

20 December 2017

**THE CITY OF BRADFORD METROPOLITAN DISTRICT COUNCIL (A650 HARD INGS
ROAD IMPROVEMENT, KEIGHLEY) COMPULSORY PURCHASE ORDER 2017
THE CITY OF BRADFORD METROPOLITAN DISTRICT COUNCIL (A650 HARD INGS
ROAD IMPROVEMENT, KEIGHLEY) (SIDE ROADS) ORDER 2017**

THE HIGHWAYS ACT 1980

-and-

THE ACQUISITION OF LAND ACT 1981

THE HIGHWAYS (INQUIRIES PROCEDURE) RULES 1994

COMPULSORY PURCHASE (INQUIRIES PROCEDURE) RULES 2007

National Transport Casework Team (REFERENCE: NATTRAN/YH/LAO/130)

In the matter of

**a highway improvement scheme involving highway alterations to facilitate and
widen the A650 Hard Ings Road, Keighley, from its junction with the A629
Beechcliffe Roundabout, generally eastwards to a point 75 metres west of its
junction with Bradford Road, Roundabout, Bradford in the
County of West Yorkshire**

Proof of Evidence

of

Michael Paul Scanlan

**Director of Gray Scanlan Hill Chartered Building Surveyors
Member of the Royal Institution of Chartered Surveyors (MRICS)**

presented as evidence in chief

on behalf of

The City of Bradford Metropolitan District Council

to

Local Public Inquiry – 30th January 2018

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A1: Technical Daylight Amenity Impact Report

A2: Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice

A3: BS8206-2:2008 Lighting to Buildings; Code of Practice for Daylighting.

A4: Technical Sunlight Amenity Impact Report

1. Introduction

1.1 Personal Details

1.1.1 My name is Michael Paul Scanlan and I hold the position of Director at Gray Scanlan Hill Chartered Building Surveyors. I have BSc (Hons) in Building Surveying from the University of Salford. I am a Member of the Royal Institution of Chartered Surveyors having achieved professional qualification in 2000.

1.1.2 I have, over the course of the last 15 years, specialised in advising and representing Clients on various third-party development issues, including rights of light (common law), sunlight and daylight and overshadowing amenity assessments (for Town & Country Planning), the Party Wall etc Act 1996 and access disputes / negotiations.

1.2 Scope of Evidence

1.2.1 The evidence I present examines the current daylight and sunlight amenity enjoyed by the windows and rooms of the “Fibreline Office” located at Victoria Park Mills”, Hard Ings Road, Keighley, West Yorkshire and discusses the measured effect that the proposed road widening, and in particular the construction of the new retaining wall required to facilitate the proposed road widening, would have on the level of amenity enjoyed.

2. Main Evidence

- 2.1.1 I was briefed that the City of Bradford Metropolitan District Council (“CBMDC”) was proposing a scheme for the road widening of Hard Ings Road.
- 2.1.2 To achieve that, I was advised that CBMDC needed to acquire part of the land between the existing highway and in front of the Fibreline Office.
- 2.1.3 That land is of sloping topography and it is necessary to construct a new retaining wall upon it to facilitate the road widening. Fibreline have expressed concern that the construction of the retaining wall would have a material adverse impact on the existing natural lighting conditions of the office block rooms of their property.
- 2.1.4 I was instructed by CBMDC to evaluate Fibreline’s concerns and my findings were set out in a Technical Daylight Amenity Impact Assessment Report dated January 2017, a copy of which is provided at Appendix 1.
- 2.1.5 Initially, the sunlight amenity impact of the proposed scheme was not evaluated on the grounds that the rooms of the Fibreline Office were not considered to be sensitive sunlight receptors; the BRE Guidance (see below) emphasises the sunlight appraisal of habitable rooms in dwelling houses, such as living rooms and conservatories.
- 2.1.6 However, since the daylight study was undertaken, Fibreline have formalised their objections and alleged the adverse negative impact that the proposed scheme will have on this sunlight amenity currently enjoyed. I was subsequently instructed to measure the sunlight amenity impact of the proposed scheme and my findings have been set out in the Technical Sunlight Amenity Impact Assessment Report provided at Appendix 4.

- 2.1.7 The daylight and sunlight amenity impact of the proposed scheme was benchmarked against the Building Research Establishment's ("BRE") *Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*, ("the BRE Guidance") which refers to the provisions of British Standard *BS8206-2:2008 Lighting to Buildings; Code of Practice for Daylighting* ("BS8206").
- 2.1.8 Relevant extracts of the BRE Guidance are provided at Appendix 2 and in particular, Sections 2.2 and 3.2, which explain the BRE's approach for appraising the daylight and sunlight amenity impact on existing neighbouring buildings. Further, a copy of Appendix C – Interior Daylighting Recommendations, and Appendix D – Plotting the No Sky Line, are also provided for reference. A copy of BS8206 is provided at Appendix 3.
- 2.1.9 I measured, using computerised 3D massing simulations of the Site and specialist computer software, the amount of daylight and sunlight that is available to the windows and rooms of the Fibreline Offices, in both the existing and proposed condition.
- 2.1.10 I inspected the Site and walked its surroundings and in so doing identified the window provision of the Fiberline Office that overlooks the Hard Ings Road public highway.
- 2.1.11 To facilitate the running of the computerised technical analysis, my CAD technicians built a digital 3D massing model of the Site and its immediate surroundings, both in its existing and proposed configuration. In constructing the 3D massing models, the following information, provided to me by others, was used and relied on:
- The results of a laser scan or Point Cloud Survey of the Site and its surroundings, commissioned and undertaken by CBMDC, enabling the creation of topographically accurate massing model of the existing Site and its surrounds.

