (RSL 2157-S4-000-003) provide a new path that crosses the lower part of the steps to link in to the path to the Pavilion/pond round the eastern side of the pond. The detailed treatment of this interface will retain the integrity of the historic structure of the steps with the new cross over set at a lower level so as not to disturb the convex/concave lower sections (drawing RSL 2157-S4-030-204 steps & 2157-S4-010-006).

## **9 OTHER HISTORIC PATHS AND WALLS**

### **Southern Driveway**

#### Description

- 9.1 The southern driveway provided a connection between the private southern carriageway drive to Caen Wood Towers west wards to the Caenwood Towers Farm (Model Farm) and passing the Milner folly. In addition, it marked the division in ownership between Caen Wood Towers and land leased from the Earl of Masfield (as shown in historic sale particulars). The drive retains its original alignment although (on account of recent land ownership changes) there is neither a connection to the Farm nor at the eastern end.
- 9.2 A brick burr retaining wall, between c.0.5-1m in height, forms the northern side of the drive with the length either side of the Milner Folly the most important. There are two flights of steps across the wall of which the western most has been subject to alterations (comprising concrete steps with sloping side slopes where flag stones have been laid set in concrete over the dry retaining wall). Historically, the eastern flight lead to the heath garden.
- 9.3 The retaining wall is in variable condition with some sections previously repaired with concrete, the addition of drainage pipes, and others which have recently collapsed including plant roots contributing.

#### Restoration

- 9.4 Appendix 3 s. 9) describes the approach to be used in restoration of the retaining wall and associated two flights of steps. All recent collapsed stone is being collected in boxes positioned near the collapse for subsequent use in restoration.
- 9.5 The concrete surface of the drive will be removed and slightly reduced in width to enable planting along the southern side. The new path will have an asphalt finish with a double set edge located proud of the retaining wall and to accommodate surface water drainage. The steps will be restored. The restored steps at the eastern end will connect to a new entrance to the heath garden (off site).

### **Paths from Model Farm**

#### Description

- 9.6 A concrete surfaced path follows alongside the western boundary in the vicinity of the Model Farm, and to the north side of the southern drive. Both paths were present in 1881.

#### Restoration

- 9.7 Landscape proposals have adjusted the alignment of these paths to reflect present ownership boundaries and proposals. The western boundary path will be slightly narrowed with minor variations to the alignment. The path will be re surfaced using self binding gravel with a shrub mix planted along side the boundary railings (RSL 2157-S4-030-202).

### **Northern woodland: paths/walls and boundary posts**

#### Description

- 9.8 The wooded area along the northern side of the grounds incorporates former administrative boundaries of the Parish of Marylebone (marked on the 1860s OS mapping), the Parliamentary and Municipal borough, and Metropolitan borough boundaries (marked on the 1913 OS mapping). This mapping also shows the location of three iron boundary posts dated 1887 and one boundary stone, with a further stone by the extant western boundary. The four boundary markers have been located within the woodland (with those three for Hornsey Parish dated 1887).
- 9.9 For the most part the landscape proposals retain and re-establish the extant path network and associated walls, steps and rock work within and adjacent to the woodland. This includes the path along the northern side of the tennis court connecting to the main lawn, and paved paths

following through the wood, with some tufa retaining walls partially obscured under undergrowth.

- 9.10 The woodland includes flagstone paths east west, mostly shown on 1881 mapping with a connecting to the south alongside a low brick burr and tufa retaining wall. The eastern most end of the path follows between brick walls which ended by the conservatory of the Caenwood Towers.
- 9.11 The woodland includes several large girth oak and sweet chestnut trees shown on early mapping and containing veteran features. Along side the main woodland path and elsewhere are a number of large upstanding hollow tree stumps. At the eastern end of the wood, a defunct section of semi-circular wall was built round a historic tree trunk with the stump extant- the wall defined formed part of a former walkway. A further semi circular retaining/ part tufa wall round an ancient living tree trunk is located in the central part of the wood.

#### Restoration

- 9.12 Overall, the woodland path is in relatively good condition although some sections have deteriorated on account of erosion and root development, with one or two areas where flags are missing. Localised repair will be undertaken where the stones are unstable or missing (RSL 2157-S4-030-001) following recommendations in Appendix 3 s 11 with details provided to Camden Local Studies and Archives Centre.
- 9.13 Proposals include for ducting through the woodland with such works designed to avoid disruption to the woodland path except in locations itemised for repair. Lighting will be installed along side a section of the path but it will not affect its integrity.
- 9.14 The tufa retaining wall will be retained with an adjoining overgrown semi circular section enclosing veteran tree no 2617 exposed through cutting back of undergrowth.
- 9.15 The four boundary post markers in the woodland will be retained in their original positions (Appendix 3 s.12) including the adjacent upstanding tree stumps. The two posts at the eastern end will be re-erected to a vertical position. If the missing western most stone is found –it will be re-erected and retained.
- 9.16 The upstanding tree stumps will be retained (subject to natural processes). The trees with veteran features will be retained with further prescriptions for these included in the wildlife conservator management plan conservation.

## 10 PHASING PLAN FOR RESTORATION OF THE HISTORIC LANDSCAPE

- 10.1 Table 10.1 provides an outline programme for the historic landscape restoration works subdivided by element over the period from May 2018 to October 2019 and within the required two years of the commencement of such works. In many instances an initial exploratory and conservation method trial phase will be followed by the full structural restoration works and planting works. Phasing dates also relate to associated works in the vicinity for example; ducting in the northern wood with the paths. The phasing plan programme includes planting as appropriate.




Table 10.1: Phasing plan for restoration

HISTORIC LANDSCAPE ELEMENT	APPROX. PHASING DATES	
	From	To
MILNER FOLLY - Investigation & preparation works	May-18	Jun-18
Restoration	Sep-18	Jan-19
SUNK GARDEN STEPS AND WALLS Relocation of retaining wall (to south), relaying of paths and new steps, restoration of walls, planting	Jun-18	Jul-19
NORTHERN WOODLAND – PATHS AND BOUNDARY POSTS Identify sections of path for restoration and carry out trials	Jul-18	Aug-18
Restoration of paths & boundary posts	Aug-18	Oct-18
POND RESTORATION WORKS inclusive of dredging, lining, water circulation and planting	Aug-18	Apr-19
PULHAMITE ARTIFICIAL ROCKWORK – Further excavation & removal of concrete to expose buried Pulhamite & condition, emptying of planting pockets,	Aug-18	Oct-18
Scaffold and trial cleaning	Sept -18	Jan-19
Restoration including cascade/ravine feature and planting	Dec-19	Apr-19
RESTORATION OF ASSOCIATED PULHAM FEATURES - Bridge, boathouse, well head and planting	Mar-19	Oct -19
SOUTHERN DRIVE- Restoration of walls and steps	Feb-19	May-19
STEPS FROM SUNK GARDEN TO WESTERN BOUNDARY - Investigation and restoration	May-19	Jun-19

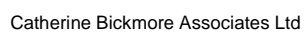
## REFERENCES

- Bennett, M. R., Doyle, P., Larwood, J. G. & Prosser, C. D. (eds) (1996).** *Geology on your Doorstep. The Role of Urban Geology in Earth Heritage Conservation.* Geological Society
- Catherine Bickmore Associates (2016)** *Historic landscape appraisal for Athlone House, Hampstead Lane, London N6.* June 2016
- English Heritage (2008)** *Durability guaranteed, Pulhamite rockwork –its conservation and repair*
- Claude Hitchin (2012)** *Rock landscapes, the Pulham legacy*
- Pulham, James (1877)** *Picturesque ferneries and rock-garden scenery*
- Pulham (c.1873)** *A Naturalistic Pulhamite Fernery, Conservatory, or Winter Garden*
- Robinson W (1870)** *Alpine flowers for English gardens*
- Robinson W (1871)** *Hardy flowers (1871), B S*
- Williams BS (1873)** *Select ferns and lycopods*
- Wooster D (1874)** *Alpine plants*
- The Gardeners' Chronicle (1928)** Caen Wood Towers pp 310-11, 307,
- Wright, H.J. 1896** 'Gardens about London: Caen Wood Towers' *Journal of Horticulture and Cottage Gardener* pp 508-10, 517
- Sale catalogues relating to Caen Wood Towers/Athlone House dated June 22nd 1881, November 30th 1881, and March 30th 1910, including plans, illustrations, and photographs held in Camden Local Studies and Archive Centre (CLSAC)

Photographs ( Appendix 3 includes more photographs as part of condition survey)

	
<p>1.View of southern approach to the Grotto at Swiss Garden, Biggleswade which illustrates the potential for Pulhamite to be lost in the earth over time.</p>	<p>2.View of southern approach to the Grotto at Swiss Garden, Biggleswade The right side shows rockwork carefully defined by digging the soil away by hand around it largely undertaken by garden volunteers.</p>
	
