Contractors Management Plan

Ferncroft Avenue

Highgate

London

NW3 7PH

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Appendix 1: Site Conditions

1.0 Introduction

1.1 Project Overview

The development proposals involve the refurbishment of the existing house (3 storey with garden level) and the construction of small rear extension, side garage, attic conversion and new basement level.

It is the aim of Mr & Mrs Torns that their refurbished family home should have a minimum environmental impact during construction and when occupied. This philosophy has been a major factor in the selection of the materials and methodology for the construction of the extensions.

The purpose of the CMP is to ensure that the impact of demolition and construction work on the local residents and the immediate highway network is minimized. The CMP provides detail of all measures that are considered appropriate at this time; however, the CMP is a live document that will evolve as necessary to address issues that may be identified through ongoing consultation with local residents as the project progresses.

The Contractor's Project Manager will be responsible for implementing measures contained in the CMP and will be the point of contact for local residents during the construction process. The Contractor's Project Managers name, telephone number and email address will be added to the CMP once he/she has been appointed.

Prior to the appointment of the contractor the implementation of any necessary measures will be managed by the Client's Project Manager (CN Associates), 21st Architecture and the site owner, Mr Torns.

Project Manager: Henry Nash, CN Associates, 3 Barrett St, London, W1U 1AY.

T: 020 7935 2932

The Client's Project Manager will ensure that the contractor has public liability insurance cover in place prior to starting on site. This document has been prepared with input from structural and civil engineers, 21st Architects (project architects), and Mr & Mrs Torns themselves to ensure that the CMP can comprehensively address all issues that may arise during demolition and the construction of works.

2.0 Project Background

2.1 Site Description

Mr. and Mrs. Torns have carried out no previous building works on the property besides approved Tree alterations. The house was however reverted back to its original single dwelling layout from being split into two flats in 2013.

Planning References: 2014/0175/T; 2013/4984T; 2013/2954/T; 2012/0810/T; 2011/3851/T 2006/1178/T; 2005/4178/T; TC9806718 (1998); TC9607112 (1996).

31491 (1980): Retention of a garden wall and gate.

2013/0122/P: Conversion of 2 flats into a single dwelling house.

2.2 Pre-Application Engagement

It is understood that as part of the scheme development, Mr. and Mrs. Torns and their original project team have carried out extensive pre-application engagement with Camden LPA which lead to the approval of the proposed scheme under Planning Reference F/04133/11. This process included public notification to which comments would have been acknowledged and dealt with accordingly to Camden LPA's approval.

3.0 Proposed Site Works

3.1 Programme & Construction Methodology

As the Construction Contract has yet to be awarded, the programme below provides an indication of the duration of each phase of the works. The programme will be updated with the dates envisaged for each phase of works once planning permission has been granted, a contractor has been appointed and the date for works to start on site has been determined.

It is currently anticipated that the overall construction period will be 44 weeks with a further period of 4 weeks for installation of furnishings, decant and occupation.

Work Phase	Duration	Typical labour levels (excluding management & supervision.)
Site set up and establishment	1 wks	
Demolition & Reclamation	1 wks	
Basement Excavation	12 wks	
Piles, Foundations & Basement Const'	10 wks	
Superstructure amendments	4 wks	
Envelope	6 wks	
Internal finishes	3 wks	
Landscaping (overlapping with internals)	4 wks	
Commissioning final fit out	3 wks	

Overall works	44 wks	

3.2 Demolition

The existing building comprises predominantly of a brick and white rendered façade, with flat red clay tiled pitched roofs. The existing foundations are strip footing with a timber suspended ground floor. Landscaping is constructed in brick with render and brick paving. There is an existing coal cellar at basement level to be underpinned and removed as part of the basement excavation. The existing dining room at ground floor will be demolished and rebuilt over the new basement with a new flat roof and walk on rooflight.

In order to minimize the environmental impact of the demolition of these elements the existing bricks and render will be carefully dismantled and crushed on site for re-use as hardcore to the new construction. All roof tiles will be carefully removed and reused in the new roofs with new matching tiles. Facing bricks will be reused wherever possible.

The remaining demolition materials will be separated on site with all recyclable material (timber, metals and glass) being taken for reprocessing, such that the volume of arisings to be sent to landfill will be minimized to that material such as plaster, which cannot be recycled. We currently estimate that these measures will significantly reduce the material taken to landfill. The reuse of the retained material will also save on deliveries of new materials and reduce volumes requiring removal from site.

