8.0 TECHNICAL STUDIES

8.1 TRANSPORT

- The site is located in a highly accessible location and as such the proposed scheme aims to minimise car use and promote sustainable transport trips.
- Car free development (disabled parking provided as per Camden Council guidelines) with electric car charging points.
- 92% reduction in HGV movements on a daily basis.
- Wider footpath relieves congestion along West End Lane.
- Wider, more attractive, safer , more active Potteries Path.
- Substantial cycle storage space for new residents.

Transport Planning Practice (TPP) has been appointed to provide transport advice in relation to the proposals.

In summary the proposals are expected to generate fewer vehicle trips than the existing uses at the site and the trips generated by the proposed development are expected to have no perceptible impact on any travel mode.

As part of the transport assessment a number of surveys have been commissioned to asses the impact of the redevelopment in relation to:

- Pedestrian flow, footpath capacity and safety
- Public transport access and capacity
- Highways (vehicular) traffic count, capacity and road safety audit
- Cycle routes and connections

As previously noted the site has an excellent public transport accessibility with a PTAL of 6a. Accordingly, there are numerous public transport services in the vicinity of the site.

At present, the site is served by a single vehicular access adjacent to the railway bridge. TPP Drawing 30760/AC/026 shows the location of the proposed vehicular access. The proposed shared access road will be 5.8m wide to accommodate two-way traffic and pedestrian access.

Green Transport Infrastructure

One of the Borough's key objectives is to reduce the environmental impact of transport and make Camden a better place to walk and cycle. Camden's policy highlights that development should be designed in such a way that makes full use of its transport accessibility and promote developments with a high density at locations which are well served by public transport.

The transport strategy outlined in the transport assessment prepared by TPP has been developed around a balanced and integrated package of measures that seeks to prioritise movement by alternative modes to the private car. This is based upon formal discussions on transport issues with LBC officers and considers access and movement to the site by all modes of transport.

The site lies in a prime location for access to public transport. Several bus routes stop within walking distance of the site and these routes have a combined peak frequency of approximately 63/64 buses per hour in each direction. In addition to this West Hamsptead underground , Overground Station and West Hamsptead Thameslink are all within close walking distance.

The site is already well connected in terms of cycle and pedestrian links however the consultation excercises have reinforced local concern over the congestion on West End Lane.

The redevelopment of the site will prioritise cycle and walking links with a shared surface arrangement to reduce numbers and speeds of traffic through the site.

The redesigned Potteries Path will reinforce a direct link from the site to the east and Crown Close / Lymington Road. This will strengthen pedestrian and cycle links through the site.

The development is car-free with the exception of disabled car parking spaces. As such a total of 16 disabled car parking spaces will be provided for blue bladge holders with electric vehicles charging points.

A draft 'Full Travel Plan' is submitted as part of the planning application in accordance with TfL's 'Travel planning guidance'. The normal objectives of a Travel Plan are:

- To maximise the accessibility of the site by means other than the private car
- To encourage staff/residents/visitors to travel via alternative means other than the private car
- To minimise the level of vehicular traffic generated by the development
- To enable the development to protect and enhance the environment

Pedestrian flows

West End Lane is a busy high street, carrying over 7000 vehicles per day. West Hampstead Thameslink and Underground stations are located near to the site and, as such, a significant volume of pedestrians cross West End Lane in the vicinity of the site.

A pedestrian count was undertaken on West End Lane during a12 hour period. An assesment of the data agianst TfL capacity criteria show that, by TfL's definition, the pedestrian environment is very comfortable with "plenty of space for people to walk at the speed and the route that they choose".

An audit of the existing pedestrian environment with respect to key desire lines relative to the site has been undertaken on the request of LBC Officers. This audit includes routes to the nearest bus stop, West Hampstead Thameslink, Overground and Underground stations, as well as key routes to shops and local facilities.

The study, contained in the transport assessment report, confirms that the pedestrian environment within the vicinity of the site and to key amenities and transport destinations is of a high quality.

Public Transport

TfL's webCAT website confirms that the site has a PTAL rating of 6a, which indicates an excellent level of access to the public transport facilities.

The trip generation assesment carried out by TPP shows that the increase in patronage is not expected to have any discernible impact on the capacity of bus or train services in the area.

Buses

The site is well connected to the London Bus Network with five bus routes running past the site on West End Lane. During peak hours 63 - 64 number of buses in each way.

Underground

West Hampstead Underground Station is located approximately 250m (3 minute walk) to the south of the site. Access to this station is via West End Lane. From here the Jubilee Line provides direct access to much of Central London and a number of key transport hubs including Waterloo, London Bridge and Stratford.

Public transport Impact

The proposals would result in an additional 41 and 37 two-way trips during the AM and PM peak hours respectively on the London Underground network. With regard to train services, an additional 7 two-way trips in the morning peak and 6 trips in the evening peak are predicted to be generated by the proposed development, equating to a maximum of one additional person every ten minutes. The assessment also shows an additional two-way trip generation of 3 and 2 bus trips during the morning and evening peak hours respectively.

Local Highway

West End Lane, classified as the B510, runs in a north south direction. It is not recognised as part of TfL's strategic road network (TLRN). An Automated Traffic Count (ATC) survey was undertaken on West End Lane over a seven day period in July 2015. In addition to the ATC survey, a fully classified junction count was carried out on the existing access into the Travis Perkins site.

An independent Stage 1 Road Safety Audit has been commissioned to identify any design safety issued related to the access junction.

Car Parking & Anticipated vehicle movements

Due to the high levels of public transport accessibility, the development is proposed to be car free with only disabled parking being allocated for the wheelchair accessible residential units. Any forthcoming planning permission will be accompanied by a S106 legal agreement, which will include an agreement which ensures that all future occupiers would be ineligible to purchase carparking spaces.

