BISHOPSGATE GOODSYARD

REVIEW OF DAYLIGHT AND SUNLIGHT IMPACT ON SURROUNDING RESIDENTIAL PROPERTIES

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SUMMARY

S1. A large new development is proposed on the Bishopsgate Goodsyard site in Shoreditch. This report reviews the developer's ES Addendum Appendix F (the GIA report) on daylight and sunlight and covers the loss of daylight and sunlight to surrounding properties.

S2. I have not carried out any independent calculations of the loss of light; my assessment has been based on the data provided by GIA. I have assumed that these data have been calculated correctly. My assessment has been carried out against the guidelines in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'.

S3. A very large number of properties would experience a major adverse impact. GIA have focused on 28 buildings for which independent consultants Delva Patman Redler (DPR) identified loss of light as either 'unacceptable' or ''reductions in daylight that would not normally be considered acceptable but where further consideration should be given to decide whether, in the context of this particular development, the impacts are materially against planning policy'. These are 97-105 and 119 Brick Lane; 10 and 78 Quaker Street; 3 Club Row; 1-48 Wheler House; 23-24 and 25 Wheler Street; 154 and 167 Commercial Street; 194-196 Shoreditch High Street; 13, 15, 17, 25, 28-30 and 65-66 Bethnal Green Road; 19-29, 30, 32, 63 and 70 Redchurch Street, Telford Homes Block A; 1-16

Sheba Place; 1-42 Eagle House; and 14 Chance Street. Two or three of these are commercial buildings, but together they also include around 150-200 homes.

S4. However there are a similar number of homes not on this list, for which there would be significant reductions, in excess of the BRE guidelines. GIA's data in the Environmental Statement identify 1733 windows that would fail the BRE vertical sky component guideline for loss of daylight, of which 940 would lose more than double the guideline amount. In my experience, I am aware of no other proposed development that would have such a large effect on so many dwellings.

S5. GIA have attempted to justify the loss of light in various ways. They have compared the results with an alternative massing for the proposed development, allegedly based on the Bishopsgate Goodsyard Interim Planning Guidance. However this guidance document does not specify the height and layout of buildings, and GIA's massing contradicts the IPG in two important respects, both related to daylight. Accordingly the comparison with the alternative massing should be disregarded.

S6. The BRE guidance recommends a vertical sky component of 27%, or 0.8 times the existing value, for daylight received, but states that this may be interpreted flexibly. GIA have used a much lower target of 15%. This is too low; it is significantly less than what would typically be experienced in existing residential properties in the area (a median of 27%). Nevertheless a significant number of windows would not even reach the 15% mark with the new development in place, notably in 119 Brick Lane, 97-105 Brick Lane, Wheler House, 167 Commercial Road, 194-195 Shoreditch High Street, 13 Bethnal Green Road, Telford Homes Block A, 1-42 Eagle House and 29-30 Bethnal Green Road.

S7. The relative loss of light also needs to be taken into account. Many of the affected windows are on the upper floors of existing buildings, because of the sheer height and bulk of the proposed development. These would normally be expected to have higher daylight provision; but the new development reduces the available light substantially, giving a major adverse impact.

S8. For some of the surrounding dwellings (3 Club Row, and properties in Wheler Street and Redchurch Street), GIA have cited the distance from the new development as a mitigating factor, implying that as the development is far away the loss of light will somehow be less noticeable. This is a spurious argument, as the data show that there would still be large losses of light. In fact the distance between some of the affected dwellings and the proposed development highlights its size and bulk and the large area it impacts.

S9. GIA have underplayed the value of loss of sunlight in their report. This is important too. 119 Brick Lane, 194-196 Shoreditch High Street, 17 Bethnal Green Road, 70 Redchurch Street, Telford Homes Block A, 19-29 Redchurch Street, 25 Bethnal Green Road and 28-30 Bethnal Green Road would all experience major adverse impacts to sunlight as a result of the new development.

1. INTRODUCTION

1.1 A large new development is proposed on the Bishopsgate Goodsyard site in Shoreditch. The developers' submission to the GLA included an Appendix F on 'Daylight and sunlight' written by Gordon Ingram Associates (GIA). This is an ES Addendum; the earlier Environmental Statement included a chapter 11 'Daylight and sunlight, overshadowing, solar glare and light pollution', reviewed in an earlier report by BRE dated 29 May 2015.

