
NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER PROJECT

ENVIRONMENTAL STATEMENT: VOLUME 3 APPENDICES

The Planning Act 2008 The Infrastructure
Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009
Regulation 5 (2) (a)

AD06 . 02

Arup

Revision 1

July 2016

Appendices

- Vol 3 Appendix 1.1 Visual Methodology
- Vol 3 Appendix 1.2 Aboricultural Survey
- Vol 3 Appendix 1.3 Viewing in the Field
- Vol 3 Appendix 1.4 Additional Cumulative Developments

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ENVIRONMENTAL STATEMENT: VOLUME 3 APPENDIX 1.1 VISUAL ASSESSMENT METHODOLOGY

AD06 .02

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1 Visual assessment methodology

1.1 Introduction

- 1.1.1 This appendix sets out the methodology for assessing the likely significant effects of the North London Heat and Power Project (the 'Project') on visual receptors.
- 1.1.2 Visual effects relate to changes that arise in the composition of available views, as a result of changes arising from the Project and the responses of receptors (people) to these changes.
- 1.1.3 This appendix is divided into the following parts:
- engagement – describing a summary of comments included in the Scoping Opinion and received on the Preliminary Environmental Information Report (PEIR) and through further stakeholder engagement and how these comments have been addressed;
 - legislation and guidance – detailing requirements of the relevant National Policy Statements (NPS), how these have been addressed and additional guidance relevant to the assessment;
 - methodology for establishing baseline conditions; and
 - methodology for the assessment of construction, operation decommissioning and cumulative effects.

1.2 Engagement

- 1.2.1 A summary of the responses to the Scoping Report and subsequent consultation are provided in Vol 3 Appendix 1.1 Table 1.

Vol 3 Appendix 1.1 Table 1 Visual stakeholder engagement – comments and responses

Organisation and date	Comment	Response
Scoping response: Secretary of State (November 2014)	No evidence has been provided to substantiate that the new configuration of buildings, some of which would be taller and have a greater massing, but would be largely inconspicuous and characteristic of the existing site/surroundings. <i>"The Scoping Report fails to recognise the combined effects of the existing plant with the proposed plant" and "also fails to address the potential effects due to the visible plume and any potential cumulative effects with other proposed developments".</i>	The visual assessment presented in Vol 3 of the ES provides an assessment of the potential visual effects which would arise as a result of the Project. Combined and cumulative effects have been considered within this assessment.
	<i>"The Secretary of State advises that the ES [Environmental Statement] should describe the</i>	A detailed methodology has been provided identifying the models used, the extent of the survey area and the

Organisation and date	Comment	Response
	<i>models used (for example in defining the Zone of Theoretical Visibility (ZTV)), provide information on the area it covers, the timing of any survey work and the methodology used. The Secretary of State recommends that the location of viewpoints should be agreed with the local authorities and other relevant stakeholders such as Natural England and the Lee Valley Regional Park Authority."</i>	methods used. The timing of survey work has been identified on the baseline photos. The London Borough of Enfield (LB Enfield), Lee Valley Regional Park Authority (LVRPA) and Natural England (NE) have been consulted regarding the location of viewpoints, see consultation responses later in this table.
	<i>"The Secretary of State requests that careful consideration should be given to the form, siting, and use of materials and colours in terms of minimising the adverse visual impact of these structures, and the extent to which they will appear coherent with the existing industrial structures in the wider area."</i>	Where possible within the Design Code Principles for the Project careful consideration has been given to the form, siting, and use of materials and colours for the proposed structures in terms of minimising the adverse visual impact.
	<i>"The proposals will be for large structures. The Secretary of State requests that careful consideration should be given to the form, siting, and use of materials and colours in terms of minimising the adverse visual impact of these structures."</i>	
	<i>"The visual impact of the stack and the visible plume it would generate will need to be considered, as should the worst case impacts if the existing buildings are not demolished before operation of the proposed plants commences (as suggested by Paragraph 3.2.5 of the Scoping Report). The likely extent of the visible plume should be illustrated on the proposed photomontages, together with those of all other power stations within the ZTV for the proposed development."</i>	The stack and the variable extent of the associated plume have been considered within the assessment and have been illustrated on the wirelines. For a limited time during Stage 2 the existing and the proposed facilities and their associated stacks would be visible. In certain weather conditions plumes may be visible from both stacks.
	<i>"Paragraph 11.2.4 explains that the proposed development would be largely inconspicuous and characteristic of the existing site and that therefore the nature of existing views would be unlikely to change significantly. The likely change in views should be described and assessed in the ES"</i>	Wirelines illustrating the maximum parameters of the Project have been provided to illustrate the potential worst-case impacts i.e. when both the existing Energy from Waste (EfW) facility and the proposed Energy Recovery Facility (ERF) are both present.

Organisation and date	Comment	Response
	<i>however, supported by photomontages from relevant receptors to illustrate the potential worst case impacts."</i>	Wirelines have been provided as opposed to photomontages as it was considered that, in conjunction with the Design Code Principles, they provided sufficient information to inform the assessment.
Scoping response: LB Enfield (November 2014)	<i>"Reference also does not appear to be made within the EIA topics section regarding Arboricultural and landscape implications. It is considered that these should be scoped in."</i>	The landscape strategy considers the potential impacts on trees and where possible the trees along the boundaries of the Application Site would be retained.
	<i>"It is also considered that there is a need for a full tree survey and Arboricultural constraints plan as well as a comprehensive landscaping plan. This latter item should cover the buffer zone planting adjacent to the waterways to mitigate against any tree removals. All of these items should be scoped in the EIA."</i>	Full tree surveys have been undertaken for the main body of the Application Site and along Lee Park Way. A tree loss plan is included as part of the Arboricultural Report (Vol 3 Appendix 1.2) and a comprehensive landscape strategy (refer to the Design and Access Statement (AD05.07)) has been prepared. Buffer zone planting to mitigate tree removals has been included in the landscape strategy.
Scoping response: English Heritage (November 2014)	<i>"The potential for impacts on views from Chingford Mill, and for its significance to be affected, cannot yet be understood from the information provided. While there may not be a substantial change in the use of the site proposed for the EDF [sic], as stated in para 6.3.10, a significant change in scale of the facility (as compared to the present structures) could result in an impact that requires assessment in the EIA."</i>	A further viewpoint at Pumping Station House (viewpoint 14) was added to the assessment viewpoints.
LB Enfield (March 2015)	<i>"The viewpoint location chosen for the baseline visual assessment would appear acceptable in principal."</i>	No further action required.
LVRPA (March 2015)	<i>"The Proposed Viewpoints cover the main areas in terms of the Regional Park, although it would be interesting to have an additional view looking across the site in the south from the vantage point of the A406 North Circular Road i.e. from the clockwise carriageway. The wireframe locations are again helpful for the applicant as they will help in assessing impact on the immediate and adjoining Park areas to the north and south. An additional wireframe</i>	The additional view from the vantage point of the A406 North Circular Road has not been included within the assessment as it is considered that viewpoints 2, 3 and 10 sufficiently cover visual receptors at this location. The additional wireframe from viewpoint 14 has not been included as it is considered that this aspect is sufficiently covered with the preparation of the wireframes for viewpoint 2 in the near distance and viewpoint 1 at Chase Lane Park in the middle distance as well as the

Organisation and date	Comment	Response
	<i>from viewpoint 14 would enable assessment from the east, across from the other side of the Park."</i>	assessment of the effects on visual receptors at viewpoint 14.
NE (March 2015)	<i>"... Natural England has no objections or further recommendations to add."</i>	No further action required.
Phase Two Consultation response: LB Enfield (June 2015)	<i>"...the need for this development to be of the highest quality in terms of design and emissions that take the receptors including the new community of Meridian Water into account."</i>	The Meridian Water development, as well as other identified receptors, has been considered within the visual assessment.
	Regarding the decommissioned incinerator site: <i>"this area would constitute a significant feature and it will be important to ensure it should make a positive contribution to visual amenity during this period."</i>	The existing EfW facility's plot would be covered with hardstanding which may include gravel following demolition of that facility as it is being safeguarded for future other waste related development.
	<i>"There are concerns regarding the height of EcoPark House due to its siting adjoining the Lee Navigation but this is more to do with height and visual impact..."</i>	The visual impact of EcoPark House has been considered within the assessment. The proposed EcoPark House has been reduced from 3 storeys to 2 storeys.
	<i>"Combined with green walls and the use of high quality materials as well as the raising of grounds level towards the eastern elevation, to integrate the building alongside a comprehensive landscape scheme, it is considered this approach could appropriately respond to the sensitivities of this corridor and the LVRP [Lee Valley Regional Park]."</i>	The design of the Project has sought to integrate it within its environment through use of high quality materials and taking advantage of topography. Although green walls have not been proposed, areas of green and brown roof are included.
	LB Enfield considers the visual impact of the stack is exacerbated by the regular presence of the plume.	This has been considered in the visual assessment.
	<i>"The local planning authority is comfortable with the approach and approach to mitigation. However, an appropriate consideration need to be given to site lighting to ensure light spill will not unduly affect the local environment and biodiversity interests."</i>	Noted. An assessment of operational lighting in visual terms has not been undertaken on the basis that this would not be significantly different to the present situation. Effects of lighting on ecology are, however, considered in Vol 2 Section 5 of the Environmental Statement (ES).

Organisation and date	Comment	Response
Phase Two Consultation response: LVRPA (June 2015)	Regarding all built structures including the proposed ERF, Resource Recovery Facility (RRF)/Reuse and Recycling Centre (RRC) and EcoPark House: <i>“the cumulative visual impacts could be considerable and largely negative in terms of the Regional Park and particularly when walking or cycling along the adjacent waterside paths.”</i> Regarding EcoPark House: <i>“...there is very little room to ‘soften’ such buildings with planting; they need to be of sufficient quality from the outset to avoid negative impacts on the adjoining waterway and Park area.”</i>	The effects of the entire Project on the visual amenity of park users have been assessed. EcoPark House has been reduced in height to reduce its visual impact.
	<i>“Care should be taken however not to add to light pollution in the area and to consider the Lea Valley SMINC and the role of the Lee Navigation and Lea Park Way as a wildlife and ‘dark’ corridor.”</i>	Additional dense planting has been incorporated between the River Lee Navigation and Lee Park Way to minimise light spill onto the dark corridor.
	Regarding the requested additional view from the A406 North Circular Road and the additional wireframe from viewpoint 14, LVRPA withdrew their request on 21 August 2015.	No further action required.
Phase 2 Consultation response: Greater London Authority (June 2015)	<i>“...the applicant should provide a views analysis to understand the degree that this structure will impact on the setting of the neighbouring conservation area.”</i>	There are no Conservation Areas within the vicinity of the Application Site. Viewpoints have been agreed with NE, LVRPA and LB Enfield.
	<i>“The applicant is required to undertake a views analysis to demonstrate whether the proposals will result in any negative impact on the openness of the adjoining MOL. This should include a series of specific views from within the site and within the MOL and these will need to be agreed for testing in discussion with GLA officers and the Council.”</i>	There are no areas of Metropolitan Open Land within the vicinity of the Application Site. However views located within the adjacent Green Belt have been included within the assessment.

1.3 Legislation and guidance

- 1.3.1 There is no single method or legislation for the assessment of visual effects. However, the Landscape Institute and the Institute of Environmental Management and Assessment have guidance entitled the Guidelines for

Landscape and Visual Impact Assessment (GLVIA)¹ and the assessment of the Project has followed this. In addition, within London, further guidance on visual assessments is provided by the London View Management Framework (LVMF) Supplementary Planning Guidance².

1.3.2 There are two National Policy Statements (NPS) of direct relevance to the Project:

- a. EN-1: Overarching NPS for Energy; and
- b. EN-3: NPS for Renewable Energy Infrastructure.

1.3.3 Vol 3 Appendix 1.1 Table 2 and Vol 3 Appendix 1.1 Table 3 identify the NPS policy requirements which relate to visual amenity and provide an outline of how these requirements have been addressed within the assessment.

Vol 3 Appendix 1.1 Table 2 Visual NPS EN-1 requirements

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
Para 5.2.4 – <i>“The impact of stack height on landscape and visual amenity will be a consideration.”</i>	The maximum parameters in terms of height and size of the proposed stack has been assessed.	Vol 3 Section 1.6 of the ES
Para 5.9.4 – <i>“Where considering visual impacts of thermal combustion generating stations the IPC [Infrastructure Planning Commission – now the Planning Inspectorate] should presume that the adverse impacts would be less if a hybrid or direct cooling system is used and that developers will use the Best Available Techniques. The IPC should therefore expect the applicant to justify Best Available Techniques for the use of a cooling system that involves visible steam plumes or has a high visible structure, such as a natural draught cooling tower. It should be satisfied that the application of modern hybrid cooling technology or other technologies is not reasonably practicable before giving consent to a development with natural draught cooling towers.”</i>	Different options are being considered for the cooling system. For the purposes of the assessment, a worst-case scenario in terms of plume production has been assumed.	Vol 3 Section 1.6 of the ES
Para 5.9.5 – <i>“The applicant should carry out a landscape and visual assessment and report it in the ES. The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the project. The applicant’s assessment should also take account of any relevant policies based on these assessments in local development documents in England.”</i>	A visual assessment has been carried out for the Project. The assessment of townscape effects has been scoped out of the assessment because the existing townscape character is defined by the	Vol 3 of the ES Vol 1 Section 5.3 and Vol 3 Section 1.1 of the ES for explanation of why townscape has been scoped out.

¹ Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment 3rd Edition.

² Greater London Authority (2012) London View Management Framework supplementary planning guidance.

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
	presence of the existing waste management facilities and the Project would not significantly alter this.	
Para 5.9.6 – “The applicant’s assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character.” Para 5.9.8 – “Landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape. Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting operational and other relevant constraints the aim should be to minimise the harm to the landscape, providing reasonable mitigation where possible and appropriate.” Para 5.9.14 – “Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development document has policies based on landscape character assessment, these should be paid particular attention.’	The assessment of townscape effects was scoped out of the assessment because the existing townscape character is defined by the presence of the existing waste management facilities and the Project would not significantly alter this.	Vol 1 Section 5.3 and Vol 3 Section 1.1 of the ES for explanation of why townscape has been scoped out
Para 5.9.7 – “The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include light pollution effects, including local amenity, and nature conservation.”	The visual assessment has considered the visual effects that would arise as a result of the construction, operation and demolition of the Project. An assessment of the construction stage night time lighting was scoped out as construction activities would take place primarily during the day time and where lighting is required capped lighting would be used.	Vol 3 of the ES

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
	An assessment of the operational stage lighting has not been undertaken as the operational lighting would be similar to the present situation.	
Para 5.9.15 – Projects “<i>will often be visible within many miles of the application site of the proposed infrastructure.</i>” The Planning Inspectorate will judge “<i>whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project.</i>”	ZTV plans have been prepared for the maximum building parameters for both the building and the stack to demonstrate the theoretical extent of visibility of the Project. It is considered that significant effects would arise within a maximum 2km radius from the Application Site due to the scale of the Project within the view. Beyond the 2km radius the Project would gradually become less prominent within the view as other structural features such as tall residential buildings, pylons and industrial buildings can be seen in the foreground of the views. Representative viewpoints from sensitive receptors have been selected within the 2km radius of the ZTV.	Vol 3 of the ES
Para 5.9.17 – “<i>The IPC [now the Planning Inspectorate] should consider whether the project has been designed carefully, taking into account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation.</i>”	The Code of Construction Practice (Vol 1 Appendix 3.1) and the landscape strategy have been informed as part of an iterative process during the assessment process to minimise, where possible, visual effects.	Vol 3 Section 1.6 of the ES

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
Para 5.9.18 – “All proposed energy infrastructure is likely to have visual effects for many receptors around proposed site. The IPC [now the Planning Inspectorate] will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project.”	An assessment of the effects on visual receptors with particular focus on the most sensitive receptors (residential and recreational) has been undertaken for the construction, operational and decommissioning stages of the Project.	Vol 3 of the ES
Para 5.9.19 – “It may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impacts on sensitive receptors. This may assist the IPC [now the Planning Inspectorate] in judging the weight it should give to the assessed visual impacts of the proposed development.”	The Project has the advantage of having an existing facility which is being replaced on the same site. This has informed understanding of the local context and the potential for significant effects and thus the scope of all assessment topics, including the visual assessment.	N/A
Para 5.9.20 – “The IPC [now the Planning Inspectorate] should ensure applicants have taken into account the landscape and visual impacts of visible plumes from chimney stacks and/or the cooling assembly. It may need to attach requirements to the consent requiring the incorporation of particular design details that are in keeping with the statutory and technical requirements.”	The visual assessment has considered the maximum parameters in terms of height and size of the proposed stack and the worst-case scenario for plume generation in terms of both height and duration of visibility of plume.	Vol 3 Section 1.6 of the ES
Para 5.9.21 – Reducing the scale of a project can help to mitigate the visual and landscape effects on a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, the electricity generation output. There may, however be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in function. In these circumstances, the IPC may decide that the benefits of the mitigation to reduce the landscape	The Project design and the landscape strategy have been informed as part of an iterative process to minimise, where possible, visual effects. It should be noted that the Development Consent Order application does not seek approval of the detailed architectural	Vol 3 Section 1.6 of the ES Book of Plans (AD02.01)

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
and/or visual effects outweigh the marginal loss of function. Para 5.9.22 – <i>“Within a defined site, adverse landscape and visual effects may be minimised though appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.”</i>	design of buildings and further information regarding the colour and materials for the proposed buildings and a detailed landscaping scheme will be agreed at a later date.	

Vol 3 Appendix 1.1 Table 3 Visual NPS EN-3 requirements

Requirements of NPS EN-3	How the requirement is addressed	Location of where to find further detail
Para 2.5.47 – <i>“The IPC [now the Planning Inspectorate] should be satisfied that the design of the proposed generating station is of appropriate quality and minimised adverse effects on the landscape character and quality.”</i>	The Project design and the landscape strategy have been informed by the assessment process to minimise, where possible, visual effects. The assessment of townscape effects has been scoped out of the assessment because the existing townscape character is defined by the presence of the existing waste management facilities and the Project would not significantly alter this.	Vol 3 Section 1.6 of the ES Vol 1 Section 5.3 and Vol 3 Section 1.1 of the ES for explanation of why townscape has been scoped out.
Para 2.5.48 – <i>“An assessment of the landscape and visual effects of the proposed infrastructure should be undertaken in accordance with the policy set out in 5.9 of EN-1.”</i>	A visual assessment has been carried out for the Project. The assessment of townscape effects has been scoped out of the assessment.	Vol 3 of the ES Vol 1 Section 5.3 and Vol 3 Section 1.1 of the ES for explanation of why townscape has been scoped out
Para 2.5.50 – <i>“Good design that contributes positively to the character and quality of the area will go some way to mitigate adverse landscape/visual effects. Development proposals should consider the design of the generating station, including the materials to be used in the context of the local landscape.”</i>	The Project design and the landscape strategy have been informed as part of an iterative process during the assessment process to minimise, where	Vol 3 Section 1.6 of the ES Book of Plans (AD02.01)

Requirements of NPS EN-3	How requirement the is addressed	Location of where to find further detail
Para 2.5.51 – “Mitigation is achieved primarily through aesthetic aspects of site layout and building design including size and external finish and colour of the generating station to minimise intrusive appearance in the landscape as far as engineering requirements permit. The precise architectural treatment will need to be site-specific.” Para 2.5.52 – “The IPC [now the Planning Inspectorate] should expect applicants to seek to landscape waste combustion generating station site to visually enclose them at low level as seen from surrounding external viewpoints. This makes the scale of the generating station less apparent, and helps conceal its lower level, smaller scale features. Earth bunds and mounds, tree planting or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities.”	possible, visual effects.	

1.4 Baseline conditions

Current baseline

- 1.4.1 The visual baseline has been established through a combination of desk-based research and field surveys to establish the existing visual context as of 2014/2015. The desktop and field survey data sources are outlined below.
- 1.4.2 The following desktop documents have been reviewed to inform the selection of viewpoints and determination of their sensitivity:
- The London Plan 2011³; information on London wide policies relating to views; and
 - the LVMF2; information on protected viewpoints and viewing corridors, and the methodology for describing the existing view and assessing effects arising from the Project.
- 1.4.3 The following field surveys have also been undertaken:
- preliminary site visit to check the ZTV and establish the locations of visual receptors (the process for preparing the ZTV is described in paragraphs 1.4.6 to 1.4.11);
 - summer visual field surveys (July 2014) to capture the summer visual baseline photography, establish the visual characteristics of viewpoints in summer and undertake an assessment of the visual effects;

³ Greater London Authority (July 2011) The London Plan: Spatial Development Strategy for Greater London.

- c. winter visual field surveys (March 2015) to capture the winter visual baseline photography, establish the visual characteristics of viewpoints in winter and undertake an assessment of the visual effects;
- d. summer visual field survey (July 2015) for viewpoints 13 and 14;
- e. verifiable photography (April 2015): professional photography from each of the viewpoints from which a wireline⁴ has been prepared; and
- f. verifiable surveying: surveying of the camera location and photographic reference points for each of the viewpoints from which a wireline has been prepared.

1.4.4 The visual baseline has been described with reference to viewpoints that are representative of views towards the Project from visual receptors (people).

1.4.5 All viewpoints are located within the ZTV, which has been checked on-site to ensure it is an accurate indication of the theoretical visibility of the Project.

ZTV preparation methodology

1.4.6 The ZTV has been created by digitally modelling the landform within the assessment area using a digital terrain model (ground profile) combined with building height information from a digital surface model.

1.4.7 Building height information was extracted using the Ordnance Survey MasterMap buildings layer to filter out trees and other vegetation from the digital surface model, which inaccurately skew the results if left in. This is due to the model interpreting all information as a solid barrier, whereas trees frequently filter visibility rather than obstruct, particularly during winter.

1.4.8 The ZTV has been run for the maximum proposed building parameters and separately for the stack height. This has been done so the proposed stack does not disproportionately distort the ZTV map.

1.4.9 An offset of 1.6m above-ground level has been used to represent the eye level view of an average height person. The model has then highlighted areas from which the Project, with and without the proposed stack, would be theoretically visible.

1.4.10 The results have been presented on two plans showing the ZTVs, thereby highlighting the extent of visibility of the Project which would be experienced by people standing at ground level.

1.4.11 The validity of the ZTVs has been checked on-site, using professional judgement to ensure the output is a fair representation of the likely visibility of the Project. Where necessary the extent of the assessment area has then been reduced to reflect the likely visibility of the Project.

⁴ Wirelines (also referred to as wireframes) are line diagrams which illustrate the three-dimensional shape of the Project.

Receptor identification and sensitivity

- 1.4.12 Viewpoints have been selected to represent groups of visual receptors within the ZTV. Before viewpoints were selected, the different visual receptors within the assessment area were identified based on desktop research and site visits. Viewpoints were then selected to represent groups of visual receptors which have the same or a similar view towards the Application Site, based on the following attributes:
- a. theoretical visibility of the Project;
 - b. consultation and feedback from LB Enfield Council, LVRPA and NE;
 - c. the receptor type; and
 - d. the extent of screening or filtering of the view (e.g. by buildings or vegetation).
- 1.4.13 The location of each viewpoint has been confirmed in consultation with the LB Enfield Council, LVRPA and NE (see Vol 3 Appendix 1.1 Table 1 Visual stakeholder engagement – comments and responses). An additional viewpoint was added following the scoping response from English Heritage. These viewpoints have formed the basis for the visual assessment.