3 spaces have been identified for electric vehicle charging points, with a further 20% of the total number of spaces reserved as passive provision to meet the relevant London Plan policy objectives. As there are no parking spaces associated with the community or employment space it has been assumed (for the purpose of assessment) that all of the journeys to site are completed by other modes.

The planning application proposes a range of town centre uses for the ground floor, including Use Class A1, A2, A3, D1 or D2. The assessment of this floorspace has been carried out using "the worst case scenario" in relation to the end user, deliveries and services, which is considered to be Use Class A1 (retail) occupier."

The proposed development will generate fewer vehicular trips than the previous site owing to the difference in the trip generation characteristics of the land use that is proposed, compared to the builder's merchant that currently operates on site. From this analysis, and because of the car-free nature of the proposed development,vehicular trips to and from the development are predicted to reduce by 39 and 16 vehicles in the AM and PM peak hours respectively.

8.2 ADOPTED HIGHWAY

During the evolution of the design, changes have been proposed to improve the public realm for both pedestrians and cyclists in and around the site. Those proposals include:

1. Proposal to relocate vehicular access to the northwest corner of the site. The principal of segregating pedestrian and vehicular access routes. Road safety has been discussed with Highways officers on site and the conclusion is that the existing pedestrian crossing adjacent to the site on West End Land does not need to be relocated . A road safety audit has been undertaken in support of the application.

2. Removal of existing vehicular access. This would introduce opportunities to improve the public realm at this location (e.g. active node with potential for inew public space. This is further enhanced by the introduction of a hard/soft landscaping scheme at this location (a similar approch has been succesfully implemented on the north side of Iverson Road at the junction with West End Lane).

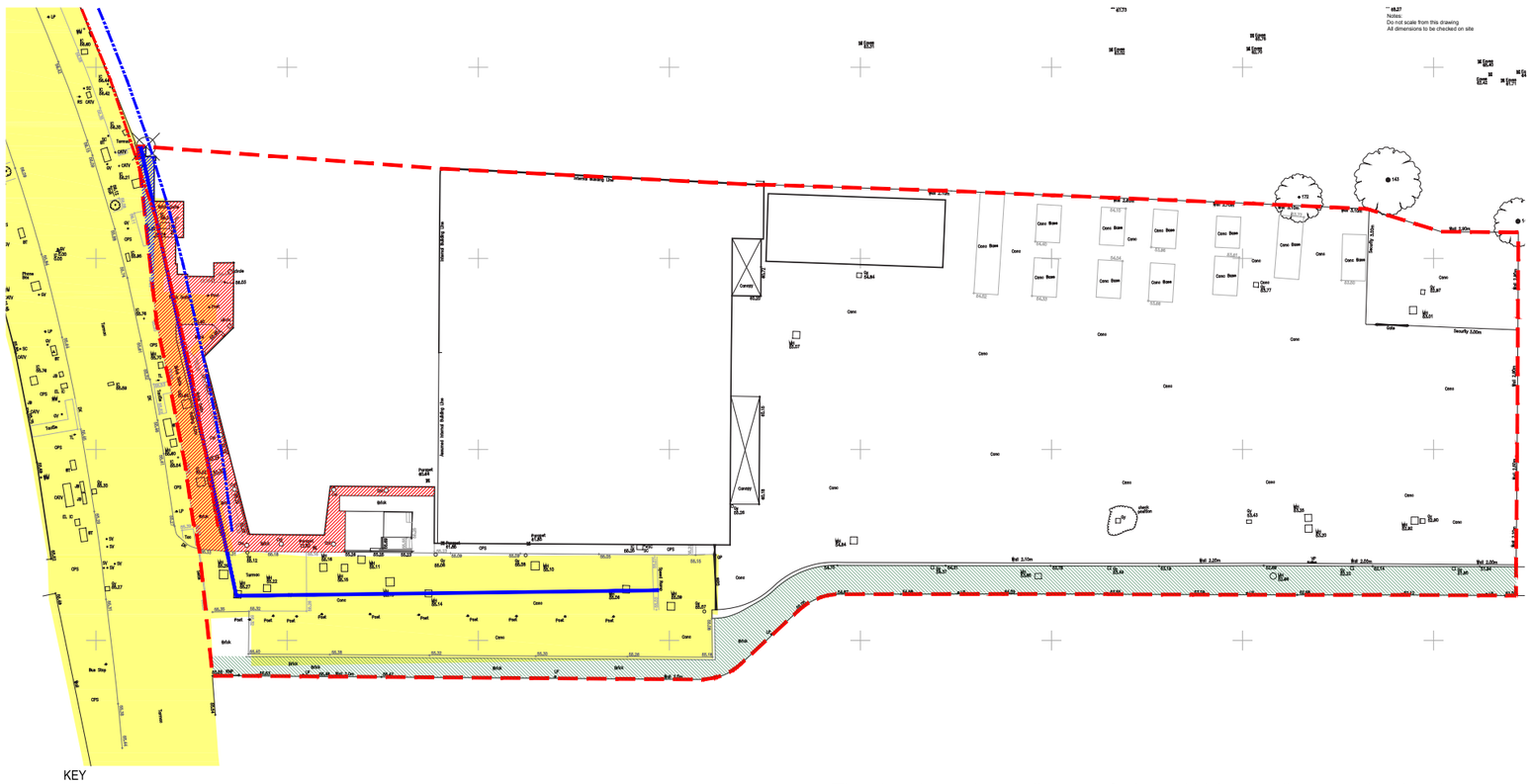
3. Redesigned Potteries Path. This public right of way is maintained. It is enclosed by brick walls on both sides. It is proposed to remove the brick wall directly adjacent to the site to both widen and improve sight lines. The footpath will have a consistent width of 3m along its entire length. A mixture of hard and soft landscaping, and lighting directly adjacent to the footpath (e.g. a route with trees and benches) has been proposed to further enhance the path.

