3.0 Sustainability

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3.01 Sustainability Summary

01 Smart servicing + low energy

Heat recovery mechanical ventialtion reduces heating and cooling loads

02 Renewable systems

Photovoltaics panels on the roof

03 Occupant amenity +delight

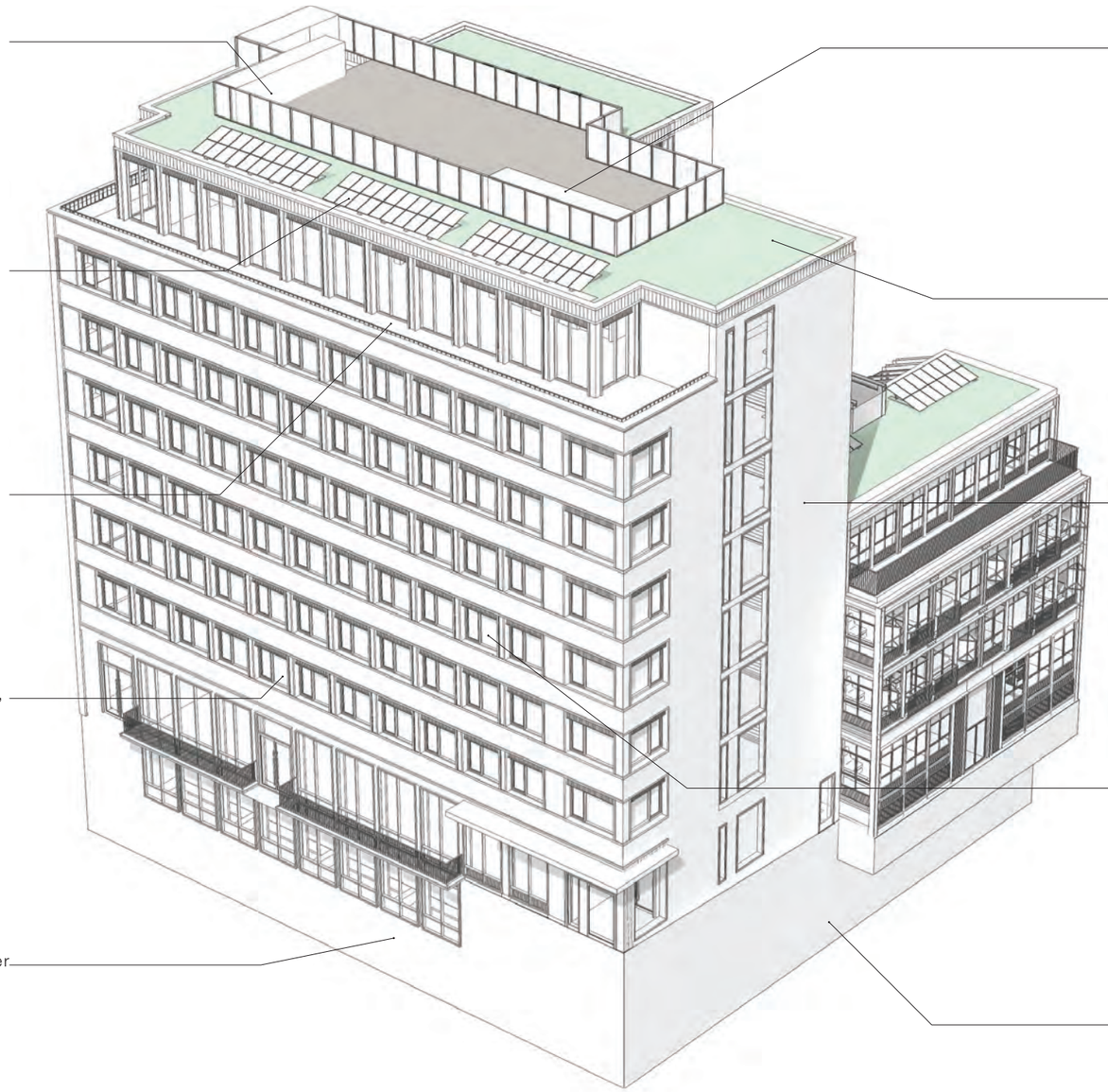
External terrace for tenants

04 Smart low energy lighting

Low energy light fittings, photoelectric daylight dimming and presence detecting controls reduce electricity use