1.2 The local residents' group the Jago Action Group have commissioned BRE to provide an independent assessment of the developer's submission on daylight and sunlight (hereafter referred to as the GIA report). This assessment covers loss of daylight to residential properties only. It does not address the levels of light in the proposed residential buildings, sunlight in open spaces, artificial light pollution or reflected solar glare.

1.4 The assessment included a site visit on 19 May 2015 to inspect surrounding buildings that could be affected.

1.5 I have not carried out any independent calculations of the loss of light and the assessment has been based on the data provided by GIA in the appendices to the Environmental Statement. I have assumed that these data have been calculated correctly.

2. GUIDANCE ON LOSS OF LIGHT TO EXISTING BUILDINGS

2.1 To assess the loss of daylight to existing buildings nearby, GIA have referred to the BRE Report 'Site layout planning for daylight and sunlight: a guide to good

practice'. This guidance is widely used by local authorities to help determine planning applications. It was revised in 2011.

2.2 To assess the impact on the amount of diffuse daylighting entering existing buildings, the Report uses the vertical sky component (VSC) on the window wall. The Report sets out two guidelines for vertical sky component:
1. If the vertical sky component at the centre of the existing window exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window.
2. If the vertical sky component with the new development is both less than 27% **and** less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric lighting will be needed for more of the time.

2.3 Appendix F of the BRE Report outlines ways in which alternative target values for vertical sky component could be derived. Section 4.0 of the GIA report refers to this. It uses three different approaches to derive such alternative targets. In principle this is reasonable. Unfortunately GIA have derived the targets in a flawed and incorrect way.

2.4 The first approach is based on the Bishopsgate Goods Yard Interim Planning Guidance (IPG) 2010. In their section 5.0, figures 6 and 7, GIA present a scheme layout (notional massing) that is supposed to follow the guidance in the IPG.

2.5 However the IPG does not give a definitive massing. Although it states where tall buildings and lower buildings would be expected, it does not give specific guidance on the height and width of these buildings.

2.6 GIA’s notional massing appears to contravene the guidance in the IPG in two important ways. The IPG states that ‘Penetration of daylight and sunlight should

be encouraged by ensuring there is not a ‘wall’ of development along the northern site edge’. However the proposed notional massing does appear to constitute such a wall, with only small gaps between the buildings.

2.7 The clearest relevant guidance in the IPG is in its recommendation BG14, which states that ‘The location of tall buildings must not create unacceptable impacts on the amenity of existing or future residents in terms of access to daylight and sunlight’. However GIA’s Figure 8 shows that the impacts on daylight from their notional massing are similar to those for the proposed development. Those impacts were described as unacceptable by Tower Hamlets and Hackney councils’ independent assessors Delva Patman Redler (DPR) in a review letter dated 21 September 2015. Therefore it can be concluded that GIA’s notional ‘IPG massing’ is not compliant with the IPG and should be discounted as a comparator.

2.8 In their section 6.0 GIA use another approach to justify low target vertical sky components. This is an analysis of existing vertical sky components on facades in the area to the north of the site. Although this is called the Boundary Estate in GIA’s report, it includes the medium rise, more commercial areas off Shoreditch High Street and Bethnal Green Road. GIA conclude that average vertical sky components range from 17% at ground floor level, to 25% at second floor level. However these values significantly underestimate the actual vertical sky components to residential properties in this area for three main reasons:

a) The way the averages have been derived mean that they include commercial properties as well as dwellings. This is a particular issue at ground floor level where there are a lot of retail and office uses. The commercial properties tend to be more heavily obstructed. An example is the building opposite the tall Telford Homes scheme, to the right of GIA’s figure 9. This has very low vertical sky components because of the

presence of the tall new buildings directly opposite, but has less requirement for daylight as it is in commercial use.

b) The values include secondary facades in the rear of buildings and in tight courtyards. These may have low vertical sky components but tend to be used for secondary rooms like bathrooms and bedrooms. With a few exceptions (for example 44-54 and 70 Redchurch Street) the windows affected by the proposed development are street facing windows with higher existing vertical sky components.

