

16. Waste

16.1. Introduction

- 16.1.1. This Chapter, which has been prepared by Waterman, provides a statement of conformity with regard to the potential waste related impacts arising from the Scheme with Phase 1A (North) in place (hereafter referred to as the 'Development'). This statement of conformity is provided pursuant to the s.73 ES to confirm that the overall findings of the s.73 ES with respect to waste remain valid.
- 16.1.2. A brief summary of any significant changes to relevant policy, legislation and guidance which have occurred subsequent to the preparation of the s.73 ES is provided, together with confirmation on whether the changes have any material bearing on the assessment. A review has been undertaken of the detailed design, as defined in **Chapter 2**, to identify elements of the Phase 1A (North) detailed design of relevance to the waste assessment, and a summary of this is provided.
- 16.1.3. Any new or different potential waste generated related significant impacts arising from the Development from those identified in the s.73 ES are described. Likewise, any new or different mitigation measures from those identified in the s.73 ES are presented where considered necessary, and residual impacts following the application of mitigation are described.

16.2. Policy, Legislation and Guidance

- 16.2.1. There have been no significant changes to legislation relating to relating to waste since the s.73 ES. A summary of relevant policy changes is provided below.

Planning Practice Guidanceⁱ, 2014

- 16.2.2. The Planning Practice Guidance is a web-based resource which provides further details relating to the policies set out within the National Planning Policy Framework (2012)ⁱⁱ. In relation to waste the Practice Guidance states "*For proposals that are likely to generate significant volumes of waste through the development or operational phases it will be useful to include a waste audit as part of the application. This audit should demonstrate that in both construction and operational phases of a proposed development, waste will be minimised as far as possible and that such waste as is generated will be managed in an appropriate manner in accordance with the Waste Hierarchy*"
- 16.2.3. This information was included in the s.73 ES. The Applicant is also required to submit a Demolition and Site Waste Management Plan as Pre-Commencement Planning Condition 9.1 of the 2014 Permission.
- 16.2.4. The Planning Practice Guidance also states "*Before granting planning permission, the local planning authority will need to be satisfied that the impacts of non-waste development on existing waste management facilities are acceptable and do not prejudice the implementation of the Waste Hierarchy*". This has been considered by LBB as part of the 2014 Permission.

Draft Further Alterations to the London Planⁱⁱⁱ, 2014

- 16.2.5. In January 2014, the Mayor published the Draft Further Alterations to the London Plan (FALP)^{iv} for a 12 week period of public consultation. The FALP had been prepared primarily to address key housing and employment issues emerging from an analysis of census data released in 2013 since the publication of the London Plan in July 2011, and which indicates a substantial increase in the capital's population. Following a review of consultation responses to the FALP, the Mayor published a schedule of suggested changes to the Draft FALP in July 2014 which consisted of minor clarifications, corrections and factual updates to the Draft FALP. A public examination of the Draft FALP commenced on 1 September 2014.
- 16.2.6. In relation to waste, there are suggested changes which apply to the following sections of the London Plan:
- Section 5.7 suggested changes state that *“the Mayor acknowledges that waste contracts do not recognise administrative boundaries and that waste flows across borders. Consequently the aim of his waste policies is to achieve net self-sufficiency for household and commercial waste by 2026.”*
- Section 5.10 suggested changes state that *“Although there have been considerable improvements in local authority waste recycling rates (up from 8 per cent in 2001 to 30 per cent in 2012), the Mayor wishes to see an increase to 45 per cent by 2015 and then 50 per cent by 2020.”*
- Section 5.14 suggested changes state that *‘proposals for waste management should be evaluated against the following criteria:....) achieving a positive carbon outcome of waste treatment methods and technologies (including the transportation of waste, recyclates and waste derived products) resulting in greenhouse gas savings. Facilities generating energy from London’s waste will need to meet, or demonstrate that steps are in place to meet, a minimum CO₂eq performance of 400 grams of CO₂eq per kilowatt hour (kwh) of electricity produced. Achieving this performance will ensure that energy generated from waste activities is no more polluting in carbon terms than the energy source it replaces’.*
- 16.2.7. The suggested changes above are not considered to have a material impact on the outcomes of the waste assessment presented in the s.73 ES, however they will be considered within this Report and any further waste assessments to be undertaken on future Development phases.

