



ARBORICULTURAL REPORT

4 Lambolle Road
London
NW3 4HP

16th June 2021

Prepared by

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Scope

The purpose of this report is to provide Arboricultural advice in relation to identifying the constraints of trees that could potentially be impacted by the construction of the garden room, and how they will be protected in accordance with BS5837:2012. Planning consent has been approved, planning ref: 2020/3292/P and this report addresses the requirements of condition 3.

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1 INTRODUCTION

1.1 Brief:

This report has been prepared at the request of Dr K Moshal the property owner, to provide advice on how the trees in close proximity to the approved garden room could be detrimentally impacted by construction activities. Identifying the constraints of the trees and providing advice on suitable tree protection measures to prevent them being damaged during the work.

1.2 Qualifications and experience:

I have based this report on my site observations and the provided information, and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture and list the details in **Appendix 1**.

1.3 Documents and information provided:

A plan of the approved layout.
A copy of the decision notice.

1.4 Relevant background information:

Planning consent for the garden room has been approved Ref: 2020/3292/P.

1.5 Scope of this report:

This report is only concerned with trees that could be impacted by construction works to implement the approved layout, and the measures required to provide protection for them as best prescribed in the guidance of BS5837: 2012 'trees in relation to design, demolition and construction'. Any issues regarding construction methods etc. is outside the remit of an Arborist and remedy should be sought with suitably qualified persons, for example builder, engineer etc. For the purposes of this report an Arborist / Arboriculturalist is someone who through training and experience has the knowledge to assess trees and their condition in a competent manner. Trees with a dbh of less than 75mm have not been included as per the guidance in BS5837:2012 or species considered to be shrub specimens.

2 APPRAISAL

2.1 Brief site description:

This site is a back garden of the property which is laid to lawn. The focus of this report is the end of the garden where there is current play equipment for children installed. Three Lime trees and a row of Conifers are present along the boundary. The site is surrounded by residential properties of a similar nature.

2.2 Condition of the trees:

The trees appear to be in a healthy condition with no signs of pests or diseases normally associated with the species.

A more detailed analysis of the trees can be found in **Appendix 3**.

2.3 Suitability of trees for location and management requirements at present:

In my opinion the trees could be considered suitable for the location and appear to have been managed according to the location.

No management is required necessary at present.

2.4 Potential effects of development on the trees:

To implement the planning permission granted only the canopy overhang of G1 will need to be faced back to provide clearance to the new garden room. This work will not impact on amenity and is unlikely to impact on the tree's health or longevity. All tree surgery works will be in accordance with BS3998:2010. The canopy clearance of the other trees is sufficient so that it will not be impacted by the proposed construction of the garden office.

The client is aware that the RPA (Root Protection Area) of the trees needs to be worked around as far as practicably possible, and Green Retreats who are the company supplying the structure have provided a foundation detail they will use. This is a shallow pad style foundation that will be excavated by hand and lined with a non-porous material. This is a recognised construction method to use in such circumstances and has been utilised to success on other projects, to achieve the construction of similar structures. The raised construction will still allow the trees to utilise the ground under the building to perform gaseous exchange and absorb moisture. Some discussion maybe required in terms of drainage run off from the roof to ensure the trees is not deprived of moisture, but also not to cause pooling of water that could impact on the tree's health. The position of the pads will need to be initially assessed with a supervising arborist present to best avoid roots where possible.

This can be achieved with hand dug trial holes to the depth of the pad. If roots larger than 2.5cm in diameter are encountered the pad locations will be adjusted to avoid conflict with the roots. Roots 2.5cm and below in diameter can feasibly be pruned clear, but where possible this should be avoided. Where access over the RPA will be needed to undertake this, suitable ground protection will need to be in place to prevent the soil from becoming compacted. A method to work back from the trees would be the best approach so that the ground can be protected as work commences, and activities directly adjacent to the trees is a minimum. Protective fencing will be set up to denote the extent of the RPA (Root Protection Area) where access is not required, and to prevent collision damage with the stems of the trees. This protective barrier could be a plastic mesh style fence to allow the family to still have access to the garden space where required, but clearly identify where construction activities are not permitted. However, if this is not agreeable with the council, then heras panels as suggested in BS5837:2012 and shown in **Diagram 1 of Appendix 3** will be used. Details of the foundation type, design and installation that have been provided by Green Retreats is provided in **Appendix 3**.

