Construction Management Plan

pro forma v2.1

Persephone Gardens

July 2017

Camden

Contents

Appendix M – Construction Noise Assessment

Appendix N – Air Quality Assessment

Appendix O – Sample Information for Dust Monitors

Revisions & additional material

Please list all iterations here:

Date	Version	Produced by
July 2017	1 – pre-consent and pre-appointment of the Principal Contractor	Life Care Residences and sub-contractors

Additional sheets

Please note – the review process will be quicker if these are submitted as Word documents or searchable PDFs.

Date	Version	Produced by

Camden

Introduction

The purpose of the **Construction Management Plan (CMP)** is to help developers to minimise construction impacts, and relates to both on site activity and the transport arrangements for vehicles servicing the site.

It is intended to be a live document whereby different stages will be completed and submitted for application as the development progresses.

The completed and signed CMP must address the way in which any impacts associated with the proposed works, and any **cumulative impacts of other nearby construction sites**, will be mitigated and managed. The level of detail required in a CMP will depend on the scale and kind of development. Further policy guidance is set out in Camden Planning Guidance **(CPG)** 6: Amenity and **(CPG)** 8: Planning Obligations.

This CMP follows the best practice guidelines as described in Transport for London's (TfL's Standard for Construction Logistics and Cyclist Safety (**CLOCS**) scheme) and Camden's Minimum Requirements for Building Construction **(CMRBC)**.

The approved contents of this CMP must be complied with unless otherwise agreed with the Council in writing. The project manager shall work with the Council to review this CMP if problems arise in relation to the construction of the development. Any future revised plan must also be approved by the Council and complied with thereafter.

It should be noted that any agreed CMP does not prejudice or override the need to obtain any separate consents or approvals such as for road closures or hoarding licences.

If your scheme involves any demolition, you need to make an application to the Council's Building Control Service. Please complete the "**Demolition Notice.**"

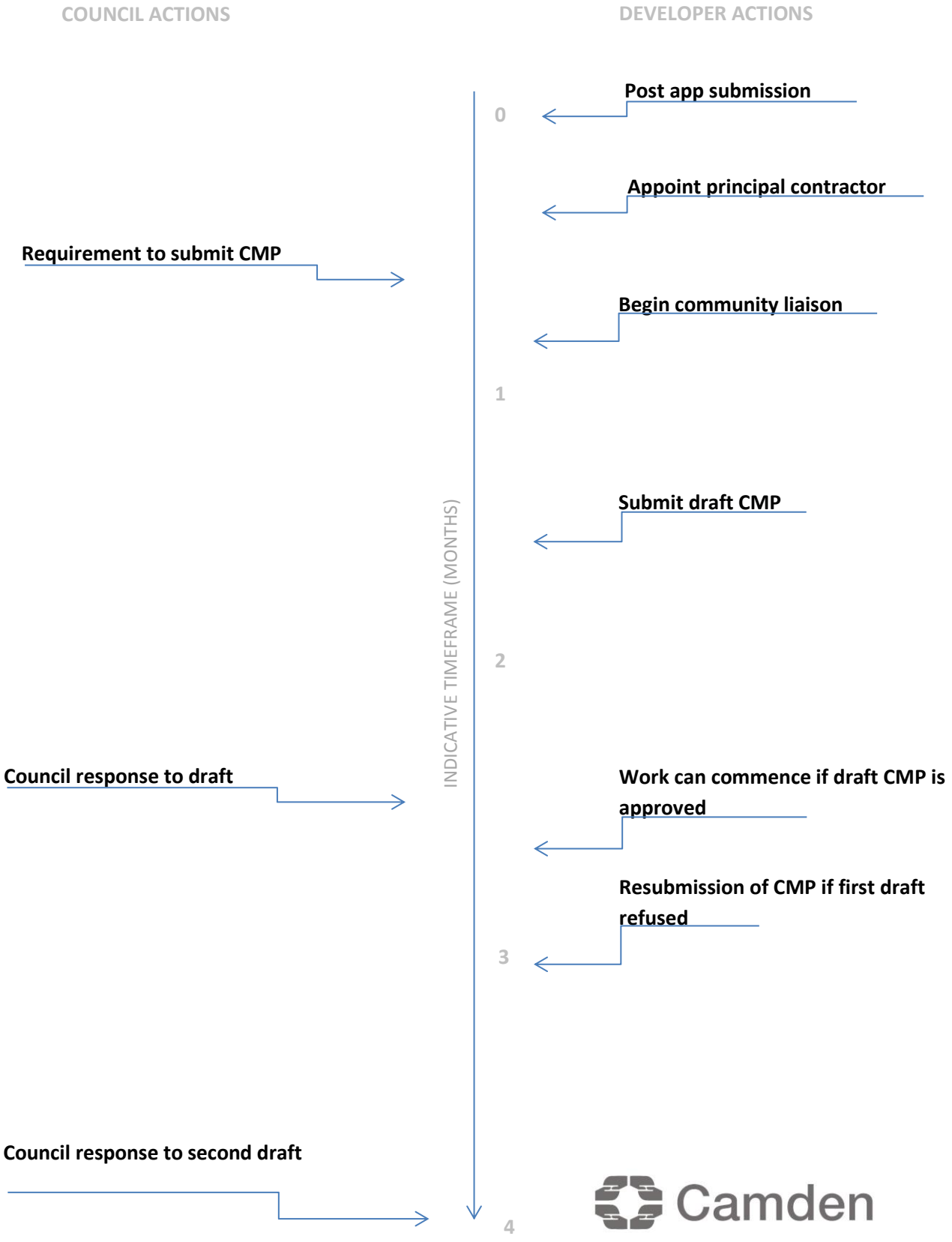
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. **It is preferable if this document, and all additional documents, are completed electronically and submitted as Word files to allow comments to be easily documented. These should be clearly referenced/linked to from the CMP.**

Please notify that council when you intend to start work on site. Please also notify the council when works are approximately **3 months from completion.**

(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearance, delivery of plant & materials, construction, etc.)

Revisions to this document may take place periodically.

Timeframe


COUNCIL ACTIONS
DEVELOPER ACTIONS
Post app submission
0
Appoint principal contractor
Requirement to submit CMP
Begin community liaison
1
Submit draft CMP
INDICATIVE TIMEFRAME (MONTHS)
2
Council response to draft
Work can commence if draft CMP is approved
Resubmission of CMP if first draft refused
3
Council response to second draft
4

Contact

1. Please provide the full postal address of the site and the planning reference relating to the construction works.

Address: Persephone Gardens, Gondar Gardens, London

Planning ref: No planning reference to date.

Type of CMP - Section 106 planning obligation/Major sites framework

2. Please provide contact details for the person responsible for submitting the CMP.

Name: Daniel Perfect

Address: Life Care Residences, Sherwood House, Forest Road, Kew, London, TW9 3BY

Email: dperfect@lcr.uk.com

Phone: 020 8939 9600 / 077 4877 6210

3. Please provide full contact details of the site project manager responsible for day-to-day management of the works and dealing with any complaints from local residents and businesses.

A Principal Contractor has not yet been appointed. This information will be provided following consent and the appointment of the Principal Contractor.

4. Please provide full contact details of the person responsible for community liaison and dealing with any complaints from local residents and businesses if different from question 3. In the case of **Community Investment Programme (CIP)**, please provide contact details of the Camden officer responsible.

Principal Contactor

A Principal Contractor has not yet been appointed. The contact for the Principal Contractor will be provided following consent and the appointment of the Principal Contractor.

Life Care Residences Contact

Name: Daniel Perfect

Address: Life Care Residences, Sherwood House, Forest Road, Kew, London, TW9 3BY

Email: dperfect@lcr.uk.com

Phone: 020 8939 9600 / 077 4877 6210

5. Please provide full contact details including the address where the main contractor accepts receipt of legal documents for the person responsible for the implementation of the CMP.

A Principal Contractor has not yet been appointed. This information will be provided following consent and the appointment of the Principal Contractor.

Site

6. Please provide a site location plan and a brief description of the site, surrounding area and development proposals for which the CMP applies.

The proposed development includes the partial demolition of the existing reservoir, including the roof and most of the internal structure, and the erection of six 4-6 storey buildings and four 2-3 storey link buildings. The proposed development will have a common basement level within the retaining walls of the existing reservoir, and a site-wide biodiversity-led landscaping and planting scheme including external amenity space, drop off area, retention pond and slope stabilisation.

The accommodation includes:

- 82 self-contained extra care apartments;
- a 15 bed nursing home;
- associated communal facilities including reception area, guest suite, restaurant, café, bar, library, exercise pool, gym, therapy rooms and cinema; and
- associated support facilities including staff offices, welfare and training spaces, storage, laundry, kitchen, cycle storage, car parking and plant areas.

A site location plan is included in Appendix A.

The proposed development site sits within a Site of Importance for Nature Conservation (SINC) designated for its mostly neutral grassland, moderate diversity of common wild flower plants, and a population of the locally uncommon spiked sedge (*Cares spicata*). The site also has the only known population of slow worm (*Anguis fragilis*) in the London Borough of Camden. A detailed Ecological Management Plan will be put in place during construction and operation of the proposed development to ensure the protection and enhancement of the SINC and its flora and fauna (refer to Appendix B).

7. Please provide a very brief description of the construction works including the size and nature of the development and details of the main issues and challenges (e.g. narrow streets, close proximity to residential dwellings etc.).

The proposed development includes the demolition and partial retention of the existing below ground brick-built reservoir structure and the construction of a building with four storeys above grade and two storeys below grade. The building includes six cores providing vertical circulation and lateral stability to a reinforced concrete frame, clad primarily in brickwork with elements of curtain wall and metal finished cladding at high level.

The proposed development presents various constraints/challenges that will actively influence the methodology for construction and how the project is managed:

- **Location** - The site is located in a residential area. Properties face directly into the proposed development site on three sides requiring effective management of interfaces with local residents and the public.
- **Residential properties** - As the proposed development works are close to residential properties effective control and mitigation of environmental impactors, primarily noise, dust and vibration, will be implemented throughout the construction phase to minimise impact.
- **Constrained access** - Existing infrastructure on Mill Lane and on the junction onto Gondar Gardens road provides a constrained access. Gondar Gardens road and adjacent streets, including Agamemnon Road are also constrained due to resident parking. Management of construction traffic and interfaces with the public, including pedestrians and cyclists, will be required to minimise impacts.
- **Access to site** – Access to the proposed development site is only possible via Gondar Gardens road as the site is bordered on three sides by residential properties. Effective planning of site set up and material storage/laydown and access will be essential to minimise potential impacts of construction traffic.
- **Construction deliveries** - Construction deliveries will need to be planned to avoid peak times, in line with Camden Council guidance, particularly given the proximity of Beckford Primary School to the proposed development. This constraint will need to be fully considered in terms of traffic management.
- **Construction at height** – Construction at height will be required at the site boundary and the adjacent existing footpath/highway on Gondar Gardens road. The interface will require effective planning/management to maintain protection of the public at these locations.
- **Ecology** - The site is defined as a SINC, Borough Grade 2, and construction will need to be undertaken in line with the Ecological Management Plan (refer to Appendix B).

8. Please identify the nearest potential receptors (dwellings, business, etc.) likely to be affected by the activities on site (i.e. noise, vibration, dust, fumes, lighting etc.).

The proposed development site is situated in a residential area and is surrounded on all four sides by residential properties, with the exception of the entrance to the site. The residential properties are those of Gondar Gardens (to the north and west), Agamemnon Road (to the east) and Hillfield Road (to the south) (refer to Appendix A). These properties may be impacted by construction activities on site as described in Question 7.

On Mill Lane, at the southern extent of Gondar Gardens, there are a number of commercial businesses including a public house, take-aways, dry cleaner's, veterinary surgery, dentist's surgery and a variety of shops. These may be affected by passing construction traffic but should not be impacted by on-site construction works.

9. Please provide a scaled plan detailing the local highway network layout in the vicinity of the site. This should include details of on-street parking bay locations, cycle lanes, footway extents and proposed site access locations.

Please refer to Appendix C for indicative drawing which will be updated following consent and appointment of the Principal Contractor.

10. Please provide the proposed start and end dates for each phase of construction as well as an overall programme timescale. (A Gantt chart with key tasks, durations and milestones would be ideal).

The anticipated on-site start date is 16th October 2017 with a completion date of 16 September 2019. The anticipated on-site start date will be dependent on planning consent being granted and a final version of the CMP being approved by Camden Council.

The approximate overall project duration is 100 weeks (refer to Appendix D for the Outline Indicative Programme which will be updated following consent and appointment of the Principal Contractor).

11. Please confirm the standard working hours for the site, noting that the standard working hours for construction sites in Camden are as follows:

- 8.00am to 6pm on Monday to Friday
- 8.00am to 1.00pm on Saturdays
- No working on Sundays or Public Holidays

Notwithstanding specific planning conditions imposed on the proposed development consent, working hours will be in accordance with standard working hours outlined by Camden Council for construction projects in the borough, these being:

- 8am – 6pm Monday to Friday
- Saturdays – 8am to 1pm
- Sundays and bank holidays – no site works

In accordance with 'Guidance for Contractor Working Camden', persons may be on site outside the agreed working hours but will not be permitted to undertake any noisy activities. Agreed working hours and limitations will be clearly communicated and effectively managed by the Principal Contractor.

To minimise impact on local traffic routes it may be necessary, in isolated cases, to seek dispensation to undertake activities outside the agreed working hours, particularly to take receipt of large deliveries or erect construction plant, e.g. tower cranes. Such instances will be identified and submitted to Camden Environmental Health Team (minimum two weeks prior) with all affected parties, including residents, informed and consulted on potential impact.

12. Please indicate if any changes to services are proposed to be carried out that would be linked to the site during the works (i.e. connections to public utilities and/or statutory undertakers' plant). Larger developments may require new utility services. If so, a strategy and programme for coordinating the connection of services will be required. If new utility services are required, please confirm which utility companies have been contacted (e.g. Thames Water, National Grid, EDF Energy, BT etc.) You must explore options for the utility companies to share the same excavations and traffic management proposals. Please supply details of your discussions.

The proposed development will require new utility connections for gas, water and drainage, electrical, and telecoms supplies.

A utilities search was undertaken to establish the affected utilities on the proposed development site. The existing utility networks along the Gondar Gardens highways are:

- National Grid Plc (gas);
- Thames Water (water mains & sewers);
- UK Power Networks (electricity);
- BT (telecoms); and
- Virgin (telecoms).

National Grid Plc

A new incoming gas supply will be brought onto site by National Grid, where a new branch connection will be made from the gas main on Gondar Gardens (highway/pavement). The branch will terminate at the boundary of the proposed development site with a valve and capped connection to be extended to enter the site.

Thames Water

A new incoming water supply will be brought onto the site via a connection to the Thames Water main on Gondar Gardens, and will serve the proposed development from a meter on the edge of the site boundary.

To the south of the site there is an existing foul and surface water connection to the main sewer in Gondar Gardens road. It is anticipated that a second connection to the main sewer in the road will be required at the north end of the proposed development site.

UK Power Networks

A new incoming high voltage (HV) supply shall be brought onto the site by UK Power Networks from the highway/pavement. The new HV supply shall serve an upgraded power transformer which shall serve existing local low voltage (LV) domestic housing locally surrounding the proposed development site, and a new LV connection to serve the proposed development. The replaced/upgraded transformer shall be located within plantroom as part of the main building, adjacent to the site boundary. The new LV supply for the proposed development shall be routed via underground ducts to a basement plant area.

BT & Virgin

A series of 90mm underground ducts shall be installed from the highway/pavement to a basement plant area to serve telecoms and media requirements.

Traffic Management and Coordination of works

All statutory providers shall liaise with Camden Council to determine and agree whether traffic management is required and will seek opportunities to mitigate disruption via coordinated services works, shared trenches etc.

Utility providers will be required to submit drawings and carry out the necessary traffic management, to ensure that works can be carried out safely and with minimal disruption. All proposals will be submitted 7-10 days in advance of planned works, and will be subject to Camden Council Highways approval.

Where more substantial traffic management is required, a minimum of 12 weeks' notice will be provided to Camden Council.

Community Liaison

A neighbourhood consultation process must have been undertaken prior to submission of the CMP first draft. This consultation must relate to construction impacts, and should take place following the grant of planning permission in the lead up to the submission of the CMP. A consultation process specifically relating to construction impacts must take place regardless of any prior consultations relating to planning matters. This consultation must include all of those individuals that stand to be affected by the proposed construction works. These individuals should be provided with a copy of the draft CMP, or a link to an online document. They should be given adequate time with which to respond to the draft CMP, and any subsequent amended drafts. Contact details which include a phone number and email address of the site manager should also be provided.

Significant time savings can be made by running an effective neighbourhood consultation process. This must be undertaken in the spirit of cooperation rather than one that is dictatorial and unsympathetic to the wellbeing of local residents and businesses.