Sustainable Design and Construction SPG, 2014

- 16.2.8. The Mayor of London published an updated version of the Sustainable Design and Construction Supplementary Planning Guidance in April 2014. The Mayor's Priorities in relation to construction state that *“Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation the waste hierarchy.”*
- 16.2.9. The Mayor Priorities stated in relation to operational waste are as follows:
- “Developers should provide sufficient internal space for the storage of recyclable and compostable materials and waste in their schemes....The design of development should meet borough requirements for the size and location of recycling, composting and refuse storage and its removal.”*
- 16.2.10. Mayor's Priorities stated in relation to construction waste are as follows:

“Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy.”

- 16.2.11. Section 2.7 of the SPG concerns ‘Materials and Waste’. This section includes guidance on the following:
- **Managing existing resources:** Developers should always look for options to sensitively reuse, refurbish, repair and convert buildings rather than wholesale demolition. The waste hierarchy should be applied to limit waste generation in demolition.
 - **Site-waste management:** ensure appropriate construction site management.
 - **The Waste Hierarchy:** Developers should maximise the re-use of materials and minimise waste generated from demolition and construction processes through implementation of the waste hierarchy. Where demolition is necessary and substantial demolition is proposed (over 1,000 sqm), Developers should use the Demolition Protocol and a Site Waste Management Plan should be produced.
- 16.2.12. It is deemed that the guidance provided within the SPG aligns with the existing waste strategy for the Development and the proposed Demolition and Site Waste Management Plan as per Planning Condition 9.1 of the 2014 Permission.

Draft North London Waste Plan

- 16.2.13. A previous version of the North London Waste Plan (NLWP) was submitted to an Inspector in 2012 who concluded that the plan failed to meet the ‘Duty to Co-operate’ which came into force during the final stages of the plan making process. Boroughs (including LBB) have therefore commenced preparation of a new North London Waste Plan (NLWP) which is currently underway. Consultation on the Draft North London Waste Plan (NLWP) is due to commence in January 2015. The NLWP website provides an updated evidence base to inform preparation of the new plan which has been referred to in this Chapter.

16.3. Relevant Phase 1A (North) RMAs Details

- 16.3.1. In relation to the assessment of waste, the Phase 1A (North) elements of relevance include the following infrastructure, bridges, river realignment and open spaces during related demolition and construction works where waste will be produced and require potential treatment for re-use on Site or off-Site removal:
- Demolition of buildings identified in **Figure 2.1**;
 - Construction of primary and secondary routes: new roads, junctions and routes to link the future Development to the existing infrastructure;
 - Alteration and diversion of the River Brent;
 - Construction of bridge structures: replacement Templehof Bridge (A406) (B1), new River Brent bridges, Living Bridge (B7) and new M1 junction pedestrian and cycle bridge (B6);
 - Claremont Park and Clitterhouse Playing Fields Improvements Part 1;
 - Central Brent Riverside Park including River Brent Nature Park 5; and

