

6.1 Cast Iron

The proposed material for the memorial is cast iron that references everyday street details such as man hole covers. Accordingly, using a cast metal embeds the memorial into the everyday urban fabric of the city.

Cast iron requires very little maintenance as can be observed on its varied use throughout London's streets. The cast iron will form a natural protective and deleterious patina over time to give the cambered surface a rich texture and depth.



Figure 6.1a-c Casting process for the stainless steel stellae of the National Memorial



Figure 6.1d Thames Water access cover, Finchley road, London.



Figure 6.1b



Figure 6.1e Thames Water access cover, Antony Gormley, Peckham, London.



Figure 6.1c



Figure 6.1f Cast Iron Bollards Antony Gormley, Peckham, London.



6.2 Cast Iron Samples

The design team are currently engaging with several foundries to research and develop the detail and weathering of the single piece of cast iron. Accordingly, the design of the lettering has developed so that it is suited to the casting process to produce the greatest legibility and quality for the final memorial.

The samples shown here test the scale of the large incscription and its depth as a uniform cambered or planar extrusion. Moreover, the samples were used to test the surface texture achievable with differents grains of sand in the casting process.



Figure 6.2a Sample main inscription planar extrusion



Figure 6.2c Sample main inscription cambered extrusion

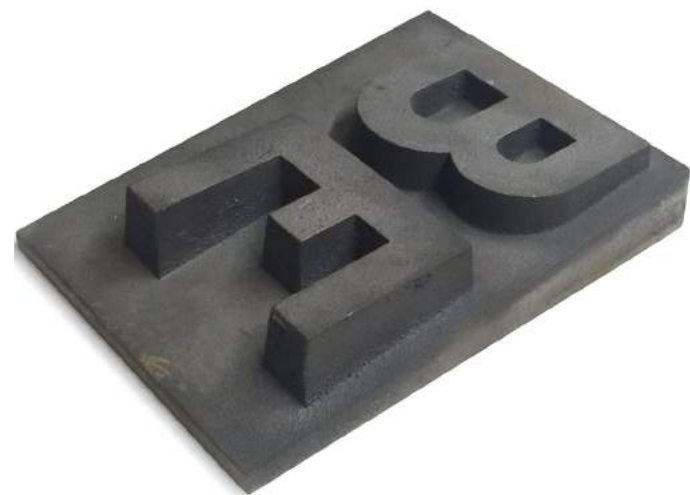


Figure 6.2b Sample main inscription planar extrusion



Figure 6.2d Sample main inscription cambered extrusion

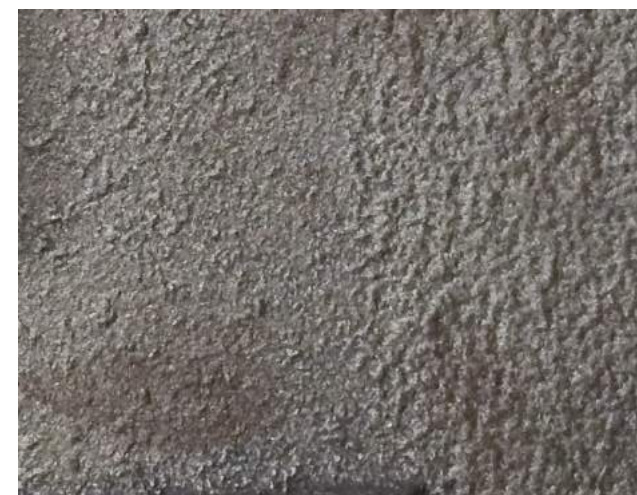


Figure 6.2e Textured surface finish achieved from casting sand

6.2 Cast Iron Samples

Samples were also fabricated to test the names of the thirteen innocent victims with both proud and recessed lettering.

The samples revealed that proud lettering is greater suited to the casting process. The proud lettering cast is consistent with the crisp letters of the inscription artwork and will produce the greatest legibility and quality in the final memorial.

