

CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

CADP:  
PART 1  
ENVIRONMENTAL  
STATEMENT  
SECOND  
ADDENDUM  
& OTHER CLARIFYING  
INFORMATION

London City Airport   
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**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP)**

**ENVIRONMENTAL STATEMENT  
SECOND ADDENDUM (ESSA)  
AND OTHER CLARIFYING  
INFORMATION**

28 May 2014

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# 1. INTRODUCTION

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## a) Background

- 1.1 On the 26th July 2013 London City Airport (the Airport) submitted proposals for the City Airport Development Programme (CADP) comprised in two planning applications:
- a) CADP 1 – A detailed application for new airfield infrastructure and extended passenger facilities at the Airport (LPA ref. 13/01228/FUL)
  - b) CADP 2 – An outline application for a new hotel with up to 260 bedrooms (LPA ref. 13/01373/OUT)
- 1.2 The applications were accompanied by a number of documents, including an Environmental Statement (ES) and its Non-Technical Summary (NTS) which together report the findings of the Environmental Impact Assessment (EIA) of the proposed CADP.

## **ES Addendum March 2014**

- 1.3 Following the submission of the two CADP applications and supporting ES, the London Borough of Newham (LBN) requested further information in accordance with Regulation 22 (“Further information and evidence respecting environmental statements”) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 in a letter to the Airport dated 21st January 2014.
- 1.4 In response, the CADP Environmental Statement Addendum (ESA) was prepared and submitted to LBN in March 2014. The ESA addressed various technical queries within LBN’s Regulation 22 letter, including clarifications and supplemental information relating to the ES. Minor revisions to the design of CADP1 were also reviewed in terms of whether these had any bearing on the conclusions of the ES. An Updated ES NTS was also submitted at that time to reflect this further information (including supplementary assessment of air noise, ground noise and construction noise), as requested by LBN.
- 1.5 The ESA and Updated ES NTS were also supported by the following documents: Planning Statement Addendum (Quod, March 2014); Design and Access Statement Addendum (Pascall + Watson, January 2014); Energy and Low Carbon Strategy Addendum (Atkins, January 2014); and, the ‘CADP Revision to Application Drawings’ (March 2014). All of these documents were consulted upon by LBN.

## b) LBN Regulation 22 Letter, May 2014

- 1.6 Following consultation on the ESA and related submissions listed at paragraph 1.5 above, and advice from its consultants (AMEC), LBN issued a further Regulation 22 letter dated 23rd May 2014 (attached at Appendix 1.1).
- 1.7 An explanation is provided below on the content of this Environmental Statement Second Addendum (ESSA) and its associated appendices. Other supplementary documents, which do not form part of the Regulation 22 response, are also briefly described here and within the letter accompanying the submission of this further information (Quod, 28th May 2014).

### **Environmental Statement Second Addendum (ESSA)**

- 1.8 This Environmental Statement Second Addendum (ESSA) has been prepared in order to address the six 'items' raised in Part 1 of LBN's Regulation 22 letter dated 23rd May 2014. These items are responded to in turn within this document, as explained within the sub-heading 'c' below ('Approach to the ESSA').
- 1.9 Although not specifically requested by LBN, Section 6 of this ESSA presents some additional information on the terminology used in the noise section (pp. 31-32) of the March 2014 ESA, as well as updating some calculations used in the air quality section of the ESA (pp 42-45) to determine the 'air quality neutral' status of the CADP. This further information is provided solely for the sake of completeness, as explained below.