05 Cyclist facilities

Secure long stay cycle bays, lockers and shower rooms provided in the basement



06 Fresh air

Filtered air intake at the roof provides fresh air throughout the building

07 Enhanced ecology

Extensive green roof to improve the ecologicaly and habitat

08 Smart construction

Improved wall build up to improve performance of building fabric

Retention of existing facade enables embodied carbon to be saved

High performance glazing to reduce cooloing energy

09 Enhanced occupant control + experience

Inteligent building management systems control and measure energy use

10 Efficient Water Use

Low flow sanitary fittings reduce the buildings water use

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3.0 Sustainability
3.02 Energy Strategy

The following text is provided by Green Building Design Consultants. Refer to full report; Sustainablility & Energy Statement, for further information.

The Energy statement that has been issued with the planning documents assesses 'Best Practice', energy efficiency measures and renewable energy solutions for the Proposed Development. The inclusion of energy efficiency measures has been discussed to minimise on-site energy use compared to a building regulation compliant design. These include improved insulation levels, high specification glazing and energy efficient lighting and appliances.

The feasibility of incorporating low and zero carbon energy sources has also been assessed with PV installations on the flat roof of both the office block and residential block being proposed for the site.
SAP and SBEM calculations have been carried out to confirm the energy strategy delivers a high standard of fabric efficiency in conjunction with high efficiency heating systems to exceed Building Regulations 2013 Part L compliance for the commercial and residential units.

The Proposed Development will meet all relevant policies and requirements set out within the Camden Local Plan and the London Plan, the result of which is the provision of a resource efficient, sustainable development. The following standards are being proposed:

Residential Block

- A thermally efficient building fabric specification
- Accredited Construction Details for all applicable thermal bridges (and IG Hi-Therm lintels for the dwellings)
- Air-permeability of ~4m3/hr/m2
- A communal CHP system with HIU to each dwelling
- 2.7 kWp PV Array on the flat roof of the residential block
- AC units to provide comfort cooling
- Efficient lighting design to reduce power consumption
- Efficient water fittings to reduce indoor water demand
- Home Quality Mark 'level 3' compliance

Commercial Block

- A thermally efficient building fabric specification as per Table 8
- Accredited Construction Details for all applicable thermal bridges (and IG Hi-Therm lintels for the dwellings)
- Air-permeability of ~5m3/hr/m2
- VRV system to provide heating and cooling for offices
- 10.4kWp PV Array on the flat roof of plant room
- Efficient lighting design as per Figure 10
- Separate metering for all major commercial energy loads, which includes 'out-of-range' values (minimum of heating, cooling, lighting and ventilation)
- Efficient water fittings to reduce indoor water demand
- BREEAM 2014 'Excellent' compliance overall

Unit Type	Commercial	Residential
Energy Baseline (tonnesCO_2/ yr)	41.05	14.07
Be Lean (tonnesCO_2/ yr)	30.67	13.89
Be Clean (tonnesCO_2/ yr)	23.47	9.68
Be Green (tonnesCO_2/ yr)	19.17	9.03
Total Cumulative Savings	53.30%	35.80%

Table 1: Proposed Solution Summary

Table 1 (above), and Figures 1 and 2 (below) demonstrate that the site-wide estimated emissions have been reduced in accordance with the Camden Local Plan and the London Plan.

A 19% improvement over Building Regulations Part L1A (dwellings) and 35% improvement over Part L2A (commercial) 2013 target emissions rates, compared to a compliant gas based solution, have been achieved by implementing the "be lean, be clean, be green" national energy policy methodology.