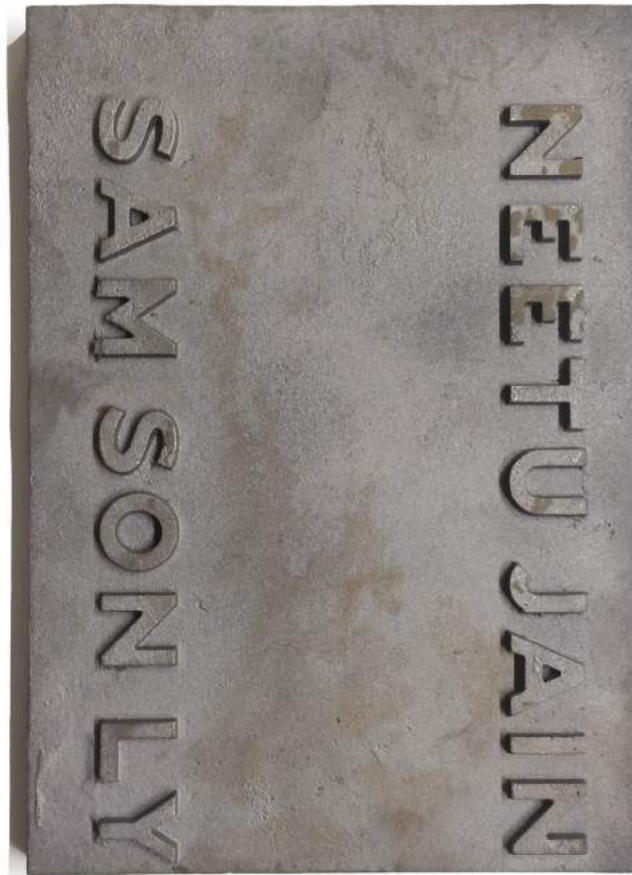


Figure 6.2f Sample small inscription proud lettering.

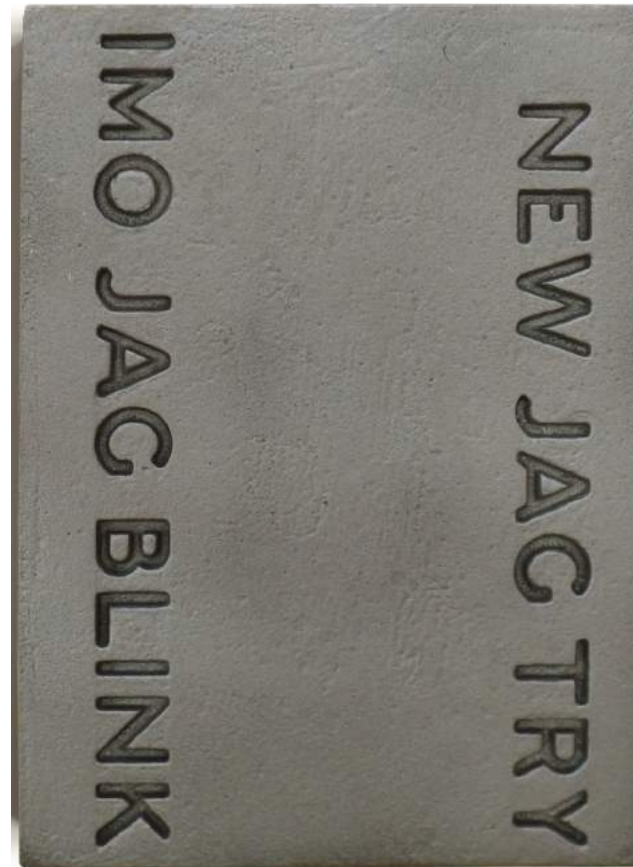


Figure 6.2h Sample small inscription recessed lettering.



Figure 6.2g Sample small inscription proud lettering detail.



Figure 6.2i Sample small inscription recessed lettering detail.



