



Residential



Commercial



Retail



Conservation



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Prepared by: Structural Engineer (See end of report for details).

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PREAMBLE:

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TERMS OF REFERENCE:

We were appointed by the client to prepare a supporting Structural Design Statement for the demolition works of existing buildings and redevelopment to provide a new care home (Class C2 - Residential Institution at 103/107 North Hill, London N6 4DP).

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Construction Method Statement

1.0 ~ Introduction:

Elite Designers Ltd. is a firm of Consulting Structural and Civil Engineers operating from offices in Southwest London. High end residential refurbishments and commercial developments of all scales have been central to the workload of the practice within central London and the surrounding Greater London area. As a practice, we have produced many single and multilevel basements designs to both new and existing buildings. Our general understanding of the development of London, its geology, and unique features together with direct experience on many sites puts us in a strong position to advise clients on works to their buildings, and particularly the design and construction of their basement.

Furthermore, it is assumed that the contractor appointed to carry out the works will be a member of the considerate constructor scheme and will have suitable and relevant experience in basement construction within the London area. The client will also appoint a suitably qualified engineer to develop the design and oversee site construction should the planning application be successful in line with the regulations of the Local London Borough.

This report sets out the design philosophy for the proposed works to 103/107 North Hill, London N6 4DP. It should be read in conjunction with the detailed structural drawings and calculations attached in the appendices which detail both the temporary and permanent design stages of the proposed alterations. The aim of the method statement is to ensure safe and proper construction of the proposed works and to ensure no adverse effects to the existing or neighbouring structures, while also addressing the requirements of the Basements SPD.

This Structural Engineers Construction Method Statement (CMS) is based on and takes account of all the reports and drawings in the appendices, further detailed reports and investigations are planned for the next design stage, this include the production of a detailed site investigation and basement impact assessment which is underway and to be submitted as an addendum for the planning application by specialist geotechnical engineers.

While considering the most appropriate method of retaining the soil around the ground level in both the temporary & permanent conditions several potential methods were assessed. A feasibility study was undertaken to determine the most appropriate construction method for the site and the proposed works. The first stage of the feasibility was to assess the Architect's proposal and to provide advice on alterations to the project where necessary from a structural point of view to ensure long term stability of the building and minimise the requirements of temporary works during construction. The study allowed for an appraisal of the different potential construction methods available, and suggestions were made as to the most suitable from both a time and cost point of view as well as their suitability for the given site conditions.

In this study the merits and shortcomings of sheet piling, bored piling and traditional retaining wall techniques were examined. From the conclusion of this study, it was felt that at this stage the most appropriate solution would be for a bored pile solution to be employed, this will be discussed further in detail below. The construction sequence will deal with any issues of excavations under or adjacent to an existing property or road while minimising the potential losses of usable floor area. Given the preference to minimise any inconvenience to neighbouring properties and to maximise usable floor

area of the proposed development, a sequenced piled solution would lend itself best to fulfilling all of the aforementioned and the structural requirements of this development. For these reasons it was decided to detail the proposed solution shown in the appendix A drawings.

Following this a series of calculations were carried out (a summary of which is attached in the appendices). These were used to prepare preliminary budget costs to the project, to access potential program savings, and are submitted as a viable engineering solution for planning; in addition they allowed the party wall process to be commenced and will provide a solid base for engineering discussion should the project progress to the detailed design stage.

The preliminary calculations carried out, a summary of which is attached in appendix B, ensure the overall structural integrity of both the existing and neighboring structures is retained throughout development. The stability of the building in all stages of construction and in the completed stage is provided for by careful sequencing of works to support the new building above the proposed basement works.

Due to the nature and makeup of the existing underlying soil types, slope instabilities are not of concern and loading patterns have been checked to ensure they will not occur. This is particularly evident with the proposed methods as the size and speed of the excavations adjacent to the existing structure to the perimeter of the project can be carefully controlled and monitored as necessary to ensure no rotations of the wall segments, individually or as a group can occur. The proposed solution ensures no instabilities are created or allowed to occur within the soil mass during both the construction process and in the permanent state; therefore, any settlement to the surrounding area will be negligible. By following the step by step installation method in Section 9, any adverse effects on neighbouring properties will be minimised/mitigated.

A party wall agreement is required, and this will detail the allowable construction tolerances and impacts on the neighboring properties (currently there are no foreseen effects to the integrity of surrounding structures). A suitably experienced surveyor will need to prepare a fair and impartial party wall agreement. This agreement will deal with the right to execute the party wall works, the time and manner of executing any party wall work, and any other matter that arises between the parties connected to the party wall works.

This method statement should only be used as a guide. Responsibility for site safety and the implementation of applicable building practices and British Standards are the responsibility of the Main Contractor. This method statement is not exhaustive and assumes the Main Contractor has the competence and relevant experience to undertake building works of this nature.

2.0~ Existing Structure:

The existing property consists of an up to four stories above ground floor detached residential care home property, known as the Mary Feilding Guild Care Home. The front of the building is setback approximately 8m from the road at the front, there is a courtyard to the rear.



The local topography is gently sloping towards the west; subsequently the site is unlikely to be surcharged during periods of heavy rainfall. A more detailed discussion of flooding is assessed below.

A visual inspection of the existing building was carried out to determine the condition of the existing structure and its ability to deal with the proposed development. The existing structure appears to be in reasonable condition as there are no signs of significant degradation or subsidence. The roof and floors appear to be mostly of a traditional timber construction. The floor and roof structures are supported on structural masonry walls with corbelled footings on mass concrete oversite foundations bearing directly onto the soil substrate. The proposals would be to remove and demolish the existing structures to clear the site and allow for rebuilding of the new proposal. Generally speaking the new loadings will be of a similar magnitude to those of the existing structures and therefore the underlying subsoils shouldn't have issue with supporting the new foundations.

3.0 ~ Party wall:

The proposed works include the construction of a full area basement within 3m of the adjacent properties; therefore, full procedures under The Party Wall etc. Act 1996 will be required. The procedures should outline allowable construction tolerances and impacts on the adjacent property. There are currently no foreseen effects on the integrity of the adjacent properties due to the works proposed in this report.

The structural scheme adopted has been designed with due regard to maintaining the structural stability and integrity of neighbouring buildings and surrounding land. The structural form of the alterations and the method of construction have been developed to ensure that lateral deflections and associated ground movements are kept within acceptable limits during and post construction.

4.0 ~ General descriptions of works:

"Demolition of existing buildings and redevelopment to provide a new care home (Class C2 - Residential Institution), together with a well-being and physiotherapy centre. The proposed care home includes up to 70 bedrooms, a hydrotherapy pool, steam room, sauna, gym, treatment/medical rooms, hairdressing and beauty salon, restaurant, cafe, lounge, bar, well-being shop, general shop, car and cycle parking, refuse/recycling storage, mechanical and electrical plant, landscaping, and associated works."

The proposal is to demolish the existing buildings currently on the site and the construction of a new care home consisting of a basement, ground, 1st and 2nd floor accommodation and ancillary facilities construct a full area basement of approximate depth of 3m beneath the proposed footprint. The basement walls will be constructed as a piled wall around the whole perimeter of property. The piled walls will be faced with new lining concrete walls. Traditional retaining walls will be used along the perimeter of the new ground floor structure. The basement walls will both retain the neighboring gardens to the sides and rear while supporting the new structure above on a steelwork frame

Access for materials and the removal of spoil will be via the front of the property. The exact method in which soil is to be removed from the site will be detailed by the contractor prior to works commencing.

