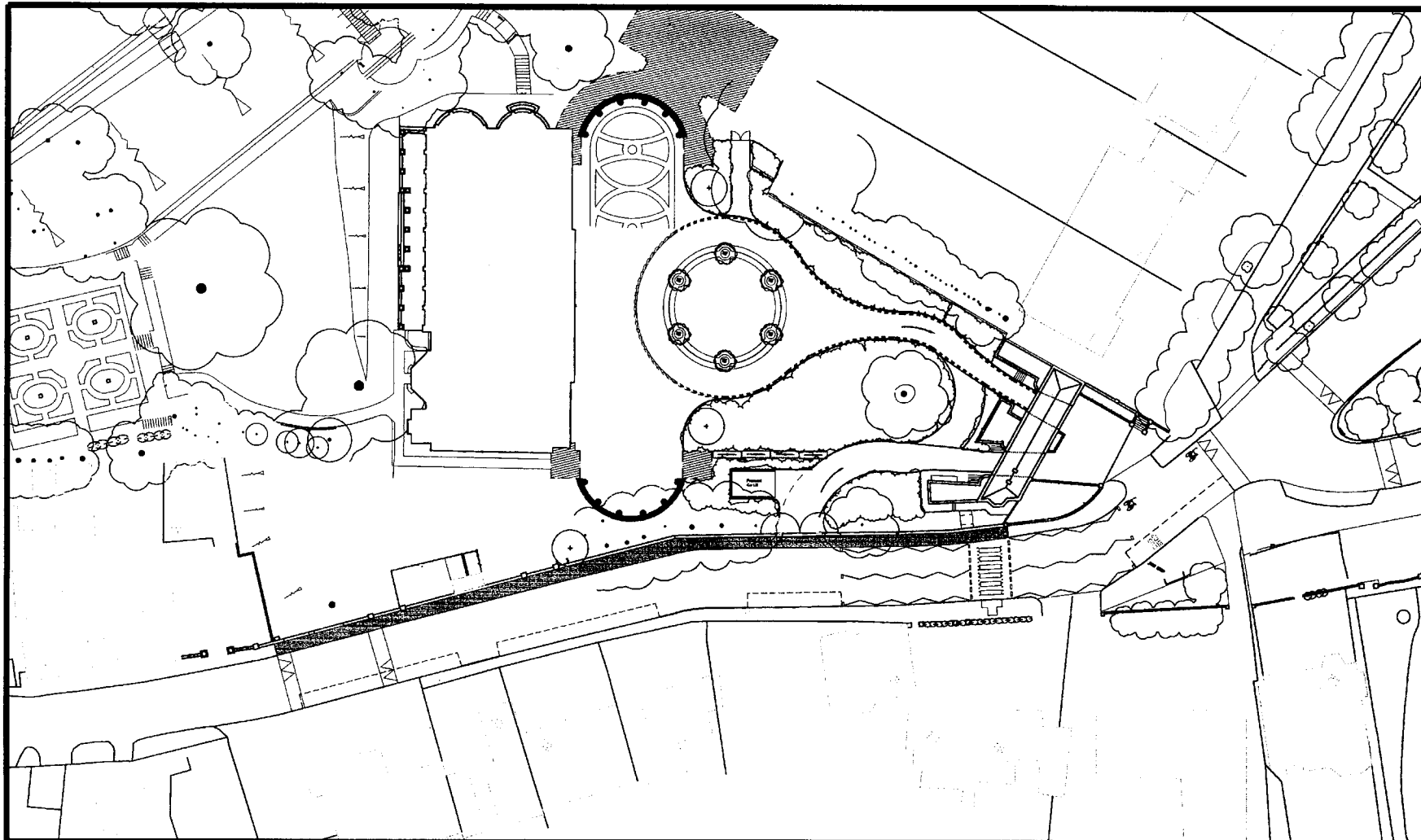


Plan 6: The Repaving Works



ADL
TRAFFIC

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NOTES

1. FOR ILLUSTRATIVE PURPOSES ONLY.
2. DO NOT SCALE FROM THIS DRAWING.
3. ALL DETAILS TO BE CONFIRMED ON SITE.
4. BACKGROUND PLAN IS BASED UPON 601-P-022_001.

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AMENDMENTS

REF.	DATE	DESCRIPTION

EXTENT OF PAVEMENT WORKS

ADL Job No.

2219

Project

Witenhurst
Highgate

Title

The Highway Works
on Highgate West Hill

Date

14 Apr 2010

Drawn

A.Miles

Checked

Date

Approved

Date

Scale

1:500

Orig No.

2219-04

Rev.

Planning Application under reference
APP/5210/A/09/2119330;

2.34 "the Property"

the land known as 41 Highgate West Hill
London N6 6LS the same as shown shaded
grey on Plan 1

2.35 "the Repaving Works"

the repaving of the footway with imitation stone
(unless otherwise agreed by the Parties acting
reasonably) along the entire frontage of the
Property along Highgate West Hill with a full
height kerb as shown on Plan 6

2.36 "the Refurbishment Plan"

A plan to be prepared by the Owner and
approved by the Council (in consultation with
English Heritage) securing measures for the
following:

- (i) the refurbishment of the Main Building
under the Planning Permission and
Listed Building Consent and the
completion of the same;
- (ii) the refurbishment and restoration of the
listed structures in the gardens of the
Property including the Tennis Pavilion
and the completion of the same

and to further include a time frame for the
completion of such works and for the avoidance
of doubt in the event a plan to secure the above
measures is approved by the Council (in
consultation with English Heritage) pursuant to
the Orangery Section 106 Agreement such
approved plan shall be deemed to be the
approved "Refurbishment Plan" for the
purposes of this Agreement