Description of visual baseline from each viewpoint

- 1.4.14 For each viewpoint, text and annotated photos have been used to describe the baseline characteristics in winter and summer. In each case, the following has been described:
- a. the composition of the view, including skyline, foreground, middle ground and background characteristics and how these are distinctive, aesthetically or culturally important, or detract from the view;
 - b. the nature of the view of the Application Site, including what, if anything, filters or screens the view and whether a view is a wide panorama, framed, glimpsed or part of a sequential (or kinetic) view; and
 - c. the conditions within the view that may affect the assessment, including atmospheric conditions, distance, seasonal change or building works that may block or harm views on a temporary basis.
- 1.4.15 Panoramas have been included for all viewpoints, to illustrate the baseline view. These have been created using a series of single frame images taken in portrait orientation which overlap by at least 30 per cent. These images have been stitched together using the automated cylindrical photomerge process within Photoshop CS6. It should be acknowledged that this introduces some distortion into the view and these stitched panoramas should not be relied on to provide an exact representation of the view from each viewpoint.
- 1.4.16 Where a wireline has been prepared from a viewpoint, the professionally captured verifiable photo of the baseline has been provided as either a single frame image or a wide panorama, matching what is visible to the human eye. These panoramas have been professionally created, providing accurate representations of the views from these locations, further details are provided in Section 1.6.

- 1.4.17 All viewpoints have been selected to represent the view of the Project from visual receptors (people) in publicly accessible locations. For most views, the most sensitive receptors are considered to be recreational or tourists. However, there are also some sensitive receptors (e.g. residential) located in buildings at elevated locations. Where these receptors coincide approximately with the location of one of the viewpoints, the baseline description of the view from upper storeys has been included in the text, based on professional judgement. No photos of the view from upper storeys have been included due to lack of access to private buildings.

Determining sensitivity of visual receptors

- 1.4.18 The sensitivity of visual receptors is determined taking a visual receptor's susceptibility to change in views and also the value attached to particular views into account.
- 1.4.19 The susceptibility of visual receptors to visual changes is mainly a function of their level of interaction with the landscape, for example the occupation or activity of visual receptors experiencing the view and the extent to which their attention or interest is focussed on views.
- 1.4.20 Visual receptor types are considered by category in the following hierarchy:
- a. high sensitivity – residential, recreational including tourists where attention is focused on the surrounding landscape;
 - b. medium sensitivity – transport, where views of the landscape are generally glimpsed; and
 - c. low sensitivity – active sports, employment and other institutions, where attention is generally focused on the activity rather than on the wider landscape.
- 1.4.21 Where viewpoints are located in areas that may represent multiple receptor types, the most sensitive receptor has been selected, acknowledging the presence of other sensitive receptors.
- 1.4.22 The sensitivity of a visual receptor remains the same in both summer and winter.

Future baseline

- 1.4.23 It is recognised that the landscape in London is subject to on-going change and that by 2019 when construction on the Project would start, other developments are likely to be under construction or be wholly or partially complete. Where this is known, likely changes to existing baseline conditions has been factored into the assessment. This allows the visual effects likely to arise from the Project to be based on a representative understanding of future baseline conditions and to provide a reasonable 'worst-case' assessment.
- 1.4.24 Vol 1 Appendix 5.2 of the ES summarises the other developments within the assessment area that have been considered as part of the cumulative assessment. Where these developments would also alter the baseline environment during the assessment period, this change to the baseline is described, with consideration to the following:

- a. how the developments would change the existing composition of the viewpoints (e.g. by opening up, framing or obscuring views towards the Project);
- b. how new development would alter the type and sensitivity of visual receptors at viewpoints (e.g. by changing land use); and
- c. how new development would introduce new visual receptors.

1.4.25 For this Project, while new receptors would occur, these are considered to be adequately represented by the existing viewpoints.

1.5 Construction and operation (Stages 1-3)

1.5.1 This section sets out the methodology for assessing construction and operational on visual receptors during the Stages 1-3. The construction and operational effects for Stages 1-3 have been considered together and would not be viewed separately by receptors.

1.5.2 Construction effects are temporary and relate to the plant and activity required to be present during the construction of the Project. Operational effects are considered to be long-term and relate to the construction of the built form, areas of hardstanding and landscaping within the Application Site.

1.5.3 Effects on visual amenity as a result of the plume from the proposed ERF stack have been assessed based on the plume visibility described in the Air Quality assessment (Vol 2 Section 2 of the ES). The wet flue gas treatment with no reheat option was selected for the assessment as it represents the worst case in terms of frequency and height of the visible plume. A qualitative judgement was made on the effects of the visible plume from the proposed stack compared to the existing stack based on the frequency and height of the plumes.

1.5.4 It is assumed that the visible plume from the proposed cooling towers would not differ from the plume of the existing cooling towers. Therefore these have not been given further consideration.

Assessment of Project stages

Stage 1

1.5.5 Within Stage 1, sub-stages 1a and 1d have been selected for the assessment as during both sub-stages construction activities and the operational state are considered most likely to give rise to significant effects than during the other sub-stages.

1.5.6 Sub-stage 1a would last approximately six months and would be characterised by the enabling works within the Edmonton EcoPark and adjoin areas, most notably:

- a. clearance of trees and vegetation along the eastern site boundary, Lee Park Way and the Temporary Laydown Area;
- b. establishment of the Temporary Laydown Area including site offices, storage of construction materials, plant and machinery and parking;

- c. erection of a site hoarding fencing; and
- d. creation of the Lee Park Way access.

1.5.7 Sub-stage 1d would last approximately 2.5 years and would be characterised by the construction of the proposed ERF within the northern part of the Application Site, including the structural works and associated crane movements as well as the continuous use of the Temporary Laydown Area.

Stage 2

1.5.8 Stage 2 of the Project is defined by the transition stage, when both the existing EfW facility and the newly built ERF would be visible operating side by side. This stage is estimated to last between approximately six to twelve months. The Temporary Laydown Area would still be operating and landscape works not affected by the demolition of the existing EfW facility would be completed during this stage.

Stage 3

1.5.9 This stage would last approximately two years and would be defined by the decommissioning and demolition of the existing EfW building. Notable works would include the demolition of the existing EfW building and associated site clearance, the completion of the landscape works and the reinstatement of the Temporary Laydown Area.

Assessment area

1.5.10 The construction stage assessment area has been defined as the area over which the proposed construction activity could affect peoples' views of the landscape within the wider area. A ZTV has not been prepared for construction activities because at this stage of the Project the exact construction methodologies and the type of construction machinery that would be used is unknown. However, the ZTVs which have been prepared for the maximum building and stack parameters have been used in conjunction with professional judgement as a tool to establish the extent of the visual construction stage assessment area. Professional judgement has then been applied to interpret the model, in line with guidance provided by GLVIA. All viewpoints are located within the ZTV.

1.5.11 The process for preparing the ZTV is described in paragraphs 1.4.6 to 1.4.11.

Assessment method

1.5.12 The assessment of visual effects has been undertaken with reference to representative viewpoints, using professional judgement, with reference to project descriptions, method statements and drawings. No construction stage verifiable photomontages or wirelines have been prepared because the construction effects would be temporary and it was considered that professional judgement would be sufficient to inform the assessment.

- 1.5.13 The assessment process in Section 3 of the LVMF relates specifically to permanent operational developments, and therefore this has not been followed in detail for the construction stage assessment.

Magnitude of change

- 1.5.14 The likely nature and magnitude of changes to viewpoints have been described together with the consequential effect on the visual receptor. Factors that have been considered in assessing the magnitude of change to each viewpoint are described in Vol 3 Appendix 1.1 Table 4 below, based on guidance from GLVIA.

Vol 3 Appendix 1.1 Table 4 Visual impact magnitude criteria

Impact magnitude	Definition
High	• Total loss of or major alteration to key characteristics of the view from a receptor. • Addition of new features or components which would be continuously highly visible and markedly different in character to the existing composition of the view. • Substantial changes in close proximity to the visual receptor, within the direct frame of view.
Medium	• Partial loss of or alteration to one or more key characteristics of the view from a receptor. • Addition of new features or landscape components that may be continuously highly visible, but are largely characteristic of the existing view from a receptor. • Changes a relatively short distance from a receptor, but viewed as one of a series of components in the middle ground of the view. • Substantial change partially filtered by intervening vegetation and/or built form, or viewed obliquely from the visual receptor.
Low	• Fairly small loss of, or alterations to, one or more characteristics of the view from a receptor. • Addition of new features or components that may be continuously or intermittently visible, but are largely characteristic of the existing view from a receptor. • Changes within the background of the view, viewed as one of a series of components in the wider panoramic view from a receptor. • Change largely filtered by intervening vegetation and/or built form, or viewed obliquely from the visual receptor.
Negligible	• Very limited loss or alteration of inconspicuous characteristics of the view from a receptor. • Addition of new features or components that are largely inconspicuous and characteristic of the existing site when viewed from a receptor. • Changes within the background of the view, viewed as an inconspicuous element within the wider panoramic view from a receptor. • Change almost entirely obscured by intervening vegetation and/or built form.

Significance criteria

- 1.5.15 Determination of the level of effect experienced by a visual receptor requires the application of professional judgement to weigh the findings of receptor sensitivity and the magnitude of change. This approach is recommended by GLVIA as opposed to the use of a standardised assessment matrix. The presence of any combination of factors may be considered when assessing the level of effect. This allows professional judgement to be used when determining the relative importance of different factors, which varies on a site specific basis. Effects may be adverse or beneficial.

The broad criteria that influence the level of significance and which are guided and adapted from GLVIA guidance are shown in Vol 3 Appendix 1.1 Table 5. Any one aspect described may result in a categorisation within that level of effect. Both the major and moderate categories are considered to constitute a significant effect.

Vol 3 Appendix 1.1 Table 5 Significance criteria for assessment of visual effects

Level of effect	Description
Major adverse*	A marked deterioration in the existing view.
Moderate adverse*	A noticeable deterioration in the existing view.
Minor adverse**	A discernable deterioration in the existing view.
Negligible**	No perceptible deterioration or improvement in the existing view.
Minor beneficial**	A discernable improvement in the existing view.
Moderate beneficial*	A noticeable improvement in the existing view.
Major beneficial*	A marked improvement in the existing view.

* These effects are considered to be significant.

** These effects are considered to be not significant.

1.6 Operation (Stage 4)

- 1.6.1 Operational effects are considered to be long-term and relate to the construction of the built form, areas of hardstanding and landscaping within the Application Site.
- 1.6.2 The findings of the operational stage assessment have been iteratively fed back into the design process to minimise adverse effects wherever possible. This has included the design of the built form, selection of indicative materials, and the planting design.
- 1.6.3 Effects on visual amenity as a result of the plume from the proposed ERF stack have been assessed as described in paragraph 1.5.3.

Assessment of Project stages

Stage 4

- 1.6.4 Stage 4 would be characterised by the fully operational ERF. The duration of this stage is to be confirmed, however it is considered to be a long term arrangement for the Project.

Assessment area

- 1.6.5 The operational stage assessment area has been defined as the area over which the physical components or change caused by the introduction of the Project could affect peoples' views of the landscape within the wider area. The process for establishing the assessment area follows that described in paragraph 1.5.10 for construction.

Assessment method

- 1.6.6 The methodology for assessing visual effects arising from the operation of the proposed ERF, including determining magnitude of change and level of effect, follows the construction assessment methodology described in paragraphs 1.5.12 to 1.5.15.
- 1.6.7 In certain locations the assessment of visual effects has been supported by the production of verifiable wirelines.
- 1.6.8 Verifiable wirelines are accurately prepared visualisations of the Project which have been used to determine the change to a view from specific locations. The methodology for producing the wirelines is described in the following paragraphs.
- 1.6.9 Where verifiable wirelines have not been prepared, the assessment has been undertaken based on the parameters of the Project being applied for (see Book of Plans (AD02.01)) and descriptions of the Project.

Wireline production methodology

- 1.6.10 A verifiable wireline is a wireline based on a replicable, transparent and structured process, so that the accuracy of the representation can be verified by an independent party.
- 1.6.11 The methodology followed for the assessment is based on current best practice and follow recommendations from the GLVIA Note 01/11⁵ and the LVMP Supplementary Planning Guidance.

Verifiable photography

- 1.6.12 The verifiable wirelines have been based on accurately captured and surveyed verifiable photography. Photography was captured during April 2015. The horizontal field of view was determined with reference to the LVMF. All images have a vertical field of view of 50 degrees.
- 1.6.13 The specification for the verifiable photography was as follows:

⁵ Landscape Institute (2011) Photography and photomontage in landscape and visual impact assessment, Landscape Institute Advice Note 01/11.

- a. image resolution:
 - 1. panoramic images were supplied at a minimum of 15,000 pixels wide at 300dpi;
- b. image quality:
 - 1. processed tagged image file formats⁶ (TIFF files) containing corrections for lens distortions⁷, vignetting⁸ and chromatic aberrations⁹;
 - 2. any necessary sharpening was applied uniformly across images; and
 - 3. all panoramic images were free of parallax errors¹⁰;
- c. data (marked on each file in a separate layer):
 - 1. focal length (to three decimal places where applicable);
 - 2. the lens axis;
 - 3. the details of height over survey point (between 1.55m and 1.70m high);
 - 4. field of view;
 - 5. image dimensions;
 - 6. film gate size;
 - 7. date and time; and
- d. accuracy:
 - 1. generally each individual observation set-up achieved an accuracy of + or – 45mm to Ordnance Survey grid/datum.

Verifiable surveying

- 1.6.14 Each camera location has been surveyed together with a series of clearly defined detail points within the image (e.g. corners of road markings, features on road signs, corners of building features etc.). Each image has a minimum of 10-12 clearly defined detail points taken across the width of the image at near, mid and far distance (i.e. a balance of points across the photograph).
- 1.6.15 The surveyors delivered:
 - a. points for the camera locations and each detail point were each given a unique number that related to the viewpoint number;
 - b. a CAD file containing the camera position and detail points as vertical lines;

⁶ A type of file particularly suited to high resolution images.

⁷ Displacement or errors in the images caused by irregularities in camera lens.

⁸ Reduction in an image's brightness or saturation at the periphery when compared to the centre of the image.

⁹ Colour distortion in an image caused by the inability of the camera lens to bring the various colours of light to focus at a single point.

¹⁰ Apparent change in the direction of an object caused by changes in the camera location.

- c. a spreadsheet of the camera locations and detail points including annotated descriptions; and
 - d. an image of the photo showing the detail points marked on.
 - e. Production of 3D model
- 1.6.16 The 3D model of the Project was created collaboratively with the design team, with reference to 3D models of the proposed works parameters.
- 1.6.17 All elements of the 3D model were resolved from all angles to ensure it was a complete model and therefore fully robust when creating wirelines from specific angles and locations.
- 1.6.18 Within Autodesk 3DS Max, all surfaces created as part of the 3D model were checked to ensure no co-planar faces existed anywhere in the model, with all faces appropriately sub-divided.
- 1.6.19 All elements within the 3DS Max model files were named appropriately. There were no generic names within the model files (e.g. circle, cylinder etc.) to ensure all objects can be selected and all users have full control of the 3DS Max scene.
- 1.6.20 A 3DS Max model file for each viewpoint was assembled before rendering.

Camera matching

- 1.6.21 The process of camera matching creates a virtual camera in the same location and height, and pointing in the same direction as the physical camera used on-site to capture the image.
- 1.6.22 The process involved accurately positioning the three dimensional model of the Project within each existing view. This was achieved through a process of matching the surveyed points in the digitised image with those recorded by the survey team on the existing photographs. The central horizon line in each of the existing views was then calculated and imported into 3DS Max as a backdrop to the 3D model. The survey points and specifications of the lens type relating to each view were also entered into 3DS Max.
- 1.6.23 The survey points of the camera position and each clearly defined detail point (relating to specified objects in the view) were then highlighted on the digitised image. A further check of the accuracy of the survey points in each digitised view was carried out by overlaying the central horizon line of each view with the digitised survey points prepared in 3DS Max. This additional check ensured that the survey points matched precisely. This process was undertaken independently by two different designers, with the results cross referenced to provide a further check on accuracy.
- 1.6.24 Once the process of camera matching was completed, the 3D model of the Project was accurately positioned to match each of the views captured. This was achieved by rendering the camera matched 3D model of the Project within 3DS Max at the same size as the digitised existing view.

Recommended viewing distances

- 1.6.25 It is recommended that the panoramic verified images are viewed at an optimum viewing distance in relation to the size of printed photomontage, to give a correct sense of scale.
- 1.6.26 In order for the viewer at the camera location to use the images, they must be printed large enough to hold at a comfortable 400-500mm viewing distance which, for the whole panorama is often impractical because of the size. The images are provided within an A3 format for practicality, and do not lend themselves to direct comparison out in the field.
- 1.6.27 For viewing in the field, it is more practical to use a set of 40 degree sections from the panorama, printed on A3 landscape sheets (with the image filling the full height of the paper). These can then be held up at the correct distance from the eye (as noted above) and at the height photographed from, and this would then match what is being seen in the field. It is crucial that the viewer is standing in the precise location of where the photograph was captured from.
- 1.6.28 If the panoramas are to be used in the field, they should be viewed by curving them either with the use of a cylindrical object or simply by hand with a radius of 450mm. With a standard vertical field of view, panoramas should be printed at the following sizes for true representation:
- a. 80 degrees – 630mm x 300mm;
 - b. 120 degrees – 950mm x 300mm; and
 - c. 160 degrees – 1200mm x 300mm.

1.7 Decommissioning effects

- 1.7.1 The process of decommissioning of the Project would be temporary and relate to the plant and activity required to decommission the proposed ERF alone. It has been assumed therefore that landscaping associated with the Project would remain.

Assessment of Project stages

- 1.7.2 The decommissioning of the proposed ERF is expected to take approximately two years.

Assessment area

- 1.7.3 The decommissioning stage assessment area has been defined as the area over which the physical components or change caused by the introduction of the Project could affect peoples' views of the landscape within the wider area. The process for establishing the assessment area follows that described in paragraph 1.5.10 for construction.

Assessment method

- 1.7.4 The methodology for assessing visual effects arising from the decommissioning of the proposed ERF, including determining magnitude

of change and level of effect, follows the construction assessment methodology described in paragraphs 1.5.12 to 1.5.15.

1.8 Cumulative effects

1.8.1 The general approach to assessing cumulative effects is described in Vol 1 Section 5.3 of the ES. In addition, developments over three storeys within a 2km radius have also been included within the assessment as it was considered that these developments may give rise to significant visual effects due to their elevated height. These additional developments are listed in Vol 3 Appendix 1.4 of the ES. Only known developments under construction, permitted but not yet implemented or submitted but not yet determined, within the assessment area have been considered.

1.8.2 The cumulative assessment for construction and operation has the potential for likely significant effects on receptors to be elevated.

Construction and operation (Stages 1-3)

1.8.3 During construction, cumulative effects may arise from the visibility of construction plant and activity, demolition or site hoardings at multiple sites, or increased levels of construction traffic. All available information relating to construction at other sites has been considered alongside the construction of the Project, and professional judgement applied to determine whether:

- a. significant effects arising from the Project alone would be elevated;
- b. non-significant effects arising from the Project alone would be elevated to become significant; or
- c. non-significant effects arising from the Project alone would be elevated but remain non-significant.

Operation (Stage 4)

1.8.4 The assessment of cumulative effects on visual receptors during operation has been undertaken for Year 1 in line with the assessment of effects.

1.8.5 During operation cumulative effects may arise from the presence of multiple developments, together altering the view from visual receptors. All available information relating to the design, height, massing and land use has been considered alongside the permanent design of the Project, and professional judgement applied to determine the likely change to the effects as described in paragraph 1.8.3.

NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER PROJECT

ENVIRONMENTAL STATEMENT: VOLUME 3 APPENDIX 1.2 ABORICULTURAL SURVEYS

AD06 .02

Vol 3 Appendix 1.2 Arboricultural Survey

- Tree Survey Report – Edmonton EcoPark (November 2012).
- Arboriculture Report – Edmonton EcoPark North East (February 2015).
- Arboriculture Report – Lee Park Way (February 2015).
- Tree Survey Addendum – Deephams Farm Road/Ardra Road/Land to the East of Edmonton EcoPark (August 2015).
- Indicative Tree Removal Plan.



*The Complete Professional
Arboricultural Consultancy*

November 2012
CBA10106 v1

North London Waste Authority

TREE SURVEY REPORT

Site:
Edmonton Eco-Park
North London

CBA Trees
14 Damson Crescent, Fair Oak, Eastleigh, SO50 8RE
Tel: 023 8098 6229
Email: info@cbatrees.co.uk
[www: cbatrees.co.uk](http://www.cbatrees.co.uk)



TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.

- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

Y	=	young trees
SM	=	semi-mature trees
EM	=	early mature trees
M	=	mature trees
OM	=	over-mature trees

- An assessment of a tree's physiological condition is defined as:

Good	=	fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
Fair	=	fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
Poor	=	a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
Dead	=	dead

- An assessment of a tree's structural condition is defined as:

Good	=	no significant structural defects
Fair	=	structural defects which could be alleviated through remedial tree surgery or management practices
Poor	=	structural defects which cannot be alleviated through tree surgery or management practices
Dead	=	dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality			DARK RED
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands, of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation value or other cultural value	MID BLUE
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either “*full ground level inspection*” or “*climbing inspection required*”. There may also be a further reference to the need for “*decay detection equipment*” to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

	BS5837:2012 TREE SURVEY SCHEDULE			
	Client:	North London Waste Authority	Site:	Edmonton Eco-park, North London
	Date:	22 November 2012	Consultant:	James Fuller FdSc.Arb, BTEC Nat.Dip.Arb, TechArbor.A Alex Monk TechCert (Arbor A), NCH Arb
	Tagged:	No	Weather:	Rain