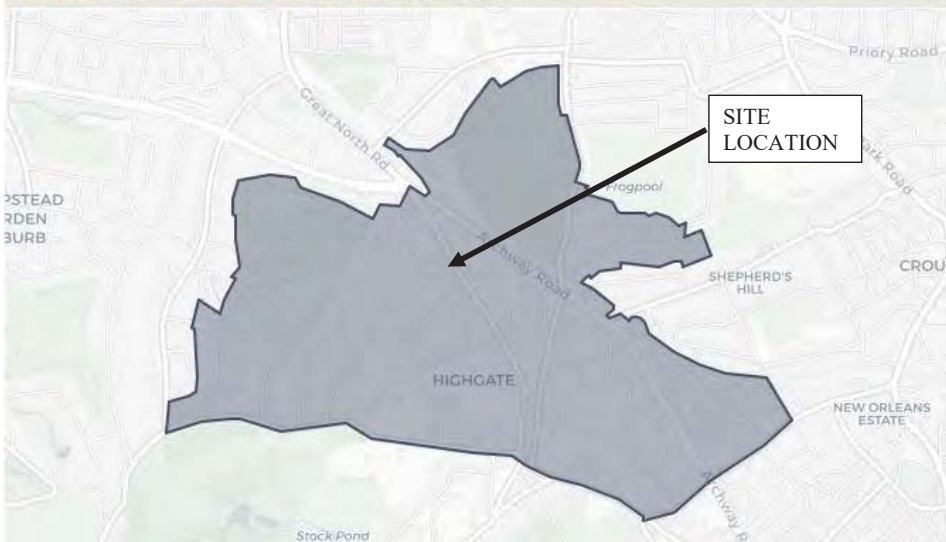
5.0 ~ Historic Background:

A review of the WW2 bomb maps shows that there are multiple strikes (29 high explosive Bombs) in some proximity to the site. Maps don't show exact locations, but given the evidence recorded from the recent site investigations, the underlying strata appears to have been undisturbed in the area of the property and subsequently no impact is expected on the proposed basement construction. Further reviews and investigations of the bomb strikes will be required as works progress

Bombs dropped in the ward of: Highgate

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It appears from the initial site investigation that the amount of water moving through the excavation will be limited to the lowest section of the excavation and that minor water entries (if any) should be manageable by sump pumping with a suitable discharge location to ensure removed water doesn't interfere with the works. Pumped water would need to be treated with settlement tanks or other approved measures to ensure the quality of local groundwater sources.

Given the depths at which the water table appears to be, and the proposed depth to which it is planned to excavate for constructing the alterations, it is likely that the construction will not project significantly into the water level. However, given this potential minimal intrusion during construction it is safe to conclude there should be no adverse effects by the development to the local hydrology of the area; however this will be discussed in more detail in the hydrological report produced in detailed design stages and will be referred too within the basement impact assessment.

A desk top investigation has been carried out to establish the positions of any underground utilities, main drainage, or infrastructure and ensure the works do not impact on these. The contractor should carry out works under the assumption that there may be additional unknown service locations and take all necessary precautions. It will be necessary to carry out some works to the drainage locally within the curtilage of the development to allow for the new requirements on both surface and foul water drainage of the new layouts, but these will not impact in any way on the neighboring properties.

6.1 Ground Bearing Pressure & Suitability:

The proposed basement level of about 3m is expected to encounter the London clays and therefore at that depth a new allowable bearing pressure of 150kN/m² which has been considered in the design of the structure at this stage.

6.2 Slope Stability:

The site is situated on a gently sloping site and is not cut into the side of hills or valleys. Therefore, slope instability is not considered to be a problem.

See Appendix D for the geotechnical summary.

7.0 ~ Watercourses and Existing Trees:

7.1 Ground Water

The water found to be present is most likely to be perched ground water sitting on the less permeable clay. Ongoing monitoring is expected to confirm that ground water is relatively static below ground level.

The site is classified by the Environment Agency as a minor 'Secondary A Aquifer'.

The local area is considered to be gently sloping.

6.0 ~ Ground Conditions / Geology:

Local knowledge of the area and study of British Geological Survey records (attached in appendix D) will be backed up by a Geotechnical Site Investigation report, this is included within the Basement impact assessment by Soils Ltd.

Current examination of a ground conditions suggests the underlying soil to be a moderate thickness of made ground between 0.5-0.8m. The Claygate Member underlines the made ground formation and consist of firm light gray mottled orange-brown sandy clay. Beyond the depth of approximately 5m, the soil contain firm a grey very silty, very sandy clay till full depth of investigation 10.0m bgl

The water table was not encountered during the site investigation but it is probably that water will run along the clay head at approximately 5m. Further water monitoring should be carried out during the detailed design and throughout the construction process to establish the exact water table levels at the time. A dewatering method may be required to keep the excavations dry through the construction phase. If required advice from a specialist dewatering company should be obtained by the contractor.

In line with design standards, uplift will be allowed for within the design of the basement floor slab. The uplift forces can be easily counteracted by the self-weight of the basement structure and the building above.

There are no ponds, streams, or other surface water features on or immediately adjacent to site, the Thames is a significant distance from the site and as such is not expected to interfere with the works.

The local area is predominantly residential properties intersected by highways. The current surface water flow regimes can therefore be summarised as follows:

- Rainwater falls onto hard standing surfaces and roofs with most discharging directly into the existing drainage system and some being taken up in evaporation.
- Garden, permeable areas and green areas where present will absorb rainfall directly into the ground and discharge back to the local ground water.

The proposals do not materially alter the existing surface water flow path.

Subterranean ground water flow paths are most likely to be in an approximate north to south direction with water gently flowing along the top of the Clay. The proposals would appear not to materially affect these potential flows.

7.2 Watercourses:

A desk top study and review of the "Lost Rivers of London" indicates a waterway known as "Tyburn River" runs to the south at a distance sufficient that it is not expected to influence the proposed works.

The substratum is to be sandy silt over sandy clay. The ground water encountered in the site investigation is assumed to be perched over the impermeable lower layers. Seasonal variations in the ground water are to be expected and the contractor will be required to have considered suitable remediation measures during excavations and general works.



7.3 Existing Trees:

Close to both boundary lines with 119 North Hill and with properties at Wetherley Court, there are several trees, but the existing foundations and boundary walls will have acted as a significant barrier to root penetration into our site. Given

our proposal is to excavate away from the location of these trees and that it is highly unlikely that the roots from the existing tree will have spread under the barriers, it is expected that construction will not significantly harm any surrounding roots. Further investigation will be carried out prior to construction to confirm root protection requirements where relevant and the contractor will provide in his method statement measures to be taken to protect any adjacent trees and shrubbery from both aerial and subterranean damage.

7.4 Flooding:

Due to the present hydrological status, we would not expect the proposal to have an adverse effect on the ground water flow in the area and this is discussed further in site investigation report.

8.0 ~ Description of Proposed Structure:

The proposal is to demolish existing building currently on site and a new care home consisting of a basement, ground, 1st and 2nd floor accommodation and ancillary facilities. The basement will be formed by combination of traditional reinforced concrete retaining walls and a piled wall solution. Structure will be designed with adequate capacity to support both vertical loading from above and surcharges from the adjacent road/neighbors properties and above ground structure as per the current architect's proposal.

A series of frames and beams will be installed in the basement and through the building to replace some of the current load bearing structural masonry walls allowing for excavation of the basement and refurbishment works. Along the perimeter water beams will be installed in order to prop the top of the retaining walls in permanent condition therefore providing spare capacity in terms of both overturning and soil bearing pressure utilization factor.

The following gives a proposed overall view of the installation sequence of the proposed development.

1. Set up site works,
2. Carry out demolitions to normal industry standards and all health and safety regulations.
3. Mobilise a pile rig and install perimeter piling.
4. Cast capping beam and install any required temporary works.
5. Carry out bulk excavation to form basement.
6. Construct superstructure frame.

See appendix A with feasibility stage drawings showing further details of the proposed structural solution.

It is recommended these works are carried out by a suitable experienced contractor familiar with this type of construction and the techniques required producing the desired end result.

9.0 ~ Construction Method:

In addition to the detailed description of the piling sequence given below; reference should be made to the drawing attached in Appendix A which gives a visual representation of the proposed works.

9.1 Traditional piling general concept:

The piling wall will be constructed with 400mm diameter concrete piles which need to be reinforced in the top section to deal with the lateral loading stresses caused by the soil being retained. The piles will be constructed in total within the curtilage of the existing property but will be close enough to the land of the neighbouring properties to invoke the requirements of the party wall regulations and will therefore require discussion and agreement with the adjoining owners.

The walls will be constructed to an approved sequence as shown on the drawings. The walls will need to be back propped by the floors during excavation of the central mass

Piling step by step

Piles are to be installed at different levels and positions around the development and are to be installed in the construction sequence as described above. The detailed description below is applicable to the piles whether they are installed at existing ground level to the rear of the property or from sub 1 level along the party wall.