It is important to understand that prior to construction works commencing on site that any soft ground within the RPA is suitably protected, to prevent soil compaction. Where possible any access should be confined to areas outside of the RPA. Details of the type of ground protection in relation to the traffic crossing it and other protection measures that need to be considered can be found in **Appendix 3. It is important that the ground and other protection criteria is in place because failure to do so could result in the build being stopped or legal action by the council taken.**

The main risks this development proposal presents to the trees will be via indirect actions from construction activities such as, inconsiderate material storage etc. However, this can be addressed by careful planning of work procedures and installing protection fencing, ground protection etc. as required and outlined in the tree protection method statement.

The site manager will need to be aware of the protection measures needed and ensure access and material storage are managed around this to prevent conflict with the trees.

The site manager will need to confirm the locations of material storage, access for construction activities onto site etc. and how this will be managed around the protection of the trees, demonstrating how the protective areas will be avoided for this purpose and ensuring the ground is protected always until the build is finished.

Details of ground and other protection measures are provided in the method tree protection method statement in **Appendix 3**.

3 OTHER CONSIDERATIONS

3.1 Trees subject to statutory controls:

I believe the trees are the subject of a TPO (tree preservation order). I suggest that the local authority is contacted to confirm this and kept updated with any proposed tree works so as to form a good working relationship and to prevent misunderstandings or contravention of protection measures. This statement is meant for readers of this report as an advisory, to make sure they make the relevant checks so as not contravene any protection status the trees may have.

*Andrew Day HND Arb
For Andrew Day Arboricultural Consultancy Ltd.*

Brief qualifications and experience of Andrew Day

I hold a Higher National Diploma in Arboriculture. I have been working in the field of arboriculture for approximately 10 years, spending time as a contracting arborist undertaking all aspects of practical arboriculture both in the UK and Europe. I have also worked within local government as a tree officer working for a variety of local authorities. I have a broad experience of both the practical and theoretical aspects of arboriculture having worked within the public and private sector.

1. Qualifications:

Higher National Diploma in Arboriculture (1996)

NPTC (National Proficiency Training Council) units 20, 21 and 22

Lantra professional tree inspection certificate

2. Practical experience:

Prior to establishing my company, I worked for a private Arboriculture company for three years undertaking many practical aspects of Arboriculture. I moved on from this to become a local authority tree officer for five years, my duties included consultation on planning matters with regard to trees, advice to the general public, managing the council's tree stock and liaising with other professionals on Arboricultural related issues. I was approached by an established tree contracting and consulting company in Essex to develop and run the consultancy department as their principle consultant which I did for three years.

SITE PHOTOGRAPHS



Showing T1 – 3 & G1

SITE SPECIFIC INFORMATION

Explanatory Notes

Tree Survey

Tree Protection Method Statement and Protection Criteria

Hand Dig Method Statement

Informatives for Site manger

Arboricultural Considerations notice for site hut and inducted personnel

Foundation details supplied by Green Retreats

Explanatory Notes

Measurements/estimates: All dimensions are estimates unless otherwise indicated. Measurements taken with a tape or clinometer are indicated with a '*'. Less reliable estimated dimensions are indicated with a '?'.

Species: The species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after in brackets. In some instances, it may be difficult to identify a particular tree quickly and accurately without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicated with a '?' after the name in order to avoid delay in the production of the report. The botanical name is followed by the abbreviation sp if only the genus is known. The species listed for groups and hedges represent the main component and there may be other minor species not listed.

Height: Height is estimate height to the nearest metre.

Spread: The maximum crown spread is visually estimated to the nearest metre of the total crown spread diameter. It should be noted that the crown of some trees can be one side, however this usually indicated within the report.