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
1	Common Sycamore <i>Acer pseudoplatanus</i>	9	S	Est 500	5.0	5.0	6.0	5.0	2.0	2.0	2.0	2.0	EM	Good	Good Bifurcated at 2m above ground level Minor deadwood in crown	None required at time of survey	40+	B1
2	Common Sycamore <i>Acer pseudoplatanus</i>	9	MS <6	382	4.0	5.0	5.0	4.0	2.0	1.0	1.0	2.0	EM	Good	Fair Bifurcated at ground level Minor deadwood in crown Low hanging branches	None required at time of survey	40+	B1
3	Hybrid Black Poplar <i>Populus x canadensis</i>	8	S	240	1.0	2.0	3.0	3.0	3.0	3.0	2.0	3.0	SM	Fair	Fair Crown shape distorted due to group pressure Epicormics on trunk Minor deadwood in crown	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
4	Poplar <i>Populus spp</i>	14	S	410	5.0	6.0	4.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Good Grows with T3 Old pruning wounds on trunk Epicormics on trunk Crown shape distorted due to group pressure Minor deadwood and stubs in crown Trunk shape distorted due to group pressure	None required at time of survey	20+	B1+2
5	Hornbeam <i>Carpinus spp</i>	6	S	160	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	Y	Fair	Fair Bark wound on trunk from ground level to 2m above ground level on West side Previously crown lifted on all sides	None required at time of survey	10+	C1
6	Hornbeam <i>Carpinus spp</i>	5	S	190	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5	Y	Good	Good Developing tree Bifurcated at 3m above ground level	None required at time of survey	40+	B1
7	Hornbeam <i>Carpinus spp</i>	7	S	170	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	Y	Good	Good Developing tree Good shape and form	None required at time of survey	40+	B1
8	Hornbeam <i>Carpinus spp</i>	6	S	250	4.0	3.0	2.5	3.0	2.0	2.0	3.0	2.0	SM	Good	Good Slight lean to North Trifurcated at 2m above ground level	None required at time of survey	40+	B1
9	Holm Oak <i>Quercus ilex</i>	4	MS <6	180	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	Y	Good	Good Multi-stemmed at ground level Developing tree Low hanging branches	None required at time of survey	40+	C1
10	Hornbeam <i>Carpinus spp</i>	6	S	180	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	Y	Good	Good Developing tree	None required at time of survey	40+	C1+2
11	Hybrid Black Poplar <i>Populus x canadensis</i>	9	S	350	5.0	5.0	5.0	6.0	3.0	3.0	3.0	3.0	SM	Good	Fair Epicormics on trunk Old pruning wounds on trunk occluding Minor deadwood in crown	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
12	Silver Maple <i>Acer saccharinum</i>	13	S	310	5.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Fair Old pruning wounds on trunk Epicormics on trunk Previously crown lifted Bifurcated at 4m above ground level with tension fork Minor deadwood and stubs in crown	None required at time of survey	20+	B1+2
13	Red Oak <i>Quercus rubra</i>	4	MS <6	231	4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5	Y	Good	Fair Trifurcated at ground level Developing tree	None required at time of survey	20+	C1
14	Holm Oak <i>Quercus ilex</i>	4	MS <6	260	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y	Good	Good Developing tree Multi-stemmed at ground level Low hanging branches	None required at time of survey	40+	C1
15	Holm Oak <i>Quercus ilex</i>	4	MS <6	260	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y	Good	Good Developing tree Multi-stemmed at ground level Low hanging branches	None required at time of survey	40+	C1
16	Holm Oak <i>Quercus ilex</i>	4	MS <6	212	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	Y	Good	Good Developing tree Multi-stemmed at ground level Low hanging branches	None required at time of survey	40+	C1
17	Holm Oak <i>Quercus ilex</i>	4	MS <6	212	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y	Good	Good Multi-stemmed at ground level Developing tree Low hanging branches	None required at time of survey	40+	C1
18	Common Alder <i>Alnus glutinosa</i>	6	S	140	3.0	3.0	3.0	4.0	2.0	2.0	2.0	2.0	Y	Good	Developing tree within shrub border	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
19	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	490	5.0	6.0	4.0	5.0	2.0	3.0	3.0	2.0	SM	Good	Fair Bifurcated at 2.5m above ground level Crown shape distorted due to group pressure Minor deadwood in crown Previously crown lifted on East side	None required at time of survey	20+	B1+2
20	Hybrid Black Poplar <i>Populus x canadensis</i>	13	S	470	4.0	4.0	5.0	5.5	7.0	3.0	2.0	2.0	EM	Good	Good Epicormics on trunk Minor deadwood in crown Bifurcated at 4m above ground level	None required at time of survey	40+	B1
21	Red Oak <i>Quercus rubra</i>	9	S	150	3.0	4.0	2.0	0.0	2.0	2.0	2.0	-	Y	Good	Fair Developing tree Trunk and crown shape distorted due to group pressure Suppressed by T19	None required at time of survey	20+	C1+2
22	Silver Birch <i>Betula pendula</i>	5	S	150	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	Y	Good	Fair Developing tree Bifurcated at 2m above ground level	None required at time of survey	40+	C1
23	Silver Birch <i>Betula pendula</i>	6	S	170	2.0	2.0	2.0	1.0	3.0	3.0	3.0	3.0	Y	Good	Good Developing tree Crown shape distorted due to group pressure	None required at time of survey	40+	C1
24	Wild Cherry <i>Prunus avium</i>	7	S	320	4.0	4.0	4.0	4.0	1.5	1.5	1.5	1.5	SM	Good	Good Multi-stemmed at 1.75m above ground level Low hanging branches	None required at time of survey	40+	B1
25	Hybrid Black Poplar <i>Populus x canadensis</i>	10	S	420	5.0	5.0	5.0	5.0	4.0	3.0	3.0	3.0	SM	Good	Fair Epicormics on trunk Trifurcated at 3m above ground level Minor deadwood in crown	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
26	Hybrid Black Poplar <i>Populus x canadensis</i>	15	S	480	7.0	7.0	7.0	7.0	1.5	2.0	2.0	2.0	SM	Good	Good Epicormics on trunk Old pruning wounds on trunk Previously crown lifted Minor deadwood and stubs in crown Low hanging branches	None required at time of survey	40+	B1+2
27	Red Oak <i>Quercus rubra</i>	11	S	340	5.5	7.0	6.0	6.0	3.0	2.5	4.0	3.0	SM	Good	Fair Multi-stemmed at 2.5m above ground level Minor deadwood in crown Understorey of shrubs	None required at time of survey	40+	C1
28	Red Oak <i>Quercus rubra</i>	12	S	390	7.0	7.0	7.0	7.0	3.0	2.0	3.0	3.0	SM	Good	Good Multi-stemmed at 2m above ground level Minor deadwood in crown Old pruning wounds in crown Previously crown lifted	None required at time of survey	20+	B1+2
29	Hybrid Black Poplar <i>Populus x canadensis</i>	8	S	190	2.0	4.0	2.0	0.0	2.0	2.0	3.0	5.0	Y	Good	Fair Leans East Epicormics on trunk Developing tree	None required at time of survey	20+	C1
30	Common Lime <i>Tilia x europaea</i>	6	S	200	3.0	3.0	3.0	3.0	2.0	1.5	2.0	2.0	Y	Good	Fair Developing tree Old pruning wound on trunk occluding at 1.3m above ground level Bifurcated at 1.5m above ground level with compression fork and included bark	None required at time of survey	20+	C1+2
31	Hornbeam <i>Carpinus spp</i>	4	S	150	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	Y	Good	Good Developing tree	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
32	Common Lime <i>Tilia x europaea</i>	3	S	120	2.0	1.0	1.5	1.5	1.5	2.0	2.0	2.0	Y	Good	Fair Developing tree Old pruning wounds on trunk Trifurcated at 1.7m above ground level	None required at time of survey	20+	C1
33	Hornbeam <i>Carpinus spp</i>	4	S	90	2.0	3.0	0.5	0.0	2.0	2.0	2.0	-	Y	Fair	Fair Developing tree Bark wound at base on North-west side occluding Trunk and crown shape distorted due to group pressure	None required at time of survey	10+	C1+2
34	Common Ash <i>Fraxinus excelsior</i>	11	MS <6	505	5.0	6.0	5.0	5.0	3.0	4.0	1.0	2.0	SM	Good	Fair Bifurcated at ground level Basal suckers Growing on bank Waterway to East Minor deadwood in crown	None required at time of survey	40+	C1
35	Flowering Cherry <i>Prunus spp</i>	9	S	350	5.0	5.0	5.0	5.0	2.0	2.0	2.0	3.0	EM	Good	Fair Multi-stemmed at 2m above ground level Minor deadwood and stubs in crown	None required at time of survey	20+	B1
36	Silver Birch <i>Betula pendula</i>	6	S	210	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Y	Good	Fair Developing tree Bifurcated at 2m above ground level	None required at time of survey	20+	C1
37	Cappadocian Maple <i>Acer cappadocicum</i>	7	S	170	3.0	2.0	4.0	3.0	3.0	3.0	3.0	3.0	Y	Good	Fair Trunk and crown shape distorted Developing tree	None required at time of survey	40+	C1
38	Silver Birch <i>Betula pendula</i>	4	S	160	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	Y	Good	Fair Developing tree Old pruning wounds on trunks	None required at time of survey	40+	C1
39	Hybrid Black Poplar <i>Populus x canadensis</i>	7	S	440	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	EM	Fair	Fair Previously pollarded at 4-5m above ground level Epicormics on trunk	None required at time of survey	10+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
40	Hybrid Black Poplar <i>Populus x canadensis</i>	8	S	700	2.0	4.0	2.0	2.0	0.0	0.0	0.0	0.0	EM	Good	Fair Epicormics on trunk and in crown Previously pollarded at 4m above ground level Large old pruning wounds	None required at time of survey	10+	C1
41	Tree of Heaven <i>Ailanthus altissima</i>	8	S	340	5.0	5.0	6.0	5.0	2.0	2.0	2.0	2.0	EM	Good	Fair Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
42	Silver Birch <i>Betula pendula</i>	11	S	250	4.0	5.0	4.0	3.0	1.5	1.5	2.0	2.0	SM	Good	Fair Bifurcated at 2m above ground level Minor deadwood and stubs in crown Old pruning wounds on trunk occluding	None required at time of survey	20+	B1
43	Tree of Heaven <i>Ailanthus altissima</i>	9	S	350	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	EM	Good	Good Multi-stemmed at 3m above ground level Minor deadwood in crown	None required at time of survey	40+	B1
44	Flowering Cherry <i>Prunus spp</i>	7	S	350	5.0	5.0	5.0	6.0	2.0	2.0	2.0	3.0	EM	Good	Fair Part of linear group Grows in planting pit within paved area Multi-stemmed at 2m above ground level Old pruning wounds in crown occluding Previously crown lifted	None required at time of survey	10+	C1+2
45	Tree of Heaven <i>Ailanthus altissima</i>	6	S	200	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	Y	Good	Bifurcated at 2.5m above ground level Developing tree	None required at time of survey	40+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
46	Flowering Cherry <i>Prunus spp</i>	7	S	180	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Y	Good	Fair Part of linear group Grows in paved area Multi-stemmed at 1.5m above ground level Old pruning wounds on trunk occluding Previously crown lifted Crown shape distorted	None required at time of survey	20	C1+2
47	Tree of Heaven <i>Ailanthus altissima</i>	12	S	500	6.0	6.0	6.0	6.0	2.0	3.0	2.0	2.0	EM	Fair	Fair Part of linear group Grows in planting pit in paved area Roots lifting paving Girdling roots at base Old pruning wounds in crown occluding Epicormics in crown Previously crown reduced	None required at time of survey	20+	B1+2
48	Hybrid Black Poplar <i>Populus x canadensis</i>	20	S	810	9.0	10.0	9.0	8.0	2.0	2.0	2.0	2.0	M	Good	Fair Bifurcated at 3.5m above ground level Tear out wound on South side Minor deadwood in crown	None required at time of survey	20+	B1
49	Italian Alder <i>Alnus cordata</i>	10	S	230	2.0	3.0	3.0	3.0	4.0	3.0	1.0	1.0	Y	Good	Fair Trunk and crown shape distorted due to group pressure Developing tree Minor deadwood in crown	None required at time of survey	20+	C1
50	Italian Alder <i>Alnus cordata</i>	13	S	320	5.0	3.0	2.0	4.0	1.0	2.0	2.0	1.0	SM	Good	Fair Trunk and crown shape distorted due to group pressure Minor deadwood in crown	None required at time of survey	20+	B1+2
51	Silver Maple <i>Acer saccharinum</i>	13	S	390	6.0	6.0	6.0	5.0	2.0	2.0	0.5	3.0	EM	Good	Fair Multi-stemmed at 3m above ground level Low hanging branches	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
52	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	630	5.0	6.0	6.0	9.0	2.0	2.0	2.0	2.0	EM	Good	Fair Epicormics on trunk and in crown Bifurcated at 5m above ground level Branch tears on stem to North side at 7m above ground level occluding with pocket decay Previously pollarded at 14m above ground level	None required at time of survey	20+	C1
53	Hybrid Black Poplar <i>Populus x canadensis</i>	16	S	420	7.0	6.0	6.0	5.0	3.0	3.0	3.0	3.0	EM	Good	Good Epicormics on trunk Minor deadwood in crown Mechanical damage to surface roots	None required at time of survey	40+	B1+2
54	Weeping Willow <i>Salix x chrysocoma</i>	4	S	220	2.5	2.5	2.5	2.5	0.0	0.0	0.0	0.0	SM	Good	Good Memorial tree Bifurcated at 2m above ground level Low hanging branches	None required at time of survey	40+	B1+3
55	Italian Alder <i>Alnus cordata</i>	15	S	340	3.0	5.0	3.0	1.0	3.0	3.0	3.0	3.0	SM	Good	Fair Leans West Minor deadwood in crown	None required at time of survey	20+	C1
56	Italian Alder <i>Alnus cordata</i>	12	S	360	4.0	4.0	5.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Good Upper trunk shape distorted Minor deadwood in crown	None required at time of survey	40+	B1
57	Common Alder <i>Alnus glutinosa</i>	9	S	300	3.0	3.0	4.0	2.0	3.0	3.0	3.0	3.0	SM	Good	Fair Trunk and crown shape distorted Basal suckers Bifurcated at 3.5m above ground level	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
58	Common Alder <i>Alnus glutinosa</i>	8	S	280	5.0	3.0	5.0	5.0	2.0	2.0	3.0	2.0	SM	Good	Good Basal suckers Old pruning wounds on trunk occluding Previously crown lifted Minor deadwood and stubs in crown Crown shape distorted due to group pressure Grows with T57	None required at time of survey	20+	B1+2
59	Hybrid Black Poplar <i>Populus x canadensis</i>	15	S	410	5.0	5.0	7.0	5.0	4.0	3.0	2.0	3.0	EM	Fair	Good Trunk shape distorted Leans East Minor deadwood in crown	None required at time of survey	20+	B1
60	Hybrid Black Poplar <i>Populus x canadensis</i>	7	S	140	1.5	2.0	2.0	1.5	2.0	2.0	2.0	2.0	Y	Good	Good Developing tree Old pruning wounds on trunk Epicormics on trunk	None required at time of survey	40+	C1
61	Hybrid Black Poplar <i>Populus x canadensis</i>	17	S	480	9.0	6.0	7.0	9.0	3.0	3.0	4.0	2.0	M	Good	Fair Trunk shape distorted Epicormics in crown Minor deadwood in crown	None required at time of survey	40+	B1
62	Red Oak <i>Quercus rubra</i>	7	S	210	5.0	3.0	4.0	4.0	3.0	2.0	3.0	2.0	Y	Fair	Fair Old pruning wounds on trunk occluding Bifurcated at 2m above ground level with compression fork and included bark	None required at time of survey	10+	C1
63	Red Oak <i>Quercus rubra</i>	4	S	180	3.0	4.0	3.0	2.0	2.5	2.5	2.5	2.5	Y	Fair	Fair Developing tree Trunk and crown shape distorted	None required at time of survey	20+	C1
64	Red Oak <i>Quercus rubra</i>	10	S	460	5.0	5.0	5.0	5.0	2.0	1.5	2.0	2.0	EM	Good	Fair Growing on slope Multi-stemmed at 1.5m above ground level with compression forks and included bark	None required at time of survey	20+	B1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
65	Apple <i>Malus spp</i>	5	MS <6	173	4.0	4.0	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Fair Multi-stemmed at ground level Minor deadwood and stubs in crown Low hanging branches	None required at time of survey	20+	C1
66	Crack Willow <i>Salix fragilis</i>	5	S	330	3.0	1.0	1.0	2.0	3.0	3.0	3.0	3.0	SM	Fair	Fair Previously pollarded at 4m above ground level Epicormics on trunk	None required at time of survey	20+	C1
67	Crack Willow <i>Salix fragilis</i>	7	S	550	3.0	1.0	0.0	2.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Basal suckers Epicormics on trunk Previously pollarded	None required at time of survey	20+	C1
68	Crack Willow <i>Salix fragilis</i>	7	S	430	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Basal suckers Epicormics on trunk Previously pollarded	None required at time of survey	20+	C1
69	Crack Willow <i>Salix fragilis</i>	7	S	500	1.0	1.0	4.0	3.0	5.0	5.0	5.0	5.0	EM	Fair	Fair Bifurcated at 4m above ground level Previously pollarded Leans South Crown shape distorted due to group pressure	None required at time of survey	10+	C1
70	Crack Willow <i>Salix fragilis</i>	13	S	510	4.0	3.0	1.0	4.0	2.0	2.0	2.0	2.0	SM	Good	Fair Grows with T71 and T72 Bifurcated at 2m above ground level West side stem multi-stemmed at 3m above ground level Old pruning wounds on trunk and in crown Crown shape distorted due to group pressure Previously pollarded at 9m above ground level Epicormics make up crown	None required at time of survey	20+	C1+2

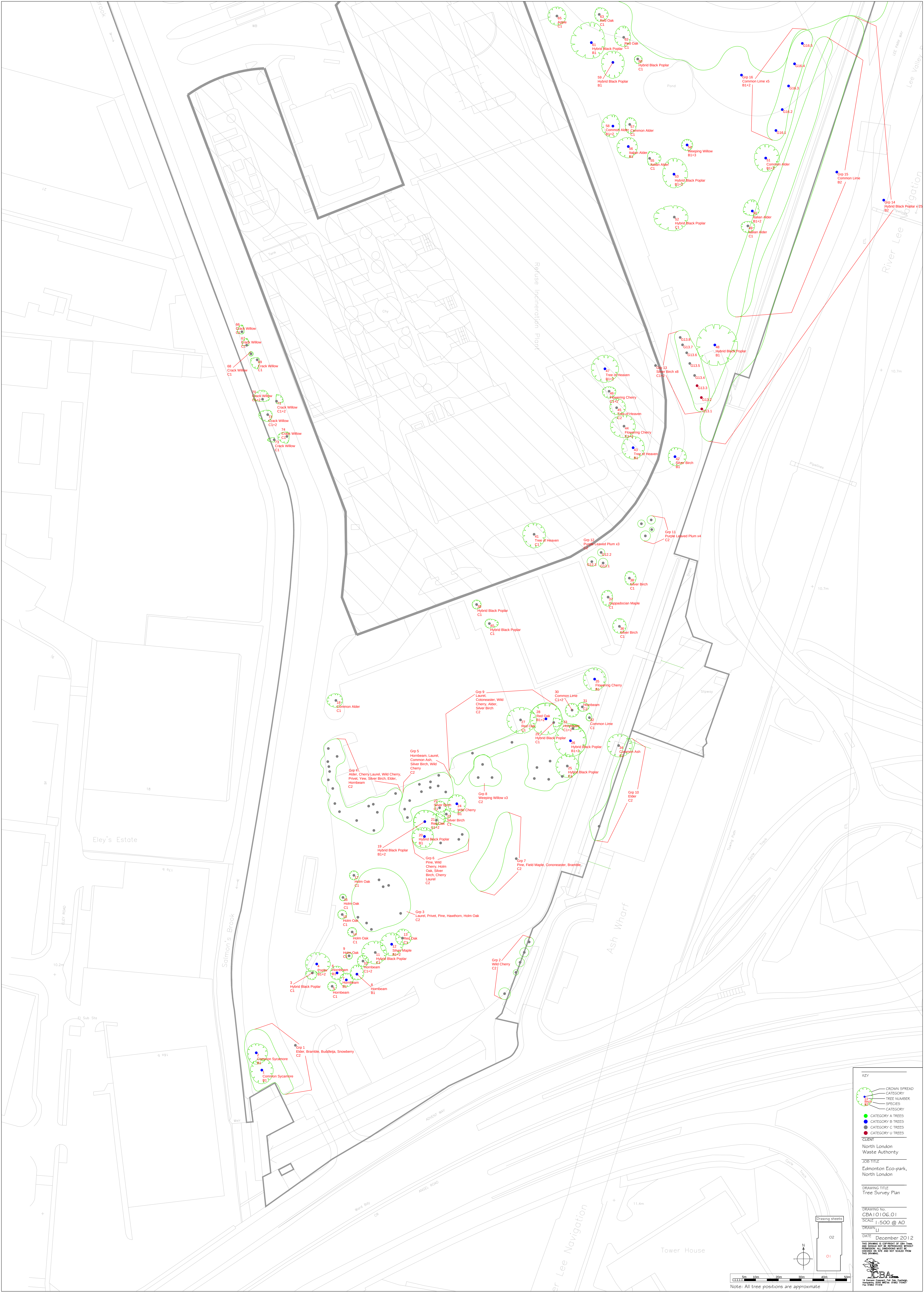
Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
71	Crack Willow <i>Salix fragilis</i>	12	S	290	3.0	3.0	1.0	0.0	3.0	3.0	3.0	-	SM	Good	Fair Grows with T70 and T72 Decaying old pruning wound at base on South side Old pruning wounds on trunk and in crown Previously pollarded at 9m above ground level Epicormics make up canopy Trunk and crown shape distorted due to group pressure Trunk leans to East	None required at time of survey	10+	C1+2
72	Crack Willow <i>Salix fragilis</i>	13	S	460	2.0	2.0	3.0	4.0	2.0	2.0	3.0	3.0	SM	Good	Fair Grows with T70 and T71 Trunk and crown shape distorted due to group pressure Trunk leans to West Old pruning wound on trunk and in crown Epicormics on trunk and in crown Previously pollarded at ground level	None required at time of survey	20+	C1+2
73	Crack Willow <i>Salix fragilis</i>	6	S	390	1.0	0.0	1.0	3.0	4.0	-	4.0	4.0	SM	Fair	Fair Old pruning wounds on trunk Previously pollarded Leans West	None required at time of survey	10+	C1
74	Crack Willow <i>Salix fragilis</i>	7	S	490	2.0	1.0	3.0	4.0	4.0	4.0	4.0	4.0	EM	Fair	Fair Old pruning wounds on trunk occluding Bifurcated at 2m above ground level Previously pollarded	None required at time of survey	10+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 1	Elder Bramble Buddleja Snowberry	5	MS <6	179	-	-	-	-	-	-	-	-	SM	Fair	Fair Scrubby boundary edge group Mainly Bramble and Snowberry with sporadic Elder Multi-stemmed at ground level Poor quality group	None required at time of survey	10+	C2
Grp 2	Wild Cherry	4	S	90	-	-	-	-	-	-	-	-	Y	Good	Good Linear group of developing trees	None required at time of survey	40+	C2
Grp 3	Laurel Privet Pine Hawthorn Holm Oak	4	S	100	-	-	-	-	-	-	-	-	Y	Good	Good Mixed species group Sporadic in places	None required at time of survey	40+	C2
Grp 4	Alder Cherry Laurel Wild Cherry Privet Yew Silver Birch Elder Hornbeam	8	S	200	-	-	-	-	-	-	-	-	Y	Good	Good Developing group with developing trees within Mainly shrub species with sporadic trees Bramble understorey Provides screening for building	None required at time of survey	20+	C2
Grp 5	Hornbeam Laurel Common Ash Silver Birch Wild Cherry	6	S	160	-	-	-	-	-	-	-	-	Y	Good	Good Mixed species group Low hanging branches Minor deadwood in crowns	None required at time of survey	40+	C2
Grp 6	Pine Wild Cherry Holm Oak Silver Birch Cherry Laurel	5	S	100	-	-	-	-	-	-	-	-	Y	Good	Good Developing group Developing trees within	None required at time of survey	40+	C2
Grp 7	Pine Field Maple Cononeaster Bramble	4	S	100	-	-	-	-	-	-	-	-	Y	Good	Good Developing group Mixed species	None required at time of survey	40+	C2

Tree No	Species	H't (m)	Single/ Multi- Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio- logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 8	Weeping Willow x3	7	S	260	-	-	-	-	-	-	-	-	Y	Good	Fair Low hanging branches Willow tree to North has fallen and is lying on ground Minor deadwood in crowns	None required at time of survey	20+	C2
Grp 9	Laurel Cotoneaster Wild Cherry Alder Silver Birch	6	S	210	-	-	-	-	-	-	-	-	Y	Good	Fair Mixed species group Low hanging branches Sporadic in places	None required at time of survey	20+	C2
Grp 10	Elder	3	MS <6	170	-	-	-	-	-	-	-	-	SM	Fair	Fair Multi-stemmed at ground level growing on bank Self-set group Poor quality group	None required at time of survey	10+	C2
Grp 11	Purple Leaved Plum x4	4	S	249	-	-	-	-	-	-	-	-	Y	Fair	Fair Multi-stemmed at 2m above ground level	None required at time of survey	20+	C2
Grp 12	Purple Leaved Plum x3	4	See below	See below	-	-	-	-	-	-	-	-	Y	Good	Fair Developing group Previously crown lifted Old pruning wounds on trunk and in crown Bark wounds on stems	None required at time of survey	20+	C2
G12.1	Purple Leaved Plum		S	110											Leans to East			C
G12.2	Purple Leaved Plum		S	100														C
G12.3	Purple Leaved Plum		S	140														C
Grp 13	Silver Birch x8	10	See below	See below	-	-	-	-	-	-	-	-		Y	Fair 3 x 'U' grade trees within group Developing trees within group Bifurcated at various heights Crown shapes distorted due to group pressure Minor deadwood and stubs in crowns	None required at time of survey	10+	C1+2
G13.1	Silver Birch		S	90														U

