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SUSTAINABILITY STATEMENT for 155 Drummond Street NW1.

15 March 2019.

This Sustainability Statement has been prepared to support the planning application to redevelop 155 Drummond Street NW1 to provide additional housing units and with reference to the Camden Local Plan; Policy CC1 Climate change mitigation, Policy CC2 Adapting to climate change and Policy CC3 Water and flooding. This document should be read in conjunction with the Sustainability Statement produced by Rodrigues Associates [ref. RA/863] which sets out the structural engineering principles of the proposed development.

Architectural design sustainability concept.
The architectural concept for the proposal developed the understanding that the site was not merely a former pair of terraced houses on Drummond Street, but also the northern gateway to the Tolmer's Square Estate. One of 4 gateway's to the estate and currently downplayed with the existing building of little architectural merit. The other 3 gateways are characterised by greater architectural mass and drama. By enhancing the architectural design of the northern gateway, providing additional residential accommodation and improving the vehicular and pedestrian links to the Tolmer's Square Estate, the design enhances the sustainability of the estate as a whole.

The existing pedestrian link from Drummond Street to the Tolmer's Square Estate is narrow, dark, with no secondary surveillance and is characterised by fly-tipping and the stench of stale urine. The proposed pedestrian link is widened to comply with the Building Regulations and the steps are removed to provide level access for disabled and ambulant users. The existing main entrance to 155 Drummond Street is narrow and constrained. The main entrance is re-designed as a side entrance, to accommodate a passenger lift, lift lobby and utility staircase of more generous proportions. By relocating the main entrance into the new side elevation, it pulls activity into the existing uninhabited and dark zone. Extensive glazing and lighting to this façade provides secondary surveillance, activity, safety and enhancement to the northern gateway, for the benefit of the development and all estate residents and pedestrians, while retaining the existing vehicular access.

The existing basement is disused. The structural engineers innovative foundation strengthening design allows for the foundation-structural-loop to be closed, making the foundations more efficient, with minor disturbance to the adjacent properties. This cost effective proposal means that the existing; foundations, concrete ground slab, flank walls from ground to 1st floor, mezzanine structures, concrete transfer structure at 1st floor and masonry podium can all be retained and re-used, saving on the embodied energy, CO2, transport energy costs, landfill and the noise and disturbance to Tolmer's Square Estate. This re-use of the concrete and masonry podium structures contributes a significant saving over the number of truck journey's that would otherwise be required to re-develop this property in a more conventional manner.

The existing 600mm concrete transfer structure is re-purposed during construction works as a crash-deck to allow the vehicular and pedestrian access to the Tolmer's Square Estate to be retained throughout the works. Flying-scaffold attached to the retained concrete transfer

structure, protects the street and estate pedestrians and a sustainable temporary works proposal reduces building waste, energy and transport costs.

The existing basement is re-designed as a large capacity cycle store with a doorway directly from street level. In conjunction with the numerous public transport links and no car parking bays allocated to the redevelopment, this contributes to a sustainable transport strategy for the proposal.

The existing brickwork and masonry lower floors are retained, not only for energy conservation reasons, but also to provide an aesthetic language to illustrate the architectural concept for the proposal. The building footprint is extremely constricted and there is no site area available to practically retain materials for recycling. A quantity of the bricks from the façade would be retained for re-use on the masonry podium. The bricks would be stacked on the concrete transfer structure for recycling and re-use.

The existing hybrid masonry / timber construction to the upper floors is to be demolished & replaced with a lightweight steel framed structure. This allows for improved levels of thermal insulation, covered by non-combustible rainscreen cladding. This type of construction is responsive to climate change since, if required, the rainscreen can be later removed and the levels of thermal insulation increased, working from the building exterior and without disturbing the buildings occupants.

The roof levels are designed as green-roof systems to; provide amenity space for the upper apartments, provide thermal benefit, reduce rainwater run-off rates, improve bio-diversity and enhance the environment.

The south facing façade [the rear façade facing Tolmer's Square Estate] could be designed as a green garden wall, incorporating the apartment balconies, to provide visual amenity for the estate as a whole. The design team would be happy to discuss this with the planning department.

Structural engineering design – sustainability concept.
Please refer to the Sustainability Statement produced by Rodrigues Associates [ref. RA/863].

The structural engineers have researched the existing building structure and construction [which is unconventional], obtained the historic foundation drawings, analysed the foundation design, modelled the structure and designed a method to cost-effectively reinforce the existing foundations; such that 2 apartments can be demolished and 6 new apartments constructed on the reinforced foundations. Throughout the structural engineer's design process, a sustainable approach to the design of the sub-structure and the super-structure informed the structural design parameters.