6.3 Lettering Development

To understand the relationship between the depth of the large lettering and the cambered surface of the memorial plaque a larger section of the memorial was fabricated at 1:1 scale.

This sample tests the large lettering with a cambered depth that varies from 40mm at its deepest points to 15mm at its shallowest point in the centre of the main inscription.

This test proved a successful solution to the former large lettering samples; resulting in greater legibility than the uniform cambered extrusion, while maintaining lettering heights that are not as extreme as those of the uniform planar extrusion.



Figure 6.3a CNC fabrication of pattern for 7 July 2005 sample cast.

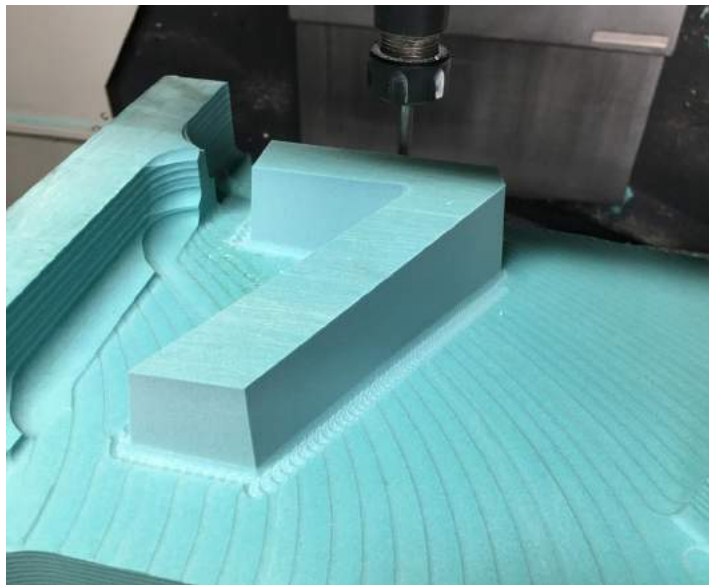


Figure 6.3b CNC fabrication of pattern for 7 July 2005 sample cast.



Figure 6.3c Sample inscription large lettering with varying letter depth.

6.4 Maintenance

The proposed memorial has been designed to be very low maintenance; the cast iron will develop a patina over time to give the cambered surface a rich texture and depth.

**Tavistock Square Memorial,**  
Tavistock Square Gardens, London, WC1H 9EZ

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**Operations & Maintenance Manual**  
**Cleaning Instructions**  
**1<sup>st</sup> August 2017 P2**

The purpose of this document is to provide quick reference material.  
This information will be included in the contents of the full Operation & Maintenance Manual.

The Tavistock Square Memorial consists of a single cast iron plaque founded on a concrete slab within the planted border of Tavistock Square Gardens. The accumulation of water and dirt over time on the cast iron surface will form an oxidised brown patina that will age the memorial with dignity.

SPECIFICATION

**MATERIAL:** Cast Iron BS EN 1561 (2011) Grade EN-GLJ-200 – Closed Cast. Non-quenched. Shot blasted. Non-passivated, non-pickled.

**FINISH:** As cast, highly textured from the sand mould. Plaque allowed to oxidise forming coloured iron oxide coating on surface. Use of a rust converter chemical solution (AkzoNobel Hammerite Kurust 250ml – 2 coats). This solution is designed to convert iron oxides into a protective chemical adherent black barrier layer and protect the base metal from further corrosion.

These solutions typically contain two primary active ingredients: Tannic Acid and an organic solvent polymer such as Butyl-Cellosolve. The tannic acid chemically converts the iron oxide into bluish-black ferric tannate, a more stable material, alongside this the polymer creates a protective primer layer and the addition of phosphoric acid converts to the inert ferric phosphate; all further stabilising the base metal.

Underside of plaque ONLY painted with rust protective combined primer and topcoat (AkzoNobel Hammerite Direct to Rust Metal Paint Hammered Finish-Black). Top facing surfaces of plaque protected with rust retardant (i.e Johnson’s Paste Wax/Bees Wax).