- Proposed drawings of the road widening and the new retaining wall prepared by CBMDC. OS levels and co-ordinates have been verified by CBMDC engineers.
- 2.1.12 I inspected the interior of the Fibreline Office, to better understand the physical relationship between the identified window provision and the rooms that it serves.
- 2.1.13 This inspection also enabled me to identify room arrangements, take room measurements (using a handheld laser measuring device known as a “Disto”) and also note the interior wall, ceiling and floor finishes of each room.
- 2.1.14 Having identified the interior room finishes, in performing the Average Daylight Factor calculations, a reflective coefficient for each room finish has been adopted, derived from the tables set out at Annex A of British Standard BS8206.
- 2.1.15 The assessment calculations have been undertaken using specialist computer software (known as “SOL”, a widely used and market leading simulated light measurement software) to perform the BRE Guidance and BS8206 tests.
- 2.1.16 The BRE Guidance and BS8206 between them confirm a number of different tests for evaluating daylight impact, including establishing the Vertical Sky Component of a window, the uniformity of daylight distribution within a room, and calculating the Average Daylight Factor of a room. I considered all of these measures as part of the assessment.
- 2.1.17 The BRE Guidance and BS8206 both recommend calculating the Annual Probable Sunlight Hours available to a window / room when evaluating sunlight impact.

2.2 Vertical Sky Component (“VSC”)

- 2.2.1 The VSC is a unit of measurement that represents the amount of visible sky that is capable of being received at the external face of a window. Daylight is derived directly from the sky. On that basis, the more sky visibility available to a window, the potential daylighting capability of the room served by it will increase.
- 2.2.2 The unit is expressed as a percentage, as it is the ratio between the amount of visible sky available to the window being tested, compared to that available from a totally unobstructed sky. To put this unit of measurement into perspective, the maximum percentage VSC value of a window located in a vertical plane is 50%, but in practice the VSC values do not typically exceed 40%, because of projecting window reveals and window heads which lessen / reduce the angles of measurement.
- 2.2.3 The BRE Guidance confirms that: “... *daylighting of an existing building may be adversely affected ... if ... the VSC measured at the centre of an existing ... window is less than 27%, and less than 0.8 times its former value*”.
- 2.2.4 The existing and proposed VSC for the Fibreline Office windows was calculated.
- 2.2.5 All fourteen windows achieve more than the BRE Guidance’s target of 27% VSC in the existing condition, with existing VSC values ranging from 27.89% to 39.39%, with the majority of windows having an existing VSC of between 35%-36%.
- 2.2.6 The construction of the new retaining wall would reduce the extent to which sky can be seen over that part of the public highway in front of the Fibreline Office. However, notwithstanding this measurable reduction in sky visibility, all windows would continue to achieve the BRE Guidance’s target of 27% VSC, following the road widening and the construction of the new retaining wall. Proposed VSC values range from 27.42% to 37.13%, with the majority of windows having an proposed VSC of between 30%-32%.

2.2.7 Further, the reduction in VSC is less than the 20% reduction accepted by the BRE and, in this regard, the measured reduction in VSC value will not be noticed by the room occupants. Reductions range between 1.69% - 15.16%, although the reduction for the majority of the windows is between 11-12% of the existing VSC value.

2.3 Internal Daylight Distribution / No Sky Line (“NSL”)

2.3.1 The NSL divides those parts of a room which can and cannot see the sky through its window provision. Those parts of a room beyond the NSL usually look dark and gloomy, compared with the rest of a room, because they receive no direct daylight.

2.3.2 BS8206 confirms that a room will appear adequately daylight if 80% of its area receives direct sky light. The BRE Guidance confirms that it is permissible for the area of a room that receives direct sky light to be reduced by 20% of its existing coverage, on the grounds that such a reduction in coverage would not be noticed by the room occupants.

2.3.3 The NSL was measured for all office block rooms that are served by the windows that would overlook the proposed road widening and new retaining wall.

2.3.4 In the existing condition, all eight rooms of the Fibreline Office receive direct sky light to more than 80% of their measured floor area. The results of the technical study confirmed that there would be no movement at all in the NSL in any room following the road widening and the construction of the new retaining wall.