2.37 "the Service Management Plan"

a plan setting out the measures that will be adopted by the Owner for the management of the deliveries and servicing to the Property together with any amendments as agreed by the parties in writing from time to time and for the avoidance of doubt in the event a plan to secure the above measures is approved by the Council pursuant to the Orangery Section 106 Agreement such approved plan shall be deemed to be the approved "Service Management Plan" for the purposes of this Agreement

2.38 "Site Waste Management Plan"

the plan as set out at the Second Schedule hereto together with any amendments as agreed by the parties in writing from time to time setting out the waste management strategy for handling and disposing of construction waste during the Construction Phase of the Development to ensure that at least 80% of the construction and demolition waste is reused and recycled

NOW THIS DEED WITNESSETH as follows:-

- 3.1 This Agreement is made in pursuance of Section 106 of the Act, and is a planning obligation for the purposes of Section 106 as aforesaid, and shall be enforceable by the Council against the Owner as provided herein and against any person deriving title to any part of the Property from the Owner and insofar as it is not a planning obligation its provisions may be enforceable by the Council under any relevant statutory powers.
- 3.2 Words importing the singular shall include the plural and vice versa and any words denoting actual persons shall include companies corporations and other artificial persons.

- 3.3 Any reference to a specific statute or statutes include any statutory extension or modification amendment or re-enactment of such statute and any regulation or orders made under such statute.
- 3.4 The clause and paragraph headings do not form part of this Agreement and shall not be taken into account in its construction or interpretation.
- 3.5 It is hereby agreed between the Parties that save for the provisions of clauses 1, 2, 3, 5, 6, 7 and 8 hereof all of which shall come into effect on the date hereof the covenants undertakings and obligations contained within this Agreement shall be conditional on the grant of the Planning Permission and in the event of a grant of Planning Permission shall become binding upon the Owner upon the Implementation Date.
- 3.6 The Parties save where the context states otherwise shall include their successors in title.

4. **OBLIGATIONS OF THE OWNER**

The Owner hereby covenants with the Council as follows:-

4.1 **CONSTRUCTION MANAGEMENT PLAN**

4.1.1 On or prior to the Implementation Date to submit to the Council for approval the Construction Management Plan.

4.1.2 Not to Implement nor permit Implementation until:

(a) the Construction Management Plan has been approved by the Council as demonstrated by written notice from the Council to that effect; and

(b) the Council has confirmed in writing that either:

(i) no additional consents are required for compliance with the Construction Management Plan (such as listed building consents for the lowering of any ground level); or

- (ii) any such additional consents required for compliance with the Construction Management Plan have been granted.

- 4.1.3 The Owner acknowledges and agrees that the Council will not approve the Construction Management Plan unless it demonstrates to the Council's reasonable satisfaction that the Construction Phase of the Development can be carried out safely and with minimal possible impact on and disturbance to the surrounding environment and highway network.
- 4.1.4 To ensure that throughout the Construction Phase the Development shall not be carried out otherwise than in strict accordance with the requirements of the Construction Management Plan and not to permit the carrying out of any works comprised in demolition or building out the Development at any time when the requirements of the Construction Management Plan are not being complied with and in the event of non compliance with this sub-clause the Owner shall upon notice from the Council forthwith take any steps required to remedy such non-compliance.

4.2 HIGHWAYS CONTRIBUTION

- 4.2.1 On or prior to the Implementation Date to pay to the Council the Highways Contribution in full and for the avoidance of doubt this sum excludes any statutory undertakers costs PROVIDED THAT if, on the Implementation Date, a sum equal to the Highways Contribution has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement or the Boundary Wall Section 106 Agreement for the Highway Works, the Owner shall not be required to pay the Highways Contribution to the Council in accordance with this clause
- 4.2.2 Not to Implement or to permit Implementation until such time as the Council has received the Highways Contribution in full PROVIDED THAT if, on the Implementation Date, a sum equal to the Highways Contribution has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement or the Boundary Wall Section 106 Agreement for the Highway Works, the Owner shall not be required to pay the Highways Contribution to the Council in accordance with this clause.
- 4.2.3 If the Certified Sum (as defined in clause 5.6) exceeds the Highways Contribution then the Owner shall within fourteen days of the issuing of the certificate referred to in clause 5.6 pay to the Council the amount of the excess PROVIDED THAT if a sum

equal to the excess has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement or the Boundary Wall Section 106 Agreement for the costs incurred by the Council in carrying out the Highway Works that exceed the Highways Contribution, the Owner shall not be required to pay the excess in accordance with this clause.

4.3 MONITORING FEE

- 4.3.1 On or prior to the Implementation Date to pay to the Council the Monitoring Fee PROVIDED THAT if, on the Implementation Date, a sum equal to the Monitoring Fee has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement or the Boundary Wall Section 106 Agreement for the Council's monitoring of this Agreement, the Orangery Section 106 Agreement, the Boundary Wall Section 106 Agreement and the related planning permissions, the Owner shall not be required to pay the Monitoring Fee to the Council in accordance with this clause.
- 4.3.2 Not to Implement or to permit Implementation until such time as the Council has received the Monitoring Fee PROVIDED THAT if, on the Implementation Date, a sum equal to the Monitoring Fee has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement or the Boundary Wall Section 106 Agreement for the Council's monitoring of this Agreement, the Orangery Section 106 Agreement, the Boundary Wall Section 106 Agreement and the related planning permissions, the Owner shall not be required to pay the Monitoring Fee to the Council in accordance with this clause.

