

# Chocolate Factory, Haringey

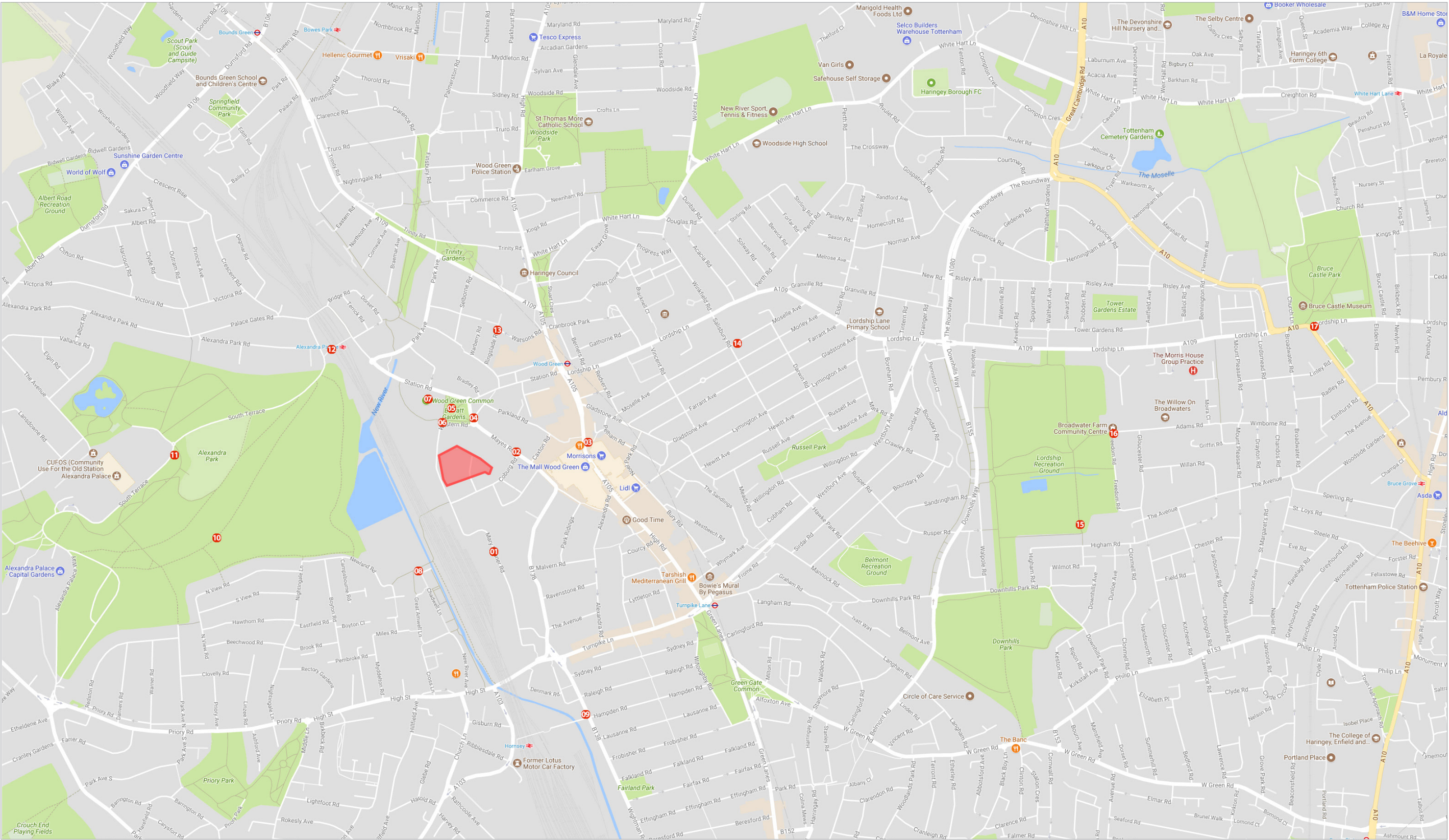
Hayes Davidson Methodology

February 2018



Viewpoint location map

The viewpoints were selected by Barton Willmore in liaison with London Borough of Haringey.