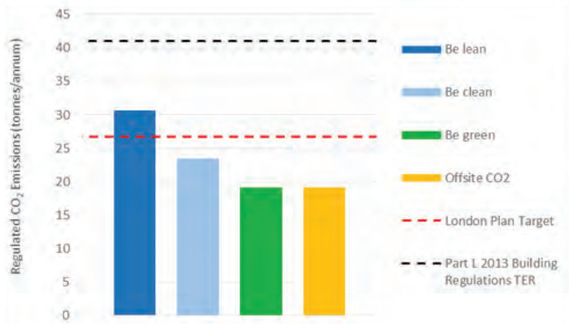


Figure 1: 'Lean, clean and green' Summary New Commercial Areas

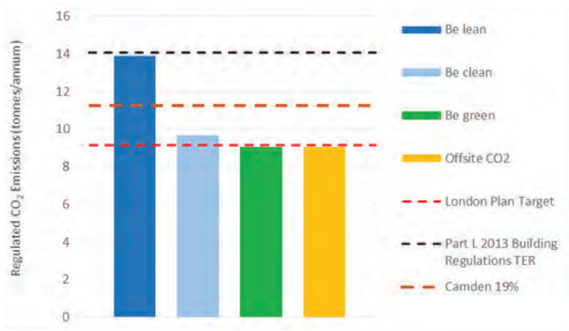


Figure 2: 'Lean, clean and green' Summary Residential Units

Sustainability Statement

Sustainability issues relating to the site as a whole, the construction process, building design and operation have been considered and these are set out in detail in the Sustainability and Energy Statement.
In particular, the energy and water efficiency measures for the Proposed Development have been assessed in some detail.

Water efficiency measures have been considered and the Proposed Development will achieve a predicted water consumption of no greater than 17.61 litres per person per day for the commercial units and no greater than 110 litres per person per day for the residential units.

Current LB Camden planning policy is noted to include a requirement to meet a BREEAM "excellent" rating. This requires a minimum score of 70% to be achieved along with a set of mandatory credits.
The policy also requires a minimum score to be achieved in three categories. This requires a minimum 60% of the credits to be achieved in the energy and water categories and a minimum 40% of the credits to be achieved in the materials category.

A pre-assessment exercise was carried out on the scheme proposals. This was reviewed in a full design team workshop held on 02 May 2017 at which the client was also represented.

3.0 Sustainability
3.03 Ecology Statement

The following text is an extract from the Ecology Consultancy Preliminary Ecological Survey. Refer to full report for further information.

The proposed development site is not subject to any statutory nature conservation designations. There are no European or national statutory sites within a 1km radius of the site.

Six non-statutory sites designated as Sites of Importance for Nature Conservation (SINCs) are present within 1km of the site;

Sites of Metropolitan Importance
Regents Park, 0.83km North-West

Sites of Borough Grade II Importance
Park Square Gardens, 0.70km North-West

Sites of Local Importance
Gordon Square, 0.60km North-East
Russell Square, 0.69km East
Phoenix Garden, 0.80km South-East
St James's Garden, 0.91KM North

No impacts are envisaged on statutory or non-statutory designated sites due to the small scale of the proposed development and distance of the site from any designated site. Therefore there are no constraints to the proposed development in this regard.

Arthur Stanley House featured very few opportunities for roosting bats. Opportunities were limited to a small number of gaps in the external brickwork of the building due to crumbling mortar. There were no other habitats on site considered to be potentially suitable. The site was in a dense urban area largely devoid of green space which may be used for foraging, and there were no habitat corridors (such as street trees) leading to or from the site which bats might use to commute. Overall, despite a very limited number of features being present, the sites urban location, isolation from foraging/commuting habitat and high level of disturbance is thought to greatly reduce the risk of bats roosting on site. The data search returned records for four species of bat including within the 1km search radius. This included records of common pipistrelle, soprano pipistrelle, nathusius' pipistrelle and common noctule.

No evidence of breeding birds was noted during the Phase 1 survey. The relatively large areas of flat roof space and the openings into the building provided suitable nesting habitat for species of bird such as feral pigeon. Whilst the building is relatively tall and derelict it was considered sub-optimal breeding habitat for rare species such as black redstart as it did not have a complex roof structure and was not a good example of its preferred habitat type (industrial infrastructure particularly along rivers and canals. Note: The River Thames is 1.78km from the site). In addition, there is no high quality foraging habitat in close proximity to the site. Suitable habitat for a limited range of breeding birds was present on site. The data search returned numerous records for bird species within 1km of the site, including rare and declining species utilising urban environments such as house sparrow and black redstart.