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
G13.2	Silver Birch		S	110														U
G13.3	Silver Birch		S	80														U
G13.4	Silver Birch		S	180														C
G13.5	Silver Birch		S	190														C
G13.6	Silver Birch		S	120														C
G13.7	Silver Birch		S	140														C
G13.8	Silver Birch		S	130														C
Grp 14	Hybrid Black Poplar x 25	18	S	300	-	-	-	-	-	-	-	-	SM	Good	Good Linear group Minor deadwood in crowns Epicormics on trunks Waterway to North-east	None required at time of survey	40+	B2
Grp 15	Common Lime	7	S	190	-	-	-	-	-	-	-	-	Y	Good	Good Developing trees Linear group	None required at time of survey	40+	B2
Grp 16	Common Lime x5	10	See below	See below	-	-	-	-	-	-	-	-	SM	Good	Good Developing group Provides third line of trees along East boundary Good shape and form	None required at time of survey	40+	B1+2
G16.1	Common Lime		S	240														B
G16.2	Common Lime		S	230														B
G16.3	Common Lime		S	150														B
G16.4	Common Lime		S	290														B
G16.5	Common Lime		S	200														B
Grp 17	Common Alder Silver Birch Field Maple Poplar Hawthorn	7	S	110	-	-	-	-	-	-	-	-	Y	Good	Good Mixed species group Growing on bank Low hanging branches Approximately 300 trees	None required at time of survey	40+	B2
Grp 18	Willow Hawthorn Wild Cherry	7	S	130	-	-	-	-	-	-	-	-	Y	Fair	Fair Off-site mixed species group	None required at time of survey	40+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 19	Crack Willow	13	S	Est 350	-	-	-	-	-	-	-	-	SM	Good	Good Off-site group Unable to verify health and safety due to no access Old and new pruning wounds on trunk and in crown Previously crown lifted Growing on bank Part of linear group	Gain access and re-survey within 1 month	20+	B2



KEY

- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY

● CATEGORY A TREES
● CATEGORY B TREES
● CATEGORY C TREES
● CATEGORY U TREES

CLIENT
North London
Waste Authority

JOB TITLE
Edmonton Eco-park,
North London

DRAWING TITLE
Tree Survey Plan

DRAWING No.
CBA\0106.01

SCALE
1:500 @ A0

DRAWN
LI

DATE
December 2012

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CBA
14 Gower Street, London WC4E 6NF
Tel: 0202 7119

Drawing sheets

02
01

Scale
0m 10m 20m 30m 40m 50m

Note: All tree positions are approximate





	BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE			
	Client:	North London Waste Authority	Site:	Edmonton Eco-park, North London
	Date:	22 November 2012	Consultant:	James Fuller FdSc.Arb, BTEC Nat.Dip.Arb, TechArbor.A Alex Monk TechCert (Arbor A), NCH Arb

Notes:

1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m² in accordance with Section 4.6.1 of BS5837:2012.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m ²)
1	Common Sycamore	B1	S	500	6.00	113.11
2	Common Sycamore	B1	MS <6	382	4.58	66.02
3	Hybrid Black Poplar	C1	S	240	2.88	26.06
4	Poplar	B1+2	S	410	4.92	76.06
5	Hornbeam	C1	S	160	1.92	11.58
6	Hornbeam	B1	S	190	2.28	16.33
7	Hornbeam	B1	S	170	2.04	13.08
8	Hornbeam	B1	S	250	3.00	28.28
9	Holm Oak	C1	MS <6	180	2.16	14.66
10	Hornbeam	C1+2	S	180	2.16	14.66
11	Hybrid Black Poplar	C1	S	350	4.20	55.42
12	Silver Maple	B1+2	S	310	3.72	43.48
13	Red Oak	C1	MS <6	231	2.77	24.14
14	Holm Oak	C1	MS <6	260	3.12	30.59
15	Holm Oak	C1	MS <6	260	3.12	30.59
16	Holm Oak	C1	MS <6	212	2.54	20.33
17	Holm Oak	C1	MS <6	212	2.54	20.33
18	Common Alder	C1	S	140	1.68	8.87
19	Hybrid Black Poplar	B1+2	S	490	5.88	108.63
20	Hybrid Black Poplar	B1	S	470	5.64	99.95
21	Red Oak	C1+2	S	150	1.80	10.18
22	Silver Birch	C1	S	150	1.80	10.18

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
23	Silver Birch	C1	S	170	2.04	13.08
24	Wild Cherry	B1	S	320	3.84	46.33
25	Hybrid Black Poplar	C1	S	420	5.04	79.81
26	Hybrid Black Poplar	B1+2	S	480	5.76	104.24
27	Red Oak	C1	S	340	4.08	52.30
28	Red Oak	B1+2	S	390	4.68	68.82
29	Hybrid Black Poplar	C1	S	190	2.28	16.33
30	Common Lime	C1+2	S	200	2.40	18.10
31	Hornbeam	C1	S	150	1.80	10.18
32	Common Lime	C1	S	120	1.44	6.52
33	Hornbeam	C1+2	S	90	1.08	3.66
34	Common Ash	C1	MS <6	505	6.06	115.39
35	Flowering Cherry	B1	S	350	4.20	55.42
36	Silver Birch	C1	S	210	2.52	19.95
37	Cappadocian Maple	C1	S	170	2.04	13.08
38	Silver Birch	C1	S	160	1.92	11.58
39	Hybrid Black Poplar	C1	S	440	5.28	87.59
40	Hybrid Black Poplar	C1	S	700	8.40	221.70
41	Tree of Heaven	C1	S	340	4.08	52.30
42	Silver Birch	B1	S	250	3.00	28.28
43	Tree of Heaven	B1	S	350	4.20	55.42
44	Flowering Cherry	C1+2	S	350	4.20	55.42
45	Tree of Heaven	C2	S	200	2.40	18.10
46	Flowering Cherry	C1+2	S	180	2.16	14.66
47	Tree of Heaven	B1+2	S	500	6.00	113.11
48	Hybrid Black Poplar	B1	S	810	9.72	296.85
49	Italian Alder	C1	S	230	2.76	23.93
50	Italian Alder	B1+2	S	320	3.84	46.33
51	Common Alder	B1+2	S	390	4.68	68.82
52	Hybrid Black Poplar	C1	S	630	7.56	179.58
53	Hybrid Black Poplar	B1+2	S	420	5.04	79.81
54	Weeping Willow	B1+3	S	220	2.64	21.90
55	Italian Alder	C1	S	340	4.08	52.30
56	Italian Alder	B1	S	360	4.32	58.64
57	Common Alder	C1	S	300	3.60	40.72
58	Common Alder	B1+2	S	280	3.36	35.47

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
59	Hybrid Black Poplar	B1	S	410	4.92	76.06
60	Hybrid Black Poplar	C1	S	140	1.68	8.87
61	Hybrid Black Poplar	B1	S	480	5.76	104.24
62	Red Oak	C1	S	210	2.52	19.95
63	Red Oak	C1	S	180	2.16	14.66
64	Red Oak	B1	S	460	5.52	95.74
65	Apple	C1	MS <6	173	2.08	13.54
66	Crack Willow	C1	S	330	3.96	49.27
67	Crack Willow	C1	S	550	6.60	136.87
68	Crack Willow	C1	S	430	5.16	83.66
69	Crack Willow	C1	S	500	6.00	113.11
70	Crack Willow	C1+2	S	510	6.12	117.68
71	Crack Willow	C1+2	S	290	3.48	38.05
72	Crack Willow	C1+2	S	460	5.52	95.74
73	Crack Willow	C1	S	390	4.68	68.82
74	Crack Willow	C1	S	490	5.88	108.63
Grp 1	Elder Bramble Buddleija Snowberry	C2	MS <6	179	2.15	14.50
Grp 2	Wild Cherry	C2	S	90	1.08	3.66
Grp 3	Laurel Privet Pine Hawthorn Holm Oak	C2	S	100	1.20	4.52
Grp 4	Alder Cherry Laurel Wild Cherry Privet Yew Silver Birch Elder Hornbeam	C2	S	200	2.40	18.10
Grp 5	Hornbeam Laurel Common Ash Silver Birch Wild Cherry	C2	S	160	1.92	11.58

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 6	Pine Wild Cherry Holm Oak Silver Birch Cherry Laurel	C2	S	100	1.20	4.52
Grp 7	Pine Field Maple Cononeaster Bramble	C2	S	100	1.20	4.52
Grp 8	Weeping Willow x3	C2	S	260	3.12	30.59
Grp 9	Laurel Cotoneaster Wild Cherry Alder Silver Birch	C2	S	210	2.52	19.95
Grp 10	Elder	C2	MS <6	170	2.04	13.08
Grp 11	Purple Leaved Plum x4	C2	S	249	2.99	28.05
Grp 12	Purple Leaved Plum x3	C2	See below	See below	See below	See below
G12.1	Purple Leaved Plum	C	S	110	1.32	5.47
G12.2	Purple Leaved Plum	C	S	100	1.20	4.52
G12.3	Purple Leaved Plum	C	S	140	1.68	8.87
Grp 13	Silver Birch x8	C1+2	See below	See below	See below	See below
G13.1	Silver Birch	U	S	90	-	-
G13.2	Silver Birch	U	S	110	-	-
G13.3	Silver Birch	U	S	80	-	-
G13.4	Silver Birch	C	S	180	2.16	14.66
G13.5	Silver Birch	C	S	190	2.28	16.33
G13.6	Silver Birch	C	S	120	1.44	6.52
G13.7	Silver Birch	C	S	140	1.68	8.87
G13.8	Silver Birch	C	S	130	1.56	7.65
Grp 14	Hybrid Black Poplar x 25	B2	S	300	3.60	40.72
Grp 15	Common Lime	B2	S	190	2.28	16.33
Grp 16	Common Lime x5	B1+2	See below	See below	See below	See below
G16.1	Common Lime	B	S	240	2.88	26.06
G16.2	Common Lime	B	S	230	2.76	23.93
G16.3	Common Lime	B	S	150	1.80	10.18
G16.4	Common Lime	B	S	290	3.48	38.05
G16.5	Common Lime	B	S	200	2.40	18.10

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 17	Common Alder Silver Birch Field Maple Poplar Hawthorn	B2	S	110	1.32	5.47
Grp 18	Willow Hawthorn Wild Cherry	C2	S	130	1.56	7.65
Grp 19	Crack Willow	B2	S	350	4.20	55.42





The Professional Arboricultural
Consultancy

COMPANY PROFILE, QUALIFICATIONS AND EXPERIENCE



CBA Trees, one of the leading professional arboricultural consultancy practices in the UK is based in Colden Common, Hampshire. There are currently four consultants working from our Hampshire office, all of varying expertise and qualifications, with another consultant working from Monmouth.



The team is headed by Colin Bashford MBE M.Arb., F.Arbor.A, MAE who, with over 45 years in the profession, is considered to be one of the most eminent professionals in this field and is a Registered Consultant of the Arboricultural Association, a Law Society approved Expert Witness and a member of the Academy of Experts.

Colin has worked on private estates; for Local and Central Government where in the latter he advised up to Ministerial level for government bodies, agencies and departments, as well as acting as the Inspecting Officer on Appeals, or Technical Assessor at Public Local Inquiries.

In 1990, Colin retired from public service and formed a sole practitioner company; this has since blossomed into a thriving Practice which was formally incorporated in 1993.

His expertise leads Colin to act as an expert witness on behalf of well-known household names. A listing of some of the clients of CBA Trees can be found on pages 3 and 4 of this document.

Colin is a past Chairman of the Board of Governors for Merrist Wood College in Guildford, and has served for many years on the Board of Directors of the International Society of Arboriculture and that of ISA Europe Ltd. He is currently President of the International Society of Arboriculture.



Stefan Rose joined CBA Trees in 1998 as a junior surveyor/arborist, and he has gained experience in almost every field of our work, under guidance and supervision of the senior consultants. Stefan holds the Arboricultural Association Technician's Certificate, and now as a Senior Consultant, he takes instructions from his own expanding client base, as well as assisting our Principal Consultant on prestigious casework. Stefan continues his studies towards the Professional Diploma in Arboriculture and maintains a supervisory role with our young surveyors and trainees.



James Fuller joined CBA as a student placement during 2007 and has worked continuously since that time. Having successfully completed his Foundation Degree Studies at Sparsholt College, James became a full-time surveyor/trainee consultant during Summer 2009, and now as an Arboricultural Senior Consultant he undertakes large amenity and Health & Safety audits, British Standard Surveys and provides advice in line with BS5837:2012, liaison with local authority planning and tree officers, site monitoring, provision of advice to prominent development companies and preparation of Implications Assessments and Method Statements his for ever expanding client base. As part of his professional development, James attained the Professional Tree Inspector's Certificate in November 2011.



Alex Monk has had many years of experience as an independent tree surgeon/surveyor, running his own business in Hampshire. He holds the National Certificate in Arboriculture, and the Arboricultural Association Technician's Certificate. Alex came to CBA Trees in May 2004 as a trainee surveyor/consultant, soon became a reliable and trusted member of staff, and is now a Consultant with his own extensive client base.



All consultants are trained in the use of 'state of the art' decay detection equipment, and other professional tools.

Listed below are some of the services we provide:

- Arboricultural Consultancy
- Arboricultural Impact Studies & Method Statements
- Trees in Conservation Areas
- Advice on Veteran Trees and Ancient Woodlands
- Expert Witness at PLI, and Court Work
- Arboricultural/Landscape Design
- PLI, Expert Witness and Court Work/Litigation
- Tree Survey Work (street trees, development projects, individual private sites)
- Tree Preservation Order Advice
- Tree Inspections and Hazard Risk Assessments
- Woodland Creation, Maintenance & Management
- Health & Safety issues – Inspections on behalf H&SE
- Arboricultural site and project management

CBA Trees is very proud of its client base that includes the following companies:



Residential Developers

Bryant Homes (Southern) Ltd
Bryant Homes (Weald) Ltd
Wimpey Construction
Alfred McAlpine Limited
McLean Homes (South-West) Ltd
Bovis Homes Limited
Fairview New Homes plc

Beazer Homes plc
Berkeley Homes Ltd
Edward Ware Homes
Bryant Homes (South-West) Ltd
Beechwood Homes Ltd
Taywood Homes Ltd
Heron Homes/Development Ltd

Charles Church Homes
Premier Properties Limited
Persimmon Homes Ltd
Fairclough Homes Ltd
Countryside Properties
David Wilson Developments Ltd



Retail Properties/Parks

CRS Home World Limited
Allied Breweries
John Lewis Partnership

Greene King plc
Tesco Stores Ltd
North Oxfordshire Consortium

J Sainsbury plc
Lidl GmbH UK Ltd



Business Parks

Arlington

Brixton plc

Slough Estates Ltd



Leisure

Haven Europe
BskyB

Brands Hatch Leisure Group Ltd
Royal London Parks

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RPS Planning, Transport & Environment

Town Planning Consultancy
MacGregor Smith
Lester Aldridge
Denton Hall
Bond Pearce
McKennis



Local Authorities & Government Bodies

Royal Borough of Kensington & Chelsea
Surrey Heath Borough Council
Borough of Bexley
Highways Agency
Department of Transport
Test Valley Borough Council

Rushmoor Borough Council
West Sussex County Council
Interserve Defence Services
Basingstoke Borough Council
Southampton City Council
Aspire Defence

Royal Borough of Kingston
Poole Borough Council
Hampshire County Council
Elmbridge Borough Council
Ministry of Defence

CBA Trees can be found at 14 Damson Crescent, Fair Oak, Eastleigh, SO50 8RE. Tel: 023 8098 6229 Email: info@cbatrees.co.uk

For further information, visit our web site at www.cbatrees.com which gives more detail of our expertise, and of course, our staff are always willing to help answer any queries you may have.



February 2015
CBA10106 v1

North London Waste Authority

ARBORICULTURAL REPORT

Site:
North London Heat and Power Project
INSIDE BOUNDARY



Russell House, Unit 20, Chalcroft Business Park,
Burnetts Lane, West End, Southampton, SO30 2PA
Tel: 023 8098 6229 [www: info@cbatrees.co.uk](http://www.info@cbatrees.co.uk)
The Complete Arboricultural Consultancy

ARBORICULTURAL SUMMARY REPORT:

INSIDE BOUNDARY

Client: North London Waste Authority

Site: North London Heat and Power Project

Arboricultural Consultant: Stefan Rose BSc(Hons), TechCert(Arbor.A)

Date: February 2015

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APPENDICES

CB1	Inside Boundary Addendum Tree Survey and Tree Survey Plan CBA10106.01.1 (Inside)
CB2	Inside Boundary Photographs 12-24
CB3	Qualifications and Experience

1.0 GROUP 17

Group 17 is a recently planted, native species group, growing on a raised bank of what appears to be spoil; perhaps from previous site works.

As it appears the trees within this group have been planted at the same time, they are of an even age and structurally of poor form. The few shrub species planted are being drawn up; the final species have not yet formed into dominant trees within the group.

There is little, if any ground cover or shrub layer of note and there are no trees that as yet, have developed at a significantly faster rate to develop into significant trees.

Planting appears to be at approximately 2-2.5m centre spacing, which gives a planting density of approximately 36 trees per 100m² grid.

Numerous trees have the stakes and ties still in place

CBA Trees have been informed by Arup that they are proposing to develop part of the site, group 17 falls within this area, below is information detailing tree retention and removals based on the information received.

The group contains native species which consist of the following:

Species	Approximate number of trees in section to be removed	Approximate number of trees to be retained	Approximate total number of trees within Group	Approximate Percentage within group %
Hawthorn	63	31	94	25
Apple/Pear	13	2	15	4
Field Maple	105	23	128	35
Wild Cherry	1	0	1	<1
Common Ash	45	39	84	23
Grey Poplar	8	7	15	4
Common Elder	10	0	10	3
Pedunculate Oak	5	8	13	4
Silver Birch	5	0	5	1
Common Alder	3	0	3	<1
Goat Willow	1	0	1	<1
TOTAL:	259	110	369	100%

1.1 LANDSCAPE VALUE:

As a group there is potentially a high landscape value but this can only be essentially within the site confines as it provides visual separation between existing buildings. The group is visible from public places such as the Lee Park Way and does again provide a visual barrier to the Bulk Waste building but the perimeter trees (namely T75 through to T143) provide additional separation.

1.2 ECOLOGICAL VALUE:

As one would expect, the group contains a considerable amount of litter due to wind distribution. At the time of surveying there appeared to be little ecological value within the group but an experienced and qualified Ecologist should confirm this.

As the group continues to establish and grow, there is the potential for individual trees within the group to develop and dominate in the area and become more important arboriculturally, ecologically and from a landscape perspective. However, for this to occur, management of the group would need to be undertaken in the form of thinning works and planting to improve the vertical structure of the group and shelter offered by the group.

2.0 GROUP 16

Unfortunately at the time of our survey we were unable to gain access into the area of this group. It is however considered to be planted with similar species and have structurally the same aspects as Group 17.

Group 16 is a recently planted native species group, growing on a raised bank of what appears to be spoil; perhaps from previous site works.

As it appears the trees within this group have been planted at the same time, they are of an even age and structurally of poor form. The few shrub species planted are being drawn up, the final species have not yet formed into dominant trees within the group.

There is little, if any ground cover or shrub layer of note and there are no trees that as yet have developed at a significantly faster rate to develop into significant trees.

Planting appears to be at approximately 2-2.5m centre spacing, which gives a planting density of approximately 36 trees per 100m² grid.

Numerous trees have the stakes and ties still in place.

The species are typical of a planted native group and consist of the following:

Hawthorn	Grey poplar
Apple	Common Elder
Pear	Pedunculate Oak
Field Maple	Silver Birch
Wild Cherry	Common Alder
Common Ash	Goat Willow.

Due the lack of access it was not possible at the time to count the number of species to provide a more detailed breakdown, but given the planting looks very similar to that of Group 17, it can reasonably be assumed that the percentage breakdown of species would be comparable.

2.1 LANDSCAPE VALUE:

Arguably this group has a significantly higher landscape value than that of Group 17 as it stands on the bank between the Bulk Waste area and the Lee Park Way and River Lee Navigation, effectively screening the majority of the building when in close proximity to the Bulk Waste Warehouse.

As a group there is high landscape value due to this screening aspect. The group is clearly visible from public places such as the Lee Park Way and River Lee Navigation

2.2 ECOLOGICAL VALUE:

Again, as might be expected, the group contains a considerable amount of windblown litter. At the time of surveying there appeared to be little ecological value within the group but an experienced and qualified Ecologist should confirm this.

As with Group 17, as this group continues to establish and grow there is the potential for individual trees within the group to develop and dominate the area and become more important arboriculturally, ecologically and from a landscape perspective. However, for this to occur, management of the group would need to be undertaken in the form of thinning works and planting to improve the vertical structure of the group and shelter offered by the group.

3.0 TREES 82 - 113

This is a linear group of 31 Hybrid Black Poplars (100%) that have been planted on the boundary of the site. Individually they are tall and etiolated trees but their canopies combine to form a group that provides visual separation between the site, Lee Park Way and River Lee Navigation.

3.1 LANDSCAPE VALUE:

Arguably this group has a significantly high landscape value as it stands on the boundary between the Lee Park Way, River Lee Navigation and warehouses within the site, effectively screening and/or softening the views into the site, which one assumes was the intended purpose of this planting.

As a group there is high landscape value due to this screening. The group is clearly visible from public places such as the Lee Park Way and River Lee Navigation

3.2 ECOLOGICAL VALUE:

This group of trees would appear to offer little ecological value but an experienced and qualified Ecologist should confirm this.

This group of trees may benefit from a thinning regime to allow retained trees to fill out and develop a more spreading canopy.

4.0 TREES 114 - 128

This is a linear group of 16 developing Lime trees (100%) that have been planted towards the boundary of the site as an addition to the line of Poplar trees. The canopies are beginning to combine to form a group that provides visual separation between the site, Lee Park Way and River Lee Navigation in conjunction with the

Poplars but are not as visually important or identifiable as a separate screen of trees.

4.1 LANDSCAPE VALUE:

This group has a low landscape value as it stands on the inside of the boundary Poplar trees and the views of the trees to distinguish them apart from the more dominant Poplars is difficult from outside or inside the site. The trees do help to support the larger Poplars in providing a softening of the view from Lee Park Way, River Lee Navigation and warehouses within the site, effectively screening and/or softening the views into the site, which one assumes was the intended purpose of this planting; this is somewhat limited by their current size and the Poplars.

As a group there is moderate landscape value due to this screening. The group is clearly visible from public places such as the Lee Park Way and River Lee Navigation.

4.2 ECOLOGICAL VALUE:

This group of trees would appear to offer little ecological value at present but an experienced and qualified Ecologist should confirm this.

This group of trees may benefit from a thinning regime to allow retained trees to fill out and develop a more spreading canopy.

5.0 TREES 130 - 143

This is a mixed species group of 14 developing trees consisting of Lime, Birch, Rowan, Cherry, Norway Maple, Sycamore, Alder, Elder and Ash that appear to be older or to have established more quickly than the majority of trees within Group 17.

The single Rowan tree is a windblown tree with decay at the base and has little, if any long term value.

Species	Approximate total number of trees within Group	Approximate Percentage within group %
Lime	5	36
Alder	1	7
Common Sycamore	1	7
Silver Birch	2	15
Elder	1	7
Rowan	1	7
Bird Cherry	1	7
Ash	1	7
Norway Maple	1	7
TOTAL:	14	100%

5.1 LANDSCAPE VALUE:

This group has a moderate landscape value as it stands towards the perimeter of the site but is essentially screened by the dominating boundary Poplar and Lime trees. The trees help to support the larger Poplar and Lime trees in providing a softening of the view from Lee Park Way, River Lee Navigation and warehouses within the site, effectively screening and/or softening the views into the site, which one assumes was the intended purpose of this planting; this is somewhat limited by their current size and the Poplars.

5.2 ECOLOGICAL VALUE:

This group of trees would appear to offer little ecological value at present but an experienced and qualified Ecologist should confirm this.







The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.

- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

Y	=	young trees
SM	=	semi-mature trees
EM	=	early mature trees
M	=	mature trees
OM	=	over-mature trees

- An assessment of a tree's physiological condition is defined as:

Good	=	fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
Fair	=	fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
Poor	=	a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
Dead	=	dead

- An assessment of a tree's structural condition is defined as:

Good	=	no significant structural defects
Fair	=	structural defects which could be alleviated through remedial tree surgery or management practices
Poor	=	structural defects which cannot be alleviated through tree surgery or management practices
Dead	=	dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality			DARK RED
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands, of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation value or other cultural value	MID BLUE
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either “*full ground level inspection*” or “*climbing inspection required*”. There may also be a further reference to the need for “*decay detection equipment*” to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

	BS5837:2012 TREE SURVEY REPORT (INSIDE BOUNDARY) ADDENDUM TO TREE SURVEY DATED 22/11/12						
	Client:	North London Waste Authority			Site:	North London Heat and Power Project	
	Date:	9th and 10th February 2015			Consultant:	Stefan Rose BSc(Hons), TechCert(Arbor.A) Alex Monk TechCert (Arbor A), NCH Arb	
	Tagged:	No			Weather:	Overcast, cold	

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
75	Silver Birch <i>Betula pendula</i>	10	S	230	2.0	2.0	4.0	2.5	2.5	2.5	2.5	2.5	SM	Good	Fair Trunk and crown shape distorted Recent trenching on East side 1m from stem	None required at time of survey	20+	C1
76	Italian Alder <i>Alnus cordata</i>	13	S	310	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	SM	Good	Good Minor deadwood in crown Mechanical damage to surface roots Trunk shape distorted at 5m above ground level	None required at time of survey	40+	C1

INSIDE BOUNDARY

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
77	Silver Birch <i>Betula pendula</i>	14	S	270	2.0	2.0	3.0	2.0	3.0	3.0	3.0	3.0	SM	Good	Fair Bifurcated at 3m above ground level Minor deadwood in crown	None required at time of survey	20+	C1
78	Hybrid Black Poplar <i>Populus x canadensis</i>	20	S	420	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	EM	Good	Good Epicormics on trunk	None required at time of survey	40+	B1
79	Silver Birch <i>Betula pendula</i>	5	S	190	1.5	1.0	0.5	1.0	2.0	2.0	2.0	2.0	SM	Fair	Fair Bifurcated at 1.8m above ground level Suppressed and stunted by T78	None required at time of survey	10+	C1
80	Silver Birch <i>Betula pendula</i>	4	S	230	-	-	-	-	-	-	-	-	SM	Dead	Dead stem smothered in creeper	Advise removal	<10	U
81	Silver Birch <i>Betula pendula</i>	11	S	320	2.0	3.0	3.0	0.0	4.0	4.0	4.0	-	SM	Good	Fair Trunk and crown shape distorted due to group pressure Bifurcated at 3m above ground level Minor deadwood in crown	None required at time of survey	20+	C1
82	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	390	2.0	3.0	2.0	0.0	3.0	3.0	3.0	-	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Epicormics on trunk and in crown	None required at time of survey	40+	B1+2
83	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	190	4.0	3.0	2.5	1.5	1.5	2.0	2.0	3.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown Trunk shape distorted due to group pressure	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
84	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	260	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Epicormics on trunk and in crown	None required at time of survey	40+	B1+2
85	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	260	3.0	4.0	3.5	3.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown Bifurcated at 6m above ground level	None required at time of survey	40+	B1+2
86	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	320	3.0	3.0	2.0	3.5	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Epicormics on trunk and in crown Tall and etiolated due to group pressure	None required at time of survey	40+	B1+2
87	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	330	4.0	5.0	5.0	5.5	2.0	2.0	2.0	3.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
88	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	300	2.0	3.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Good Part of linear group Epicormics on trunk and in crown Tall and etiolated due to group pressure	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
89	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	320	4.0	5.0	4.0	5.5	2.0	2.0	2.0	2.5	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
90	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	310	2.0	4.0	2.0	3.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Epicormics on trunk and in crown Tall and etiolated due to group pressure Bifurcated at 3.5m above ground level	None required at time of survey	40+	B1+2
91	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	350	4.0	5.0	4.0	6.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
92	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	260	2.0	4.0	2.0	2.5	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Epicormics on trunk and in crown	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
93	Hybrid Black Poplar <i>Populus x canadensis</i>	19	S	340	4.0	6.0	4.0	6.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
94	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	290	2.0	3.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Epicormics on trunk and in crown	None required at time of survey	40+	B1+2
95	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	380	3.0	5.0	4.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
96	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	330	2.0	3.5	2.0	4.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Multi-stemmed at 5-6m above ground level	None required at time of survey	40+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
97	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	250	3.0	4.0	3.0	3.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group P45 Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown Bifurcated at 8m above ground level	None required at time of survey	40+	B1+2
98	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	280	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Bifurcated at 9m above ground level	None required at time of survey	40+	C1+2
99	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	380	4.0	5.0	4.0	5.5	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown Bifurcated at 1.8m above ground level	None required at time of survey	40+	B1+2
100	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	250	2.0	4.0	2.0	3.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Bifurcated at 9m above ground level	None required at time of survey	40+	C1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
101	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	340	3.5	5.0	5.0	5.5	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
102	Hybrid Black Poplar <i>Populus x canadensis</i>	18	S	330	2.0	3.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Bifurcated at 2.5m above ground level	None required at time of survey	40+	B1+2
103	Hybrid Black Poplar <i>Populus x canadensis</i>	16	S	280	3.0	4.5	3.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
104	Hybrid Black Poplar <i>Populus x canadensis</i>	16	S	340	2.0	3.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Epicormics on trunk and in crown	None required at time of survey	40+	B1+2
105	Hybrid Black Poplar <i>Populus x canadensis</i>	16	S	320	3.0	4.0	3.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
106	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	310	2.0	4.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Minor deadwood in crown	None required at time of survey	40+	B1+2
107	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	350	4.0	5.0	3.0	4.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
108	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	300	2.0	3.5	2.0	2.0	3.0	3.0	3.0	3.0	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Bifurcated at 2m above ground level Minor deadwood in crown	None required at time of survey	20+	C1+2
109	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	310	3.0	4.0	3.0	6.0	2.5	2.0	2.0	2.5	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown	None required at time of survey	40+	B1+2
110	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	210	2.0	3.0	2.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Fair Part of linear group Tall and etiolated due to group pressure Bifurcated at 2m above ground level Minor deadwood in crown	None required at time of survey	20+	C1+2

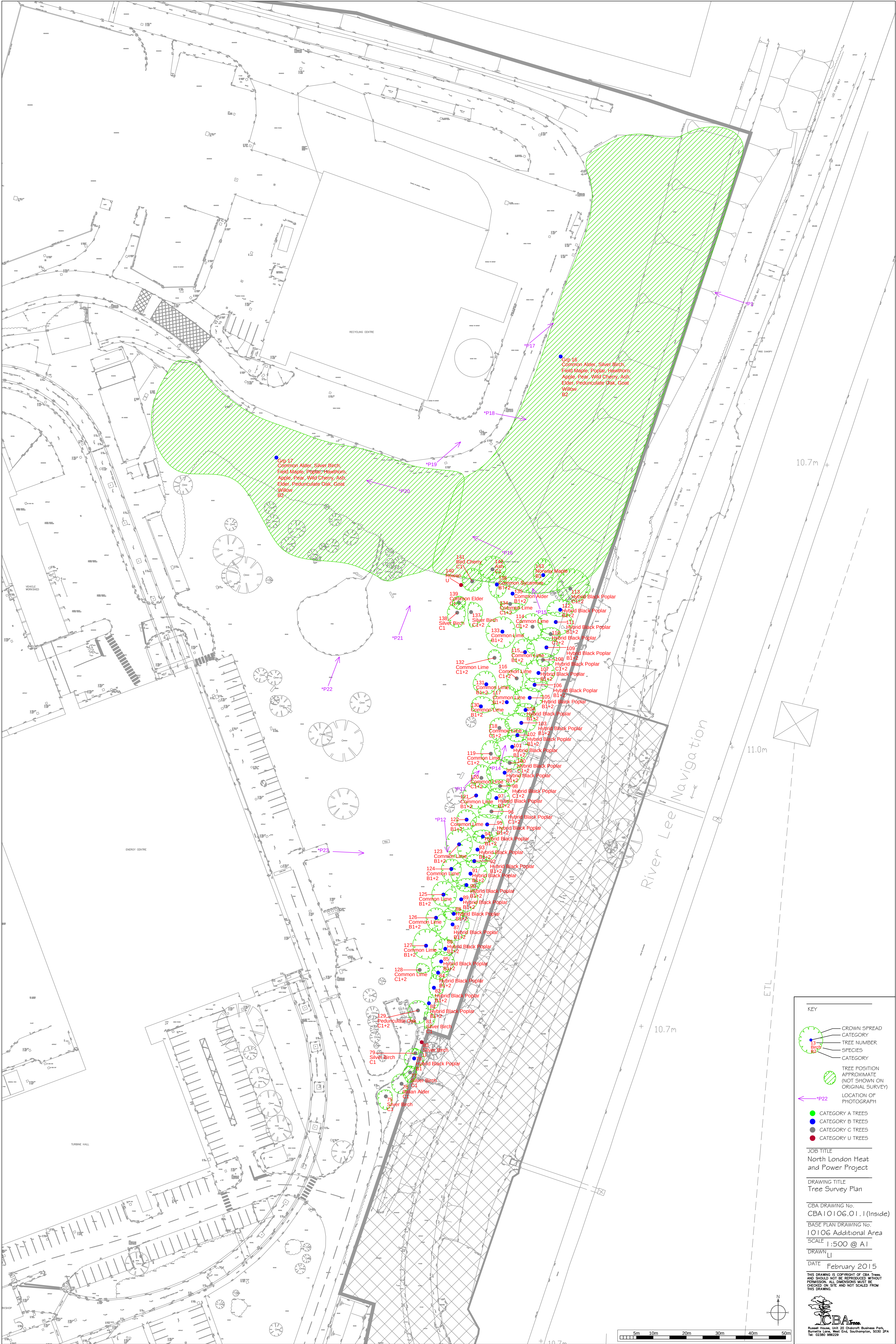
Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
111	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	350	3.0	5.0	4.0	5.5	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Tall and etiolated due to group pressure Crown shape distorted due to group pressure Epicormics on trunk and in crown Minor deadwood in crown Bifurcated at 6m above ground level	None required at time of survey	40+	B1+2
112	Hybrid Black Poplar <i>Populus x canadensis</i>	14	S	430	3.0	4.0	2.0	4.0	3.0	3.0	3.0	3.0	EM	Good	Good Part of linear group Minor deadwood in crown Crown shape distorted due to group pressure	None required at time of survey	40+	B1+2
113	Hybrid Black Poplar <i>Populus x canadensis</i>	13	S	210	6.0	6.0	4.0	4.0	3.0	3.0	3.0	3.0	SM	Good	Fair Part of linear group Crown shape distorted due to group pressure Minor deadwood in crown Weighted North	None required at time of survey	40+	C1+2
114	Common Lime <i>Tilia x europaea</i>	7	MS <6	290	4.0	3.0	4.0	4.0	1.5	1.5	1.5	1.5	SM	Good	Fair Part of linear group Bifurcated at 0.75m above ground level Crossing stems	None required at time of survey	20+	C1+2
115	Common Lime <i>Tilia x europaea</i>	7	S	260	4.0	3.0	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Good Crossing branches Part of linear group Minor deadwood in crown	None required at time of survey	40+	B1+2
116	Common Lime <i>Tilia x europaea</i>	8	S	190	3.0	2.0	4.0	3.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Bifurcated at 2m above ground level Minor deadwood in crown	None required at time of survey	40+	C1+2
117	Common Lime <i>Tilia x europaea</i>	9	S	230	5.0	4.0	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Low hanging branches Minor deadwood in crown	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
118	Common Lime <i>Tilia x europaea</i>	7	S	200	3.0	3.0	4.0	3.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Crossing branches Epicormics in crown	None required at time of survey	40+	C1+2
119	Common Lime <i>Tilia x europaea</i>	7	S	150	4.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	SM	Good	Fair Part of linear group Low hanging branches Minor deadwood in crown Bifurcated at 3.5m above ground level Trunk shape distorted Tight forks with included bark	None required at time of survey	20+	C1+2
120	Common Lime <i>Tilia x europaea</i>	7	S	200	4.0	3.0	3.0	3.0	0.5	0.5	0.5	0.5	SM	Good	Poor Vertical decaying wound from ground level to 1m above ground level Crossing branches	None required at time of survey	10+	C1+2
121	Common Lime <i>Tilia x europaea</i>	9	S	210	4.0	4.5	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Low hanging branches Old pruning wounds on trunk	None required at time of survey	40+	B1+2
122	Common Lime <i>Tilia x europaea</i>	7	S	210	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Minor deadwood in crown	None required at time of survey	40+	B1+2
123	Common Lime <i>Tilia x europaea</i>	8	S	180	4.5	4.0	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Fair Part of linear group Bifurcated at 2m above ground level Low hanging branches	None required at time of survey	40+	B1+2
124	Common Lime <i>Tilia x europaea</i>	7	S	200	3.0	3.0	4.0	3.0	0.5	0.5	0.5	0.5	SM	Good	Good Part of linear group Minor deadwood in crown	None required at time of survey	40+	B1+2
125	Common Lime <i>Tilia x europaea</i>	7	S	180	4.0	4.0	3.5	3.5	1.0	1.0	1.0	1.0	SM	Good	Fair Part of linear group Bifurcated at 2m above ground level Low hanging branches Old pruning wounds on trunk	None required at time of survey	40+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
126	Common Lime <i>Tilia x europaea</i>	8	S	270	3.0	3.0	4.0	3.0	0.0	0.0	0.0	0.0	SM	Good	Good Part of linear group Bifurcated at 2.5m above ground level Low hanging branches	None required at time of survey	40+	B1+2
127	Common Lime <i>Tilia x europaea</i>	11	S	200	5.0	5.0	4.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Low hanging branches	None required at time of survey	40+	B1+2
128	Common Lime <i>Tilia x europaea</i>	9	S	180	2.0	3.0	1.0	1.0	1.0	2.0	2.0	1.0	SM	Good	Good Part of linear group Growing on bank Crown shape distorted due to group pressure	None required at time of survey	20+	C1+2
129	Pedunculate Oak <i>Quercus robur</i>	5	S	130	3.0	3.0	4.0	3.0	2.0	3.0	1.0	2.0	Y	Fair	Fair Trunk shape distorted Crown shape distorted due to group pressure Bifurcated at 1.25m above ground level	None required at time of survey	20+	C1+2
130	Common Lime <i>Tilia x europaea</i>	9	S	230	3.0	4.0	2.0	3.0	1.0	2.0	1.0	1.0	SM	Good	Good Part of linear group Low hanging branches	None required at time of survey	40+	B1+2
131	Common Lime <i>Tilia x europaea</i>	9	S	210	4.0	3.0	3.0	4.0	1.0	1.0	1.0	1.0	SM	Good	Good Part of linear group Low hanging branches	None required at time of survey	40+	B1+2
132	Common Lime <i>Tilia x europaea</i>	7	S	160	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	SM	Good	Good Part of linear group Crossing branches Basal suckers	None required at time of survey	20+	C1+2
133	Common Lime <i>Tilia x europaea</i>	11	S	270	4.5	4.0	5.0	5.0	2.0	2.0	1.0	1.0	SM	Good	Fair Part of linear group Bifurcated at 5m above ground level Tight forks with included bark Low hanging branches Minor deadwood in crown	None required at time of survey	20+	B1+2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
134	Common Lime <i>Tilia x europaea</i>	9	S	210	0.0	3.0	3.0	3.0	0.0	1.0	1.0	1.0	SM	Good	Good Crown shape distorted due to group pressure Part of linear group Low hanging branches	None required at time of survey	40+	C1+2
135	Common Alder <i>Alnus glutinosa</i>	15	S	330	5.0	5.0	5.0	5.0	4.0	3.0	3.0	3.0	EM	Good	Good Bark wound at base on South side Part of linear group Minor deadwood in crown Bifurcated at 9m above ground level	None required at time of survey	40+	B1+2
136	Common Sycamore <i>Acer pseudoplatanus</i>	10	S	350	4.0	3.0	4.0	2.5	2.5	2.5	2.5	2.5	EM	Good	Fair Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	B1+2
137	Silver Birch <i>Betula pendula</i>	7	S	240	3.0	3.5	4.5	1.0	0.5	1.0	1.0	4.0	SM	Fair	Fair Trunk and crown shape distorted Bark wound at base on West side with slight decay Minor deadwood in crown	None required at time of survey	20+	C1+2
138	Silver Birch <i>Betula pendula</i>	12	S	220	3.0	2.5	4.5	3.0	2.0	2.0	1.0	1.0	EM	Good	Fair Trunk shape distorted due to group pressure Bark wounds on trunk	None required at time of survey	20+	C1
139	Common Elder <i>Sambucus nigra</i>	4	MS <6	200	2.0	2.0	2.0	2.0	0.5	0.5	0.5	0.5	SM	Good	Fair Multi-stemmed at ground level	None required at time of survey	20+	C1
140	Rowan <i>Sorbus aucuparia</i>	-	S	170	-	-	-	-	-	-	-	-	SM	Poor	Poor Wind blown tree Leans East and hung up in T141	Advise removal	<10	U
141	Bird Cherry <i>Prunus padus</i>	10	S	320	4.0	3.0	3.0	3.0	2.0	2.0	0.0	2.0	EM	Good	Fair Multi-stemmed at 2.5m above ground level T140 rests in crown on South side	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
142	Ash <i>Fraxinus spp</i>	12	S	170	4.0	4.0	3.0	4.0	5.0	5.0	5.0	5.0	SM	Good	Fair Growing on bank Bifurcated at 3m above ground level Crown shape distorted due to group pressure Minor deadwood in crown	None required at time of survey	20+	C1
143	Norway Maple <i>Acer platanoides</i>	9	S	230	5.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5	SM	Good	Good Growing on bank No visible defects	None required at time of survey	40+	B1
Grp 16	Common Alder Silver Birch Field Maple Poplar Hawthorn Apple Pear Wild Cherry Ash Elder Pedunculate Oak Goat Willow	9	S	150	-	-	-	-	-	-	-	-	Y	Good	Good Provides separation to public waterway River Lee Navigation and Lee Park Way	Consider thinning to improve form of individuals	40+	B2
Grp 17	Common Alder Silver Birch Field Maple Poplar Hawthorn Apple Pear Wild Cherry Ash Elder Pedunculate Oak Goat Willow	9	S	150	-	-	-	-	-	-	-	-	Y	Good	Good Mixed species group Growing on spoil bank Low hanging branches Approximately 300 trees Crown shapes distorted due to group pressure Several Poplar showing signs of decline	Consider thinning to improve form of individuals	40+	B2



KEY

- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY
- TREE POSITION APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)
- LOCATION OF PHOTOGRAPH

← *P22

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

JOB TITLE
North London Heat and Power Project

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA10106.01.1 (Inside)

BASE PLAN DRAWING No.
10106 Additional Area

SCALE
1:500 @ A1

DRAWN
U

DATE
February 2015

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CBA Trees
Russell House, Unit 20 Orchard Business Park, Burnetts Lane, West End, Southampton, SO30 2PA
Tel: 02380 986229

	BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE (INSIDE BOUNDARY) ADDENDUM TO TREE SURVEY DATED 22/11/12			
	Client:	North London Waste Authority	Site:	North London Heat and Power Project
	Date:	9th and 10th February 2015	ConsultantS:	Stefan Rose BSc(Hons), TechCert(Arbor.A) Alex Monk TechCert (Arbor A), NCH Arb

Notes:

1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m2 in accordance with Section 4.6.1 of BS5837:2012.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
INSIDE BOUNDARY						
75	Silver Birch	C1	S	230	2.76	23.93
76	Italian Alder	C1	S	310	3.72	43.48
77	Silver Birch	C1	S	270	3.24	32.98
78	Hybrid Black Poplar	B1	S	420	5.04	79.81
79	Silver Birch	C1	S	190	2.28	16.33
80	Silver Birch	U	S	230	-	-
81	Silver Birch	C1	S	320	3.84	46.33
82	Hybrid Black Poplar	B1+2	S	390	4.68	68.82
83	Hybrid Black Poplar	B1+2	S	190	2.28	16.33
84	Hybrid Black Poplar	B1+2	S	260	3.12	30.59
85	Hybrid Black Poplar	B1+2	S	260	3.12	30.59
86	Hybrid Black Poplar	B1+2	S	320	3.84	46.33
87	Hybrid Black Poplar	B1+2	S	330	3.96	49.27
88	Hybrid Black Poplar	B1+2	S	300	3.60	40.72
89	Hybrid Black Poplar	B1+2	S	320	3.84	46.33
90	Hybrid Black Poplar	B1+2	S	310	3.72	43.48
91	Hybrid Black Poplar	B1+2	S	350	4.20	55.42
92	Hybrid Black Poplar	B1+2	S	260	3.12	30.59
93	Hybrid Black Poplar	B1+2	S	340	4.08	52.30

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
94	Hybrid Black Poplar	B1+2	S	290	3.48	38.05
95	Hybrid Black Poplar	B1+2	S	380	4.56	65.33
96	Hybrid Black Poplar	C1+2	S	330	3.96	49.27
97	Hybrid Black Poplar	B1+2	S	250	3.00	28.28
98	Hybrid Black Poplar	C1+2	S	280	3.36	35.47
99	Hybrid Black Poplar	B1+2	S	380	4.56	65.33
100	Hybrid Black Poplar	C1+2	S	250	3.00	28.28
101	Hybrid Black Poplar	B1+2	S	340	4.08	52.30
102	Hybrid Black Poplar	B1+2	S	330	3.96	49.27
103	Hybrid Black Poplar	B1+2	S	280	3.36	35.47
104	Hybrid Black Poplar	B1+2	S	340	4.08	52.30
105	Hybrid Black Poplar	B1+2	S	320	3.84	46.33
106	Hybrid Black Poplar	B1+2	S	310	3.72	43.48
107	Hybrid Black Poplar	B1+2	S	350	4.20	55.42
108	Hybrid Black Poplar	C1+2	S	300	3.60	40.72
109	Hybrid Black Poplar	B1+2	S	310	3.72	43.48
110	Hybrid Black Poplar	C1+2	S	210	2.52	19.95
111	Hybrid Black Poplar	B1+2	S	350	4.20	55.42
112	Hybrid Black Poplar	B1+2	S	430	5.16	83.66
113	Hybrid Black Poplar	C1+2	S	210	2.52	19.95
114	Common Lime	C1+2	MS <6	290	3.48	38.05
115	Common Lime	B1+2	S	260	3.12	30.59
116	Common Lime	C1+2	S	190	2.28	16.33
117	Common Lime	B1+2	S	230	2.76	23.93
118	Common Lime	C1+2	S	200	2.40	18.10
119	Common Lime	C1+2	S	150	1.80	10.18
120	Common Lime	C1+2	S	200	2.40	18.10
121	Common Lime	B1+2	S	210	2.52	19.95
122	Common Lime	B1+2	S	210	2.52	19.95
123	Common Lime	B1+2	S	180	2.16	14.66
124	Common Lime	B1+2	S	200	2.40	18.10
125	Common Lime	B1+2	S	180	2.16	14.66
126	Common Lime	B1+2	S	270	3.24	32.98
127	Common Lime	B1+2	S	200	2.40	18.10
128	Common Lime	C1+2	S	180	2.16	14.66
129	Pedunculate Oak	C1+2	S	130	1.56	7.65

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
130	Common Lime	B1+2	S	230	2.76	23.93
131	Common Lime	B1+2	S	210	2.52	19.95
132	Common Lime	C1+2	S	160	1.92	11.58
133	Common Lime	B1+2	S	270	3.24	32.98
134	Common Lime	C1+2	S	210	2.52	19.95
135	Common Alder	B1+2	S	330	3.96	49.27
136	Common Sycamore	B1+2	S	350	4.20	55.42
137	Silver Birch	C1+2	S	240	2.88	26.06
138	Silver Birch	C1	S	220	2.64	21.90
139	Common Elder	C1	MS <6	200	2.40	18.10
140	Rowan	U	S	170	-	-
141	Bird Cherry	C1	S	320	3.84	46.33
142	Ash	C1	S	170	2.04	13.08
143	Norway Maple	B1	S	230	2.76	23.93
Grp 16	Common Alder Silver Birch Field Maple Poplar Hawthorn Apple Pear Wild Cherry Ash Elder Pedunculate Oak Goat Willow	B2	S	150	1.80	10.18
Grp 17	Common Alder Silver Birch Field Maple Poplar Hawthorn Apple Pear Wild Cherry Ash Elder Pedunculate Oak Goat Willow	B2	S	150	1.80	10.18



Inside Boundary: Photographs 12-24



Photograph 12:

Looking South-east towards trees 95-81 (background), 123-128 (foreground) (read left to right) and tree 48 on the right side of the photograph



Photograph 13: Looking North-east towards trees 112-100 (background) and 114-121(foreground) (read left to right)



Photograph 14: Looking northwards between trees 119-114 (left side of photograph) and 100-112 (right side of photograph) (read front to back)



Photograph 15: Looking North into Group 17, trees 134, 135 and 136 are the more dominant trees on the left side of the photograph



Photograph 16: Looking North-west into Group 17



Photograph 17: Looking North-east into Group 16



Photograph 18: Looking East into Group 16



Photograph 19: Looking North-east into Group 16



Photograph 20: Looking West, along the top of the bank within Group 17



Photograph 21: Looking North to Group 17, trees 138 and 139 are on the right side of the photograph



Photograph 22:

Looking North to Group 17, trees 59-64 on the left hand of the photograph, trees 105-117 and 130-143 on the right hand side of the photograph



Photograph 23:

Looking East to trees 113-81 (left to right) with trees 114-128 (left to right) and tree 51 standing in front with canopies just visible, tree 48 stands to the right hand side and tree 52 stands on the left hand side of the photograph.