Approximate site boundary is marked in red for indicative purposes only

| Qualifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Work Commissioned                                                                                                                                                                                                                                                                                                                                                                                                        | Choice of simulation technique and media employed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <div>1.0 Hayes Davidson was founded in 1989 to specialise in computer aided architectural illustration. The company has a team which deals exclusively in the creation of three dimensional digital models and the representation of buildings and cities. The team is overseen by Managing Director Alan Davidson and is coordinated on a day to day basis by partners all of whom have architectural, technical and artistic experience. A Technical Director with qualifications and experience of geometry and construction oversees all projects where geometric definition and accuracy is required. Hayes Davidson have been invited to sit on judging panels for a number of architectural illustration awards, and lecture on computer aided illustration techniques, perception and three dimensional representation.</div> <div>1.1 Alan Davidson, the founder and Managing Director, has a BA and MA (Hons.) in Architecture from the University of Edinburgh and is an ARCUK registered architect. He studied Fine Art and attended Art College in Edinburgh. He has worked as an architect since 1986 and an architectural illustrator since 1979.</div> <div>1.2 Hayes Davidson is considered to be the most experienced architectural computer imaging company working in the UK having produced over 10,000 ‘virtual’ or ‘computer aided’ images since 1989. The work of Hayes Davidson has been acknowledged as pioneering; advancing the use of computer technologies in the representation of buildings. The work has been widely published. Hayes Davidson have won the CICA (‘Construction Industry Computing Association’) award for the best computer rendering of buildings three years consecutively. The computer generated artwork of Hayes Davidson is collected by the Royal Institute of British Architects Drawings Collection.</div> <div>1.3 The following is a reference for Hayes Davidson from Dr. Neil Bingham, Assistant Curator of the Royal Institute of British Architects Drawings Collection.<br/><br/><i>“The RIBA Drawings Collection was established at the foundation of the RIBA in 1834, now holds an estimated 3/4 million drawings, and is considered one of the finest architectural collections in the world. Since 1994, the RIBA has been acquiring the work of Hayes Davidson. The Drawings Collection recognise their work as representing some of the highest quality and most important architectural illustration of the late 20<sup>th</sup> Century.”</i></div> <div>1.4 Hayes Davidson is the only company to our knowledge to have verified photomontage, videomontage and surround montage accepted at public inquiry level in the UK. Hayes Davidson has produced evidence for the Heron Tower, Doon Street Tower, 1+20 Blackfriars, Newcastle Quayside, High Holborn and the London Bridge Tower Public Inquiries. On many occasions the material produced by Hayes Davidson has been accepted and praised by the Inquiry.</div> | <div>2.0 Hayes Davidson were commissioned by Workspace Group PLC.</div> <div>2.1 All drawn and digital information regarding the proposed development was supplied to Hayes Davidson in digital format by Barton Willmore.</div> <div>2.2 Hayes Davidson attended a series of meetings on site between March 2017 and April 2017 with a photographer and surveyor to establish the position of the views required.</div> | <div>3.0 It is important to emphasise that no media can currently reproduce the human experience of viewing a scene. There is no method of analysis or representation that will accurately summarise every lighting, material, social, sensory or climatic condition.</div> <div>3.1 A photomontage is the superimposition of an image onto a photograph for the purpose of creating a realistic representation of proposed or potential changes to a view. Printed photomontage allows the highest resolution and allows the eye to see the greatest detail. In this way it starts to simulate the effect of looking at a view from a single position.</div> <div>3.2 Setting aside time of day and year and local climatic conditions, the different aspects of a building that contribute to its aesthetic appearance can be summarised as follows: (For the purpose of simplicity we will disregard the speed of walking and social and other sensory influences but these are also relevant).<br/><br/>1. proportion (height, width)<br/>2. distance/depth from viewer<br/>3. outline and definition of building edges<br/>4. the viewers 360° awareness of the surroundings<br/>5. position in view<br/>6. the effect of light on and the nature of the buildings materials<br/>7. night lighting<br/>8. nature of surrounding buildings/structures (shadowing and reflection)</div> <div>3.3 Not all simulation techniques can be verified and where detailed analysis of materials and their behaviour to light are to be considered, no wholly objective analysis method is possible, and the architect and Hayes Davidson work together to apply subjective judgement.</div> |

## Photography

- 4.0 All photography was carried out by a professional architectural photographer using the following equipment:

Camera: Arca-Swiss F- Metric Compact 6x9/Phase One P45+

Lens: Schneider Apo-Digitar XL 5.6/35mm

The images were processed by the photographer to achieve results that best reflected the experience of each scene at the time of the photography.