4.4 PEDESTRIAN ENVIRONMENT CONTRIBUTION

- 4.4.1 The Owner hereby covenants with the Council on or prior to the Implementation date to pay to the Council the Pedestrian Environment Contribution PROVIDED THAT if, on the Implementation Date, the sum of £20,000 (twenty thousand pounds) index linked has been paid by the Owner to the Council pursuant to the Orangery Section 106 Agreement for improvements to the pedestrian environment the Owner shall only be required to pay £30,000 (thirty thousand pounds) of the Pedestrian Environment Contribution to the Council in accordance with this clause.
- 4.4.2 The Owner hereby covenants with the Council not to Implement or to permit Implementation until such time as the Council has received the Pedestrian Environment Contribution PROVIDED THAT if, on the Implementation Date, the sum of £20,000 (twenty thousand pounds) index linked has been paid by the Owner to the

Council pursuant to the Orangery Section 106 Agreement for improvements to the pedestrian environment the Owner shall only be required to pay £30,000 (thirty thousand pounds) of the Pedestrian Environment Contribution to the Council in accordance with this clause.

4.5 PERMANENT ACCESS

4.5.1 To ensure that during the Construction Phase and following the Occupation Date the following is observed:

- (a) only emergency vehicles shall use the Permanent Access;
- (b) the gates for the Permanent Access shall remain locked shut at all times except for when a vehicle is entering or exiting.

4.5.2 After the Occupation Date the Owner shall not Occupy or permit Occupation of the Development at any time when the Development is not being managed in strict accordance with clause 4.5.1

4.6 THE REFURBISHMENT PLAN

4.6.1 To submit to the Council for approval the following:

- (a) the Refurbishment Plan; and
- (b) a timetable for the completion of the works authorised under listed building consent referenced 2009/3000/L.

4.6.2 Not to undertake any of the refurbishment works detailed in the Refurbishment Plan until such time as the Council has approved the Refurbishment Plan pursuant to clause 4.6.4 (a) as demonstrated by written notice to that effect and for the avoidance of doubt the Council acknowledges that the works approved under listed building consent reference 2009/3000/L have commenced and can continue to be carried out while the Council approves the Refurbishment Plan pursuant to this clause.

4.6.3 To ensure that throughout the Construction Phase the Development shall not be carried out otherwise than in strict accordance with the requirements of the Refurbishment Plan and not to permit the carrying out of any works comprised in building out the Development at any time when the requirements of the Refurbishment Plan are not being complied with and in the event of non compliance with this sub-clause the Owner shall upon notice from the Council forthwith take any steps reasonably required to remedy such non-compliance.

4.6.4 Not to Occupy or permit the Occupation of the Development until;

(a) the Council has approved the Refurbishment Plan (in consultation with English Heritage) as demonstrated by written notice from the Council to that effect;

(b) the Council has approved the timetable for the completion of the works granted under listed building consent 2009/3000/L;

(c) the works contained in the Refurbishment Plan have been completed and the Council has confirmed in writing that the Refurbishment Plan has been complied with; and

(d) the works authorised by listed building consent 2009/3000/L have been completed and the Council has confirmed in writing that such works have been completed.

4.7 SERVICE MANAGEMENT PLAN

4.7.1 On or prior to the Implementation Date to submit to the Council for approval the Service Management Plan.

4.7.2 Not to Implement nor permit Implementation until the Service Management Plan has been approved by the Council as demonstrated by written notice from the Council to that effect.

4.7.3 To ensure that after the Occupation Date the Owner shall not Occupy or permit Occupation of the Development at any time when the Development is not being managed in strict accordance with the Service Management Plan as approved by the Council from time to time and shall not Occupy or permit Occupation of the

Development otherwise in strict accordance with the requirements of the Service Management Plan.

4.8 SITE WASTE MANAGEMENT PLAN

- 4.8.1 To ensure that throughout the Construction Phase the Development shall not be carried out otherwise than in strict accordance with the requirements of the Site Waste Management Plan in force from time to time and not to permit the carrying out of any works comprised in building out the Development at any time when the requirements of the Site Waste Management Plan are not being complied with and in the event of non compliance with this sub-clause the Owner shall upon notice from the Council forthwith take any steps reasonably required to remedy such non-compliance.

5. OBLIGATIONS OF THE COUNCIL

The Council hereby covenants as follows:

- 5.1 To only spend the Highways Contribution on the Highway Works.
- 5.2 Subject to the receipt of the Highways Contribution to consult with the Owner's project manager for the Development on the proposals for and the detailed design of the Crossover Works with the aim to have the Crossover Works completed as soon as reasonably practicable and the Council shall use all reasonable endeavours to achieve that aim.
- 5.3 Subject to receipt of the Highways Contribution to consult with the Owner's project manager for the Development on the proposals for and the detailed design of the Repaving Works with the aim to have the Repaving Works completed prior to the Occupation Date and the Council shall use all reasonable endeavours to carry out and complete the Repaving Works prior to the Occupation Date.
- 5.4 To use all reasonable endeavours to carry out the Highway Works in a good and workmanlike manner.
- 5.5 To notify the Owner on completion of the Highway Works.

