

# S R BRUNSWICK C Eng, FICE, FCIQB

138 Woodcock Hill  
Kenton, Middx.  
HA3 0JN

July 2020

Mob: 07803 262 009  
E Mail: [srb@srbrunswick.com](mailto:srb@srbrunswick.com)

## **Ref 2026 – Method Statement – 4B Hampstead Hill Gardens**

I am a Chartered Engineer and Fellow of both the Institution of Civil Engineers and Chartered Institute of Building with over 40 years' experience of permanent structural design and temporary works for above and below ground works.

I have been asked by Mrs Williams of 4a Hampstead Hill Gardens to provide a critique method statement for the construction of the proposed development at 4B Hampstead Hill Gardens as a comparator to the stage sequence drawings published on the planning portal by Mason Navarro Pledge Temporary Works Sht 1 of 2 (Drg Ref 218136-S-P002 Rev P4).

### **Introduction**

The current proposal by Mason Navarro Pledge (mnp) is based upon the removal of half the party wall thickness on both sides of the property to maximise the space available for the new development. To allow this to happen it is essential that the existing construction details are known and understood with knowledge of all connection details and load paths to resist all dead and imposed loads including wind. It is only with this knowledge that an appropriate design and methodology can be established.

The desire to maximise the plot size is common for all developments but any design team will be aware of the problems that can arise with working on and near party walls which can result in damage to the party wall. Hence the need to work within the requirements of the Party Wall Act 1996 and properly assess the existing conditions and implications of any proposals to alter the party wall.

I have based my comparisons and comments on methods and sequencing on the information provided by Mason Navarro Pledge.

### **Design Philosophy**

The design philosophy is derived from the type of development and the materials being used to construct the development combined with the construction methodology.

The development is located in a conservation area with significant residential properties. The development proposal is to demolish the existing 2 storey property and construct a new property over 4 storey's including a basement. The basement extends for the full area of the building and extends into the rear garden, all as outlined in the documents submitted in the planning application and available on the planning portal.

As the adjacent properties are of traditional design and construction with shallow foundations any basement design would need to take recognition of this and adopt construction techniques that will not have a detrimental effect on the adjacent properties or the party walls enclosing the property.

The sequence of the construction is a key issue to developing the construction philosophy and to ensure that the work is undertaken safely and no damage is sustained to the party walls and / or the properties in the area.

As part of the development of the philosophy it is necessary to establish the following:

- Construction details of the property to be demolished
- Construction details of the party walls and adjacent properties within the zone of influence of the works.
- Ground conditions including identifying any above or below ground water courses, water table and soil profile and testing to a depth at least 3m below the deepest level of the works, (currently this is not available on the planning portal)
- Design Imposed loadings for the building including wind loads in the temporary and permanent conditions.
- Design form of the new property and interfaces with the existing.

## **Understanding of the Existing Construction**

Record drawings for the existing property have been identified for the existing construction and include details of the foundation solution that was adopted. The record drawings indicate that this property has been redeveloped and extended in the past to convert it from the garage of 4A Hampstead Hill Gardens (HHG) to a residential property on two floors. The redevelopment utilised the enclosing wall to 4A HHG and extended it to the rear, to form the new property, all as shown on the record drawings included within the Design & Access Statement prepared by GRID Architects and placed on the Planning Portal.

On the boundary with No 6 HHG there is the side wall of the existing property and a garden wall to the front and rear. The garden walls, as would be expected, are constructed so that they straddle the property boundary with the external face of the cavity wall on the boundary line. The record drawings show that the foundations to the cavity wall are central on the line of the wall and so extend into the garden of 6 HHG.