These are most effective when initiated as early as possible and conducted in a manner that involves the local community. Involving locals in the discussion and decision making process helps with their understanding of what is being proposed in terms of the development process. **The consultation and discussion process should have already started, with the results incorporated into the CMP first draft submitted to the Council for discussion and sign off.** This communication should then be ongoing during the works, with neighbours and any community liaison groups being regularly updated with programmed works and any changes that may occur due to unforeseen circumstances through newsletters, emails and meetings.

Please note that for larger sites, details of a construction working group may be required as a separate S106 obligation. If this is necessary, it will be set out in the S106 Agreement as a separate requirement on the developer.

Cumulative impact

Sites located within high concentrations of construction activity that will attract large numbers of vehicle movements should consider establishing contact with other sites in the vicinity in order to manage traffic routeing and volumes. Developers in the Tottenham Court Road area have done this to great effect.

The Council can advise on this if necessary.

13. Consultation

The Council expects meaningful consultation. For large sites, this may mean two or more meetings with local residents **prior to submission of the first draft CMP**.

Evidence of who was consulted, how the consultation was conducted and a summary of the comments received in response to the consultation. Details of meetings including minutes, lists of attendees etc. must be included.

In response to the comments received, the CMP should then be amended where appropriate and, where not appropriate, a reason should be given. The revised CMP should also include a list of all the comments received. Developers are advised to check proposed approaches to consultation with the Council before carrying them out. If your site is on the boundary between boroughs then we would recommend contacting the relevant neighbouring planning authority.

Please provide details of consultation of draft CMP with local residents, businesses, local groups (e.g. residents/tenants and business associations) and Ward Councillors.

This document is the first draft of the CMP submitted as part of the planning application for the proposed development. Following consent and appointment of the Principal Contractor, the Principal Contractor will amend and update the CMP and will consult on it fully with Camden Council, local residents, businesses, local groups and Ward Councillors. A minimum of two consultation events will be undertaken on the CMP to allow for amendments to be made and these to be communicated. The updated CMP will provide details of this consultation, and any amendments made following consultation, prior to re-submission to Camden Council for approval. Local residents and community interest groups have been consulted regularly on the proposed development to date and details of this consultation can be found in Appendix E.

14. Construction Working Group

Please provide details of community liaison proposals including any Construction Working Group that will be set up, addressing the concerns of the community affected by the works, the way in which the contact details of the person responsible for community liaison will be advertised to the local community, and how the community will be updated on the upcoming works i.e. in the form of a newsletter/letter drop, or weekly drop in sessions for residents.

As per Question 15 below, the Principal Contractor will be part of the Considerate Constructors Scheme which provides guidance on community liaison requirements. It is foreseen that as a minimum the following will be implemented:

- A **Construction Working Group** will be arranged following consent and appointment of the Principal Contractor and will contain representatives of both the Developer and the Principal Contractor.
- **A Resident Engagement Meeting** will be organised prior to the commencement of work on site and at suitable intervals throughout construction, where the Construction Working Group will provide information on the progress of the proposed development and upcoming work, and to allow residents and the public to raise any concerns. Representatives of Gondar and Agamemnon Residents Association, Hillfield and Aldred Road Residents Association, Menelik Area Residents Association, Sarre Road Residents Association, West Hampstead and Fortune Green Neighbourhood Development Forum, any other local residents which may not be affiliated to an association, Camden Ward Councillors and Camden Council will be invited to attend. The Principal Contractor will be required to maintain accurate minutes of each meeting and to provide an update at future meetings of actions taken.
- A **project specific website** will be set up where local residents and the general public will be able to access relevant information on the proposed development, such as Principal Contractor contacts, project programme and this CMP.
- The Principal Contractor will appoint a specific **Public Liaison Contact** for all public queries and/or concerns. This point of contact will be advertised in local papers, through a letter drop at all properties on Gondar Gardens and neighbouring streets, on the LCR and project specific websites, and displayed on boards on the outskirts of the proposed development site. Email, phone and a postal address will be provided. The Principal Contractor will have an obligation to respond to all queries/concerns within a set time period and will report to the Construction Working Group on the actions undertaken.

15. Schemes

Please provide details of any schemes such as the 'Considerate Constructors Scheme', such details should form part of the consultation and be notified to the Council. Contractors will also be required to follow the "Guide for Contractors Working in Camden" also referred to as "Camden's Considerate Contractors Manual".

Scheme participation/membership envisaged by Principal Contractor/Sub-Contractors on the project will be:

- Participant member of the UKCG and Construction Health and Safety Group.
- Registered with Considerate Constructors Scheme. Project will be registered under the scheme and monitored to ensure compliance.

- Member of the 'Construction Skills Certification Scheme' (CSCS)
- Participation in any industry accredited scheme relevant to the specifics of the project e.g. Crane Safe Campaign, as applicable.
- All sub-contractors engaged on the project to be registered with the Freight Operators Recognition Scheme (FORS). All sub-contractors to be registered with CSCS/CPCS. The Principal Contractor to ensure these are minimum requirements for all sub-contractors.

The CMP will be updated with full details following consent and the appointment of the Principal Contractor.

16. Neighbouring sites

Please provide a plan of existing or anticipated construction sites in the local area and please state how your CMP takes into consideration and mitigates the cumulative impacts of construction in the vicinity of the site. The council can advise on this if necessary.

Appendix F contains a plan showing proposed sites for developments as outlined in Fortune Green & West Hamstead Neighbourhood Plan (Camden Council, 2015). It also shows planning applications for developments in close proximity to the proposed development site whose construction may lead to cumulative impacts should they occur simultaneously.

This plan will be updated in consultation with Camden Council prior to the commencement of construction of the proposed development to identify any new proposals, or changes to existing ones, and the timings for construction of all relevant developments in the area.

The Principal Contractor will liaise closely with Camden Council and the contractors on any other developments where construction will be occurring within the same time period to ensure that cumulative effects are minimised.

Transport

This section must be completed in conjunction with your principal contractor. If one is not yet assigned, please leave the relevant sections blank until such time when one has been appointed.

Camden is a CLOCS Champion, and is committed to maximising road safety for Vulnerable Road Users (VRUs) as well as minimising negative environmental impacts created by motorised road traffic. As such, all vehicles and their drivers servicing construction sites within the borough are bound by the conditions laid out in the CLOCS Standard.

This section requires details of the way in which you intend to manage traffic servicing your site, including your road safety obligations with regard to VRU safety. It is your responsibility to ensure that your principal contractor is fully compliant with the terms laid out in the CLOCS Standard. It is your principal contractor's responsibility to ensure that all contractors and sub-contractors attending site are compliant with the terms laid out in the CLOCS Standard.

Checks of the proposed measures will be carried out by the council to ensure compliance. Please refer to the CLOCS Standard when completing this section. Guidance material which details CLOCS requirements can be accessed here, details of the monitoring process are available here.

Please contact CLOCS@camden.gov.uk for further advice or guidance on any aspect of this section.

Please refer to the CLOCS Overview and Monitoring Overview documents referenced above which give a breakdown of requirements.

CLOCS Considerations

17. Name of Principal contractor:

A Principal Contractor has not yet been appointed. This information will be provided following consent and the appointment of the Principal Contractor.

18. Please submit the proposed method for checking operational, vehicle and driver compliance with the CLOCS Standard throughout the duration of the contract (please refer to our CLOCS Overview document and Q18 example response).

Compliance with CLOCS is aligned with the requirement for accreditation with the Freight Operators Recognition Scheme (FORS). On this basis, all fleet operators, including those working on behalf of either the Principal Contractor or their sub-contractors, will need to demonstrate accreditation to FORS Silver as a minimum. Accreditation under the FORS scheme will be a contractual prerequisite on the proposed development with compliance reviewed and checked, taking note of CLOCS *Managing Supplier Compliance Guidance*. Compliance in respect of operational, vehicle and driver compliance aspects with CLOCS requirements will be via:

- ***Desktop checks*** – Remote checking will be undertaken using the online FORS accreditation database and other equivalent accreditation schemes. The following can be checked via the online database:
  - quality operation;
  - collision reporting;
  - traffic routing;
  - records of equipment ordered or fitted to vehicles in line with CLOCS guidance (e.g. warning signage/blind spot minimisation/side guards);
  - driver licensing; and
  - driver training and development.

- ***Site Checks*** – On-site checks play a key role in ensuring compliance and will include checking the following:
  - vehicles display valid FORS certification including ID number;
  - physical check of driver licences upon arrival and traffic route plans; and
  - physical check of the delivery vehicle to review: vehicle cleanliness/blind spot minimisation, warning signage, side guards/audible warning equipment and beacons.

- ***Off-Site (Operator Depot) Checks*** – As applicable, checks may be carried out at the depot of the fleet operator to review compliance. Checks undertaken may include:
  - review of vehicle maintenance records;
  - review of driver training and development records; and
  - review of collision and near miss records.

p19. Please confirm that you as the client/developer and your principal contractor have read and understood the CLOCS Standard and included it in your contracts. Please sign-up to join the CLOCS Community to receive up to date information on the standard by expressing an interest online.

I confirm that I have included the requirement to abide by the CLOCS Standard in my contracts to my contractors and suppliers:

Daniel Perfect

LCR, Sherwood House, Forest Road, Kew, London, TW9 3BY

Please contact CLOCS@camden.gov.uk for further advice or guidance on any aspect of this section.

Site Traffic

Sections below shown in blue directly reference the CLOCS Standard requirements. The CLOCS Standard should be read in conjunction with this section.

20. Traffic routing: *"Clients shall ensure that a suitable, risk assessed vehicle route to the site is specified and that the route is communicated to all contractors and drivers. Clients shall make contractors and any other service suppliers aware that they are to use these routes at all times unless unavoidable diversions occur."* (P19, 3.4.5)

Routes should be carefully considered and risk assessed, taking into account the need to avoid where possible any major cycle routes and trip generators such as schools, offices, public buildings, museums etc. Where appropriate, on routes that use high risk junctions (i.e. those that attract high volumes of cycling traffic) installing Trixi mirrors to aid driver visibility should be considered.

Consideration should also be given to weight restrictions, low bridges and cumulative impacts of construction (including neighbouring construction sites) on the public highway network. The route(s) to and from the site should be suitable for the size of vehicles that are to be used.

a. Please indicate routes on a drawing or diagram showing the public highway network in the vicinity of the site including details of links to the Transport for London Road Network (TLRN).

It is anticipated that construction vehicles will access the proposed development site via Gondar Gardens road, via Mill Lane from mainly an easterly direction (although westerly access maybe considered). In the early stages of the programme, week 1 to week 26, vehicles will be able to drive

onto the site, turn and drive out of the site. They will drive south down Gondar Gardens road to Mill Lane. This section of Gondar Gardens road from the site to Mill Lane will be controlled by traffic marshals (refer to Appendix G – green arrows).

After approximately week 26 this turning facility will be lost. Delivery vehicles will now be unloaded/loaded from the zone established to the front of the site. When ready to leave, these vehicles will reverse into the newly formed centrally-situated courtyard ground floor slab area (managed by traffic marshals) and depart the site by the access route.

However, occasionally, larger vehicles may have to leave the unloading zone by continuing along Gondar Gardens road to Agamemnon Road and then Ajax Road (refer to Appendix G – red arrows).

Appendix G also demonstrates the local public transport links close to the proposed development site. These drawings will be updated following consent and appointment of the Principal Contractor

It is currently anticipated that material export off site will be disposed at the following locations:

- Landfill Site (operated by Tarmac), London Colney, AL4 0RY; and/or
- Landfill Site (Operated by O'Malley), Denham, UB9 4HF

The final disposal location will be determined following consent and the appointment of the Principal Contractor and take into consideration timing of the project commencement, capacity of the site and classification of materials on site.

b. Please confirm how contractors, delivery companies and visitors will be made aware of the route (to and from the site) and of any on-site restrictions, prior to undertaking journeys.

In line with CLOCS standard and prior to commencement of the works, a suitable risk-assessed route to/from the site will be agreed. The route will take note of potential constraints and mitigate, where possible, for any impacts on existing traffic. The agreed route will be incorporated into Project Traffic Management Plan which will form part of this CMP. Site delivery times to avoid peak traffic will be assessed and determined. The confirmed route will be submitted to Camden Council for review and agreement as part of the final CMP prior to commencement of construction. All companies delivering to the proposed development site will be provided with the following documents as part of contractual documentation;

- CMP incorporating Site Logistics and Traffic Management Plan; and
- confirmed route to and from the proposed development site including directions.

Before delivering to the proposed development site, the Principal Contractor/fleet operator will be required to brief all drivers on the agreed route to site, with briefing attendance recorded. The Project Traffic Management Plan will be regularly reviewed by the Principal Contractor, taking account of factors affecting the agreed route and amended as necessary. Part of the review will involve

continuous liaison with neighbours and undertaking two-way communication to identify potential issues.

Factors affecting the route may include:

- other construction sites and neighbouring projects;
- road works or road closures; and/or
- specific local events impacting traffic conditions.

Amendments and/or revised routes will be communicated to the relevant contractors/fleet operators who will re-brief drivers accordingly. Deliveries will be subject to a delivery management/booking system, with incoming deliveries required to be pre-booked/approved in advance. Drivers will be required to contact the proposed development site prior to departure to ensure no issues will impact the planned delivery, including current traffic conditions that could affect journey time/time of arrival. The provision of suitable and extensive directional site signage, to signify the route is important to assist drivers when attending site, will be considered in conjunction with Camden Council Highways team.

21. Control of site traffic, particularly at peak hours: "*Clients shall consider other options to plan and control vehicles and reduce peak hour deliveries"* (P20, 3.4.6)

Construction vehicle movements are generally acceptable between 9.30am to 4.30pm on weekdays and between 8.00am and 1.00pm on Saturdays). If there is a school in the vicinity of the site or on the proposed access and/or egress routes, then deliveries must be restricted to between 9.30am and 3pm on weekdays during term time. (Refer to the *Guide for Contractors Working in Camden*).

A delivery plan should ensure that deliveries arrive at the correct part of site at the correct time. Instructions explaining such a plan should be sent to all suppliers and contractors**.** Consideration should be given to the location of any necessary holding areas for large sites with high volumes of traffic. Vehicles must not wait or circulate on the public highway. Whilst deliveries should be given set times to arrive, dwell and depart, no undue time pressures should be placed upon the driver at any time.

a. Please provide details of the typical sizes of all vehicles and the approximate frequency and times of day when they will need access to the site, for each phase of construction. You should estimate the average daily number of vehicles during each major phase of the work, including their dwell time at the site. High numbers of vehicles per day and/or long dwell times may require vehicle holding procedures.

The construction vehicle movements for the period encompassing demolition, substructure and superstructure phases are proposed to be between 08:00 and 18:00. This is due to the prolonged and

continuous nature of the concreting works, which include the setting up of the concrete pump, concrete pouring (continuous), followed by clean down which will run beyond the general 16:30 requirement. Vehicle movements following this period will generally be between 09:30 and 16:30 on weekdays and 08:00 and 13:00 on Saturdays.

All vehicles accessing the site will use highway specification roads and therefore will be highway compliant. Hence roads will be suitable for construction traffic.

Typical vehicle sizes are expected to be:

- concrete trucks 8m, 4 axles;
- large plant deliveries, articulated lorries 15m trailer;
- reinforcement and formwork deliveries, articulated lorries 10-15m trailer;
- miscellaneous, rigid lorries with maximum 13m trailer; and
- non-articulated lorries and delivery vans.

Appendix H demonstrates the anticipated Daily Vehicle Movements by month. This will be updated following consent and appointment of the Principal Contractor.

b. Please provide details of other developments in the local area or on the route.

Appendix F contains a plan showing proposed sites for developments as outlined in Fortune Green & West Hampstead Neighbourhood Plan (Camden Council, 2015). It also shows planning applications for developments in close proximity to the proposed development site whose construction may have cumulative impacts should they occur simultaneously.

This plan will be updated in consultation with Camden Council prior to the commencement of construction to identify any new proposals and the timings for construction of all relevant developments in the area.

The Principal Contractor will liaise closely with Camden Council and the contractors on any other developments where construction will be occurring within the same time period to ensure that cumulative effects are minimised.

c. Please outline the system that is to be used to ensure that the correct vehicle attends the correct part of site at the correct time.

All contractors delivering to site will be required to notify the Principal Contractor in advance and book in deliveries using the agreed delivery management system. Deliveries will need to be booked in a minimum of seven days in advance via the site logistics team.

When confirming/booking in a delivery, the following information will be required by the Principal Contractor:

- vehicle size/off-load requirements;
- FORS accreditation details;
- planned date of delivery;
- company details;
- appointed site contact for delivery; and

- contact details for driver/haulier.

Delivery request submitted, the Principal Contractor will review and confirm if acceptable and provide a time slot for arrival to site. Any off-load/storage locations for deliveries will be confirmed prior to delivery date via the appointed contact and details provided to fully trained and competent Traffic Marshalls responsible for co-ordinating the delivery upon arrival. Delivery drivers will be instructed to contact the site a minimum of 30 minutes prior to arrival to ensure they are informed of delays. Deliveries not pre-booked or arriving outside of their agreed time slot will be turned away from the site.