- 4.1 Each scene was recorded using a survey marker to accurately identify the view location. A plumb line was used to ensure that the centre of the camera was directly over the surveyed viewing position at a height of 1.60 metres. A log was kept of the time and date that each photograph was taken so that lighting conditions could be recreated in the computer model.
- 4.2 There is no single definitive camera and lens format that is suitable for all planning photomontage work. Choices needs to be made with care and clearly explained through method statement/annotation. Townscape photography taken with a 40° lens (50mm lens/35mm camera) is most often likely to be inadequate for purpose and is not recommended. To insist, as some do, that only 40° lenses should be used is unrealistic. If chosen appropriately, correctly annotated, and with professional understanding by those assessing, there is little to be lost by using wider angle lenses (up to 70°), as this can add peripheral information that more closely reflects our 'experience' of a scene.
- 4.3 Very wide angle single lens views can minimise impact and as such this technique is also inappropriate. Through a careful choice of lenses that allow wider fields of view, townscape is able to be better assessed. The use of hybrid lenses/photographic solutions (ref. Multi-Lens section 7.3) ensure that distortion issues can be minimised for panoramic images.
- 4.4 Hayes Davidson recommends that all parties are mindful that Environmental Statement photomontage should be used as a complement to site based assessment.



fig 1a the camera



fig 1b the camera in position



fig 2 example of processed image



### Digital Images and Colour Correction

- 6.0 The digital images supplied by the photographer were saved as Photoshop PSD/TIFF/JPG files for use in the verification process.
- 6.1 Using the surveyed horizon points as a guide, each image is checked and rotated, if necessary, to ensure that the horizon line on the photograph is level, based upon the information received from the surveying team.
- 6.2 Any incorrect colour 'casts' are adjusted to match the original processed image. Similarly the brightness/contrast ratios of the image are corrected to match the original image (fig. 4b).
- 6.3 In professional architectural photography, having the camera pointing 'horizontally' (parallel with the ground) is desirable to ensure that vertical elements of the photographed scene remain perpendicular to the horizon. In reality the eye and brain compensate for non-perpendicular verticals and it is desirable to replicate this with photography. The tripods used by professional architectural photographers have built-in spirit level 'bubbles' to assist the photographer in keeping the vertical building elements 'vertical'.
- 6.4 Following from 6.3 above, the cameras used by professional architectural photographers have the ability to 'shift' the camera back upwards which removes the 'static' nature of having the horizon midway along the vertical dimension of the photograph (as opposed to a standard 35mm camera) and allows for the inclusion of more sky over immediate foreground. This is standard practice within architectural photography and more realistically reflects the viewers experience on site.
- 6.5 The 'virtual' cameras in proprietary 3D software typically do not have this 'shift-negative' feature and so their horizon line will always bisect the vertical dimension of the view when the virtual camera's view cone is positioned parallel to the ground plane. Consequently the digital image is further resized to ensure that the surveyed horizon line bisects the background image in the vertical dimension. (fig 4b).



fig 4a High resolution image as supplied before colour correction



fig 4b High resolution image after colour correction. The image has been rotated and resized to ensure that the surveyed horizon line is level and bisects the vertical dimension equally

The 3D Model and View Verification Process

- 7.0 All drawn and digital information regarding the proposed development was supplied to Hayes Davidson in digital format by Barton Willmore.
- 7.1 At each view position a virtual camera was set up in the 3D software using the coordinates provided by the surveyor. The 3D coordinates of the additional surveyed verification points were used to create an accurate model of the contextual surveyed parts of the scene. The scene was verified by matching the contextual surveyed points between the data scene and the photograph (fig. 5a). The contextual survey points were used as a check against the target position and the field of view of the virtual camera.
- 7.2 Hayes Davidson used a 3D model of the proposed development supplied by Barton Willmore. This computer model was precisely aligned to the surveyed coordinate system and the aligned scene using a information provided by Barton Willmore. (fig. 5b)
- 7.3 Where multiple images were required to create the wider scene, Hayes Davidson used an in-house technique called Multi-Lens. Each individual image was aligned using the process above then the virtual cameras are merged into a single scene in the 3D software, thus creating a merged wide image. This technique reduces the distortion caused by using wider lenses.
- 7.4 Using the verified camera described previously, the computer produces an image, known as a render, of the proposed building using the geometry specified. This produces the wireline image (fig. 5c).



fig 5a Contextual survey points matched to the scene



fig 5b The wireframe 3D model placed into the scene



fig 5c The wireline image

### Image Production

- 8.0 Buildings with a similar orientation to the proposed building within the scene can be used as a reference to obtain valuable visual clues as to how the light would react with the proposed building.
- 8.1 Hayes Davidson analysed the scene and assessed tonal values. We used the computer to take multiple digital samples of values for hue, saturation and brightness from a number of scenes in the photography. From this an analysis and assessment of the likely tonal and colour values in the scene was made.
- 8.2 The computer generated image of the proposals is combined with the background photography using proprietary digital compositing software.