4. Pedestrian routes within the site. The proposals acknowledge the importance of permeability. All residential and non residential spaces will be accessible from Potteries Lane or West End Lane.

5. Parking and servicing. The proposals for a car free development except for disabled parking and servicing is proposed, as is the proposal to provide electric vehicle charging points to London Plan requirements. All parking and servicing is to be accommodated within the site. The swept path diagrams provided illustrate that all servicing requirements will be safely accomodated.

6. Public highway directly adjacent to the site on West End Lane. The public realm in this location is particularly poor. The existing property frontage forms a poor relationship with the adjacent public highway. The paving materials are of a poor quality. And there are various items of unnecessary street clutter. The scheme is designed so that the new property frontage forms a good relationship with the adjacent public highway (i.e the property frontage is realigned to be parallel with the public highway. The footway is de-cluttered and existing guarding and dropped pavement is replaced with a level access, wideing the effective footpath width to 6.4m at the south western corner as the junction with Potteries path.

Existing Site Plan



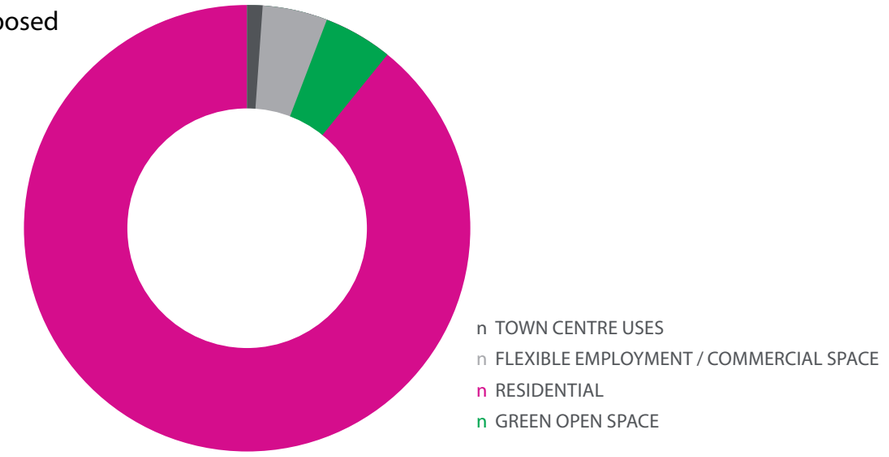
KEY

- PROPOSED BOUNDARY LINE (FOLLOWS EXISTING SITE BOUNDARY DEMARCATION)
- PROPOSED BUILDING LINE
- BOUNDARY LINE ESTIMATED FROM HM LAND REGISTRY TITLE PLAN
- 6m LINE PROJECTED FROM KERB EDGE
- EXTENT OF BRICK PAVING ON WEST END LANE DEMARCATING SITE BOUNDARY
- EXTENT OF LAND NOT DEMARCATED BY BRICK PAVING AND WITHIN PROJECTED BOUNDARY LINE
- ADOPTED PUBLIC HIGHWAY
- POTTERIES PATH

The plan above shows all areas of adopted highway adjacent and within the site boundary,coloured yellow. The footway on West End Lane and part of Potteries Path are part of the adopted highway which are within the site boundary and therefore will require highways consent to undertake the works. Discussions with highways officers and Adopted highways officers have taken place to discuss the proposals. For example, the footway to the front of the property includes a disabled parking bay for the existing building. With the development in place, this parking bay will be surplus to requirements. Removing the bay will also help to improve the relationship between the footway and adjacent highway and provide a continuous building line along the frontage to West End Lane.

The strip of adopted highway on the southern edge of the site (just to the north of the railway lines) is another section which will be stopped-up. The vehicular access is proposed to be relocated to the northern edge of the site. The public right of way that exists along the southern edge of the site will be retained.

8.3 EMPLOYMENT & ECONOMIC IMPACT



Existing employment floorspace

1618sqm – retail showroom/trade counter/open storage

Proposed non-residential floorspace

800sqm Town Centre uses

480sqm flexible office/employment space

268sqm dedicated start-up units

60sqm community meeting room

TOTAL 1608sqm

Existing staff: 30

Proposed full time employed : approx. 78

An Employment and Economic Impact Study, prepared by Turley is submitted as part of the planning application.

The following summary and infographic highlight the expected employment and economic benefits of the proposed development.

Construction Phase:

Construction-Related Employment : the proposed development has the capacity to support approximately 216 person-years of direct employment with the construction sector. This equates to an average of 72 full-time equivalent (FTE) temporary construction jobs on-site annually. It is estimated that 54 direct FTE jobs per annum and 27 indirect/induced FTE jobs per annum could be sourced from the London economy.

Construction-Related Productivity: the construction capital expenditure associated with the proposed development could deliver an annual net additional £8.4 million GVA contribution to the London economy each year, of which circa £5 million per year could contribute to the growth of the Camden economy, during the construction period.

Operational Phase:

Operation-Related Employment: the operation of the proposed commercial and retail space has the capacity to support 62 gross FTE jobs, of which 47 direct FTE jobs per annum and 23 indirect/induced FTE jobs per annum could be supported within the London economy (i.e. taken by residents of London).

Operation-Related Productivity : the proposed commercial and retail space will generate economic productivity in the form of GVA uplift annually the operational 'lifetime' phase. These elements could deliver an annual net additional £4.8 million GVA contribution to the London economy each year, of which circa £1.3 million per year could contribute to the growth of the Camden economy.