Deliveries will be met by Traffic Marshalls and inspected before being directed to the appointed contact. Delivery drivers entering the site will be briefed on site rules and their vehicles will be inspected. Any vehicles deemed non-compliant will not be allowed to enter the site. The appointed contact will be responsible for checking the delivery is correct, in addition to escorting the delivery to the off-load area in conjunction with site traffic marshals.

A site logistics plan will be prepared prior to commencement to identify entrance/access and laydown/storage areas to assist with the planning and control of deliveries. This will be issued to all sub-contractors prior to commencement to allow deliveries to be properly planned.

d. Please identify the locations of any off-site holding areas (an appropriate location outside the borough may need to be identified, particularly if a large number of delivery vehicles are expected) and any measures that will be taken to ensure the prompt admission of vehicles to site in light of time required for any vehicle/driver compliance checks. Please refer to question 24 if any parking bay suspensions will be required for the holding area.

Potential off-site holding areas for site traffic/deliveries will be confirmed by the Principal Contractor within the Project Traffic Management Plan following consent and appointment of the Principal Contractor. It is currently envisaged that at peak times and during busy periods the provision of off-site holding area would be beneficial in allowing better control of deliveries and reducing the potential for waiting vehicles.

The requirement for an off-site holding area will be reviewed in line with the proposed programme and may be implemented during specific periods where the number and frequency of planned deliveries requires detailed timing and control to avoid waiting traffic and congestion.

e. Please provide details of any other measures designed to reduce the impact of associated traffic (such as the use of construction material consolidation centres).

The following measures will potentially be employed to reduce and mitigate the impact of construction traffic, either through improved management of logistics or through non-traditional construction methodology:

- The proposed development will operate a 'Just in Time' protocol in terms of deliveries to ensure more regular flow and avoid peaks of excessive deliveries. This also provides an opportunity to manage and reduce vehicle sizes required to supply the site.
- The Principal Contractor will identify and utilise off-site manufacture and pre-fabrication where possible to minimise the number of deliveries to site through a reduction in single components being required in lieu of composite and modularised solutions.
- The Principal Contractor will utilise off-site material consolidation centres for specific high volume trade packages in conjunction with pre-fabrication of components.
- Incoming deliveries will be pre-slung/pre-strapped to allow for quick off-load upon arrival which will reduce waiting time on site and/or traffic congestion.
- The Principal Contractor will instigate a process of pre-selection of allocated delivery drivers and vehicles via repeat/bulk suppliers to allow for vehicle and compliance checks to be carried out in advance at depot thereby reducing time spent on site.
- Where possible a vehicle holding area will be provided on the proposed development site to avoid the need for vehicles to remain outside the site boundary and on the public highway.
- The Principal Contractor will undertake effective planning of the construction operations to allow for progressive loading out of materials as works progress and in advance of subsequent trade packages being commenced to provide a regulated pattern of deliveries and avoid peaks.

22. Site access and egress: *"Clients shall ensure that access to and egress from the site is appropriately managed, clearly marked, understood and clear of obstacles."* (P18, 3.4.3)

Vehicles entering and leaving the site should be carefully managed, using gates that are clearly marked and free from obstacles. Traffic Marshalls must ensure the safe passage of pedestrians, cyclists and other traffic when vehicles are entering and leaving site, particularly if reversing.

a. Please detail the proposed access and egress routes to and from the site

Please see responses provided in Section 20a and Section 23 of the CMP.

b. Please describe how the access and egress arrangements for construction vehicles will be managed.

The Principal Contractor will produce a Site Logistics Plan to identify the following as a minimum:

- main access and egress points (gates will be specifically referenced and numbered);
- material off-load and laydown areas;
- material storage areas;
- site haul routes/access routes;
- site welfare and accommodation; and
- tower crane and static plant locations.

Vehicles accessing/egressing the site will be controlled by qualified/competent traffic marshals. To ensure a secure boundary is maintained gates will only be opened to facilitate the access/egress of vehicles and will be kept locked at all other times. The Principal Contractor will appoint a Logistics Manager to ensure plans, protocols and procedures are implemented.

Holding areas will be utilised to prevent congestion and allow vehicles to be held as necessary. Vehicles will only be permitted to leave the site once the Traffic Marshals have confirmed it is safe to do so having checked conditions on the highway, including for the presence of pedestrians and cyclists. All vehicles will be checked for cleanliness prior to exiting the site to prevent contamination of the highway and will be cleaned as necessary.

Traffic Marshals will be provided with two-way radios to ensure effective communication with each other and site management, including sub-contracted supervisors. Daily briefings will be undertaken to review planned deliveries using the delivery schedule and in conjunction with the Logistics Manager.

c. Please provide swept path drawings for any tight manoeuvres on vehicle routes to and from the site including proposed access and egress arrangements at the site boundary (if necessary).

Refer to Appendix I for indicative drawings which will be updated following consent and appointment of the Principal Contractor.

d. Provision of wheel washing facilities should be considered if necessary. If so, please provide details of how this will be managed and any run-off controlled.

During the demolition and substructure phases vehicle movements on the site will be kept to appropriate temporary hard standing areas to minimise the risk of wheels becoming contaminated with mud and clay. However, consideration will be given to establishing a drive-through wheel wash facility which recycles and recirculates 100% of water separating the muck and debris in a holding tank area for easy removal and cleaning.

Typical Recycled Water Wheel Wash Facility

Following these phases vehicles will not leave the public highway resulting in wheel wash facilities no longer being required. Any debris from the off-loading procedure will be swept clean at the time of incident. Spill response kits will be available and trained operatives will be in attendance to address any spillage of liquids or fluid material within the loading and unloading zone. Road conditions will be continuously monitored with adequate facilities in place for cleaning as necessary.

23. Vehicle loading and unloading: *"Clients shall ensure that vehicles are loaded and unloaded on-site as far as is practicable."* (P19, 3.4.4)

If this is not possible, Traffic Marshalls must ensure the safe passage of pedestrians, cyclists and motor traffic in the street when vehicles are being loaded or unloaded.

Please provide details of the parking and loading arrangements for construction vehicles with regard to servicing and deliveries associated with the site (e.g. delivery of materials and plant, removal of excavated material). This is required as a scaled site plan, showing all points of access and where materials, skips and plant will be stored, and how vehicles will access and egress the site. If loading is to take place off site, please identify where this is due to take place and outline the measures you will take to ensure that loading/unloading is carried out safely. Please outline in question 24 if any parking bay suspensions will be required.

The current intention is to close the Gondar Gardens' footpath adjacent to the site for the duration of the works to eliminate any interface with pedestrians within this area. From weeks 1 to 26 vehicles will be able to access the site via the existing crossover in Gondar Gardens. After this period, and as the substructure works are progressing, this facility will be lost. An unloading/loading zone will be established in the proposed development site. This zone will be serviced by tower crane 1 and will be controlled by traffic marshals (refer to Appendix J for indicative drawings which will be updated following consent and appointment of the Principal Contractor).

It is anticipated that two luffing tower cranes of suitable radius and capacity will be provided for the construction of the concrete frame. The cranes will also be retained for the distribution of the façade materials. We have selected luffing tower cranes to avoid any oversailing issues (refer to Appendix J). The exact location of the cranes will be subject to final approval from the structural engineer. However, the cranes will be fitted with a zoning system to prevent oversail on critical boundaries. A lifting plan and schedule will be managed daily by the site management team to avoid "stacking up" of vehicles and congestion. Drop chains, slings, straps, skips, forks, lifting frames and boat skips will be available to facilitate the unloading and distribution of materials.

Typical Example of Luffing Tower Crane

Traffic marshals will pay particular attention to pedestrians and cyclists especially during peak hours. Additional signage will be put into place to highlight speed restrictions on the approach to the site. Sub-contractors must allow for breaking down of materials off site to accommodate the logistical constraints of the proposed development.

All deliveries will be made on an 'as required' basis to meet the progress of the works. Sub-contractors are to make allowance for delivery by the most appropriate type of vehicle i.e. Hiab lorry, rear loader, side loader and rigid lorry.

Storage of materials will be strictly in agreement with the Principal Contractor and in clearly designated areas. Materials will not be stored next to the work face, on or against final or part-completed works nor will materials be in or around fire escape and access/egress routes.

Highway interventions

Please note that Temporary Traffic Orders (TTOs) and hoarding/scaffolding licenses may be applied for prior to CMP submission but won't be granted until the CMP is signed-off.

24. Parking bay suspensions and temporary traffic orders

Please note, parking bay suspensions should only be requested where absolutely necessary. Parking bay suspensions are permitted for a maximum of 6 months, requirement of exclusive access to a bay for longer than 6 months you will be required to obtain Temporary Traffic Order (TTO) for which there is a separate cost.

Please provide details of any proposed parking bay suspensions and TTO's which would be required to facilitate construction. **Building materials and equipment must not cause obstructions on the highway as per your Considerate Contractors obligations unless the requisite permissions are secured.**

Information regarding parking suspensions can be found here.

The parking bays on the west side of Gondar Gardens, directly in front of the proposed development site entrance, will need to be suspended for the duration of the works. Site constraints make it necessary to suspend the bays due to the following constraints:

- access is only available from the west of the site via Gondar Gardens road;
- there is limited laydown area within the proposed development site boundary due to the requirement to maintain existing areas of natural habitat; and
- the proximity of the new frontage to the existing footpath along Gondar Gardens road.

Suspending parking bays will facilitate construction and provide a safe zone between construction operations and the residents and public. Parking bays will need to be suspended for the full period of construction (more than six months), and therefore a TTO will be required. The suspended bays will be segregated from the highway by use of suitably robust barriers to form a 'pit lane' for construction traffic. Access to and from the 'pit lane' will be controlled by traffic marshals to ensure the safety of the public and road users. Suspended bays will not be utilised for the storage of materials outside the site boundary or any other equipment related to the project, in line with the '*Guide for Contractors Working in Camden'*. Refer to Appendix K for indicative drawings which will be updated following consent and appointment of the Principal Contractor.

25. Scaled drawings of highway works

Please note that use of the public highway for storage, site accommodation or welfare facilities is at the discretion of the Council and is generally not permitted. If you propose such use you must supply full justification, setting out why it is impossible to allocate space on-site. You must submit a detailed (to-scale) plan showing the impact on the public highway that includes the extent of any hoarding, pedestrian routes, parking bay suspensions and remaining road width for vehicle movements. We prefer not to close footways but if this is unavoidable, you should submit a scaled plan of the proposed diversion route showing key dimensions.

- a. Please provide accurate scaled drawings of any highway works necessary to enable construction to take place (e.g. construction of temporary vehicular accesses).

As per the response in Question *24*, it is envisaged that the previously identified constraints will require a safe zone to be created between the construction site and residents/road users; closure of the footpath will be necessary to the west elevation allied with the suspension of parking bays. Site hoarding will enclose the section of closed footpath, with pedestrians being directed from the east to the west side of Gondar Gardens at either end of the closure. Temporary crossing points to be established to safely direct pedestrians. The highway on Gondar Gardens will be unaffected by the proposed closure and suspensions on the east side of the street. The existing access gate off Gondar Gardens road will be utilised for initial enabling and site clearance works, with a proposed new permanent vehicle entrance being formed adjacent to South Mansions prior to commencement of the main works (refer to Appendix K for indicative drawings which will be updated following consent and appointment of the Principal Contractor).

Installations of signage or equipment will all be in accordance with the relevant Traffic/Highway regulations and will take note of the requirements set out in the *'Guide for Contractors Working in Camden'.*

b. Please provide details of all safety signage, barriers and accessibility measures such as ramps and lighting etc.

The majority of the safety signage, external safety lighting and accessibility measures will be placed on Gondar Gardens to the west of the proposed development site. Details will be defined following consent and the appointment of the Principal Contractor but it is envisaged that the following will be required:

- Suitable lighting to illuminate the external hoarding and the traffic segregation barriers on Gondar Gardens during hours of darkness to prevent potential traffic collisions and improve general visibility.
- Safety/directional signage on the external perimeter of the site at the vehicle entry locations warning of potential risks and identifying access/egress points.
- Directional signage along the traffic route to the proposed development site to direct incoming site traffic/deliveries.
- Suitable safety/directional signage to inform pedestrians of potential construction traffic and pavement diversions at either end of the west side of the proposed development site.
- Convex mirrors will be placed at the site access locations to provide visibility of on-coming traffic or cyclists for vehicles exiting onto Gondar Gardens.
- Convex mirrors will also be placed on the external corners of the perimeter hoarding on Gondar Gardens where the footpath will be closed. This will improve visibility for pedestrians required to cross from the east to the west pavement due to closure of the footpath.
- Designated crossing points will be provided at each end of the proposed pavement closure including temporary pavement crossing/ramps as necessary.

The above is indicative and non-exhaustive with the final proposals to be defined by the Principal Contractor's Traffic Management/Logistics Plan. All of the above will be undertaken following consultation with Camden's Highways department and in accordance with relevant regulations, in addition to the requirements outlined in the *'Guide for Contractors Working in Camden'*

26. Diversions

Where applicable, please supply details of any diversion, disruption or other anticipated use of the public highway during the construction period (alternatively a plan may be submitted).

Provided the closure of the eastern pavement on Gondar Gardens and the suspension of the parking bays on Gondar Gardens are acceptable to Camden Council, the extent of disruption to the highway and the requirement for temporary diversions to facilitate construction would be mitigated. An indicative list of activities that might impact the highway include:

- installation of external perimeter hoarding/traffic segregation on Gondar Gardens;
- delivery/collection of large plant/equipment - e.g. excavators/piling rig/mobile cranes;
- large delivery vehicles required to access the site;
- tower crane erection/de-rigging operations; and/or
- utility and drainage connections required to existing infrastructure in Gondar Gardens;

The extent of disruption to the highway will be mitigated wherever possible through effective planning, robust delivery control and effective traffic management by the Principal Contractor. Certain activities will require temporary closure of Gondar Gardens and diversion of traffic; this will be confirmed following appointment of the Principal Contractor. Any event requiring closure of the

existing highway will be formally submitted and agreed with Camden Council's Highway department in advance.

27. VRU and pedestrian diversions, scaffolding and hoarding

Pedestrians and/or cyclist safety must be maintained if diversions are put in place. Vulnerable footway users should also be considered. These include wheelchair users, the elderly, those with walking difficulties, young children, those with prams, the blind and partially sighted. Appropriate ramping must be used if cables, hoses, etc. are run across the footway.

Any work above ground floor level may require a covered walkway adjacent to the site. A licence must be obtained for scaffolding and gantries. The adjoining public highway must be kept clean and free from obstructions. Lighting and signage should be used on temporary structures/skips/hoardings etc.

A secure hoarding will generally be required at the site boundary with a lockable access.

a. Please provide details describing how pedestrian and cyclist safety will be maintained, including any proposed alternative routes (if necessary), and any Traffic Marshall arrangements.

The proposed development site is bordered on three sides by residential properties, with access only possible from the west from Gondar Gardens. All construction traffic and pedestrians will access/egress the proposed development site via this boundary. The boundary between the proposed development site and Gondar Gardens will be secured by a solid 2.4m high timber hoarding, erected in compliance with the requirements of Camden Council and the Highways Department. Vehicular and pedestrian access/egress onto the proposed development site will via lockable gates formed in the hoarding. Vehicular gates will be locked and controlled by traffic marshals, only being opened to allow controlled access/egress. Pedestrian access will be via key pad lock and biometric turnstile during working hours, with the gate to be kept locked during non-working hours. All gates in the hoarding will open into the site in line with Camden Council's recommendations, whilst hoarding will be fully lit during the hours of darkness.

The hoarding line will be at the edge of the footpath running along Gondar Gardens, with the footpath being closed for the duration of the construction works. Pedestrians will cross to the footpath on the west side of Gondar Gardens road, taking them away from a potential interface with construction operations, including traffic entering/exiting the site.

Construction traffic entering/exiting site will be controlled by competent, trained traffic marshals, who will bank vehicles and manage the interfaces with other road users, including cyclists and pedestrians. Prior to a vehicle exiting the proposed development site the traffic marshal will ensure the road (Gondar Gardens) is clear of on-coming traffic, including cyclists, before allowing the vehicle to exit.

Priority will be given to other road users/cyclists. Depending on the size of the vehicle, multiple traffic marshals may be required to safely direct and manoeuvre the vehicle. As appropriate, other traffic will be temporarily stopped on Gondar Gardens to facilitate vehicle movements. Convex mirrors will be installed at vehicular/pedestrian gates to improve visibility for persons/vehicles exiting site. This is particularly relevant where gates are set back from the main hoarding line. Signage will be installed along the extent of Gondar Gardens warning vehicle drivers, cyclists and pedestrians of the potential for construction traffic to be exiting the proposed development site.

b. Please provide details of any temporary structures which would overhang the public highway (e.g. scaffolding, gantries, cranes etc.) and details of hoarding requirements or any other occupation of the public highway.