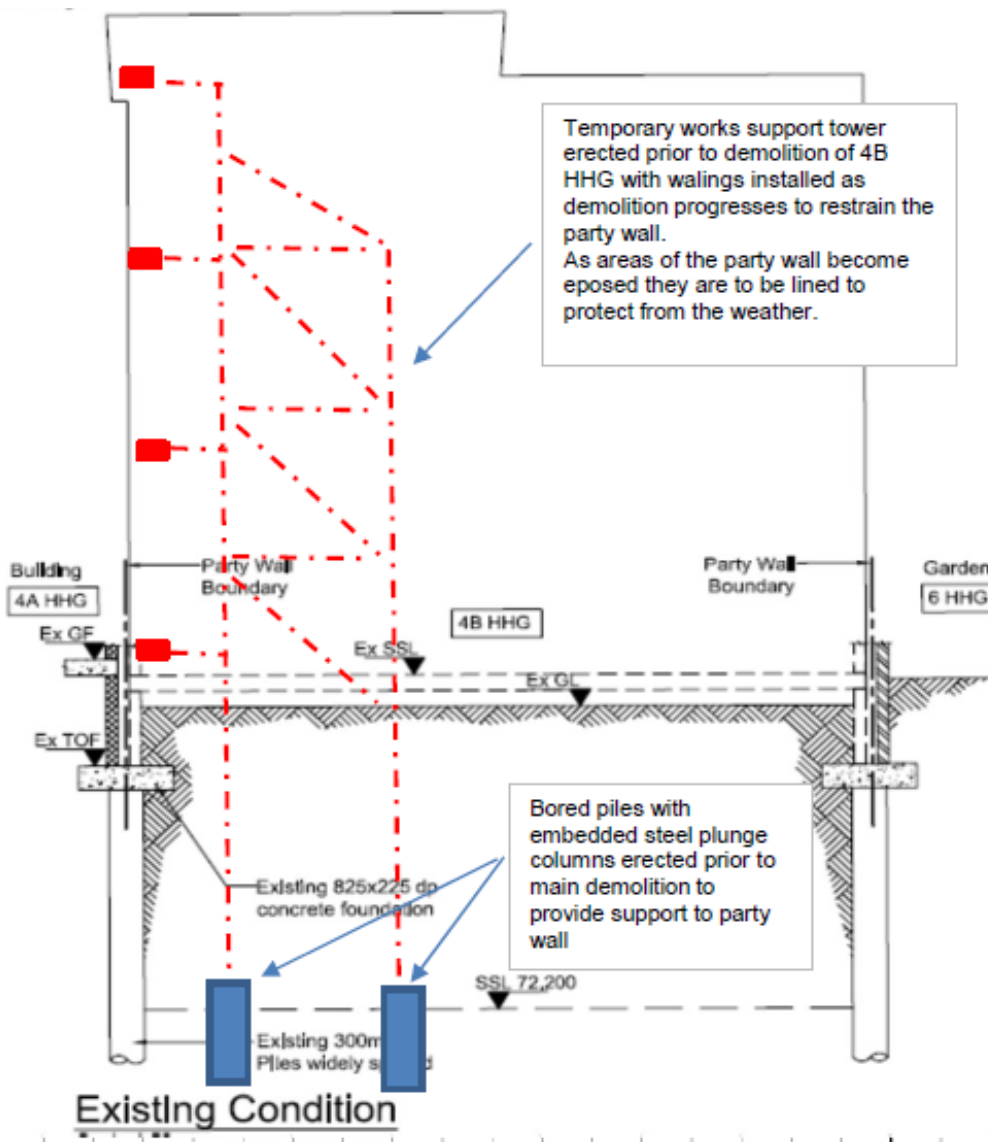
The record drawings also show that short bored, small diameter piles have been built integrally with the strip footing and are assumed to have been designed to limit settlement. The piles are limited in length and according to the notes on the drawings, would not extend below the proposed basement formation.

## **Demolition**

Prior to the start of any demolition a full Method Statement and Risk Assessment needs to be developed to reflect the range of tasks to be undertaken and the measures that need to be put in place to ensure safe methods of work are adopted to safe guard the people working on the project, the neighbours and any members of the public who may be nearby.

The site is small and built to the boundaries so it is assumed a scaffold will be required around the building to give safe access and an agreement will need to be made with the owners of 6 HHG to allow access for the erection of the scaffold. If this is not obtained a no-go zone as a minimum will need to be established in the event of any debris falling to the ground during the demolition work.

As the demolition progresses it will be necessary to introduce temporary works to restrain the party wall against the effects of wind loading as the wall, in its proposed form, has not been exposed to these loads. In addition, it is currently proposed to remove the outer brick facing of the cavity wall to leave the inner 100mm leaf which will certainly require restraint to help resist the applied design wind loads. As no investigation has been done the detailed construction of the cavity wall on the boundary with 4A is unknown, or its method of restraint, so the worst case has to be



assumed with little or no restraint from the floor and roof plates of 4A. The form of temporary restraint could be in the form of beams supported on gallows brackets with returns on the front and rear elevation bolted to the masonry to prevent the wall being sucked out under the design wind loading. If permission is not given for this form of temporary works it will be necessary to build one, or possibly two towers, within the main section of 4B and designing this to restrain the horizontal beams, as sketch above. The tower / towers will need to be founded on small diameter piles extending to below the formation of the new basement as the tower or towers will need to be in

place until the new development is completed and takes over the restraint of the party wall.

The exposed party wall will also need to be lined with a membrane to give weather protection as the inner leaf of the cavity wall has not been exposed to the weather, all as mentioned on the drawing by Mason Navarro Pledge Temporary Works Sht 1 of 2 (Drg Ref 218136-S-P002 Rev P4) a copy of which is attached in the Appendix.

In my opinion the risk in removing the outer leaf of the party wall to 4A is unacceptable as there is a high risk of damage to the retained leaf of the party wall.

