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DAYLIGHT & SUNLIGHT ASSESSMENT

ON BEHALF OF GREATPLANET LIMITED

NOVEMBER 2016

WEST & PARTNERS

127 METAL BOX FACTORY

30 GREAT GUILDFORD STREET

LONDON SE1 0HS

1.0 INTRODUCTION

1.1 This assessment reviews the daylight and sunlight considerations of any potential impacts on the amenity of any existing and future adjoining occupiers and the future resident of the proposed development supplemental to the application and the accompanying Planning Design & Access Statement.

2.0 TOWN PLANNING FRAMEWORK

National Policy

2.1 In respect of the overarching role that the planning system ought to play the Framework sets out, in paragraph 17, core land use planning principles which should underpin both plan making and decision taking. These include:
"*always seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings;"*

2.2 In requiring good design the Framework advises at paragraph 56:
"The Government attaches great importance to the design of the built environment. Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute to positively making places better for people."

The London Plan - Regional Policy

2.3 Policy 7.6 'Architecture' of the London plan states, inter alia:

"B Buildings and structures should:

not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate. This is particularly important for tall buildings"

London Plan - Supplementary Planning Guidance - Housing SPG

2.4 Adopted in March 2016 and revised in May 2016 this SPG supersedes the Interim London Housing Design Guide (August 2010) sets out seven issues: of these Part 2 regarding housing quality is relevant to the consideration of Daylight & Sunlight. Standard 32 states:

"*All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen/dining spaces should preferably receive direct sunlight."*

2.5 The SPG also states, inter alia:
"*2.3.45 ……., BRE good practice guidelines and methodology can be used to assess the levels of daylight and sunlight achieved within new developments, taking into account guidance below ……..*
2.3.46 Where direct sunlight cannot be achieved in line with Standard 32, developers should demonstrate how the daylight standards proposed within a scheme and individual units will achieve good amenity for residents. They should also demonstrate how the design has sought to optimise the amount of daylight and amenity available to residents, for example, through the design, colour and landscaping of surrounding buildings and spaces within a development.

2.3.47 BRE guidelines on assessing daylight and ***sunlight should be applied sensitively to higher density development in London, particularly*** *in central and* ***urban settings, recognising the London Plan's strategic approach to optimise housing output*** *(Policy*

3.4) ***and the need to accommodate additional housing supply in locations with good accessibility suitable for higher density development*** *(Policy 3.3)****. Quantitative standards on daylight and sunlight should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London."***

2.6 Tangentially related is Standard 29 which addresses the considerations with regard to the preferential provision of Dual Aspect units in particular seeking to minimise the number of single aspect north facing dwellings or those exposed to noise levels above which significant adverse effects on health and quality of life occur. It states at 2.3.39
"… The design of single aspect flats will need to demonstrate that all habitable rooms and the kitchen are provided with adequate ventilation, privacy and daylight and the orientation enhances amenity, including views. North facing single aspect dwellings should be avoided wherever possible. However, in applying this standard consideration should also be given to other planning and design objectives for a site, for example the aim to maximise active frontages and minimise inactive frontages".

2.3.41 "In single aspect dwellings with more than two bedrooms it is difficult to achieve adequate natural ventilation and daylight to all rooms in an efficient plan layout which avoids long internal corridors. …… The design of single aspect ground floor dwellings will require particular consideration to maintain privacy and adequate levels of daylight".

2.7 The London Plan and HSPG do not provide numerical values for daylight or sunlight. Those given in this report are based upon the BRE guidance referred to, in explanatory note 2.3.47 above, and more fully detailed below.

THE LOCAL PLAN

2.8 Richmond's Local Plan is made up of a suite of documents including the Core Strategy, adopted April 2009; the Development Management Plan, adopted in November 2011 and SPD's and SPG's. A new (replacement) Local Plan is currently being prepared. This has been the subject of pre-publication consultation (July / August 2016) and therefore at this stage regard should be given to the emerging revised policies, although the weight to be given to these is limited.

2.9 The Supplementary Planning Document (SPD) relevant to the consideration of daylight and sunlight impact is Residential Development Standards (March 2010). This states under the heading 'Neighbourliness' - Sunlight and daylight:

3.1.1 If no substantial loss of sunlight or daylight to adjoining dwellings and gardens occurs residential development will generally be acceptable subject to the overall design quality, impact on the character of the area and sustainability of the proposal.
3.1.2 Residential development should create good living conditions and should not cause any significant loss of daylight or sunlight to habitable rooms or gardens in neighbouring properties. In deciding the acceptability of proposals the council will be guided by the Building Research Establishment (BRE) standards. Regard will also be made to the impact on residential amenity and the patterns of use of the rooms and gardens.