The site was dominated by buildings and hard-standing and this provided very little opportunity for invasive species to colonise. Schedule 9 species were absent at the time of the survey and at the time of the 2017 survey.

Conclusion
The proposed development site is not subject to any nature conservation designations. It contains small areas of common and widespread habitats none of which are habitats of principal importance.

The habitats at the site and populations of the above species are likely to be of value within the immediate vicinity of the site only. It is unlikely that the site would support rare species, or diverse assemblages or large populations of any noteworthy species.

Key Enhancement Recommendations
Where the proposed works require the removal of the main Arthur Stanley building with low potential to support breeding birds, this should be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main bird breeding season (Newton et al., 2011).

The creation of biodiverse green roofs are recommended as they will assist in delivering objectives of regional and local planning policies and potentially support London BAP species such as house sparrow and black redstart. The London plan states (policy 5.11) that major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible (Camden London Borough Council, 2010). In addition, the Fitzrovia Area Action Plan recognises that Fitzrovia is 'severely lacking in public open space and access to nature conservation interest' (Camden Borough Council, 2014).

Additional Enhancement Recommendations
Any proposals for green roofs should include a specification of proven ecological value for foraging birds and invertebrates as pioneered by the Green Infrastructure Consultancy Such roofs are typified by substrates of varying type and depth, include dead wood habitat and open areas of vegetation, require low levels of maintenance, and are attractive to people as well as wildlife. They also provide opportunities for natural colonisation by plants and invertebrates. Such roofs are preferable to standard sedum species dominated roofs that deliver little in the way of biodiversity value and ecosystem services as they are typically less species-rich and have a shallower substrate depth.

Where possible planting schemes should incorporate native species and any non-native planting schemes should comprise a high percentage of species of recognised wildlife value. The use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or typically 'aggressive' species should be avoided.