### **Health Impact Assessment Addendum**

- 1.10 In relation to Part 2 ("Non Regulation 22 Additional Information / Clarifications") Items 1-5 of LBN's letter refer to supplemental information and clarification on the Health Impact Assessment (HIA) which was submitted with the CADP planning applications (RPS, July 2013). A stand-alone HIA Addendum (RPS, May 2014) has therefore been prepared in order to address these comments. The HIA Addendum has been presented separately to this ESSA, as the Health Impact Assessment is a separate process to the Environmental Impact Assessment (EIA) and therefore did not form part of the original ES.
- 1.11 The HIA Addendum acts to update the HIA in relation to the further information contained in both the March 2014 ESA and the ESSA. In response to Items 1-3 of Part 2 of LBN's letter, it focuses firstly on the health effects of noise (including annoyance; night time construction noise and possible sleep disturbance; and, cardio-vascular effects) with reference to established Government standards and scientific research. In response to Item 4, it then considers the 'cumulative effects' from the CADP in combination with current application by ABP to redevelop the Royal Albert Dock site to the north of the Airport (planning application reference number 14/00618/OUT). This is largely based on the Updated Cumulative Effects Assessment, contained in Section 5 of this ESSA.
- 1.12 Where appropriate, cross-references to the ES, ESA and this ESSA are made in order to aid the reader in his/ her interpretation of this standalone document.

### **Technical Assessment Review: Need and Aviation Logistics Response**

- 1.13 Clarification on matters contained in the original Need Statement (York Aviation, July 2013), also set out in Part 2 ("Non Regulation 22 Additional Information / Clarifications") of the LBN letter (Items 1 -3) have been addressed within a separate document titled Technical Assessment Review: Need And Aviation Logistics Response (Pascall + Watson and York Aviation, May 2014) which is submitted alongside this ESSA. This responds to questions raised by LBN regarding the sizing of the proposed Terminal Building (Item 1), the utilisation of space released following the relocation of arrivals into the Eastern extension (Item 2), and the status of the Airport's 2006 Masterplan and its relationship to the CADP (Item 3).

## **Environmental Statement Second Updated Non-Technical Summary (NTS)**

- 1.14 For the sake of completeness, the ES Second Updated Non-Technical Summary (NTS) provides a track-changed version of the previous Updated NTS, (March 2014). In accordance with the EIA Regulations, this is submitted as a standalone document.
- 1.15 In this document, the text in red ink denotes the previous amendments and the blue text shows the new additions to account for the further information on noise and cumulative effects.

### **c) Approach to the Environmental Statement Second Addendum (ESSA)**

- 1.16 This ESSA and its corresponding technical appendices provide the requisite information set out in Parts 1 of LBN's Regulation 22 letter (included at Appendix 1.1). The specific wording of the Regulation 22 letter has been reproduced in full, with the appropriate responses set out directly below each question/ topic. This further environmental information particularly corresponds to ES Chapter 8: Noise and Vibration and ES Chapter 18: Cumulative Effects.
- 1.17 This ESSA is intended to be read in conjunction with the full ES (Volume I) and its accompanying technical appendices (Volumes II, III and IX) submitted to LBN with the CADP planning applications CADP1 and CADP2 in July 2013, together with the first ESA submitted in March 2014.
- 1.18 The order of the ESSA is as follows:

#### **Regulation 22 Matters - Further Information, Part 1, Item 1: Air Noise and Ground Noise**

- 1.19 This further information and the responses to LBN's specific queries are provided in Section 2, which has been compiled by the Airport's noise consultants - Bickerdike Allen Partners (BAP).
- 1.20 As requested by LBN Item 1, air noise contours have been generated using the actual tracks flown by aircraft rather than using the London City Airport published Standard Instrument Departure (SIDs) Routes (presented in Appendix 2.1), and commentary is provided on these contours.

#### **Regulation 22 Matters- Further Information, Part 1, Items 2-4: Construction Noise**

- 1.21 As requested by LBN Items 2-4, further information is provided in Section 3 with regard to Construction Noise, including cumulative night time noise emissions from different sources (e.g. the haul road and specific plant) under 'worst case' scenarios and on-time periods (Items 2 and 3); and, an additional assessment of changes in overall road traffic noise added to noise from the construction plant (Item 4).