It is currently not envisaged there will be requirement for temporary structures to overhang the public highway on Gondar Gardens based on the proposal to close the existing footpath and suspend the car parking bays to the west of the proposed development site.

The west façade of the proposed development site is close to the existing footpath on Gondar Gardens. During construction, temporary access equipment will be required, including potentially scaffolding. Closure of the existing pavement allows access equipment to be installed within the confines of the proposed development site hoarding. Diverting pedestrians across Gondar Gardens to the west side improves protection of the public during works to the façade.

SYMBOL IS FOR INTERNAL USE

Environment

To answer these sections please refer to the relevant sections of **Camden's Minimum Requirements for Building Construction (CMRBC).**

28. Please list all noisy operations and the construction method used, and provide details of the times that each of these are due to be carried out.

The proposed development site will operate within the agreed working hours outlined in the '*Guidance for Contractors Working in Camden*', unless a dispensation has been requested and granted by Camden Council in advance of planned works being undertaken. Working hours are confirmed in response to Question 11.

The following will constitute the significant operations during construction with potential to cause noise impacts:

- **Site Clearance and Partial Demolition of Existing Reservoir Structure** – Use of mechanical excavators and demolition equipment to remove the existing brickwork structure and bulk earth works. The existing structure will be crushed using mechanical means and the material re-used. Any surplus material will be removed from site (weeks 1 -16).
- **Piling/Foundations/RC Basement Structure** – Tracked piling rigs will be used to install new piled foundations, using the Continuous Flight Auger (CFA) method, and the formation of reinforced concrete foundations/retaining walls. The piling operation will involve the movement of heavy plant and drilling to form the piles. Crane lifts will be used to position equipment, including formwork/falsework and reinforcement, and there will be noise associated with off-loading activities to work areas. The installation of formwork/falsework and stripping will require metal materials to be struck. The concrete placement, using a static concrete pump, located at ground level, and compaction of concrete will use vibrating equipment. Loading and cutting of reinforcement material (weeks 16 - 32).
- **RC Super-Structure** – Construction of reinforced concrete frame using tower crane, concrete pump and compaction equipment. Extensive crane lifts will be required to position equipment, including formwork/falsework and reinforcement, which will have associated noise of off-load to work areas. The installation of formwork/falsework and stripping will require metal materials to be struck. The concrete placement using a static concrete pump located at ground level and compaction of the concrete will use vibrating equipment. Loading and cutting of reinforcement material and works at height (weeks 24 - 40).
- **External Cladding to Facades** – Brickwork, brick cladding and glazing to main façade elevations. Materials will be loaded out and positioned using the tower crane. The erection of external access systems, including scaffolding, will involve striking metal components and drilling of ties to the

structure. Depending on the final design bolting in of the façade panels may require the use of torque guns (weeks 44-60).

Internal fit out works will follow as facades to external elevations are completed, therefore reducing break-out noise.

Indicative equipment/plant and construction traffic by construction phase are detailed below:

Phase 1: Site Establishment/Clearance

Period: Week -1 to 3 (Total 3 Weeks)

Plant/Equipment: large 360 excavator (circa 20t), 2 x small 360 excavator (circa 6 t), 2 x large dumper trucks (circa 10t), small tools including chain saws/cutting equipment

Construction Traffic: plant deliveries (large), spoil removal, concrete deliveries (minimal), fuel deliveries, general site deliveries

Phase 2: Excavation/Temporary Works and Demolition to Reservoir Structure

Period: Week 1 to 19 (Total 18 Weeks)

Plant/Equipment: large 360 excavator (circa 20t), large 360 excavator/concrete muncher (circa 20t), 3 x large dumper trucks (circa 10t), concrete compaction (pokers) temporary generators (30/125kva), small tools

Construction Traffic: plant collection/deliveries (large), spoil removal, concrete deliveries (minimal), fuel deliveries, general site deliveries

Phase 3: Continuous Flight Auger (CFA) Piling

Period: Week 13 to 23 (Total 10 Weeks)

Plant/Equipment: CFA Piling rig, mobile handling crane, concrete holding drum, medium 360 excavator (circa 13t), dump truck (circa 6t), temporary generators (30/125kva), small tools

Construction Traffic: plant collection/deliveries (large), spoil removal, concrete deliveries, reinforcement deliveries, fuel deliveries, general site deliveries

Phase 4: RC Sub- Structure

Period: Week 19 to 36 (Total 17 Weeks)

Plant/Equipment: 2 x tower cranes, 2 x medium 360 excavators (circa 13t), 2 x large dump trucks circa 10t), mobile cranes, mobile concrete pumps, temporary generators (30/125/2x 320kva), concrete compaction (pokers) small tools

Construction Traffic: plant collection/deliveries (large), spoil removal, concrete deliveries, reinforcement deliveries, fuel deliveries, general site deliveries

Phase 5: RC Super- Structure

Period: Week 30 to 48 (Total 18 Weeks)

Plant/Equipment: 2 x tower cranes, static concrete pump, 2 x all terrain forklift, temporary generators (125/2 x 320kva), compressors, concrete compaction (pokers) small tools

Construction Traffic: plant collection/deliveries, concrete deliveries, reinforcement deliveries, fuel deliveries, general site deliveries

Phase 6: Envelope/Facades

Period: Week 46 to 85 (Total 39 Weeks)

Plant/Equipment: 2 x tower cranes, 2 x all terrain forklift, 6 no. goods/passenger hoist, temporary generators (125/2 x 320kva), small tools

Construction Traffic: plant collection/delivery, cladding/window/brick deliveries (large), fuel deliveries, general site deliveries

Phase 7: Internal Fit Out

Period: Week 56 to 100 (Total 44 Weeks)

Plant/Equipment: 2 x all terrain forklift, 6 no. goods/passenger hoist, temporary generators (125kva/320kva), small tools

Construction Traffic: general construction site deliveries

Phase 8: External Works and Landscaping

Indicative Period: throughout construction (refer to programme)

Indicative Plant/Equipment: medium 360 excavator (circa 13t), 2 x small 360 excavators (circa 6t), small tools

Indicative Construction Traffic: spoil off-site, concrete deliveries, general construction site deliveries

29. Please confirm when the most recent noise survey was carried out (before any works were carried out) and provide a copy. If a noise survey has not taken place please indicate the date (before any works are being carried out) that the noise survey will be taking place, and agree to provide a copy.

A baseline noise survey was undertaken on 8th and 9th of February 2017, the report is provided as Appendix L. The findings of the baseline survey are used to derive threshold noise criteria in Appendix M.

30. Please provide predictions for noise and vibration levels throughout the proposed works.

Noise levels at Noise and Vibration Sensitive Receptors (NVSRs) arising from the proposed construction activities are summarised below. This is based on a worst case scenario in which it has been assumed that all plant is operating 100% of the time.

Phase of works	Predicted daytime noise level at NVSR, $dBL_{Aeq,T}$					Complies with threshold at all NVSRs?
	NVSR1	NVSR2	NVSR3	NVSR4	NVSR5	
Phase 1	68	63	68	61	63	Exceeds by 3 dB at NVSR1 & NVSR3
Phase 2	70	65	68	61	63	Exceeds by 5 dB at NVSR1 & by 3 dB at NVSR3
Phase 3	68	64	66	60	62	Exceeds by 3 dB at NVSR1 & by 1 dB at NVSR3
Phase 4	70	67	68	62	64	Exceeds by 5 dB at NVSR1, by 2 dB at NVSR2 and by 3 dB at NVSR3
Phase 5	70	66	67	62	64	Exceeds by 5 dB at NVSR1, by 1 dB at NVSR2 and by 2 dB at NVSR3

Predicted noise levels are highest at NVSR1, with the highest noise levels predicted to occur during Phase 2, Phase 4 and Phase 5 of the works. The predicted noise levels meet the threshold criterion at NVSR4 and NVSR5 throughout all phases of the works.

At NVSR1 the predicted levels exceed the threshold by up to 5 dB during Phase 2, Phase 4 and Phase 5 of the works. At NVSR2 and NVSR3 the predicted levels exceed the threshold by up to 3 dB. Such a level of exceedance is relatively minor and will be addressed by following best practices on site. Given the degree of conservatism in the predictions, in which all plant has been assumed to operate 100% of the time, actual noise levels are anticipated to be lower than predicted.

Details on the location of the NVSRs, the prediction methods used, and assumptions made are provided in Appendix M.

It has not been possible to predict vibration levels at NVSRs arising from the works at this stage; vibration will vary according to the construction methods used, the proximity of the works to NVSRs and the ground conditions. The highest levels of vibration are anticipated during the demolition of the existing reservoir and its foundations.

31. Please provide details describing mitigation measures to be incorporated during the construction/demolition works to prevent noise and vibration disturbances from the activities on the site, including the actions to be taken in cases where these exceed the predicted levels.

Mitigation will start during the planning and detailed design phase of the proposed development, following consent. Construction techniques and methodologies will be reviewed prior to construction in relation to identified risk of noise and vibration nuisance presented by the works. Wherever possible, the methodologies selected will be those that reduce the potential for noise and vibration nuisance. An Environmental Action Plan (EAP) will be prepared by the Principal Contractor identifying all activities with the potential to create nuisance, and mitigation measures based on risk assessment will form part of this CMP. The EAP will identify trigger levels for noise and vibration and will set out a planned monitoring regime. The plan will identify what action is to be taken should trigger levels be reached; this usually requires a review of the methodology or for the intensity of operations to be reduced depending on the severity of the breach.

During construction works various practical steps will be taken to prevent nuisance from noise and vibration through good practice, including:

- Works will only be carried out during agreed working hours.
- Construction equipment will be operated electrically rather than via diesel/petrol and silenced to prevent excessive noise. Equipment will be required to be in good condition, well maintained and have effective exhaust systems.
- If it is not possible to select quiet equipment and plant, the Principal Contractor will ensure that acoustic screening is employed to reduce noise breakout and try to position equipment as far away as possible from sensitive receptors.
- The Principal Contractor will ensure that mechanical plant and equipment is switched off when not in use and will avoid revving engines wherever possible through correct plant selection.
- The Principal Contractor will utilise construction techniques that reduce vibration avoiding percussive breaking or driving in favour of expansion/hydraulic or drilled methods - e.g. CFA piling in lieu of driven piles.
- Where possible, the Principal Contractor will avoid the use of generators in lieu of mains power for temporary supplies to the proposed development site.
- The Principal Contractor will ensure that the site management and workforce are fully aware of the local conditions and constraints including sensitive receptors, with guidelines and working hours clearly identified.
- The Principal Contractor will continually assess noisy works, or those with the potential to create vibration, to ensure early identification of issues and review the proposed method statements to identify alternative methods that reduce impact.
- The requirement for noise monitoring of the works will be determined in agreement with Environmental Health prior to commencement of works.
- The Principal Contractor will utilise off-site pre-fabrication of components where possible to reduce the extent of fixing on site and the amount of delivery traffic.
- The Principal Contractor will ensure effective planning of deliveries and material off-loading to reduce time spent on site for vehicles.

The following mitigation measures will be put in place to mitigate the vibration impacts from the works:

- The Principal Contractor will utilise construction techniques that reduce vibration by avoiding percussive breaking or driving in favour of expansion/hydraulic or drilled methods - e.g. CFA piling in lieu of driven piles.
- The Principal Contractor will continually assess works with the potential to create vibration to ensure early identification of issues and review the proposed method statements to identify alternative methods that reduce impact.
- When breaking out foundations, consideration will be given to the most effective method of vibration mitigation, potentially including the use of vibration isolating trenches.
- Vibration monitoring at NVSRs will be undertaken during periods when activities are occurring within close proximity to existing buildings. The vibration meters will be fitted with an audible and visible alarm system to alert workers if vibration criteria are exceeded.
- If vibration criteria are exceeded work will be stopped and a change to the method of operation considered to minimise vibration.
- Where vibration-generating activities are proposed in close proximity to existing NVSRs, a structural survey, including a photographic record, will be undertaken of the NVSR in advance of the works to document the condition of the building.
- Residents will be given written notice in advance of activities likely to generate significant vibration, advising of the timing and anticipated duration of the works.

Further detail on noise and vibration mitigation is provided in Appendix M.

Environmental nuisance will be a primary concern during construction of the proposed development and the Principal Contractor will undertake regular consultation with residents of Gondar Gardens and adjacent areas to ensure works do not adversely impact neighbouring properties.

32. Please provide evidence that staff have been trained on BS 5228:2009

The Site Managers Safety Training Scheme (SMSTS) qualification incorporates training on BS5228:2009 Parts 1 and 2. Site management will all be in possession of current SMSTS qualification and therefore have been trained in respect of this British Standard. Site Management and Supervisors for both Principal and Sub-Contractors will be expected to have attended Site Environmental Awareness Training (SEATS).

The Principal Contractors Site Induction provided to all persons prior to commencing work on the project will include reference to BS5228:2009 as applicable and outline key points with specific relevance to the project. Specific Work Method Statements submitted by sub-contractors will be expected to take note of the BS5228:2009 when considering planned works, whilst sub-contract managers/supervisors will be expected to have completed SMSTS/SSSTS Qualification.

Following consent and appointment of the Principal Contractor the CMP will be updated to include evidence of this training.

33. Please provide details on how dust nuisance arising from dusty activities, on site, will be prevented.

Potential for migration of dust beyond the proposed development site boundary will be a significant issue to be addressed on the project, particularly given the proximity of residential properties. Dust nuisance will be mitigated during the works in the following ways:

- A suitable risk assessment of potential dust creators will be undertaken prior to construction, following consent.
- The Principal Contractor will ensure effective site management and housekeeping in line with industry best practice to avoid build-up of waste stockpiles.
- Construction methods will avoid/control cutting or grinding of materials where possible.
- The Principal Contractor will provide suitable dust suppression/screening where works are identified as requiring control - e.g. demolition and crushing of materials.
- The Principal Contractor will provide suitable haul routes/lay down and storage areas surfaced to reduce dust emissions and easily cleaned - e.g. tarmac.
- The Principal Contractor will ensure construction plant and vehicles conform with the proposed development site speed limits.
- The Principal Contractor will ensure vehicles removing waste material from the proposed development site are covered before exiting onto the highway.
- The Principal Contractor will provide suitable wheel washing/vehicle cleaning to prevent migration of dust onto highways, and road sweep as necessary.
- Stored materials will be enclosed or damped down as applicable during dry conditions to mitigate fugitive dust.
- Dust-creating materials (e.g. soil/aggregate/crushed concrete) will be stored away from the proposed development site boundaries and screened/damped down to prevent wind spread of dust.

34. Please provide details describing how any significant amounts of dirt or dust that may be spread onto the public highway will be prevented and/or cleaned.

The primary means of dust migrating onto the highway will be via construction traffic exiting the proposed development site, or blown by the wind from within the proposed development site boundary during dust-creating activities. This is specifically prevalent during dry weather. To prevent/mitigate migration of dust onto the highway the following measures will be implemented:

- Suitable haul routes, storage areas and laydown areas will be provided that prevent the creation of dust by traffic and are easily cleaned - i.e. tarmac.
- The Principal Contractor will undertake logistics planning to decrease the requirement for vehicles to travel to the proposed development site beyond the main haul routes - i.e. by providing set off-load areas with off-load being undertaken by crane wherever possible.

- If tarmac surfaces are not an option, the Principal Contractor will ensure routes are damped down regularly during dry weather to minimise migration.
- The Principal Contractor will ensure that where dust-creating activities are unavoidable the works are screened and damped down to minimise the extent of dust created.
- The Principal Contractor will ensure that all construction vehicles delivering or removing dusty materials to/from site are covered.
- The Principal Contractor will ensure that vehicles are cleaned prior to exiting the site onto the highway where necessary. This may require installation of wheel washing facilities at the exit gates.
- The Principal Contractor will undertake daily inspection of the highway along the main site access route to identify any requirement for cleaning. Road sweepers will be employed as required to maintain the cleanliness of highways.

35. Please provide details describing arrangements for monitoring of noise, vibration and dust levels.

The Environmental Action Plan (EAP) will identify all potential factors which could cause nuisance and will take note of assessments prepared during the planning phase of the proposed development, including the extent of potential receptors and sensitivity. All factors identified will be risk assessed and planned mitigation/control measures identified for implementation by the project team.

The EAP will detail site monitoring requirements. The frequency and type of monitoring will be clearly identified and, as applicable, agreed in conjunction with Camden Council and local residents. Persons responsible for carrying out monitoring and recording data will be identified in the EAP to ensure responsibility is clear. A specialist company will likely be engaged to set up monitoring equipment and to undertake physical recording of findings and produce reports on behalf of the site team.

In addition to planned, regular and routine monitoring, for example daily/weekly readings taken in set locations, a process of benchmarking will also be implemented. Review of specific activities at commencement will be undertaken to ensure that assessment of potential noise/dust/vibration levels prior to commencement are correct. The plan for initial/on-going monitoring will be a requirement of all contractors and will be clearly stated within submitted Method Statements.