CLEANING

**ATMOSPHERIC / USER DIRT / OILY PRINTS / WATER BASED PEN GRAFFITI / PARK DIRT MUD:**

Solution - **Pressure Washing** with water OR **Bucket of water**. Mild natural cleaning solutions or soaps.  
Method – Nylon stiff bristle plate washing brush and 100% cotton (lint free) cloth. Work over area.  
PPE – Protective gloves; Work overalls & high-vis; Eye protection; Face mask. Cordon around memorial.  
Cautions – Not to blast chippings from path. Not to let washing equipment fall against memorial.  
Washing solvents to be appropriate for absorption by adjacent planting area and not detrimentally affect the fauna/flora.

**RUST**

Solution – Use of rust converter chemical solution (AkzoNobel Hammerite Kurust 250ml – 2 coats), followed by rust retardant (AkzoNobel Hammerite Direct to Rust Metal Paint Hammered Finish-Black).  
Method – Follow manufacturer’s instructions.

**CDM & COSHH STATEMENTS FROM THE O&M TO BE READ IN CONJUNCTION**

**Tavistock Square Memorial,**  
Tavistock Square Gardens, London, WC1H 9EZ

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**Operations & Maintenance Manual**  
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**THICK GRAFFITI / PAINT / TAR / OIL / GREASE / GLUE / UNKNOWN NON-WATER APPLICATIONS:**

Solution – **Ice Blast** pressure blasting  
Method – Method Statement from operative company. Includes: Compressed Air, Generator, Dry CO2 Company – Icetech, 8 Atlas Way, Atlas North Trading Estate, S4 7QQ Sheffield. +44 1142 430 555  
PPE – Method Statement from operative. Cordon around memorial.  
Cautions – Method Statement from operative company. Following this process the surface finish process will have to re-start with the re-application of rust removal paint and retardant.  
Programme – Emergency clean following vandalism.

**NEVER TO BE USED:**

Metal wire brush’s. Lint cloths, Plastic mesh cloths.  
Hydrochloric acid solutions  
Chloride solutions  
Bleach or Cif solution

**DESIRED MATERIAL FINISH:**



Surface of Cast Iron sample shows highly textured surface of sand mould (Image to be updated with weathered sample that shows extent of desired oxidised black/brown patina).

**MAINTENANCE SCHEDULE:**

**1 month pre-installation** Allow to oxidise.  
1 process of rust removal and retard.  
Rust retard applied weekly for 2 months.

**Site installation**

**Month 6** Rust retard.

**Month 12** Rust retard.

**Month 18** Rust retard.

**Ongoing (yearly)** Rust retard.  
Any alteration to memorial surface beyond ‘desired material finish’ to be treated with oxide converter and rust retard.

**CDM & COSHH STATEMENTS FROM THE O&M TO BE READ IN CONJUNCTION**

## 7.1 Consultation Timeline

The project has been developed in consultation with the 7/7 Memorial Trust, the bereaved family members, the Friends of Tavistock Square, the Bloomsbury Conservation Area Advisory Committee, the Bedford Estate, the London borough of Camden and multiple local stakeholders.

Please also refer to the many letters of support for the proposal.

**2007**

In 2007 Camden Council approached local residents to form a community group in support of a bid to the Heritage Lottery Fund, for the refurbishment of Tavistock Square Gardens - the only garden square south of the Euston Road which hadn't in recent years benefited from a significant make over and a location which had been brought to the attention of a wider national and international audience because of the London Bombings.

Although this bid was ultimately unsuccessful, the community group established, The Friends of Tavistock Square, worked closely with the Council to ensure the success of the project. As a result, The Friends of Tavistock Square, were able to bring in additional funding for maintenance work to the squares memorials.