#### **Regulation 22 Matters- Further Information, Part 1, Item 5: CS100**

- 1.22 Part 1, Item 5 of the LBN letter relates to the Bombardier CS100 and the manufacturer's noise and test data used within the noise assessment of the ES, which was previously provided in the March 2014 ESA (pages 31 and 32 and Appendix 4.1 B). The response to this request is included within Section 4 of this ESSA.

### **Regulation 22 Matters- Further Information, Part 1, Item 6: Cumulative Impacts**

- 1.23 LBN has requested that a planning application submitted by ABP for the redevelopment of the site known as Royal Albert North, Beckton, E16 (LBN Planning Application reference number 14/00618/OUT) is considered in terms of potential cumulative impacts, particularly in relation to noise.
- 1.24 The ABP application was registered after the CADP planning applications and ES were submitted (as well as LBN's first Regulation 22 letter) but it is understood that the application could nonetheless be determined before the CADP applications.
- 1.25 In addition to the ABP scheme, consideration has been given to other relevant development proposals which have, or are likely to be, determined prior to the determination of the CADP application proposals. Section 5 of the ESSA and the corresponding Appendix 5.1 therefore provide an update to the cumulative impact assessment, including any change to the residential properties and population which would fall into the air noise contours should these developments proceed and be built-out in the future.

### **Further Clarifications not included within LBN's Regulation 22 Letter**

- 1.26 As mentioned above, Section 6 of this ESSA consists of two minor clarifications that were not requested within LBN's Regulation 22 letter but that relate to the information submitted in the ESA (March 2014). These include:
- 1.27 An explanation of the terms 'Sideline/lateral', 'Flyover' and 'Approach'. These were used within Section 4 of the March 2014 ESA in order to present the CS100 noise testing data obtained from a flight trial in Canada (Table 4.6) and to compare the noise characteristics of this 'new generation' aircraft with the noise certification data of other aircraft in operation at the Airport (Table 4.7). As these terms were not described within the Glossary and Abbreviation section of the ESA (Section 11), for the sake of completeness, the International Civil Aviation Organization (ICAO) definitions of these terms have been included within Section 6 of this ESSA.
- 1.28 The second part of Section 6 relates to the assessment of 'Air Quality Neutral' status. The GLA Supplementary Planning Guidance (SPG) on Sustainable Design and Construction was adopted by the Mayor in April 2014. The SPG was in draft at the time that the ESA was submitted (March 2014) and therefore a provisional assessment of the CADP against these criteria was undertaken using Building Emission Benchmarks (BEM) in the draft SPG. This analysis was provided at pages 42-44 of the ESA. As the final published SPG contains slightly different BEM factors, the data has been re-analysed and is presented in this section of the ESSA for the sake of completeness. This shows that the new BEM have no material bearing of the conclusions of the original assessment.

### **ES Second Addendum Summary and Appendices**

- 1.29 A summary of the ESSA is provided within Section 7 which provides an overview of the responses to Part 1 of LBN's Regulation 22 letter, along with the further clarifications provided.



### **Glossary and Abbreviations**

- 1.30 Section 8 includes an update to the Glossary and Abbreviations tables to include terms used within this ESSA.

## 2. REGULATION 22: AIR AND GROUND NOISE

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### a) Introduction

2.1 The following section responds directly to LBN's Regulation 22 request for further information on matters dealt with in ES Chapter 8: Noise and Vibration. It provides a response to Part 1, Item 1 of the letter, as provided by the Airport's noise consultants, Bickerdike Allen Partners (BAP).