2.4 Average Daylight Factor (“ADF”)

- 2.4.1 The ADF is used as the measure of general illumination of a room from direct sky light. To achieve a predominantly day lit appearance, BS8206 suggests that the ADF of a room should be at least 2%. The ADF is seen as a more representative test of internal daylight adequacy than other daylight amenity tests, as it not only considers the amount of sky available to the window, but also the physical relationship between the window and the room, glazing transmissions and the reflectivity of internal finishes.
- 2.4.2 The existing and proposed ADF for all eight office block rooms was calculated.
- 2.4.3 In the existing condition, six of the eight rooms achieve an ADF of more than the BS8206 target of 2%, ranging from 2.21% to 4.27% ADF. There are two rooms that have lower existing ADF values - a store (1.64%) and a small office (1.98%).
- 2.4.4 The construction of the new retaining wall will reduce the measured ADF values. Reductions range between 1.16% - 12.43%, although the reduction for the majority of the rooms is between 8-10% of the existing ADF value.
- 2.4.5 However, the six rooms that currently achieve the BS8206 2% ADF target will continue to do so, with proposed ADF values of between 2.01% and 4.05%.
- 2.4.6 The two rooms that do not achieve the 2% ADF targets would experience small reductions in ADF, but these reductions are significantly less than 20% of the existing measured ADF values and would not be noticed by the room occupants.

2.5 Annual Probable Sunlight Hours (“APSH”)

- 2.5.1 APSH is the average number of hours during the year in which direct sunlight reaches the unobstructed ground (or other reference point) when cloud is taken into account.

- 2.5.2 The BRE Guidance confirms that sunlight may be adversely affected if a 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”*.
- 2.5.3 September – March are acknowledged as the “winter months”.
- 2.5.4 The existing and proposed APSH for all office block rooms with a window facing within 90° of due south was calculated.
- 2.5.5 All rooms technically appraised achieve significantly in excess of the BRE Guidance / BS8206 target of 5% APSH in the winter months and 25% APSH all year round.
- 2.5.1 6 rooms with a south facing window provision receive 27% APSH in the winter months and 86% APSH year round. A further room, served by an east facing window, receives 19% APSH in the winter months and 58% APSH year round.
- 2.5.2 The construction of the new retaining wall will reduce APSH levels. However, all rooms would continue to achieve in excess of the BRE / BS 8206 targets.
- 2.5.3 The 6 rooms with a south facing window provision will retain 17% APSH in the winter months and between 76-78% APSH year round. The room with the east facing window will be reduced to 15% APSH in the winter months and 54% APSH year round.

2.6 Conclusion

- 2.6.1 I have established that the proposed road widening, and in particular the construction of the proposed retaining wall, will result in a small diminishing of daylight amenity currently received by the windows and enjoyed by the rooms of the Fibreline Office.

- 2.6.2 However, notwithstanding a measurable reduction in VSC and ADF values, the daylight amenity will remain accepted daylight design guidance compliant, insofar as target values will still be met and / or reductions of existing values are within an acceptable tolerance threshold and would not be noticed by the room occupants.
- 2.6.3 The proposed road widening and construction of the retaining wall will have no measurable impact on the extent to which direct sky light is distributed within the rooms.
- 2.6.4 I have established that whilst the proposed road widening, and in particular the construction of the proposed retaining wall, will result in a small diminishing of the sunlight amenity currently enjoyed by the rooms of the Fibreline Office. However, the sunlight amenity will remain sunlight design guidance compliant insofar as the APSH target values will still be met and / or reductions in existing values are within an acceptable tolerance threshold and would not be noticed by the room occupants.
- 2.6.5 In summary, I am of the view that I have advanced a compelling case to justify the Orders being confirmed in the public interest to ensure that the Council, acting on its behalf, will be able to use compulsory purchase powers, should the use of such powers be required as a last resort, to acquire for the purposes of the Orders, all the land and rights needed to promote, deliver and facilitate the proper construction to improve and widen the A560 Hard Ings Road, Keighley in the County of West Yorkshire, from its junction with the A629 Beechcliffe Roundabout, generally eastwards to a point 75 metres west of its junction with Bradford Road Roundabout.

3. Expert Declaration

- 3.1.1 I confirm that my duty to the Inquiry as an expert witness overrides any duty to those instructing or paying me. I have understood this duty and complied with it in giving my evidence impartially and objectively and that I will continue to comply with that duty.
- 3.1.2 I confirm that my expert evidence includes all facts which I regard as being relevant to the opinions I have expressed and that attention has been drawn to any matter that would affect the validity of those opinions.
- 3.1.3 I am not instructed under any conditional fee arrangement and
- 3.1.4 I have no conflict of interest.
- 3.1.5 I confirm that I have made clear which facts and matters referred to in this proof of evidence are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.
- 3.1.6 I confirm my report complies with the requirements of The Royal Institution of Chartered Surveyors “Surveyors acting as expert witnesses: RICS Practice Statement”.

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