c) GIA's own tables show that for the properties affected, existing vertical sky components as low as 17% are relatively rare, except in modern developments (for example the Telford Homes scheme and Daniel Gilbert House) where balconies obstruct light. Their Environmental Statement gives 2153 existing windows out of 4359 with a vertical sky component of 27% or more, so the median vertical sky component currently is 27%. In addition, over 700 of these existing windows have balconies or access decks above them which restrict the incoming light. Though GIA explain the high existing vertical sky components as due to the empty site, only a small proportion of the properties (those in 13-17 Bethnal Green Road, Sclater Street, Sheba Place, Commercial Road, 10 Quaker Street and Hollywood Lofts) look directly onto the empty site without other obstructions.

2.9 The final approach adopted by GIA is to cite a case study elsewhere. Though they refer to research covering three central London boroughs, they only describe one example development, at 90 Long Acre in Covent Garden. This is quite different to the proposed Bishopsgate Goodsyard development; it is a medium rise development on narrow streets, surrounded by existing properties very close by. A much smaller number of properties would be affected. Even then, Westminster's planning officer concluded that 'There is no doubt that the daylight and sunlight losses to Shelton Street are undesirable and regrettable,

and fall at the extreme of what can reasonably be considered acceptable even for a central London location.'

2.10 Thus the 15-18% vertical sky component given by GIA as an alternative target is not appropriate. It is significantly less than what would typically be experienced in existing residential properties in the area, and would not meet the Bishopsgate Goods Yard Interim Planning Guidance.

2.11 For sunlight, the BRE Report recommends that for existing buildings checks are carried out for all main living rooms of dwellings, and conservatories, if they have a window facing within 90° of due south. Access to sunlight should be calculated for the main window of each of the above rooms which faces within 90° of due south. If the centre of the window can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March, then the room should still receive enough sunlight. If the year round loss of annual probable sunlight hours does not exceed 4%, then the loss of sunlight is small.

2.12 GIA have not given alternative target values for sunlight.

3. ASSESSMENT OF LOSS OF LIGHT TO EXISTING RESIDENTIAL PROPERTIES

3.1 A previous assessment was given in the BRE review dated 29 May 2015, and so this report concentrates on the material presented in the GIA report.

3.2 The GIA report initially focuses on those properties for which loss of light was identified as 'unacceptable' in the Delva Patman Redler (DPR) report for the local planning authorities. They are:

1. 119 Brick Lane
2. 97-105 Brick Lane
3. 78 Quaker Street
4. 3 Club Row
5. 1-48 Wheler House
6. 25 Wheler Street
7. 10 Quaker Street
8. 167 Commercial Street
9. 196 Shoreditch High Street
10. 195 Shoreditch High Street
11. 194 Shoreditch High Street
12. 65-66 Bethnal Green Road
13. 13 Bethnal Green Road
14. 30 Redchurch Street
15. 32 Redchurch Street
16. 17 Bethnal Green Road
17. 70 Redchurch Street
18. Telford Homes Block A

3.3 GIA also address additional properties which DPR identified as experiencing 'reductions in daylight that would not normally be considered acceptable but where further consideration should be given to decide whether, in the context of this particular development, the impacts are materially against planning policy'. They are:

19. 63 Redchurch Street
20. 1-16 Sheba Place
21. 1-42 Eagle House
22. 23-24 Wheler Street
23. 154 Commercial Street
24. 19-29 Redchurch Street

25. 15 Bethnal Green Road
26. 25 Bethnal Green Road
27. 28-30 Bethnal Green Road
28. 14 Chance Street

3.4 The earlier BRE review identified major adverse impacts on daylight to 119 Brick Lane, 1-48 Wheler House, 25 Wheler Street, 10 Quaker Street, 167-169 Commercial Street, 194-196 Shoreditch High Street, 30-32 Redchurch Street, 17 Bethnal Green Road, 70 Redchurch Street, Telford Homes Block A, 1-16 Sheba Place, 1-42 Eagle House, 154 Commercial Street, 19-29 Redchurch Street, 15 Bethnal Green Road, 25 Bethnal Green Road, 28-30 Bethnal Green Road. It identified moderate adverse impacts to 14 Chance Street, 97-105 Brick Lane and 3 Club Row. 63 Redchurch Street and 23-24 Wheler Street were classified as having minor adverse impacts. 65-66 Bethnal Green Road and 13 Bethnal Green Road were excluded from the BRE analysis as they were thought to be commercial buildings. Though 78 Quaker Street may be offices too, loss of light to dwellings in the nearby 62-76 Quaker Street was assessed as moderate adverse.

