

	Lifetime Homes - Principles	Proposals
1.	Provide, or enable by cost effective adaptation, parking that makes getting into and out of the vehicle as convenient as possible for the widest range of people (including those with reduced mobility and/or those with children).	The scheme is a car-free scheme.
2.	Enable convenient movement between the vehicle and dwelling for the widest range of people, including those with reduced mobility and/or those carrying children or shopping.	The scheme is a car-free scheme. However, drop off is envisaged at the front of the building and from the pavement the approach to all dwelling entrances will be gently sloping. The approach route will have ramps that do not exceed a gradient of 1:12 for a distance of up to 2 metres and 1:20 for a distance of 10 metres, and no slope should have a going greater than 10 metres long.
3.	Enable, as far as practicable, convenient movement along other approach routes to dwellings (in addition to the principal approach from a vehicle required by Criterion 2) for the widest range of people.	There is a gently sloping approach to all dwelling entrances from the main highway with a clear route of a firm, non-slip material that has a minimum width of 1200mm and opens out to widths up to 2000mm wide along the route.
4.	Enable ease of use of all entrances for the widest range of people.	All entrances to the dwellings will be illuminated, have an accessible threshold and a minimum effective clear width of 800mm. Entrances to the rear building will have 300mm clear nib to the leading edge on the pull side of the door.
5.	Enable access to dwellings above the entrance level to as many people as possible.	The communal stair in Block C will have: <ul style="list-style-type: none"> • Uniform closed risers not exceeding 170mm and uniform goings not less than 250mm with contrasting nosings. • Handrails that are 900mm above the stair pitch that extend 300mm beyond the top and bottom steps.
6.	Enable convenient movement in hallways and through doorways.	Internal hallways to the dwellings are at least 900mm wide with 775mm clear opening to all doors. 300mm nibs to the pull side of doors will be achieved to all entrance level doors.
7.	Enable convenient movement in rooms for as many people as possible.	1500mm turning circle is achieved in living / dining / kitchen areas with 750mm essential circulation between furniture. There is 1200mm clear width between kitchen unit fronts. The main bedroom will achieve 750mm clear space to all sides of the bed with other bedrooms achieving 750mm clear space to at least one side and the foot of the bed.
8.	Provide accessible socialising space for visitors less able to use stairs.	A living room and combined kitchen/dining room are provided on the entrance level of all dwellings.
9.	Provide space for a member of the household to sleep on the entrance level if they are temporarily unable to use stairs (e.g. after a hip operation).	All the living rooms in the flats have been designed so they can accommodate a bedspace which can be screened off on the entrance level which will be provided with an electrical socket. An entrance level bedroom is provided in the 3 bed masionette flats and all the 1 bed flats.
10.	Provide an accessible WC and potential showering facilities for: i) any member of the household using the temporary entrance level bed space of Criterion 9, and:ii) visitors unable to use stairs.	All masionette flats will contain an entrance level WC wet room which includes a shower and the 1 bed flats have a bathroom that is easily convertible into an accessible shower room.
11.	Ensure future provision of grab rails is possible, to assist with independent use of WC and bathroom facilities.	As part of the construction process plywood patresses will be provided in stud walls to WC and Bathrooms to provide adequate fixing within a height band of 300mm – 1800mm from the floor.
12.	Enable access to storeys above the entrance level for the widest range of households.	The main stair to each dwelling will have a clear width of 900mm and enable installation of a seated stair lift. There will also be the ability designed in to all masionette flats to create an opening in the floors of a minimum size of 1000mm x 1500mm. This potential aperture area will be clear of services and have an electrical point to allow the installation and operation of the through floor lift.
13.	Assist with independent living by enabling convenient movement between bedroom and bathroom facilities for a wide range of people.	As part of the construction process suitable structure above ceiling finishes over the main bedroom / bathroom will be capable of adaption to support the future installation of single point hoists above the bed, bath and WC. The flats have potential for access via a through floor lift as set out criterion 12 and there is a direct connection between the bedroom and bathroom in each dwelling.
14.	Provide an accessible bathroom that has ease of access to its facilities from the outset and potential for simple adaptation to provide for different needs in the future.	In all flats an accessible bathroom is provided either adjacent to the main bedroom in the 2 and 3 bed flats or off the circulation space in 1 bed flats, with the potential for access by a through floor lift from the dining area on the ground floor. A WC, washbasin and accessible bath are provided with the associated clear approach zones as set out in criterion 14. In each dwelling capped drainage will be provide beneath the bath to allow for a future accessible shown to be installed with a 1500mm clear turning circle indicated.
15.	Enable people to have a reasonable line of sight from a seated position in the living room and to use at least one window for ventilation in each room.	The windows in the principal living spaces will start at floor level and so will allow a seated occupant to see out and have a uninterrupted view into gardens and external spaces. Opening lights in habitable rooms will be accessible with a 750mm wide approach route and handles will be no higher than 1200mm above floor level.
16.	Locate regularly used service controls, or those needed in an emergency, so that they are usable by a wide range of household members - including those with restricted movement and limited reach.	Service controls will be positioned within a height band of 450mm to 1200mm from the floor and at least 300mm away from any internal corner.