### Notes

- 8.3 Subject to accurate survey information, the position and scale of a building in a scene can be verified mathematically. Whilst position, height and scale will be objectively accurate, subjective judgement must be used when lighting is being assessed and therefore a definitive and objectively verified agreement on lighting is not possible.
- 8.4 The computer can accurately assess the relative contrast between the faces of a building at a particular time. The computer can also render approximate material definitions. However, not every aspect of what is seen visually on screen is able to be simulated using an automatic or wholly objective process. Reflected light, local lighting conditions, detailed material definitions, climatic conditions including moisture content of the air both across the scene as a whole and locally cannot be accurately assessed or simulated by current computer technology.
- 8.5 We therefore turn to the scene for visual clues in order to set the render of the proposed development into the photograph.



fig 6a The scene with the features in the foreground marked so that the proposed development can be positioned



fig 6b The rendered model of the development accurately positioned



fig 6c The completed photomontage

Chocolate Factory, Haringey

Appendix B: Hayes Davidson Methodology – Technical Details

| View No. | Location                                                                                                        | Rendered/<br>Wireline | Camera/<br>Tripod<br>height<br>(m) | Single /<br>Multipanel | Horizontal<br>field of<br>view<br>(degrees) | Vertical<br>field<br>of view<br>(degrees) | Lens<br>used<br>(mm) | Date       | Time  | Easting (m) | Northing<br>(m) | Ele-<br>vation<br>(mAOD) | Eye<br>Level<br>(mAOD) |
|----------|-----------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------|------------------------|---------------------------------------------|-------------------------------------------|----------------------|------------|-------|-------------|-----------------|--------------------------|------------------------|
| 01       | Mary Neuner Road, looking north-west                                                                            | Rendered              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 07/04/2017 | 15:12 | 530800.004  | 189808.298      | 24.969                   | 26.569                 |
| 02       | Mayes Road, at junction with Coburg Road                                                                        | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 08/04/2017 | 08:22 | 530868.090  | 190138.073      | 22.113                   | 23.713                 |
| 03       | Wood Green High Road, glimpsed view south of Ezra's Kitchen, looking west                                       | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 08/04/2017 | 11:11 | 531089.909  | 190173.628      | 20.559                   | 22.159                 |
| 04       | Mayes Road at junction with Tower Terrace / Western Road, looking south                                         | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 08/04/2017 | 08:02 | 530724.321  | 190245.856      | 24.575                   | 26.175                 |
| 05       | Barratt Gardens, by pergola, looking south                                                                      | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 08/04/2017 | 09:07 | 530650.752  | 190273.800      | 26.266                   | 27.866                 |
| 06       | New River Path at the southern edge of Wood Green Common, at the junction with Western Road, looking south-east | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 09/04/2017 | 15:24 | 530620.037  | 190230.592      | 25.492                   | 27.092                 |
| 07       | Wood Green Common, looking south-east                                                                           | Rendered              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 18/04/2017 | 17:29 | 530567.514  | 190304.006      | 27.918                   | 29.518                 |
| 08       | New River Avenue, at junction with Greenways Cycle and Pedestrian Route, looking north-east                     | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 07/04/2017 | 17:00 | 530557.975  | 189742.118      | 30.519                   | 32.119                 |
| 09       | Wightman Road, in vicinity of Hornsey Station, looking north                                                    | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 07/04/2017 | 13:48 | 531112.715  | 189295.176      | 28.759                   | 30.359                 |
| 10       | Alexandra Park, west of sports ground, looking north-east                                                       | Rendered              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 18/04/2017 | 14:25 | 529891.516  | 189822.305      | 46.787                   | 48.387                 |
| 11       | Alexandra Palace, South Terrace, looking east                                                                   | Rendered              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 18/04/2017 | 15:55 | 529757.549  | 190095.851      | 88.880                   | 90.48                  |
| 12       | Alexandra Palace Station footbridge, looking south-east                                                         | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 07/04/2017 | 17:33 | 530254.912  | 190449.417      | 44.492                   | 46.092                 |
| 13       | Ringslade Road, looking south                                                                                   | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 18/04/2017 | 09:43 | 530790.323  | 190528.832      | 36.940                   | 38.54                  |
| 14       | Moselle Avenue north-east of junction with Salisbury Road looking south-west                                    | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 09/04/2017 | 10:34 | 531560.255  | 190497.922      | 17.658                   | 19.258                 |
| 15       | Lordship Recreation Ground, in vicinity of Higham Road, looking west                                            | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 18/04/2017 | 12:26 | 532689.396  | 189958.988      | 24.484                   | 26.084                 |
| 16       | Entrance to Lordship Recreation Ground from Adams Road, looking west                                            | Rendered              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 09/04/2017 | 12:18 | 532793.760  | 190243.461      | 15.834                   | 17.434                 |
| 17       | Lordship Lane adjacent to Bruce Castle at junction with Bruce Grove, looking west                               | Wireline              | 1.6                                | Single                 | 70                                          | 55                                        | 35mm                 | 09/04/2017 | 10:58 | 533434.583  | 190606.353      | 19.427                   | 21.027                 |