- 5.6 On completion of the Highway Works to provide a certificate to the Owner specifying the sum expended by the Council in carrying out the Highway Works (the "Certified Sum").
- 5.7 If the Certified Sum is less than the Highways Contribution then the Council shall within fourteen days of the issuing of the certificate referred to in clause 5.6 pay to the Owner the amount of the unspent element of the Highway Contribution.
- 5.8 In relation to the costs incurred by the Council in carrying out the Highway Works the Council hereby covenants with the Owner to:
- (a) Use all reasonable endeavours to carry out the Highway Works in a financially economic way;
 - (b) when reasonably requested by the Owner provide to the Owner a written breakdown of all past and proposed future expenditure from the Highways Contribution;
 - (c) use all reasonable endeavours to notify the Owner in writing when the Council becomes aware that the cost of the Highway Works will exceed the amount of the Highways Contribution and use all reasonable endeavours to consult with the Owner (before incurring any costs in relation to such further excess) with a view to minimising such further excess and pay due regard to any representations made by the Owner in relation to the minimising of such further excess.
- 5.9 To only spend the Pedestrian Environment Contribution on the Pedestrian Environment Improvements unless otherwise agreed with the Owner.
- 5.10 In the event that some or all of the Pedestrian Environment Contribution remains unexpended five years after the date on which the Certificate of Practical Completion is issued, to return any unexpended sums to the payer of the contribution within 28 days of a written request by the payer of the contribution to the Council to that effect.
- 5.11 On completion of the Pedestrian Environment Improvements to provide a certificate to the Owner specifying the costs expended by the Council in carrying out the Pedestrian Environment Improvements (the "Pedestrian Environment Improvements Costs").

- 5.12 In the event the Pedestrian Environment Improvements Costs is less than the Pedestrian Environment Contribution, to return to the Owner the difference thereon unless otherwise agreed between the Parties.

6. NOTICE TO THE COUNCIL/OTHER MATTERS

- 6.1 The Owner shall give written notice to the Council on or prior to the Implementation Date specifying that Implementation of the Development has taken or is about to take place.
- 6.2 Within seven days following completion of the Development the Owner shall certify in writing to the Planning Obligations Monitoring Officer in the manner outlined at clause 7.1 hereof quoting planning reference number 2009/3192/P the date upon which it is anticipated the Development will be ready for Occupation.
- 6.3 The Owner shall act in good faith and shall co-operate with the Council to facilitate the discharge and performance of all obligations contained herein and the Owner shall comply with any reasonable requests of the Council to have access to any part of the Property affected by the Development or any reasonable requests to provide documentation within the Owner's possession (at the Owner's expense) for the purposes of monitoring compliance with the obligations contained herein.
- 6.4 The Owner agrees declares and covenants with the Council that it shall observe and perform the conditions restrictions and other matters mentioned herein and shall not make any claim for compensation in respect of any condition restriction or provision imposed by this Agreement and further shall indemnify the Council for any expenses or liability arising to the Council in respect of breach by the Owner of any obligations contained herein save to the extent that any act or omission of the Council its employees or agents has caused or contributed to such expenses or liability.
- 6.5 Submission of any plan for approval by the Council under the terms of this Agreement shall be made by the Owner to the Council sending the full document and any appendices in electronic format (where practicable) to the Planning Obligations Monitoring Officer referring to the names dates and Parties to this Agreement and citing the specific clause of this Agreement to which such plan relates quoting planning reference number 2009/3192/P.

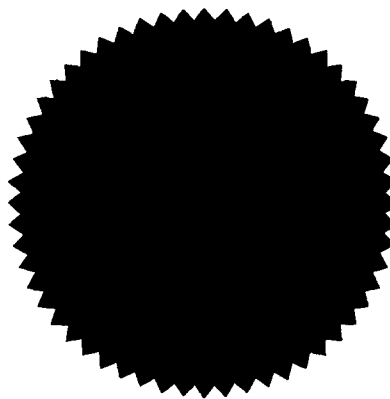
- 6.6 Payment of the contribution pursuant to Clause 4 of this Agreement shall be made by the Owner to the Council sending the full amount in the form of a Banker's Draft to the Planning Obligations Monitoring Officer referring to the names dates and Parties to this Agreement and citing the specific clause of this Agreement to which such Contribution relates quoting the Income Code ZM925ZL065 or by Electronic Transfer directly to the Co-Operative Bank plc of 1 Islington High Street London N1 9TR quoting Sort Code 08-90-33 and London Borough of Camden General Account No. 61030019 and to inform the Planning Obligations Monitoring Officer of such payment quoting the above details as if the payment had been made by Banker's Draft.
- 6.7 All consideration given in accordance with the terms of this Agreement shall be exclusive of any value added tax properly payable in respect thereof and all parties other than the Council shall pay and indemnify the Council against any such value added tax properly payable on any sums paid to the Council under this Agreement upon presentation of an appropriate value added tax invoice addressed to the Owner.
- 6.8 Any sums referred to in this Agreement as payable or to be applied by any party other than the Council under this Agreement shall be paid or applied TOGETHER WITH if such payment or application is made more than three months from the date of this Agreement a further sum ("A") being equal to the original sum payable ("B") multiplied by a figure being a fraction of which the All Items of Retail Prices ("the AllRP") figure last published by the Central Statistical Office at the date hereof is the denominator ("X") and the last AllRP figure published before the date such payment or application is made ("Y") less the last published AllRP figure at the date hereof ("X") is the numerator so that
- $$A = B \times \frac{(Y-X)}{X}$$
- 6.9 All costs and expenses payable to the Council under this Agreement shall bear interest at the rate of 2% per annum above the Base Rate of the National Westminster Bank plc from time to time being charged from the date such payment is due until payment is made.
7. **IT IS HEREBY AGREED AND DECLARED** by the Parties hereto that:-
- 7.1 The provisions of Section 196 of the Law of Property Act 1925 (as amended) shall apply to any notice or approval or agreement to be served under or in connection with this Agreement and any such notice or approval shall be in writing and shall

specifically refer to the name, date and Parties to the Agreement and shall cite the clause of the Agreement to which it relates and in the case of notice to the Council shall be addressed to the London Borough of Camden, Planning Obligations Officer, Urban Design and Renewal, Planning and Public Protection, Culture and Environment Directorate, Town Hall Annex, Argyle Street, London WC1H 9LP quoting the planning reference number 2009/3192/P in the case of any notice or approval or agreement from the Council this shall be signed by a representative of the Council's Environment Department.