2.10 The Local Plan Pre-publication version, issued for consultation in July 2016, introduces New Policy LP 8 - Amenity and Living Conditions. This states inter alia:
All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:
1. ensure the design and layout of buildings enables good standards of daylight and sunlight to be achieved in new development and in existing properties affected by new development;

where existing daylight and sunlight conditions are already substandard there should be no material worsening of the conditions;
2. ensure there is a minimum distance of 20 metres between main facing windows of habitable rooms (this includes living rooms, bedrooms and kitchens with a floor area of 13sqm or more) and reasonable visual privacy for occupants of new development and for occupants of existing properties affected by new development;

3.0 ASSESSMENT METHODOLOGIES

3.1 The Supplementary Planning Document (SPD) - Residential Development Standards (March 2010) and the London Plan make reference to the guidelines set out in the BRE Report 209 "*Site Layout Planning for Daylight and Sunlight – a guide to good practice"* by PJ Littlefair. This is widely accepted guidance. It sets out methods for assessing the impact of a proposed scheme on the daylight and sunlight enjoyed by adjoining buildings and open areas.

3.2 It is important to note that the BRE Report is not intended to be used as an instrument of planning policy. The author of the Report states in the introduction:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen 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 light is only one of many factors in site layout design.*** *in special circumstances the developer or planning authority may wish to use different target values. For example.....in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings"*

3.3 It is consequently important to ensure that any assessment results are balanced in the context of all other planning considerations relating to the scheme and are accorded a degree of importance that is proportionate and appropriate to the matrix of all other planning policy considerations relevant to the determination of the proposed development.

3.4 In respect of daylight to properties adjoining a development site, and the potential adverse effect of a development in close proximity, the BRE Report advises, in the Summary to Section 2.2, that:
"If any part of a building, or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

- *the vertical sky component measured at the centre of an existing main window is less than 27% and less than 0.8 times its former value;*

or

- *the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value."*

3.5 The BRE Report advocates the assessment of daylight for all dwellings and any existing nondomestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels, hostels, care homes and most offices, but not necessarily small workshops, retail units and industrial units. The BRE report goes on to say that:

> *"Windows to all bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed."*

3.6 The vertical sky component of a building's window does not vary with the compass orientation of that building. Thus compass orientation is not relevant in any daylighting assessment.

3.7 In this case where the existing buildings to the south was developed close to the site boundary regard needs to given to the advice in Section 2.3 of the report. This states, inter alia:

> *"From a daylighting standpoint it is possible to reduce the quality of adjoining land by building too close to the boundary. A well designed building will stand a reasonable distance back from the boundaries so as to enable future nearby developments to enjoy similar access to daylight. By doing so it will keep its own natural light when the adjoining land is developed."*

3.7 From the summary to section 2.2 of the BRE report, three steps for assessing the effect of a development on daylight of adjoining properties can be derived.

Step1: Subtending 25º angle. With this step it is necessary to consider whether the envelope of the proposed development subtends an angle of 25º to the horizontal, as measured in a vertical section perpendicular to a main window wall of each neighbouring building from the centre of each lowest window. This requires simple two-dimensional composite cross sections to be prepared through the proposed development and each of the neighbouring buildings. If the proposed new building/development does not subtend an angle of 25º, no further assessment is required for that particular neighbouring property.

Step 2: Vertical Sky Component. This applies if the proposed development subtends the 25º angle and requires calculation of the Vertical Sky Component (VSC). The BRE Report defines the Vertical Sky Component as:

"the ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a CIE Standard Overcast Sky, to the illuminance on a horizontal plane due to an unobstructed hemisphere of this sky"

If the VSC for a window is less than 27% and is less than 0.8 times its former value, then the BRE criteria cannot be satisfied. Alternatively, if the Vertical Sky Component is less than 27%, but more than 0.8 times its former value then daylighting levels might still be adequate to the neighbouring property subject to Step 3.

Step 3: Area of Working Plane receiving direct skylight. This requires consideration of the daylight distribution within a room and involves plotting the "no-sky" contour line at the working plane within each room of an adjoining property. This is the contour within a room, behind which no sky is visible from the room's window (or windows) at the working plane. After a development is complete, the area of a room with visible sky should, ideally, be 0.8 times or more of the former area on the working plane prior to the development. There is no absolute minimum area given by the BRE Report.

3.8 In respect of sunlight the BRE Report advises, in the summary to section 3.2, that:

"If a room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees to the horizontal, measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, receives in the year less than one quarter of the annual probable sunlight hours, including at least 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.8 times its former sunlight hours during either period".