Diameter: These figures relate to 1.5m above ground level and are recorded in centimetres. Estimate measurements are banded 0-10cm, 11-20, 21-30 etc. If appropriate, diameter is measure with a diameter tape. 'M' indicates trees or shrubs with multiple stems. 'AV' indicates average and is the average of two stems when dealing with twin stem trees.

Estimated Age: Age is assessed as **M** mature (last one third of life expectancy), **EM** early-mature (one third to two thirds life expectancy) and **Y** young (less than one third life expectancy).

FSB: First significant branch from ground level (direction shown on tree protection / constraints plan)

SULE: This is the estimated Safe Useful Life Expectancy of the tree. Trees can live longer than this value but can pose a risk to persons or property.

RPR: Radius of root protection area around the tree /group

RPA: Root protection area for tree or group

BS 5837 2012 - On the basis of this assessment, trees can be divided into one of the following categories:

A - Trees whose retention is most desirable, High category

B - Trees where is desirable, Moderate category

C - Trees which could be retained, Low category

U - Trees that cannot realistically be retained; Fell category

Tag	Name	Age	Diameter (mm)	Height (m)	Crown Hgt (m)	FSB Hgt (m)	Crown Spread (N S E W) (m)				Life Exp	Recommendations	Category	RPR (m)	RPA Area (m)
T1	Tilia X europaea (Common Lime)	M	400	18(3)	3	8	2	3	3	3	20+	No works required at present.	B3	4.8	72.39
T2	Tilia X europaea (Common Lime)	M	300	18(3)	3	8	2	2	2	3	20+	No works required at present.	B3	3.6	40.72
T3	Tilia X europaea (Common Lime)	M	300	18(3)	3	8	3	3	3	3	20+	No works required at present.	B3	3.6	40.72
G1	X Cupressocyparis leylandii (Leyland Cypress)	SM	150	4(1)	1	1	1	1	1	1	20+	No works required at present.	C3	1.8	10.18

Method Statement for Tree Protection Measures

PROJECT: 4 Lambolle Road, London, NW3 4HP

CLIENT: Dr K Moshal

1.1 Brief

Provide protective measures specification for trees to be retained using the guidelines and principles prescribed in BS5837: 2012 'trees in relation to design, demolition and construction'.

1.2 Protective measures and Site Supervision

An important factor in providing protection for the trees during the construction works is the chronological order in which development tasks are undertaken. Before work continues on site, the following issues will be addressed and submitted to the council for approval.

- A suitably qualified arborist will be retained to oversee tree protection measures where required and liaise with the tree officer as required. The contact information of this arborist will be made available to the council tree officer prior to works starting on site.
- Any excavation work in the RPA to site foundation pads will be initially started using hand tools, with the supervising arborist overseeing and recording any root presence.
- The foundation design for the building will be suitable to address any potential influence that the trees may have on it. Location of services and details of their installation will have been provided, with any arboricultural protection measures or methodologies of working programmed in the works schedule and approved by the council.
- A pre- commencement meeting with a suitably qualified arborist will take place with the site manager and other relevant site personnel, to debrief them on the importance of the protection measures and to assist in setting up of the ground protection etc. before work commences on site.
- A schedule of arboricultural site supervision will be formulated at the pre-commencement meeting and be provided to the council by the site manager once this plan of visits has been set. It is then the responsibility of the site manager to ensure the arboricultural supervision visits are booked in and undertaken at the relevant times.

1.2.1

A pre-commencement inspection by the supervising arborist will take place to ensure the protective measures are understood and a schedule of arboricultural site monitoring is formulated at the start of the project, this will consist of a visit by a suitably qualified arborist once at the start of the project, once mid-way through and once at the end. If this is not to the council's satisfaction, then visits arboricultural visits will take place once a month for the duration of the project. A log of these visits and any actions required will be available to the council on request and kept on site.

All personnel inducted on site will be made aware of the tree protection measures and will be responsible for their own actions in maintain these and ensuring that they do not cause any damage to the trees.

1.2.2

Protective fencing will be a plastic mesh style fencing to still allow the property owner to utilise the garden space but denote the protective area. If this is not acceptable to the council the protective fencing will be as shown in **diagram 1** or similar that demonstrates that it is fit for purpose, will be placed in the locations as shown on the tree protection plan in **Appendix 5**, prior to works commencing on site.