- Temporary Bus Station and Bus Stops (Plots 114 and 113 respectively).
- 16.3.2. For consideration of both construction and operation impacts, the residential Plots 53 and 54 located on Brent Terrace are also of relevance for this assessment. The Plots will provide 47 units of replacement housing for existing residents of Whitefield Estate. Plots 53 and 54 will comprise private refuse and recycling bin storage areas located in the central car parks in each Plot. Bin stores have been sized by the design team in accordance with LBB requirements.
- 16.3.3. Waste collection will be undertaken by LBB waste team in line with regular local collections. It is not proposed that the refuse lorries will access the plots; however the bin stores have been located within distance of Brent Terrace to allow for curb-side collection. A new turning circle is proposed at the northern end of Brent Terrace to improve the current refuse collection strategy where the collection truck has to reverse the entire length of Brent Terrace. The new turning circle is incorporated into the design of the entrance area into the new Claremont Park.
- 16.3.4. The infrastructure elements of Phase 1A (North) would not generate significant volumes of waste, other than during construction which remains as reported within the s.73 ES. Areas of public realm would have bins as shown on the detailed design drawings, although the volumes of waste are not considered significant. Green garden waste and park waste will be collected for composting by LBB waste services, whilst on-site composting opportunities for residents and parks will be investigated further with LBB.

16.4. Assessment Methodology

- 16.4.1. The information presented in the s.73 ES waste methodology section has been reviewed and remains valid.
- 16.4.2. The baseline information presented in the ES was based on an estimation of baseline waste production using land-use together with an understanding of committed developments in the area published by LBB. This information has been reviewed by Waterman with reference to newly available information on the NLWP website to confirm its validity for the purposes of the assessment.
- 16.4.3. The methodology and approach and approach to the s.73 assessment are considered to remain valid, including the significance criteria applied.
- 16.4.4. The assessment of the Phase 1A (North) RMAs is considered in the context of information now available on the construction of the River Brent realignment and the Open Spaces from the 2014 ground investigation works carried out to inform the Remediation Strategies (**Appendix 15.2**) produced to discharge Planning Condition 31.2 of the 2014 Permission.

Limitations and Assumptions

- 16.4.5. No significant limitations or constraints to the review and assessment of the s.73 have been identified. The baseline data set used in the s.73 ES has not been updated, although this is not considered to affect the outcome of the assessment for of the Phase 1A (North) RMAs.
- 16.4.6. Assumptions with regard to other relevant elements of the Scheme which do not form part of the Phase 1A (North) RMAs are provided below.

Vacuum Waste Collection System

- 16.4.7. The s.73 ES waste assessment included, subject to feasibility, a vacuum waste collection system which would link into a sustainable waste strategy feeding the waste handling facility which would then prepare the waste to convey to the energy centre to produce 'refuse derived fuel' (RDF). Although this was considered as the option for the waste strategy on Site, it was not assessed as the only option to be taken forward; therefore more conventional waste collection and disposal were also considered in the s.73 ES.
- 16.4.8. Since the submission of the s.73 Application, a Vacuum Waste Collection (VWC) Feasibility Study has been prepared in response to Pre-RMA Planning Condition 1.24. The outcome of this study deemed that VWC would not be viable for the first phase of the Development (Phase 1); however it still remains a potential option for future phases of the Development; however this would be subject to further feasibility studies as the southern development comes on board. Given that the ES considered conventional waste collection and disposal as an option the s.73 ES is considered to remain valid in this regard. This Chapter therefore considers the use of regular local authority (LBB) waste collection service being applied for Plots 53 and 54.

Refuse Derived Fuel

- 16.4.9. As mentioned above, the s.73 ES included the use of RDF within the on Site energy centre. Since the s.73 Application, RDF Feasibility Studies have been carried out to satisfy Pre-RMA Planning Condition 35.3. This outcome of this study has found that RDF would not be a viable fuel source for the Site energy centre, therefore alternative fuel feasibility studies are being carried out under Pre-RMA Planning Condition 35.4 and a Revised Energy Strategy has been produced for Pre-RMA Planning Condition 35.6 suggesting the preferred use of natural gas as an alternative.
- 16.4.10. Details of the energy centres and fuel type will be confirmed when the detailed design is produced for the relevant sub-phase RMA. It is expected that part of this detail will be provided in the Phase 1B (North) RMA which is likely to contain an energy centre to service the northern development, whilst a second energy centre would be retained in later phases to be taken forward by the Southern Developer. . A small-scale CHP unit would be provided within the southern area of Plot 53, to service both residential plots (53 and 54). The CHP would be a natural gas-fired boiler housed within a standalone building. .