**2010**

The Friends of Tavistock Square secure an undertaking from the Council for an allowance to be made for the siting of a new 7/7 memorial in Tavistock Square Gardens, dispensing with the 20 year rule established as a result of the wider consultation. This agreement was also noted in Tavistock Square's Development Plan.

**2011****May 21st**

At the Tavistock Square Gardens reopening ceremony, Henrietta, Dowager Duchess of Bedford, the then Leader of the Council and Tulip Siddiq backed calls from those assembled for a new memorial in Tavistock Square.

**July**

The Duchess of Bedford hosted a meeting at the Bedford Estate Offices, with representatives from the families and the Council to discuss the validity of the proposal which subsequently led to the forming of a working group.

**October**

Camden Council officers and the families contacted approved the plan in principal, and the DCMS confirmed that the proposed project did not require their consent.

**November**

Public Meeting held in the offices of Age UK, Tavistock Square.

**2012****July 5th**

The first 7/7 Memorial Lecture delivered by Baroness Helena Kennedy provided the working group with the first opportunity to promote the ambition of a new memorial to a wider public audience. Newsletter distributed to local residents and businesses before the event to provide an update on the memorial.

**October 8th**

The 7/7 Tavistock Square Memorial Trust was registered with the Charity Commission with two key objectives. Firstly, to promote human rights as set out in the UN Charter in the form of an annual lecture in memory of those across all four sites, and secondly to campaign and fundraise for a new memorial in Tavistock Square.

**2013****Spring**

Carmody Groarke were appointed through a competitive tendering process to assist the Trust in the delivery of its second objective.

ARCADIS, formerly known as EC Harris, agreed to provide pro bono cost consulting advice to the Trust. Their office was previously located in Tavistock Square at the time of the London Bombings, and was used on the morning for the provision of triage.

**July**

Lord Ian Blair delivered the second memorial lecture. Newsletter distributed to local residents and businesses before the event to provide an update on the memorial.

**2014**

Carmody Groarke complete the preliminary stages of the project.

**July**

Martine Wright, Paralympian and Captain of the GB Seated Ladies Basketball Team, delivers the third lecture. Newsletter distributed to local residents and businesses before the event to provide an update on the memorial.

**September**

Philip Nelson (Chair, 7/7 Memorial Trust) who as a consequence of the lecture series, has become widely known and respected amongst the families of the bereaved and the survivors across all four sites, is invited by City Hall to sit on a working group chaired by the then Tessa Jowell MP to deliver the official 10th Anniversary commemorations in 2015 – the service at St Paul's and the 10th Anniversary Memorial Lecture.

**2015****Spring**

Launch of the fundraising campaign. Early supporters included the University of London, University College London and the London School of Hygiene and Tropical Medicine.

**July**

10th Anniversary Lecture is delivered by Tessa Jowell MP, with broadcast media present from all four corners of the globe. Newsletter distributed to local residents and businesses before the event to provide an update on the memorial.

Philip Nelson delivers public lecture on the importance of the memorial at The Institute of Advanced Studies.

**November**

Chancellor George Osborne awards the Trust £50,000 in the Autumn Statement.

**2016****February**

Meeting with Camden's Development Officer for Arts and Tourism (Charlie Levine) at Camden's offices.

Philip Nelson delivers lecture at The Institute of Advanced Studies, supported by the Metropolitan Police and first responders.

**June**

Final design agreed in consultation with the bereaved family members.

**July**

Memorial proposal submitted to Camden's Artwork and Memorial panel.

**September**

Friends of Tavistock Square approve the plans for the new Memorial.

**October**

Camden's Artworks and Memorial panel grants conditional approval and landowner consent for the proposal.

**November**

Pre-application meeting with Camden council.

**December**

Site meeting for Bloomsbury Conservation Area Advisory Committee consultation, followed by meeting with Camden's Planning Officer (Catherine Bond) and Green Space Development Manager (Andrew Hinchley).

**2017****March**

Camden Design Review Panel (including site meeting).