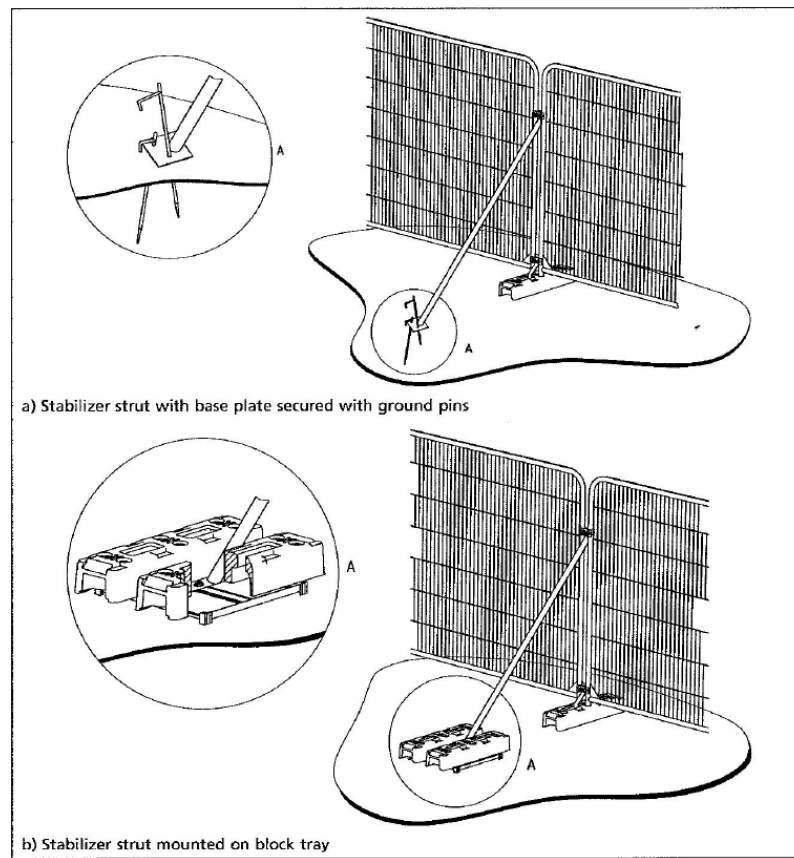
The informatives provided will be attached to the fencing to highlight its importance at a height of 1.5m and at 5m intervals along the line of fencing, or in locations that can demonstrate they are clearly visible to identify the purpose of the fencing in relation to the project

1.2.3

Where access is required within the RPA on soft ground, ground protection will be in place, this will be installed as set out in 1.7 before access into the protected area is allowed.

The placing of tree protection measures works within the construction timescale will not be altered and it is re-emphasised that this is to take place prior to any other activities. The placing of tree protection measures works within the construction timescale will not be altered and it is re-emphasised that this is to take place prior to any other activities.

Diagram 1



1.3 Forbidden activities within RPA

1.3.1 Within the root protection area, the following activities will be prohibited, unless suitable ground and other protection measures are in place, given the limited space available.

No storage of chemicals or other substances likely to leach and cause harm to the tree to be stored.

No storage of heavy plant or materials likely to cause further soil compaction. The piling rig will sit outside the RPA at all times.

No ground disturbance works, apart from what has been approved by any planning permissions or specifically from the council.

No activities that could indirectly affect the tree such as bonfires etc.

1.3.2 No ground disturbance works apart from those granted in the planning permission to install the foundation pads or similar is to be undertaken within the confines of the RPA without the written permission of the local authority.

The protected area is not to be breached at any time, unless the local authority has granted permission and a qualified arborist has been consulted and supervises any work activities that need to take place.

1.4 Storage of chemicals / mixing of materials

- 1.4.1 Storage of chemicals will be placed in a sealed bund / area, with no discharge allowed onto the ground or watercourses. The area containing these materials will have an impervious surface and stored **if possible** 10m away from the RPA. If accidental spillage of chemicals or other damage to the trees takes place the local authority is to be notified as soon as possible and a suitably qualified arborist is consulted as to the best actions to take to mitigate any damage that may have occurred as a result of the accident and these works to be undertaken to mitigate the situation as soon as possible.