Photograph 24:

Looking East to trees 75-113 (left to right), tree 150 is on the right hand side of the photograph and tree 48 stands to the left hand side of the photograph.





The Professional Arboricultural Consultancy

Qualifications of Stefan Rose Senior Consultant

Stefan Rose BSc.Hons. AA Tech.Cert. joined CBA Trees in 1998 as a junior surveyor and having gained extensive knowledge has become a respected Senior Consultant. He has considerable experience in working as a locum for Local Authorities, assessing new and extant Tree Preservation Orders, and continues to work on a number of major development projects nationwide.

As a retained Senior Consultant, Stefan undertakes Health and Safety Audits and BS5837:2012 Tree Surveys using the latest data capture equipment, together with site assessments and site monitoring. He also provides advice to prominent development companies and produces Implications Assessments and Method Statements for the submission of planning applications.



February 2015
CBA10106 v1

North London Waste Authority

ARBORICULTURAL REPORT

Site:
North London Heat and Power Project
OUTSIDE BOUNDARY



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The Complete Arboricultural Consultancy

ARBORICULTURAL SUMMARY REPORT

OUTSIDE AREA

Client: North London Waste Authority
Site: North London Heat and Power Project
Arboricultural Consultant: Stefan Rose BSc(Hons), TechCert(Arbor.A)
Date: February 2015

CONTENTS

SECTION	TITLE	PAGE NO.
1.0	OUTSIDE AREA	2

APPENDICES

CB1	Outside Boundary Addendum Tree Survey and Tree Survey Plan CBA10106.01.2 (Outside)
CB2	Outside Boundary Photographs 1-11
CB3	Qualifications and Experience

1.0 OUTSIDE AREA

The majority of trees on the additional area outside the site boundary grow on either side of the Lee Park Way. The majority of trees are formed in scrub like groups of Hawthorn and Elder or young developing trees. There are numerous individual trees but they are on the whole of little notable quality.

On the western side of the Lee Park Way is an area of Japanese Knotweed that would appear to have been cut and placed on the footpath to dry out.

There is one developing Pedunculate Oak (T154) approximately midway along the Lee Park Way on the western side. The tree is young and small but has the potential to be a high quality, visually impressive tree in the long term.

Toward the northern end of the additional outside area there are several individual trees that are of a higher importance or worthy of note due to their size:

- T150 (Sycamore) is visually impressive and of high landscape value although as the tree continues to grow the adjacent power lines may require the canopy to be cut to provide the statutory clearance distances.
- T147 (Crack Willow) is a mature tree with significant decay in the lower trunk. It would appear to have been reduced in the past and it is recommended that it is either reduced/pollarded again or removed, subject to third party approval and approval from the Local planning Authority should the tree be afforded any legal protection.

The remaining trees within this area are established trees but do grow under the power lines and therefore the potential for these trees to become high quality, impressive landscape trees is limited.

1.1 LANDSCAPE VALUE:

Other than the individual trees mentioned above, overall the trees and groups in this area would appear to have a low landscape value. The majority of the trees, if not all the trees appear to be self-set natural regeneration growing on either side of the Lee Park Way and between the site boundary and the River Lee Navigation.

1.2 ECOLOGICAL VALUE:

This area of trees would appear to offer little ecological value at present, but is thought to offer potentially more value than the area within the site due to the proximity of the water way. However, an experienced and qualified Ecologist should confirm this.







The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.

- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

Y	=	young trees
SM	=	semi-mature trees
EM	=	early mature trees
M	=	mature trees
OM	=	over-mature trees

- An assessment of a tree's physiological condition is defined as:

Good	=	fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
Fair	=	fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
Poor	=	a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
Dead	=	dead

- An assessment of a tree's structural condition is defined as:

Good	=	no significant structural defects
Fair	=	structural defects which could be alleviated through remedial tree surgery or management practices
Poor	=	structural defects which cannot be alleviated through tree surgery or management practices
Dead	=	dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality			DARK RED
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands, of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation value or other cultural value	MID BLUE
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either “*full ground level inspection*” or “*climbing inspection required*”. There may also be a further reference to the need for “*decay detection equipment*” to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

	BS5837:2012 TREE SURVEY REPORT (OUTSIDE BOUNDARY) ADDENDUM TO TREE SURVEY DATED 22/11/12						
	Client:	North London Waste Authority			Site:	North London Heat and Power Project	
	Date:	9th and 10th February 2015			Consultants:	Stefan Rose BSc(Hons), TechCert(Arbor.A) Alex Monk TechCert (Arbor A), NCH Arb	
	Tagged:	No			Weather:	Overcast, cold	

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
144	Crack Willow <i>Salix fragilis</i>	14	S	860	2.0	4.0	9.0	3.0	3.0	2.0	2.0	2.0	OM	Fair	Poor Historic root plate lift, stabilised Heavy lean to South Bifurcated at 2m above ground level Grows beside pylon and canal	Create pollard at 2-3m above ground level within 12 months	20+	C1
145	Common Sycamore <i>Acer pseudoplatanus</i>	8	S	250	2.0	2.0	2.0	2.0	2.0	1.0	0.0	2.0	SM	Good	Good Grows on bank Bifurcated at 5m above ground level with decaying union	None required at time of survey	20+	C1

OUTSIDE BOUNDARY

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
146	Common Sycamore <i>Acer pseudoplatanus</i>	10	MS <6	700	4.0	3.0	4.0	5.0	2.0	0.0	2.5	2.5	EM	Good	Fair Multi-stemmed at ground level Minor deadwood in crown Sludge mains bridge to South	None required at time of survey	40+	C1
147	Crack Willow <i>Salix fragilis</i>	14	S	1030	3.0	5.0	2.5	1.0	3.0	3.0	3.0	3.0	OM	Fair	Poor Severely decayed stem Multi-stemmed at 4-5m above ground level Epicormics on trunk	Create pollard at 4-5m above ground level within 12 months	20+	C1
148	Crack Willow <i>Salix fragilis</i>	15	MS <6	1110	2.0	5.0	10.0	4.0	6.0	8.0	7.0	5.0	M	Fair	Multi-stemmed at ground level Previously crown reduced at 12m above ground level Grows under utility line Minor deadwood in crown	None required at time of survey	40+	C1
149	Common Sycamore <i>Acer pseudoplatanus</i>	9	MS <6	400	3.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	SM	Good	Fair Bifurcated at ground level Suppressed and stunted by T148	None required at time of survey	20+	C1
150	Common Sycamore <i>Acer pseudoplatanus</i>	14	S	730	7.0	6.0	8.0	7.0	2.0	3.5	2.0	2.0	M	Good	Good Minor deadwood in crown Road to East Good shape and form	None required at time of survey	40+	A1
151	Common Elder <i>Sambucus nigra</i>	3	S	190	1.0	2.0	1.0	1.0	1.0	0.0	1.0	1.0	SM	Fair	Poor Collapsed stem at base Deadwood in crown Included bark Poor quality tree	None required at time of survey	10+	C1
152	Crack Willow <i>Salix fragilis</i>	2.5	MS >5	90	3.0	3.0	3.0	3.0	0.5	0.5	0.5	0.5	SM	Good	Fair Multi-stemmed at ground level Submerged in water	None required at time of survey	20+	C1
153	Crack Willow <i>Salix fragilis</i>	2.5	MS <6	120	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Multi-stemmed at ground level Submerged in water	None required at time of survey	20+	C1
154	Pedunculate Oak <i>Quercus robur</i>	4	S	160	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	SM	Good	Good Growing on bank Developing tree	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
155	Common Elder <i>Sambucus nigra</i>	2.5	MS <6	340	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	SM	Good	Fair Multi-stemmed at ground level Minor deadwood in crown	None required at time of survey	20+	C1
156	Common Hawthorn <i>Crataegus monogyna</i>	2.5	MS >5	250	2.0	2.0	3.0	2.5	1.0	2.0	1.0	1.0	SM	Good	Fair Multi-stemmed at 0.5m above ground level Crown reduced back and lifted on East side	None required at time of survey	20+	C1
157	Common Whitebeam <i>Sorbus aria</i>	2	MS <6	90	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Y	Good	Fair Multi-stemmed at ground level Developing tree	None required at time of survey	20+	C1
158	Common Elder <i>Sambucus nigra</i>	2	MS <6	190	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	SM	Good	Fair Multi-stemmed at ground level Submerged in water	None required at time of survey	20+	C1
159	Common Whitebeam <i>Sorbus aria</i>	2.5	MS <6	140	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Fair	Fair Growing on bank Multi-stemmed at ground level Crossing branches	None required at time of survey	20+	C1
160	Common Whitebeam <i>Sorbus aria</i>	2	S	60	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Y	Good	Fair Developing tree Growing on bank	None required at time of survey	20+	C1
161	Common Hawthorn <i>Crataegus monogyna</i>	3	MS <6	130	2.0	1.5	1.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Multi-stemmed at 0.5m above ground level Low hanging branches Crossing branches	None required at time of survey	20+	C1
162	Common Elder <i>Sambucus nigra</i>	2	MS <6	280	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	SM	Good	Fair Exposed surface roots Multi-stemmed at ground level Grows out of canal bank	None required at time of survey	10+	C1
163	Common Whitebeam <i>Sorbus aria</i>	3	MS >5	190	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	SM	Good	Fair Growing on bank Multi-stemmed at ground level Decayed stem	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
164	Apple <i>Malus spp</i>	6	S	210	3.5	3.0	4.0	4.0	1.0	1.0	1.0	1.0	EM	Fair	Fair Growing on bank Bifurcated at 0.5m above ground level Storm damage in crown Tight forks with included bark Rubbing branches	None required at time of survey	20+	C1
165	Common Hawthorn <i>Crataegus monogyna</i>	3	MS <6	180	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5	SM	Good	Fair Growing on bank Multi-stemmed at ground level Crossing branches	None required at time of survey	20+	C1
166	Common Elder <i>Sambucus nigra</i>	3	MS <6	300	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	SM	Good	Fair Growing on bank Multi-stemmed at ground level Minor deadwood in crown	None required at time of survey	20+	C1
167	Common Hawthorn <i>Crataegus monogyna</i>	2.5	MS >5	180	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	Y	Good	Fair Growing on bank Multi-stemmed at ground level Developing tree	None required at time of survey	20+	C1
168	Common Elder <i>Sambucus nigra</i>	3	MS <6	320	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	SM	Good	Fair Multi-stemmed at ground level Growing by fence	None required at time of survey	20+	C1
169	Common Hawthorn <i>Crataegus monogyna</i>	2.5	MS <6	140	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Growing on bank Multi-stemmed at 0.5m above ground level Low hanging branches	None required at time of survey	20+	C1
170	Apple <i>Malus spp</i>	3	S	180	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Growing on bank Low hanging branches Crossing branches	None required at time of survey	20+	C1
171	Common Hawthorn <i>Crataegus monogyna</i>	5	MS <6	390	3.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	EM	Good	Fair Bifurcated at 1m above ground level Low hanging branches	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
172	Common Elder <i>Sambucus nigra</i>	6	MS <6	180	2.0	3.0	2.0	1.0	2.0	2.0	2.0	2.0	EM	Good	Fair Grows against metal railings Storm damage in crown Some stems grow through fencing Minor deadwood in crown Crown shape distorted	None required at time of survey	10+	C1
173	Common Elder <i>Sambucus nigra</i>	6	MS <6	180	2.0	2.0	1.0	1.5	2.0	2.0	2.0	2.0	EM	Good	Fair Grows against metal railings Storm damage in crown Some stems grow through fencing Minor deadwood in crown Crown shape distorted	None required at time of survey	10+	C1
174	Common Hawthorn <i>Crataegus monogyna</i>	2	MS <6	110	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	Y	Good	Fair Ivy on trunks Multi-stemmed at ground level Developing tree	None required at time of survey	40+	C1
175	Common Hawthorn <i>Crataegus monogyna</i>	2	S	120	1.5	1.5	1.6	1.5	0.0	0.0	0.0	0.0	SM	Good	Fair Developing tree Low hanging branches	None required at time of survey	40+	C1
176	Pedunculate Oak <i>Quercus robur</i>	2.5	MS <6	120	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	Y	Good	Good Bifurcated at ground level Developing tree	None required at time of survey	40+	C1
177	Hawthorn <i>Crataegus spp</i>	6	MS >5	40	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	SM	Good	Fair Multi-stemmed at ground level Epicormics on trunk and in crown Crown shape distorted due to group pressure Grows with Elder Low hanging branches	None required at time of survey	20+	C1
178	Common Ash <i>Fraxinus excelsior</i>	4	MS <6	160	1.0	2.0	0.5	1.0	2.0	2.0	2.0	2.0	SM	Fair	Fair Bifurcated at 0.5m above ground level Tight forks with included bark	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
179	Common Ash <i>Fraxinus excelsior</i>	5	S	130	0.0	1.5	1.5	0.5	0.0	2.0	2.0	2.0	SM	Good	Fair Developing tree Bark wound at base Crown shape distorted due to group pressure	None required at time of survey	20+	C1
180	Common Ash <i>Fraxinus excelsior</i>	5	S	120	1.0	0.5	1.0	0.0	2.0	2.0	2.0	0.0	Y	Good	Good Developing tree	None required at time of survey	20+	C1
181	Field Maple <i>Acer campestre</i>	5	MS <6	200	1.0	0.0	2.0	1.5	1.0	0.0	1.0	1.0	SM	Good	Fair Bifurcated at ground level Tight forks with included bark	None required at time of survey	40+	C1
182	Common Hawthorn <i>Crataegus monogyna</i>	2.5	MS <6	120	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Y	Good	Fair Growing on bank Multi-stemmed at ground level	None required at time of survey	20+	C1
183	Common Hawthorn <i>Crataegus monogyna</i>	2.5	MS >5	180	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	SM	Good	Fair Growing on bank Multi-stemmed at ground level	None required at time of survey	40+	C1
184	Common Hawthorn <i>Crataegus monogyna</i>	2	MS <6	130	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	Y	Good	Fair Growing on bank Bifurcated at ground level Developing tree	None required at time of survey	20+	C1
Grp 20	Elder x12	3	MS <6	140	-	-	-	-	-	-	-	-	SM	Good	Fair Multi-stemmed at ground level Understorey group to more mature trees Trunk and crown shape distorted due to group pressure Low hanging branches	None required at time of survey	20+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 21	Elder x4 Common Sycamore x3 Hawthorn x1	4	S	130	-	-	-	-	-	-	-	-	SM	Good	Fair Some multi-stemmed at ground level Some grow on edge of water Understorey to more mature trees Trunks and crown shapes distorted due to group pressure Low hanging branches Minor deadwood in crowns	None required at time of survey	20+	C2
Grp 22	Elder x7	4	S	120	-	-	-	-	-	-	-	-	SM	Fair	Fair Some multi-stemmed at ground level Trunks and crown shapes distorted due to group pressure Some lean and wind blown Low hanging branches Bark wounds on trunks Minor deadwood in crowns	None required at time of survey	10+	C2
Grp 23	Elder x10 Goat Willow x3	3	MS <6	180	-	-	-	-	-	-	-	-	SM	Good	Fair Some multi-stemmed at ground level Trunks and crown shapes distorted due to group pressure Some lean and wind blown Low hanging branches Bark wounds on trunks Minor deadwood in crowns Some grow on stream/ditch edge	None required at time of survey	20+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 24	Goat Willow x3 Elder x8 Wild Cherry x1 Hawthorn x1 Oak x 1	5	MS <6	180	-	-	-	-	-	-	-	-	SM	Fair	Fair Some multi-stemmed at ground level Trunks and crown shapes distorted due to group pressure Some lean and wind blown Low hanging branches Bark wounds on trunks Minor deadwood in crowns Some grow on stream/ditch edge Brambles beginning to smother	None required at time of survey	20+	C2
Grp 25	Hawthorn x5	5	S	110	-	-	-	-	-	-	-	-	SM	Good	Fair Growing on bank Trunks and crown shapes distorted due to group pressure Low hanging branches Multi-stemmed at various heights	None required at time of survey	20+	C2
Grp 26	Elder x16	5	MS <6	160	-	-	-	-	-	-	-	-	SM	Fair	Fair Linear group growing along boundary fence Some stems growing through fencing Major deadwood Bark wounds on trunks Crown shapes distorted due to group pressure Low hanging branches	Remove major deadwood	20+	C1
Grp 27	Hawthorn x2 Common Ash x2 Elder x1	5	S	90	-	-	-	-	-	-	-	-	Y	Good	Fair Natural regeneration Low hanging branches Hawthorn growing on bank Bark wounds to Elder and Ash Crown shapes distorted due to group pressure	None required at time of survey	10+	C2

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
Grp 28	Common Ash x2 Pedunculate Oak x2 Lime x1 Hawthorn x1 Elder x1 Hornbeam x2	5	S	120	-	-	-	-	-	-	-	-	SM	Good	Fair Mixed planting growing under power lines Some trees multi-stemmed Low hanging branches Trunks and crown shapes distorted due to group pressure	None required at time of survey	10+	C2



KEY

- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY
- TREE POSITION APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)
- LOCATION OF PHOTOGRAPH

← P22

- CATEGORY A TREES
- CATEGORY B TREES
- CATEGORY C TREES
- CATEGORY U TREES

JOB TITLE
North London Heat and Power Project

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA10106.01.2 (Outside)

BASE PLAN DRAWING No.
10106 Additional Area

SCALE
1:500 @ A1

DRAWN
J

DATE
February 2015

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	BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE - OUTSIDE BOUNDARY ADDENDUM TO TREE SURVEY DATED 22/11/12			
	Client:	North London Waste Authority	Site:	North London Heat and Power Project
	Date:	9th and 10th February 2015	Consultants:	Stefan Rose BSc(Hons), TechCert(Arbor.A) Alex Monk TechCert (Arbor A), NCH Arb

Notes:

1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m2 in accordance with Section 4.6.1 of BS5837:2012.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
OUTSIDE BOUNDARY						
144	Crack Willow	C1	S	860	10.32	334.63
145	Common Sycamore	C1	S	250	3.00	28.28
146	Common Sycamore	C1	MS <6	700	8.40	221.70
147	Crack Willow	C1	S	1030	12.36	480.00
148	Crack Willow	C1	MS <6	1110	13.32	557.46
149	Common Sycamore	C1	MS <6	400	4.80	72.39
150	Common Sycamore	A1	S	730	8.76	241.11
151	Common Elder	C1	S	190	2.28	16.33
152	Crack Willow	C1	MS >5	90	1.08	3.66
153	Crack Willow	C1	MS <6	120	1.44	6.52
154	Pedunculate Oak	C1	S	160	1.92	11.58
155	Common Elder	C1	MS <6	340	4.08	52.30
156	Common Hawthorn	C1	MS >5	250	3.00	28.28
157	Common Whitebeam	C1	MS <6	90	1.08	3.66
158	Common Elder	C1	MS <6	190	2.28	16.33
159	Common Whitebeam	C1	MS <6	140	1.68	8.87
160	Common Whitebeam	C1	S	60	0.72	1.63
161	Common Hawthorn	C1	MS <6	130	1.56	7.65
162	Common Elder	C1	MS <6	280	3.36	35.47

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
163	Common Whitebeam	C1	MS >5	190	2.28	16.33
164	Apple	C1	S	210	2.52	19.95
165	Common Hawthorn	C1	MS <6	180	2.16	14.66
166	Common Elder	C1	MS <6	300	3.60	40.72
167	Common Hawthorn	C1	MS >5	180	2.16	14.66
168	Common Elder	C1	MS <6	320	3.84	46.33
169	Common Hawthorn	C1	MS <6	140	1.68	8.87
170	Apple	C1	S	180	2.16	14.66
171	Common Hawthorn	C1	MS <6	390	4.68	68.82
172	Common Elder	C1	MS <6	180	2.16	14.66
173	Common Elder	C1	MS <6	180	2.16	14.66
174	Common Hawthorn	C1	MS <6	110	1.32	5.47
175	Common Hawthorn	C1	S	120	1.44	6.52
176	Pedunculate Oak	C1	MS <6	120	1.44	6.52
177	Hawthorn	C1	MS >5	40	0.48	0.72
178	Common Ash	C1	MS <6	160	1.92	11.58
179	Common Ash	C1	S	130	1.56	7.65
180	Common Ash	C1	S	120	1.44	6.52
181	Field Maple	C1	MS <6	200	2.40	18.10
182	Common Hawthorn	C1	MS <6	120	1.44	6.52
183	Common Hawthorn	C1	MS >5	180	2.16	14.66
184	Common Hawthorn	C1	MS <6	130	1.56	7.65
Grp 20	Elder x12	C2	MS <6	140	1.68	8.87
Grp 21	Elder x4 Common Sycamore x3 Hawthorn x1	C2	S	130	1.56	7.65
Grp 22	Elder x7	C2	S	120	1.44	6.52
Grp 23	Elder x10 Goat Willow x3	C2	MS <6	180	2.16	14.66
Grp 24	Goat Willow x3 Elder x8 Wild Cherry x1 Hawthorn x1 Oak x 1	C2	MS <6	180	2.16	14.66
Grp 25	Hawthorn x5	C2	S	110	1.32	5.47
Grp 26	Elder x16	C1	MS <6	160	1.92	11.58
Grp 27	Hawthorn x2 Common Ash x2 Elder x1	C2	S	90	1.08	3.66

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 28	Common Ash x2 Pedunculate Oak x2 Lime x1 Hawthorn x1 Elder x1 Hornbeam x2	C2	S	120	1.44	6.52



Outside Boundary: Photographs 1-11



Photograph 1: Looking West towards Group 16 from Lee Park Way



Photograph 2: Looking North-east towards trees 144, 145 and Group 20 from Lee Park Way



Photograph 3: Looking East towards tree 146 from Lee Park Way



Photograph 4: Looking South-east towards trees 147, 148, 149 and Group 21 from Lee Park Way



Photograph 5: Looking North towards tree 150 from Lee Park Way



Photograph 6: Looking West towards Group 26 from Lee Park Way



Photograph 7: Looking West towards trees 147, 148, 149 and Group 21 from Lee Park Way



Photograph 8: Looking South-east towards trees 161 (foreground) and 162 (background) from Lee Park Way



Photograph 9: Looking South-east towards trees 147, 148, 149 and Grp 21 from Lee Park Way



Photograph 10: Looking South-east towards trees 179-181 and Group 28 from Lee Park Way



Photograph 11:

Looking North West towards trees London Eco Park from Lee Park Way with the dominate trees 48, 79-113 and 150 to the left of the pylon plus trees 147 and 148 to the right side of the pylon





The Professional Arboricultural Consultancy

Qualifications of Stefan Rose Senior Consultant

Stefan Rose BSc.Hons. AA Tech.Cert. joined CBA Trees in 1998 as a junior surveyor and having gained extensive knowledge has become a respected Senior Consultant. He has considerable experience in working as a locum for Local Authorities, assessing new and extant Tree Preservation Orders, and continues to work on a number of major development projects nationwide.