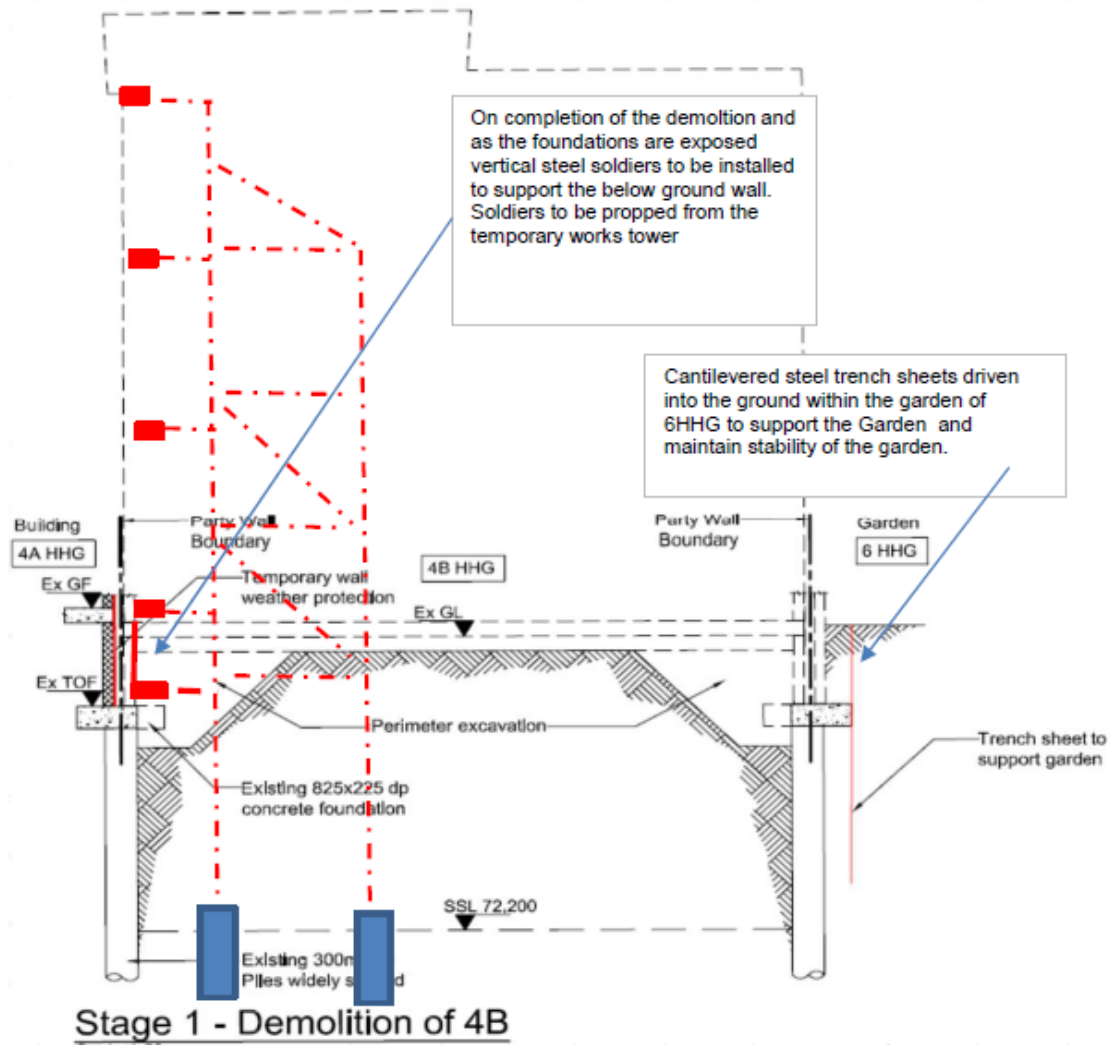
The cavity wall of the property on the boundary with 6 HHG is to be demolished as described above and is on the property of 4B. However, it is also proposed to reduce the thickness of the garden boundary walls to a half brick. To achieve this over an extended area of a free standing wall is, in my opinion, unlikely to succeed and the wall will collapse or become so fractured that it becomes unstable and require demolition for safety reasons.

Finally, it is proposed to cut back the foundations on both sides of the property so that the foundations are cut back to suit the line of the new structure. This will result in eccentric foundation load which may well cause excessive movement due to overstressing the existing formation. The loading will be temporary but as the sub strata is clay and elastic this eccentric loading will have an immediate effect on the foundation causing it to settle unevenly due to the eccentric loading resulting in movement of the remaining leaf of the cavity wall resulting in cracking of the wall. In the long term the foundation is planned to be underpinned.

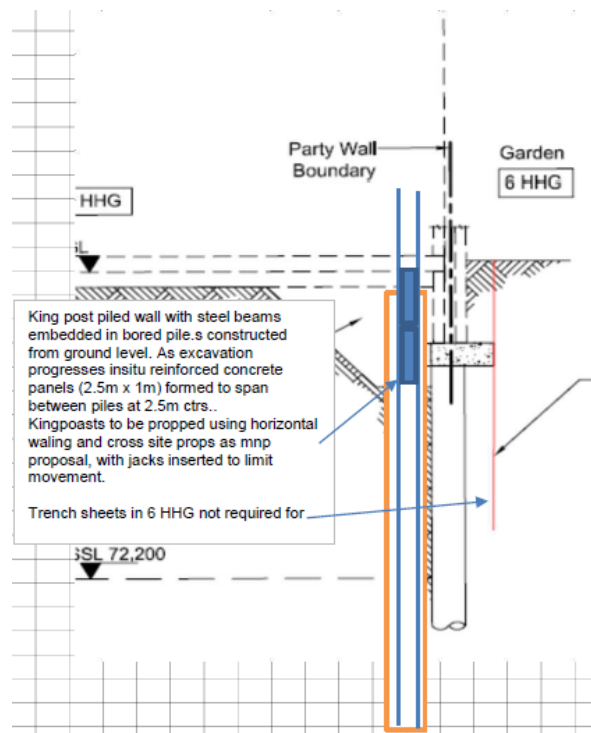
### **Basement construction**

The sequence indicated by mason navarro pledge in providing an initial ground support frame at the existing foundation level is a traditional solution. What is not stated is the requirement for jacking the props to preload the system and how the walings indicated on the section and plan will be sized to minimise deflection between props. I accept that the additional level of detail would be developed during the construction stage after planning was achieved.