Site meeting with Camden's Green Space Development Manager (Andrew Hinchley) and Aboricultural Officer (Colleen O'Sullivan).

Trial pit investigation and agreement on foundation strategy with Camden's Aboricultural Officer (Colleen O'Sullivan) and Structural Engineer (Price & Myers).

## 7.2 Camden Design Review Panel

On 17th March 2017 the Design Team presented the proposal to Camden Design Review Panel. This followed the vetting of the proposal through Camden's Artworks and Memorials form as well as several pre-application meetings with Camden Council and consultations with multiple stakeholders.

### **Panel Chair**

Peter Suggert

### **Panel Member**

Sophie Thompson  
Kay Hughes

### **Camden council representatives**

Catherine Bond  
Andrew Hinchley

### **Panel concluding comments**

- The panel whole heartedly support the proposal.
  - The memorial's scale is appropriate for the incident.
  - The directness of the memorial is right.
  - The panel understand the reasoning behind the lettering orientation, especially as one approaches from the path.
  - The panel warmly support what the design team have done; these memorials are not easy especially with the wider consultation with several stakeholders and the borough.
- Camden were present for when Carmody Groarke met BCAAC on site who raised concerns over:
1. The proposed location (preferring a site closer to the BMA, on the pavement or over the light well).
  2. The design approach. Memorials are perceived to be vertical.
  3. The opening in the hedge is a key concern.
- Unlike an abstract figure or event the proposed memorial has a special connection to the square.
  - BCAAC's suggestion to locate the memorial on the pavement or on the British Medical Association listed building are not appropriate. Tavistock Square is a tranquil space and we should make the most of this benefit.
  - The memorial feels an appropriate message in relation to the other memorials in the square - world peace in a multicultural city.
  - While there are many other memorials in the square, the overall size of the square can take the memorial, and the memorial will be read as a separate entity in comparison to other memorials in the square.
  - There is space and capacity in this location and warm support for the proposal.



8.0 Tavistock Square Gardens Memorial

The proposed memorial has been developed in consultation with the 7/7 Memorial Trust, the bereaved family members, the Friends of Tavistock Square, the London Borough of Camden, the Bedford Estate and multiple stakeholders, who have shown their support for the memorial described here and are eager to see it placed within Tavistock Square Gardens. Furthermore, the design team have sought to respond to the Bloomsbury Conservation Area Advisory Committee's concern over scale and location in this document.

The design sets out to be a fitting tribute to the lives lost on the 7th July. Its siting and low position will ensure it does not detract from the nature of Tavistock Square Gardens as a peaceful and historic London Square nor obstruct any existing pathways. The memorial will not compete with other memorials in the gardens and will create a unique, site-specific memorial to never forget the tragic events of that day.



Figure 7a Proposed view square interior



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## 7/7 Tavistock Square Memorial application

From: Hinchley, Andrew <Andrew.Hinchley@camden.gov.uk>  
 To: chiara.barrett@carmodyroarke.com <chiara.barrett@carmodyroarke.com>, Mark@chevalley.co.uk <Mark@chevalley.co.uk>  
 Cc: Levine, Charlie <charlie.levine@camden.gov.uk>  
 Date: 10/13/2016 12:20 PM

Chiara/Mark,

Your recent application to the artworks and memorials panel at Camden has been considered by the Cabinet member for Customers, Communities and Culture and been granted a conditional approval.

Camden is extremely supportive of the proposal for a memorial to the lives lost in the 7/7 attack and the design submitted was felt to have been sensitively considered to successfully address some of the constraints of the site.