<p>3.Use of scaffold erected in the lower pond of the cascade at Swiss Garden illustrating the use of scaffold erected in the drained and dredged pond. Consolidation and stabilisation work in progress before the lost areas of coating were re-established. Note also the bridge abutments in the background.</p>	
	
<p>4.Athlone House; PAR by pond view north east</p>	<p>5.Athlone House: PAR by pond east bank</p>

Page 10 of 10





## APPENDIX 2: PULHAMITE REPAIR SPECIFICATION

Item	Procedure or repair type	Methodology and materials.
1.	<p>Cleaning PAR surfaces.</p> <p>Prior to all works, including the trials, some areas of Pulhamite should be cleaned to allow the true colour and colour variation of the surface to be viewed and inspected.</p> <p>It will probably be beneficial to clean all the Pulhamite surfaces by this method, but this should proceed only after initial test trials have been carried out. The super-heated steam method is only advisable on sound hard surfaces, not appropriate for loose and disaggregated surfaces.</p>	<p>Cleaning Methods:</p> <ul style="list-style-type: none"> <li>• Super-heated water as supplied by Doff or Therma-Tec equipment. (<a href="http://www.restorative-products.com">www.restorative-products.com</a>). Using certified and trained staff.</li> <li>• Hand brushing with soft fibre brushes and water hand held water sprays.</li> </ul>
2.	<p>Mortar Trials:</p> <p>Ex situ and in situ mortar colour, surface texture mortar trials.</p> <p>To provide suitable matching colours and textures for PAR surface coatings:</p> <p>Trials will be conducted to match both the mortar qualities and the colouring and surface appearance of the historic material. Trials will test for colour and colour range, surface aggregates, suitability of mortar application/workability of mortar, setting times, methods of washing the surface to expose the aggregates.</p> <p>Trials will include trial boards with a range of different coloured mortars, and in-situ trials which display the intended surface finish and detailing; which may be used as exemplars.</p> <p>All these trials will only be finally assessed when the mortars are fully dry, as there is a distinct variation in the wet and dried colour of these mortars.</p> <p>Some surface bloom on these mortars maybe experienced.</p>	<ul style="list-style-type: none"> <li>• PAR coating Mortar trials: Materials.</li> <li>• The mortars will be based on a 50:50 by volume blend of NHL3.5 (St Astier) and Prompt Natural Cement (Vicat). This will form the binder for all the mortars for PAR surface coatings.</li> <li>• Tempo retarder, supplied by Vicat may be added in proportions specified by Vicat if necessary i.e. no more than one capful per litre of Prompt.</li> <li>• Mortar will generally be in the 1 vol. binder to 2 vols. aggregate range. Though stronger blends on 1:1.5 by volume may also be used. Additional aggregates such as larger gravels etc. may be added as a percentage of the mortar volume; i.e. add 10% of 10ml stone to the volume of mortar to produce the required surface texture. Subject to trial.</li> <li>• Colour will be achieved by the addition of either/ ground limestone (as part of the aggregate composition) or pigments produced by Bayer/Laxness for the concrete industry (distributed in the UK by <a href="http://www.thermovacplastics.co.uk">http://www.thermovacplastics.co.uk</a>). A combination of ground limestone and pigment addition is preferable.</li> <li>• No "Earth pigments" may be used, as they may have a high sulphate content which can destroy the set of these mortars, in persistently damp situations.</li> </ul>



Item	Procedure or repair type	Methodology and materials.
		<ul style="list-style-type: none"> <li>• The final texture of the mortar will be dependent on the correct selection of aggregates (to match the historic), and the treatment of the surface as the material is setting, i.e. washing off excess binder from the surface of the mortar.</li> <li>• All fresh mortar applications will be protected from rapid drying for at least 1 week with hessian. On lifting the hessian there may be some surface bloom but this will fade gradually.</li> </ul>
3.	Exposed masonry backgrounds beneath removed or failed repairs. Or exposed internal walling to plant pockets that were never coated (normally).	<ul style="list-style-type: none"> <li>• Exposed masonry backgrounds need to be inspected for structural and integral strength. Note; internal plant pockets are not PAR coated but may need repointing to consolidate plant pocket walling if roots or other decays have weakened mortar beds.</li> <li>• Repairs will be carried out to the masonry background to leave it sound and stable.</li> <li>• Repairs may include, repointing with hydraulic lime mortar of adequate strength (NHL 3.5 binder with 1 vol. binder to 2.5 vols aggregate of which 25-50% is ground limestone, and the rest a well graded sharp aggregate).</li> <li>• Brick or brick burr replacement is necessary where bricks are crumbly or lost. Selected replacement brick type should be agreed by the SO, and must be suitable for use in a potentially high salt content environment.</li> <li>• Consolidation of loose masonry or weakened masonry will be made by pointing or packing with mortar, or by pinning with A4 (marine quality) threaded rod (or 316 grade helical bars) and suitable resin system (that meets the structural requirements and set in damp or wet conditions).</li> </ul>
4.	Crack repairs:	<ul style="list-style-type: none"> <li>• Movement/expansion cracks will either be mortar packed with hydraulic lime mortar or grouted (if small dimension); or packed with hydraulic lime mortar and brick.</li> </ul>

Item	Procedure or repair type	Methodology and materials.
		<p>Leaving appropriate surface depth of approximately 25mm to allow a covering with PAR coating material, which matches the adjacent surfaces.</p> <ul style="list-style-type: none"> <li>Then stitched with stainless steel ties (probably M6 A4 or 316 grade) set in resin to the interior of plant pockets or drilled through the cracks to bind across the cracking (leaving a minimum of 100mm of stainless steel rod set in each masonry section. Such stitching will be carried out at 300mm centres along each crack.</li> <li>The above is subject to discussion with the SO/engineer. Especially where serious structural cracking has occurred such as in cantilevered stone slabs which support plant pockets.</li> </ul>
5.	Re fixing/bonding loose sections of PAR.	<ul style="list-style-type: none"> <li>Where sections of PAR are loose or detached, they may be bonded in place using a Prompt NHL 3.5 grout (50:50) blend, or mortar; the surface of such treatments may need some PAR surface coating or suitable colouring to match in the repair.</li> <li>They will most likely require also the insertion ( by drilling) of 1 or 2 No. 316 grade or A4 st. st. pins as previously specified above.</li> <li>(use M4 for small sections M6 for medium sized sections)</li> <li>See also item 7 below.</li> </ul>
6.	Background surface preparation (for brick/burr masonry) prior to applying new PAR coating.	<ul style="list-style-type: none"> <li>All backgrounds will be are adequately prepared to take a new coating of PAR. Adhesion of repairs may be poor if these tasks are not carried out correctly.</li> <li>All exposed masonry surfaces (due to receive a coating) will be cleaned and all root growth will be removed and treated with systemic herbicide (subject to discussion with the SO).</li> <li>All weathered masonry surfaces will be removed to expose new fresh surfaces that will adequately bond with new render. This may involve an element of scabbling</li> </ul>

Item	Procedure or repair type	Methodology and materials.
		<p>to weathered surfaces or working across the surface with a diamond cutting disc, which can also provide keying.</p> <ul style="list-style-type: none"> <li>Where in doubt, the scabbling may be complimented by the raking out of joints to allow greater bonding between render and masonry. In some cases, a key (or similar) may be cut/drilled into the background masonry to improve adhesion.</li> <li>Prepare the edges of surviving PAR coating, by cutting a suitable bevelled edge and providing a key for the new repair material to meet the edge of the surviving material. Ensure that the new material will abut the old surface material with at least a 10mm thickness, no buttering in of edges is allowed. Such edges will quickly be subject to frost attack.</li> <li>Back ground preparation includes the removal of all plant and organic growth, all earth materials, all weathered masonry surfaces (i.e. all surfaces that are not freshly exposed), and any loose or friable materials.</li> <li>Background preparation is a very important part of the repair/replacement process that must be carried out diligently.</li> </ul>
7.	Applying new PAR coating.	<ul style="list-style-type: none"> <li>Apply the approved mortar or blends of the approved mortars to give the required colours. (approval is based on SO's approval of initial trials).</li> <li>Pre-wet back ground masonry to ensure slow drying and curing of work.</li> <li>Work surfaces to methods approved in the initial trials.</li> <li>Match the repairs to the historic surface in both texture and colour. And to suitable contours and surface detailing to match surrounding areas.</li> <li>Do not "feather edge" or "butter edge" repairs, see item 8 below. Ensure all edge preparation has been carried out in</li> </ul>