### b) Regulation 22-'further information'

#### *Air Noise and Ground Noise*

##### **LBN Reg 22 Request:**

*1) In LCA's Regulation 22 response (10th March 2014), Figure 4.2.1 showed how actual departure tracks differ from the standard instrument departure routes (SIDs) at London City Airport. The noise contours for the Environmental Statement and also those produced annually for sound insulation assessment purposes are based on the London City Airport's published SIDs. Although it is accepted that for the key contours (57 dB and higher), the differences are expected to be small, we request that contours are generated using the actual tracks flown from London City Airport aircraft rather than using the London City Airport published SIDs.*

##### **Response:**

2.2 The actual departure tracks flown from the Airport have been derived from a further analysis of the three weeks of data provided in Section 4 of the ESA (March 2014). Three average mode summer LAeq,16h noise contours have been generated using this route data:-

- 2012 Actual
- 2023 Without Development
- 2023 With Development

2.3 For each noise contour (Appendix 2.2, Figures 2.2 to 2.4), data relating to the contour area, number of dwellings and the population count within each contour band has been determined. A comparison is given with the same information contained in the ES, with and without permitted development.

#### **Departure Routes**

2.4 Figure 2.1 within Appendix 2.1 provides a comparison between the actual departure tracks followed by aircraft departing from the Airport on both runways with the Standard Instrument Departure Routes (SIDs) used in Chapter 8 of the ES. The figure shows the mean track and an assumed dispersion around the mean track.

2.5 The mean track has been determined from an analysis of three individual weeks or seven day periods of departure track data, both for Runway 09 and Runway 27, derived from the Airport's noise monitoring and flight track keeping system which is described in the ES and Section 4 of

the ESA (March 2014). The dispersion model is based on the same assumptions as used and presented in Chapter 8 of the ES. These assumptions are found to provide a reasonable match with the actual dispersion pattern at the Airport within the zones defined by the noise contours.

**Noise contours**

2.6 Figures 2.2 to 2.4 within Appendix 2.2 include the noise contours for 2012, 2023 ‘Without CADP’ and 2023 ‘With CADP’ respectively. Each contour plan shows a set of noise contours presented in the ES (ES Appendix 8.4-8.11) based on aircraft departing along the Airport’s SIDs compared against those determined from the actual departure tracks.

**Contour Areas, Dwelling and Population Counts**

2.7 Tables 2.1-2.3 below provide the contour areas, dwelling counts and population counts, without permitted developments, for the three noise contour scenarios. Data based on the actual tracks is presented against that produced in the ES (ES Appendix 8.4-8.11) to compare statistics for contours produced using the SIDs as against the actual departure tracks.

**Table 2.1 - Contour areas (km2), LAeq,16h average mode, summer day**

Scenario Contour, L <sub>Aeq,16h</sub>	Current (2012)		2023 Without dev.		2023 With dev.	
	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
Dep track	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
57 dB	6.3	6.3	7.8	7.8	9.1	9.0
63 dB	1.6	1.6	2.0	2.0	2.4	2.4
69 dB	0.5	0.5	0.6	0.6	0.7	0.7

**Table 2.2 - Approximate number of dwellings in contours (not including permitted developments), LAeq,16h average mode, summer day**

Scenario Contour, L <sub>Aeq,16h</sub>	Current (2012)		2023 Without dev.		2023 With dev.	
	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
Dep track	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
57 dB	8,300	8,300	12,400	12,000	15,100	14,800
63 dB	400	400	900	900	1,300	1,300
69 dB	0	0	0	0	0	0

**Table 2.3 - Approximate population in contours (not including permitted developments), LAeq,16h average mode, summer day**

Scenario Contour, L <sub>Aeq,16h</sub>	Current (2012)		2023 Without dev.		2023 With dev.	
	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
Dep track	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
57 dB	17,900	18,000	27,800	26,500	34,100	33,200
63 dB	1,000	1,000	2,100	2,100	2,900	2,800
69 dB	0	0	0	0	0	0

2.8 The number of dwellings and population including permitted but not yet built residential developments are set out Tables 2.4 and 2.5.