36. Please confirm that a Risk Assessment has been undertaken at planning application stage in line with the GLA policy. The Control of Dust and Emissions During Demolition and Construction 2104 (SPG), that the risk level that has been identified, and that the appropriate measures within the GLA mitigation measures checklist have been applied. Please attach the risk assessment and mitigation checklist as an appendix.

A risk assessment has been undertaken in line with GLA policy and is provided in Appendix N. The risk assessment and mitigation measures will be reviewed and updated as required following consent and the appointment of the Principal Contractor and mitigation checklist completed in consultation with Camden Council.

37. Please confirm that all of the GLA's 'highly recommended' measures from the SPG document relative to the level of risk identified in question 36 have been addressed by completing the GLA mitigation measures checklist.

A risk assessment has been undertaken in line with GLA policy and is provided in Appendix N. The risk assessment and mitigation measures will be reviewed and updated as required following consent and the appointment of the Principal Contractor and mitigation checklist completed in consultation with Camden Council.

38. If the site is a 'High Risk Site', 4 real time dust monitors will be required. If the site is a 'Medium Risk Site', 2 real time dust monitors will be required. The risk assessment must take account of proximity to sensitive receptors (e.g. schools, care homes etc.), as detailed in the SPG. Please confirm the location, number and specification of the monitors in line with the SPG and confirm that these will be installed 3 months prior to the commencement of works, and that real time data and quarterly reports will be provided to the Council detailing any exceedances of the threshold and measures that were implemented to address these.

Due to the proximity of sensitive receptors to the site, including numerous residential properties, and the nature of works to be undertaken, the air quality assessment based on 'The Control of Dust and Emissions During Demolition and Construction 2014 (SPG)' guidance determines that the site will be a High Risk site during demolition, sub and superstructure construction.

Given this High Risk classification, a minimum of four real time dust monitors will be required during demolition and sub and superstructure phase of the works. The location of the monitors will be determined based on the Environmental Risk Assessment and an on-site survey by a specialist monitoring company which will determine the specific site requirements by analysis. The proposed locations of dust monitors will be reviewed and agreed with Camden Council's Environmental Health Officer prior to commencement.

The specification of proposed monitoring equipment will be confirmed prior to commencement and following the appointment of a specialist monitoring company. Various options are available to meet the following criteria:

- accurate real-time measurement of PM10, PM2.5, PM1, or Total Suspended Particles (TSP);
- automatic upload & data display;
- large storage capacity for long-term use;
- email, SMS alerts and FTP data export; and
- MCERTS certified by the Environment Agency.

Sample information is provided in Appendix O.

Monitors will be installed as soon as possible in advance of commencing demolition works. Real-time data and quarterly reports will be provided to Camden Council, or when requested, with reports outlining any exceedances of agreed thresholds and confirming the measures implemented to address them.

39. Please provide details about how rodents, including rats, will be prevented from spreading out from the site. You are required to provide information about site inspections carried out and present copies of receipts (if work undertaken).

Prior to taking possession of the site, a survey will be undertaken by a specialist who will review the planned works and phasing. This review of the site conditions will enable the development of a plan to control potential pests, including rodents, for the duration of the works. The plan will be regularly reviewed and updated based on routine inspection as the works progress.

Contractor welfare/accommodation areas are significant in encouraging rodents. Cleanliness of these areas, including effective control and disposal of food waste, is essential. Welfare facilities will be regularly inspected and cleaned to discourage rodents with food and other waste being stored in suitably covered bins, and regularly emptied to prevent waste build up. Site rules will prohibit the consumption of food and drink outside welfare areas with this being robustly implemented by the Principal Contractor and included within the Site Induction to ensure compliance. Good housekeeping within all areas of the site will be maintained to discourage rodents.

40. Please confirm when an asbestos survey was carried out at the site and include the key findings.

The visual inspection at the laboratory identified no materials suspected of potentially containing asbestos and the scheduled laboratory screening for asbestos found no detectable asbestos fibres within the samples of made ground. However further investigation will be undertaken to confirm this following consent and the appointment of the Principal Contractor. All staff will be made aware of the potential risk of asbestos fibres within the made ground and suitable working practices will be put in place during groundworks stage to minimise the risks.

41. Complaints often arise from the conduct of builders in an area. Please confirm steps being taken to minimise this e.g. provision of a suitable smoking area, tackling bad language and unnecessary shouting.

The proposed development will be registered with the Considerate Constructors Scheme and planned and managed in accordance with the code of standards outlined by the scheme. Contractors' interface with the local community is fundamental to being a Considerate Contractor, with good conduct being the cornerstone. Standards of conduct are set from the outset and the Principal Contractor will lead

by example. Providing a well set up, clean, tidy and effectively managed site is key to promoting positive conduct. Provision of excellent welfare facilities which are clean, tidy and well maintained is essential. Maintaining clean and tidy work areas through robust housekeeping is also key to promoting positive conduct.

All contractors on the proposed development will be made aware of what constitutes acceptable conduct through induction and regular briefings by the Principal Contractor's site management team. Site inductions will include specific instruction outlining project commitment to the CCS in addition to outlining specific site rules dealing with conduct. The site management team will implement rules robustly to maintain standards. Induction will specifically outline the importance of maintaining good neighbourly relationships and respect of the community.

To avoid negative interaction with the local community and promote positive conduct, the following steps will be implemented:

- Site personnel will be encouraged to use public transport to avoid potential issues with staff parking in the surrounding area. There will be no parking on site and bike storage/showers will be provided within site welfare.
- Site personnel will be expected to arrive/leave the site quickly and quietly to minimise disturbance to residents, and no loitering outside the site boundary or on Gondar Gardens will be permitted. Areas will be provided within the site for consumption of food and drink, the use of mobile phones and smoking.
- Site personnel will be expected to arrive/leave the site in clean clothes and without PPE. When using the local amenities, expectation will be that PPE and excessively dirty clothes/overalls are removed prior to leaving site. Changing facilities including lockers will be provided within welfare accommodation.
- Foul or abusive language will not be tolerated, nor will excessive and unnecessary shouting, both on site and specifically outside the site on the surrounding streets. Two-way radio communication will be used to negate the requirement for shouting.

A formal protocol will be established for dealing with complaints and implemented as necessary by the site team. The process of managing complaints will be defined in key stages and timescales for response/close out will be applied. Responsibility for reviewing and answering complaints will also be clear. By having a clearly defined protocol for dealing with complaints, in addition to allocated responsibility, it should be possible to deal with issues quickly and effectively.

42. If you will be using non-road mobile machinery (NRMM) on site with net power between 37kW and 560kW it will be required to meet the standards set out below. The standards are applicable to both variable and constant speed engines and apply for both PM and NOx emissions.

From 1st September 2015

(i) Major Development Sites – NRMM used on the site of any major development will be required to meet Stage IIIA of EU Directive 97/68/EC

(ii) Any development site within the Central Activity Zone - NRMM used on any site within the Central Activity Zone will be required to meet Stage IIIB of EU Directive 97/68/EC

From 1st September 2020

(iii) Any development site - NRMM used on any site within Greater London will be required to meet Stage IIIB of EU Directive 97/68/EC

(iv) Any development site within the Central Activity Zone - NRMM used on any site within the Central Activity Zone will be required to meet Stage IV of EU Directive 97/68/EC

Please provide evidence demonstrating the above requirements will be met by answering the following questions:

a) Construction time period (mm/yy - mm/yy):

   Sept 2017 to Sept 2019 (TBC)

b) Is the development within the CAZ? (Y/N):

   No

c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N):

   Yes

d) Please provide evidence to demonstrate that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered:

   All relevant machinery will be registered under the agreed site name, to be confirmed.

e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection:

   We confirm that an inventory will be kept and that all machinery will be regularly inspected, maintained and that service logs will be retained for inspection.

f) Please confirm that records will be kept on site which details proof of emission limits, including legible photographs of individual engine plates for all equipment, and that this documentation will be made available to local authority officers as required:

We confirm that records will be retained on site for inspection in line with the requirements outlined.

- SYMBOL IS FOR INTERNAL USE

Agreement

The agreed contents of this Construction Management Plan must be complied with unless otherwise agreed in writing by the Council. This may require the CMP to be revised by the Developer and reapproved by the Council. The project manager shall work with the Council to review this Construction Management Plan if problems arise in relation to the construction of the development. Any future revised plan must be approved by the Council in writing and complied with thereafter.

It should be noted that any agreed Construction Management Plan does not prejudice further agreements that may be required such as road closures or hoarding licences.

Please notify that council when you intend to start work on site. Please also notify the council when works are approximately 3 months from completion.

Signed: .....

Date: 20/10/2017

Print Name: D PERFECT

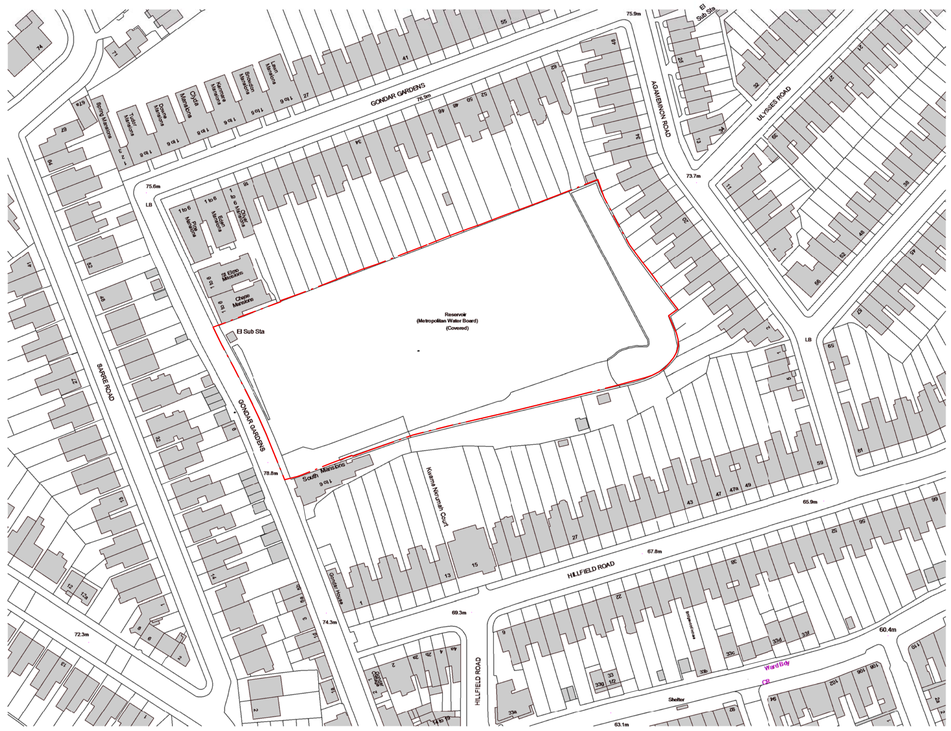
Position: Development Director - LifeCare Residences

Please submit to: planningobligations@camden.gov.uk

End of form.

Appendix A – Site Location Plan

Camden



N

0 5 10 20 50

Metres

Disclaimer
Do not scale from this drawing. Check all dimensions on site before fabrication or setting out. This document is copyright and may not be reproduced without permission of the owner.
Notes

Rev	Reason for Issue	Date	Iss
P00	Planning Issue	30.06.17	RPP

Key

Application site boundary

Inside face of existing reservoir

Consultants	
Accessibility:	Access Included
Acoustics, BREEAM, M&E Engineer:	Cudd Bentley
Cost Consultant:	Quantem
Ecology:	James Blake Associates
Fire Engineering:	KPM
Heritage Consultant:	Montagu Evans
Landscape Designer:	Andy Sturgeon Design
Planning Consultant:	Line Planning
RoL, Daylight & Sunlight Analysis:	Point 2
Structural & Civil Engineer:	Waterman Structures
Townscape Consultant:	AR Urbanism
Transport:	Cannon Consulting Engineers

Key / Site Location

Robin Partington & Partners
Castlewood
77-91 New Oxford Street
London
WC1A 1DG
+44 20 7419 3500
mail@rpplondon.com
www.rpplondon.com

Client

LifeCare Residences Limited

Project

Persephone Gardens

Drawing Title

Site Location Plan

Scale	Drawn By	Issued By
1 : 1250 @ A1	RPP	RPP

Planning

Project No.	Drawing No.	Revision
16069	**A_PL_E_010**	**P00**

Appendix B – Ecological Management Plan

Camden

Persephone Gardens

Proposed
10 Year Management Plan
2019-28

Produced by
London Wildlife Trust
Dean Bradley House
52 Horseferry Road
London SW1P 2AF

Author
Tony Wileman MCIEEM
twileman@wildlondon.org.uk
Direct tel: 020 7803 4283

Contents

1. Introduction

N.B. *This Management Plan has been written prior to the proposed development of Persephone Gardens being submitted as a planning application. It is based upon the designs identified in the Draft Landscape Report July 2017 (document 525-RP-170508 –V1) produced by Andy Sturgeon Landscape and Garden Design. It has been written as though the development within this document currently exists (in current tense). Detailed planting plans were not made available for this plan so specific management proposals regarding specific species were not compiled. However, all proposals are based on generic best practice nature conservation and horticultural management techniques.*

This document will need to be updated and modified if planning permission is granted so as to ensure it is an operational Management Plan once development works commence.

1.1 General Information

1.1.1 Details

Name:	Persephone Gardens a.k.a. Gondar Gardens
Location:	Entrance on Gondar Gardens in West Hampstead, and surrounded by residential units and gardens of Gondar Gardens, Agamemnon Road and Hillfield Road, London NW6.
Area:	1.2 hectares
Grid reference:	TQ 24769 85260 (centre of site).
Access:	Pedestrian and vehicular access is on Gondar Gardens.
Planning Status:	Local planning authority is London Borough of Camden; Site is designated as a Site of Borough (Grade II) Importance for Nature Conservation (CaBII10 *Gondar Gardens Covered Reservoir*); Trees at the eastern end of site are covered by a (group) Tree Preservation Order (TPO).
Land Tenure:	Freehold by LifeCare Residences Plc

1.2 Description

1.2.1 Physical

Topography

Persephone Gardens (see map in appendices) sits within an undulating landscape of mostly residential units. On site the buildings and associated features (Entrance and Courtyard Gardens) sit on three levels divided by steps and ramps. The three levels are 00, which is equal to the Gondar Gardens road level at around 77m above sea level, -01, and -02, the lowest point at approximately 72m above sea level.

The Open 'wild' Space area consist of a horseshoe shaped mound with slopes of all four directional point facings. They are variably in height from 72m to 79 m above sea level.

Geology and soils

The site sits on artificial soils[1] overlaying Eocene London Clay Formation, itself a collection of clays, silts and sands laid down in deep seas from shallow water sediments in graded layers.

Hydrology

The site is generally free draining although it is prone to localised water collection. Due to landscaping this is now largely contained within the retention pond.

1.2.2 Biological

Vegetation

All of the vegetation located within the footprint of the building and the Courtyard Gardens and that immediately surrounding, and within the Retention pond is entirely of planted origin (except a few natural self-set species which are largely treated as 'weeds'). The diversity of plants here is a mix of native and non-native species and were planted for their aesthetic and biodiversity interest.

Within the Open 'Wild' Space the grasslands consists of a mix of self-propagated and actively sown species of native or naturalised species. They include a variety of grasses, sedges and wildflower species that benefit wildlife. They include: common bird's-foot-trefoil, common sorrel, selfheal, black medick, meadow buttercup, common knapweed, yarrow, red and white clover, common bent, crested dog's-tail, sheep's and red fescue, and sweet vernal-grass. The rarer and locally important spiked sedge is also present.

Trees and scrub species present on site includes sycamore, ash, hawthorn, wild plum, wild cherry and bramble, plus some taller herbs such as common nettle, creeping thistle and docks.

Fauna

The site supports a population of slow-worms which live within the site and the neighbouring gardens. This is the only known site in the London Borough of Camden that has slow-worms recorded being present and is a key reason for the site being designated as a Site of Importance for Nature Conservation (SINC). The slow-worm, a legless lizard, predominantly thrives in the south-east corner on the south facing slope where the soils warm up more readily.

[1] These are soils that have been highly disturbed by human intervention and have significant importation of soils from other areas. These are very abundant in developed areas.

In addition to the slow-worms, a wide range of invertebrate species common to gardens and urban grasslands can be found. These include butterflies like common blue and meadow brown, and bees. Birds that frequent the site include blue tit, great tit, robin, dunnock, wren, woodpigeon and others including migrant species such as blackcap and chiffchaff which summer here in Britain. Red fox and grey squirrel are also present.

1.2.3 Landscape areas

For the purposes of this Management Plan the site has been divided into four broad landscape areas: Street frontage and entrances, Courtyard Garden, Buildings, terraces and roofs and Open 'wild' Space (see map in appendices) to differentiate management requirements. These four landscape areas are then subdivided into broad habitats (detailed in chapter 2). Each of the four landscape areas are detailed below.