The demolition process will be more akin to dismantling so that the maximum number of items can be reclaimed for use on site or on other projects if possible. The on site crushing will be carried out using a compact portable unit with integrated dust and noise suppression.

The minor demolition works will be carried out generally within the demise of the existing house and will not require any altered access or cause difficulties for the neighbours. These works will allow greater access to the under floor areas at ground floor level so that underpinning works can be carried out from within the property.

3.3 Excavation & foundations

A set of six by 150 mm diameter wells will be drilled to approximately 6 metre depth and 100 mm diameter plastic pipe will be lowered into the dig with low capacity pump heads lowered into the bottom. Further drill holes around the site where the number, depth and sizing will be determined by a specialist grouting company, will be formed so that grout injections can be carried out into the sandy silty clayey material and a form of concrete prepared around the site to reduce the inflow of water at any one time.

The walls of the basement will be constructed as reinforced concrete cantilevers from a spread, thickened footing as traditional construction. The design parameters for pressure on the walls will be in accordance with those recommended values given in the Reinforced Concrete Designer's Handbook (by Charles E. Reynolds and James C. Steedman) for the relevant clay soil type. In addition it will be assumed that pressure from ground water could be present to a level of minus 0.75 metres below ground level as this could easily happen after backfilling with clay instead of sand to a depth of retained material. The walls will also be constructed to support a surcharge load of 2.5kN/m2 on the surface of the ground adjacent to the wall as well as the effects of pressure from any existing foundations (especially to the neighbours). Each wall section will be checked for overturning and sliding in the temporary case and the reinforcement adjusted as necessary to take the worst case loading.

The underpin walls and basement edge thickening beneath the house will be constructed in traditional hit and miss lengths of not more than 1.2m with the top of the wall packed with sand / 10 mm pea shingle: cement 3:1, dry mix with non shrink additive, rammed hard into the 75 mm gap between the concrete underpin and the cleaned bottom of the spread brick footing. Adjacent lengths will be connected with high tensile steel dowel bars or reinforcement. Steel dowels will also be used to tie the concrete to the underside of the stepped down brick walls. It is anticipated that these walls will be cast against the face of the excavated soil or against a temporary "concrete" plug following grouting.

The walls to the rear side boundaries will be of similar construction except that the upper parts in top soil will require double shuttering. This procedure will maintain the stability of the ground and neighbouring properties at all times apart from minor disturbance of the soil at surface level.

The floor of the basement will be checked for uplift due to possible water pressure and designed to span between the walls. It is likely that the slab will require reinforcing on each face and, depending on the ground conditions, it will probably be necessary to provide a layer of hardcore or MOT type 1 compacted stone and a layer of 50 mm blinding concrete before casting the basement slab on 1000 gauge polythene and 100 mm heavy duty insulation board.

The ground floor construction will be a combination of structural steel beams spanning between basement walls and timbered joists and infill

"noise reduction" insulation and flooring.

Further temporary works measures that will be part of the scheme are given as:-

Water arising from 6 wells will be pumped to a 1 metre by 1 metre by 1 metre deep soak-away formed at the rear of the back garden i.e. at the top of the hill. The soak-away will contain special plastic boxes from Drain Station specifically for this purpose.

If any areas of underpin dig expose areas of virgin soil not stabilized with grout then we will include in the tender documents that the main Contractor shall use metal trench sheets or poling boards to stabilize the excavation prior to casting the concrete underpin.

In the unlikely event that it is found that the soil under the house is unstable and the grouting techniques have not been successful (although first indications are positive that grouting will be 100 % successful in this material) then as a fall back we may suggest to the Contractor that he considers the use of contiguous piling to 6 metre depths to form a ring around the house.

This is a fall back situation only and is an insurance method and not a front line proposal.

3.4 Ground floor

The lower-ground floor will be of new C24 suspended timber joists between primary steel beams, fitted once the basement construction is complete. Temporary support will only be removed once the basement sub-structure is complete and the new floor structure in place and works approved by the site's Structural Engineer.

3.5 Superstructure Frame & Envelope

The majority of the superstructure of the existing house will remain unaffected. Amendments will be made to three beams between ground / first floor level, to raise existing beams and provide extra support as necessary to remove existing downstands and create a leveled ceiling.