- i. Prior to bringing the piling rig on site, check with piling contractor the requirements of a working platform and install to their design and specification if required.
- ii. Mark out datum line to determine various surface heights.
- iii. Mark out pile sequence locations as specified by engineer's drawings.
- iv. Following sequencing guidance from engineers' drawings mark out proposed pile position with a pair of reference markers at 1.0m from the pile pin, approximately 90 degrees apart.
- v. Rig operator to set up over pile pin position and position auger relative to reference marks. Directed and checked by banks man.
- vi. The flap at the tip of the auger is closed and secured. Auger tip lowered to ground level and position rechecked. Drilling to commence upon banks man approval.
- vii. Concrete is prepared while piling gang grout up concrete pump, hoses and flight, concrete pump operator to check concrete complies with design mix. Concrete held in agitator.
- viii. Rig operator augers to required design depth. Reference markers are to be used to check pile position during the first few meters of drilling.
- ix. If obstruction encountered, engineer to be notified of pile number and depth. Move rig to next pile position whilst obstruction removal is dealt with. Contractor to be advised of procedure should obstruction not be removable. If necessary, pile bores to be backfilled and made safe. Open excavation to be protected when open.
- x. When design depth reached, the auger is to be kept rotating to allow all spoil in the bore to rise.
- xi. Concrete can be pumped to rig while rig operator monitors instrumentation and adjusts auger rate of withdrawal accordingly.
- xii. Pressure, concrete flow, and over-break to be monitored throughout operation.
- xiii. During the withdrawal the rig operator is to activate the flight cleaner. If an automatic cleaner is not fitted to the rig then the piling gang must clean the flight manually to prevent spoil /arising travelling above head height- this

- will be controlled by the piling foreman who must ensure the auger is not rotating when it is manually cleaned.
- xiv. When auger tip reaches platform level, concrete pumping is stopped.
- xv. Attendant excavator as directed by the banks man clears spoil and concrete slurry from pile heap.
- xvi. Piling operative cleans out pile head by hand. Reinforcement cage is lifted into position either by using service winch on piling rig, attendant excavator or service crane with a short drop chain secured to lifting point on dipping arm: cage to be pushed into pile.
- xvii. Banks man to check position of the cage in the pile, centering where necessary. Reinforcement generally to be installed flush with PPL. Anchor pile reinforcement or threaded bars that project above piling platform to have protective caps.
- xviii. Concrete testing cube samples to be taken as per engineering specification.
- xix. Rig is moved onto next pile in the sequence and positioned as above, with piles installed as per point's v to
- xx. Equipment to be cleaned and maintained as per normal methods.
- xxi. This sequence of piling is to continue until all perimeter piles have been installed.

Effectively the basement is constructed in a top-down method allowing for other works to the development to be undertaken at the same time as the basement dig out.

It is recommended that this base slab is poured in two sections with the base section being a sacrificial slab to prevent any influence on the base slab from water movement's cause by any dewatering operations.

- xxii. Following completion of the piling works, and once all slabs have been complete the perimeter concrete skin/ block work can be installed to smooth the piled wall and finishing works can commence.

9.2 Traditional underpin concept used for excavation:

The retaining walls where required will be formed in reinforced concrete approximately 450mm thick. They will be used to form the external walls of the basement level.

The walls will be constructed in short sections in a hit and miss pattern typical of this type of underpinning, approximately 1.0 m wide and connected with steel dowels in the normal manner for this type of construction. The walls will need to remain back propped until the concrete has sufficiently cured, and the permanent structure will be in place

When forming each cantilevering L-shaped section of wall, an access trench is dug down to the formation level of the base slab. Reinforcement is fixed and the base of the underpin is poured. Following this the wall reinforcement is fixed and the wall shuttered and poured. By using hit and miss sequencing it is possible to work on more than one pin at a time safely up to a maximum of four pins around the perimeter of the building.

9.3 Traditional retaining wall step by step – method 2: retaining wall designed as propped top and bottom in both temporary and permanent conditions

- i. Mark out datum line to determine various surface heights.

- ii. Mark out full plan of section of underpinning marked on attached drawings.
- iii. Begin digging within marked area to depth of 1.5m, using laser meter to determine appropriate depths.
- iv. Install sheeting against the retained earth face if required, and prop with mini-Acrow steel props set at 1m centres.
- v. Install 1m high timber railing guard around pit.
- vi. If site manager deems it appropriate, install timber guard to prevent loose material from falling onto workers whilst digging.
- vii. Starter bars are to be driven into the soil below to engineer's specification and main reinforcement to be installed.
- viii. Pour concrete mix (engineer's specification) into shuttered mould removing mini-Acrow props as concrete fills excavated trench.
- ix. After 48 hours excavate the central soil mass to a level flush with the underside of the newly poured ring wall.
- x. Install waling beams and temporary props across the excavation between the concrete walls at a level below that of the proposed permanent floor structure.
- xi. Begin sequence of underpinning the ring wall in a hit and miss sequence. Begin digging within marked area to depth of 1m, using laser meter to determine appropriate depths. Pin widths can be increased to 1.6m.
- xii. Install sheeting against the retained earth face, planking and strutting segment made up of two sheets of 18mm plywood across all sides of pit, with timber struts of 125mm x 50mm at 500mm centres, reinforced with mini-Acrow steel props set at 1m centres.
- xiii. Install 1m high timber railing guard around pit.
- xiv. If site manager deems it appropriate, install timber guard to prevent loose material from falling onto workers whilst digging.
- xv. Continue digging for further 1m, and then install further planking and strutting segment to same specifications as above.
- xvi. From 2m depths, continue digging in 600mm segments with planking and strutting segment to same specifications as above.
- xvii. Water table should be lowered below level of excavation if necessary. This is to be maintained through the installation of appropriate submersible pumps to remove water locally from the area being excavated. Should ingress become more than a minor flow, stop digging and back fill immediately. Seek advice from engineer.
- xviii. In sequences, set between two other sequences (or adjacent to each other) already completed, install dowel bars 1100mm long and 12mm diameter at 200mm centres as proposed by engineers in completed underpins either side.
- xix. Install shuttering.
- xx. Pour concrete mix (engineer's specification) into shuttered mould.
- xxi. After 48 hours, remove timber shuttering.
- xxii. Begin next sequence as directed in accordance with direction of engineers.
- xxiii. Continue above steps until all the wall sequences have been completed.
- xxiv. Once the shuttering has been removed from the last sequence, the central mass of soil can be removed in sections, with waling beams and diagonal bracing installed progressively above the retaining wall toes and at RC floor slab level to provide sliding and overturning resistance respectively until the installation of the concrete basement floor slab has been completed.
- xxv. Once the basement and floor slabs have both cured, remove propping.

9.4 Temporary Works:

No Structural works will commence without a detailed temporary works design, drawing and calculation package in place including all necessary method statements.

Structural drawings give proposed acceptable details for the excavations and a proposed sequence for the works. By following this sequence, the extent of temporary supporting works can be minimised.

The depth of construction is approximately 4.0m below the existing rear garden ground level. If the basement is constructed as per the suggested method on drawings, then minimal temporary works should be required., although the underpinning in the permanent case is designed as unpropped and will rely on temporary propping for stability: that means permanent structure could be installed before central mass excavation to minimize the temporary works impact. Concerning the stability of soil below the adjoining properties foundations the contractor is advised to have some sheeting available to deal with any unexpected pockets of poor ground.

9.5 Site set up:

Carefully protect and/or remove any internal or external fixtures and fittings affected by the works, terminate/protect services and temporarily divert all active drainage.

The hoarding and conveyor will be positioned at the front of the property and will be subject to any restrictions imposed by the local governing authority. The layout will be agreed prior to the commencement of any works.

Erect plywood hoarding with vertical standards to an overall maximum height of 2.4m and anchored to the ground. The hoarding will have a plywood roof covering and will be fully secure with a lockable door for access. The hoarding will be painted, and the appropriate health and safety notices will be clearly displayed at all times.

Electrically operated lights are to be fitted to the perimeter of the hoarding together with chevron highway reflectors so that it is clearly visible during the hours of darkness.

Provide protection to the public where the conveyor extends over the footpath. Depending on the requirements of the local governing authority. Construct a plywood bulkhead onto the pavement.

Install electrically operated conveyor at basement level to provide mechanised removal of spoil from the working area. The conveyor will be adequately supported and secured to the hoarding using a temporary scaffold structure, will have an incline not greater than 40° and will discharge directly over a metal skip container. The skip container will be used for the temporary storage of excavated material pending its removal from site.

Provide flexible dust sheet protection to the discharge point of the proposed conveyor.

Install temporary electrical and water supplies from Clients permanent connections. These will be retained in a safe condition for the duration of the contract period.

Deliveries, removals, and access for operatives will most likely take place in View Road and through the main front entrance. This entrance will be manned throughout operational hours by a Banksman to ensure construction deliveries do not pose a potential risk to pedestrians.