Street frontage and entrances

The frontage along Gondar Gardens is defined by a low perimeter wall with railings. An evergreen hedge buffers between the public realm and the private amenity space. Several trees and shrubs planted in pots complement the hedges. A break in the building blocks creates a vista through the site looking east towards the Open 'wild' Space. A small entrance courtyard with a single tree defines the space with a gated private entrance. The main entrance for vehicles and pedestrian leads to a courtyard with access to the vehicle lift, cycle parking and ground level parking. This entrance is framed by planting in large pots and hedge planting along the southern boundary with the neighbouring South Mansions.

Courtyard Garden

The Courtyard Garden functions as an organisational space for pedestrian movement across the site and into the different building blocks, as well as providing amenity space for the residents. The gardens are on three levels and are designed to be reminiscent of private gardens incorporating screening, enclosure and security, while functioning as great visual amenities. Seats and benches are scattered throughout. The gardens themselves are ornamental in design but incorporate biodiverse species of both native and non-native origin.

Buildings, terraces and roofs

The building blocks themselves incorporate a number of buildings with private terraces and green (vegetated) and brown (rubble-based) roofs. This Management Plan does not cover the general management of the private buildings or the private terraces. With regards to the green roofs there are approximately 1000m^2 of sown vegetated biodiverse green roofs and 700m^2 of un-vegetated brown roof that will become vegetated through natural self-sown seed over time.

Open 'wild' Space

The Open 'Wild' Space is the eastern portion of the site, and will have no general access to residents or the public except through a series of controlled 'open' days and for management and monitoring purposes. This is to ensure the wildlife of the site is free from continued disturbance. The space is mostly composed of semi-improved neutral grassland with areas of scrub, and scattered trees around the boundaries to the north, east and south. A retention pond with associated wetland vegetation and scrub is located at the western end adjacent to the building blocks, and the Courtyard Gardens.

1.3 Influencing features

1.3.1 Financial resources and labour

LifeCare Residences ensures a skilled maintenance team maintains the landscape of the site in consultation with James Blake Associates and, where appropriate, London Wildlife Trust in accordance with this plan where possible. LifeCare Residences is responsible for ensuring sufficient resources and labour are provided to deliver the work plan. On occasion there may be a requirement for a third party contractor to undertake works such as if a large tree has fallen. LifeCare Residences will be responsible for managing any third party contractor requiring access to the site.

1.3.2 Access restrictions

Management of the site is constrained to some extent by access arrangements for machinery. However, most management works are undertaken using hand tools (including powered tools as necessary) so vehicular access is rarely required. A gated entrance to the Open 'wild' Space is available for emergency access and if larger machinery is required to manage the area.

1.3.3 Natural trends

Without long term management, natural successional processes will take place throughout the site. These will largely consist of (the list is not exhaustive):

- An increase of 'weed' species in Courtyard Gardens making them potentially less aesthetically appealing;
- An increase of unwanted 'damaging' species on green and brown roofs such as butterfly-bush that may cause structural damage;
- An increase of rank grasses and a subsequent decline in wildflower diversity of the grasslands. This in turn would reduce overall invertebrate populations and threaten the slow-worm population;
- An increase in scrub and tree encroachment into the grassland threatening the slow-worm population but changing overall invertebrate and bird diversity in favour of tree and shrub species. Wildflower diversity likely to decline; and
- An increase in siltation of pond reducing its biodiversity value and potentially increasing flood risk.

1.3.4 Invasive species

On occasion invasive species may become present on site. The London Invasive Species Initiative (LISI) list all the known and potential invasive species that occur or may occur in Greater London and their current status. They include all known Wildlife and Countryside Act 1981 (as amended) Schedule 9 species (in London) which are subject to legal requirements to prevent their spread into the wild.

The most likely invasive/problematic species to occur on site are:

- butterfly-bush *Buddleja davidii*: can cause structural damage of roofs and walls;
- Japanese knotweed *Fallopia japonica*: previously recorded on site and in neighbouring gardens;
- Russian vine: *Fallopia baldschuanica*: garden escape
- Virginia creeper *Parthenocissus quinquefolia*: garden escape and present in neighbouring gardens

Further information on LISI and invasive species can be found here:

London Invasive Species Initiative: http://www.londonisi.org.uk/

1.3.5 Impact of visitors

The site is not heavily used and most visitors keep to the established footpaths and do not access the Open 'wild' Space which is more sensitive than the rest of the site. The Open 'Wild' Space will be subject to impact during 'open' days as well as during management works and monitoring. The most likely visitor impacts upon the Courtyard Gardens will be to breeding birds through disturbance and to accidental impacts upon invertebrates through general usage. These impacts are likely to be very minimal and are highly unlikely to have a detrimental impact upon the overall site biodiversity.

1.3.6 Impact of management work

Although the management work identified in this plan is essential to maintain the biodiversity value of the site, the undertaking of said work will impact upon that biodiversity. Direct impacts like the removal of vegetation and accidental killing, and indirect impacts such as species displacement and disturbance will occur. By following procedures set out in this plan adverse impacts on the overall biodiversity should be kept to a minimum and should be easily recoverable. With good management practice, biodiversity values of the overall site could increase. The Monitoring Plan (Chapter 3) should identify if losses to overall biodiversity value are occurring and appropriate action can be taken to reverse any negative trend before they have a significant detrimental effect.

1.3.7 Legislation and policy

Management and use of the site will need to take account of species protected under the Wildlife and Countryside Act 1981 (as amended). These include:

- slow-worm - it is illegal to intentionally kill or injure them;
- birds - all (and their nests, nestlings and eggs) are protected from deliberate killing or damage.

Besides legislation and policy that governs the buildings, people and accessible space which are not covered by this plan, a series of other policies have been adopted by LifeCare Residences with regards to the site management. These are as follows:

- Biosecurity: - ensuring invasive species and or pathogens do not spread into other areas;
- Dogs on Open 'wild' Space: - ensuring dogs and other pets (belonging to residents or their visitors) do not access the Open 'wild' Space;
- Herbicides and Pesticides: - use is restricted to when absolutely necessary and when alternative treatments are not effective.

Health and safety is a highly influential factor when managing sites, and there is a need to comply with all relevant legislation. A site-based risk assessment for the site, highlighting all the risks relevant to the site and its management is available. These risks are highlighted on a map based risk assessment. To further comply with the relevant Health and Safety at Work Act 1974, risk assessments for all works undertaken by staff and contractors on site must also be made available.

1.4 Biodiversity and horticulture objectives

1.4.1 Vision

Lifecare Residences Vision for the landscape of the site is:

> *"Manage and enhance the amenity and semi-natural 'wild' spaces on site so that residents can be enriched by nature while ensuring sensitive biodiversity thrives, and the site's nature conservation designations are maintained."*

1.4.2 Performance objectives

LifeCare Residences aims to achieve the following objectives for the management of the site:

1. Maintain the SINC status designation across the entire site.
2. Maintain existing important species populations including priority species like the slow-worm.
3. Enhance existing habitats to increase overall biodiversity value.
4. Create new habitats to attract a wider variety of species.
5. Create gardens and other green infrastructure features that incorporate measures to attract biodiversity.
6. Manage the entire site's soft landscape with a holistic approach that benefits wildlife and ensures the biodiversity value is maintained for the future.

1.4.3 Staffing requirements

For LifeCare Residences to deliver on the management of the horticulture and biodiversity of the site, it is expected that a full time gardener is employed all year around. The gardener needs to have an understanding of conservation management of wildlife sensitive areas and be skilled, trained and licenced for the use of:

- brushcutters (strimmers with blade usage)
- pesticides and herbicides

2. Management Plan

Management of Persephone Gardens is essential to ensure that the site remains accessible and usable by the residents that live there and any visitors, and also to maintain the biodiversity of the site. The general management requirements and those required in each of the four landscape areas and their specific habitats and features are covered below.

2.1 General management

2.1.1 Watering

Much of the planted areas within the street frontage and entrances, Courtyard Garden and the green and brown roofs are fed by an efficient perforated-pipe irrigation system forgoing the need for manual watering. However, some areas are not covered by this irrigation system and manual watering will be required. Concealed /recessed water points have been installed in strategic points to facilitate this need. The Open 'wild' Space will have no need for watering.

Manual watering will be undertaken as required.

2.1.2 Invasive or problematic species removal

Invasive and problematic species will become identified during the monitoring process and plans for their removal should be implemented as soon as possible to reduce their spread. Invasive species are all those that are listed on the LISI list (see above).

Problematic species are those species that are causing specific problems to that habitat and may have a detrimental effect if they persist. This includes common nettle, docks, thistles, ragwort, certain grasses, bramble, roses as well as some trees and shrubs and could include garden plants like bamboos, cyclamen and some climber and bulb species. 'Weed' species in the amenity spaces (Entrance and Courtyard Garden) are not covered under this (see weeding below).

Invasive and problematic species removal will be undertaken as required.

2.1.3 Pesticide and herbicide usage

Pesticide and herbicide usage will be kept to a minimum and alternative methods of control or removal will be sought before usage. This is to ensure that the biodiversity value of the site does not decline due to toxic residues in the environment from their application.

Pesticide and/or herbicide application will be undertake (if necessary) as required under suitable strict conditions.

2.1.4 Weeding

'Weeds' are generally considered as 'plants in the wrong place'; in these circumstances they are species with good colonising ability and can rapidly occupy areas of disturbed and bare soils (often known as ruderal species). In most cases these will be annual self-set plants that have arrived from elsewhere, and will appear in the amenity areas, although perennials may also occur. They will include species such as annual mercury, dandelion, mouse-eared chickweed, and scarlet pimpernel.

These species are likely to be controlled by hand removal (pulling) as part of everyday management of the perennial flower beds and tubs as well as any that appear between cracks

in the hard surfaces. However, they should not be removed from the brown or green roofs or any area within the Open 'wild' Space as they form the fabric of the biodiversity of the site and their removal will lower the site's overall biodiversity value.

Weeding will be undertaken as required (likely to be a daily occurrence) and collected material should be composted.

2.1.5 Cleanliness

The amenity areas will be kept clean and free of debris to ensure that they appear in a state of care at all times. This will be a daily or near daily occurrence. Non-organic litter will be removed daily. Organic matter can be composted if it is appropriate.

The removal of non-organic litter from the Open 'wild' Space should be undertaken weekly or as found.

Organic and no-organic garden waste from neighbouring gardens should be removed when it is identified and the appropriate facilities for its removal are made available. This practice should be strongly discouraged through discussions with neighbouring residents as it accentuates the spread of invasive and problematic species.

2.2 Street frontage and entrances

2.2.1 *Hedge*

The hedge is composed of an evergreen shrub and requires the following management:

- To be checked monthly during the months of September-February and cut using a hedge trimmer as required to maintain its shape and required look. Cuttings to be collected, removed and composted. Some cuttings can be left underneath the hedge and allowed to rot naturally to help maintain soil quality and provide wildlife habitat for invertebrates where this does not detract from the required look.

2.2.2 Street tree

The street tree is a common lime *TIlia X europea* 'Greenspire'. It should be checked in September of each year to ensure it is healthy and does not require pruning. If pruning is required it should take place during the months of October-February only. It should not be cut during the summer months. Pruned material should be placed onto the wood piles in the Open 'wild' Space.

2.2.3 Pot planting

The pot plants will be a mix of trees and shrubs and will be of a type that requires minimal management. They may require:

- To be checked monthly during the months of September-February and pruned as required to maintain their shape and required look. They should not be cut during the summer months. Cuttings to be collected, removed and composted or placed onto the wood piles in the Open 'wild' Space. Some cuttings can be left underneath the shrubs and allowed to rot naturally to help maintain soil quality and provide wildlife habitat for invertebrates, where this does not detract from the required appearance.

2.2.4 Cycle storage green roofs

The cycle stores have shallow soil green roofs on top of them. These are planted with biodiverse short turf species like sedums but also other species. They should largely require minimal management except those activities covered under general management.

2.2.5 Hard surfaces and furniture

Hard surfaces are to be kept clear and clean of debris and free from weeds as required, to ensure the pathways and furniture are accessible and usable.

2.3 Courtyard Garden

2.3.1 Hedging

The hedges are composed of different species and will require the following management:

- To be checked monthly during the months of September-February and cut using a hedge trimmer as required to maintain their shape and required look. They should not be cut during the summer months. Cuttings to be collected, removed and composted. Some cuttings can be left underneath the hedges and allowed to rot naturally to help maintain soil quality and provide wildlife habitat for invertebrates where this does not detract from the required appearance.

2.3.2 Planted borders and lawns

The planted borders and small lawns will be composed of a wide variety of native and non-native perennials. They will require the following management.

- Lawns will need to be mown weekly between the months of March - October. However, they should not be cut during periods of frost, drought, when wet as this causes damage to the grass. They should avoided to be cut when flowers like clover, daisies and dandelions (if present) are in full bloom as these add to the biodiversity value. Once flowered the lawns can then be mown.
- Kept clear from leaf fall and dead plant materials as required: some of this material can be allowed to rot and decay in areas of the beds where it is out of view (underneath shrubs etc.) providing homes for various invertebrates and maintaining biodiversity. The use of leaf blowers can cause significant damage to invertebrate life in flower beds reducing biodiversity values. Leaf fall can be collected using this method but some areas (particularly those around flowers and shrubs) are best removed by rake and hand so as to minimise harm to biodiversity.
- Shrubs that require pruning are to be checked monthly during the months of September-February and pruned as required to maintain their shape and required look. They should not be cut during the summer months. Cuttings to be collected, removed and composted or placed onto the wood piles in the Open 'wild' Space. Some cuttings can be left underneath the shrubs and allowed to rot naturally to help maintain soil quality and provide wildlife habitat for invertebrates, where this does not detract from the required look.

2.3.3 Trees

Trees in the Courtyard gardens consist of three types; standards, box-headed topiary trees, and multi-stem trees. They will require management as follows:

- The box–headed topiary trees are be checked in September of each year and cut using a hedge trimmer as required to maintain their shape and required look. They should not be cut during the summer months. Cuttings to be collected, removed and composted. This will require stable scaffolding to undertake.
- All trees should be checked in September of each year to ensure they are healthy and do not require pruning. If pruning is required it should take place during the months of October-February only. They should not be cut during the summer months. Pruned material should be placed onto the wood piles in the Open 'wild' Space.

2.3.4 Water features

There are several water features present within the Courtyard Gardens. These will require:

- Monthly maintenance checks (or as advised) of pumps and other working parts ensuring they are clear of debris.
- Daily clearance of water features of leaves, algal blooms etc. to prevent damage to pumps etc. and increased siltation.
- Any water plants present may require thinning if they become dominant in the water bodies. This should be done with hand during the months of September-March to reduce impact on biodiversity.

2.3.5 Hard surfaces

Hard surfaces are to be kept clear and clean of debris and free from weeds as required, to ensure the pathways and furniture are accessible and usable.

2.4 Buildings, terraces and roofs

2.4.1 Bird and bat boxes

The bird and bat boxes on the buildings should not require any maintenance requirements.

2.4.2 Private terraces

The private terraces management will be the responsibility of the individual residents.

2.4.3 Green and brown roofs

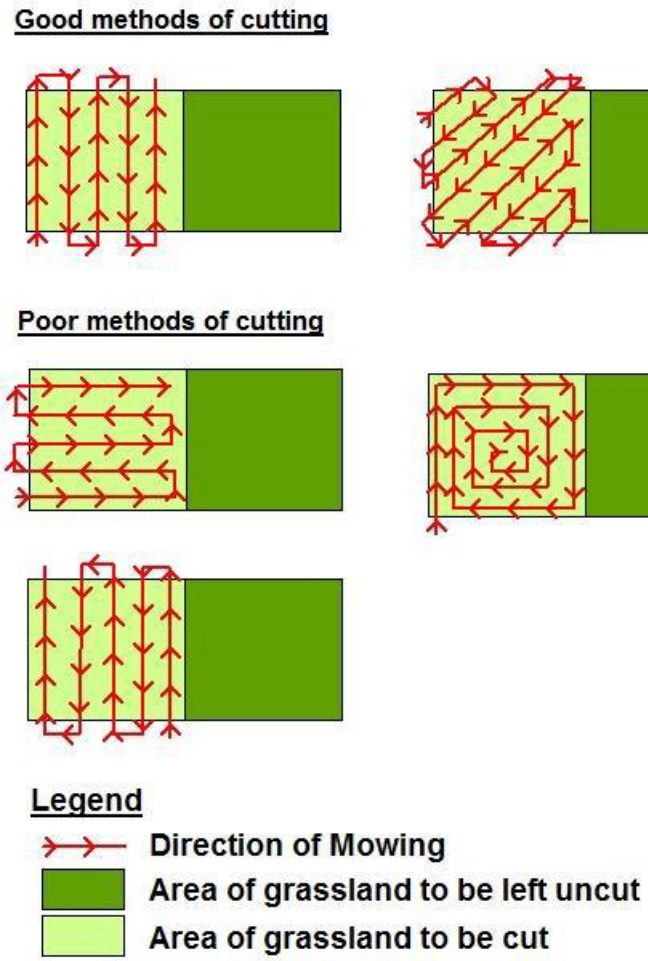
The green and brown roofs once established should largely require minimal management except those relevant activities covered under general management.