- 7.2 This Agreement shall be registered as a Local Land Charge.
- 7.3 The Owner agrees to pay the Council its proper and reasonable legal costs incurred in preparing this Agreement on or prior to the date of completion of the Agreement.
- 7.4 The Owner hereby covenants with the Council that it will within 28 days from the date of grant of the Planning Permission apply to the Chief Land Registrar of the Land Registry to register this Agreement in the Charges Register of the title to the Property and will furnish the Council forthwith on written demand with official copies of such title to show the entry of this Agreement in the Charges Register of the title to the Property.
- 7.5 Nothing contained or implied in this Agreement shall prejudice or affect the Council's powers to enforce any specific obligation term or condition nor shall anything contained or implied herein prejudice or affect any provisions, rights, powers, duties and obligations of the Council in the exercise of its functions as Local Planning Authority for the purposes of the Act or as a local authority generally and its rights, powers, duties and obligations under all public and private statutes, bye laws and regulations may be as fully and effectually exercised as if the Council were not a party to this Agreement.
- 7.6 The Owner nor their successors in title nor any person deriving title from them shall be bound by the obligations in this Agreement in respect of any period during which it no longer has an interest in all of the Property or in that part of the Property to which the breach of the obligations relates but without prejudice to liability for any breach committed prior to the time it disposed of its interest.

THE COMMON SEAL OF THE MAYOR)
AND BURGESSES OF THE LONDON)
BOROUGH OF CAMDEN was hereunto)
Affixed by Order:-)


.....
Authorised Signatory



THE FIRST SCHEDULE
Draft Construction Management Plan

Witanhurst, West Hill, Highgate.

Construction Management Plan

Peter Goring
Witanhurst Construction Management Ltd
Revision E – March 2010

1. Re-Development Proposals

- 1.1 The redevelopment of Witanhurst involves the restoration of a significant listed property on the At Risk Register.
- 1.2 The project involves works to the house and grounds, which are addressed in a number of planning applications phased to reflect the needs of removing the risk to the current property, restoration and improvement works. The applications cover the following items:
- Roofing works to restore damage to the existing roof
 - The removal and reconstruction of the existing listed boundary wall to West Hill which has significant tree damage and is registered as a potentially dangerous structure
 - Internal modifications to the existing basement to create appropriate plant space to improve the energy demand of the property
 - Internal modification to the two uppermost floors to rectify historical internal layout conversions
 - Construction of a large basement under the forecourt of the existing listed building to provide underground parking, leisure areas and landscape improvements.
 - The demolition of the existing annex and construction of a new Orangery.
 - Restoration of existing listed landscape features and pavilions in the grounds
 - New landscaping masterplan layout and extensive planting to the rest of the grounds
- 1.3 This report summarises the interaction between the design and construction, together with the outcome of discussions with third party regulatory bodies. It also reviews how this will impact on the existing property and surrounding area both during the construction phase and in the longer term.
- 1.4 Witanhurst is located at the top of Highgate West Hill and bounded on the north by The Grove and at the south by the more recent development of Highfields Grove. West Hill is a busy and important route linking Parliament Hill to Highgate Village.
- 1.5 The planning applications provide a comprehensive set of drawings and detailed reports to indicate the design intentions. These documents have been prepared by;
- | | |
|--------------------------------------|--|
| • Robert Adam Architects | Architect And Lead Designer |
| • Michael Balston | Landscape Architects |
| • Simon Jones Associates | Specialist Tree Consultant |
| • Michael Barclay Partnership | Scheme Structural Engineers |
| • Geotechnical Consulting Group | Specialist Geotechnical Consultants |
| • Vector Designs | Mechanical and Electrical services engineers |
| • Witanhurst Construction Management | Detailed Layouts And Logistic Planning |
- 1.6 A presentation of the Basement Construction Proposals was made to English Heritage on 4th June 2009. This included a detailed discussion with the EH appointed structural engineer, who was satisfied with the proposals in principle. A public consultation evening was held at St Michael's Church on 15th September and local residents, businesses and local interest groups were invited to attend. The list of attendees was discussed and agreed with London Borough of Camden prior to the meeting. The issues raised at the meeting and subsequent feedback have been incorporated into this report.

2. Design Development

a. Proposed Layouts

- 2.1 As with all major projects this is an iterative and co-ordinated process. For schemes with significant basements there is a further consideration where the method of construction can affect both the design of the scheme and the effects on the existing building and adjacent properties.
- 2.2 The full designs and associated reports are contained in the documentation with each of the applications.