**Table 2.4 - Approximate number of dwellings in contours  
(including permitted but not yet built residential developments),  
L<sub>Aeq,16h</sub> average mode, summer day**

Scenario Contour, L <sub>Aeq,16h</sub>	Current (2012)		2023 Without dev.		2023 With dev.	
	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
Dep track	8,300	8,300	26,400	25,000	30,600	29,800
57 dB	400	400	5,500	5,500	6,700	6,400
63 dB	0	0	0	0	0	0

Note: Counts include 5000 dwellings for the permitted Silvertown Quays development although a new scheme is currently proposed containing only around 2000 dwellings.

**Table 2.5 - Approximate population in contours  
(including permitted but not yet built residential developments),  
L<sub>Aeq,16h</sub> average mode, summer day**

Scenario Contour, L <sub>Aeq,16h</sub>	Current (2012)		2023 Without dev.		2023 With dev.	
	SIDS (ES)	Actual	SIDS (ES)	Actual	SIDS (ES)	Actual
Dep track	17,900	18,000	65,600	62,300	76,000	74,200
57 dB	1,000	1,000	14,500	14,500	17,500	16,700
63 dB	0	0	0	0	0	0

Note: Counts include population for 5000 dwellings for the permitted Silvertown Quays development although a new scheme is currently proposed containing only around 2000 dwellings.

- 2.9 Table 2.1 to Table 2.5 show that the area, dwelling counts and population counts for the 57dB, 63dB and 69 dB noise contours are very similar whether based on the Airport's SIDs or on the actual departure tracks flown by the aircraft.
- 2.10 In spatial terms, as shown in Table 2.1, the areas of the contours are identical with one slight exception. The only difference is apparent in 2023 'With CADP' case, where the contour area for the 57 dB contour, determined from the actual tracks, is very slightly smaller than that based on the Airport's SIDs (9.0 as compared to 9.1 square kilometres).
- 2.11 In terms of dwelling and population counts, the counts determined from the actual flight tracks are generally identical or slightly lower than (and showing a slight improvement over) those produced using the Airport's SIDs. The only exception relates to the 2012 population counts where a slightly higher count is recorded under the actual flight tracks than using the Airport's SIDs. This, however, is considered to occur more as a result of number rounding to the nearest 100 rather than constituting any material difference.
- 2.12 To conclude, this assessment indicates that there is no material difference between the areas of the key noise contours and the dwelling and population counts contained within them, whether calculated from the published the Airport's SIDs (as used in the ES) or the actual departure tracks determined from the Airport's noise monitoring and flight track keeping system. Accordingly, the conclusions concerning air noise in the noise chapter (Chapter 8) of the ES (as supplemented by the ESA and this ESSA) remain unchanged as a result of this analysis.

### 3. REGULATION 22: CONSTRUCTION NOISE

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#### a) Introduction

- 3.1 The following Section and Technical Appendices relate directly to LBN's Regulation 22 request for further information on matters dealt with in ES Chapter 8: Noise and Vibration. It provides a response to Part 1, Items 2-4 of the letter, as provided by the Airport's noise consultants Bickerdike Allen Partners (BAP).

#### b) Regulation 22-'further information'

##### **Construction Noise**

- 3.2 Requests 2 and 4 have been addressed together as they both relate to the haul road.

##### **LBN Reg 22 Request:**

*2) When calculating likely noise emissions, the haul road noise and construction noise need to be considered cumulatively to establish the worst case 15 minute noise levels.*

##### **LBN Reg 22 Request:**

*4) It is not clear what method has been adopted to assess the haul road. However should a BS5228:2009 approach have been taken, these noise levels should be added to the noise from the construction plant assessments when evaluating significance, particularly if the site routes will be used purely by construction vehicles. If not, an assessment based on changes in overall road traffic noise is more appropriate.*

*It should be noted that the assessment is based on construction traffic being limited to daytime hours only. This assumption should be confirmed and the noise from any haul activities included as part of the overall noise assessment.*

##### **Response:**

- 3.3 Appendix 3.1 includes a figure titled 'Schematic Layout of Contractors Facilities and Access' (Figure 6.9 extracted from Chapter 6 of the ES) which shows the routes for construction traffic by road and barge. The haul road will be used at various times of the day and night.