2.4.4 Semi-improved neutral grassland

The grassland is one of the most important habitats on site for biodiversity. To maintain that biodiversity value the following management is required:

- Cut using a brush-cutter once in March and again in October (cuts should not take place during frosty or wet conditions) every year ensuring that the vegetation is cut no lower than 5cm in height. Cutting should be undertaken in a way that any slow-worms or small mammals present in the grassland can escape into adjacent habitat such as uncut grassland or scrub, without them having to cross areas already cut or them being exposed to predation (See figure 1.). Cut material should be left in-situ for 2 days (allowing invertebrates to leave) before being collected and composted. A third cut in December/January may be undertaken if monitoring of vegetation determines that this is required.
- Additional cuts may be required to be undertaken along the access route from the Courtyard Garden to the steps for open days to allow public access. In addition, a circular operating space can be cut at the top of the steps for use on open days. The methods of cutting should follow standard procedure (as above) so will require cutting at least 2 days prior to the open day events.

Fig. 1. Methods of cutting grass to ensure minimal impact on wildlife (dark green areas are synonymous to the scrub and the Ecotone zone)



2.4.5 Retention pond

The newly created pond will take time to become established and during this time of establishment will require minimal management however some things that may be required in its establishment or over the longer period are:

- Removal of blanket weed (an algae), other algae or duckweed. These species can quickly block out the light entering a pond and will reduce biodiversity. Although once present they are unlikely to be eradicated completely, their control to ensure they do not become dominant is essential for the health of the pond. Generally the water's surface should not be covered by more than 20% of these species. This should be checked monthly, more regularly if possible between April and August.
- Vegetation clogging of the pond should be avoided. A healthy pond should have at least 30% of its surface area free from vegetation cover. Ideally the amount of surface water area should be between 40-70%. In addition no one given species should dominate the pond by more than 50%.
- In removing any pond vegetation (blanket weed, duckweed or other species). This should be done with hand (or net) and should be left on the banks for two days before being removed. This is to ensure any aquatic invertebrates on the vegetation can return to the pond. Pond vegetation clearance work should only be undertaken during the months of September-March to reduce impact on pond biodiversity. If duckweed or

blanket weed has become a problem early on in the months of April or May then it should be removed immediately and not be left until September.

- Ponds over time become subject to siltation. This gradually lowers the water depth and encourages quicker colonisation of vegetation. The rate varies according to the pond and its immediate surroundings but generally those near trees or shrubs that drop their leaves in winter will silt up faster than those in the open. Generally most ponds need de-silting every 10-20 years. De-silting a pond is a complex and difficult task and should be undertaken during the months of October-December. The silt will need to be removed from site and it is likely a mini-digger with bucket will be required to dig it out. Prior to de-silting aquatic vegetation can be removed and placed into temporary bucket ponds to keep it alive and thriving while the pond is de-silted. Once done it can then be re-introduced. De-silting has a significant impact on the wildlife of a pond and cannot be totally avoided but if a pond is not de-silted the wildlife value will decline anyway. Once re-established a pond will recover well if de-silted properly and the wildlife value will soon return to its previous levels.
- The shrub planting habitat around the pond needs to ensure that it provides an access route to the pond for management purposes and ensure that there is an access path from the Courtyard Garden to the base of the steps in the grasslands again for management purposes. The shrubs here should be native and may require annual or biennial pruning to prevent encroachment into the pond edge and the grasslands and provide a vista from the Courtyard Garden into and over the pond. Otherwise they should be allowed to provide a natural barrier to prevent public access into the Open 'wild' Space area. If pruning is required it should take place during the months of October-February only. They should not be cut during the summer months. Pruned material should be placed onto the wood piles in the Open 'wild' Space.

2.4.6 Scrub and trees

The scrub and tree habitat skirting the north, east and south boundaries of the site should largely be managed by non-intervention. However some management may be required:

- Occasional pruning of trees and shrubs as required (broken and fallen limbs) presenting a risk to neighbouring infrastructure and fencelines. If pruning is required it should take place during the months of October-February only. They should not be cut during the summer months. Pruned material should be placed onto the wood piles in the Open 'wild' Space.
- Occasional pruning of trees and shrubs as required to ensure encroachment onto grassland does not occur (this should largely be controlled through the ecotone management (see below). If pruning is required it should take place during the months of October-February only. They should not be cut during the summer months. Pruned material should be placed onto the wood piles in the Open 'wild' Space.

2.4.7 Ecotone zone

The ecotone zone is a 1-2 metre variable width strip of vegetation that delineates where the grassland and scrub/tree habitat meet around the north, east and south boundaries. It should exist along the entire length of where these habitats meet. Its management is vital to ensure that the scrub habitat does not over time encroach upon the grassland habitat. It is sometimes valuable to delineate the scrub-side edge of this habitat using permanent marker posts or points fixed into the ground to ensure this habitat doesn't move as the scrub encroaches. The Ecotone is to be managed as follows:

- Cut using a brushcutter once in October (cuts should not take place during frosty or wet conditions) **once every 3 years** ensuring that the vegetation is cut no lower than 5cm in height. Cutting should be undertaken in a way that any slow-worms or small

mammals present in the grassland can escape into adjacent habitat (scrub) without them having to cross areas already cut or them being exposed to predation (See methods of cutting table). Cut material should be left in-situ for 2 days (allowing invertebrates to leave) before being collected and composted. A second cut in March may be undertaken if monitoring of vegetation determines this is required.

2.4.8 Biodiversity enhancement features

There are a number of biodiversity enhancement features to be placed within this area. They include bird and bat boxes, reptile hibernacula, stag beetle loggeries. The management of these features is as follows:

- The bat boxes should be left and not interfered with unless necessary and then they should be handled with a specialist bat ecologist.
- The bird boxes should equally be left but could (although not necessary) be cleaned out every year in October).
- The reptile hibernacula should not be interfered at any time of the year especially during the winter months (October-March). Should there be a need to move them then this should be undertaken by a qualified ecologist. They should be allowed to become vegetated and overgrown.
- The stag beetle loggeries should not be touched or removed but additional fallen and cut wood materials can be added to them as long as they do not get too big (unsightly).

2.4.9 Steps and access features

The steps in the grassland and the access gates leading from the car park entrance and the Courtyard Gardens should be maintained in good working order and remain locked at all time until access is required for management or monitoring works, on an open day or during emergencies. The steps may occasionally require repair work as the wooden boarding rots. This can be undertaken at any time of year.

3. Monitoring

Monitoring is essential if the performance objectives are to be met. To ensure that they are met, several monitoring programmes will be run over the course of this ten year plan. These would need to be undertaken by a qualified ecologist. These are detailed below.

3.1 A walkover biodiversity assessment

The walkover biodiversity assessment will comprise of an Extended Phase I survey across the entire site (including roofs but not private terraces) which will be undertaken in year 1 (2019) forming the baseline data and again in years 3 (2021), 5 (2023) and 10 (2028) during the months of May or June. This assessment will identify existing habitats and species composition and additionally include a brief fauna survey. The site will be evaluated against the following criteria.

- The overall habitat mix of semi-improved grassland, trees/scrub, ecotone, brown and green roofs and planted shrubberies remains fairly stable. i.e. the natural trends, invasive species, impacts of visitors and management addressed in section 1.3 are not evident.
- The gardens are suitably biodiverse and remain a mix of native and non-native species
- The green roofs are well vegetated (sward density is greater than 70%) and they have a stable or increasing faunal usage;
- The brown roofs have increasing vegetation and a stable or increasing faunal usage.

3.2 Vegetation transects

Vegetation transects will be undertaken in the semi-improved grasslands in year 1 (2019) forming the baseline data and again in years 3 (2021), 5 (2023) and 10 (2028) during the months of June or July. These are set location transects 1 metre in width that will be plotted across the semi-improved grasslands taking in areas of grassland that were restored and areas that were existing prior to the development. It is suggested that two transects are required each running from the Retention Pond scrub edge towards the boundary scrub and trees; one in a north easterly direction and one in a south easterly direction. A series of fixed points along the transect routes will be monitored in years 1, 3, 5 and 10 using a 1x1m quadrat. Vegetation composition will be recorded in each quadrat in each year using the DOMIN scale. These transects will help to identify any specific changes that are occurring to the vegetation composition and characteristics like sward density and sward height over time

In addition a series of vegetation transects should also be set up upon the green and brown roofs to monitor the vegetation change occurring here.

These transects will be evaluated against the following criteria:

- The species composition remains relatively stable or is becoming enhanced and the ratio of grasses to wildflowers remains around 4:1 (+- 10% variation). Wildflowers on the roofs can be higher than this ratio but should not get lower than this;
- The amount of scrub coverage remains less than 10%;
- The amount of thatch (loose dead vegetation) coverage remains less than 10%;
- The amount of bare soil coverage remains less than 10%;
- Average sward height remains less than 50cm.

3.3 Reptile surveys

A continuing programme of reptile surveys should be undertaken on the grasslands in years 1, 3, 5 and 10 in the months of April - May and August-September to ensure that the development pressures and the management practices are maintaining the population of slow-worms. The reptile survey methodology adopted in year 1 (forming a baseline) should be repeated exactly (and within two weeks of the baseline date) in subsequent years to ensure that there is consistency and minimal bias created from the results. Results should also consider survey data collected from previous surveys in 2010, 2013 and 2016 with understanding that the methodologies for these surveys may have variability

The slow-worm populations will be evaluated against the following criteria:

- Slow-worm captures should not decline more than 10% from the baseline;
- There should be evidence of young individuals in the late surveys.

3.4 Other evaluation

In addition to the surveys mentioned above, there is a requirement in each of the years 1, 3, 5 and 10 that the site overall is evaluated to ensure it is maintaining the SINC status. The criteria (all of which need to be met) to be evaluated are:

- Presence of slow-worms and population appears at least stable;
- Green and brown roofs are biodiverse and are supporting a variety of invertebrate life;
- Gardens are well maintained are biodiverse and are supporting a variety of invertebrate life;
- Grasslands and habitat structure supports a wide variety of species including some species of borough importance (yellow meadow ant, spiked sedge, breeding migrant birds).

3.5 Action

The results from the monitoring if not of a desirable requirement will need to be evaluated to attempt to understand why the undesirable results are being recorded. This may be obvious in some examples (increase in scrub in grassland = lack of management) but less so in others. Either way a decision to change management practices to rectify the undesirable results will be required. These new management practices may themselves require additional more scrutinised monitoring to identify whether they are the appropriate change to rectify the undesirable outcome towards a more positive one.

4. Work Plan

Green boxes show when tasks are generally to be undertaken and blank spaces when work should not be undertaken (unless species circumstances dictate a need and impacts on biodiversity have been considered including need for licences to undertake works.

N.B.

Lawns cut during the summer months should consider flowering pants and drought like conditions. In the latter cutting grass during dry conditions can seriously cause it damage and reduce its growth and could lead to bare soil patches developing.

An additional semi-improved grassland cut could be required in December or January as determined by the monitoring programme. This must not be undertaken during frosty conditions.

Landscape area	Management tasks	Work months												Frequency
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
All Areas	Infrastructure repairs													As required
	Watering of vegetation													As required (not in Open 'wild' Space)
	Invasive and problematic species removal													As required.
	Removal of non-organic litter													Daily (weekly in (Open 'wild' Space area)
	Walkover Biodiversity Assessment													Once in years 1 (2019) 3 (2021), 5 (2023) and 10 (2028)
Street frontage and entrances	Cut evergreen hedge using hedge trimmer													To check monthly and cut if required
	Pruning of street tree									Check				Check once in October and prune if required
	Weed pot plants													As required
	Prune pot plants													As required
	Clear hard surfaces of debris													Check and clear weekly or as required
	Clear hard surfaces of 'weeds'													Check weekly and weed if required

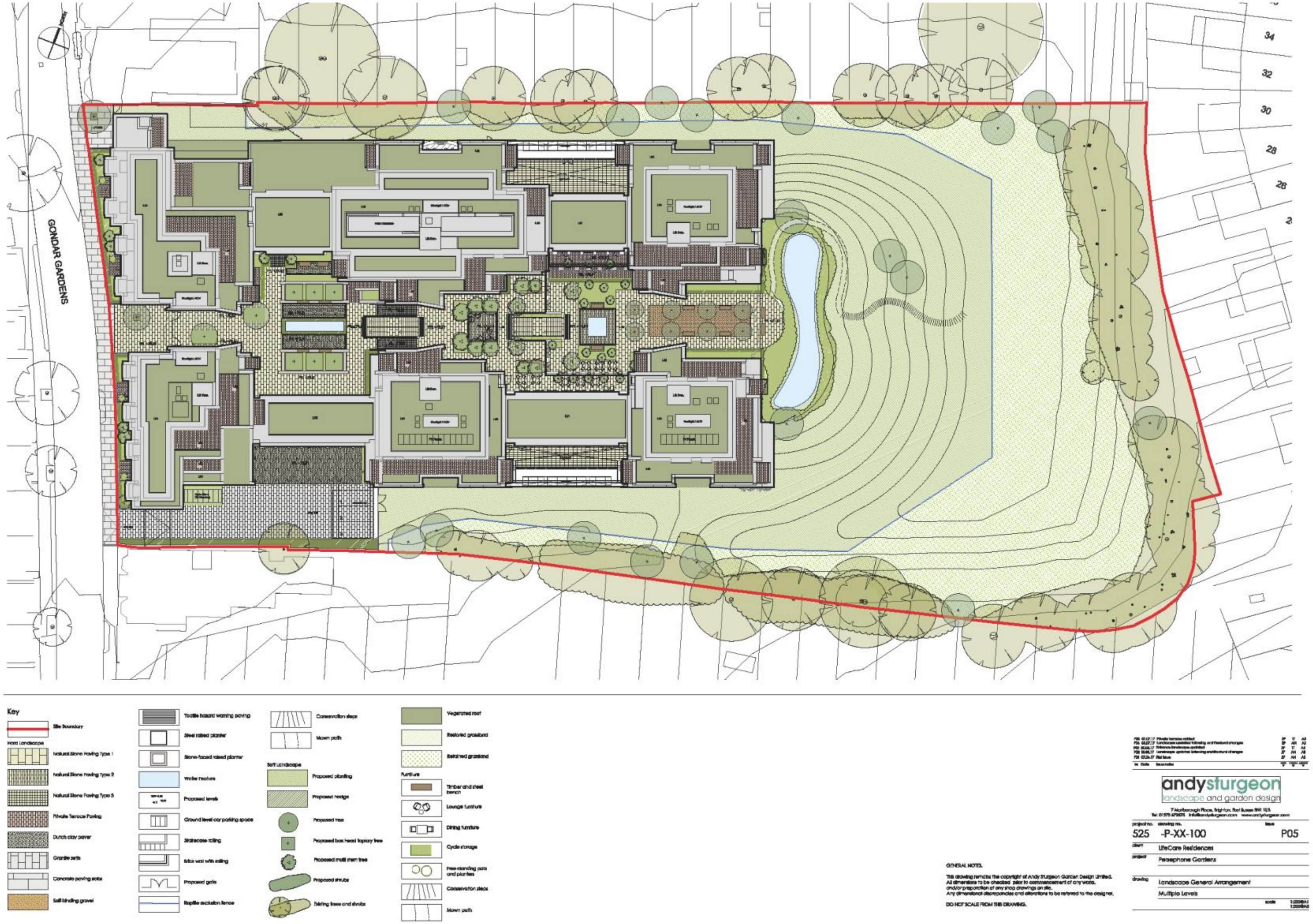
Landscape area	Management tasks	Work months												Frequency
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Courtyard garden	Cut hedges using hedge trimmer													To check monthly and cut if required
	Mow lawns					See N.B.	See N.B.	See N.B.	See N.B.					Weekly
	Weed planted borders													Check weekly and weed if required
	Remove debris, leaf fall and dead plant materials from planted borders													Check weekly and weed if required
	Prune shrubs in planted borders													Check monthly and prune if required
	Prune and shape box-headed topiary trees using hedge trimmer									Check				Check once in September and prune if required
	Prune trees									Check				Check once in September and prune if required
	Water feature checks (pumps, pipes etc.)													Monthly
	Clearance of debris, algae, leaves etc. from water features													Daily

Landscape area	Management tasks	Work months												Frequency
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Courtyard gardens continued	Clear hard surfaces of debris													Check and clear weekly or as required
	Clear hard surfaces of 'weeds'													Check weekly and weed if required
Building, terraces and roofs	Weeding of green and brown roofs													As proposed by monitoring checks
Open 'wild' Space	Cut grasslands with brushcutter, leave cuttings 1-2 days and then remove	See N.B											See N.B	Once in each month
	Ecotone cutting using brushcutter leave cuttings 1-2 days and then remove													Once every 3 years in Year 1 (2019) , 4 (2022), 7 (2025) and 10 (2028)
	Pond vegetation checks													Monthly
	Removal of blanket weed and other vegetation from retention pond													As required
	Pond de-silting													As required and informed by monitoring
	Pond shrub cutting													As required informed by monitoring