10.0 ~ Potential Ground Movements to Adjoining Properties:

Anticipated movements are expected to be minimal and suppressed by the stiffness of the above structure. The stability of the existing building, and the adjoining building, has been carefully considered at this stage. The proposed works should have a negligible effect on the stability of the above and surrounding structures.

The category of movement expected for this element of works would be a category 0-1 as per the building damage classification table based on CIRIA C580 guidance (see appendix C). Further analysis of this is being carried out by specialist geotechnical engineers.

The Contractor will be required to monitor ground movements during the works to check the validity of the ground movement analysis and the performance of the temporary works and construction methods. A 'traffic light' system of green, amber, red trigger values will be set with specific Contractor actions set against each trigger values.

Traffic light	Trigger Value (mm)	Contractor Action
Green	<8	No action required.
Amber	8-12	Notify the CA and Party wall Surveyors. Increase frequency of monitoring. Implement contingency measures if movement continues
Red	>12	Notify the CA and the party wall surveyors. Implement measures to cease movement and stop work.

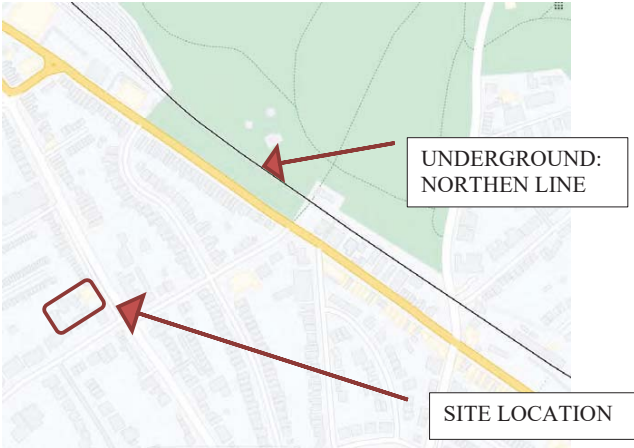
A suitable experienced contractor familiar with propping techniques and sequential operations should be appointed. The designer has considered the risk to the adjoining properties and the proposed foundation system offers an inherently strong foundation to existing load bearing walls.

Monitoring of the renovated property will be carried out during the works to assess possible movements, and the findings will be reported to the adjoining surveyors periodically if necessary.

11.0 ~ Underground Structures & Existing services:

A desk top investigation has been carried out to establish the positions of any underground utilities, main drainage, or infrastructure to ensure no impact on these. Investigations show the positions of services; however, the contractor should carry out works under the assumption that there may be additional unknown service locations, taking all necessary precautions. It is the contractor's responsibility to coordinate any alterations of these incoming services with the appropriate service suppliers. All appropriate measures to be taken for any required alterations.

A preliminary search shows that the closest tube line to the development is the Northern Line, however as the distance is more than 200m away the proposed works will therefore not have any influence on these structures. It will therefore not be necessary to advise London underground asset protection department to check alignments and agreed works will not affect any existing tunnels or access shafts. No other underground structures, tunnels or vaults are expected in the vicinity of the proposed works.



12.0 ~ Surface Water and Sewer Drainage

The existing drainage and sewage connections will be maintained. It may be necessary to locally carry out some works to the surface and foul water drainage within the site. These works will not impact in any way on the neighbouring properties.

The proposed works will not alter the current status of the property as it will remain as a care home. Therefore, the volume of both foul and surface water that is discharged into the mains sewers is not expected to be affected. A detailed analysis at design stage will be carried out to ensure that existing discharge rates to the main sewers are not increased beyond existing levels.

13.0 ~ Excavation of soil:

The soil will be excavated and removed using small excavators/conveyor belts up to ground level and transferred to skips/lorries as per a suitable traffic management plan. Public rights of way will be maintained where necessary and the footpaths and street adjacent to the site will be cleaned each evening. The frequency of vehicle movements will be confirmed by the chosen contractor and approved by the council before works commence.

14.0 ~ Waterproofing and Ground Water:

Concrete elements where practically possible will be design to BS8007 in minimise water ingress. In addition to this a drainage system should be installed in accordance with BS8102 to provide required drainage in the event of any water ingress through the concrete.

A sump pump may be required to remove any water ingress through the concrete structure and this will need to be designed by a specialist drainage engineer.

15.0 ~ Conclusion:

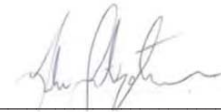
We do not anticipate any significant damage to the adjoining structures or public road as a result of these works if they are carried out in the approved manner described above by competent contractors. There should not be any impact on the integrity of the adjoining structures. Due to the soil conditions and the suggested foundation solution; we do not anticipate any significant settlement following the excavation.

There will be no slope stability issues because of the development as the ground is generally level across the site. The proposed structure is a piled solution; this form of construction will provide adequate support to the existing structure, and we do not anticipate any adverse effects on the surrounding properties. Excessive temporary works are not deemed necessary for the proposed works as the structure has been developed to allow for all loading which may occur during both the construction phases and the permanent load cases. A description of the propping and full-face support is given in section 9. The contractor selected for the works should have suitable experience carrying out this type of work and will be required to be a member of the considerate constructor scheme.

The existing drainage where possible will be retained and reused. The main connection to Thames's water network will be retained and alterations will be required within the curtilage of the project only.

There are trees of worth to be considered surrounding the development but consideration of the protection of the root zone has been undertaken and we consider that these trees will remain unaffected by the works.

It is considered that the proposed works can be carried out within a safe and cost-effective manner by a suitable contractor.



John Fitzpatrick **B (Struct) Eng, CEng, MIEI, MICE**
Director
Elite Designers Ltd.

GENERAL NOTES:

- TO BE READ IN CONJUNCTION WITH ALL RELEVANT METHOD STATEMENTS & SPECIFICATIONS ISSUED FOR THE JOB.
- ALL DIMENSIONS ARE IN mm U.N.O.
- NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS, WORK TO FIGURED DIMENSIONS ONLY. FOR DETAILS OF SETTING OUT REFER TO SETTING OUT DRAWINGS.
- ALL ELEVATIONS ON PLANS ARE WITH RESPECT TO ARBITRARY DATUM TO BE ESTABLISHED ON SITE.
- ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR AND ANY DISCREPANCIES BROUGHT TO THE ENGINEER'S ATTENTION.
- REASONABLE OPPORTUNITY TO BE GIVEN TO ELITE DESIGNER LTD TO INSPECT ALL STRUCTURAL WORKS BEFORE COVERING UP.
- ALL CONCRETE WORKS TO COMPLY WITH THE NATIONAL STRUCTURAL CONCRETE SPECIFICATION FOR BUILDING CONSTRUCTION.
- ALL STEELWORK TO BE IN ACCORDANCE WITH THE NATIONAL STRUCTURAL STEELWORK SPECIFICATION (N.S.S.S.)
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL BUILDING REGULATIONS & B.S STANDARDS.

FOUNDATIONS:

- ALL CONCRETE SHALL BE GRADE C40N20, UNLESS NOTED OTHERWISE.
- ALL EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED AND APPROVED BY ELITE DESIGNERS LTD PRIOR TO CONCRETING.
- EXISTING FOUNDATIONS SHALL NOT BE UNDERMINED OR INTERFERED WITH IN ANY MANNER AND EVERY PRECAUTION SHALL BE TAKEN TO ENSURE THAT THE FORMATION LEVEL REMAINS DRY, FORMATION LEVELS AS SHOWN MAY VARY DEPENDING ON CONDITIONS ENCOUNTERED ON SITE.
- CONTRACTOR TO REPORT IMMEDIATELY TO THE ENGINEER IF IT IS DISCOVERED THAT THE SUBSOIL CONDITION IS POORER THAN THE EXPECTED SOIL CONDITION ESTIMATED BASED ON SOIL INVESTIGATION REPORT.
- ALL MATERIALS & WORKMANSHIP TO CONFORM TO BS 8002.
- WHERE DEEMED NECESSARY BY THE ENGINEER ALL FOUNDATIONS TO BE TAKEN DOWN WITH MASS CONCRETE (GRADE C20) AS FAR AS GROUND WITH ADEQUATE BEARING CAPACITY.
- ALL WALLS TO BE CENTERED ON FOUNDATIONS, RISING WALLS TO GROUND FLOOR TO BE CONSTRUCTED IN SOLID CONCRETE BLOCK WORK UP TO DPC LEVEL, THEREAFTER, AS SHOWN ON PLAN.