Modifications to structural timber at third floor level will involve the fitting and bracing of new timbers prior to any cuts being made in the existing joists.

The new rear extensions and garage will be constructed of traditional masonry cavity wall blockwork, with facing either in white sand & cement render or facing bricks to match existing. The remaining roof structures will be constructed in timber.

As stated the use of reclaimed brick and tiles will help reduce the volume of material import. Mortar for the external brickwork will be supplied using an ultra quiet electric silo plant, so as to minimise waste, avoid open sand and cement storage, and reduce noise and dust nuisance. The block and render walling and new windows will be installed following completion of the main structure and be accessed together with the brick work, from a perimeter standing scaffold as required.

There will be scaffolding erected within the site boundary to give access to higher levels of the property to allow completion works to windows, balconies, doors, walls and roofs. This will include positively fixing the scaffolding to the shell of the house by using drill fixings and non-ferrous expanded bolt combinations into the brickwork. With short scaffolding tubes and circular bolt connectors, these can be used as restraints to the scaffold and allow it to carry storage loads and access ways.

3.6 Internal finishes

The internal finishes for the building will use a high proportion of pre-fabricated and pre-finished materials, ranging from the main staircase amendments, to joinery (doors and paneling) and floor finishes. The finishes have been chosen to limit the volume of site works and the number of operatives required to complete the installation, as well as limiting the volumes of waste materials generated by the installation.

3.7 Landscaping

There will be minimal landscaping alterations to the front of the property, apart from changes to materials put forward in the Landscape Consultant's design, and the approved lightwell making up part of the basement construction. External walls of lightwells will be reinforced concrete retaining walls with French drainage systems behind at low level, faced with brickwork to match existing.

The sides of the property will remain hard standing, with new stone surfaces to match the surfaces at the front of the property.

The rear of the property currently has a two tier configuration, beginning with a brick lined trench to the rear façade of the house, and a sloped lawn leading up the rear boundary retaining wall and fence. It is proposed that in order to make improved and safer use of the lawn as a family garden, that this be split into a three tiered design. A patio at ground floor level of the house, will terrace up to a leveled lawn that will allow family play and open space. In turn this will tier again to a smaller rear patio (with the bomb shelter retained), to reach the existing rear boundary retaining wall and fence which will be concealed behind new planting. Fences to the sides of the property will be bounded by planting also.

Any alteration in level between the proposed leveling at 22 and neighbouring properties will be kept to a minimum, with any grounds supported appropriately with low level boarding, before new low level retaining concrete wall are set. These walls will be low level, remain on the property of 22 Ferncroft Avenue, and be concealed with soil and planting.

Due to the small size of the site, leveling work will be carried out by hand with soil arisings being transported by wheelbarrow via the side of the house to a skip located at the front of the property. Materials will be kept separated and removed from site as described in the demolitions chapter of this document. It is intended that no soil arisings are sent to landfill and will be reused on other sites by the contractor.

Landscaping will take place during the later stages of the project coinciding with internal works. Planting will be programmed according to growing season so as to aid establishment on site. The precise nature of this will depend on the types of plants chosen, which will occur later in the project stages. Any planting taking place after main works have finished will have no impact to neighbouring properties or residents.

4.0 Construction Management Action Plan

The following sections outline the key elements for further consideration. These will be This document demonstrates our commitment to manage and mitigate concerns identified in the risk analysis (see 6.0 Risk Analysis).

Some of the specific features outlined below are generic issues to be considered and mitigated on all developments, however others are more specific to this development and addressed accordingly. Many of the issues will be dealt with in our more detailed site based Method Statements developed in collaboration with the Main Contractor's Project Manager upon appointment.

4.1 Access

Direct access to the site will be through secure, gated hoarding from Ferncroft Avenue. All staff and visitors will be required to sign in at entry. There will be no other access point to the site.

4.2 Access Routes - Ferncroft Avenue

All demolition, construction and delivery vehicles will approach the site from Platt's Lane via Finchley Road. It is intended to have in place a 'one way' loop system to minimise turning in Ferncroft Avenue and avoid passing St Margaret's Primary School at all times. No deliveries will take place before 10am, between 3 and 4pm, and after 5pm to avoid School pick up/drop off times and morning/evening resident movement.



22 Ferncroft Avenue site location, accessed via Platt's Lane and Hollycroft Road loop to avoid St Margaret's Primary School highlighted blue.