b. Impact on the Existing Property

- 2.3 The provision of the new basement involves the replacement of the annex with the Orangery, removal and subsequent replacement with mature trees to the West Hill boundary. The overall depth of the basement excavation is 9 metres. This requires significant earthwork support to ensure that there are no effects on the structure of the existing building and surrounding properties. In consultation with interested regulatory bodies, design and construction specialists the basement has been located to minimize impact. In particular, English Heritage provided a useful commentary of key geotechnical and structural issues, these were all addressed in a presentation on 4th June 2009.
- 2.4 The basement has been located away from the West Hill boundary wall to allow for a tree planting zone for mature trees to be planted and thrive. Part of the existing listed boundary wall has been leaning dangerously for a number of years as a result of root damage from poor tree maintenance and ground retaining surcharges. This wall is to be replaced under a separate planning application. The replacement wall has been designed with appropriate structural design and managed tree planting to ensure that the wall can be restored to the original condition and will not suffer future damage from either tree growth or earth pressures.
- 2.5 Excavation close to existing foundations can cause settlement and movement, which in extreme circumstances can result in structural as well as decorative damage. Careful consideration has been made in the design of the basement to ensure that the basement can be constructed without causing damage to the existing fabric of the building. A secant piled wall will be constructed around the perimeter of the basement to provide the necessary support. This has been designed taking full consideration of the location of the existing structure, ground conditions and method of construction.
- 2.6 This method increases the costs of the excavation, disposal of waste from the site and the reinforced concrete construction of the basement due to the restricted access to the work faces. However, in this particular project it also provides some significant advantages to the operation of the site and the impact to existing and adjacent properties.
- Constructing the ground floor slab prior to any excavation works taking place minimises deflections and settlements of the secant piled wall during the excavation. It effectively locks in the existing foundations.
 - The ground floor slab provides a hardstanding and platform within the site for disposal vehicles to move within the site and be loaded. This will allow the vehicles easier access into the site reducing the risk of congestion on the highways as vehicles manoeuvre off West Hill.

- The slab also allows general access into the site for all other operations and deliveries ensuring that temporary loading bays will not be required on the highway and therefore, minimising disruption to traffic. All vehicles will be able to drive into and away from the site in forward gear
- All excavation works and reinforced concrete construction can be carried out under the ground floor slab reducing the potential for dust and noise nuisance. Similarly, the vehicles will be loaded on the slab and always on a surfaced route through the site minimising the risk of dust on the road. Vehicles wheels will be cleaned with water jets and inspected prior to leaving the site.

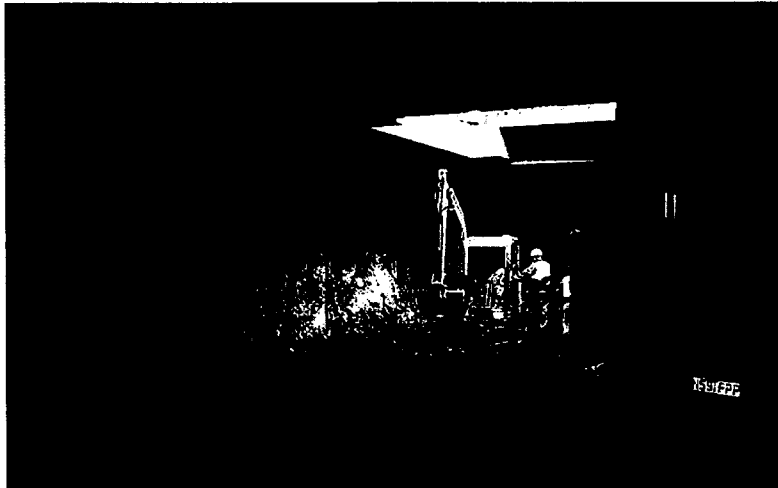


Figure 1 - Excavation from the work face in Topdown Construction

- 2.7 This methodology has been adopted in the design approach and the construction sequence agreed. Once this had been determined it allowed Michael Barclay Partnership to develop the geotechnical and structural approach to the design of the building. Specialist site investigation and geotechnical consultants were engaged to survey the site and provide the information necessary to determine the effects of the basement construction on the existing building.

3. Structural Design Approach

a. Groundwater and Hydrology

- 3.1 A full detailed desk study and site investigation of the soils and groundwater has been carried out to determine the structural design and model the effects of the basement construction on the existing house and adjacent properties. The site slopes considerably from north-east to south-west and this is reflected in the water flow around the proposed basement structure.
- 3.2 The effects of introducing a secant piled wall around the perimeter of the basement will be to restrict the flow at the front of the building, which causes water to flow around the side of the new foundation. This has the effect of raising the water table at the front and lowering it at the rear. This study therefore

concludes that there are no effects to adjacent properties from any changes in the groundwater levels resulting from the proposed basement structure.

b. Temporary Support & Monitoring Regime

- 3.4 The original study and methodology considerations reached agreement that a secant piled wall would be provided around the perimeter of the excavation, with the ground floor slab used to provide restraint to the top of the wall during the excavation and construction of the reinforced concrete basement structure.
- 3.5 There are three major causes of movement to be considered in basement construction and the predicted extents for this project are as follows:
- Settlement due to the preparation and installation of the perimeter secant piled wall – 4mm
 - Settlement due to the lateral movement of the wall during the excavation – 8mm
 - Long term heave due to the reduction in soil pressures from removing material during the excavation – 8mm
- I.e. the net long term movement - 4mm Settlement
- 3.6 During the course of the excavation the lateral movement in the piles will be monitored to determine whether the actual movements are within the predicted limits. The existing foundations will also be monitored to reflect whether the resultant settlements are occurring. Movements and settlements will be recorded at intervals to suit the construction initially this will be on a weekly basis, during the key periods for installation of piles and excavation the frequency will increase to every other day and during the concreting period the period will be weekly whilst movements are being noted and then increased to fortnightly once movements are stabilized.
- 3.7 At all stages within the excavation the movement can be predicted and if movements are in excess of those predicted a number of measures can be adopted to further restrict movement. These would include, inter alia:
- Reviewing the excavation sequence
 - Installation of additional props
 - Construction of elements of the permanent works
- 3.8 Movement criteria will also be set for the perimeter including all party walls, these will vary depending on the proximity of the piled wall and the sensitivity to settlement. All issues relating to the party wall will be agreed within the party wall awards. Generally, the party walls will be in Category 1 – “Very Slight” damage which may require some repointing works to retaining walls on the Witanhurst face of the walls.