Waste Handling Facility

- 16.4.11. There has been no further development of the design of the Waste Handling Facility (WHF) (Phase 1 (South) within the Phase 1A (North) RMAs and as such the assessment included in the s.73 ES remains current and valid. It is noted however that the change in fuel type for the energy centre from RDF to an alternative and the subsequent impact on the waste handling facility (previously sorting the waste for RDF use) will need to be assessed for the RMA of the relevant future sub-phase within which the energy centre and WHF facilities come forward. This is not however considered likely to affect the findings of this sub-phase assessment.

16.5. Consultation

- 16.5.1. LBB has provided an informal scoping review and it has confirmed that it is in agreement with the approach of providing a Statement of Conformity for the waste assessment for the Phase 1A (North) RMAs.
- 16.5.2. One comment was received on waste in the EIA Scoping Opinion, dated December 2014 from the Environment Agency, as detailed in **Table 4.1** of this Report. The Environment Agency stated it would be useful to understand the potential changes to the scheme in relation to waste management and particular the use of refuse-derived fuel. These are described further in this Chapter.

16.6. Baseline Conditions

- 16.6.1. A review of the baseline information and its validity for the purposes of the assessment is provided below:

Site-Wide Waste Arisings – the s.73 ES presented estimated arisings from the Site as a whole based upon existing building footprints and average waste generation rates. Whilst some of the data was sourced in 2005/06, the waste outputs are unlikely to have changed significantly since this time and are considered to remain valid.

London Borough of Barnet Comparator – the s.73 ES presents totals for household waste produced in 2011/12 of 146,806 tonnes. A review of the latest data available on the government's data.gov.uk website for WasteDataFlow there is currently no further annual household waste information available beyond 2011/12. This data therefore remains valid as per the s.73 ES.

Other Wastes Managed in the Scheme Area – the s.73 ES references the Hendon Road Waste Transfer Station which is located within the Site to the east of Brent Terrace. A review of the Barnet Sites information available within 'The North London Waste Plan (NLWP) Technical Report, May 2011' confirms that details of the 'other waste sites' listed in Table 16.8 of the s73 ES remain valid, whilst the following additional reuse and recycling sites are identified within proximity of the Site:

- 23 Barnet Site on Edgware Rd and Geron Way, NW2 6LJ;
- 37 Barnet Victory Park, NW2 6ND 174; and
- Barnet Network Rail land at Aerodrome Road, NW4 4UB.

- 16.6.2. Whilst the baseline information has been updated for certain elements presented in the s.73 ES it is not considered to be material to the outcome of the assessment and therefore remains valid for the purposes of decision making.

16.7. Assessment and Mitigation

Construction

Potential Impacts

- 16.7.1. There have been no significant changes in the construction programme or approach which will alter the findings of the s.73 assessment. However, since the completion of ground investigation works

in 2014 which have informed the Remediation Strategies (**Appendix 15.2**) further information is available detailing the excavation in each area of the Phase 1A (North) works. A summary of the spoil volumes is provided in **Table 16.1**.

Plots 53 and 54

- 16.7.2. No specific cut and fill volumes have been provided for Plots 53 and 54, however the corresponding Remediation Strategy indicates that further testing will be undertaken to determine whether the excavated material from the plots can be reused as fill material on Site where levels are increasing. The fill materials will be carefully stockpiled to minimise adverse effects from weather conditions (dust and washing downstream into drains) with each material type then being subject to suitability testing in accordance with the Department for Transport Specification for Highways Materials (placement of fills). Excavation will be required in order to accommodate retaining walls at Brent Terrace to the north east of the plots and adjacent to the car park areas. Further details on the construction volumes will be provided pre-commencement and addressed in terms of management within the Demolition and Site Waste Management Plan.