4.3 Vehicle sizes

The following list provides detail of the type of vehicles that will need to gain access to the site during the demolition and construction process.

- Skip Lorry 4 Wheel, 17 Tonne, G.V.W
- Plant delivery 4 Wheel, 17 Tonne, G.V.
- Concrete Delivery Vehicle 6 Wheel, 24 Tonne, G.V.W
- Building Panel Deliveries 4 Wheel, 17 Tonne, G.V.W
- Ballast and Loose Materials 4 Wheel, 17 Tonne, G.V.W, Tipper
- General Building Materials 4 Wheel, 17 Tonne, G.V.W, HIAB Flat Bed
- Wheeled 360 Excavator, 23 Tonne GVW

Demolition and ground works will require these HGVs to be driven onto site. The site hoarding will be adapted to allow for vehicle movements into site. All vehicle movements will be under the direction of a traffic marshal at all times, ensuring other road users and pedestrians are segregated from site vehicle movement.

Following demolition of the front boundary wall and driveway landscaping, there is space on site to enable all construction vehicles to reverse into the site in and then leave the site in forward gear.

Manoeuvres may require the suspension of the one on-street parking bay on the public highway directly in front of the property.

A Traffic Management system will be in place with only one 1 HGV on the site at any time and HGV Vehicles will be accompanied by a Banksman to the site from Platt's Lane. It should be noted that the site can also accommodate parking of light goods vehicles that will be needed by workers to transport tools and materials to and from the development. It is anticipated that a limited number of LGVs will park on Ferncroft Avenue during working hours only i.e. not overnight. The LGVs movements are included in the maximum movements per day.

4.4 Vehicle movements

Construction vehicle movements will not be permitted at weekends or during public holidays and will be scheduled to take place between the hours of 10:00 and 15:00 and 16:00 to 17:00 so as to avoid typical peak period vehicle movements along Ferncroft Avenue and School pick up/drop off periods. Heavy goods vehicle movements will also be scheduled so as to avoid more than one movement every 30 minutes. Table 2 on the next page provides a breakdown of the number of vehicle movements during each phase of the construction process.

Work Phase	Duration	Total HGV movements	Average daily movements	Peak daily movements
Site set up & establishment	1 wks	6	1.2	Max 4 per day
Demolition & Reclamation	4 wks	55	2.75	Max 4 per day
Foundations	4 wks	78	3.9	Max 4 per day
Piles & Ground floor	4 wks	84	4.2	Max 4 per day
Superstructure	8 wks	82	2	Max 4 per day
Envelope	8 wks	40	1	Max 2 per day
Internal finishes & commissioning	22 wks	55	0.5	Max 2 per day
Landscape (phase 2) (overlaps with finishes)	3 wks	15	1	Max 2 per day
Total	51 wks	474	2.1	1

A delivery will comprise of two movements, arrival and departure. The movement table will be updated to provide more specific detail of anticipated delivery times once planning conditions have been discharged and the date for works to start on site can be determined.

4.5 Interface with adjoining sites

The table above indicates typical daily vehicle movements and the maximum number that is predicted would occur. The range between average and maximum number of daily vehicle movements will provide an element of flexibility during each of the building phases.

In the event that construction works are taking place elsewhere on Ferncroft Avenue there is flexibility within each of the building phases to enable vehicle movements to be scheduled so as to limit the cumulative impact of construction vehicles associated with 22 Ferncroft Avenue and other development sites.

4.6 Communication

The Contractor will register and comply with the requirements of the Considerate Contractors Scheme for the duration of the project. A contact board will be displayed outside the site providing details of those to contact. This will include names and telephone numbers of key construction staff that neighbours and the general public can contact should they have cause to do so.

A book will be kept on site, which will be used to record details of any complaints. This will include the name of the person making the complaint. The complaints book will be regularly reviewed to ensure that any complaints are dealt with and resolved promptly (sample overleaf).

Montway Construction Limited	Project Complaints Register								
Contract No & F	Fit	e Lodge, zroy Park, Higt ndon N6 6HT	ngate,						
Date Received	Name & Details of Caller	Complaint/ Comment/ Compliment	Montway Construction Ltd. Signature	Action Taken	Date Actioned	Status Open/Closed			

5.0 Environmental Issues

5.1 Nuisance Control

A range of measures will be implemented to ensure that the potential impact of the works on local residents and neighbours will be minimised. These measures are discussed in turn below.