However, the level of the propping is below ground level and it is assumed that the retained portions of the cavity wall to 4A and garden wall to 6 HHG are capable of acting as cantilevered retaining walls supporting earth and surcharge loads. These walls are substantially weakened by the reduction in width of the wall and so will be incapable of retaining any earth and associated surcharge loading as is required by the proposal. In my opinion the walls should not be reduced in size as the risk of collapse is too high and even if they are not reduced in size they will need to be propped with an additional level of walings at ground level with vertical soldier supports at regular intervals to ensure the walls are properly supported and can resist the earth and surcharge loadings. This can be supported from the temporary works tower as shown below.



To facilitate the works on the boundary with 6 HHG it is proposed to drive steel trench sheets within the garden and tight to the line of the foundation of the boundary wall and cavity wall to 4B. The equipment necessary to drive the sheets into the ground is typically mounted on a tracked 360 degree machine which will have to operate from the body of 4B after demolition but before any excavation is undertaken. The works will need to be coordinated with the support tower or towers required to restrain the party wall with 4A. The trench sheets once in place cannot be removed without access from the garden of 6 HHG and if this has not been agreed the sheets will remain in place. Indeed the original installation of the sheet piles will be subject to the agreement of the owners of 6 HHG, which I understand will not be



forthcoming and so another solution will be required. This could take the form of augured piles at say 2.5m ctrs with steel sections cast within the pile. The steel section would then be exposed in 1m lifts and a temporary reinforced concrete wall built on a layer by layer basis and cast against the exposed ground / wall, going down to the formation. This would then require the basement wall to be cast against this temporary wall, which may reduce the size of the basement. This same solution can be adopted for the boundary with 4A and this would significantly reduce the risk of damage to the party wall, as the work to the wall will be reduced.

It is then proposed to construct the basement in a traditional manner by initially underpinning the retained portion of the foundations on both sides. The sequence is not detailed but is outlined on the mnp drawing and repeated below. My concern is

## **Stage 3 - Underpinning**

**Scale 1:50**

**The perimeter walls are constructed by underpinning in a specific sequence for safe working and to keep ground movements within permissible limits. Each excavation is local to the specified pin and perimeter location. Each pin is reinforced, to be no greater than 1200mm wide, tied laterally with reinforcement to adjacent pins and have a dry pack at the head of no greater than 50mm depth (to minimise concrete shrinkage). The underpins are to have an initial minimum toe length of 825mm to match the original condition. Each underpin is to be loosely back filled once complete.**

that the underpins do not extend below the formation of the general excavation and so have the potential to slide under the horizontal earth loading which is applied to the underpin as it is cast. In my view it is necessary to either extend the depth of the underpin, so that the passive resistance is sufficient to overcome the horizontal loads or provide another layer of propping say 0.5m above the Structural slab finished level. This lower layer of propping would be placed in trenches and jacked to minimise any movement and once commissioned the remaining excavation can be undertaken working through the propping.

The underpins will need to be reinforced to resist all lateral and vertical loads and be connected to each other so that there is minimal ingress of water, as any water ingress will soften the ground around as the water passes through the fissures in the clay resulting in settlement of adjacent foundations and the garden of 6 HHG.

As the underpins are more than 3m deep then a 2 level underpinning sequence should be considered with staggered vertical joints between the first and second levels of the underpinning. This would also require an additional level of temporary propping to resist lateral earth loads at the base of the first lift of the underpinning.

## **Monitoring**

It is essential to monitor the retained portion of the party and boundary walls along with the returns of 4A HHG to establish the actual movement both vertically and horizontally to ensure the movement is within the agreed design parameters. Once the movement profile has been determined, as a consequence of the construction method and sequencing, and it is deemed to be acceptable a review process is to be established with Amber and Red warning levels established. The Amber warning, when triggered at say 60% of predicted movement, is to highlight that movements were getting to a critical level and to allow for a review of the works to ensure all works were in accordance with the agreed methodology. If the Red level at 90% of predicted movement level is reached then work is to cease and proposals are to be obtained to explain why the movement has reached the trigger level, what damage has occurred and what can be done to ensure that the agreed maximum movement is not reached.

## Conclusion

In conclusion, I believe that the development currently proposed for the rebuilding of 4B HHG is over ambitious in the desire to maximise the floor plate, especially below ground level. The desire to cut back the party and boundary walls back to the defined boundary line is going to result in significant damage and disruption to both the immediate neighbours being the owners of 4A and 6 HHG. I have also outlined my concerns over the lack of temporary works that are proposed in the mason navarro pledge sequence drawing for the restraint of the weakened party wall with 4A HHG and a potential solution, but this will severely restrict the access for the excavation of the basement.

I have outlined an alternative basement construction method which leaves the party and boundary walls intact, but does require piling close to the boundary, the ground floor could step over to maximise the floor plate at ground level and maintain the existing party wall with 4A HHG. This also allows the rebuild of the cavity wall on the boundary with 6 HHG without having to install sheet piles within their garden which cannot be removed from 4B. Access would still be required for scaffolding to safely demolish the building and to construct the new cavity wall to the property, even if the wall was constructed overhand working from 4B only, to ensure no debris fell into the garden of 6HHG

The site is small and access for the works will need to be from the street utilising the existing pavement crossing and there will be very little space for storage of materials. The basement work requires some significant plant to carry out the piling, installation of basement propping and excavation, which will require careful management of the equipment selection and operation. This is to ensure that the operations minimise nuisance to the neighbours and prevent impact damage to the adjacent property and boundary walls.