3.9 The BRE Report advises that the maximum number of probable sunlight hours available for the London Area would be 1,486.

3.10 To summarise the BRE Report's guidance, sunlight availability to relevant windows is unlikely to be adversely affected if the three parameters below are satisfied:

3.11 Sunlight assessment methodology. The orientation of the windows to be tested and their relationship to the southerly transit of the sun is most relevant to any sunlight. In undertaking the assessment the following three parameters apply:

1. the neighbouring property has windows overlooking the proposed development,

and, 2. those overlooking windows face within 90 degrees of due south,

and, 3. the proposed development subtends an angle of more than 25o to the horizontal, measured from the centre of the window, perpendicular on plan to the window.

3.12 In respect of the assessment of the Interior Daylight of the units in the proposed development paragraph 2.1.22 of the BRE Report states that the ADF (Average Daylight Factor) may be calculated and compared with the recommendations in BS8206-2 C*ode of Practice for Daylighting.* The ADF is a measure of the amount of daylight within an interior and this relates to the size of the room and window(s), the type of glass, the level of reflectivity of interior surfaces and obstructions outside. Appendix C of the BRE Guide advises that the ADF can be calculated using the formula:

$$\mathbf{ADF = \frac{T\ M\ AW\ \theta}{A(1 - R2)} =\%}$$

where:

T = transmittance of glass. Appendix C indicates that for clean clear double glazed units with a low emissivity coating a value of 0.68 can be applied

M = maintenance factor, allowing for effects of dirt. The CfSH manual advises 1.0 for easily cleaned windows with an adjustment to 0.92 for windows not accessible from the ground or balcony taking into account the urban nature of the site.

AW = net area of window glazing (not including the frame).

θ = visible sky angle, measured from the centre of the window in the vertical plain normal to the window. This is expressed in degrees.

A = total area of indoor surfaces: floor + ceiling + walls including windows.

R = average reflectance of the area **A**. For light colours the average value of 0.5 is recommended.

4.0 NEIGHBOURING PROPERTIES TO BE CONSIDERED

4.1 The site, edged red on Plan 9980/DL01 is largely rectangular, with a frontage to the west side of the High Street and to the east side of the private roadway which provides access to the St Clare Business Centre off Holly Road. The north and south boundaries abut adjoining developed sites.

4.2 Opposite across the High Street is The Star Public House with its open car park to the south and adjoining two storey properties No. 10 and 12 High Street to the north in non-residential use.

4.3 To the south is the three story, relatively modern, development known as The Mews (also known as Bushy Park Mews) . This terrace of eight properties was originally designed for office use. Some have been converted to residential use pursuant to permitted development prior

approval decisions in a variety of configurations. This terrace sits tight against south boundary of the site and is in terms of amenity a bad neighbour to the application site.

4.4 To the north there is a pair of properties on the street frontage while to the rear is the recently completed development of a terrace of four, three story town houses with surface parking. These properties are oriented parallel to the site boundary and do not have windows facing the application site.

5.0 ASSESSMENTS

The High Street

5.1 The open car park to the south of The Star Public House, edged Green on the attached plan, 9980/DL01 occupies c.30% of the frontage opposite the proposed development. To the north, **The Star PH,** edged Pink on the attached plan, occupies a further c.33% of the frontage opposite the site. There will be a reduction in the VSC to this building but as it has a series of semi obscured windows to the ground floor bar area and does not depend upon natural light for its operations this has not been the subject of detailed analysis.

5.2 **No 10 High Street,** edged Yellow on the attached site plan, is predominantly opposite the gap between the north and south blocks of the proposal so there will be no noticeable change and a potential slight improvement to the VSC of the retail premises on the ground floor.

5.3 **No 12 High Street,** edged orange on the attached plan, is opposite the lower north block which is a comparable height to the existing building, although the building line steps forward marginally. There will be a slight reduction in the VSC to this building but as it comprises a retail shop and office on the ground floor this is not considered to be a material issue.

The Mews

Daylight

5.4 **No 1 The Mews:** On the ground floor this building is now configured as a two bedroom flat with the bedrooms on the north side facing the development. The east bedroom has a full height glazed double door c.1.7m wide and a standard window c.0.8m wide. The west bedroom has a standard window c.0.8m wide.

5.5 The attached plans (9980/DL02 and DL03 which are a composite of the submitted application drawings and plans obtained from the LBR planning Web page for The Mews) show the layout / relationship of 1 & 2 The Mews to the development of the terrace of houses proposed to the west side of the site at first and second floor levels, highlighted yellow with the outline of the existing tall single storey building highlighted pink.