3.5 The BRE review also classified the loss of light to 48-50 Redchurch Street and 31-39 Redchurch Street (not in the above lists) as major adverse, because of the substantial loss of light to all south facing rooms including main living rooms.

3.6 Between them, the properties in the two ‘unacceptable’ lists cover around 150-200 homes. GIA’s report carries out a fresh review of the loss of light to each of these buildings. Their loss of light was assessed in detail in the previous BRE review, and it is not proposed to repeat this material here. However there are some general points about GIA’s approach which need to be made.

3.7 First, GIA's analysis includes comparisons with their 'IPG massing'. These should be disregarded because this massing is not IPG compliant (see 2.6 and 2.7 above).

3.8 GIA's assessment has focused largely on retained levels of vertical sky component with the new development in place. They have adopted the lowest value in their 15-18% range, which as paragraph 2.10 above states is already significantly less than what would typically be experienced in existing residential properties in the area. Nevertheless a significant number of windows would not even reach the 15% mark with the new development in place, notably in 119 Brick Lane, 97-105 Brick Lane, Wheler House, 167 Commercial Road, 194-195 Shoreditch High Street, 13 Bethnal Green Road, Telford Homes Block A, 1-42 Eagle House and 29-30 Bethnal Green Road.

3.9 Although retained levels of daylight are very important, the relative loss of light also needs to be taken into account. Halving the vertical sky component from 30% to 15%, for example, constitutes a greater impact than a reduction from 20% to 15%. The 15% mark would normally be considered poor for a ground floor window. Because of the sheer height and bulk of the proposed development, it has a substantial impact even on the upper floors of nearby buildings (as high as the 17th floor in the case of Telford Homes Block A). These would normally be expected to have higher levels of daylight; GIA's own analysis suggests 27% vertical sky component and above. However the new development reduces the vertical sky components to these windows to much lower levels. For example, rooms on the top (fourth) floor of 10 Quaker Street would experience vertical sky component reductions from 33% to 13-14%.

3.10 A minority of buildings, for example Wheler House and Telford Homes Block A, have overhangs or balconies above the windows that reduce the light received. The BRE Report 'Site layout planning for daylight and sunlight: a guide

to good practice' states that a way to assess the effect of the overhang is to carry out an extra calculation without the overhang in place. Where this has been done, the results show that there is still a substantial reduction in daylight, indicating that it is the new development, rather than the presence of the overhang, that is the main factor in the loss of light.

3.11 For some of the surrounding dwellings (3 Club Row, and properties in Wheler Street and Redchurch Street) GIA have cited the distance from the new development as a mitigating factor, implying that as the development is far away the loss of light will somehow be less noticeable. This is a spurious argument. Loss of light is a factor of the angle subtended by the obstruction; so a small building close by can have the same effect as a much taller building a long way off. It is the vertical sky component reduction that quantifies the loss of light, whether the building is close by or much further away. Indeed the distance between some of the affected dwellings and the proposed development highlights its size and bulk and the large area it impacts.

3.12 3 Club Row and 70 Redchurch Street are both some distance from the proposed development, but would still be adversely affected by it. GIA make the point that daylight levels there are already low because of the new Telford Homes tower. But this makes the situation worse for the residents of 3 Club Row and 70 Redchurch Street, because they would suffer a double loss of light. This cumulative impact needs to be taken into account.

3.13 For other dwellings, GIA emphasise their proximity to the cleared site and their dependence on light from over it. This is true for some properties, but GIA also extend the argument to others where there are other sources of light. For example, 97-105 Brick Lane does not directly face the new development, but would still be substantially impacted. Most of the windows in 25 Wheler Street

would only have a side view of the development, but they would be affected by it too.

3.14 GIA have underplayed the value of loss of sunlight in their report. This is important too. 119 Brick Lane, 194-196 Shoreditch High Street, 17 Bethnal Green Road, 70 Redchurch Street, Telford Homes Block A, 19-29 Redchurch Street, 25 Bethnal Green Road and 28-30 Bethnal Green Road would all experience major adverse impacts on sunlight as a result of the new development.