As a retained Senior Consultant, Stefan undertakes Health and Safety Audits and BS5837:2012 Tree Surveys using the latest data capture equipment, together with site assessments and site monitoring. He also provides advice to prominent development companies and produces Implications Assessments and Method Statements for the submission of planning applications.



TREE SURVEY - ADDENDUM

North London Waste Authority

North London Heat and Power Project (South Section Red and Blue Areas and North Section Red Area)



Russell House, Unit 20, Chalcroft Business Park,
Burnetts Lane, West End, Southampton, SO30 2PA
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The Complete Arboricultural Consultancy

August 2015
CBA10106 v1



The Professional Arboricultural Consultancy

TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.

- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

Y	=	young trees
SM	=	semi-mature trees
EM	=	early mature trees
M	=	mature trees
OM	=	over-mature trees

- An assessment of a tree's physiological condition is defined as:

Good	=	fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
Fair	=	fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
Poor	=	a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
Dead	=	dead

- An assessment of a tree's structural condition is defined as:

Good	=	no significant structural defects
Fair	=	structural defects which could be alleviated through remedial tree surgery or management practices
Poor	=	structural defects which cannot be alleviated through tree surgery or management practices
Dead	=	dead

- An assessment of a tree's future life expectancy is defined as: **<10, 10+, 20+ or 40+ years.**

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality			DARK RED
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands, of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation value or other cultural value	MID BLUE
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either “*full ground level inspection*” or “*climbing inspection required*”. There may also be a further reference to the need for “*decay detection equipment*” to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

	TREE SURVEY REPORT (BS5837:2012)	
	Site:	North London Heat and Power Project
	Date:	20 August 2015
	Consultant:	Alex Monk TechCert (Arbor.A), NCH.Arb
	Tagged:	No

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed; carrying additional weight that increases the chance of windthrow due to a larger dense crown area; and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base.
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	H't	Single/ Multi- Stemmed	Stem Diam	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio- logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
		(m)	(S or MS)	(mm)	N	E	S	W	N	E	S	W						
SOUTH SECTION RED AREA																		
185	Common Elder <i>Sambucus nigra</i>	5	MS <6	200	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Fair	Fair Multi-stemmed at ground level Minor deadwood in crown	None required at time of survey	10+	C1
186	Rowan <i>Sorbus aucuparia</i>	4	S	120	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	SM	Fair	Fair Growing on bank Multi-stemmed at 1.6m above ground level Basal suckers	None required at time of survey	20+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
187	Common Elder <i>Sambucus nigra</i>	3	MS >5	220	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Multi-stemmed at ground level Low hanging branches	None required at time of survey	20+	C1
188	Common Elder <i>Sambucus nigra</i>	4	S	140	3.0	2.0	0.0	2.0	2.0	0.0	-	1.0	SM	Fair	Fair Leans north Crown shape distorted due to group pressure Low hanging branches	None required at time of survey	10+	C1
189	Common Elder <i>Sambucus nigra</i>	5	MS <6	220	1.0	2.0	2.0	1.0	3.0	1.0	1.0	3.0	EM	Fair	Poor Collapsed stem Bifurcated at ground level Basal suckers Low hanging branches Poor quality tree	None required at time of survey	10+	C1
190	Common Elder <i>Sambucus nigra</i>	5	MS >5	270	3.0	3.0	3.0	4.0	0.0	0.0	0.0	0.0	M	Good	Fair Multi-stemmed at ground level Low hanging branches Minor deadwood in crown	None required at time of survey	10+	C1
191	Common Elder <i>Sambucus nigra</i>	4	MS >5	220	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	SM	Good	Fair Multi-stemmed at ground level Low hanging branches Minor deadwood in crown	None required at time of survey	20+	C1
Grp 31	Pedunculate Oak Common Ash Common Hazel Common Elder	6	S	130	-	-	-	-	-	-	-	-	SM	Good	Fair Mixed species group of developing trees Many have been coppiced with regrowth All trees under 140mm diameter Group is confined between cycle path and site boundary fence Some trees within this group have been previously removed	None required at time of survey	20+	C2

Tree No	Species	H't (m)	Single/ Multi- Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m) N E S W				H't of Crown AGL (m) N E S W				Life Stage	Physio- logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
BLUE AREA																		
Grp 29	Silver Birch Field Maple Common Lime Spindle Common Ash Common Elder	6	S	140	-	-	-	-	-	-	-	-	SM	Good	Fair Mixed species group Growing on slope Rubbish within group Understorey of Bramble and Ivy	None required at time of survey	20+	C2
Grp 30	Common Hawthorn Pedunculate Oak Privet Elder Silver Birch	4	S	90	-	-	-	-	-	-	-	-	SM	Good	Fair Mixed species group providing visual separation from cycle path and main road	None required at time of survey	20+	C1
NORTH SECTION RED AREA																		
192	Crack Willow <i>Salix fragilis</i>	11	S	430	6.0	5.0	2.0	6.0	2.0	4.0	4.0	2.0	EM	Good	Fair Leans north Multi-stemmed at 2.5m above ground level Minor deadwood in crown Part of linear group Root plate lifted Unstable tree	Advise removal within 6 months	<10	U
193	Crack Willow <i>Salix fragilis</i>	11	S	420	3.0	6.0	3.0	5.0	6.0	4.0	2.0	2.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
194	Crack Willow <i>Salix fragilis</i>	11	S	390	4.0	6.0	3.0	6.0	5.0	4.0	6.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
195	Crack Willow <i>Salix fragilis</i>	11	S	410	2.0	6.0	4.0	6.0	4.0	4.0	4.0	3.0	EM	Good	Fair Part of linear group Leans north Bifurcated at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1

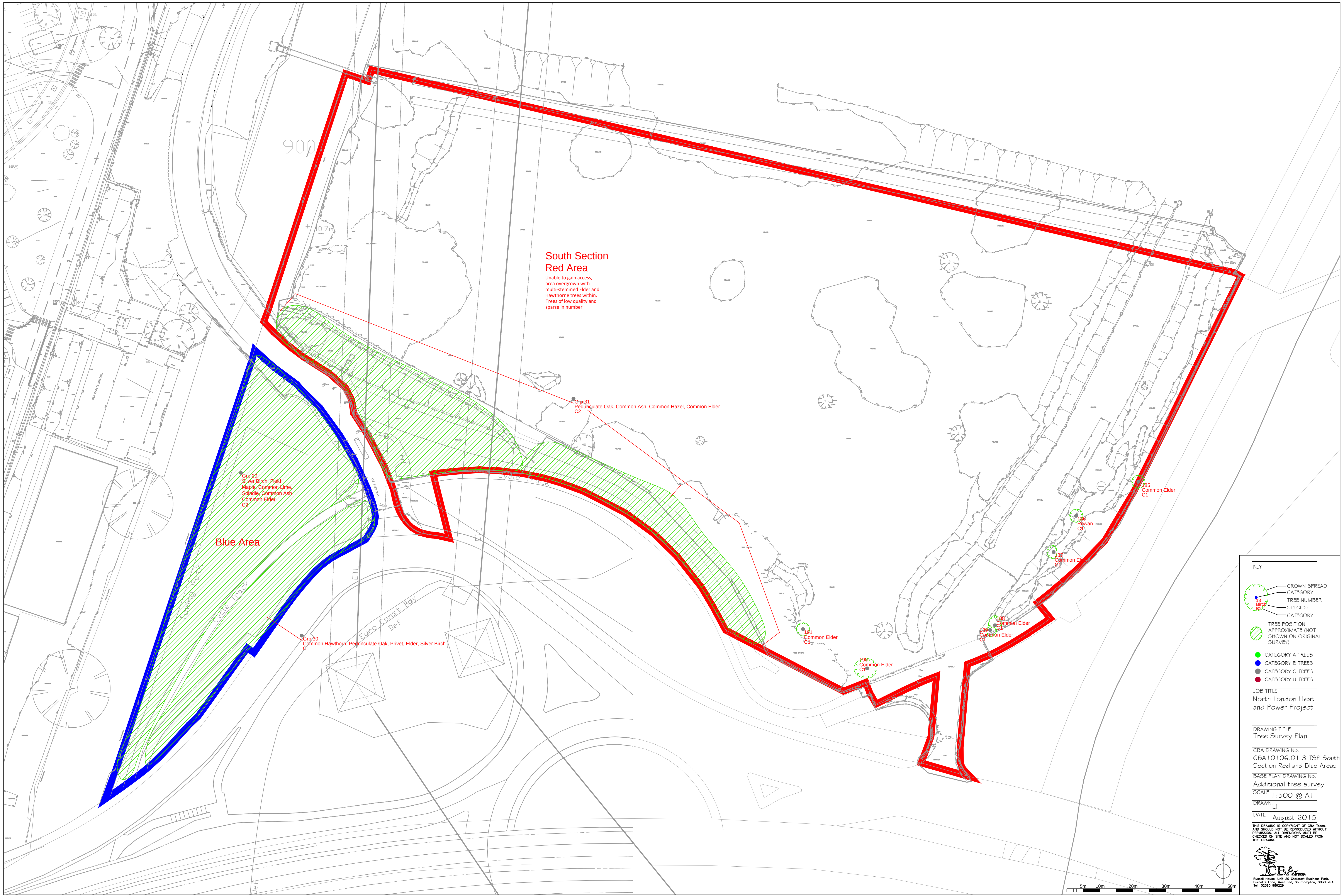
Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
196	Crack Willow <i>Salix fragilis</i>	11	S	340	5.0	5.0	4.0	6.0	0.5	4.0	2.0	0.0	SM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
197	Crack Willow <i>Salix fragilis</i>	11	S	320	3.0	5.0	2.0	6.0	4.0	4.0	4.0	0.0	SM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
198	Crack Willow <i>Salix fragilis</i>	11	S	440	4.0	6.0	3.0	6.0	2.5	4.0	3.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
199	Crack Willow <i>Salix fragilis</i>	11	S	460	4.0	5.0	3.0	5.0	2.0	4.0	3.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
200	Crack Willow <i>Salix fragilis</i>	11	S	410	2.0	4.0	5.0	5.0	2.0	4.0	2.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown Lower limbs on east side previously removed due to failure	None required at time of survey	40+	C1
201	Common Elder <i>Sambucus nigra</i>	3	MS >5	240	2.5	0.0	2.0	2.0	0.0	-	0.0	0.0	SM	Fair	Fair Suppressed and stunted Multi-stemmed at ground level Poor quality tree	None required at time of survey	10+	C1
202	Crack Willow <i>Salix fragilis</i>	11	S	380	4.0	4.0	3.0	4.0	2.0	4.0	3.0	3.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
203	Crack Willow <i>Salix fragilis</i>	11	S	420	4.0	6.0	3.0	5.0	3.0	4.0	2.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
204	Crack Willow <i>Salix fragilis</i>	11	S	350	3.0	4.0	3.0	4.0	3.0	4.0	2.0	2.0	SM	Good	Fair Part of linear group Bifurcated at 2.5m above ground level Minor deadwood in crown Stake at base	None required at time of survey	40+	C1
205	Crack Willow <i>Salix fragilis</i>	11	S	340	4.0	4.0	2.0	3.0	2.0	4.0	3.0	0.0	SM	Good	Fair Part of linear group Bifurcated at 2.5m above ground level Minor deadwood in crown Stake at base	None required at time of survey	40+	C1
206	Crack Willow <i>Salix fragilis</i>	11	S	690	8.0	8.0	7.0	3.0	3.0	3.0	2.0	2.0	M	Good	Fair Part of linear group Multi-stemmed at 2-3m above ground level Damaged long limb on east side - splitting and risk of failure	Repollard within 12 months	40+	C1
207	Crack Willow <i>Salix fragilis</i>	10	S	430	9.0	6.0	2.0	5.0	2.0	4.0	3.0	0.0	EM	Good	Fair Part of linear group Old pruning wounds on trunk occluding Minor deadwood in crown	None required at time of survey	40+	C1
208	Crack Willow <i>Salix fragilis</i>	11	S	420	3.0	5.0	3.0	4.0	4.0	4.0	5.0	1.0	EM	Good	Fair Part of linear group Old pruning wounds on trunk occluding Minor deadwood in crown	None required at time of survey	40+	C1
209	Crack Willow <i>Salix fragilis</i>	10	S	390	4.0	4.0	3.0	4.0	4.0	4.0	5.0	0.0	SM	Good	Fair Part of linear group Bifurcated at 2m above ground level Minor deadwood in crown Crown reduced on east side	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
210	Crack Willow <i>Salix fragilis</i>	10	S	410	4.0	6.0	3.0	5.0	4.0	4.0	3.0	0.0	EM	Good	Fair Part of linear group Bifurcated at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
211	Crack Willow <i>Salix fragilis</i>	10	S	400	3.0	6.0	4.0	5.0	6.0	3.0	4.0	0.0	EM	Good	Fair Part of linear group Multi-stemmed at 2m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
212	Crack Willow <i>Salix fragilis</i>	10	S	280	1.0	3.0	1.0	4.0	2.0	4.0	3.0	1.0	SM	Fair	Fair Part of linear group Trunk and crown shape distorted Bifurcated at 2m above ground level	None required at time of survey	20+	C1
213	Crack Willow <i>Salix fragilis</i>	11	S	540	5.0	4.0	4.0	6.0	4.0	3.0	4.0	0.0	M	Good	Fair Part of linear group Multi-stemmed at 1.6m above ground level Leans north Minor deadwood in crown	None required at time of survey	20+	C1
214	Crack Willow <i>Salix fragilis</i>	11	S	410	4.0	3.0	4.0	5.0	3.0	3.0	3.0	3.0	EM	Good	Fair Part of linear group Minor deadwood in crown Crown shape distorted	None required at time of survey	40+	C1
215	Crack Willow <i>Salix fragilis</i>	11	S	390	4.0	6.0	5.0	5.0	4.0	3.0	4.0	2.0	EM	Good	Fair Part of linear group Bifurcated at 2m above ground level Crown shape distorted Minor deadwood in crown	None required at time of survey	40+	C1
216	Crack Willow <i>Salix fragilis</i>	10	S	340	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	SM	Good	Fair Part of linear group Bifurcated at 2m above ground level Crown shape distorted Minor deadwood in crown	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
217	Crack Willow <i>Salix fragilis</i>	11	S	370	3.0	4.0	4.0	5.0	2.0	2.0	2.0	2.0	SM	Good	Fair Part of linear group Trifurcated at 2.5m above ground level Crown shape distorted Minor deadwood in crown Stake at base	None required at time of survey	40+	C1
218	Crack Willow <i>Salix fragilis</i>	11	MS <6	370	2.0	4.0	2.0	4.0	4.0	2.0	3.0	2.0	SM	Good	Fair Trifurcated at ground level Part of linear group Minor deadwood in crown	None required at time of survey	20+	C1
219	Crack Willow <i>Salix fragilis</i>	11	MS <6	450	4.0	5.0	4.0	5.0	3.0	3.0	3.0	0.0	SM	Good	Fair Part of linear group Bifurcated at 0.5m above ground level Minor deadwood in crown Crown shape distorted Old pruning wounds on trunk occluding	None required at time of survey	40+	C1
220	White Willow <i>Salix alba</i>	14	S	480	2.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Previous storm damage in crown	None required at time of survey	40+	C1
221	White Willow <i>Salix alba</i>	14	S	460	4.0	5.0	2.0	4.0	3.0	3.0	3.0	3.0	EM	Good	Fair Part of linear group Multi-stemmed at 2.5m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
222	White Willow <i>Salix alba</i>	12	S	390	3.0	4.0	5.0	4.0	3.0	3.0	3.0	3.0	EM	Good	Fair Part of linear group Multi-stemmed at 3m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
223	White Willow <i>Salix alba</i>	14	S	470	4.0	5.0	2.0	4.0	2.0	2.0	2.0	2.0	EM	Good	Fair Part of linear group Multi-stemmed at 3m above ground level Minor deadwood in crown	None required at time of survey	40+	C1

Tree No	Species	H't (m)	Single/ Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H't of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
224	White Willow <i>Salix alba</i>	13	S	280	4.0	5.0	2.0	3.0	3.0	3.0	3.0	3.0	SM	Good	Fair Part of linear group Multi-stemmed at 3m above ground level Minor deadwood in crown	None required at time of survey	40+	C1
Grp 32	Common Ash Common Hawthorn Buddleija White Willow Bramble	8	S	90	-	-	-	-	-	-	-	-	SM	Good	Good Mixed species group between road and building Amenity planting	None required at time of survey	20+	C2



KEY

- CROWN SPREAD
- CATEGORY
- TREE NUMBER
- SPECIES
- CATEGORY
- TREE POSITION
- APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)

● CATEGORY A TREES
● CATEGORY B TREES
● CATEGORY C TREES
● CATEGORY U TREES

JOB TITLE
North London Heat and Power Project

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA10106.01.3 TSP South Section Red and Blue Areas

BASE PLAN DRAWING No.
Additional tree survey

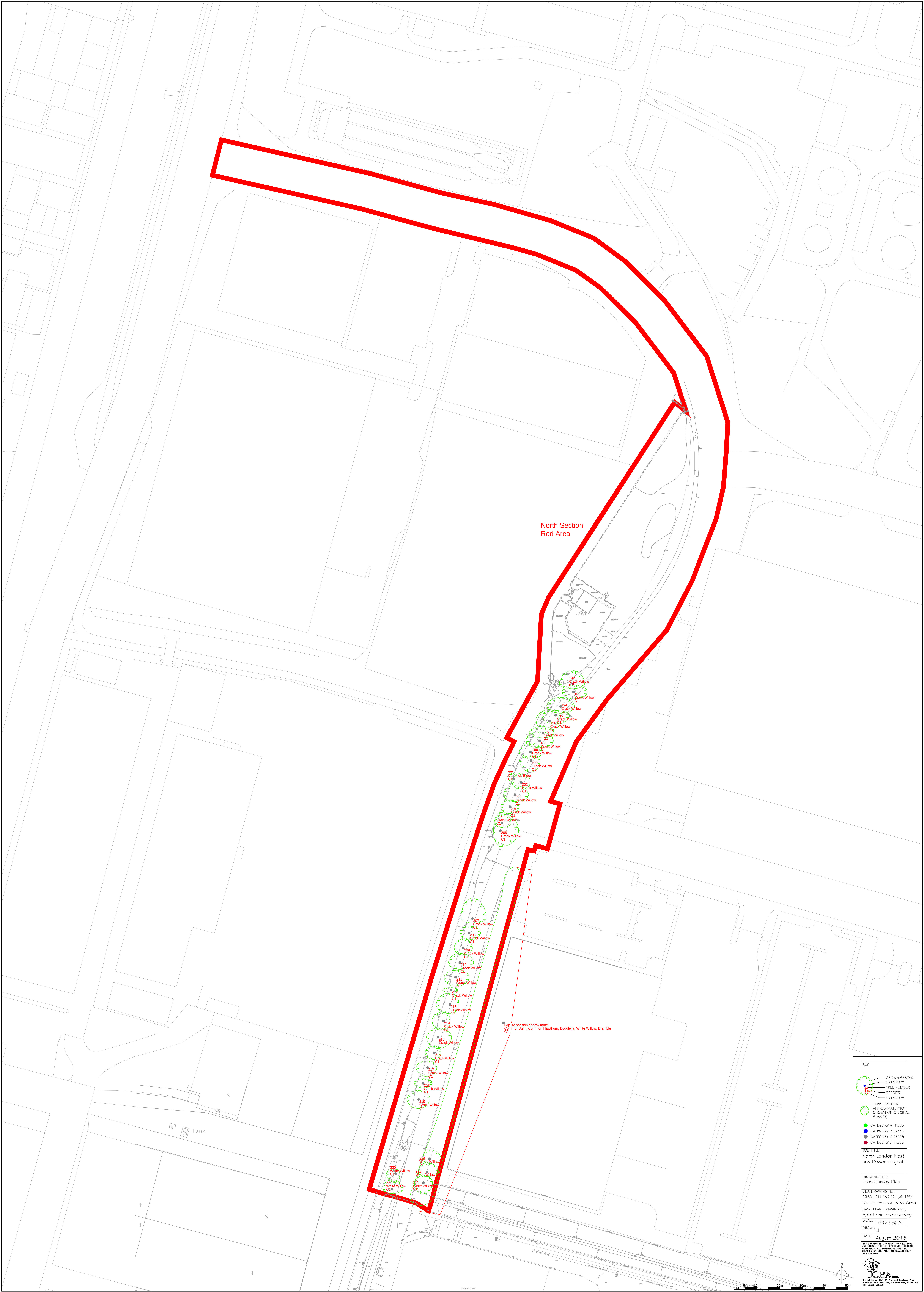
SCALE
1:500 @ A1

DRAWN
[Signature]

DATE
August 2015

THIS DRAWING IS COPYRIGHT OF CBA Trees AND SHOULD NOT BE REPRODUCED WITHOUT PERMISSION. ALL DIMENSIONS MUST BE CHECKED ON SITE AND NOT SCALED FROM THIS DRAWING.

CBA Trees
Rural House, Unit 20 Chafford Business Park, Burnetts Lane, West End, Southampton, SO30 3PA
Tel: 02380 986229



North Section
Red Area

Crp 52 position approximate
Common Ash, Common Hawthorn, Buddlejia, White Willow, Bramble
C2

- KEY
- CROWN SPREAD
 - CATEGORY
 - TREE NUMBER
 - SPECIES
 - TREE POSITION
 - APPROXIMATE (NOT SHOWN ON ORIGINAL SURVEY)
 - CATEGORY A TREES
 - CATEGORY B TREES
 - CATEGORY C TREES
 - CATEGORY U TREES

JOB TITLE
North London Heat and Power Project

DRAWING TITLE
Tree Survey Plan

CBA DRAWING No.
CBA10106.01.4 TSP

BASIC PLAN DRAWING No.
Additional tree survey

SCALE
1:500 @ A1

DRAWN
LI

DATE
August 2015

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CBA
Countryside Business Associates
Barnet, London, UK. Tel: 0208 451 1111
www.cba-uk.co.uk



	BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE	
	Site:	North London Heat and Power Project
	Date:	20 August 2015
	Consultant:	Alex Monk <i>TechCert (Arbor.A), NCH.Arb</i>

Notes:

1. This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
2. At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
3. For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m² in accordance with Section 4.6.1 of BS5837:2012.

TREE PRESERVATION ORDER/CONSERVATION AREA:

CBA Trees has not been instructed to investigate whether trees on or adjacent to the site are protected by a Tree Preservation Order or located within a Conservation Area.