Enhanced Local Labour Force & Resident Spending Power: there is potential to increase local population by circa 444 people residing within the 202 new homes. Based on this total population growth, there will be circa 221 economically active and employed residents residing on the completed scheme, who will generate a gross household income of approximately £7.6 million annually.

Support for Local Retail & Leisure Services : as a result of the uplift in local resident population there is the potential to capture circa £2.7 million of household retail (convenience and comparison) expenditure, and £1.7 million of leisure (goods and services) expenditure, every year locally from households living on the completed scheme. This will help to boost the vitality and viability of local shops and businesses, and sustain essential local leisure and support services.

Retail & Leisure Expenditure Derived Employment : The increase in local retail and leisure expenditure generated by new residents will, in turn, support additional employment throughout the operational lifetime of the proposed development. It is estimated that 5 retail jobs per annum and 6 jobs per annum in the leisure industry would be supported locally.

8.4 ENERGY & SUSTAINABILITY STRATEGY

Sustainable Development

- Targets : BREEAM 'Very Good & Code for Sustainable Homes 4
- Energy efficient housing meaning low fuel use and lower bills.
- A mixed community of residents with new job opportunities

Biodiversity

- Green/brown roofs
- New trees and substantial planting

Energy

- 40% Carbon reductions on site
- On-site electric/energy generation
- Potential for district heating CHP communal heating
- Passive solar gain/winter gardens/thermal performance

Water

- Water saving devices
- SUD (Sustainable Urban Drainage) strategy

Recycling

- Waste separation and recycling
- Construction waste diverted from landfill

Sustainability Strategy

The proposed energy solution for the development follows and responds to the Be Lean, Be Clean, Be Green principles (London Plan, 2015) and includes various energy efficiency measures as well as low-carbon and renewable energy technologies.

The development has been designed to prevent overheating and avoid excessive requirements for heating and cooling. The proposed energy strategy demonstrates that 35% CO2 reduction can be achieved when compared to the CO2 baseline through energy efficiency measures, energy efficient supply and renewable energy contributions. Water consumption will be reduced through the incorporation of water efficient fixtures and fittings. Environmental friendly and responsibly sourced materials will be specified, where possible, in line with the BRE Green Guide to Specification.

The health and wellbeing of the occupants will be improved by providing good daylight levels, sufficient private space and indoor comfort. It is proposed to provide comfort cooling to private dwellings to enable residents to achieve a more controlled and pleasant internal environment during hot days in summer which will help the residents who are intolerant to high temperatures and vulnerable residents with health issues. In addition, the residential units will be built to Lifetime Homes standards.

The site will be registered with the Considerate Constructors Scheme with the aim of achieving Best Practice standards, which will ensure that the site's impacts on the environment, the workforce and the general public are minimised. The scheme is designed in accordance with Secured by Design standards.

The ecology of the site will be protected and will be improved by providing green areas and green roofs and introducing new ecological features. A Transport Assessment and Travel Plan have prepared for the proposed development. The proposed development will provide 310 secure, easily accessible, cycle parking spaces and 16 on-site car parking bays for blue badge holders only.

Services strategy

Primary energy supply is provided by site wiode district heating system located in a plant room at lower ground level. The proposal also include for additional on site generated electricity via PV panels located on the roof.

For the majority of the year ventilation to the new build flats will be provided through (high efficiency) mechanical ventilation with heat recovery (MVHR). This will be supplemented by passive ventilation measures as the majority of flats will be dual aspect and therefore cross ventilation would be available.

Energy Strategy

The proposed Energy Strategy includes various energy efficiency measures as well as low-carbon and renewable energy technologies as outlined in the table below.

Energy Principles	Energy Strategy Response
Be Lean: Use less energy. Minimise energy demand through efficient design and the incorporation of passive measures	**Passive design** • Optimised orientation to enable controlled solar gain and improved direct and indirect natural lighting. • Incorporation of balconies into the design to reduce risks of overheating in summer. **Building Fabric** • Use of optimal building fabric standards. **Energy Efficiency** • 100% energy efficient lighting and appropriate controls • Variable speed heating system with high delta T and low return temperatures • High efficiency motors and variable speed pumps for heating and extraction systems • High efficiency heating system • Appropriate controls for heating system • Temperature and time zoning • Appropriate insulation of heating distribution system • Provision of energy efficient white goods
Be Clean: Supply energy efficiently. Reduce energy consumption through use of low-carbon technology	**Energy efficient energy supply** • On-site CHP system connected to on-site heat network to supply domestic hot water and space heating to the entire development • Energy efficient VRF systems to supply cooling to private residential and the non-residential units
Be Green: Use renewable energy systems	**Renewable energy** • PV system to supply renewable electricity for the non-residential units.

Secured by Design – Statement of Intent

Permeability/Access/Security

The design strategy aims to strike a balance between permeability, territoriality and passive surveillance to create high quality, welcoming public spaces, businesses and residences; providing safety and security through community and ownership of both private and publicly accessible areas.

There is no internal access between uses within the development, each building use (flexible commercial/ residential/community) is discrete. It is anticipated that CCTV will be considered and the strategy will be considered (in conjunction with the SbD Officer) as the project progresses.

Public Access

The site is largely accessible to the public, predominantly due to an existing public footpath (Potteries Path) and new public spaces being created as part of the scheme. These public spaces, including the improved public footpath, are pedestrian only and located on the south of the site, and controlled vehicle (and pedestrian) access is located to the north of the site. The publicly accessible spaces have been designed with appropriate lighting and landscaping (further detail below) incorporating a variety of uses to front the spaces (retail/commercial, start-up business units, community meeting room and residential) to encourage social activity and increase useful natural surveillance throughout the day.