Item	Procedure or repair type	Methodology and materials.
		<p>advance.</p> <ul style="list-style-type: none"> <li>Do not cover over historic surface with new repairs, repairs should meet at the edge of the surviving areas.</li> <li>Cover with hessian and cure with damp water sprays for at least 1 week.</li> <li>Note: with pigment coloured mortars, consistency in drying and curing of mortar is very important to maintain constant colour finish.</li> </ul>
8.	Edges to new repairs:	<ul style="list-style-type: none"> <li>Ensure that all edges of historic or existing work have weathered surfaces removed and are in a suitable condition to provide a positive bond to the new work.</li> <li>Ensure that all adjacent repairs meet the historic surfaces and do not cover these surfaces with feather edging/or buttering over.</li> <li>Note feather edging is one of the causes of failure. Prevent this by careful application of new work, and suitable cutting of the historic edge before application commences.</li> </ul>
9.	<p>Consolidation of loose historic surfaces:</p> <p>By grouts;</p>	<ul style="list-style-type: none"> <li>Flush voids behind detached surfaces ensuring removal of all loose materials and determine the best method for injecting grout.</li> <li>Assume that most work will be gravity grouting injected from above.</li> <li>Inject grout into holes provided at suitable centres.</li> <li>Allow the grout to flow through weep holes initially and then block holes. Build up grout levels gradually, without causing water pressure to force surfaces off.</li> <li>Consider applying grouts through clay bird's nests.</li> <li>Hydraulic lime (NHL 3.5) and Prompt natural cement grouts (blend at 1;1</li> </ul>

Item	Procedure or repair type	Methodology and materials.
		provide a strong adhesive grout. These can be blends that are much weaker blends for a more porous grout).
10.	Removal of 'recent (non PAR) concrete	<ul style="list-style-type: none"> <li>Concrete path will be very careful lifted and removed especially around the ravine area and where the path overlaps any Pulhamite structures.</li> </ul>

## DRAWINGS

### Drawings relating to landscape strategy

RSL 2157-S4-000-003 rev B: Site plan –Historical elements  
RSL 2157-S4-000-009 rev C: General arrangements-soft element  
RSL 2157-S4-010-006 rev C: General arrangement-hard elements (steps and southern end of lake)  
RSL 2157-S4-010-101 rev A: Historic garden wall (Sunk garden)  
RSL 2157-S4-020-005 rev D: General arrangement-soft element (Pulhamite, lake and well)  
RSL 2157-S4-030-001 rev A: Hard landscape details historical elements (paths)  
RSL 2157-S4-030-202 rev A: Hard landscape details surfaces (paths)  
RSL 2157-S4-030-204 rev B: Hard landscape details steps

### Drawings relating to bridge, boat house and Milner Folly

#### Bridge, boat house

(817)BA-40\_PL01 ground plan  
(817)BA-41\_PL01 roof plan  
(817)BA-200\_PL01 elevations  
(817)BA-300\_PL01 elevations and section  
(817)BA-301\_PL01 elevations and section

#### Milner Folly

(817)MF-200\_PL01 elevations Milner





LEGEND

SOFT LANDSCAPE ELEMENTS

TREES

- EXISTING TREES  
TO BE RETAINED & NOT SHOWN - REFER TO WORKS TO TREES PLAN
- PROPOSED TREES  
ALL PROPOSED TREES TO HAVE 1M DEEP TREE PIT TO BE DUG BY LANDSCAPE CONTRACTOR
- ESPAlier TREES
- CLIMBERS

TREES LIST - REFER TO SCHEDULE AS PER Q31

- AML AMELANCHIER LAMARCKII - MULTI STEM.
- BP BETULA PENDULA - MULTI STEM.
- BUJ BETULA UTILIS VAR. JACQUEMONTII
- CB CATALPA BIGNONIOIDES 'AUREA'
- LS LIQUIDAMBAR STYRACIFLUA - CLEAR STEM.
- MSP MALUS SPECIES
- PN PINUS NIGRA AUSTRIACA
- PAP PRUNUS AVIUM 'PLENA' - MULTI STEM.
- PS PRUNUS SERRULA - MULTI STEM.
- PSP PRUNUS SPECIES
- PYSP PYRUS SPECIES
- QI QUERCUS ILEX
- SXS SALIX X SEPULCRALIS
- AXB OSMANTHUS X BURKWOODII
- CB CARPINUS BETULUS
- CBb CARPINUS BETULUS BONSAI
- TC TILIA CORDATA
- TCe TILIA CORDATA ESPALIER
- TBT TAXUS BACCATA TOPIARY

SOFT PLANTING AREAS

- EXISTING ACID GRASSLAND  
DO NOT REMOVE OR DAMAGE
- NEW SEMI IMPROVED ACID GRASSLAND  
PROVIDE MINIMUM 0.05 HA - THIS IS AN AREA MARKED ON SITE TO ALLOW NATURAL COLONIZATION OF THE SURROUNDING ACID GRASSLAND. SEED AND PLUG PLANTING - REFER TO PLANTING SCHEDULE - 2157-S4-SC-001.
- SALVAGED SEMI IMPROVED ACID GRASSLAND  
TO BE REMOVED, PROTECTED ON SITE ELSEWHERE & TO BE RELOCATED IN ORIGINAL LOCATION AS PER RSL PLAN
- NEW LAWN  
AS PER Q30 / 410
- NATIVE WOODLAND BULB PLANTING WITHIN NEW LAWN  
REFER TO SCHEDULE FOR SPECIES LIST - 35-40no. PER M2 & AS PER Q31
- NEW WILDFLOWER MIX  
PROVIDE MINIMUM 0.05 HA - REFER TO SCHEDULE FOR SPECIES - 500 PLUGS PER M2 & AS PER Q31 / 445
- GREEN ROOF  
PLEASE REFER TO EXTERNAL WORKS SPECIFICATION
- GROUND COVER & ORNAMENTAL HERBACEOUS PLANT MIX  
REFER TO SCHEDULE FOR SPECIES LIST - 9 NO PLANTS PER M2 (2-3L POT) & AS PER Q31
- SHRUB MIX  
REFER TO SCHEDULE FOR SPECIES LIST, MEDIUM TO HIGH SHRUBS - 3 PER M2 (MIN 12L POT) & AS PER Q31
- NATIVE WOODLAND SHRUB PLANTING (MIX 1 & 2)  
CHECK PLAN FOR MIX TYPE - REFER TO SCHEDULE FOR SPECIES LIST AND SPECIFICATION, ALSO AS PER Q31
- HEDGES  
REFER TO BELOW & AS PER Q31

- H1 - FAGUS SYLVATICA - 2000MM HIGH, PRECLIPPED
- H2 - ROSMARINUS OFFICINALIS - 400MM HIGH, PRECLIPPED
- H3 - TAXUS BACCATA - 700MM HIGH, PRECLIPPED
- H4 - TAXUS BACCATA - 500MM HIGH, PRECLIPPED
- H5 - TAXUS BACCATA - 1000MM HIGH, PRECLIPPED
- H6 - NATIVE HEDGE - 2000MM HIGH, PRECLIPPED
- H7 - TAXUS BACCATA - 2000MM HIGH, PRECLIPPED
- H8 - BUXUS SEMPERVIRENS - 350MM HIGH, PRECLIPPED

- EXISTING TREES AND SHRUB PLANTING  
TO BE IMPROVED AND MANAGED AS PER THE ECOLOGIST RECOMMENDATIONS. REFER TO CATHERINE BIGAMORES REPORT & DRAWINGS.
- MARGINAL PLANTING TO POND  
REFER TO SCHEDULE FOR SPECIES LIST AND SPECIFICATION, ALSO AS PER Q31
- GREEN SCREENS  
AS PER Q40  
REFER TO 2157-S4-030-206

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DO NOT SCALE FROM THIS DRAWING

Figured dimensions only are to be taken from this drawing. All dimensions are to be checked on site prior to commencing any works. If in doubt, ask.

All RSL drawings to be read in conjunction with relevant RSL drawings, details, schedules & specifications.

Any discrepancies to be reported and clarified with RSL at the earliest opportunity, prior to procurement and without delay.

PLEASE NOTE: ALL PROPOSED HARD LANDSCAPE ELEMENTS ARE NOT SHOWN ON THIS DRAWING.

ADDITIONALLY THE EXISTING TREES ARE NOT SHOWN. REFER TO TREE WORKS PLAN FURTHER INFORMATION. CONTRACTORS TO HAVE DEEMED TO VISITED SITE.

THIS DRAWING SHOULD BE PRINTED IN COLOUR.