PILES:

- PILES SHALL BE DESIGNED BY AN APPROVED PILE DESIGNER IN ACCORDANCE WITH BS 8110 & THE I.C.E SPECIFICATION FOR PILING AND EMBEDDED WALLS AND FORWARDED TO ELITE DESIGNERS LTD PRIOR TO WORK COMMENCING.
- PILES SHALL BE DESIGN AS UN-PROPPED DURING CONSTRUCTION.
- PILES TO HAVE LOAD CAPACITY AS INSTRUCTED SEPERATELY BY ELITE DESIGNERS LTD. CONTRACTOR SHALL ENSURE THAT ALL ADJACENT LIVE SERVICES HAVE BEEN LOCATED.
- PILE TESTING, INTEGRITY TESTING 100%, DYNAMIC TEST 5 NO PILES IN ACCORDANCE WITH I.C.E. SPECIFICATION.
- PILE LOADING TO BE CONFIRMED. FINAL PILE LAYOUT TO BE DETERMINED SUBJECT TO FULL SITE INVESTIGATION.

REINFORCEMENT ESTIMATES:

- RC PILE CAPS ALLOW (60% T25, 25% T16 & 15% Links)
- RC PAD FOOTINGS ALLOW (95% T 16 & 5% Links)
- RC GROUND BEAMS ALLOW (70% T25, 10% T12 & 20% Links)
- RC GROUND BEARING SLABS ALLOW (100% Mesh)
- RC STAIRS & LANDINGS (60% T16, 35% T12 & 10 % Links)
- RC WALLS (80% T16 & 20% T12)
- (80% T16 & 20% T12)

REINFORCED CONCRETE NOTES:

- CONCRETE ABOVE SUB STRUCTURE SHALL BE GRADE C35N20 UNLESS NOTED OTHERWISE.
- COVER TO REINFORCEMENT SHALL BE 35MM UNLESS NOTED OTHERWISE.
- ALL REINFORCEMENT SHALL BE HIGH TENSILE DEFORMED TYPE 2 BARS
- ALL STEEL MESH SHALL HAVE A HIGH YIELD TENSILE STRENGTH OF 485
- MINIMUM OF 400mm LAPS SHALL BE PROVIDED IN MESH REINFORCEMENT.

- ALL REINFORCEMENT TO BE INSPECTED AND APPROVED BY ELITE DESIGNERS LTD PRIOR TO POURING OF CONCRETE.
- CONCRETING WORKS SHALL NOT BE CARRIED OUT IF THE AIR TEMPERATURE IS LOWER THAN 2 DEGREES OR IF FROST IS EXPECTED.
- BEFORE PLACING STRUCTURAL CONCRETE ON HARDCORE OR OTHER ABSORBENT STRATA, LAY DAMP PROOF MEMBRANE ON SAND BLINDING. ENSURE MINIMUM LAPS AND SEAL TO MANUFACTURE'S REQUIREMENTS. ADEQUATELY PROTECT MEMBRANE FROM PUNCTURING, AND CAREFULLY REPAIR ANY PUNCTURES WHICH DO OCCUR.
- UNLESS AN ARCHITECTURAL SCREED IS TO BE PROVIDED, ALL FLOOR SLABS TO RECEIVE POWER TROWELED FINISH, APPLYING SUFFICIENT PRESSURE TO CLOSE THE SURFACE, TO GIVE A UNIFORM SMOOTH FINISH FREE FROM TROWEL MARKS AND OTHER BLEMISHES. AFTER CURING, APPLY AN APPROVED RESIN SEALER TO CONCRETE WEARING SURFACE FLOORS IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS. ALL SLABS SHALL BE WET CURED FOR AT LEAST 7 DAYS AFTER CASTING, SUBMIT CURING DETAILS FOR REVIEW AND ACCEPTANCE.
- OF THE SIDES IS NOT TO EXCEED 1:1.5. JOINTS ARE TO BE ARRANGED SO AS TO MINIMISE THE OCCURRENCE OF SHRINKAGE CRACKS.
- SUDDEN IRREGULARITIES IN CONCRETE FINISH ARE NOT PERMITTED. THE VARIATION IN SURFACE FINISH IS TO BE NOT MORE THAN 5mm UNDER A 3m STRAIGHTEDGE AND/OR 2mm UNDER A 1m STRAIGHTEDGE.
- ALL PRECAST CONCRETE TO BE DESIGNED AND DETAILED BY PRECAST SUPPLIER. DESIGN CALCULATIONS AND DRAWINGS TO BE SUBMITTED FOR REVIEW AND ACCEPTANCE BY ENGINEER PRIOR TO FABRICATION.

STEELWORK:

- ALL STEELWORK TO BE AT LEAST GRADE S355 TO B.S. EN 10025 U.N.O
- ALL INTERNAL BOLTS TO BE GRADE 8.8 TO B.S. 3692 GALVANISED TO B.S. 729 OR B.S.4921(43 MICRONS). ALL EXTERNAL BOLTS, NUTS AND WASHERS TO BE STAINLESS STEEL WITH EPDM WASHERS.
- CORROSION PROTECTION: ALL INTERNAL STEEL WORK TO BE SHOT BLASTED TO SWEDISH STANDARD SA2.5 AND PAINTED WITH TWO COATS OF ZINC PHOSPHATE PRIMER TO A MINIMUM DRY FILM THICKNESS OF 75 MICRONS. ALL EXTERNAL STEELWORK TO BE SHOT BLASTED TO SWEDISH STANDARD SA2.5 AND HOT DIP GALVANISED TO 140 MICRONS.
- ALL STEELWORK BELOW GROUND LEVEL SHALL BE ENCASED IN CONCRETE.
- ALL WELDS SHALL BE 6mm FULL PROFILE FILLET WELDS UNLESS NOTED OTHERWISE.
- STEEL BEAMS SUPPORTED BY MASONRY WALLS SHOULD BEAR ONTO CONCRETE PAD STONE AS SHOWN.
- FIREPROOFING TO CONSIST OF INTUMESCENT PAINT APPLIED BY SPECIALISED CONTRACTOR TO BS 476 WITH 60MIN FIRE RATING AND TO BE COMPATABLE WITH CORRISION PROTECTION OF STEEL.

LINTELS:

- ALL LINTELS TO INTERNAL BLOCK WORK TO HAVE MINIMUM END BEARING OF 200mm.
- ALL LINTELS TO BE PRECAST CONCRETE LINTELS OR STAINLESS STEEL TYPE WITH CAPACITIES AS FOLLOWS:
 - FOR CLEAR SPANS UP TO 1200mm USE 100 X 65mm dp LINTELS WITH CAPACITY OF 1.2 Kn/m, 140 X 65mm dp LINTELS WITH CAPACITY OF 1.7 Kn/m & 215 X 65mm dp LINTELS WITH CAPACITY OF 2.5 Kn/m.
 - FOR CLEAR SPANS UP TO 1800mm USE 100 X 140mm dp LINTELS WITH CAPACITY OF 1.2 Kn/m, 140 X 140mm dp LINTELS WITH CAPACITY OF 1.7 Kn/m & 215 X 140mm dp LINTELS WITH CAPACITY OF 2.5 Kn/m.

MASONRY:

- ALL BLOCK WORK WALLS TO BE AGGREGATE CONCRETE BLOCKS OF
- ALL MORTAR TO BE TYPE (iii) TO BS5628-1 : 2005.
- WALL TIES TO BE EITHER POLYPROPYLENE OR STAINLESS STEEL VERTICAL TWIST TYPE TO BS 845, WITH MINIMUM EMBEDDMENT OF 50mm IN EACH LEAF. TIES TO BE SPACED @ 450mm CENTRES VERTICALLY AND 750mm CENTRES HORIZONTALLY. ADDITIONAL TIES TO BE PROVIDED WITHIN 225mm OF ALL OPENINGS AND MOVEMENT JOINTS @ 225mm CENTRES VERTICALLY.
- ALL BLOCK WORK WALLS TO BE TIED TO STEELWORK STANCHIONS @ 225mm CENTRES VERTICALLY USING PROPRIETARY STAINLESS STEEL TIES SECURED TO COLUMNS SUCH AS ANCON BRICLOK OR SIMILAR APPROVED.
- MOVEMENT JOINTS TO BE PROVIDED IN MASONRY WALLS AS INDICATED ON PLAN OR AS FOLLOWS: BRICK WORK = 12M CENTRES, BLOCK WORK = 8M CENTRES.
- ALL DPC's TO BE LDPE DPC TO BS 6515.
- FACING BRICKS FROM THE IBSTOCK BRICK RANGE WITH RECESSED POINTING. COLOR TO CLIENTS SPECIFICATION.