Claremont Park

- 16.7.3. New ground levels are proposed in Claremont Park which will require some cut and fill. The new ground levels show that the Park will slope west to east with a reduction in level from approximately 50mAOD to 47mAOD, whilst current ground levels slope east to west to the middle of the site from 47.9mAOD to 45.7mAOD and then slopes upward to the south of the Park from 45.7mAOD to 53.2mAOD. The level changes therefore equate to approximately 1m reduction in the north, middle and southeast of the Park with an increase of approximately 4m in the southwest.
- 16.7.4. Soil excavated from the north of the Park may be suitable for re-use as fill material in the south of the Park. Additional fill materials for use in the south of the Park should be, as far as practically possible, recycled from other areas of the wider Site. No specific cut and fill volumes are currently available for this area of construction.

Clitterhouse Playing Fields

- 16.7.5. The Clitterhouse Playing Fields improvement works will include reprofiling of the Playing Fields in order to provide level sports pitches, whilst ground works will also be required for the car parks, pavilion, changing rooms and store construction and landscaping. It is proposed that a raft foundation will be adopted for the buildings on site to limit excavations to a maximum of 1.5m. In consideration of the size of the proposed buildings, a minimum to maximum range of soil excavation would be 750m³ to 1,875m³ during foundation works to then be reused to raise levels elsewhere in the Playing Fields. Additional cut and fill would be required across the Playing Fields for the re-leveling works; however volume estimates for these works are not currently available.

River Brent Realignment

- 16.7.6. The excavation for the river will be much wider than the existing river channel to allow for a more naturalised river channel shape (within an impermeable membrane/concrete box). The excavation will be between 15 and 40m wide and typically 5m deep, therefore generating large volumes of

spoil material. **Table 16.1** provides a summary of the estimated cut and fill volumes based on the preliminary 3D ground model produced by URS as reported in **Appendix 15.2** report.

Table 16.1: Summary of cut and fill proposed for the River Brent Realignment

River Area	Proposed Cut / Excavation Volume (m ³)	Proposed Fill Volume (m ³)
Reach 1 (new)	50,400	28,000
Reach 2 (new)	82,400	40,900
Reach 3 (new)	50,900	36,000
Reach 2 (existing)	-	18,700

- 16.7.7. To create the new channel it will be necessary to over-excavate the ground and then backfill areas to create the trapezoid shape of the channel. There will also be a requirement to infill part of the existing river channel particularly Reach 2. This has the potential for re-use of onsite fill subject to geotechnical and chemical suitability testing.

Templehof and Living Bridges and Phase 1A (North) Highways

- 16.7.8. The existing Templehof Bridge is to be demolished in order to be realigned with a new Templehof Bridge which will be constructed in two phases. The foundations of the new structure will overlap with that of the existing structure. There will be an approach ramp on the southern side of the bridge with a continuation and widening of Templehof Avenue and Templehof Link Road.
- 16.7.9. The Living Bridge does not replace an existing structure; however the foundations of the bridge and associated southern approach will require cut and fill.
- 16.7.10. Earthworks involved in the road works for Phase 1A (North) are included in **Table 16.2** below which also includes the Templehof and Living Bridge.

Table 16.2: Summary of cut and fill proposed for Phase 1A (North) Bridges and Roads

Location	Estimated Cut / Excavation Volume (m ³)	Estimated Fill Volume (m ³)
Templehof Bridge southern ramp	<200	8,500
Living Bridge southern ramp	840	4,680
Templehof Avenue / Market Quarter Road	3,000	-
Claremont Avenue (between Templehof Link Road and Avenue)	3,000	-
Claremont Avenue (south of Templehof Avenue and Market Quarter junction)	2,800	
Junction of M1/A5 and M1/A406 (slip roads)	61,000	4,000
M1 Pedestrian and Cycleway (B6) (excavation into the railway embankment)	11,300	