Revision C Date 16/04/2018 Drawn by GH Authorized by RSL  
CHANGES AS CLOUDED

Revision B Date 04/04/2018 Drawn by GH Authorized by RSL  
UPDATES THROUGHOUT

Revision A Date 12/03/2018 Drawn by GH Authorized by RSL  
CLIENT UPDATES THROUGHOUT



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Client Private Client

Project Athlone House  
Hampstead Lane

Drawing General Arrangement  
Site Plan - Soft Elements

Paper size 1:400 Job No. 2157

Date 31-01-2018 Drawn GH

Checked EW Authorized RSL

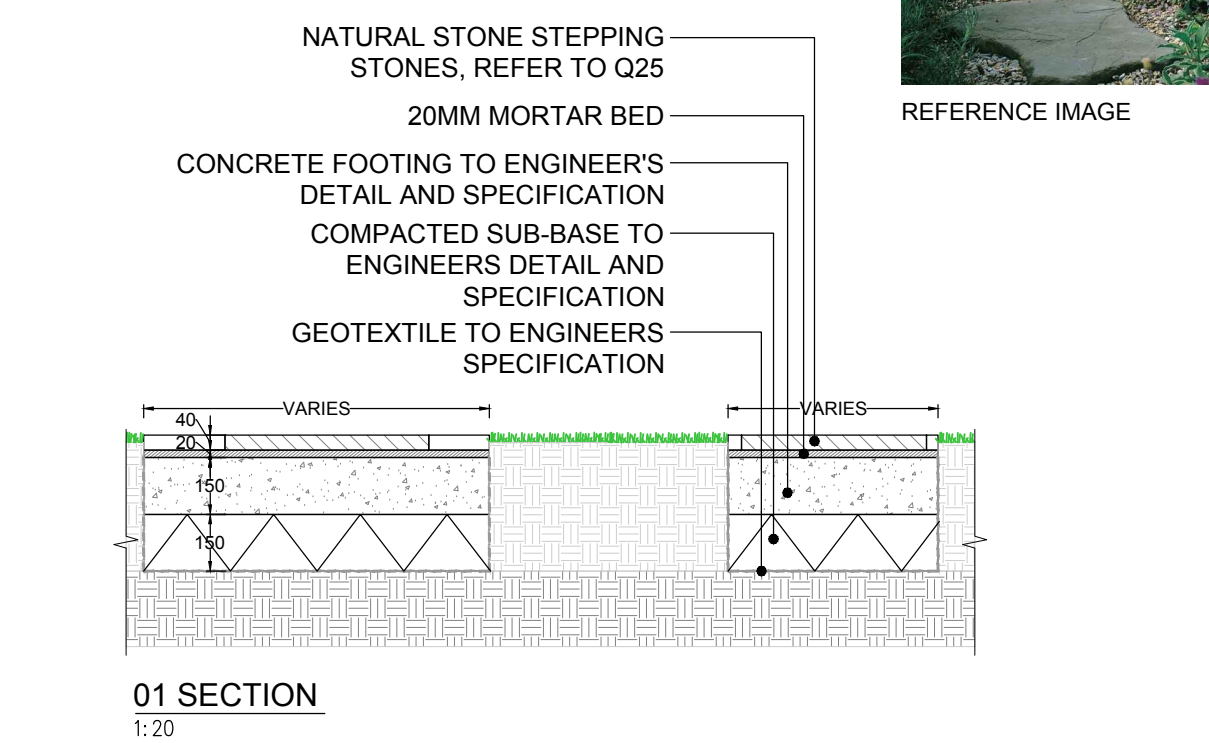