4. CONCLUSIONS

4.1 This report has reviewed the developer's ES Addendum Appendix F (the GIA report) on the loss of daylight and sunlight to surrounding properties following construction of a large new development on the Bishopsgate Goodsyard site in Shoreditch.

4.2 An unusual feature of the assessment is the very large number of properties which would experience a major adverse impact. GIA have focused on 28 buildings, comprising some 150-200 homes, for which independent consultants DPR identified loss of light as either 'unacceptable' or 'potentially unacceptable'. However there are a similar number of homes not on this list, for which there would be significant reductions, in excess of the BRE guidelines. GIA's data in the Environmental Statement identify 1733 windows that would fail the BRE vertical sky component guideline for loss of daylight, of which 940 would lose more than double the guideline amount. In my experience, I am aware of no other proposed development that has been predicted to have such a large effect on so many dwellings.

4.3 GIA have attempted to justify the loss of light in various ways. They have compared the results with an alternative massing for the proposed development, allegedly based on the Bishopsgate Goodsyard Interim Planning Guidance. However this guidance document does not specify the height and layout of buildings, and GIA's massing contradicts the IPG in two important respects. Accordingly the comparison with the alternative massing should be disregarded.

4.4 GIA have used a vertical sky component of 15% as a target for daylight received. This is much lower than the 27% recommended in the BRE guidance, and also significantly less than what would typically be experienced in existing residential properties in the area. Nevertheless a significant number of windows would not even reach the 15% mark with the new development in place, notably in 119 Brick Lane, 97-105 Brick Lane, Wheler House, 167 Commercial Road, 194-195 Shoreditch High Street, 13 Bethnal Green Road, Telford Homes Block A, 1-42 Eagle House and 29-30 Bethnal Green Road.

4.4 The relative loss of light also needs to be taken into account. Many of the affected windows are on the upper floors of existing buildings, because of the sheer height and bulk of the proposed development. These would normally be expected to have better daylight provision; but the new development causes substantial reductions in daylight.

4.5 For some of the surrounding dwellings (3 Club Row, and properties in Wheler Street and Redchurch Street) GIA have cited the distance from the new development as a mitigating factor, implying that as the development is far away the loss of light will somehow be less noticeable. This is a spurious argument, as the data show that there are still large losses of light. In fact the distance between some of the affected dwellings and the proposed development highlights its size and bulk and the large area it impacts.

4.6 GIA have underplayed the value of loss of sunlight in their report. This is important too. 119 Brick Lane, 194-196 Shoreditch High Street, 17 Bethnal Green Road, 70 Redchurch Street, Telford Homes Block A, 19-29 Redchurch Street, 25 Bethnal Green Road and 28-30 Bethnal Green Road would all experience major adverse impacts to sunlight as a result of the new development.

A1. APPENDIX: QUALIFICATIONS AND EXPERIENCE

A1.1 My name is Paul Jeffrey Littlefair and I have been working on daylighting and related issues at the Building Research Establishment, Garston, Watford WD25 9XX, since 1979. BRE is the UK's foremost construction research organisation. It was formerly part of the Department of the Environment and is now owned by the BRE Trust, a registered charity. In 1984 I was awarded a PhD for work carried out at BRE. The title of my thesis was 'Daylighting design and energy conservation'. In 1988 I became a member of the Chartered Institution of Building Services Engineers (the professional institution responsible for interior lighting) and am a Chartered Engineer. I was a founder member of the Society of Light and Lighting, and am a member of the Institution of Lighting Professionals.

A1.2 I have published over 100 papers on daylight and related issues and wrote part of the British Standard Code of Practice on daylight and the CIBSE Lighting Guide 'Daylighting and window design'. The effect of building layout on interior daylight, particularly in existing buildings, is one of my specialised subjects. In 1991 I wrote 'Site layout planning for daylight and sunlight', for the Department of the Environment, which is widely used by developers and planning authorities to help determine the loss of light to existing buildings. I revised this document in 2011.

A1.3 I am BRE's specialist on Rights to Light issues, and have carried out over 250 studies of the loss of light to existing buildings.