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m ²)
SOUTH SECTION RED AREA						
185	Common Elder	C1	MS <6	200	2.40	18.10
186	Rowan	C1	S	120	1.44	6.52
187	Common Elder	C1	MS >5	220	2.64	21.90
188	Common Elder	C1	S	140	1.68	8.87
189	Common Elder	C1	MS <6	220	2.64	21.90
190	Common Elder	C1	MS >5	270	3.24	32.98
191	Common Elder	C1	MS >5	220	2.64	21.90
Grp 31	Pedunculate Oak Common Ash Common Hazel Common Elder	C2	S	130	1.56	7.65
BLUE AREA						
Grp 29	Silver Birch Field Maple Common Lime Spindle Common Ash Common Elder	C2	S	140	1.68	8.87

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
Grp 30	Common Hawthorn Pedunculate Oak Privet Elder Silver Birch	C1	S	90	1.08	3.66
NORTH SECTION RED AREA						
192	Crack Willow	U	S	430	-	-
193	Crack Willow	C1	S	420	5.04	79.81
194	Crack Willow	C1	S	390	4.68	68.82
195	Crack Willow	C1	S	410	4.92	76.06
196	Crack Willow	C1	S	340	4.08	52.30
197	Crack Willow	C1	S	320	3.84	46.33
198	Crack Willow	C1	S	440	5.28	87.59
199	Crack Willow	C1	S	460	5.52	95.74
200	Crack Willow	C1	S	410	4.92	76.06
201	Common Elder	C1	MS >5	240	2.88	26.06
202	Crack Willow	C1	S	380	4.56	65.33
203	Crack Willow	C1	S	420	5.04	79.81
204	Crack Willow	C1	S	350	4.20	55.42
205	Crack Willow	C1	S	340	4.08	52.30
206	Crack Willow	C1	S	690	8.28	215.41
207	Crack Willow	C1	S	430	5.16	83.66
208	Crack Willow	C1	S	420	5.04	79.81
209	Crack Willow	C1	S	390	4.68	68.82
210	Crack Willow	C1	S	410	4.92	76.06
211	Crack Willow	C1	S	400	4.80	72.39
212	Crack Willow	C1	S	280	3.36	35.47
213	Crack Willow	C1	S	540	6.48	131.93
214	Crack Willow	C1	S	410	4.92	76.06
215	Crack Willow	C1	S	390	4.68	68.82
216	Crack Willow	C1	S	340	4.08	52.30
217	Crack Willow	C1	S	370	4.44	61.94
218	Crack Willow	C1	MS <6	370	4.44	61.94
219	Crack Willow	C1	MS <6	450	5.40	91.62
220	White Willow	C1	S	480	5.76	104.24
221	White Willow	C1	S	460	5.52	95.74
222	White Willow	C1	S	390	4.68	68.82

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m2)
223	White Willow	C1	S	470	5.64	99.95
224	White Willow	C1	S	280	3.36	35.47
Grp 32	Common Ash Common Hawthorn Buddleija White Willow Bramble	C2	S	90	1.08	3.66





Red (South)



Grp 31
Red (South)



Grp 29-30
(Blue)



Grp 32
Red (North)



T192-224
Red (North)



T192-224
Red (North)





The Professional Arboricultural Consultancy

Company Profile, Qualifications and Experience



CBA Trees, one of the leading professional arboricultural consultancy practices in the UK is based in Southampton. There are currently three consultants working from our Hampshire office, all of varying expertise and qualifications.



The team is headed by **Colin Bashford** *MBE M.Arb., ex F.Arbor.A, MAE* who, with over 45 years in the profession, is considered to be one of the most eminent professionals in this field and is a past Registered Consultant of the Arboricultural Association, a Law Society approved Expert Witness and a member of the Academy of Experts.

Colin has worked on private estates; for Local and Central Government where in the latter he advised up to Ministerial level for government bodies, agencies and departments, as well as acting as the Inspecting Officer on Appeals, or Technical Assessor at Public Local Inquiries.

In 1990, Colin retired from public service and formed a sole practitioner company; this has since blossomed into a thriving Practice which was formally incorporated in 1993.

His expertise leads Colin to act as an expert witness on behalf of well-known household names. A listing of some of the clients of CBA Trees can be found on pages 3 and 4 of this document.

Colin is a past Chairman of the Board of Governors for Merrist Wood College in Guildford, and has served for many years on the Board of Directors of the International Society of Arboriculture (ISA) and that of ISA Europe Ltd. He was President of ISA for the period 2011-2013.



Stefan Rose BSc(Hons), TechCert (Arbor A), joined CBA Trees in 1998 as a junior surveyor and has consistently studied to become a respected Senior Consultant. He has vast experience in working as a locum for local authorities, assessing new and extant Tree Preservation Orders, as well as working on some of the largest development sites nationwide.



James Fuller FdSc.Arb, BTEC Nat.Dip Arb, TechArbor.A, joined CBA in 2007 as a gap year junior surveyor/arborist having attained the Foundation Degree in Arboriculture and as part of his professional development James has more recently attained the Professional Tree Inspector's Certificate. Over the years James has gained experience in every field of our work, undertaking all elements of consultancy work including large tree surveys and BS5837:2012 planning applications. As a retained Senior Consultant James undertakes site assessments, site monitoring, provision of advice to prominent development companies and preparation of Implication Assessments and Method Statements.



Alex Monk TechCert (Arbor A), NCH Arb, has a background in tree surgery, running his own small business for many years. Joining CBA in 2004 he soon adapted to the rigour of surveying and consultancy and has progressed to providing his expertise to an extensive client base. Alex provides an excellent service to Local Authorities in the area, assessing extant and new Tree Preservation Orders as well as becoming an expert in the use of decay detection equipment on these and other projects. Alex's work also encompasses development projects with all the associated surveying and consultancy work that this part of the industry entails, guiding the arboricultural elements of the development project through the planning process.



Darren Smith FdSc.Arb, TechArborA is the newest recruit to our team. He has carried out full asset tree surveys for London local authorities, covering highways, parks and allotments, including Health & Safety Audits and brings a considerable amount of experience in this area. He has also attained the Lantra Professional Tree Surveyor Certificate and as part of his professional development, hopes to continue his studies to turn his Foundation Degree into a full degree.



All consultants are trained in the use of 'state of the art' decay detection equipment, and the latest data capture equipment.

Listed below are some of the services we provide:

- Arboricultural Consultancy
- Arboricultural Impact Studies & Method Statements
- Trees in Conservation Areas
- Advice on Veteran Trees and Ancient Woodlands
- Expert Witness at PLI, and Court Work
- Arboricultural/Landscape Design
- PLI, Expert Witness and Court Work/Litigation
- Tree Survey Work (street trees, development projects, individual private sites)
- Tree Preservation Order Advice
- Tree Inspections and Hazard Risk Assessments
- Woodland Creation, Maintenance & Management
- Health & Safety issues – Inspections on behalf H&SE
- Arboricultural site and project management

CBA Trees is very proud of its client base that includes the following companies:



Developers – Commercial and Residential

Bryant Homes Ltd
Abbeymill Homes Ltd
Alfred McAlpine Limited
Bellway Homes Ltd
Berkeley Homes Ltd
Bewley Homes
Bloor Homes
Bouygues UK
Bovis Homes Limited

Countryside Properties
Crayfern Homes
Crest Strategic Properties
David Wilson Developments Ltd
Fairview New Homes plc
Great Sutton Homes
Highwood Construction
Imperial Elite Construction

Laing/Gladedale Ltd
Linden Homes
Morgan Sindall
Rydon Construction
Taylor Wimpey
Thomas Homes
Wates Construction
Wates Development



Design & Legal

Barton Willmore Partnership
Terra firma Consultancy
Boyer Planning Associates
Acanthus, Lawrence & Wrightson
Cunningham Ellis & Buckle
Penningtons

Tucker Parry Knowles Partnership
Derek Lovejoy Partnership
David Huskisson Associates
Acanthus Ferguson Mann
Masons
RPS Planning, Transport & Environment

Town Planning Consultancy
MacGregor Smith
Lester Aldridge
Denton Hall
Bond Pearce
McKennas



Education

Brighton and Hove Sixth Form College
 Cognita Schools
 Hillyfield Primary Academy
 Richard Taunton College

Royal Holloway University of London
 St Osmunds Primary School
 United Church Schools

University College Oxford
 University of Portsmouth
 Merrist Wood College



Local Authorities & Government Bodies

Ampfield Parish Council
 Basingstoke Borough Council
 Catalyst Housing
 Circle Housing Group
 Eastleigh Borough Council
 Hampshire County Council
 Highways Agency
 Lambeth and Southwark
 Housing

London Borough of Bexley
 London Borough of Camden
 NHS Property Services
 Poole Borough Council
 Portsmouth City Council
 Raglan Housing
 Reigate and Banstead Council
 Royal Borough of Kensington
 & Chelsea

Royal Borough of Kingston
 Ruscombe and Twyford LEP
 Rushmoor Borough Council
 Southampton City Council
 Test Valley Borough Council
 The Hyde Group
 Transport for London
 West Sussex County Council
 West Wittering Parish Council

CBA Trees can be found at:

Russell House
 Unit 20
 Chalcroft Business Park
 Burnetts Lane
 West End
 Southampton, SO30 2PA.

Tel: 023 8098 6229 Email: info@cbatrees.co.uk

For further information, visit our web site at www.cbatrees.co.uk which gives more detail of our expertise, and of course, our staff are always willing to help answer any queries you may have.



Legend

-  Indicates areas of tree removal
-  Indicates areas of tree retention

03	03/08/15	DB	CE	CE
New layout, site boundary, Layout Area				
02	12/08/15	DB	CE	CE
Lighter background				
01	07/08/15	DB	CE	CE
Date	By	Chd	Apd	

ARUP

13 Haring Street
London EC2A 4DU
Tel: +44 (0)20 7857 1557 Fax: +44 (0)20 7857 1554
www.arup.com

Client
North London Waste Authority
100 Broadwater Park
Advent Way London
N18 3AG

Project
North London Heat and Power Project

Indicative Tree Removal Plan

LONDON BOROUGH OF WALTHAM

Scale: A6 1:1500	Drawn by: 235271	Checked by: 03
Discipline: Landscape Architecture	Drawing No: NLPP-ARP-DGA-XXX	Issue: 03
For Information		

NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER
PROJECT

ENVIRONMENTAL STATEMENT:
VOLUME 3 APPENDIX 1.3
WIREFRAME PRINTS FOR VIEWING IN
THE FIELD

AD06 . 02

Baseline



Wireline of Proposed Schemes with existing EfW facility



Baseline



Wireline of Proposed Schemes with existing EfW facility demolished



Technical Information
Location: Lee Valley public right of way and National Cycle Network Route 1 north of A406 North Circular Road.
Grid Ref.: 535850, 192349
Date taken: 15/04/15
Time taken: 11:31 GTM
FoV: 120 x 38

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images.
These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.2
Figure Name	Viewpoint 1 Existing situation and Application Site with existing EfW demolished, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility



Technical Information
Location: Lee Valley public right of way and National Cycle Network Route 1 south of A406 North Circular Road.
Grid Ref.: 535786, 1922150
Date taken: 14/03/16
Time taken: 10:32am
FoV: 120 x 38

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images.
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Figure Number	8.1.3
Figure Name	Viewpoint 3 Existing situation and Application Site with existing EFW, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility demolished



Technical Information
Location: Lee Valley public right of way and National Cycle Network Route 1 south of A406 North Circular Road.
Grid Ref.: 535786, 1922150
Date taken: 14/03/16
Time taken: 10:32am
FoV: 120 x 38

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images.
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Figure Number	8.1.4
Figure Name	Viewpoint 3 Existing situation and Application Site with existing EFW demolished, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility



Baseline



Wireline of Proposed Schemes with existing EFW facility demolished



Technical Information
Location: Menon Drive open space

Grid Ref.: 534673, 193419
Date taken: 14/03/16
Time taken: 14:00
FoV: 120 x 38

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images.
These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.6
Figure Name	Viewpoint 6 Existing situation and Application Site with existing EFW demolished, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility



Baseline



Wireline of Proposed Schemes with existing EFW facility demolished





Wireline of Proposed Schemes with existing EFW facility



Technical Information

Location: Lee Valley public right of way and National Cycle Route 1 at Pickett's Lock
Grid Ref.: 536304, 193767
Date taken: 15/04/15
Time taken: 08:20 GTM
Focal length: 52.033mm

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images. These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.9
Figure Name	Viewpoint 8 Existing situation and Application Site with existing EFW, cumulative and future baseline



north london waste authority

Date: 01/04/16



Wireline of Proposed Schemes with existing EFW facility demolished



Baseline



Wireline of Proposed Schemes with existing EFW facility



Technical Information Location: Lee Park Way adjacent to the Lee Valley Regional Park gateway and entrance Grid Ref.: 535923, 192419 Date taken: 14/03/16 Time taken: 11:48 FoV: 120 x 38	(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images. These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.	<table><tr><td>Figure Number</td><td>8.1.11</td></tr><tr><td>Figure Name</td><td>Viewpoint 10 Existing situation and Application Site with existing EFW, cumulative and future baseline</td></tr></table>	Figure Number	8.1.11	Figure Name	Viewpoint 10 Existing situation and Application Site with existing EFW, cumulative and future baseline	<table><tr><td> north london waste authority</td><td>Date: 01/04/16</td></tr></table>	 north london waste authority	Date: 01/04/16
Figure Number	8.1.11								
Figure Name	Viewpoint 10 Existing situation and Application Site with existing EFW, cumulative and future baseline								
 north london waste authority	Date: 01/04/16								

Baseline



Wireline of Proposed Schemes with existing EFW facility demolished



Technical Information
Location: Lee Park Way adjacent to the Lee Valley Regional
Park gateway and entrance
Grid Ref.: 535923, 192419
Date taken: 14/03/16
Time taken: 11:48
FoV: 120 x 38

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images. These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.12
Figure Name	Viewpoint 10 Existing situation and Application Site with existing EFW demolished, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility



Technical Information

Location: Tottenham Marshes as a path junction close to the River Lee Navigation
Grid Ref.: 535410, 190990
Date taken: 15/04/15
Time taken: 10:56 GTM
Focal length: 52.033mm

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images. These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.13
Figure Name	Viewpoint 11 Existing situation and Application Site with existing EFW, cumulative and future baseline



north london waste authority

Date: 01/04/16

Baseline



Wireline of Proposed Schemes with existing EFW facility demolished





Wireline of Proposed Schemes with existing EfW facility



Technical Information
Location: Lower Hall Lane near Chingford Mill

Grid Ref.: 536218, 192480
Date taken: 31/03/16
Time taken: 10:55
Focal length: 24mm

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images. These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.15
Figure Name	Viewpoint 14 Existing situation and Application Site with existing EfW, cumulative and future baseline



north london waste authority

Date:01/04/16



Wireline of Proposed Schemes with existing EFW facility demolished



Technical Information
Location: Lower Hall Lane near Chingford Mill

Grid Ref.: 536218, 192480
Date taken: 31/03/16
Time taken: 10:55
Focal length: 24mm

(Note:) The Application Site is shown as a red line, with the potential extent of plume shown in 50m intervals above proposed ERF stack. The visible future baseline and cumulative development is shown as a blue line. Existing development to be demolished as part of a new future baseline or cumulative development is shown in green. Where the views of the Application Site, future baseline or cumulative development would be screened by existing vegetation or built form this has been shown as a dashed line and annotated on the images.
These images should be viewed in conjunction with Volume 3 and Volume 3 Appendix 1.1 of the Environmental Statement for the North London Heat and Power Project for the methodology used for the production of the images; and the written response to Question 8.1 of the Examining Authority's first written questions for the assumptions used in the production of these images.

Figure Number	8.1.16
Figure Name	Viewpoint 14 Existing situation and Application Site with existing EFW demolished, cumulative and future baseline



north london waste authority

Date:01/04/16

NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER PROJECT

ENVIRONMENTAL STATEMENT: VOLUME 3 APPENDIX 1.4 ADDITIONAL CUMULATIVE DEVELOPMENTS

AD06 .02

Reference	Borough	Name/No.	Street	Postcode	Use class	Permission Date	Status	Permission type	Height (storeys)	Notes
P12-03055PLA	Enfield	Land At Advent Way (Former Reality Site)	Advent Way	N18 3AH	B1 Office, B1c B2 B8 Industrial, Bedroom Use classes	08/08/2013	Started	Full	5	Redevelopment of site to provide 3 blocks of 15 industrial units for B1b, B1c, B2 and B8 use (7 units incorporating mezzanine office space), a 5-storey, 96-bed Hotel (C1 use) with restaurant, bar and conference room to ground floor, new access road, access and egress from Advent Way, associated car parking, 2.4m high paladin fence to boundary with sliding and swing gates to commercial units and drop barrier to Hotel and associated landscaping, lighting, plant and equipment and associated works.
HGY/2013/1792	Haringey	Unit 11	Mowlem Trading Estate, Leaside Road and land Fronting Watermead Way,	N17 0QJ	B1c B2 B8 Industrial	13-DEC-13 (expires 13-DEC-16)	Not Started	Full	3 (max 10m)	Demolition of Unit 11, Mowlem Trading Estate, resurfacing of trading estate service road, relocation of electricity substation and redevelopment of land fronting Watermead way in the form of a relocated builders' merchants (Use Class B8) and Industrial and Warehousing (Use Class B 1(c), B2 and B8) floorspace with repositioned access/egress to/from Leaside road.
TP/09/1862	Enfield	Yard	Gibbs Road	N18 3PU	B1c B2 B8 Industrial	08-APR-13 (expires 08-APR-16)	Not Started	Full	3 (11.8m)	Use of site as an industrial facility for the production of renewable energy from waste timber involving extension to existing building, new pump house, substation and condensers with associated works and formation of a new exit to Gibbs Road.
HGY/2014/0328	Haringey	George Court	67 Willoughby Lane	N17 0QZ	Minor Residential	27-MAR-14 (expires 27-MAR-17)	Not Started	Full	3	Erection of additional floor to block of flats providing additional two self-contained flats
HGY/2011/2350	Haringey	Land off Northumberland Park	Land off Northumberland Park Tottenham London N17	N17	D2 Leisure, C2 D1 Non Res Institutions, A1 Retail	29-Jul-12	Started	Full	5?	Proposed demolition of buildings and development of a foodstore (Use Class A1) together with educational uses (Use Class D1); stadium-related uses (Use Class D2); showroom/brand centre (sui generis); and associated facilities including car parking, the construction of new and altered vehicle and pedestrian accesses, private open spaces, landscaping and related works.
2012/2128	Haringey	Former Cannon Rubber Factory/ 811	High Road	N15 4RS	Major Residential, Open Space, C2 D1 Non Res Institutions	01-May-13	Started	Full	22	Comprehensive redevelopment of the Brook House (former Cannon Rubber Factory site), including the erection of a 22 storey building (plus a part top floor mezzanine) providing 100 residential units (use class C3) and 190 sqm of commercial floorspace (use class B1, D1 and D2), two buildings of 6 and 9 storeys respectively providing 101 residential units (use class C3) and a part 2/part 5 storey building comprising a 2,388 sqm 2 form entry primary school (use class D1) and 21 residential units (use class C3), together with associated car and cycle parking, refuse stores, highways, infrastructure, open space and landscaping works.
P12-02465PLA	Enfield	Highmead Estate	Alpha Road	N18 2SL	Medium Residential, A1 Retail	01-Apr-13	Started	Full	Up to 8	Redevelopment of site to provide a total of 118 residential units and 1037sqm of commercial floor space together with a medical centre and community hall comprising a part 6-storey, part 8-storey block of 96 self contained flats (31 x 1-bed, 57 x 2-bed 8 x 3-bed) with balconies to front, rear and side, three blocks of five 4-bed 3-storey terrace houses and 1 block of 7 x 3-bed, 2-storey terraced houses, alterations to access from Alpha Road, landscaping works, 26 car parking spaces and 179 cycle parking spaces and a change of use of car park at Trafalgar Place from public to private parking.

Reference	Borough	Name/No.	Street	Postcode	Use class	Permission Date	Status	Permission type	Height (storeys)	Notes
TP/08/0804/REN1	Enfield	56	Victoria Road	N9 9SU	Medium Residential, D2 Leisure	06-AUG-12 (expires 06-AUG-15)	Not Started	Full	Up to 4	Renewal of extant permission granted under Ref:TP/08/0804 for demolition of existing buildings and erection of a part 2, part 3, part 4-storey block comprising doctors surgery with ancillary offices, dispensary and beauty salon to ground floor, staff accommodation and meeting rooms, and 13 self-contained residential units above (5 x 1-bed, 8 x 2-bed) with basement car parking, vehicular accesses to Victoria Road and Park Road and realignment of the footway.
P13-00698LBE	Enfield	Land To The West Of Oasis Academy/143	South Street	EN3 4LS	Medium Residential	18-JUN-13 (expires 18-JUN-16)	Not Started	Full	3	Construction of a new road connecting to Gardiner Close, incorporation of existing public footpath within the redevelopment site and erection of a total of 38 residential units, comprising a terrace of 24 units consisting of 12 x 3-bed, 2-storey houses, 4 x 4-bed 3-storey houses, 4 x 2-bed flats and 4 x 2-bed maisonettes; 8 x 3-bed 2/3-storey linked houses with garages and roof terraces; a 3-storey block of 6 x 1-bed flats with associated car parking, amenity space and play area, together with erection of a substation and pumping station, and reconfiguration of turning area to Falcon Road Spur car park.
P12-02641PLA	Enfield	3	Morson Road	EN3 4NQ	B1 Office, B1c B2 B8 Industrial	01-OCT-13 (expires 01-OCT-16)	Not Started	Outline	Approx 7 (maximum height of 19m)	Redevelopment of site by the erection of 19,000 sq.m. of buildings within use classes B1c/B2 and B8, together with car parking, service areas, landscaping, access roads, plant and ancillary offices. (Outline - all matters reserved)
2014/1051	Waltham Forest	37-47 Jordan Court	Heathcote Grove	E4 6RZ	Minor Residential	22-Sep-14	Started	Full	4	Construction of third floor extension to form 2 x 1 bed self contained flats.
2014/0449	Waltham Forest	57- 59	Old Church Road	E4 6SJ	Minor Residential	23-SEP-14 (expires 23-SEP-17)	Not Started	Full	3	Ground and first floor rear extensions, loft conversion with rear dormer window and conversion of upper floors into four self contained flats (3 x 1 bed, 1 x 2 bed) with parking space at rear.
2013/0503	Waltham Forest	5a & 11a	Cherrydown Avenue	E4	Minor Residential	20-DEC-13 (expires 20-DEC-16)	Not Started	Full	3	Conversion of upper floors into six residential units (5 x 2 bed , 1 x 3 bed)
2010/1442	Waltham Forest	244 - 246	Chingford Mount Road	E4 8JP	Minor Residential	19-Mar-15	Started	Full	2 - 3	A mixed use development of part two, part three storey buildings to form a ground floor retail unit (use class A1), 6 x 2 bed self-contained flats on upper floors and 1 x 4 bedroom house. Provision of 4 car parking space & cycle store
2013/0124	Waltham Forest	Coombe House 1	May Road	E4	Medium Residential	20-Jan-14	Started	Full	3	Demolition of existing building and erection of 8 dwellinghouses (7x3 bed and 1x4 bed) and erection of three storey building to provide 8 x 1 bed flats for sheltered housing. Cttee - 30/04/13
2011/0602	Waltham Forest	52	Edward Avenue	E4 9DN	Minor Residential	24-Feb-14	Started	Full	3	Conversion of dwellinghouse into 4 self-contained flats (3x1 bed, 1x3 bed) involving formation of rear dormer, with associated parking, cycle and refuse storage.
2011/0898	Waltham Forest	Walthamstow Greyhound Stadium, 300	Chingford Road	E4 8SL	Major Residential, Open Space, D2 Leisure	26-Mar-14	Started	Full	Up to 8	Demolition of curtilage Listed Buildings, south-west spectator stand and part of popular entrance, conversion, alterations and extensions to the main Tote building for leisure use and conversion and alteration to eastern Tote and kennels for community allotment use. New build residential accommodation in buildings between 2 and 8 storeys in height, comprising 294 dwellings (50 houses and 244 flats, including 1, 2, 3, & 4 bedroom units and a mix of private and affordable housing). New buildings for use as a children's nursery, cafe and creche, open space provision (public, private and communal), car, motorcycle and bicycle parking and vehicular access through existing Chingford Road entrance. Associated alterations and landscaping including alterations to public right of way.

Reference	Borough	Name/No.	Street	Postcode	Use class	Permission Date	Status	Permission type	Height (storeys)	Notes
2012/0045	Waltham Forest	Kimberley Industrial Estate & Billet Works	Billet Road	E17 5DZ	Major Residential	01-Apr-14	Started	Full	2 - 5	Amended by 2013/0212/MMA to include a revised description of development as follows: A mixed-use development: Demolition of existing buildings and construction of 349 residential units (63 x 1 bed, 149 x 2 bed, 106 x 3 bed and 31 x 4 bed) in new buildings ranging from two to five storeys in height. Also comprising retail floor space (Use Class A1- A3, total comprising 792m2) ; office floor space (Use Class B1, 874m2), community space and creche (Use Class D1, 444m2) a total of 271 car parking spaces, 710 cycle spaces, new and modified vehicular and pedestrian access points from Billet Road and Kimberley Road, provision of amenity open space, including a linear park and associated landscaping, installation of plant and servicing.
2012/1544	Waltham Forest	Garages Adjacent 14	Cheney Row	E17 5ED	Minor Residential	01-Oct-14	Started	Full	3	Erection of 3 two bedroom dwelling houses and 3 storey building to provide 3 x 2 bed self contained flats.



Series 06 Environmental
Statement

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