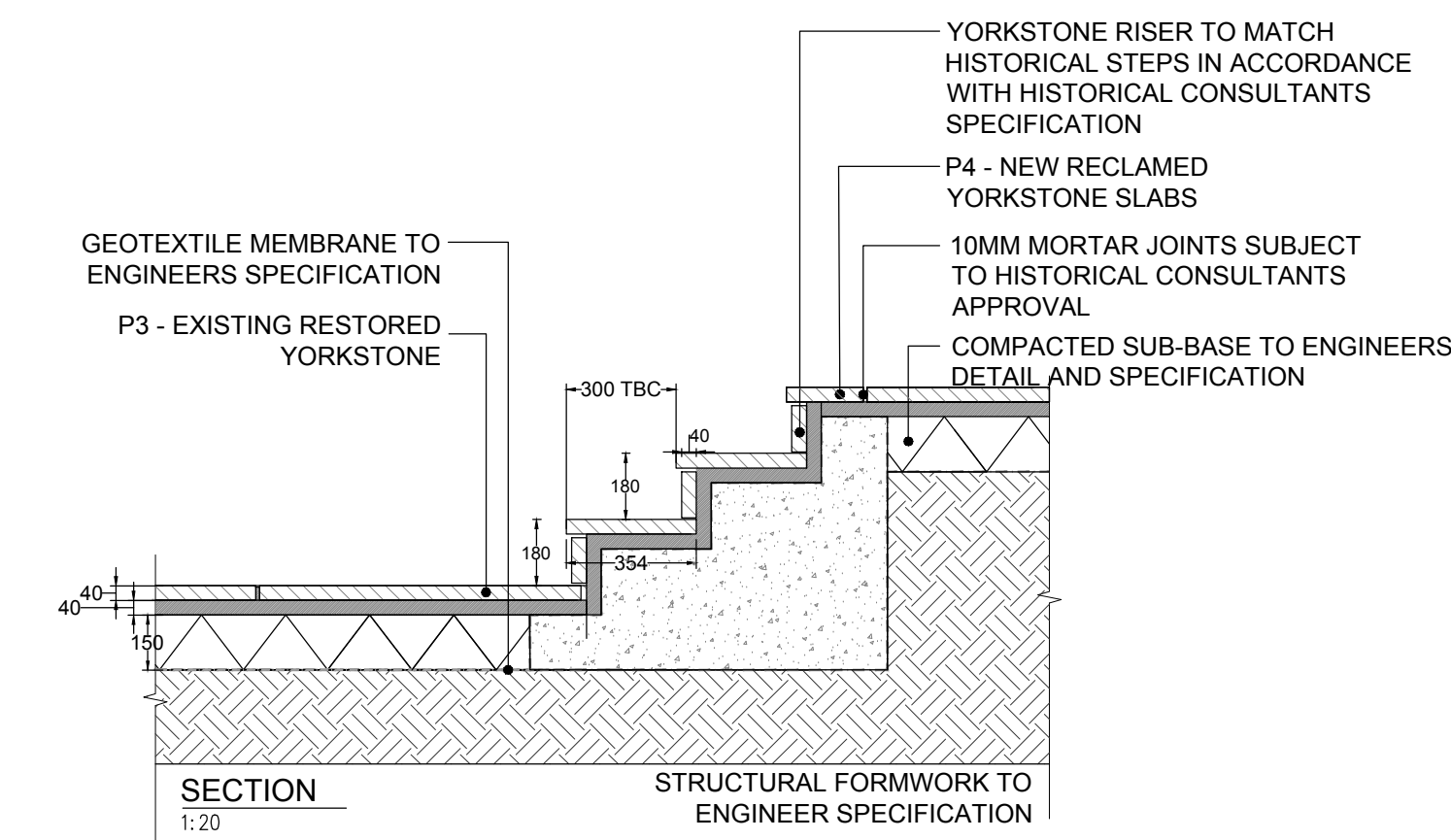
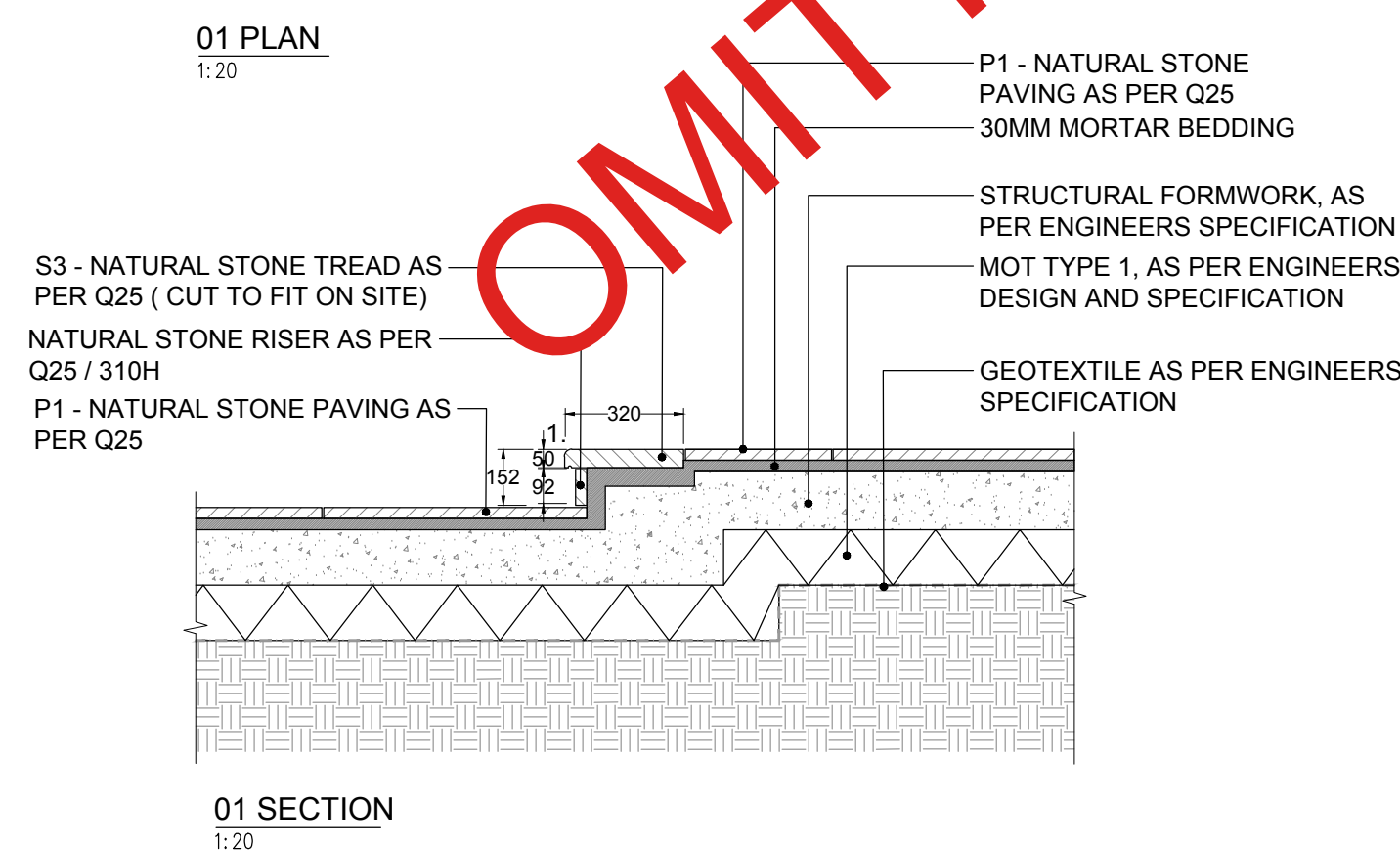
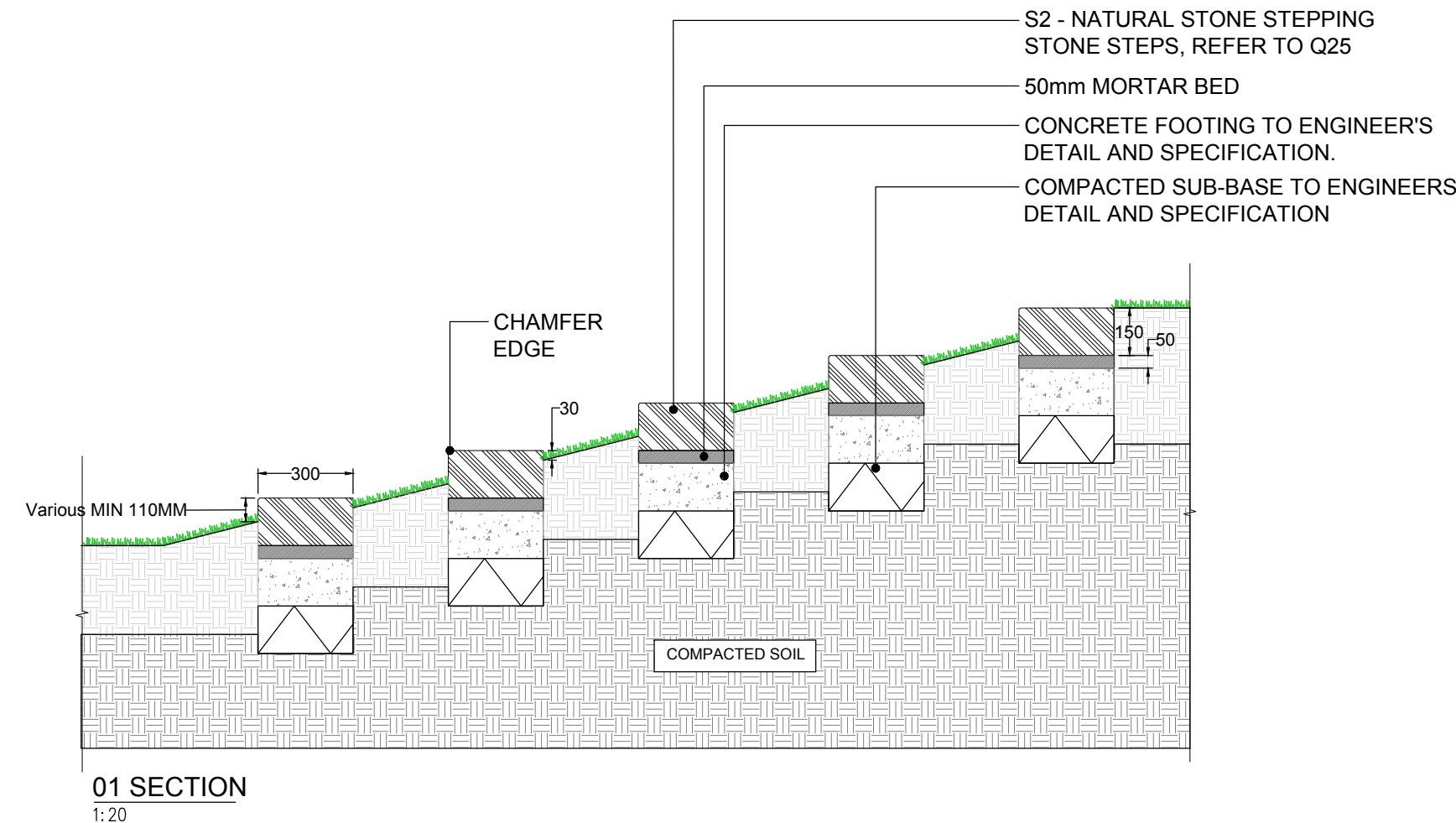
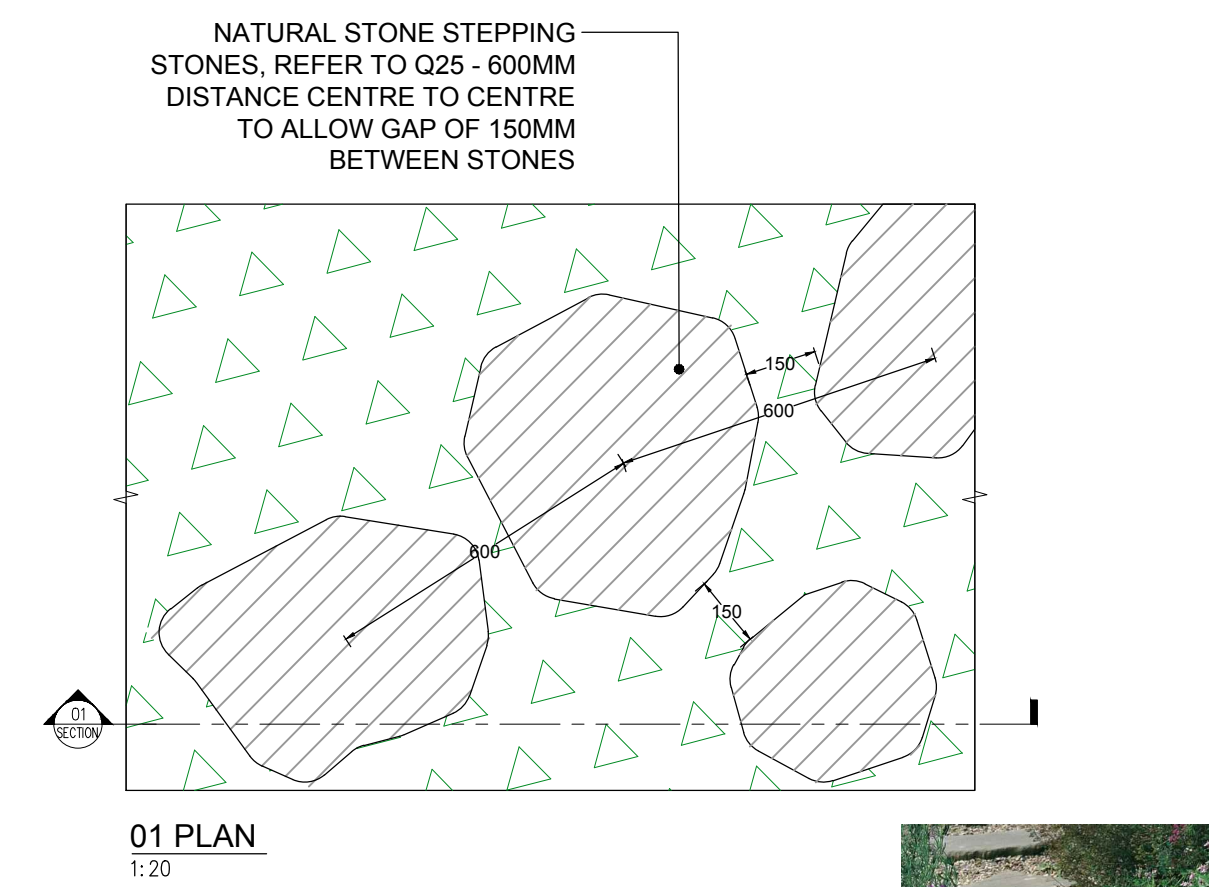
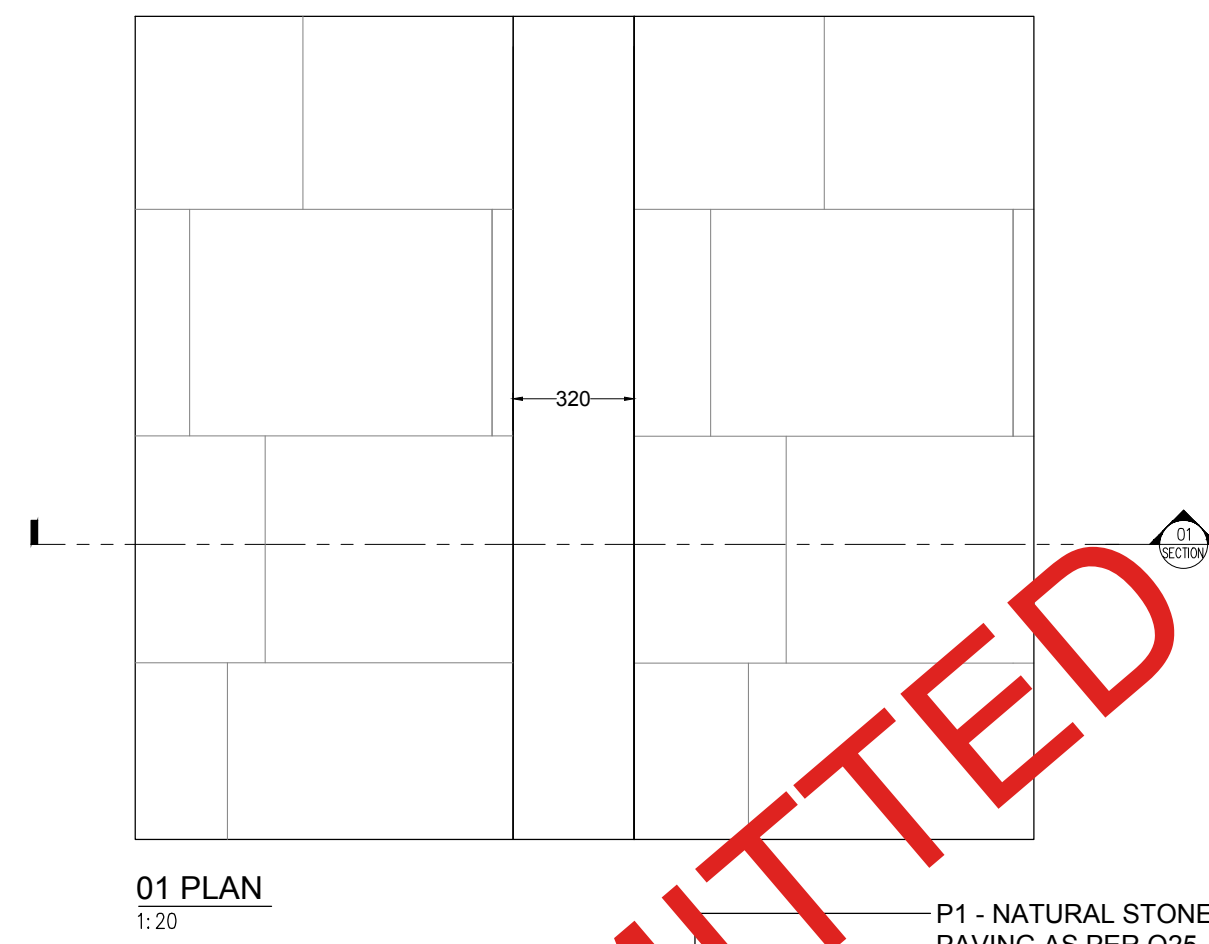
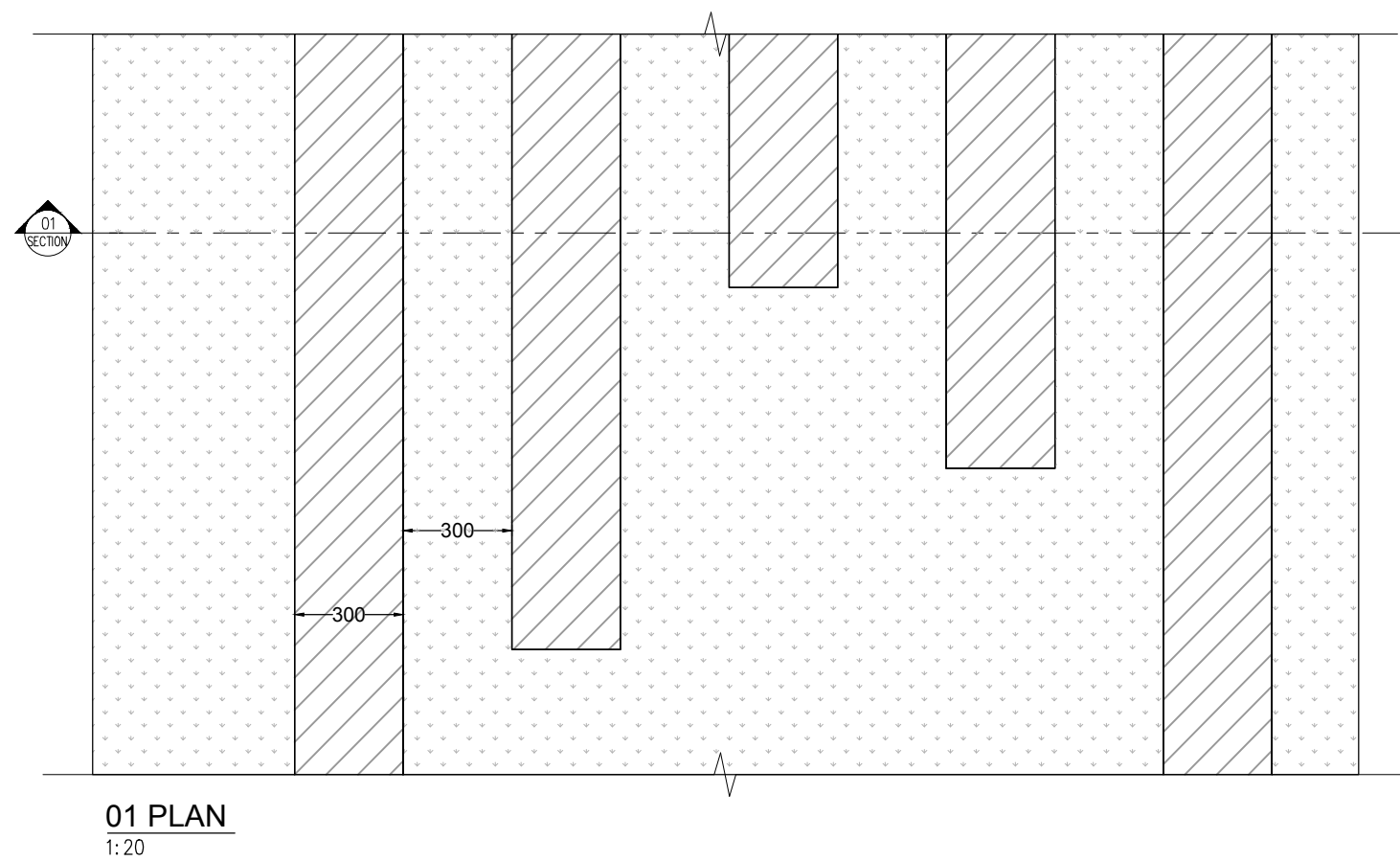
Project of Issue STAGE 4