4. Logistics and Disposal of Waste

- 4.1 Access into the site is required to minimize the disruption caused by construction traffic during the course of the works. The current access is through the existing gatehouse, this restricts the size of the vehicle that can enter and leave the site to that of a Transit or equivalent.
- 4.2 Some suppliers with smaller bespoke vehicles, for example skips, which are used on a regular daily basis have been able to modify their vehicles to fit within the existing opening. However, this is not a viable approach for general deliveries. Heavy goods vehicles are not able to enter the

site through the current gatehouse. The effective clear width is 2.7m and headroom under the springing point of the archway 3.2. This restricts the size of vehicles using the gatehouse entrance to 2.4m wide with a vertical clearance of 3.0m.

- 4.3 In February 2009, the London Fire Brigade also advised that the fire tenders required to access the site in case of emergency would not be able to access through the gatehouse and recommended an alternative emergency access off Highgate West Hill. The London Fire Brigade Guidance Note GN29 Access for Fire Appliances requires a minimum width of gateways of 3.1m and a minimum height clearance of 3.7m
- 4.4 The visibility and site lines on exiting the site are particularly poor and represent a hazard to traffic on West Hill. The sight line for traffic exiting the gate is only 12m for traffic heading north and 31m to traffic heading south.
- 4.5 Not Used
- 4.6 Not Used
- 4.7 Deliveries to and from the site will be through gatehouse. Transit vans and other light goods vehicles are currently able to access the site through the gatehouse although this does introduce segregation issues between incoming deliveries and pedestrians. With the limited sight lines at the gatehouse entrance, it is important that the use of this access is monitored and reviewed to ensure that it does not affect other road users. For larger vehicles, a banksman will be required and stationed on the opposite side of the road to the entrance to guide site vehicles onto the carriageway without affecting the traffic flow. There are several types of construction vehicles that are too large to use the existing gatehouse in its current configuration.

4.8 Typical vehicles using the site entrance include:

- 8 x 4 wheel drive muckaway for disposal of material arising from the basement excavation. These vehicles are 8.1m long and 2.5m wide with a tare weight of 12t and a maximum fully laden weight of 32t
- Concrete delivery vehicles which have an overall height of 3.7m and are 2.42m wide and 8.55m long. Fully laden when entering the site these vehicles will weigh approx. 25t. See Figure 2
- 6 x 2 wheel drive rigid flat bed lorries with crane loading arms for general deliveries from builders merchants and landscape suppliers. These vehicles are 8.5m long and 2.5m wide with a typical laden weight of 18t
- 10 x 6 wheel drive articulated vehicles with deliveries of large specimen trees and reinforcement for concrete construction. It is unlikely that there will be more than 5no deliveries using this type of vehicle per week. The vehicles measure up to 13m long and 2.5m wide with a maximum load of 32t.

- 4 x 2 wheel drive rigid box vans with specialist equipment for service and decorations. The vehicles will be 8.0m long and 2.4m wide with a height of 3.4m. typical loads will be 7.5 to 12t

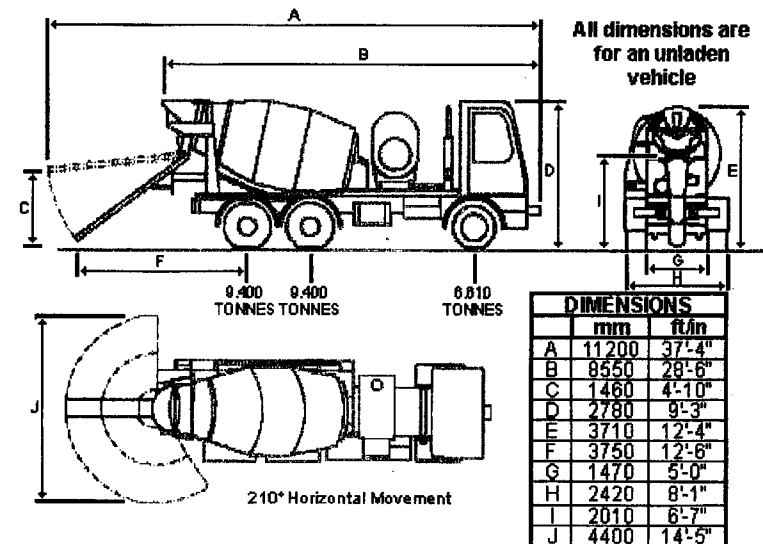


Figure 2 - Concrete Delivery Truck

- 4.9 A detailed review of the site access has been undertaken to take account of concerns from third parties. The access within the site is to be reconstructed on completion of the project, by excavating to formation level of the proposed surfacing and providing a hard stand at sub-base level the height of the access under the arch is increased to 3.8m. this will enable all of the vehicles listed in the section 4.8 above to access the site. The maximum loaded weight of vehicles using the access will be 32t. if in exceptional circumstances larger vehicles are required agreement will be obtained from LB Camden Highways prior to the delivery
- 4.10 There is no requirement for lane closures or loading bays on Highgate West Hill to facilitate the works. Temporary footpath diversions have been agreed with LB Camden Highways for the works to the West Hill retaining wall structure which has been identified as a potentially dangerous structure. Pedestrians will be diverted at the existing zebra crossing on to the south west footway with a fenced barrier and signage preventing pedestrians using the footway. A suitable location for a crossing point and drop kerbs has been identified and the works carried out by Highways to the south of the property.