LINTELS:

ALTERATIONS ARE REQUIRED TO BOTH SOLID BRICK WALLS AND CAVITY WALLS. THE FOLLOWING LINTELS ARE TO BE USED FOR DIFFERENT WIDTH AND THICKNESS OF WALLS

SOLID WALLS

65X100	
100X100	
215X100	
2NO. 65X100	
2NO. 100X100	
2NO. 215X100	
2NO. 65X100	
2NO. 100X100	
2NO. 215X100	

CAVITY WALLS

300MM THICK WALLS UP TO 1M WIDE OPENING CATNIC LINTEL CG	90/100.
300MM THICK WALLS UP TO 1.5M WIDE OPENING CATNIC LINTEL CG	90/100.
300MM THICK WALLS UP TO 2.5M WIDE OPENING CATNIC LINTEL CH	90/100.

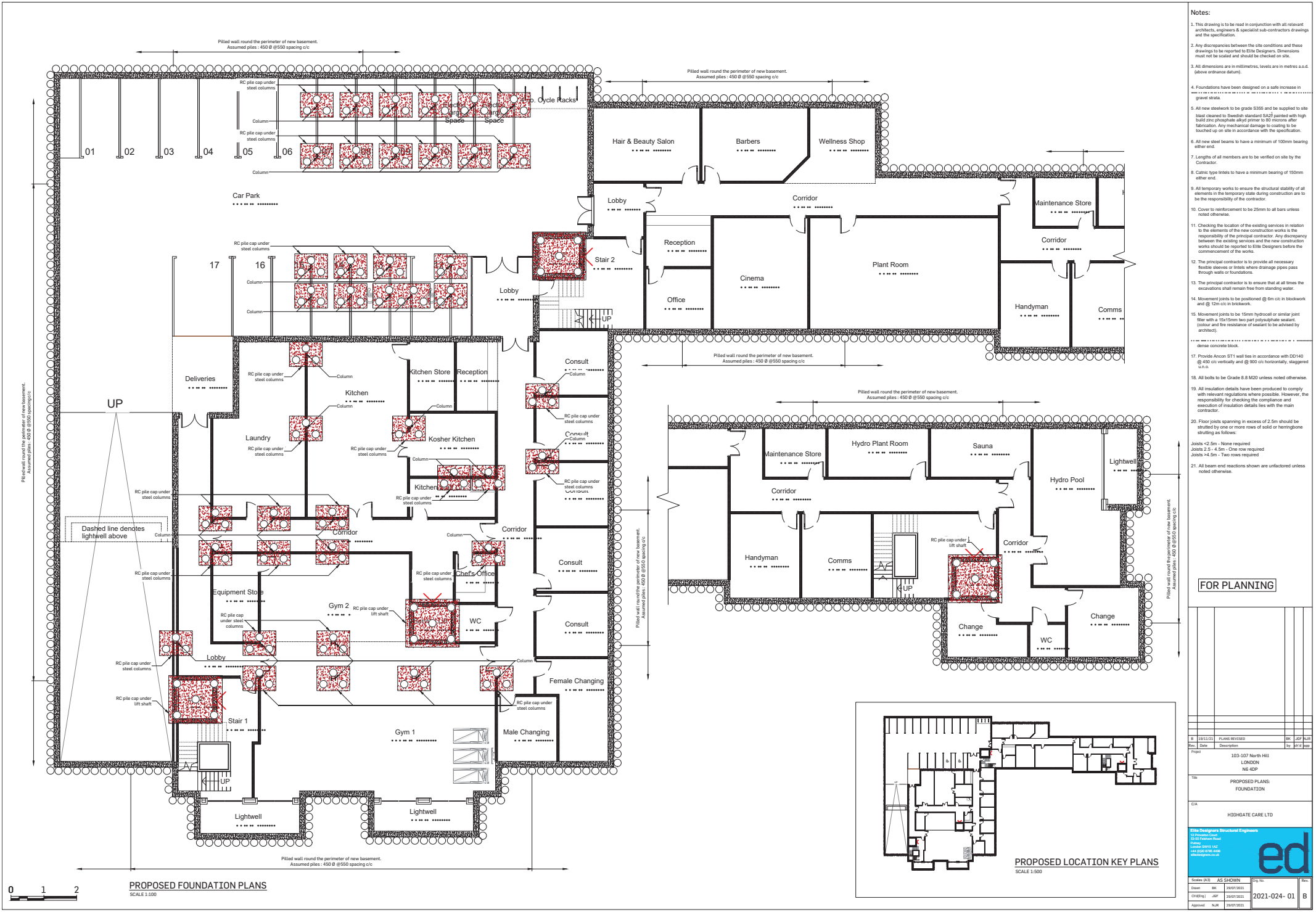
LINTELS ARE NOT TO BE USED OVER OPENING WHICH ARE CREATED UNDER POINT LOADS FROM EXISTING OR PROPOSED BEAMS. ONLY TIMBER FLOOR CAN BE SUPPORTED WITH THE ZONE OF INFLUENCE BY THESE LINTELS. ENGINEER IS TO BE INFORMED FOR LINTEL DESIGN IN THESE CASES.

Notes:

- This drawing is to be read in conjunction with all relevant architect's, engineers & specialist sub-contractor's drawings and the specification.
- Any discrepancies between the site conditions and these drawings to be reported to Elite Designers. Dimensions must not be scaled and should be checked on site.
- All dimensions are in millimetres, levels are in metres a.o.d. (above Ordnance datum).

FOR PLANNING

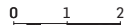
Rev.	Date	Description	by	chk'd	app
		Project			
		103-107 North Hill LONDON NE 40P			
		Title			
		GENERAL NOTES			
		CIA			
		HIGHGATE CARE LTD			
		Elite Designers Structural Engineers 21 Devon Road London, SE11 1JZ Phone: 0203 3073 162 Fax: 0203 3702 400 info@elitedesigners.co.uk			
		ed			
Scale	(A3)	AS SHOWN	Orig. Scale		Rev.
Created	AK	2020/03/01			
Checked	JGP	2020/03/01			
Approved	NLR	2020/03/01			
				2021-024- 00	A



- Notes:**
1. This drawing is to be read in conjunction with all relevant architects, engineers & specialist sub-contractors drawings and the specification.
 2. Any discrepancies between the site conditions and these drawings to be reported to Ellis Designers. Dimensions must not be scaled and should be checked on site.
 3. All dimensions are in millimetres, levels are in metres a.o.d. (above entrance datum).
 4. Foundations have been designed on a safe increase in gravel strata.
 5. All new steelwork to be grade S355 and be supplied to site blast cleaned to Swedish standard S427 painted with high build zinc phosphates after primer to BS 1200 after fabrication. Any mechanical damage to coating to be touched up on site in accordance with the specification.
 6. All new steel beams to have a minimum of 100mm bearing either end.
 7. Lengths of all members are to be verified on site by the Contractor.
 8. Cable type lints to have a minimum bearing of 150mm either end.
 9. All temporary works to ensure the structural stability of all elements in the temporary state during construction are to be the responsibility of the contractor.
 10. Cover to reinforcement to be 25mm to all bars unless noted otherwise.
 11. Checking the location of the existing services in relation to the elements of the new construction works is the responsibility of the principal contractor. Any discrepancy between the existing services and the new construction works should be reported to Ellis Designers before the commencement of the works.
 12. The principal contractor is to provide all necessary flexible sleeves or fittings where drainage pipes pass through walls or foundations.
 13. The principal contractor is to ensure that at all times the excavations shall remain free from standing water.
 14. Movement joints to be positioned @ 6m c/c in brickwork and @ 12m c/c in blockwork.
 15. Movement joints to be 15mm hydrocoll or similar joint. Water with a 1000mm two part polyurethane sealant. (colour and fire resistance of sealant to be advised by architect).
 16. Provide Ancon ST1 wall ties in accordance with DD140 @ 400 c/c vertically and @ 900 c/c horizontally, staggered 180°.
 17. All bolts to be Grade 8.8 M20 unless noted otherwise.
 18. All insulation details have been produced to comply with relevant regulations where possible. However, the responsibility for checking the compliance and execution of insulation details lies with the main contractor.
 19. Floor joists spanning in excess of 2.5m should be shored by one or more rows of solid or thermopneumatic strutting as follows:
Joists <2.5m - None required
Joists 2.5 - 4.5m - One row required
Joists >4.5m - Two rows required
 20. All beam end reactions shown are unfactored unless noted otherwise.