Northern (Vehicular) Access Route

Vehicular access is limited to the shared route to the north of the site. The first stretch of this route, accessing from West End Lane, at the western end is open access allowing immediate access to the site, thus avoiding vehicles waiting on West End Lane.

The office entrance has also been located to the north of the site, near the vehicle entrance, so as to improve activity and overlooking of this area and minimise blind corners.

Toward the end of the western block a vehicle and pedestrian gate is proposed which will control further access to the eastern end of the site, removing any unnecessary permeability, as recommended by SbD Officer. This gate will be controlled by fob for residents (pedestrian access) and for residents/guests/deliveries/services (vehicular and pedestrian) by the 24 hour concierge service. A further pedestrian gate between the two blocks will control access to the north-eastern area of the site.

Soft landscaping and lighting along this route will create a pedestrian friendly shared surface to encourage use by all to increase activity and natural surveillance throughout the day.

Access to Flats and Communal Areas

Access control will be audio and video, with no trades button fitted and further access control per 25 units, as recommended by the SbD Officer. There will also be a 24 concierge service managing site access.

Individual post boxes (with no master key) will be located in the lobby areas for each of the four residential core areas, further access into the building from this point will be controlled by encrypted fob.

Technical Standards/ Specifications

Doors/Windows/Walls

Each residential door, doors to communal areas and external gates will be to a security enhanced standard. Each opening and accessible windows will be to a security enhanced standard with P1A laminated glass. These will need to be tested and certified to one of the following four British standards (in accordance with ADQ and following recommendations by SbD Officer):

1. BS PAS 24/12

2. LPS 1175 SR2+ (that is a security rating of 2 or higher)

3. STS201

4. STS202

Common areas include any internal lobbies and external areas that are considered to scalable, e.g. a first floor window next to a wall and not necessarily a sixth storey window. Partition walls to security controlled common areas should be contain 9mm plyboard, metal mesh or other approved design.

External gating should be 2.4m high and of a design not easy to climb. Bin Stores will need to be self-locking, self-closing and fit for purpose. Cycle store doors would need to be self-locking, self-closing to a security enhanced standard. Commercial unit loading bay will be supported with a roller shutter to LPS 1175 SR 1 or 2.

External Lighting/Landscaping/Fixtures

A schematic landscape lighting has been proposed. Detailed lighting design will be developed by a lighting specialist in the detailed design phase and will be in accordance with BS5489. The public and private landscape areas are lit by both column lighting and building mounted lights. Both bench and paving lighting have been introduced in seating areas for ambient lighting. No bollard lights have been proposed. Refer to the Landscape drawings L200 and L201 for positions of lighting fittings.

Trees in the public areas have been proposed with a 2m clear stem where a window of surveillance is required. In the private areas, more specimen shrubs /smaller trees are introduced which will be maintained to a neat shape to avoid concealment. They are positioned to ensure view lines are maintained.

The shrubs and understory have ben specified to generally grow to less than 1m height. A management and maintenance plan will be developed at a later stage to ensure that the planting is maintained to the required level.

Standalone benches in the public realm are timber. They will be specified as plate fixed or socket fixed to ensure they can be removed. Arm rests have been specified to all timber benches to discourage sleeping. In potteries path, timber benches are proposed to the top of brick planter walls. These will be designed to be removable. The one bespoke concrete bench in the central garden is not removable. This has been positioned in an area of high footfall and high natural surveillance. The area is also well lit with a nearby light column. We therefore suggest that the position of this bench discourages antisocial behaviour and sleeping.

Daylight & Sunlight Study

Right of Light Consulting have carried out a detailed assessment of the proposed development in relation to daylight, sunlight and overshadowing and full details are provided in their submitted report. Their assessment comprises both the neighbouring properties and open spaces and also the proposed development. A summary of the results is provided below.

The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011. The BRE guide explains that the numerical guidelines should be interpreted flexibly, since natural lighting is only one of many factors in site layout design and should be balanced against all other material planning considerations when deciding whether to grant planning permission.

In relation to amenity areas such as gardens and open spaces, the BRE guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sunlight on 21 March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

BRE Daylight and Sunlight (Neighbouring Properties)

The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties at 166 to 174, 217, 219, 221, 223, 225, 227 & 229 West End Lane, 2 to 30 Lymington Road and 1 to 21 Crown Close.

In summary the results conclude:

Right of Light Consulting confirms that the proposed development design achieves a high level of compliance with the BRE recommendations. The majority of the neighbouring windows and gardens tested meet or surpass the BRE numerical recommendations. Whilst some windows and gardens do not meet the recommendations, the results are not unusual in the context of an urban location.

Daylight to Windows

Diffuse daylight calculations were undertaken to all rooms where daylight is required, including living rooms, kitchens and bedrooms.

93% of the habitable room windows tested meet or surpass the standard BRE Vertical Sky Component (VSC) target. Where windows do not meet the standard BRE targets it does not automatically follow that daylight will be adversely affected.

All 7% of windows (29 windows out of 396 tested) that do not achieve an ideal standard of daylight are either marginal or in very isolated areas (windows achieve a reduction ratio of 0.69 and above against the target of 0.8) Overall the massing has been reduced and pushed away from the properties to mitigate the impact on daylight / sunlight and therefore the VSC scores in this case are considered acceptable.

Sunlight availability to Windows

The BRE sunlight tests have been applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south.

98% of the windows tested meet or surpass the total annual sunlight hours test and the winter sunlight hours test. Isolated windows fall marginally short of the direct sunlight targets.

However, from observations it appears unlikely that all of these windows serve a main living room and therefore would not be required to be tested under the BRE guidelines. Given the very high level of compliance, it is considered that the proposed development is acceptable in relation to direct sunlight achievable by the neighbouring properties.