1.5 Works in the RPA

- 1.5.1 **No excavation / ground disturbance works will take place within the RPA unless to implement the permission granted. Where excavation works are needed in the RPA to site the foundation pads, this will be initially done to a depth of 600mm using hand tools, in accordance with the arboricultural hand dig method statement provided. This will be strictly adhered to. This includes the opening of any service trenches if required.**
- 1.5.2 Pad holes will be sheathed with a non-porous material to prevent any toxins leaching into the soil.
- 1.5.3 The foundation design for the building will demonstrate how it is fit for purpose to ensure that the trees will not indirectly impact on the structure, resulting in pressures to remove the trees in the future.
- 1.5.4 Where access across the RPA on soft ground to implement construction, suitable ground protection will be laid down as detailed in section 1.7 below.
- 1.5.5 All excavation works that are required in this protected area, will have the permission from the council approved for this type of operation, and the hand dig method statement provided strictly adhered to at all times.

1.6 Material storage / site parking

- 1.6.1 Particular attention will be made to the type of materials to be stored and the type of machinery needed to move them, ensuring that sufficient protection measures in accordance with this method statement and space are provided to prevent damage to the trees to remain. The details outlined in 1.4 above will be adhered to.
- 1.6.2 **At no point will plant or materials be allowed to be parked or stored within the RPA unless suitable protection is in place. This will be strictly policed by the site manager.**

1.7 Ground Protection

- 1.7.1 Where access across the RPA is required, the following ground protection measures will be implemented as required.

For pedestrian traffic:

A single thickness of scaffold boards placed on top of a scaffold frame so as to form a suspended walkway (similar to diagram 2), or boards laid on to a geotextile membrane with a layer of wood chips 100mm in thickness.

For pedestrian operated plant, up to 2 tonnes:

Interlinked ground protection boards of plywood or similar at least 2.5cm thick, laid onto a geotextile membrane on a bed of wood chip 150mm in depth.

For wheeled or tracked traffic exceeding 2 tonnes gross weight:

Metal tracking designed and fit for purpose, pre-cast concrete slabs or similar, laid to an engineering specification on a compression resistant layer e.g., wood chips that will likely spread the weight of the load and prevent compression of the soil underneath.

- 1.7.2 **AT NO POINT WILL THE GROUND WITHIN THE RPA BE LEFT UNPROTECTED IF ACCESS IS REQUIRED IN THIS AREA.**

1.8 Completion

- 1.8.1 Once all the construction activities on the site have been completed and a suitably qualified arborist will assess the condition of the trees and liaise with the local authority accordingly if any works are considered necessary.

2 HAND DIG METHOD STATEMENT

PROJECT: 4 Lambolle Road, London, NW3 4HP

- 2.1** The area to be excavated will be inspected by a professional arborist to assess the likely proximity of root activity and concentration prior to the commencement of any works. All relevant authorized personnel to be informed and required permissions gained before work commences.
- 2.2** If hand digging is not possible/practicable a method of excavation will be agreed and undertaken by a suitably qualified person for example air spading or a competent digger operator etc., in the presence of a qualified arborist.
- 2.3** During excavation great care will be taken to minimize damage to retained roots, including the bark around the roots.
- 2.4** All roots greater than 25mm diameter should be retained and worked around. Where clumps of smaller roots (including fibrous roots) are found these are to be retained.
- 2.5** Roots with a diameter in excess of 25mm must not be severed without permission from an Arborist.
- 2.6** If roots are encountered, the Arborist must conduct the root pruning and inform the relevant person to suggest mitigation works to the tree(s) if required. If severance is unavoidable roots must be cut back using a sharp tool, leaving the smallest wound possible.
- 2.7** If there is a possibility of infection being passed from one specimen to another, tools will be sterilized in an appropriate method to reduce the risk of cross contamination.
- 2.8** When backfilling an inert granular material mixed with topsoil or sharp sand (not builder's sand) is to be used around the retained roots. Unless an alternative backfill substrate has been agreed with in writing by the appropriate authorized personnel.
- 2.9** If roots are to be left exposed for a period of longer than 1 hour (dependent on weather conditions), then a covering of dampened Hessian or similar material is to be used to cover the exposed roots. Any changes to this practice are to be authorized by a qualified arborist.
- 2.10** All levels are to be returned to the original plane after any excavation unless specific design and relevant permission has been authorized.
- 2.11** A qualified Arborist is to be on site to supervise during any operations within the protection zone.