FOR PLANNING				
Rev.	Date	Description	By	App'd
1	18/11/23	PLANS REVISED	DM	JGP
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[illegible]



PROPOSED LOCATION KEY PLANS

- FOR PLANNING**

[illegible]

KEY:
Wall structure and thickness

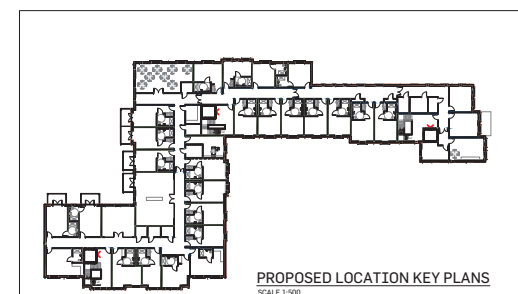
- RC wall
- Brickwork
- 100mm Blockwork
- 140mm Blockwork
- 215mm Blockwork
- RC Pile cap



PROPOSED FIRST FLOOR PLANS
SCALE 1:100

- Notes:
- This drawing is to be read in conjunction with all relevant architects, engineers & specialist sub-contractors drawings and the specification.
 - Any discrepancies between the site conditions and these drawings to be reported to Elite Designers. Dimensions must not be scaled and should be checked on site.
 - All dimensions are in millimetres, levels are in metres a.o.d. (above entrance datum).
 - Foundations have been designed on a safe increase in gravel strata.
 - All new steelwork to be grade S355 and be supplied to site blast cleaned to Swedish standard SA2P painted with high build zinc phosphate primer to RZ recovery after fabrication. Any mechanical damage to coating to be touched up on site in accordance with the specification.
 - All new steel beams to have a minimum of 100mm bearing either end.
 - Lengths of all members are to be verified on site by the Contractor.
 - Cable type limits to have a minimum bearing of 150mm either end.
 - All temporary works to ensure the structural stability of all elements in the temporary state during construction are to be the responsibility of the contractor.
 - Cover to reinforcement to be 25mm to all bars unless noted otherwise.
 - Checking the location of the existing services in relation to the elements of the new construction works is the responsibility of the principal contractor. Any discrepancy between the existing services and the new construction works should be reported to Elite Designers before the commencement of the works.
 - The principal contractor is to provide all necessary feasible sleeves or fittings where drainage pipes pass through walls or foundations.
 - The principal contractor is to ensure that at all times the excavations shall remain free from standing water.
 - Movement joints to be positioned @ 6m c/c in blockwork and @ 12m c/c in brickwork.
 - Movement joints to be 15mm hydrocoll or similar joint. Water with a 1000mm test pan polyurethane sealant. (colour and fire resistance of sealant to be advised by architect).
 - Provide Ancon ST1 wall ties in accordance with DD140 @ 400 c/c vertically and @ 900 c/c horizontally, staggered 180°.
 - All bolts to be Grade 8.8 M20 unless noted otherwise.
 - All insulation details have been produced to comply with relevant regulations where possible. However, the responsibility for checking the compliance and execution of insulation details lies with the main contractor.
 - Floor joists spanning in excess of 2.5m should be stiffened by one or more rows of solid or hermipone strutting as follows:
Joists <2.5m - None required
Joists 2.5 - 4.5m - One row required
Joists >4.5m - Two rows required
 - All beam end reactions shown are unfactored unless noted otherwise.

FOR PLANNING



PROPOSED LOCATION KEY PLANS
SCALE 1:500



B	18/11/23	PLANS REVISED			SM	JGP NLR
Rev	Date	Description			By	App'd
Project						
103-107 North Hill LONDON NE 4DP						
Title						
PROPOSED PLANS: FIRST FLOOR						
Client						
HIDGATE CARE LTD						
Elite Designers Structural Engineers 21 Devon Court Purley Surrey CR8 3PE Tel: 020 8770 0000 www.elitedesigners.co.uk						
ed						
Scale: A3	AS SHOWN			Drawn by	Rev	
Drawn	SM	23/01/2023				
Checked by	JGP	23/01/2023			2021-024-04	
Approved	NLR	23/01/2023			B	

- Notes:**
- This drawing is to be read in conjunction with all relevant architects, engineers & specialist sub-contractors drawings and the specification.
 - Any discrepancies between the site conditions and these drawings to be reported to Elite Designers. Dimensions must not be scaled and should be checked on site.
 - All dimensions are in millimetres, levels are in metres a.o.d. (above entrance datum).
 - Foundations have been designed on a safe increase in gravel strata.
 - All new steelwork to be grade S355 and be supplied to site blast cleaned to Swedish standard SA2½ painted with high build zinc phosphate abrasion primer to 80 microns after fabrication. Any mechanical damage to coating to be touched up on site in accordance with the specification.
 - All new steel beams to have a minimum of 100mm bearing either end.
 - Lengths of all members are to be verified on site by the Contractor.
 - Cable type ladders to have a minimum bearing of 150mm either end.
 - All temporary works to ensure the structural stability of all elements in the temporary state during construction are to be the responsibility of the contractor.
 - Cover to reinforcement to be 25mm to all bars unless noted otherwise.
 - Checking the location of the existing services in relation to the elements of the new construction works is the responsibility of the principal contractor. Any discrepancy between the existing services and the new construction works should be reported to Elite Designers before the commencement of the works.
 - The principal contractor is to provide all necessary feasible sleeves or fittings where drainage pipes pass through walls or foundations.
 - The principal contractor is to ensure that at all times the excavations shall remain free from standing water.
 - Movement joints to be positioned @ 6m c/c in blockwork and @ 12m c/c in brickwork.
 - Movement joints to be 15mm hydrocoll or similar joint. Wall with a 150mm two part polyurethane sealant. (colour and fire resistance of sealant to be advised by architect).
 - Provide Ancon ST1 wall ties in accordance with DD140 @ 450 c/c vertically and @ 900 c/c horizontally, staggered 180°.
 - All bolts to be Grade 8.8 M20 unless noted otherwise.
 - All insulation details have been produced to comply with relevant regulations where possible. However, the responsibility for checking the compliance and execution of insulation details lies with the main contractor.
 - Floor joists spanning in excess of 2.5m should be stiffened by one or more rows of solid or hermigone strutting as follows:
Joists <2.5m - None required
Joists 2.5 - 4.5m - One row required
Joists >4.5m - Two rows required
 - All beam end reactions shown are unfactored unless noted otherwise.

FOR PLANNING

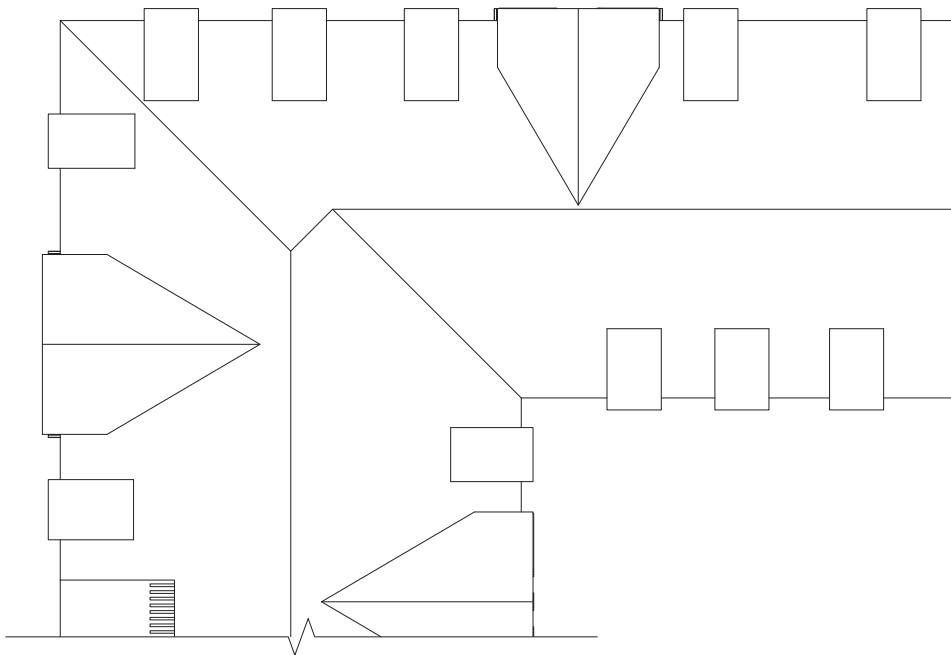
Rev		Date	Description	By	App'd	NLR
B	18/11/23		PLANS REVISED			
Project						
103-107 North Hill						
LONDON						
NE ADP						
Title						
PROPOSED PLANS:						
SECOND FLOOR						
Client						
HIDGATE CARE LTD						
Elite Designers Structural Engineers						
23 Devon Court,						
London, SE11 5LQ						
Phone: 0203 3075 142						
Fax: 0203 3075 143						
Email: info@elitedesigners.co.uk						
Scale	(A3)	AS SHOWN	Orig. No.			
Drawn	AK	23/01/2023				
Checked	AK	23/01/2023				
Approved	NLR	23/01/2023				
2021-024-05				B		