Overshadowing to Lymington Road Gardens

The availability of sunlight has been checked for all open spaces where sunlight is required. This includes:

- Gardens, mainly the back gardens of Lymington Road
- The MUGA and play space to the east of the site

All surrounding gardens pass the overshadowing to gardens and open spaces test with the exception of the gardens at 16, 24 & 26 Lymington Road. This needs to be set into context, as the situation is temporary and affected by the time of day and season, hence at noon in June there is minimal impact. The BRE guide does not set out any significance criteria for assessing transient overshadowing however, it does note that "it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing of a space is to be expected".

As with the impact on daylight, the BRE recommendations are intended to be applied flexibly and take into account the site constraints. In particular, paragraph 1.6 of the BRE guide states "In an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the heights and proportions of existing buildings". It is therefore considered impractical to avoid the isolated transgression of the BRE recommendations in this instance.

Overshadowing to Open Space (MUGA)

The availability of sunlight has been checked for all open spaces where sunlight is required. The results confirm that 100% of the MUGA situated to the east of the will receive at least two hours of sunlight on 21st March. This is significantly better than the BRE recommendation.

BRE Daylight and Sunlight Study (Within Development)

The aim of the study is to check whether or not the proposed habitable rooms and external areas within the new development receive satisfactory levels of daylight and sunlight.

The numerical results confirm that the proposed development design achieves a very high level of compliance with the BRE recommendation and there is no daylight/ sunlight related reason why planning permission should not be granted for this scheme.

The following statement is quoted directly from the BRE guide:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and this document should not be considered as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

Interior Daylighting

Around 95% of all habitable rooms achieve or surpass the minimum recommended Average Daylight Factor (ADF) targets (only 24 of the total 465 rooms fall marginally short of their ADF targets). This is a very high level of compliance in the context of an urban development site.

Sunlight to Windows

The BRE guide recommends that where possible each dwelling should have at least one main living room window that faces within 90 degrees of due south. The proposed development contains a mixture of south, south east & west and north east & west facing living rooms. Whilst the aim is usually to maximise the number of south facing living rooms within domestic dwellings, the BRE guide does not give mandatory sunlight requirements for flats. The guide states that for larger developments, especially those with site constraints, it may not be possible to have every living room facing within 90 degrees of due south. Notwithstanding the above, 78% of the living rooms (131 of the 167) at the proposed development have at least one window which faces within 90 degrees of due south.

Overshadowing to Central Green Space and Private Courtyards

The availability of sunlight has been checked for all open spaces where sunlight is required.

The results confirm that 96% of the central green space will receive at least two hours of sunlight on 21st March. This is significantly better than the BRE recommendation which states that at least 50% of any garden or amenity area should receive at least two hours of sunlight on the 21st March.

The results show that the private courtyard at lower ground and first floor (which are sited facing north) do not receive at least two hours of sunlight on 21st March. However, the BRE guide is intended to be used flexibly, particularly in urban locations. In this instance we are of the opinion that the proposed development design is likely to be acceptable, especially when taking into account that two of the communal amenity areas achieve a very high standard of sunlight.

Ecology

An Ecological Appraisal was carried out at 156 West End Lane, West Hampstead on 2 May 2015. The submitted Preliminary Ecological Appraisal prepared by The Ecology Consultancy presents the results of the survey and provides an assessment of any ecological constraints applying to the proposed development and recommendations for protecting, managing and enhancing the wildlife value of the site.

The main findings of the survey are as follows:

- The site does not form part of any statutory site and no statutory sites are located within one kilometre (km) of the site.
- The site is not subject to any non-statutory designations. There are twelve non-statutory designated Sites of Importance for Conservation located within a 1km radius of the site. The nearest of which is West Hampstead Railsides, Medley Orchard and Westbere Copse Site of Borough Grade I Importance for Nature Conservation, located on either side of the site approximately 100 metres (m) east and west.
- Habitats on site comprised a building, hard standing, introduced shrub, scattered scrub and overhanging scattered trees.
- The site has low potential to support breeding birds. Mitigation measures will be required to address the potential presence of breeding birds in-line with relevant protected species legislation. Further detail is provided in the landscape report.
- The site had negligible potential to support bats and was unsuitable to support any other protected species.

Recommendations

The site has potential to be enhanced for biodiversity, which will aid in meeting local and national BAP objectives.

In particular the following enhancement measures are recommended:

- A biodiverse roof should be installed on the new building.
- Landscaping should utilise plants of recognised wildlife value.
- Climbing plants of wildlife value (i.e. jasmine/honeysuckle/clematis) should be retained on the northern boundary wall where possible and established on new walls or against trellising, where appropriate.

Enhancement recommendations (as noted above) to improve the ecological value of the site beyond its baseline condition are incorporated into the proposed landscaping strategy.

Flood Risk

Please refer to the detailed Flood Risk Assessment (FRA) report.

The purpose of this FRA is to assess the risk of the site flooding and the impact any changes or development on the site will have on flood risk to adjacent areas. The proposed development site lies within flood zone 1 which is classified as land assessed as having a less than 1 in 1000 annual probability of river or sea flooding and is appropriate to all uses of land. The FRA concludes that the site has a low risk of flooding from fluvial sources,overland flow, from rising groundwater levels, and of flooding by reservoirs, canals or other artificial sources..

It is therefore the consideration of the FRA that the site has a low risk of flooding by surcharging of the local sewer network.

Sustainable Urban Drainage (SUDS)

Sustainable drainage systems (SuDS) are drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses.

By mimicking natural drainage regimes, SuDS aim to reduce surface water flooding, improve water quality and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment.