Policy CC1 – Climate change mitigation.
The location of the development minimises the need to travel by car. The site proximity is extensively linked to public transport nodes. No car parking spaces are provided within the development.

The 2 existing apartments are not energy efficient. The proposal replaces them with 6 apartments constructed to a high level of energy efficiency and building fabric performance, to facilitate an improvement to the housing stock on this site.

Renewable energy technologies, such as photo-voltaic generation, shall enhance the enhanced building fabric performance.

The new residential re-development shall have a 19% CO2 reduction below Part L 2013 Building Regulations.

The proposal employs passive design measures, including dual aspect apartments to provide cross ventilation [1st floor-4th floor]. Where the apartments are single-aspect [5th floor-7th floor penthouses] then vertical stack ventilation shall be employed.

Due to the constricted nature of the site, the variables in considering the building development orientation, form and mass are limited.

The minimum energy requirements under the Building Regulations shall be met and where possible, exceeded.

The re-development shall achieve a 20% reduction in carbon dioxide emissions from on-site renewable energy generation.

Considering the significant contribution that existing buildings make to Camden's CO2 emissions, the council should support the re-development proposal, which not only provides additional housing, but also improves the energy efficiency above that of the existing housing on the site.

The existing housing block is not of adequate structural capacity, nor construction quality, to merit extension and renovation. The existing cavity walls cannot viably, be increased in thermal performance. The existing masonry structures would prohibit the provision of additional housing stock, because their foundation load is greater than the proposed re-development which employs a lightweight structure.

The masonry podium is to be retained up to 1st floor level. Some of the demolished brickwork shall be retained, recycled and re-used on site. Due to the extremely restricted nature of the site, most of the demolition materials shall be carted away.

The extensive foundation, basement, ground floor, mezzanine floor and first floor concrete and masonry structures are retained and re-used, assisting the embodied carbon equation for the proposal by limiting; production, transport, and disposal of waste energy footprints.

The building is designed to be flexible in that the internal layouts are very simple with the minimum use of partition walls and generally an open-plan design. The lightweight partition walls could be re-positioned and the project should prove to be flexible in terms of adaptation to future alternative uses in order to avoid the need for future demolition of the building as a whole.

Policy CC2 – Adapting to climate change.
The proposal incorporates new appropriate green infrastructure.

The surface water run-off of the proposal is reduced by the application of a green-roof system. The ground floor surface water run-off is not changed [there is no site area available to implement Sustainable Drainage systems etc.].

The proposal incorporates a bio-diverse green roof system.

Sustainable development proposals have been incorporated into the design.

To minimise the risks connected with climate change the design of this re-development considers the anticipated change to the climate and allows for improved levels of thermal insulation, covered by non-combustible rainscreen cladding. This type of construction is

responsive to climate change since, if required, the rainscreen can be later removed and the levels of thermal insulation increased.

The project has been designed with a sustainable approach to drainage, incorporating; green roofs and potentially green walls.

The green roof shall slow the speed at which the rainwater enters the drainage network, provide valuable habitats which promote bio-diversity, cool the local microclimate and provide visual amenity. The specification of the green roof shall be tailored to realise the benefits most suitable for the site and shall consider appropriate drought resistant planting to ensure that the plants can survive hot summers with minimal maintenance and irrigation.

The re-development proposal is not designed to be air-conditioned nor use excessive mechanical plant. [There are AOV smoke vents, which are necessary as part of the integrated fire engineering strategy and automatically operate in the event of fire].

Sustainable development principles were initiated at the commencement of the design process, but the orientation of the site was not a variable since the site constraints imposed limits on any variation to orientation.

Policy CC3 – Water and flooding.
The re-development proposal incorporates water efficient measures.

The re-development is designed to be water efficient. This is achieved through the installation of water efficient fittings and appliances to help reduce energy consumption as well as water consumption.

The re-development shall meet the requirement of 110 litres per person per day [including 5 litres for external water use].

It is not possible to introduce a drainage hierarchy for this site as there is no site area available for implementation of such a system.

The re-development proposal makes no change to the risk of surface water flooding.

The re-development proposal makes no change to the risk of ground water flooding.

There may be historic water courses within the vicinity, but they are not impacted by the proposed re-development proposal since the; foundations, groundworks and basement were constructed circa. 1980 as part of the re-development of the Tolmer's Square Estate.

The re-development increases the amount of permeable surfaces into which rainwater can be absorbed [green roof system].

The re-development cannot utilise Sustainable Drainage Systems [SuDS] to achieve greenfield run-off rates, since there is no site area available to achieve this. The run-off rates are an improvement over the existing building [green roof system].

The existing basement is re-purposed as a bicycle store, as part of the sustainable transport strategy. A basement impact assessment [BIA] is not required. The proposed use of the basement does not include habitable rooms.

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