APPENDIX 6

Extract from the 20 February 2018 Committee report evaluating the daylight/sunlight impacts

Residential amenity

Daylight and Sunlight

Introduction

180. An assessment of the impact of the development on daylight and sunlight to surrounding residential dwellings (Willoughby House, Andrewes House, 83 Moorgate and 85 Moorgate) has been undertaken in accordance with the Building Research Establishment (BRE) Guidelines and considered having regard to Policies 7.6 and 7.7 of the London Plan and DM10.7 and DM21.3 of the Local Plan.

181. The assessment of daylight and sunlight is a comparative one measured against a baseline condition. In this case the buildings on the proposal site have been demolished and the residential units within the Barbican currently enjoy increased levels of both daylight and direct sunlight. However, there is an extant permission (application no. 16/00883/FULEIA) for development of the site which has been implemented and for which the impacts on daylight and sunlight have been tested and approved. If the current proposals were not to be implemented, the extant permission would be built out to completion. Therefore, the extant permission provides the "Future Baseline" against which any impacts on daylight and sunlight generated by this development should be measured.

Policy Background

182. Local Plan Policy DM10.7 Daylight and Sunlight resists development which would reduce noticeably the daylight and sunlight available to nearby dwellings and open spaces to unacceptable levels, taking account of the Building Research Establishment's (BRE) guidelines. The policy requires new development to provide acceptable levels of daylight and sunlight for occupiers. Paragraph 3.10.41 of the Local Plan indicates that BRE guidelines will be applied consistent with BRE advice that ideal daylight and sunlight conditions may not be practicable in densely developed city centre locations. Unusual existing circumstances, such as the presence of balconies or other external features which limit the daylight and sunlight that a building can receive, will be taken into account. Policy DM21.3 of the Local Plan requires development proposals to be designed to avoid overlooking and seek to protect the privacy, daylighting and sunlighting levels to adjacent residential accommodation.

183. London Plan policies 7.6 (Architecture) and 7.7 (Tall and Large Buildings) seek to ensure that development does not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate and additionally, in the case of tall and large buildings, noise, reflected glare, aviation, navigation and telecommunication interference.

184. BRE guidelines consider several factors in determining the impact of development on daylight and sunlight on existing dwellings:

- Daylight to windows: Vertical Sky Component (VSC): a measure of the amount of sky visible from a centre point of a window. The VSC test is the main test used to assess the impact of a development on neighbouring properties. A window that achieves 27% or more is considered to provide good levels of light, but if with a proposed development in place the figure is both less than 27% and reduced by 20% or more from the existing level (0.8 times the existing value), the loss would be noticeable.

- Daylight Distribution: No Sky Line (NSL): The distribution of daylight within a room is measured by No Sky Line, which separates the areas of the room (usually measured in Sq.ft) at a working height (usually 0.85m) that do and do not have a direct view of the sky. The BRE guidelines states that if with the proposed development in place the level of daylight distribution in a room is reduced by 20% or more from the existing level (0.8 times the existing value), the loss would be noticeable. The BRE advises that this measurement should be used to assess daylight within living rooms, dining rooms and kitchens; bedrooms should also be analysed although they are considered less important.
- Sunlight: sunlight levels are calculated for all main living rooms in dwellings if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are considered less important although care should be taken not to block too much sun. The BRE explains that sunlight availability may be adversely affected if the centre of the window receives less than 25% of annual probable sunlight hours (APSH), or less than 5% APSH between 21 September and 21 March; and receives less than 0.8 times its former sunlight hours as result of a proposed development; and has a reduction in sunlight hours received over the whole year greater than 4% of annual probable sunlight hours.

185. Average Daylight Factors (ADF) may also be considered. ADF is the ratio of internal light level to external light level. BRE advise that ADF is not generally recommended to assess the loss of light to existing buildings, therefore, ADF has not been assessed in this case.

186. The applicant's assessment has been carried out in accordance with the Building Research Establishment (BRE) guidelines "Site Layout Planning for Daylight and Sunlight 2011, A Guide to Good Practice".

187. The impact of the development upon the daylight amenity to residential rooms is considered by the consultants to be minor adverse in situations where:

- despite VSC alterations to the windows serving the room, the NSL alteration to the room is fully BRE compliant;
- despite NSL alterations to the room, the VSC alteration to all windows serving the room is fully BRE compliant; or
- all VSC and NSL alterations applicable to the room are either less than 30% of their baseline values and/or the windows and room retain VSC or NSL levels of at least 70% of the BRE recommended minimums.

188. It should be noted that where there are existing low levels of daylight in the baseline figures any change in the measured levels can appear to have a disproportionate impact. To give a more complete picture the same level of change can be described in two ways:
Percentage change - 10% reduced to 8% = 20% reduction
Actual change - 10% reduced to 8% = 2% reduction

Daylight

189. There are 346 windows serving 235 residential rooms surrounding the site that require assessment. These have been assessed in terms of both VSC and NSL.

Vertical Sky Component

190. In terms of VSC the development would have a negligible impact (less than a 20% reduction) on:

- 31 of 42 windows within Andrewes House
- 214 of 295 windows within Willoughby House.