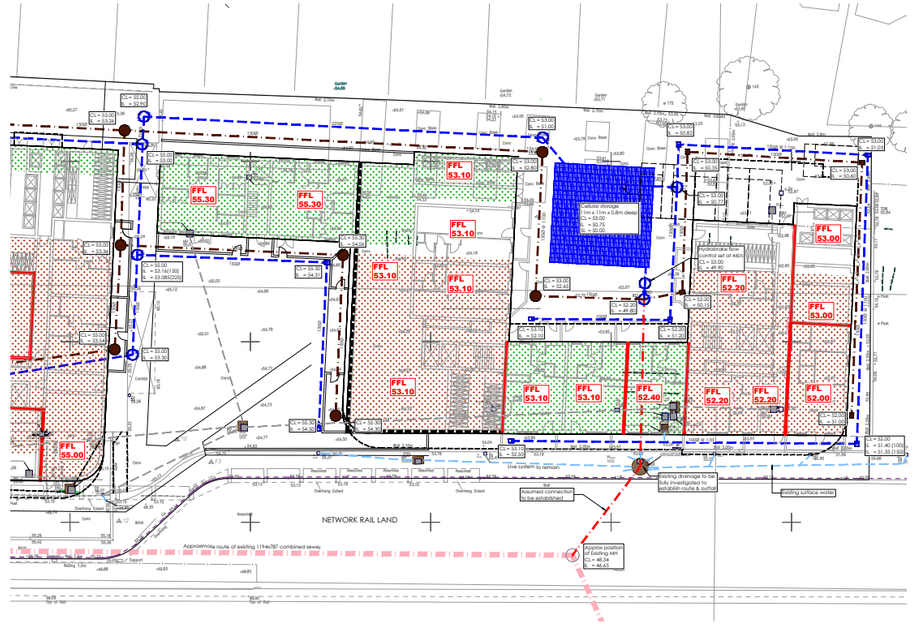
The need for alternative drainage such as SuDS is likely to increase to meet environmental challenges such as climate change and population growth.

The existing drained hard standing area for the development site has been assumed as 100% impermeable and estimated at approximately 6400sqm. A series of gullies drain the hard standing areas and the topographic survey notes the presence of an extensive drainage network currently serving the site.

Currently with a 50mm/hr rainfall rate, the existing surface water flows off the development site would be in the order of 92l/s. It is anticipated that a SUDS strategy should lower the rate of 46l/s to offer a significant 50% benefit in reduced flows into the receiving sewer networks.

A review of the site proposals suggest that storage can be provided within cellular storage within the landscaped areas (see plan opposite). The proposed scheme through the introduction of landscaping and ground floor garden areas will introduce elements of free draining ground which have been estimated at 15% of the total development area.

These spaces alone will assist in reducing surface water flows off the development site, with the remaining surface water flows attenuated through the use of a flow control chamber and on site attenuation measures. Current estimates suggest this will be in the order of 100cum of storage in the form of cellular storage and placement is anticipated to be under the proposed private courtyard along the northern boundary.



Extract of drainage strategy showing cellular storage below private courtyard (east)

Acoustics

Below is a brief summary of the Noise Impact Assesment, please refer to the report prepared by Accon for full details.

Noise surveys were undertaken to determine the current climate at the site and validate the noise model. Calculations were undertaken to determine the mitigation required to meet the BS 8233 good internal noise criteria of 30 dB during both the daytime and night-time period.

The assessment demonstrates that mitigation features will be required. With the recommended sound insulation and noise attentuation features to the westa nd south elevations, the internal noise criteria would also be met. Typical glazing system in a 10/12/6 configuration, with acoustic laminate on the inside pane, to give a Sound Reduction Index (SRI) of 40 dB could be used. Additionally, the rest of the facade build-up should be constructed to achieve a SRI of 55 dB. This can be achieved using a standard brick/block cavity wall. These specifications should be confirmed by more detailed calculations when the design of the proposed building has been developed

It is therefore considered that the proposed development meets the policy requirements and the site is considered suitable for the proposed development

Air Quality

This assessment has been completed in order to determine whether the proposed development achieves compliance against the National Air Quality Objectives, along with National and Local planning policy. In 1997 the United Kingdom National Air Quality Strategy (NAQS) was published and this document, set out an analysis of the magnitude and potential health and environmental problems associated with air pollutant emissions, particularly those emanating from road traffic.The report accordingly assesses the overall levels of nitrogen dioxide (NO2) and particulates (PM10; PM2.5) at the site.

Air pollution impacts have been assessed for both the new occupants of the development and the impact on the existing properties due to the construction and use of the new buildings.

Below is a brief summary of the Air Quality Report, please refer to the Accon report for full details.

Key findings are summarised below:

- Current development plans do not make provision for any significant on-site parking and therefore the development will not have an adverse air quality impact in use with respect of generated traffic flows onto the local highway network.
- The air quality due to the traffic on West End Lane (NO2levels) will require mitigation measure to the lower floors of the development on the western frontage. The measures anticipated include the use of mechanical ventilation (MVHR) which will draw air in from less polluted areas.
- In relation to anticipated particulate levels, it is considered that PM10 , and PM25 will not be a constraint on the development of the site, and that no mitigation measures are necessary to protect the future residential occupants from exceedances.

Construction Phase

The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise the risk of elevated PM10 concentrations and dust nuisance in the surrounding area. With the proposed measures in place, construction impacts are judged to be insignificant. Construction traffic is unlikely to significantly affect air quality within the surrounding area.

There are a number of Best Practice mitigation measures that can be used by contractors to ensure that the impacts experienced in close proximity to the construction site are minimal. These include effective site planning (e.g. dust generating activities to be located away from sensitive receptors), controlling construction traffic (e.g. wheel washing and damping down haul routes) and also by minimising site activities which have the potential to generate dust.