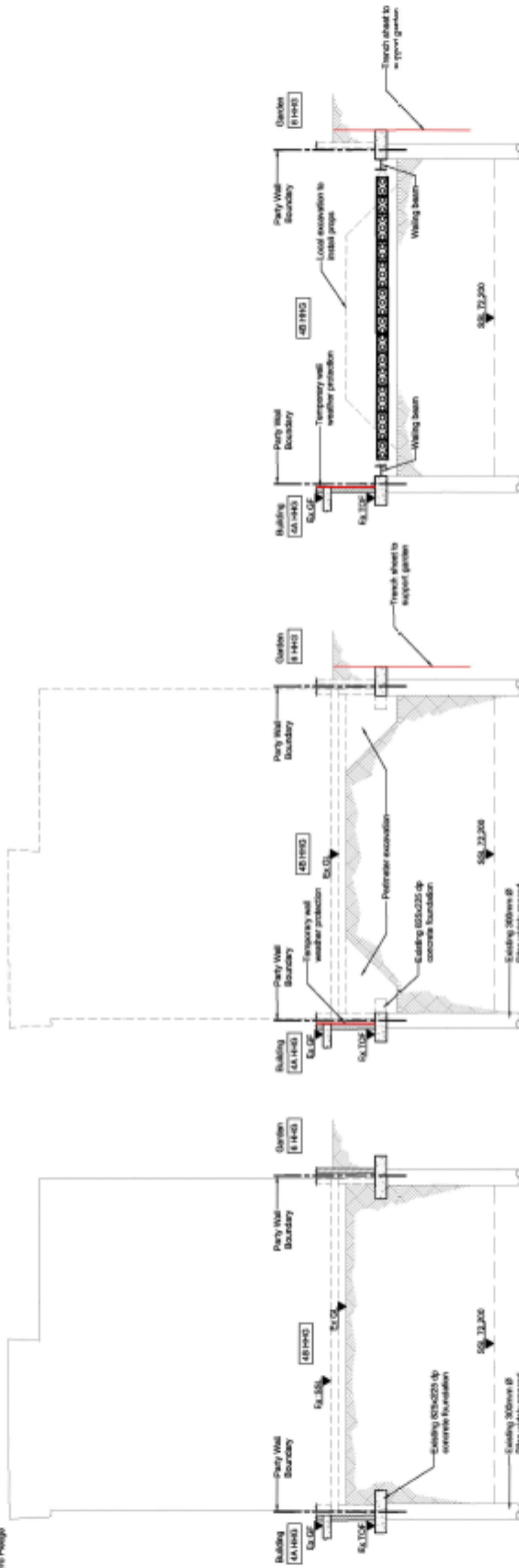
Steven R Brunswick CEng., FICE, FCIQB

## **APPENDIX**

mnp Drawing – Temporary Works Sht 1 of 2 – 218136-S-P002 Rev P4

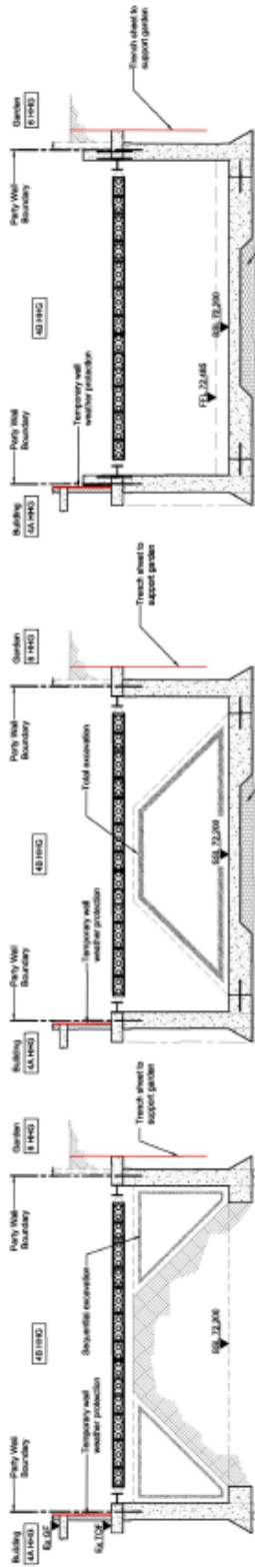
Sketches used in report





Existing Condition  
Scale 1:50

The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork. The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork.



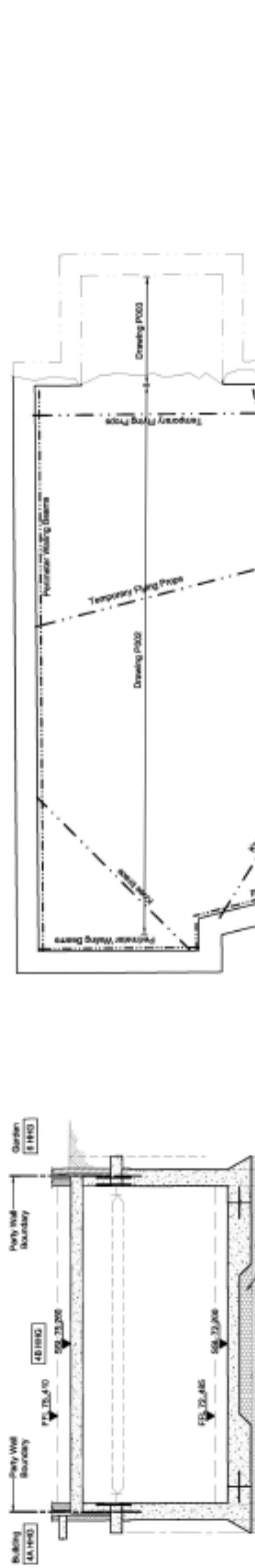
Stage 1 - Demolition of 4B  
Scale 1:50

The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork. The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork.