Location	Estimated Cut / Excavation Volume (m ³)	Estimated Fill Volume (m ³)
Brent Cross Shopping Centre access roads	<500	8,000 (eastern roundabout)
		14,000 (western roundabout)
		2,500 (Prince Charles Drive)
A41 / A406 Junction	5,000	110,000
Total volumes for Phase 1A (North)	87,640	151,680

- 16.7.11. Following a review of the new cut and fill information from the Remediation Strategies for the Phase 1A (North) alongside the waste arisings volumes within the s.73 ES for the whole Site, it is considered that the volumes in **Table 16.2** are consistent with those reported in the s.73 ES. As such, the Phase 1A (North) RMAs are not expected to result in new or different impacts from those reported in the s.73 ES.
- 16.7.12. A review of updated legislation and guidance and the Phase 1A (North) detailed design has been undertaken in addition to the Remediation Strategies. Following this review it can be confirmed that the assessment of construction waste impacts presented in the s.73 ES Waste Chapter remains valid.

Mitigation

- 16.7.13. Mitigation measures presented in the s.73 ES were secured through the 2014 Permission Planning conditions including a Demolition and Site Waste Management Plan (DSWMP) and a Site Waste Management Plan (SWMP), and / or through the implementation of measures set out in the Code of Construction Practice (CoCP), Construction Environmental Management Plans (CEMP), Pollution Prevention and Emergency Response Plans (PPERPs) and specialist method statements.
- 16.7.14. An updated CoCP and CEMP will be produced to satisfy Pre-Commencement Conditions of the 2014 Permission which will be specific to the detailed design of Phase 1A (North). No further mitigation measures beyond those identified in the s.73 ES have been identified.

Residual Impacts

- 16.7.15. No new or different significant construction impacts for waste have been identified from those identified in the s.73 ES.

Operation

Potential Impacts

- 16.7.16. The s.73 ES presented estimates of waste arising from the Site as a whole once occupied and operational. These waste estimates remain unchanged from the s.73 ES Site-wide operational waste calculations in consideration of the operational arisings from Plots 53 and 54. The s.73 ES is therefore considered to remain valid in respect of operational waste arisings.

- 16.7.17. As stated within Chapter 16 of the s.73 ES, the buildings on Site will be designed in accordance with the Code for Sustainable Homes in regards to waste management and storage. Plots 53 and 54 provide communal stores for the apartments and individual bins for the terraced houses. The bin stores have been located to allow for collection while the lorry stops on the street. This strategy will be discussed and agreed with LBB. Refuse storage has been appropriately sized (to allow for recycling or composting of at least 40% of residential waste). A Code for Sustainable Homes Pre-assessment Report for Brent Terrace (Melin, July 2014) has been reviewed and indicates the Plots can achieve the full 8 points available until category 5 waste based on the proposed build.
- 16.7.18. As stated in BXC08 Revised Environmental Sustainability Statement, compostable waste will be segregated for composting locally and will include on-site composting of green waste from parks, gardens and open spaces and used beneficially on site.

Mitigation

- 16.7.19. No new or different operational mitigation measures have been identified from those identified in the s.73 ES.

Residual Impacts

- 16.7.20. No new or different residual operational waste impacts have been identified from those identified in the s.73 ES.

16.8. Summary

- 16.8.1. No new or different potential impacts, mitigation or residual impacts arising from the Development have been identified in respect of Waste, therefore all these remain valid as identified in the s.73 ES.

References

- ⁱ Department for Communities and Local Government (2014) Planning Practice Guidance
- ⁱⁱ Department for Communities and Local Government (2012) National Planning Policy Framework
- ⁱⁱⁱ Greater London Authority (2014) Draft Further Alterations to the London Plan
- ^{iv} GLA, (2014). Draft Further Alterations to the London Plan. GLA, London.