5.2 Dust Control

Water dampening measures will be used during the demolition process, which will significantly control dust generation. Dust screens will also be incorporated during this element of the project. The dust screen will be formed using a fully sheeted scaffold around the full perimeter and height of the rear parts of the existing building scheduled for demolition. This will form a cocoon within which to carry out the dismantling work to those areas. This scaffold will be dismantled once the deconstruction works is completed to allow for access to the new basement foundations.

Fully enclosed hoarding will be erected to the front elevation of the property at ground floor level to control dust, noise and protect the front excavation from rain.

Dust generation during the next phase of the work for the new extensions and substructure will be limited on a job by job basis controlled by the contractor using such means as water dampening. In addition the excavated spoil material is being retained on site so that there will be no dust generated by the movements of this material off site. It should be also be noted that concrete is delivered wet, and that the superstructure is delivered as fabricated or modular elements pre-cut to size so that the potential for dust generation has been limited by the selection of materials and methods.

The internal nature of work to the basement, rear extensions and attic conversion allows a greater degree of dust control and prevention of dust escaping to the neighbouring environment. The construction of the new garage will mostly be wet work, with mortar premixed in the on site silo to avoid dust production. Walls are designed to brick and block dimensions to omit cutting requirements and thus reduce dust production. Dust produced from the cutting of timber will be collected by vacuum as cutting takes place.

5.3 Wheel Wash

Site vehicles will have wheels washed down prior to leaving the site so as to reduce unwanted debris spreading onto Ferncroft Avenue. A temporary concrete slab will be installed at the entrance to the site to form an impervious area that can be used as a wheel wash area. Waste water from the wheel wash, and also from general site operations such as damping down and concrete delivery washout, will be stored in temporary 'silt buster' holding and separation tank on site the level of which will be monitored by the Principle Contractor. When full, the tank will be emptied by a registered waste disposal contractor using a vacuum tanker and transported to a local depot for processing prior to disposal. This operation will be controlled by a consignment note to allow full traceability of all material removed from site.

5.4 Noise Control

Trees, hedges and walls that surround 22 Ferncroft Avenue will assist in acting as a noise barrier. Deliveries to the site will take place as described in section 4.4 and scheduled to distribute vehicle movements throughout these hours so as to avoid periods of intensive activity therefore limiting noise and vehicle emissions. The noise levels associated with particular materials has, and will continue to be taken in consideration as part of the design specification process.

5.5 Site Security

All construction materials will be stored within the site. It is proposed that solid boarded 2.4 m hoardings will be erected along the site boundary with Ferncroft Avenue. Access gates will be formed in the fence to main entrances to the site on to Ferncroft Avenue. The site will be locked outside of working hours to ensure that all materials and equipment are stored securely.

All hoardings will be regularly inspected to ensure that they remain secure. All windows and external doors will remain closed when the site is not operational and be securely boarded in between removal of old windows and fitting of new windows. An alarm system will be installed on the external scaffold. Protective boarded screens will be erected on the external scaffold at the end junction of each boarded lift that is adjacent to the neighbouring property.

All site personnel will have to sign in on arrival and sign out before leaving the site.

5.6 Tree protection

Tree to be protected



Example tree protection

Tree at front of property to be protected.

Only one tree at Ferncroft Avenue is in a location which requires tree protection. The small tree to the front of the property will be protected with timber framing constructed around the base of the tree, wrapped in high visibility tough plastic mesh.

In this instance the use of 2.4m high Heras type fencing to protect the tree would be inappropriate due to the low nature and small size of the tree.

Trees to the rear of the property to be retained are lin locations away from the building construction and landscape works and will remain unaffected. The lack of heavy equipment in these areas with the majority of labour being undertaken by hand significantly reduces to an absolute minimum any potential damage to any other trees.

5.7 Consultation with Local Residents

It is proposed that a Construction Working Group will be formed by the client's on-site agent and the Construction Project Manager to ensure that residents are aware of how the construction works are progressing and provide them with the opportunity to raise any issues that may arise as they occur. A direct dial number of the client's onsite agent will also be provided so that any issues can be reported. Representatives of the local Residents Association will be invited to join the Construction Working Group as well as any other parties affected by the works and Council Officers. This will include residents of neighbouring properties, and properties that border the construction vehicle route on Ferncroft Avenue and Hollycroft Avenue. The Site Project Manager will keep in regular contact with local residents, affected parties and the Council by sending a fortnightly update by email, and post if necessary. It is also proposed that fortnightly meetings will be held with local residents if all parties agree that they are required.