5.6 As these show the proposed terrace is set back from the boundary whereas the existing building is immediately adjoining the boundary with The Mews. The top floor of the proposed terrace houses is also stepped in from the first floor to both east and west sides and does not extend as far west as the existing building.

5.7 The attached Section (9980/DL04) shows the direct angle formed to the centre reference point of the relevant windows by the existing building at 63^{o} and the intersection at the roof of the first floor element of the new building at 58^{o} at the east side.

5.8 As a consequence of these changes there will be a marginal improvement of the VSC for the windows to the bedrooms of this ground floor flat.

5.9 **No 2 The Mews** On the ground floor this building is now configured as a two bedroom flat with the bedrooms on the north side facing the development. The bedrooms each have a full height glazed door c.0.8m wide and a standard window c.0.8m wide.

5.10 The attached VSC calculations based on the BRE methodology for calculating using the Skylight Indicator (Plans 9980/DL05 to and DL08) show that Bedroom 1 has a cumulative VSC of 41%: well above the recommended value and that Bedroom 2 has a cumulative VSC of 24% so there will be a reduction in light to this room.

5.11 In considering this regard needs to be given to the fact that the building which has been converted from offices under permitted development rights sits less than 2m from the boundary with the application site and that it is not a prime living area or kitchen and the consequential impact on the amenity of this property will be negligible.

5.14 **No 3 and No 4 The Mews** have also been converted to residential flats with bedrooms fronting the application site on the ground floor. The existing angle and VSC of these rooms is not altered as a consequence of the proposal.

5.15 **Nos 5 and 6 The Mews** are still used as offices on the ground floor and these will continue to have a similar level of daylight to the existing condition as a result of the relationship with the current building on the site.

5.16 No records of change from offices to C3 residential have been identified for **No 7 The Mews** but it is believed that this building has been converted for residential use as has **No 8 The Mews**. The existing angle of light to the ground floor windows of these properties is set by the existing building.

5.17 The attached Plan (9980/DL09) shows the layout / relationship of these properties to the proposed development second and third floor levels, the later highlighted yellow, with the outline of the existing building highlighted pink. As these shows the top floor of the proposed building is stepped in from the second floor which is generally on the line of the existing building in this location.

5.17 The attached Section (9980/DL10) shows the direct angle formed to the centre reference point of the relevant windows by the existing building at 49^{o} and the intersection at the roof of the second floor of the new building at 54^{o}.

5.18 The VSC for the windows to the bedrooms of these two ground floor flats is currently less than 27% which is largely due to the close proximity of The Mews, erected as offices, to the site boundary and the existing building. However, as the existing VSC will be reduced by 5.5% and therefore the light to these windows will not reduce to less than 0.8 times its existing value and the change in daylight to the existing bedrooms, should not be noticeable or affect the amenity of these two properties.

Sunlight

5.19 As the properties in The Mews are due south of the application site there is no impact on sun to these properties.

St Clare Business Centre

5.20 This is currently in non-residential use with a relatively large vehicular open area opposite the west side of the site and the proposed terrace of houses is set back to provide the necessary angle to the centre line of the roadway serving the adjoining site -attached Section (9980/DL07)

73 High Street and Penny Farthing Mews

5.21 The proposed development will not result in any change to the VSC of these properties. There will be some additional passing shadow on the ground to the south east of the new houses but this is largely laid out as hard standing parking and manoeuvring space.

Proposed Development Internal

5.22 The assessment of the ADF for the proposed units set out in the attached spread sheet are based upon the detailed flat layouts and show compliance with the minimum requirements of 2% for the living /dining/kitchens and 1% for the bedrooms.

6.0 CONCLUSION

Light to Adjacent buildings.

6.1 The Building Research Establishment Guide to Good Practice 2011 makes recommendations for the retention of daylight and sunlight in existing buildings adjacent to new developments. These as set out at 2.3.47 of the most recent adopted Housing SPG published by the Mayor the BRE guidelines should be applied sensitively in urban settings, such as this, balancing the need to optimise housing output and the need for quantitative standards not to be applied rigidly.

6.2 The proposed development will have only a very limited effect upon the availability daylight to rooms in the adjacent buildings to the south and this is not considered on balance to be such as to be detrimental to the amenity of the occupiers of these buildings.

Daylight to Rooms within Proposed Flats.

6.32 All proposed flats and houses have large windows and the layouts are configured so that rooms are not of excessive depth so that there is adequate ADF to all rooms.

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