ANDREW DAY
ARBORICULTURAL CONSULTANCY LTD

REDUCING COSTS BY DELIVERING PRACTICAL SOLUTIONS

TREE PROTECTION ZONE

**DO NOT LEAVE THE GROUND
UNPROTECTED**

**NOT ADHERING TO THIS CAN
RESULT IN THE FOLLOWING:**

- **SHUT DOWN OF THE JOB**
- **FINANCIAL IMPLICATIONS**
- **CRIMINAL PROCEEDINGS**

ARBORICULTURAL SITE CONSIDERATIONS

THIS NOTICE IS TO BE DISPLAYED IN THE SITE OFFICE OR A SUITABLE LOCATION WHERE IT IS CLEARLY VISIBLE AND ISSUED TO ALL PERSONNEL INDUCTED ONTO SITE

The following site considerations must be observed at all times during the development process, from site preparations through to completion.

- ❖ The protected area of the RPA must be regarded as sacrosanct and not breached except where to implement the planning permission granted, without prior consultation with either the local planning authority or the supervising arborist.
- ❖ Ground protection must not be lifted or removed without prior consultation with either the local planning authority or the supervising arborist.
- ❖ Damage caused to ground protection must be reported to the site manager to ensure suitable repair or actions are taken.
- ❖ No materials, chemicals, machinery, or vehicles to be stored within the RPA (root protection area) as defined on the tree protection plan and on site by fencing and ground protection.
- ❖ No materials etc. must be rested against or machinery chained to trees.
- ❖ No pruning of trees may be undertaken by anyone other than a qualified arborist and approved by the supervising arborist and local authority tree officer.
- ❖ Any physical damage caused to a tree to be retained must be reported to the site manager immediately so that suitable remedial works can be commissioned without delay.
- ❖ Builder's sand (which contains high levels of salt) must not be used to back fill excavations within or in close proximity to tree roots, as it has a toxic effect and can cause root desiccation. Sharp sand must be used under such circumstances.
- ❖ Soil contaminants such as concrete mixings, diesel oil and vehicle washings must be kept suitably contained, preferably within bunded areas. Any spillages within 2m of a fenced area must be reported to the site manager and supervising arborist immediately so that suitable mitigation works can be commissioned.
- ❖ Fires must not be lit in positions where their flames can extend to within 5m of foliage, branches, or trunks. Wind direction and size of fires will impact on this.
- ❖ Notice boards, telephone cables or other services etc. must not be attached to any part of a tree.

Remember the tree officer can turn up at any time or neighbours may report any poor practice or threats to the trees.

METHOD STATEMENT FOR PILE FOUNDATIONS ON SITES AFFECTED BY TREES/TPO

1. The base area is laid out and the location agreed with the customer.
2. Areas beyond the tree canopy will be dug by hand to our standard depths which can vary depending on the make-up of the subsoil geology. The only difference being that the holes in a TPO protected area will be lined with a thick plastic waterproof membrane.
3. Holes under the tree canopy will also be dug by hand to not disturb any large root systems and if necessary, relocated to avoid a tap root.
4. All holes are then tampered down giving a flat bottom, so they can carry the designed load (typically 180 Kilo per pile). The plastic protective membrane is then inserted into the holes before the concrete is poured, this is a quick-setting concrete mix which goes off very rapidly - within 1 hour.
5. Care is taken to avoid spillage of our concrete mix/powder using protective membrane where necessary at the time of mixing.
6. The insulated flooring panels are then laid onto the concrete pad/pile system.