191. There would be a minor adverse impact (20% to 29.9% reduction):

- 8 of 42 windows within Andrewes House
- 66 of 295 windows within Willoughby House

192. Of the remaining windows, 3 at Andrewes House and 15 at Willoughby House would experience reductions greater than 30% of existing VSC levels with 4 of the windows at Willoughby House subject to reductions of more than 40%.

193. The BRE guidelines recommend a minimum existing VSC level of 27%. The 18 windows that would experience a greater than 30% "Percentage" change have very low baseline VSC values of between 1.71% and 4.73%. Therefore, the very small "Actual" change in VSC of between 0.57% and 1.64% results in a disproportionate percentage reduction which would, in reality, be unlikely to be noticed by the occupants.

194. BRE guidance states, "Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light."

195. Calculations have been carried out and the results show that without balconies all the windows within Andrewes House and Willoughby House would meet the BRE guidelines for VSC with the proposed development in place. This demonstrates that the design of the existing building, rather than the proposed development, is the principal factor in the relative loss of light in terms of VSC.

No Skyline

196. In terms of NSL the development would have a negligible impact (less than a 20% reduction) on:

- 21 of 21 rooms within Andrewes House
- 203 of 208 rooms within Willoughby House

197. There would be a minor adverse impact (20% to 29.9% reduction):

- 1 of 208 rooms within Willoughby House

198. The remaining 4 rooms at Willoughby House would experience reductions of 36.5% - 47.9% of the existing NSL level. These rooms serve bedrooms which the BRE guidelines consider to be of less importance than living rooms, dining rooms and kitchens in terms of NSL daylight distribution. It is noted that in this case daylight would still penetrate to approximately 43% - 57% of the rooms.

Sunlight

199. There are 341 windows serving 231 residential rooms surrounding the site which are relevant for sunlight amenity assessment. These have all been assessed in terms of the annual probable sunlight hours (APSH).

Annual Probable Sunlight Hours

200. BRE guidance states that "…the sunlighting of the existing building may be adversely affected…if the centre of the window receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and receives

less than 0.8 times its former sunlight hours during either period and has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours."

201. On this basis, the impact to the sunlight amenity of the following number of rooms within the surrounding properties would be negligible, with an overall sunlight compliance rate of 96%: All rooms within Andrewes House; 199 of the 208 rooms within Willoughby House; and All rooms within 85 Moorgate.

202. Of the nine rooms within Willoughby House which would experience APSH alterations greater than outlined in the BRE guidance in terms of total APSH, two would not meet the winter APSH guideline levels.

203. The nine rooms within Willoughby House which would experience sunlight amenity alterations greater than outlined in the BRE guidelines are all located beneath large balconies serving the upper floors. As a result of their location the majority of these rooms already have baseline APSH values below the BRE recommended minimums. The actual APSH alterations that the windows serving the rooms would experience result are, therefore, disproportionate in percentage terms. The impact to the sunlight amenity of the nine rooms is, considered to be moderate adverse to substantial in nature.

204. BRE guidance states that, "Balconies and overhangs above an existing window tend to block sunlight, especially in the summer. Even a modest obstruction opposite may result in a large relative impact on the sunlight received. One way to demonstrate this would be to carry out an additional calculation of the APSH, for both the existing and proposed situations, without the balcony in place…this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of sunlight."

205. This calculation has been carried out and the results show that, without balconies, all windows within Willoughby House would meet the BRE guidelines for APSH with the proposed development in place. This demonstrates that the structure of the existing building, rather than the proposed development, is the principal factor in the relative loss of sunlight in terms of APSH.

206. Without balconies, therefore, there would be no sunlight amenity impact to any of the surrounding residential rooms which are greater than negligible in nature.

Daylight and Sunlight Conclusions

207. Despite the dense urban location of the Site, the vast majority of alterations to the daylight and sunlight amenity of the surrounding residential properties are either in full compliance with BRE guidance or are considered to be no greater than minor adverse in nature.

208. The BRE guidelines, state that they are "…purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location…Though it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design. In special circumstances, the developer or the planning authority may wish to use different target values. For example, in a historic city centre, or 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."

209. In respect of the few residential rooms that do experience effects which depart from BRE guidance, these are predominantly located under large balconies serving rooms to the floors above them.

210. BRE guidance states that existing windows with balconies above them typically receive less daylight and sunlight because the balcony reduces visibility of the top part of the sky. As such, even a modest obstruction opposite these windows may result in a large relative impact upon on the VSC, APSH and NSL. The BRE suggests that, in order to demonstrate that it is the presence

of the balcony rather than the size of the new obstruction that is the main factor in the relative loss of daylight and/or sunlight, additional daylight and sunlight calculations should be carried out for both the existing and proposed situations without the balconies in place.

211. These assessments were carried out and, as indicated by the BRE, they demonstrated that it is the presence of the balconies, rather than the size of the proposed development that is the main factor in the relative loss of daylight and/or sunlight.

212. By virtue of the limited impact of the proposed development on the daylight and sunlight received by the neighbouring residential occupiers, as indicated by the BRE assessments, it is considered that the proposals are in compliance with policies DM10.7 and DM21.3 of the Local Plan and policies 7.6 and 7.7 of the London Plan.