Landscape area	Management tasks	Work months												Frequency
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Open 'wild' Space continued	Pruning of trees and shrubs around boundaries													As required informed by monitoring
	Bird boxes cleaning													If required but not necessary
	Grassland vegetation transects													Once in years 1 (2019), 3 (2021), 5 (2023) and 10 (2028)
	Reptile surveys													In years 1 (2019), 3 (2021), 5 (2023) and 10 (2028)

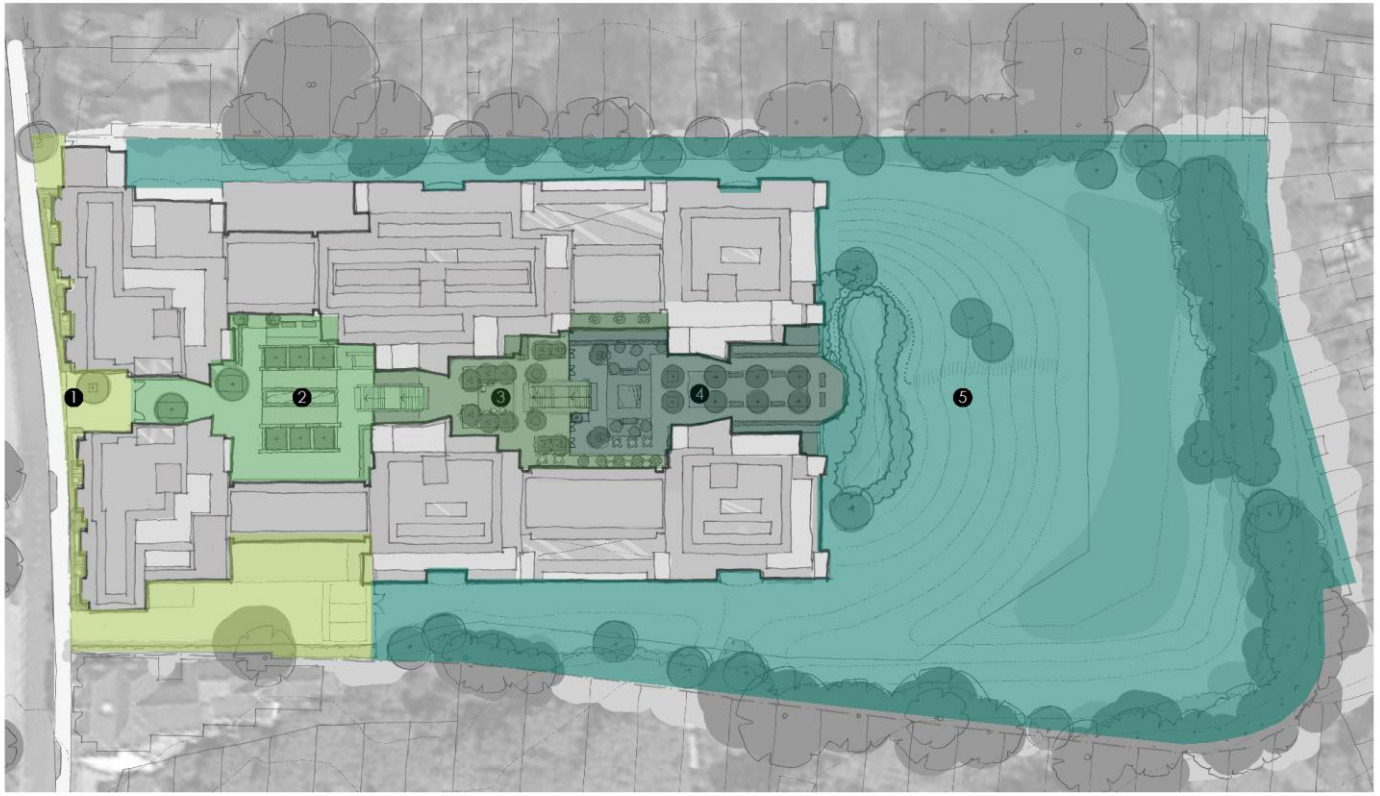
5. Appendices

Map of site



GONDAR GARDENS
34
32
30
28
26
Key
Site Boundary
Hard Landscape
Natural Stone Paving Type 1
Natural Stone Paving Type 2
Natural Stone Paving Type 3
Private Terrace Paving
Dutch clay paver
Granite setts
Concrete paving slabs
Self-binding gravel
Tactile hazard warning paving
Steel raised planter
Stone-faced raised planter
Water feature
Proposed levels
Ground level car parking space
Staircase railing
Brick wall with railing
Proposed gate
Reptile exclusion fence
Conservation steps
Mown path
Soft Landscape
Proposed planting
Proposed hedge
Proposed tree
Proposed box head topiary tree
Proposed multi stem tree
Proposed shrubs
Existing trees and shrubs
Vegetated roof
Restored grassland
Retained grassland
Furniture
Timber and steel bench
Lounge furniture
Dining furniture
Cycle storage
Free-standing pots and planters
Conservation steps
Mown path
GENERAL NOTES.
This drawing remains the copyright of Andy Sturgeon Garden Design Limited.
All dimensions to be checked prior to commencement of any works, and/or preparation of any shop drawings on site.
Any dimensional discrepancies and alterations to be referred to the designer.
DO NOT SCALE FROM THIS DRAWING.
andysturgeon
landscape and garden design
project no. 525
drawing no. -P-XX-100
issue P05
client LifeCare Residences
project Persephone Gardens
drawing Landscape General Arrangement
Multiple Levels
scale

Landscape areas



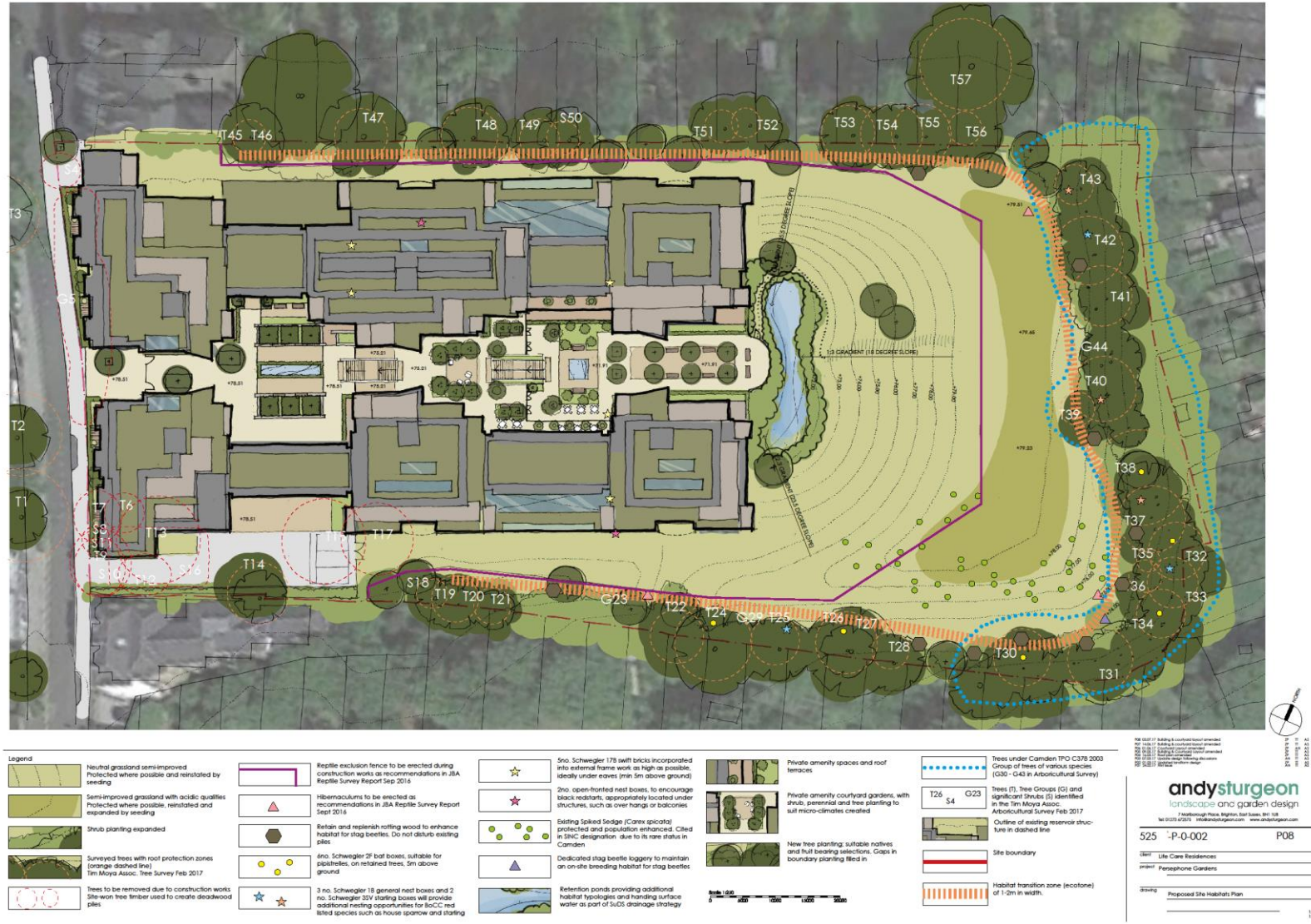
1 Street frontage and entrances
2 Courtyard Garden Level 00
3 Courtyard Garden Level -01
4 Courtyard Garden Level -02
5 Open 'wild' Space

andysturgeon
landscape and garden design

project no.	drawing no.	issue
525	-P-0-003	P01

client: Life Care Residences
project: Persephone Gardens
drawing: Key areas overview

Map showing biodiversity features



6. About London Wildlife Trust

6.1 Vision and Mission

A London alive with nature, where everyone can experience and enjoy wildlife.

To stand up for London's wildlife by:

- Protecting, Restoring and Creating wild places for nature
- Engaging, Inspiring and Enabling people to connect with nature
- Championing, Challenging and Influencing people to stand up for nature

6.2 Charity information

Charity name	London Wildlife Trust
Address	Dean Bradley House, 52 Horseferry Road, London SW1P 2AF
Company number	1600379
VAT number	202410283
Date of Registration	26 November 1981
Charity Commission Number	283895

6.3 Insurance

London Wildlife Trust's insurance policies cover

- Professional Indemnity £2 million
- Employer's Liability £10 million
- Public Liability £10 million

6.4 Quality assurance

London Wildlife Trust has a number of policies in place that are adhered to and that contribute to monitoring the quality standards of work that is undertaken. The Trust's suite of policies includes the following:
Health & Safety policy
Environmental policy
• Equal Opportunities policy
• Lone working policy

The Trust's ecological staff are members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and have several years of experience in carrying out ecological survey, policy and campaign work.

Appendix C – Local Highway Network

Camden

CLIENT LIFECARE RESIDENCES LTD	**Cannon Consulting Engineers** Cambridge House, Kentford, Newmarket, Cambs, CB8 7PN Tel: +44 (0)1638 555 107 info@cannonce.co.uk www.cannonce.co.uk		CANNON CONSULTING ENGINEERS Highways, Transport & Infrastructure Planning		
PROJECT TITLE PERSEPHONE GARDENS	SCALE @ A3 N.T.S	DATE 07/07/2017			
DRAWING TITLE LOCAL HIGHWAY	DESIGNED CM-	DRAWN MK	ISSUE STATUS PRELIMINARY	DRAWING NUMBER V361 CMP 001	REV .

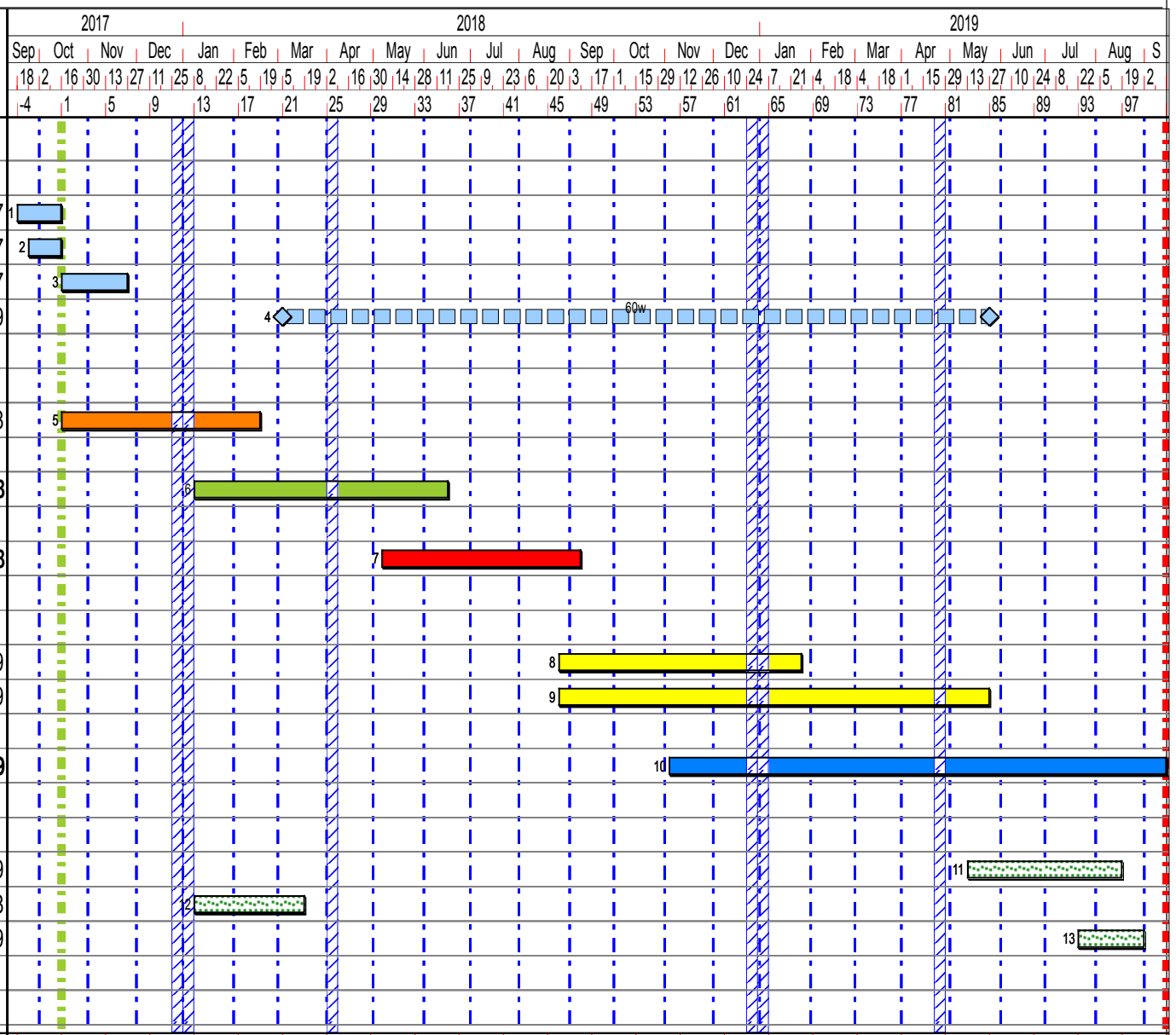
Appendix D – Outline Indicative Programme

Camden

GONDAR GARDENS
OUTLINE PROGRAMME

Date : 28/06/2017
Ref : OP/01

Line	Name	Duration	Start	Finish
	ENABLING WORKS			
1	mobilisation	4w	18/09/2017	13/10/2017
2	site establishment	3w	25/09/2017	13/10/2017
3	reshaping balancing pond area	6w	16/10/2017	24/11/2017
4	erect/dismantle tower cranes		05/03/2018	27/05/2019
	DECONSTRUCTION			
5	deconstruct existing structure (inc temp works)	16w	16/10/2017	16/02/2018
6	***SUBSTRUCTURE***	**22w**	**08/01/2018**	**15/06/2018**
7	***SUPERSTRUCTURE***	**18w**	**07/05/2018**	**07/09/2018**
	ENVELOPE			
8	***roof***	20w	27/08/2018	25/01/2019
9	***elevations***	36w	27/08/2018	24/05/2019
10	***INTERNAL WORKS***	**42w**	**05/11/2018**	**13/09/2019**
	EXTERNAL WORKS			
11	hard landscaping	14w	13/05/2019	16/08/2019
12	soft landscaping	10w	08/01/2018	16/03/2018
13	complete soft landscaping	6w	22/07/2019	30/08/2019
	.			



Drawn by:KB	Prog No.OP/01	Rev No.	Comments:

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