PROPOSED SECOND FLOOR PLANS
SCALE 1:100

PROPOSED LOCATION KEY PLANS
SCALE 1:500

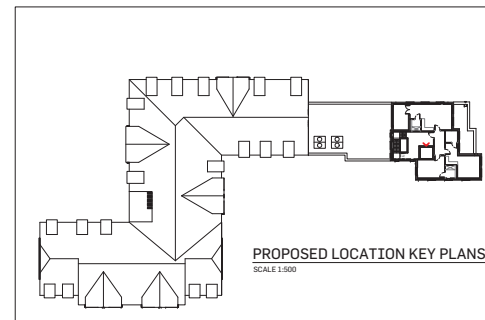




Flat Roof Below
(M&E Equipment TBC)

- KEY:
Wall structure and thickness
- RC wall
 - Brickwork
 - 100mm Blockwork
 - 140mm Blockwork
 - 215mm Blockwork
 - RC Pile cap

PROPOSED THIRD FLOOR PLANS
SCALE 1:100



PROPOSED LOCATION KEY PLANS
SCALE 1:500

- Notes:
- This drawing is to be read in conjunction with all relevant architects, engineers & specialist sub-contractors drawings and the specification.
 - Any discrepancies between the site conditions and these drawings to be reported to Elite Designers. Dimensions must not be scaled and should be checked on site.
 - All dimensions are in millimetres, levels are in metres a.o.d. (above entrance datum).
 - Foundations have been designed on a safe increase in gravel strata.
 - All new steelwork to be grade S355 and be supplied to site blast cleaned to Swedish standard S427 painted with high build zinc phosphate abraded primer to R0 receive after fabrication. Any mechanical damage to coating to be touched up on site in accordance with the specification.
 - All new steel beams to have a minimum of 100mm bearing either end.
 - Lengths of all members are to be verified on site by the Contractor.
 - Cable type ladders to have a minimum bearing of 150mm either end.
 - All temporary works to ensure the structural stability of all elements in the temporary state during construction are to be the responsibility of the contractor.
 - Cover to reinforcement to be 25mm to all bars unless noted otherwise.
 - Checking the location of the existing services in relation to the elements of the new construction works is the responsibility of the principal contractor. Any discrepancy between the existing services and the new construction works should be reported to Elite Designers before the commencement of the works.
 - The principal contractor is to provide all necessary flexible sleeves or fittings where drainage pipes pass through walls or foundations.
 - The principal contractor is to ensure that at all times the excavations shall remain free from standing water.
 - Movement joints to be positioned @ 6m c/c in blockwork and @ 12m c/c in brickwork.
 - Movement joints to be 15mm hydrocoll or similar joint. Fill with a 150/15mm two part polyurethane sealant. (colour and fire resistance of sealant to be advised by architect).
 - Provide Ancon ST1 wall ties in accordance with DD140 @ 400 c/c vertically and @ 900 c/c horizontally, staggered 180°.
 - All bolts to be Grade 8.8 M20 unless noted otherwise.
 - All insulation details have been produced to comply with relevant regulations where possible. However, the responsibility for checking the compliance and execution of insulation details lies with the main contractor.
 - Floor joists spanning in excess of 2.5m should be supported by one or more rows of solid or herringbone strutting as follows:
Joists <2.5m - None required
Joists 2.5 - 4.5m - One row required
Joists >4.5m - Two rows required
 - All beam end reactions shown are unfactored unless noted otherwise.

FOR PLANNING

 Elite Designers 3 Princeton Court Felsham Road SW15 1AZ		Project 103 to 107 North Hill		Job Ref. 2021-024	
		Section Preliminary Planning/Feasibility		Sheet no./rev. 1	
		Calc. by JGF	Date 17/08/2021	Chk'd by	Date
				App'd by	Date

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 Elite Designers 3 Princeton Court Felsham Road SW15 1AZ		Project 103 to 107 North Hill		Job Ref. 2021-024	
		Section Preliminary Planning/Feasibility		Sheet no./rev. 2	
		Calc. by JGF	Date 17/08/2021	Chk'd by	Date
				App'd by	Date

PILE ANALYSIS (EN1997)

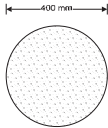
PILE ANALYSIS

In accordance with EN 1997-1:2004 incorporating Corrigendum dated February 2009 and the UK national annex

Tedds calculation version 1.0.03

Design summary

Description	Unit	Actual	Allowable	Utilisation	Result
Axial, compression	kN	100	934.6	0.107	PASS
Axial, tension	kN	25	740.5	0.034	PASS



Pile details

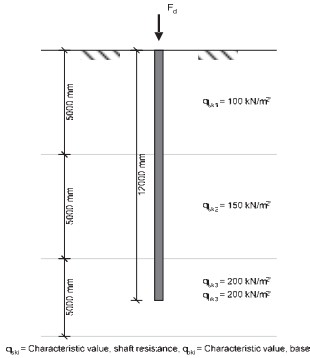
Installation method;	Drilled
Shape;	400 mm diameter
Length;	L = 12000 mm

Material details

Material;	Concrete
Concrete strength class;	C25/30
Part. factor, concrete (EN1992-1-1 cl. 2.4.2.4(1));	$\gamma_c = 1.50$
Coefficient α_{cc} (EN1992-1-1 cl. 3.1.6(1));	$\alpha_{cc} = 0.85$
Characteristic compression cylinder strength;	$f_{ck} = 25 \text{ N/mm}^2$
Design comp. strength (EN1992-1-1 cl. 3.1.6(1));	$f_{cd} = \alpha_{cc} \times f_{ck} / \gamma_c = 14.2 \text{ N/mm}^2$
Mean value of cyl. strength (EN1992-1-1 Table 3.1);	$f_{cm} = f_{ck} + 8 \text{ MPa} = 33.0 \text{ N/mm}^2$
Secant mod. of elasticity (EN1992-1-1 Table 3.1);	$E_{cm} = 22000 \text{ MPa} \times (f_{cm} / 10 \text{ MPa})^{0.3} = 31.5 \text{ kN/mm}^2$
Modulus of elasticity;	$E = E_{cm} = 31.5 \text{ kN/mm}^2$

Geometric properties

Pile section depth;	$h = 400 \text{ mm}$
Bearing area;	$A_{bearing} = \pi \times h^2 / 4 = 0.126 \text{ m}^2$
Pile perimeter;	$Perim_{pile} = \pi \times h = 1.257 \text{ m}$
Moment of inertia;	$I = \pi \times h^4 / 64 = 125664 \text{ cm}^4$



Stratum details

Stratum	Geomaterial	Thickness, $t_{stratal}$ (mm)	Characteristic value, base, q_{kbl} (kN/m²)	Characteristic value, shaft, q_{kbl} (kN/m²)
1	Cohesionless	5000	-	100
2	Cohesionless	5000	-	150
3	Cohesionless	5000	200	200

Action details

Characteristic perm. unfav. action, compression;	$G_{c,k,unfav} = 100 \text{ kN}$
Characteristic perm. fav. action, compression;	$G_{c,k,fav} = 0 \text{ kN}$
Characteristic variable unfav. action, compression;	$Q_{c,k} = 0 \text{ kN}$
Characteristic perm. unfav. action, tension;	$G_{t,k,unfav} = 25 \text{ kN}$
Characteristic perm. fav. action, tension;	$G_{t,k,fav} = 0 \text{ kN}$
Characteristic variable unfav. action, tension;	$Q_{t,k} = 0 \text{ kN}$