As previously noted, there were a couple of areas of the application which will require further information to fully satisfy the guidance criteria, and these conditions on the approval are as follows:

- Further evidence of wider public support for the design and location
- Additional construction/material specification, including confirmation that the installation will not impact the neighbouring tree
- Agreement with Camden Council on public liability insurance and any necessary legal agreement for the installation

There were some additional advisory comments from officers which it would also be helpful to consider before the planning application:

- The edges of the memorial should be kept in line with the footpath to avoid a trip hazard
- The memorial will require the loss of a small stretch of the stone railing plinth and will most likely require the railings to be re-planted into the artwork. As the railings area listed, this will require listed building consent as well as planning permission.
- Further information will be required on the materials, finishes, construction and method of fixing.
- A potential risk that the simplicity and low level of the memorial may lead to it being walked on, and a preference to avoid the potential demand for barriers which could result from this at a later date.

Camden are keen to support the Trust through the rest of this process wherever possible, and it may be helpful to arrange a meeting to discuss the outstanding issues and how we can work through these as efficiently as possible?

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The need for evidence of public support has been discussed, and it is acknowledged that the method by which this is undertaken needs to be sensitive and appropriate to the nature of the memorial. It would be particularly helpful to discuss how this might best be undertaken and how we can assist in this process, particularly with regard to facilitating engagement with local stakeholders such as the CAAC.

With regard to the tree roots, our tree team will certainly be able to assist with any investigative works. I will have further conversations to establish what they consider to be the best way to proceed and feed back to you.

I have approached our planning team for further advice on the next stage of your application and the requirement for listed building consent.

If you agree that a meeting would be helpful at this stage, please feel free to suggest some dates and I will co-ordinate with any other colleagues it may be useful to involve.

If you have any questions in the meantime, please do not hesitate to get in touch.

Regards

Andrew

Andrew Hinchley CMLI PhD  
 Green Space Development Officer  
 Community Services  
 Supporting Communities  
 London Borough of Camden

Telephone: 020 7974 8817  
 Mobile: 07557 758675  
 Web: [camden.gov.uk](http://camden.gov.uk)  
 Floor 4  
 5 Pancras Square  
 5 Pancras Square  
 London N1C 4AG



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Figure 9.1a Camden Artworks and Memorial Panel response



8/2/2017

**RE: 178\_170510\_Tavistock Square Memorial Trial pit findings**

From: O'Sullivan, Colleen <Colleen.O'Sullivan@camden.gov.uk>  
 To: Chiara Barrett <Chiara.Barrett@carmodygroarke.com>  
 Cc: Lewis Kinneir <lewis.kinneir@carmodygroarke.com>, Hinchley, Andrew <Andrew.Hinchley@camden.gov.uk>, James Stevenson <jstevenson@pricemyers.com>, jlittle@pricemyers.com <jlittle@pricemyers.com>  
 Date: 5/11/2017 3:21 PM

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Hi Chiara,

Thanks for the email. That all sounds fine. It shouldn't be too much trouble to find ways around the tree roots in that area.

If you have any further questions please let me know.

Kind regards,

—

Colleen O'Sullivan  
 Arboricultural Officer

Telephone: 020 7974 5183

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**From:** Chiara Barrett [mailto:Chiara.Barrett@carmodygroarke.com]  
**Sent:** 10 May 2017 17:11  
**To:** O'Sullivan, Colleen <Colleen.O'Sullivan@camden.gov.uk>  
**Cc:** Lewis Kinneir <lewis.kinneir@carmodygroarke.com>; Hinchley, Andrew <Andrew.Hinchley@camden.gov.uk>; James Stevenson <jstevenson@pricemyers.com>; jlittle@pricemyers.com  
**Subject:** 178\_170510\_Tavistock Square Memorial Trial pit findings

Dear Colleen,

I hope this email finds you well. To summarise our meeting at the trial pit excavation, it was considered that none of the tree roots were of such importance relative to the maturity of the trees that any damage would be worrying (reference photo attached). Camden agreed in principle to our proposal to support a raft on strategic piles to avoid these tree roots.

Our structural engineers are developing this agreed foundation design which will be submitted as part of the planning application in due course.

Kind regards,

Chiara Barrett

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**Figure 9.2a** Email correspondence with Camden's Arboricultural Officer following trial pit investigation.