Stage 2 - Temporary Works Installation  
Scale 1:50

The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork. The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork.



Stage 3 - Underpinning  
Scale 1:50

The party wall is to be underpinned in a specific sequence to ensure stability. The existing 600x600 concrete foundation is to be demolished and replaced with a new 300mm wide concrete foundation. The existing 300mm wide brickwork is to be demolished and replaced with a new 300mm wide brickwork.



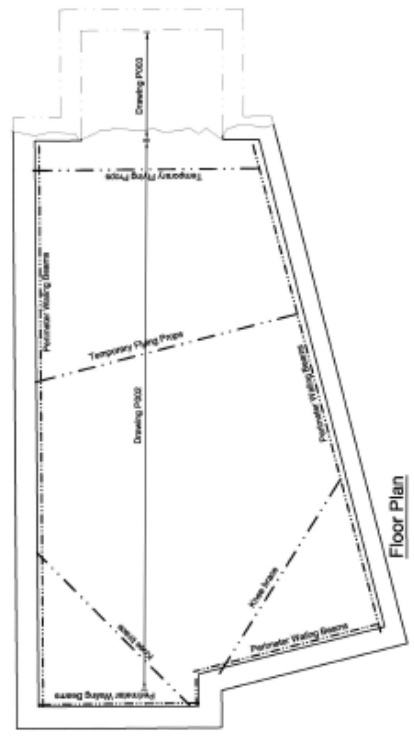
Stage 4 - Excavation  
Scale 1:50

The basement can now be fully excavated exposing the existing foundation level. 50mm concrete bedding is used to protect the footing below. Central beam production is used to support the excavation walls. The concrete bedding will need to be covered, any drains repaired and waterproofing treatment applied to the waterproof specialist's specifications.

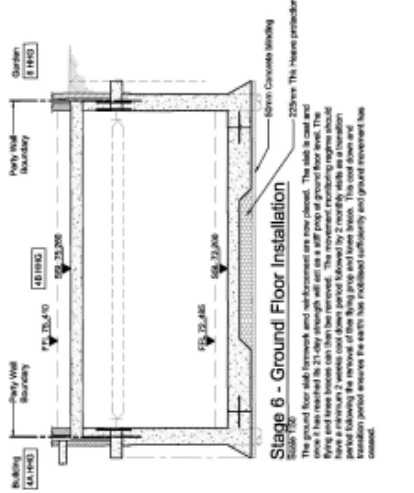


Stage 5 - Substructure Continuity  
Scale 1:50

Small staggered holes are to be covered through into the existing foundation into the waterproofing. Epoxy resin is used to seal the holes. The concrete is cast in place and reinforced with steel reinforcement. The concrete bedding will need to be covered, any drains repaired and waterproofing treatment applied to the waterproof specialist's specifications.



Floor Plan



Stage 6 - Ground Floor Installation  
Scale 1:50

The floor slab framework and waterproofing are now in place. The slab is cast in place and reinforced with steel reinforcement. The concrete bedding will need to be covered, any drains repaired and waterproofing treatment applied to the waterproof specialist's specifications.

Updated to Architects details 11.11.19 KAD  
P4 SRS Change 21.05.19 KAD  
P4 General update 24.05.19 KAD  
P4 SRS Change 21.05.19 KAD  
P4 General update 24.05.19 KAD  
P4 SRS Change 21.05.19 KAD  
P4 General update 24.05.19 KAD  
P4 SRS Change 21.05.19 KAD  
P4 General update 24.05.19 KAD

COMMENTS

mnp  
mason navarro pledge  
Consulting Civil and Structural Engineers  
Beaumont Court  
100, 101, 102, 103  
Hampstead, 505 11th  
London, NW3 2PJ  
www.mnp.co.uk