Do not scale from drawing. Contractors must verify all dimensions on site before commencing any work or shop drawings. Figured dimensions are to be used in preference to scaled dimensions. If this drawing exceeds the quantities taken in any way the architects are to be informed before work is initiated.

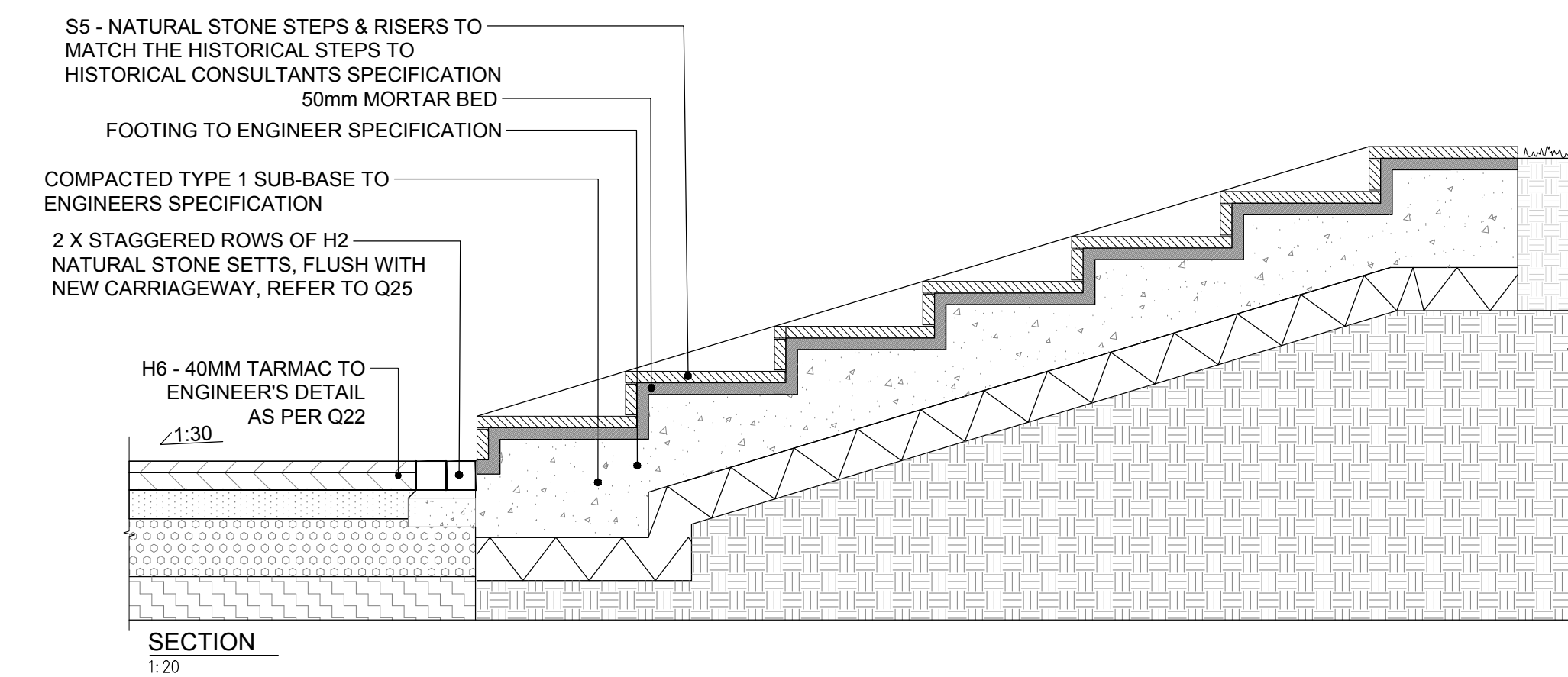
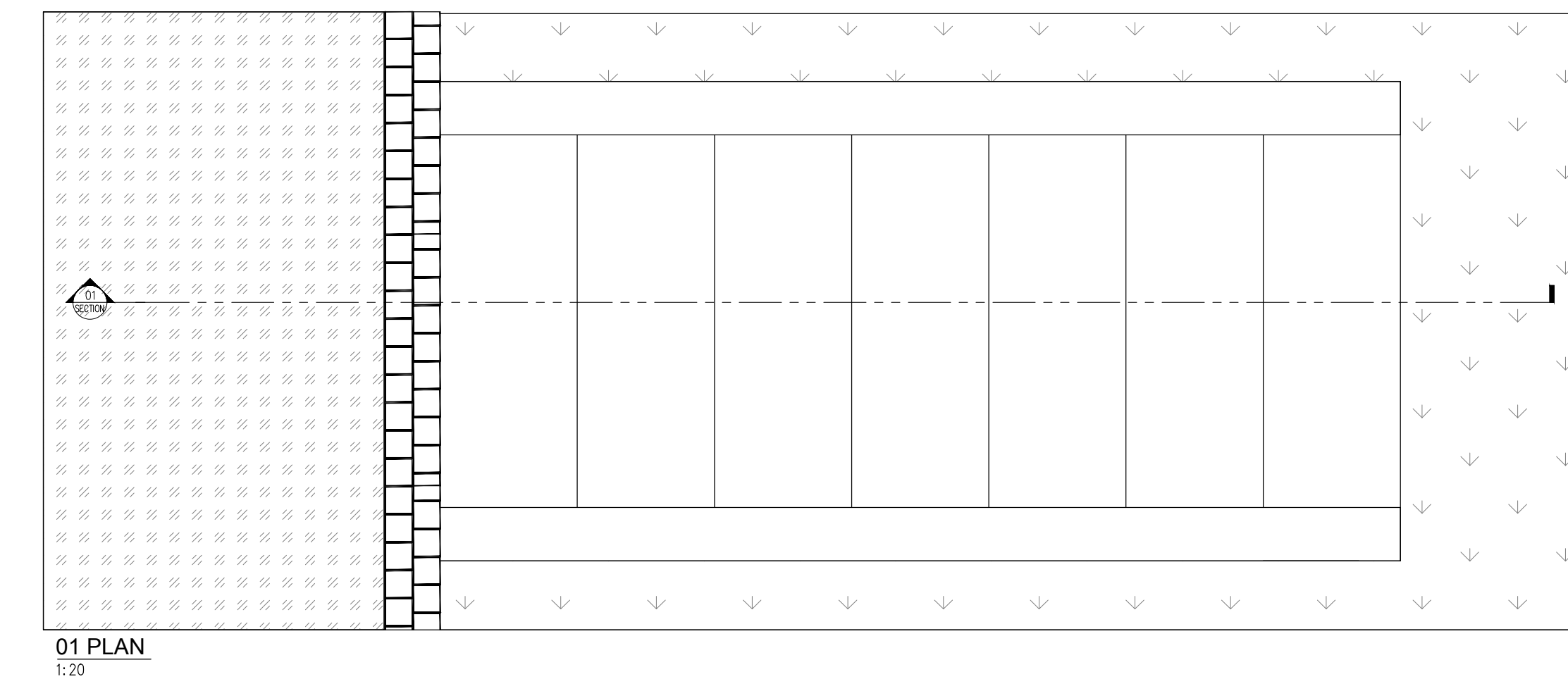
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Drawing No. 2157-S4-000-009 Revision No. C