3.0 Sustainability

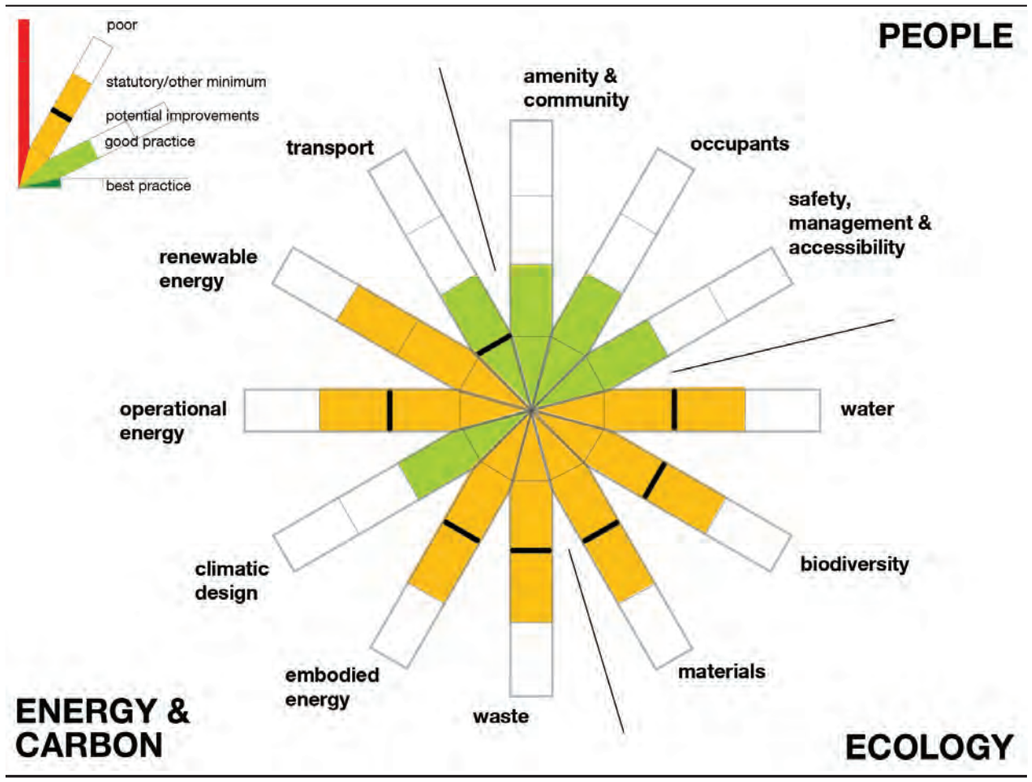
3.04 Sustainability Toolkit Assessment

Integration

Project			
Project Code	15608	**Sector**	-
Project Name	Arthur Stanley House	**AHMM Team**	-
Workstage	2	**Reviewer**	-
Project Location		**Assisted by**	-
Date	-	**Client**	Westbrook partners
File Ref		**Team - M&E, Sust.**	Point 2 surveyors

Characteristics	
GIA/NIA (m^2)	-
# Levels	-
Floor to Floor (m)	-
Cost (£ or £/m^2)	-
Occ. density (m^2/p)	

Rose



Targets

Operational Energy	(kWh/m^2/yr)		**Occupant Comfort**	Adaptive Comfort	
CO_2 Emissions	(kgCO_2/m^2/yr)	-	**Indoor Air Quality**		-
Part L Improve (%)	(%)	-	**Amenity**		-
Embodied Energy	(MJ/ m^2)	-	**Safety**	SBD certification	-
Embodied CO_2	(e kg/$m^{2)}$	-			-
Renewable Energy	(kWh/m^2/yr OR % Op)	-	**Water**	(l/person/day)	-
Climatic Design		Seasonal strategy	**Biodiversity**	(m^2 increase)	
Waste	(% diverted from landfill)		**Materials**	provenance	FSC, low VOCs.
Transport	(bikes/car spaces/m)		**Rating (eg BREEAM)**	Target rating	Excellent

Strategy - notes	Strategy - for development	Action
Energy & Carbon		
Climatic Design		
- Maximise windows	-	AHMM:
- 50% / 50% glazed	-	
- Daylight investigated	-	Other:
-	-	
-	-	
-	-	
Operational Energy		
- Existing envelope replaced	- Comfort cooling	AHMM:
- Renewed & insulated behind spandrels	- Illustrate nights cooling	
- Openable windows	- FCU's / chilled beams	Other:
-	- 35% offered	
-	-	
	-	
Renewable Energy		
- PV's / 35%	-	AHMM:
- Bishops court	-	
-	-	Other:
-	-	
-	-	
-	-	
Embodied Energy		
- Retained building	- Concrete spec - recycled and cement replacement ratios	AHMM:
- External steel	- New brick source	Other:
- New slabs	-	
-	-	
-	-	
Waste		
- Low waste thoughout	- How much recylced	AHMM:
- Pre-cast panels	-	
-	-	Other:
-	-	
-	-	
-	-	
Transport		
-	- Bikes required - provision?	AHMM:
-	-	
-	-	Other:
-	-	
-	-	
-	-	
People		
Amenity & Community		
- Active frontages	-	AHMM:
- GP surgery	-	
- Terrace to floor plates	-	Other:
- Julliet balcony	-	
-	-	
-	-	
Occupants		
- Better light into basement	- Comfort criteria - adaptive	AHMM:
- Daylight modelled through resi	-	
-	-	Other:
-	-	
-	-	
-	-	
Safety/ Management		
- Openable windows	-	AHMM:
- No balconies	-	
- Daylight good	-	Other:
-	-	
-	-	
-	-	
Ecology		
Water		
-	- Attenuation, recycling, operational use rates	AHMM:
-	-	
-	-	Other:
-	-	
-	-	
-	-	
Materials		
- Simple brick	- Ethical sourcing, low VOC's etc	AHMM:
-	-	
-	-	Other:
-	-	
-	-	
-	-	
Bio-diversity		
- Green roofs	- Improvement in ecological value	AHMM:
-	-	
-	-	Other:
-	-	
-	-	
-	-	