	Maisonette 1		Apartment 2		Average	
	Energy Demand (kWh/yr)	CO ₂ Emissions (tonnes CO ₂ per annum)	Energy Demand (kWh/yr)	CO ₂ Emissions (tonnes CO ₂ per annum)	Energy Demand (kWh/yr)	CO ₂ Emissions (tonnes CO ₂ per annum)
'Be Green'	6717.7	1.136	3615.9	0.611	5166.8	0.874
Baseline Spec	10320.4	1.815	5459.9	0.959	7890.2	1.387
Total Improvement	3602.7	0.679	1844.0	0.348	2723.4	0.513
%	34.91	37.41	33.77	36.29	34.52	36.99

Table 4

This represents an average reduction in CO₂ emissions of **36.99%** per year across the two samples modelled, and has been achieved through energy efficiency measures, using improved building fabric, passive measures, increasing the efficiency of the building services and finally installation of a renewable energy source.

A reduction in CO₂ emissions of more than 35% has been achieved over the *baseline* model thus satisfying the requirement of London Plan policies 5.2, 5.3, 5.7, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14 and 5.15 and Development Strategy policies 1.1(k) and 1.2(f).



Executive Summary

It is our opinion that sufficient design works have been carried out at this early stage to demonstrate that the proposal is successfully addressing the requirements of policy 5.2 of the London Plan and the local energy policies of Camden Borough Council.

The *energy hierarchy* has been adopted to follow a *BE Lean, Be Clean, Be Green* methodology.

The preferred energy strategy is to *reduce energy demand* and consequently the amount of conditioning and renewable energy contribution needed. This starts with a fabric first approach to improve thermal elements and controlled fittings.

Further example calculations demonstrate the effect of passive measures together with increased levels of air tightness. In addition building services have been optimised for efficiency. These gains produce a CO₂ reduction of **15.65%** over the baseline.

The feasibility of CHP systems and decentralised energy networks have been considered within the *Be Clean* case.

The final *Be Green* improvements have additionally explored the adoption and effect of adding renewable energy. The most appropriate renewable energy sources have been identified as air source heat pumps combined with photovoltaic panels which in total produce a carbon saving over the baseline emissions of **36.99%**.

The calculations provided draw upon the detailed SAP 2012 assessment of two sample dwellings under various scenarios. This gives as accurate a guide as possible to the energy usage of the final development in operation.

The behaviour of the occupants arguably has the largest part to play in terms of energy demand. Guidance for the future occupants will be provided on the operations of all systems within the building to encourage efficient use of energy generally and with particular attention to optimal use of energy generated by the suggested renewable systems.