- 4.11 The use of this pedestrian diversion will be reviewed during the course of the works and subject to agreement it may be prudent to maintain this diversion for the course of the construction period to segregate pedestrians from construction traffic.
- 4.12 In consultation with LB Camden Highways, the most appropriate route to and from the site for major delivery vehicles has been agreed. All vehicles will enter the site in forward gear by turning right from West Hill and will leave also in forward by turning left to head north up West Hill. All vehicles will be guided onto and off the site by a banksman, who will also be responsible for checking the vehicle wheels prior to them leaving the site. The gates will be manned during working hours closed when there are no vehicles using the access or anticipated deliveries.

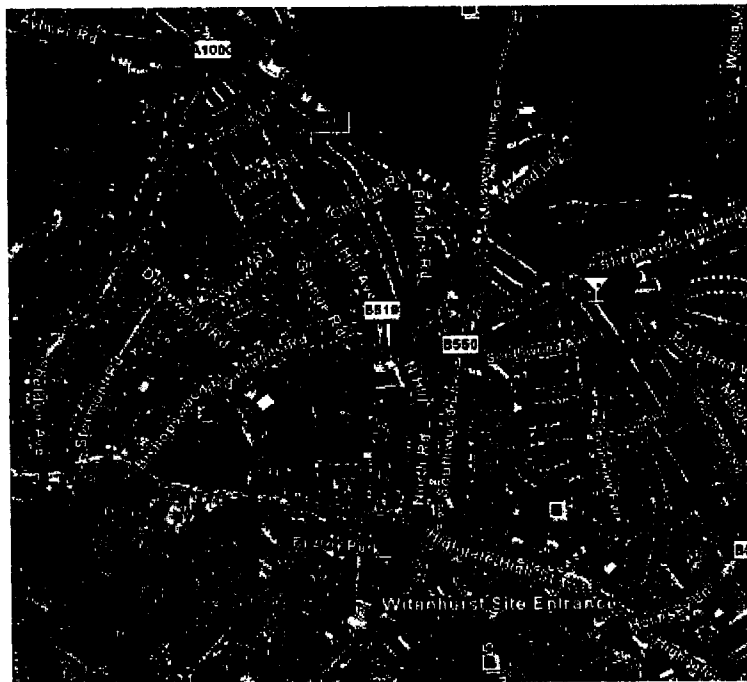


Figure 3 - Route to A1 for Main Delivery Vehicles

- 4.13 Site working hours will be limited to Monday to Friday 8.00 to 18.00. Weekend working is not envisaged but will be limited to 8.00 to 13.00 on Saturdays as required. Should any unavoidable out of hours working be required the timing will be agreed with London Borough of Camden environmental health prior to the works commencing. All local residents and consultation groups will be notified of any planned abnormal working hours issues.

- 4.14 A traffic survey was carried out in March 2010 to determine the number of vehicle movements on Highgate West Hill during working hours. The typical hourly rate for various classes of traffic is indicated in Figure 4.
- 4.15 Figure 4 indicates that the morning and afternoon peak hour flows are approximately 40% greater than the notional off peak period. This is mainly the result of more cars and bikes on the road during peak hours with very little increase in the number of vans, buses and HGV. The anticipated traffic flows from the construction site are not likely to have a significant impact on the overall traffic count on the road. Details of the average flows compared to the traffic count are included in the appendices.

Weekday Two way Average Traffic Flows HighGate West Hill

TIME PERIOD	TOTAL VEHICLES	MOTOR-CYCLES	MOTOR-CYCLES%	CARS	CARS %	LGV	LGV %	HGV	HGV %	BUS	BUS %
08:00	1022	72	7	848	83	68	7	21	2	12	1
09:00	977	44	4	817	84	86	9	19	2	12	1
10:00	818	30	4	682	83	83	10	12	2	12	2
11:00	732	24	3	609	83	80	11	8	1	12	2
12:00	749	21	3	642	86	64	9	10	1	12	2
13:00	779	24	3	652	84	75	10	15	2	12	2
14:00	811	18	2	694	86	74	9	13	2	12	2
15:00	936	21	2	813	87	77	8	12	1	12	1
16:00	1066	19	2	926	87	88	8	21	2	12	1
17:00	1096	34	3	960	88	64	6	27	3	12	1

SATURDAY TwoWay

TIME PERIOD	TOTAL VEHICLES	MOTOR-CYCLES	MOTOR-CYCLES%	CARS	CARS %	LGV	LGV %	HGV	HGV %	BUS	BUS %
08:00	496	19	4	414	83	43	9	8	2	12	2
09:00	738	16	2	669	91	33	4	7	1	12	2
10:00	806	19	2	718	89	37	5	20	2	12	1
11:00	879	21	2	795	90	43	5	6	1	12	1
12:00	904	14	2	837	93	31	3	10	1	12	1
13:00	954	20	2	863	90	41	4	18	2	12	1

Figure 4 – Traffic Survey March 2010

- 4.16 The impact of construction traffic from the works will be dependent on the phase of the construction. The peak anticipated vehicle movements into and out of the site each hour are as follows:
- Initial stages scaffolding, roof removal – to Dec 2009 2no. LGV & Skip lorries
 - Basement preparation & piling period - July to Nov 2010 3no. HGV & 2no. LGV
 - Topdown Basement excavation period - Nov '10 to Mar '11 5no. HGV & 1no. LGV
 - Basement construction - March to July 2011 2no. HGV & 2no. LGV
 - Restoration and fit out works – Jan 2010 to Oct 2012 1no. HGV & 2no. LGV
 - Landscaping works – Sept 2010 to Oct 2012 2no. HGV & 2no. LGV