Fig 1 Standard piles/ pads

Fig 2 Tree/TPO Pads

Fig Example of a Base Layout

Fig 1

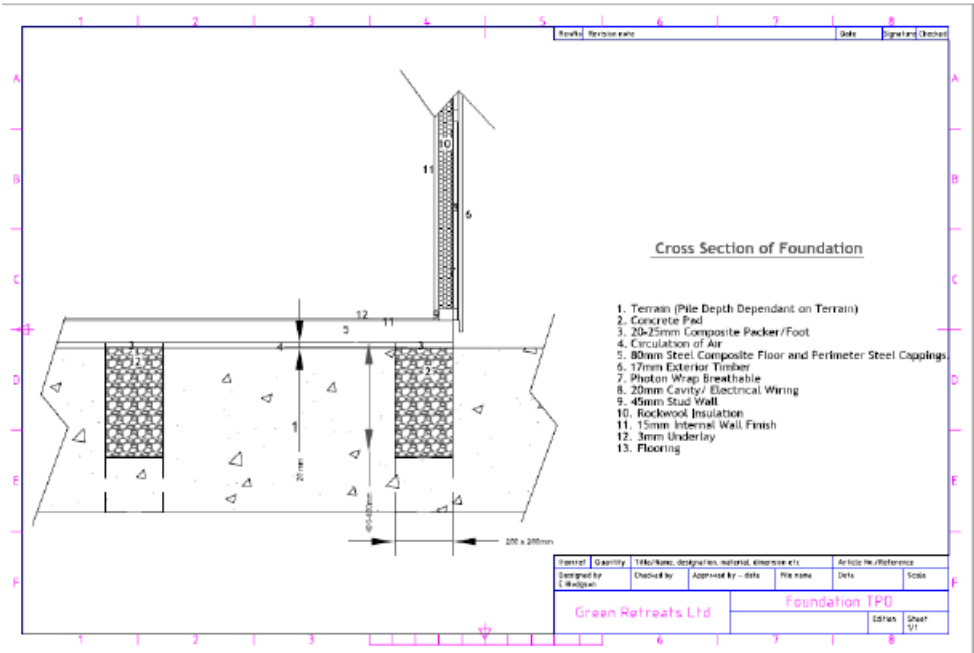


Fig 2

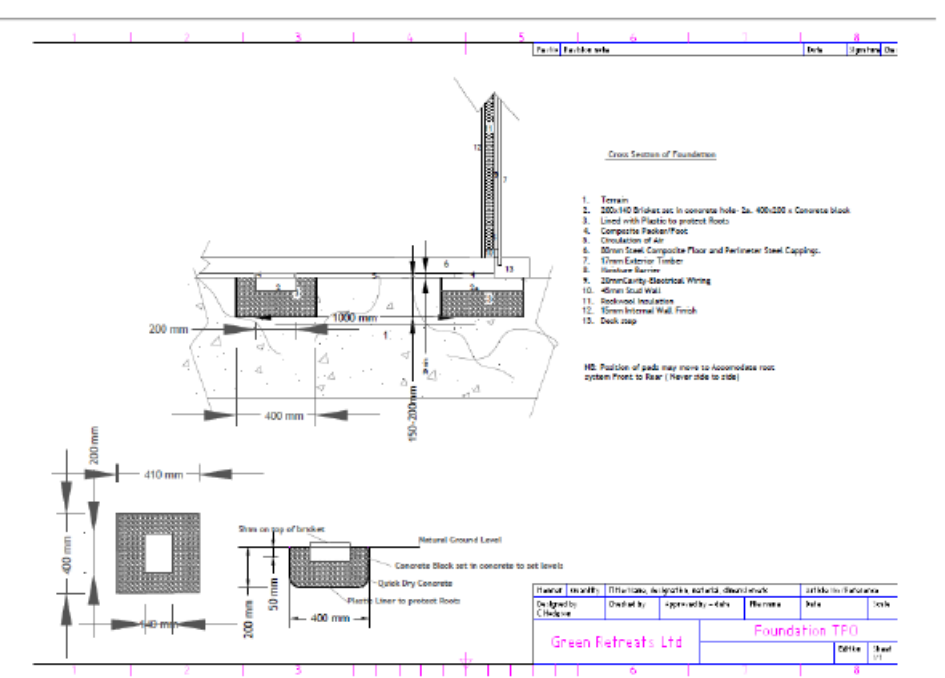
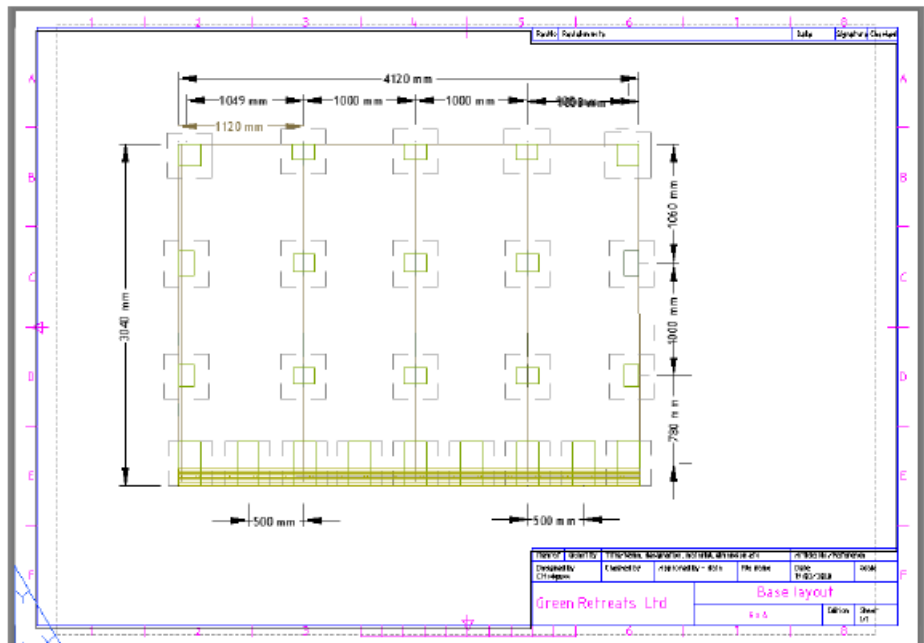


Fig 3



Site Personnel Contact Information

As far as I am aware the only personnel associated with this site at the time of writing this report is the site owner and Green Retreats the garden room construction company. Because Green retreats have been dealing with this through the planning process, Table 1 shows their contact details if any enquires relating to this project need answering.

Table 1

Name	Relation to Site	Contact Details
Green Retreats	Garden Room Construction Company	01296 653078

LIMITATIONS AND QUALIFICATIONS

LIMITATIONS AND QUALIFICATIONS

Unless specifically mentioned the report will only be concerned with ground inspections. No below ground inspections will be carried out without prior confirmation from the client that such works should be undertaken. This report is for the purposes of identifying the potential impact construction activities could have on the trees and is not a health and safety assessment of the trees. A cursory assessment of the trees health and condition will be recorded, but this is not to be taken as a detailed assessment of its structural condition, health, and management recommendations in relation to this. A separate tree inspection regime focusing on these aspects will need to be undertaken if this is required.

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available during the inspection process. No checking of independent data will be undertaken, Andrew Day will not be responsible for the recommendations within this report where essential data are not made available or are inaccurate.

This report will remain valid for one year from the date of inspection but will become invalid if any tree works not recommended within the report are undertaken, soil levels around the trees are altered in any way, and extreme weather conditions are experienced or if any building works that could impact on the tree are undertaken or not disclosed.

If any of the above occurs, then it is strongly recommended that a new tree inspection is carried out.

It will be appreciated, and deemed to be accepted by the client that the formulation of the recommendations for the management of the trees will be guided by the following:

1. The need to avoid reasonable foreseeable damage
2. The arboricultural considerations – Tree safety, good Arboricultural practise and aesthetics.

The client is deemed to have accepted the limitation placed on the recommendations by the sources quoted in the attached report. Where time constraints or the client limits sources, this may lead to an incomplete quantification of the risk.

TREE PROTECTION PLAN

(This plan is for reference only; please refer to the separate A3 plan for scaling if required)