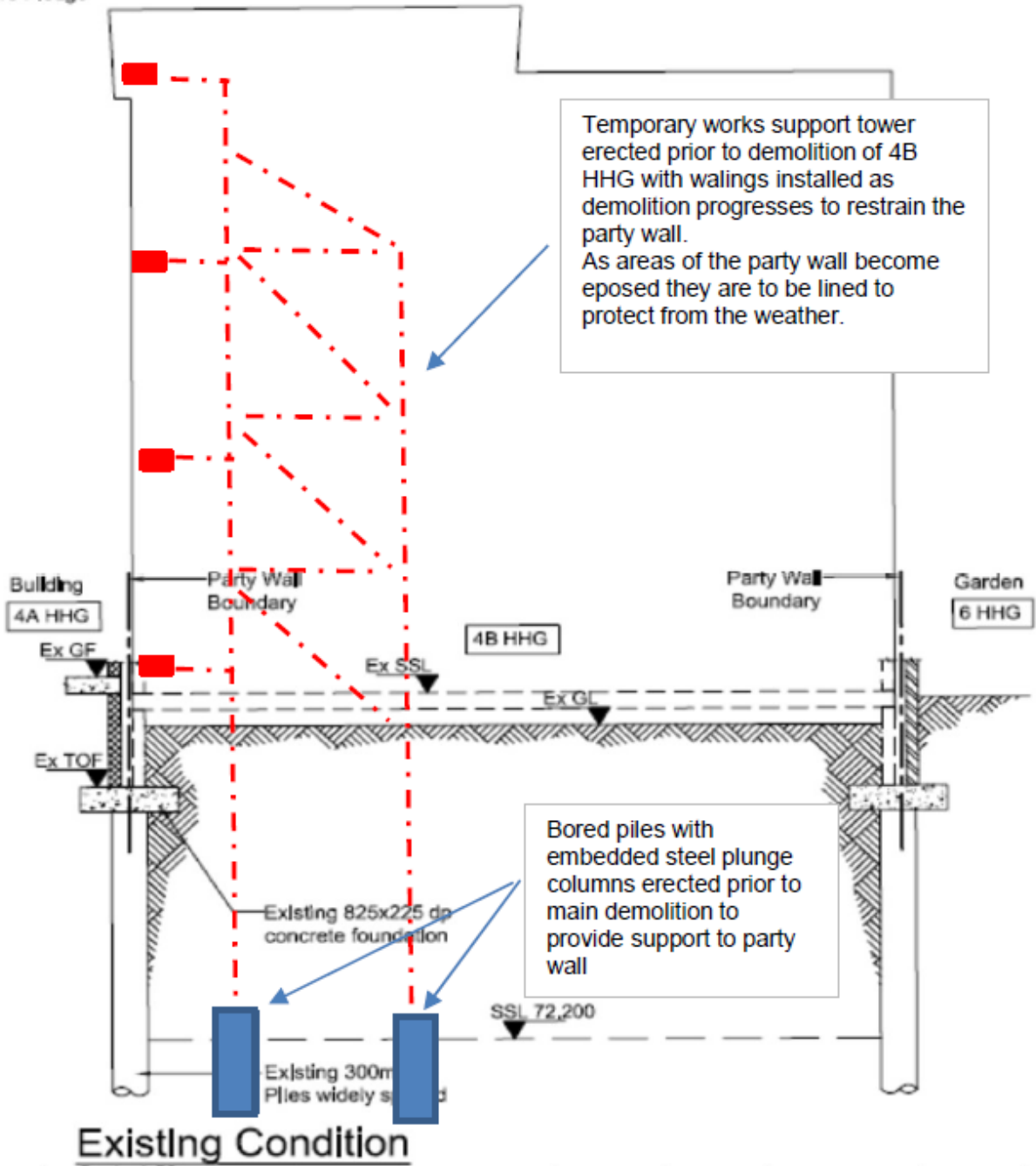
Mr & Mrs BREARLEY

4b HAMPSTEAD HILL GARDENS  
LONDON  
NW3 2PJ

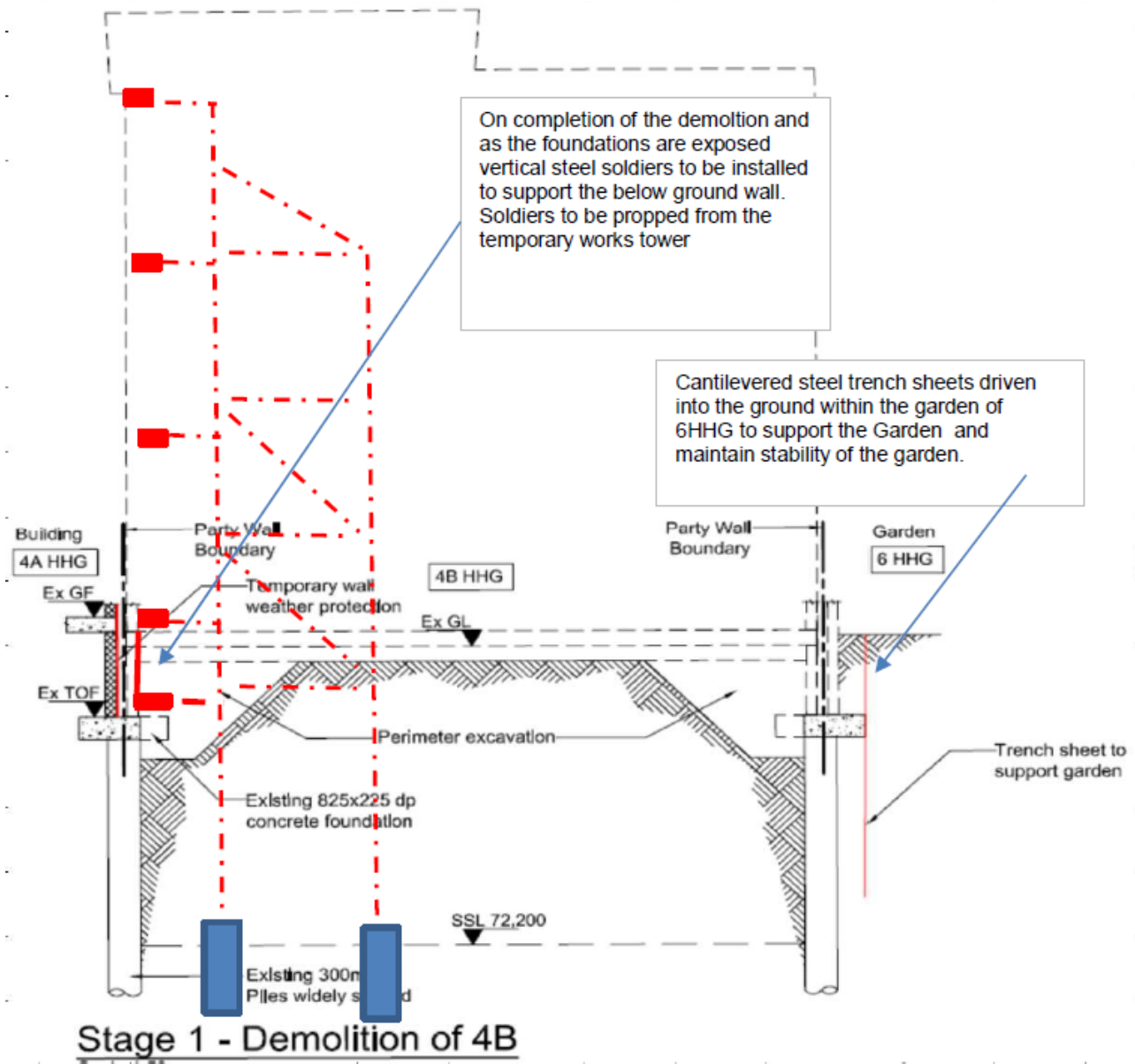
TEMPORARY WORKS  
Sheet 1 of 2

218136-S-P002  
P4

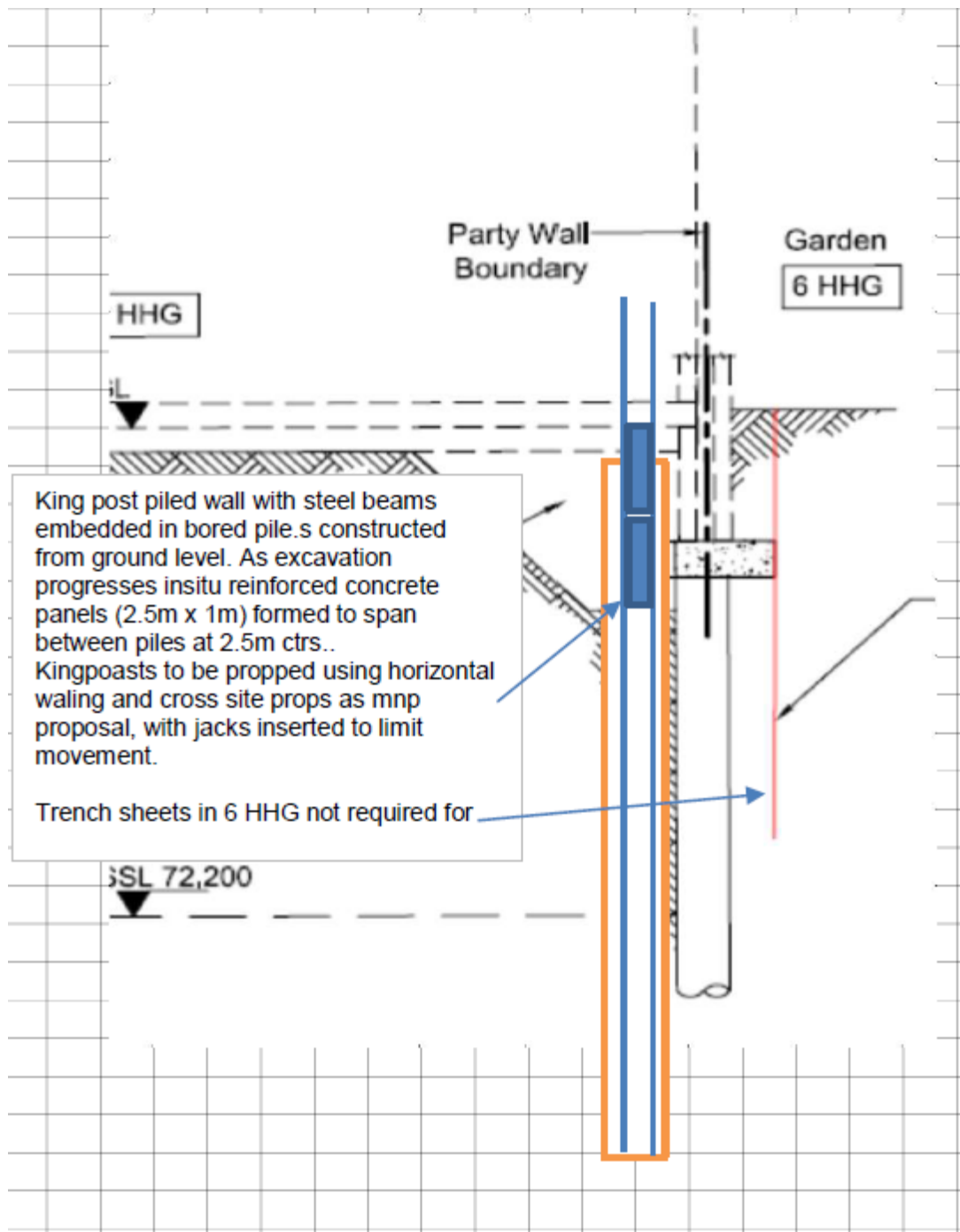
-Iavarro Pledge



Temporary works restraint tower for Party Wall works above ground



Temporary works restraint tower for Party Wall works below ground



King Post earth retention scheme for basement construction