5.8 Travel Plan

There will typically be a total of up to 6 construction workers on site, although this may increase to 14 during the later stages of the project when the internal finishes and landscaping phases are being undertaken. Workers will generally travel to site using public transport, however it is estimated that there will be in the order of 2 or 3 light vans needing to access 22 Ferncroft Avenue per day during these phases to enable workers to transport tools and materials to and from the site. These vehicles would park on site where possible, and on Ferncroft Avenue if necessary. It should be noted that this is a small development site with limited amount of site personnel therefore LGVs will be limited.

5.9 Groundwater & Surface water run-off

No water from site will be allowed to drain to any off site locations in order to mitigate against any adverse effects on neighbouring properties from water run off. Surface water flow from potential sources of contamination such a concrete delivery washout points, mortar silos and plaster mixing baths will be separately contained and will not be discharged into the land drainage system.

5.10 Pedestrian safety

There are strict speed limits in place already, which are monitored by local residents, and Heavy vehicles will be escorted both ways by a banksman to ensure a steady speed and safety.

5.11 Site Safety

A Site Fire Safety Co-ordinator will be appointed to assess the degree of fire risk and formulate a Site Fire Safety Plan, which will be updated as necessary as the works progress and will also include the following:

- Hot Work Permit regime.
- Installation of the site fire fighting equipment e.g. establishing fire points and installing and maintaining fire extinguishers etc.
- Evacuation alarm.
- Material storage and waste control.
- Fire Brigade access.

As a domestic householder project this project is not notifiable to the HSE. However all parties will fulfill their consistent duties under the CDM regulations. The Contractor will prepare a Construction Health and Safety Plan for the works, including Risk Assessments that will be developed and agreed. Subcontractors detailed method statements will also be produced and safe methods of work established for the works overall. Site inductions will be held for all new site personnel and frequent visitors to establish the site rules and to enforce safety procedures; and all site personnel will be required to read the emergency procedures when signing in for the first time, and sign to the effect that they have read the procedures. These will include any relevant neighbourhood issues. Also included will be a Health & Safety Injury Register (see sample below).

Montway Construction Limited	Health & Safety Injury Register									
Contract No & The Lodge, Fit	- 260	ghgate, Londo	n N6 6HT							
Name	Address	Time/Date of Injury	Occupation	Nature of Injury	Cause of Injury	Status Open/Closed				

5.12 Cycle storage

There is sufficient space on site to keep bicycles securely for workers and visitors that intend to travel to site by bike during construction.

Post construction bicycle storage will be inside the secure new garage.

6.0 Risk Analysis

We have identified the following hazards associated with the enabling and shell and core works:-

- · Demolition works
- Soil Conditions
- · Traffic management and off loading deliveries
- · Scaffolding and temporary works
- Plant installation
- Working at height Truss / window installation
- · Construction plant, access and movement on-site
- Noise, dust and vibration control

During the planning of the works these hazards will be assessed and preventative measures will be put in place to minimize the overall risks to as low as is reasonably practicable.

7.0 Contact Details

Roger Torns Client.

22 Ferncroft Avenue, NW3. roger.torns@ssgi.co.uk

Richard Diamond Director, 21st Architecture

rdiamond@21starchitecture.com

0207 952 0252

John Livermore Architect, 21st Architecture

314 Goswell Road, London, EC1V 7AF

jlivermore@21starchitecture.com

0207 952 0252

Henry Nash QS & Project Manager.

CN Associates, 3 Barrett St, London, W1U 1AY.

henry@cnassociates-qs.co.uk

T: 020 7935 2932

Alan Dean Structural Engineer

Jenkins & Potter Ltd

1st Floor, 67-74 Saffron Hill, London EC1N 8QX.

a.dean@jenkinspotter.co.uk

0207 242 8711

lan Fuller

M&E Engineer

The Old Store, Manor House Farm, Barwick Road, Leeds L\$25 2DN.

01132 877 775

ian.fuller@btconnect.com

Casper Gabb

Landscape Consultant Natural Elements Design

Woodlands, Glazeley Nr Bridgenorth,

Shropshire, WV16 6AB

info@naturelelementsdesign.co.uk

01746 789 222