## 1 S2 - STEPPING STONE STEPS



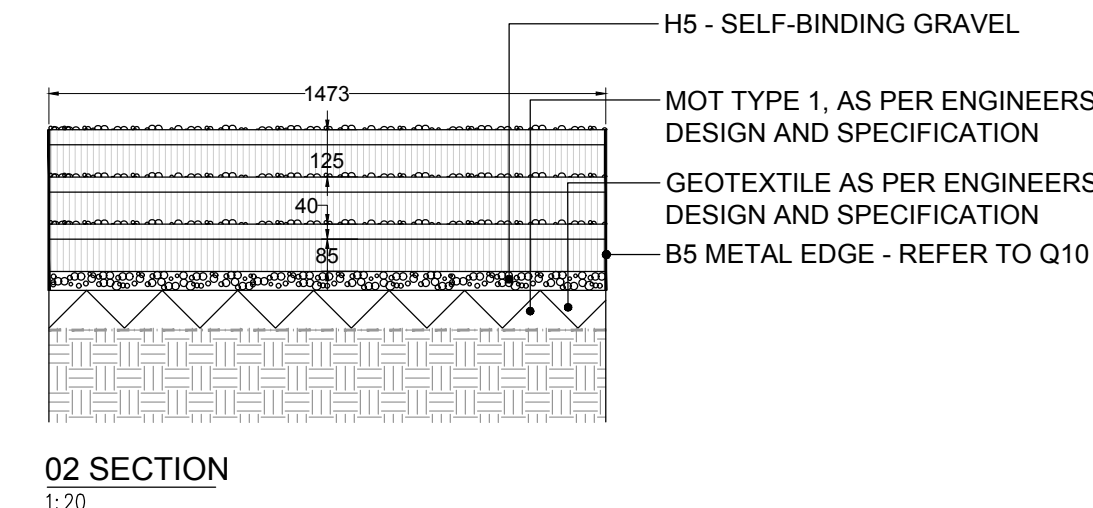
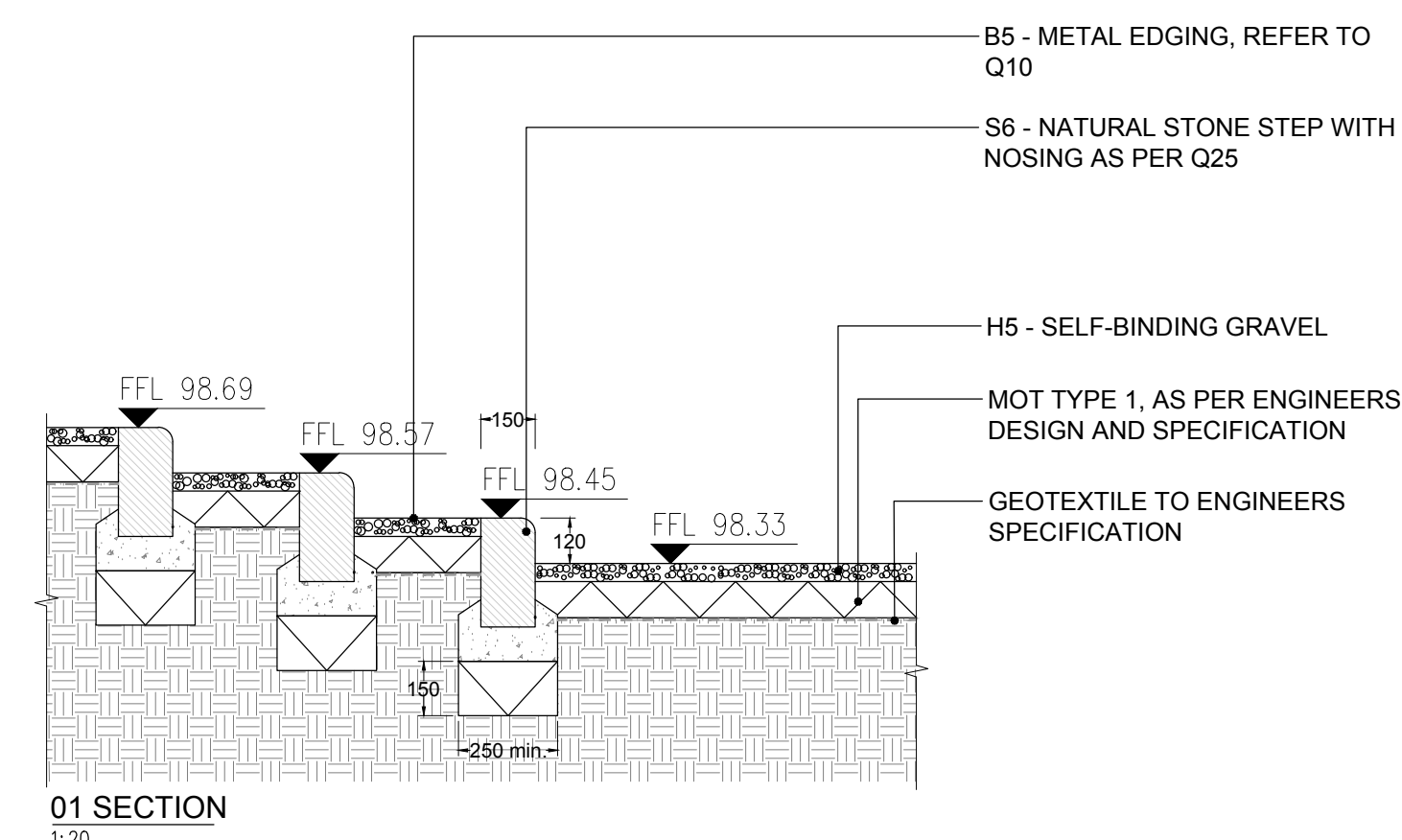
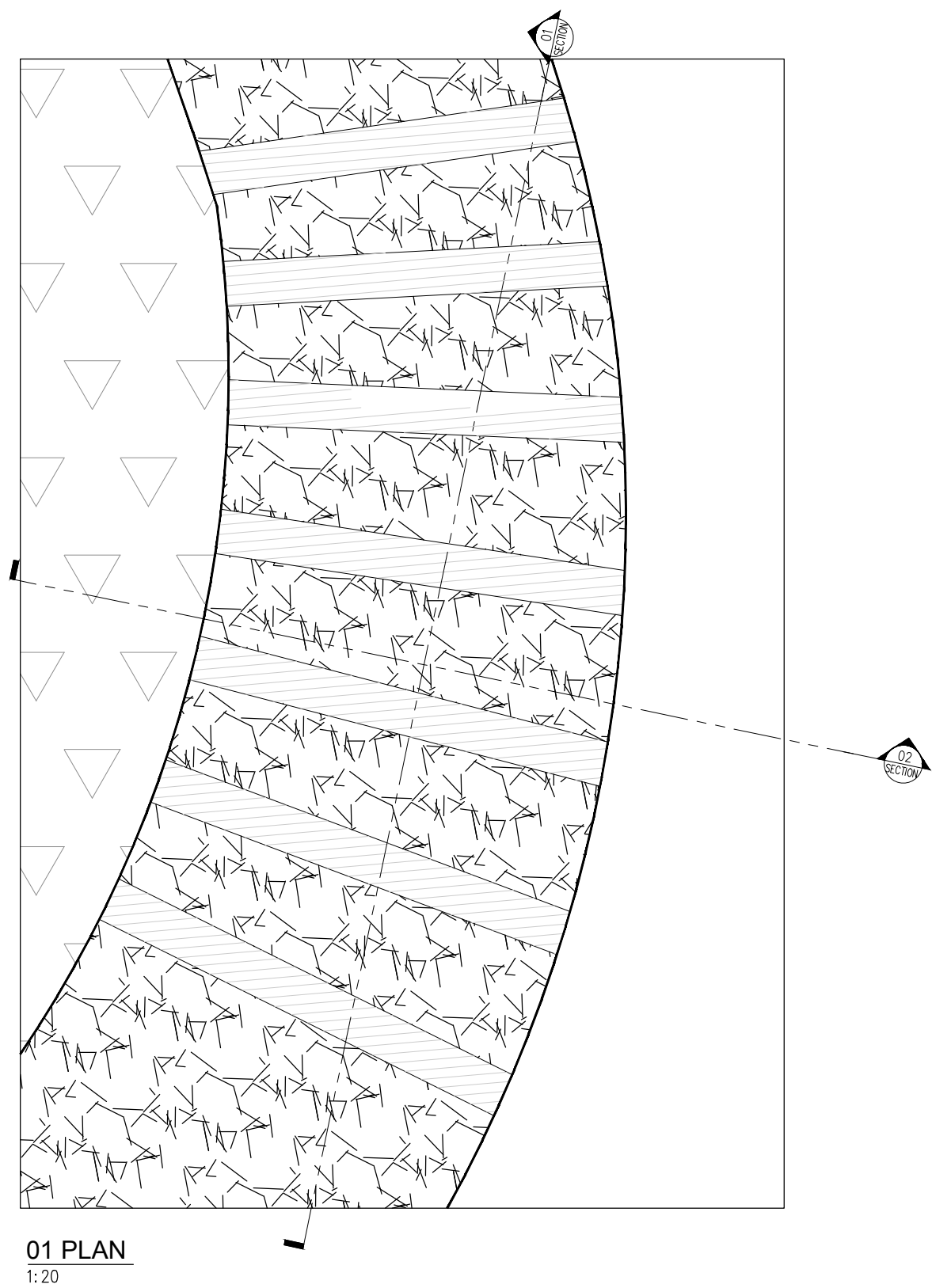
## 4 S5 - NEW STEPS TO MATCH HISTORICAL ONES - DESIGN INTENT

## 2 S3 - TERRACE STEP

01 SECTION 1:20

## 3 S4 - SUNKEN GARDEN NEW STEPS

## 3 H8 - STEPPING STONES PATH



## 5 S6 - SELF-BINDING GRAVEL STEPS

Revision B	Date 04/04/2018	Drawn by AS	Authorised by EW
AS PER REVISION CLOUD			
Revision A	Date 12.03.2018	Drawn by NP	Authorised by EW
STEPPING STONES ADDITION			
<div>Scale</div> <div></div>		<div>North</div> <div></div>	
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Client	Private Client		
Project	Athlone House Hampstead Lane		
Drawing	HARD LANDSCAPE DETAILS STEPS		
Paper size	1:20 @ A1	Job No.	2157
Date	31-01-2018	Drawn	AS
Checked	EW	Authorised	GH
Purpose of Issue	STAGE 4		
Do not scale from drawing. Contractors must verify all dimensions on site before commencing any work or shop drawing. Figure dimensions are to be used in preference to scaled dimensions. If this drawing exceeds the quantities taken in any way the architects are to be informed before work is initiated.			
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Drawing No.	2157-S4-030-204	Revision No.	B