If Best Practice mitigation techniques are implemented, it is considered that the potentially medium risk impact from the construction phase would be negligible to low. The overall effects

8.7 WASTE, CONSTRUCTION MANAGMENT

Waste Management Strategy

The submitted Waste Management Strategy prepared by WSP Parson Brinkerhoff provides an assessment of the potential waste generated by the new occupants of the development. The overall aim of developing this strategy is to ensure compliance with policy and create adequate provisions to support good practice in the separation, storage and collection of refuse. The refuse considered is a combination of both general and recyclable waste.

Storage of household waste

Household waste generation from the proposed development has been estimated by WSP using Gov.uk municipal waste statistics and LBC data.

Internal

In the first instance, residents would segregate and store their refuse and recycling through the use of internal compartmentalised waste storage in their kitchens. This would promote the segregation of refuse, recyclable and compostable materials at source.

Waste Stores

The waste storage capacity requirements for the Proposed Development have been based on the volumes from LBC's Camden Planning Guidance and calculated on size of each household.

The provision of bins would be split equally between refuse and recycling including provision for food waste. The waste stores will be sized to allow clearance of 150 mm between each bin and the walls. and space in front of the bins to allow residents to easily access the bins when depositing waste.

Communal waste stores are shown in the plan opposite.

- The Shared Ownership units will have a dedicated waste store with sufficient space for the equivalent of six 1,100 litre Eurobins.
- The Affordable Rented units will have a dedicated waste store with sufficient space for the equivalent of seven 1,100 litre Eurobins .
- The Private Sale units will have two dedicated waste stores (Core 3 and Core 4) with sufficient space for the equivalent of 12x 1,100 litre Eurobins on the lower ground floor level .

Collection of household waste

On collection days, the Refuse Collection Vehicle (RCV) will access the proposed development from West End Lane and drive along the north shared access route. There will provide direct access to the Shared Ownership and Affordable Rented waste stores on ground floor level.

Fob access will enable RCVs to drive to the waste stores for the Private Sale units on the lower ground level, utilising the turning head to reverse and exit the proposed development in a forward gear. The swept path analysis for the RCV has been provided in the transport report.

According to Camden policy, collectors will not have to manually transport a wheeled bin more than 10 metres from the point of storage to the RCV . All waste stores are within this distance.

Storage and collection of commercial waste

Retail

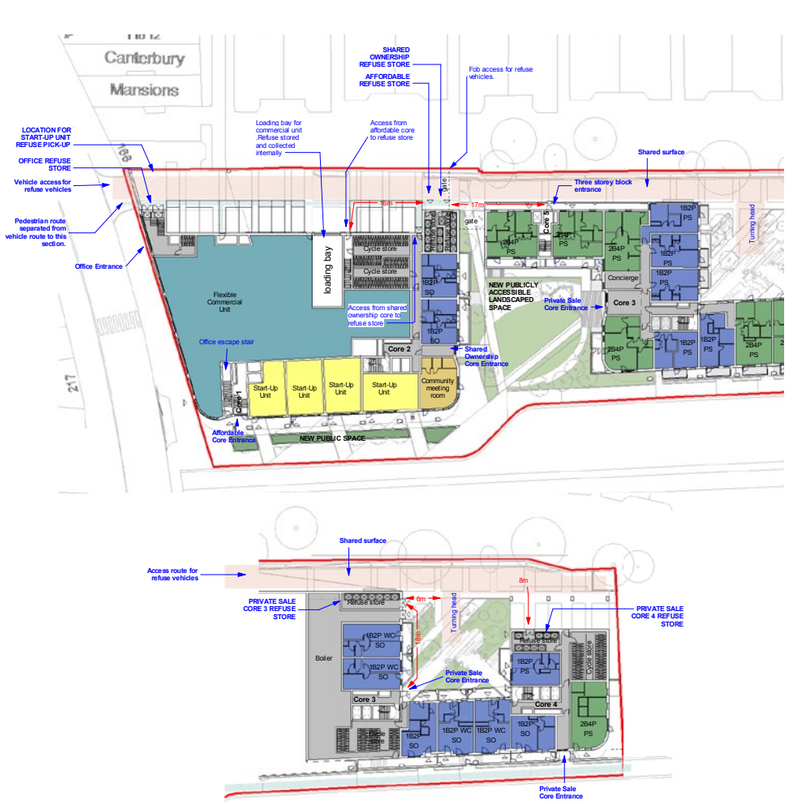
The retail unit will have its own internal waste storage and will arrange for their own waste collection directly from their unit via the loading bay.

Office at 1st floor

The offices will have a dedicated waste store with 2x 660 litre Eurobins on the ground floor level accessed from the northern shared access route.

Start-up Units & Community Meeting Room

The start-up units and Community meeting room will each have internal waste storage and will arrange for their own waste collections directly from their units.



Construction Management Plan

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

A preliminary CMP has been prepared by Silver DCC and 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.

Key components of the CMP include:

- A neighbourhood consultation process must have been undertaken prior to submission of the CMP first draft. 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.
- Construction Working Group is set up for local businesses and residents that may be affected by these works, within the vicinity of West End Lane. It is intended that regular contact is maintained with these 'stakeholders' prior to and during the construction works phase. This will include meetings, letter drops, clear signage, schools talks and registration with the Considerate Constructors Scheme.
- The contractor will be required to follow the Guide for Working in Camden and Camden's Considerate Contractors Manual as well as signing up to the Considerate Constructors scheme.

An indicative site logistics plan of the anticipated construction site has been included showing how the CMP takes into consideration and mitigates the cumulative impacts of construction in the vicinity of the site. This will be developed and reviewed closer to the time of construction.