BAP confirms that the haul road has been added to the noise model and therefore added to the noise from the construction plant assessments.

- 3.4 Construction traffic (Heavy Goods Vehicles, HGVs) will arrive at the contractor's compound via Woolwich Manor Way and Hartmann Road East. The closest residential properties along Woodman Street will be protected by a temporary noise barrier. Access airside will be via Connaught Road. HGVs will not pass close to any residential properties along this route. An additional route via the existing airport access road passes close to residential properties on Camel Road. These are already protected by a traffic noise barrier.
- 3.5 Predictions of likely peak levels of HGV traffic were provided in the ES and the ESA. The peak HGV vehicle movements by road per calendar month were 585 two way trips (Years 1-3) and

626 two way trips (Years 4-7). The Phase 1 peak monthly HGV estimate was not changed for the ESA. However, as explained at paragraph 3.19 of the ESA, the Phase 2 peak HGV monthly movements increased to 874 due to a change in construction methodology for the Hotel in order to reduce the amount of construction required outside of operational hours.

- 3.6 The predictions in the ESA represent the peak months. For Phase 1 the range will vary from 258 to 585 two way HGV trips per month. During Phase 2 the range will vary from 218 to 874 two way trips.
- 3.7 During these peak months the total daily HGV traffic will be in the order of 19 two way trips for Phase 1 and 29 two way trips for Phase 2. The number of trips will be lower still for a short term assessment period and at-worst could be between 2 and 4 two way trips per hour.
- 3.8 The nearest dwellings on Woodman Street south of the Hartmann Road East haul road will benefit from noise screening provided by either the new temporary construction noise barrier or the existing DLR noise barrier. The nearest dwellings on Camel Road south of the existing airport access road/Hartmann Road will benefit from screening provided by the existing road traffic noise barrier. Due to the low number of movements and the screening, noise levels are not expected to be significant due to the haul road.
- 3.9 As a sensitivity exercise, BAP has added haul roads to the relevant one hour noise contour maps provided previously in the ES Addendum (Appendix 3.4), as well as to the 15 minute noise contour maps listed below as Contours 1-8.
- 3.10 To aid comparison, contour maps are shown with and without haul roads, as described below and included at Appendix 3.3, 4 two-way trips have been added into the one hour models. Two two-way trips have been added in to the 15 minute models. It has been assumed that these vehicles are using Route 3 (see Figure 6.9 in Appendix 3.1) which runs along the southern perimeter of the site. The predictions can be seen in the following Contours which cover peak periods for night time decks works.
- 3.11 The Contours below (Appendix 3.3) refer to “Section” 2A, 2B and 3A (see Figure included within Appendix 3.2- *Markup of Drawing CA0L-900 Rev E* ) which relate to works on various phases of the deck construction, and also to “ETSE” which relates to the Eastern Terminal Stand Extension works:
- Contour 1 – ES addendum July 2016 one hour, no haul road
  - Contour 2 – ES addendum 2016 one hour, with haul road
  - Contour 3 – Worst case 15 minutes, no haul road
  - Contour 4 – Worst case 15 minutes, with haul road
  - Contour 5 – Typical (Section 2A and ETSE) 15 minutes, no haul road
  - Contour 6 – Typical (Section 2A and ETSE) 15 minutes, with haul road
  - Contour 7 – Typical (section 3A and 2B) 15 minutes, no haul road
  - Contour 8 – Typical (sections 3A and 2B) 15 minutes, with haul road

3.12 The haul road noise contribution to the Contours is summarised in Table 3.1 below.

**Table 3.1- Summary of haul road test (highest noted receiver level on contours)**

Contour	Description	Time period (T)	$L_{Aeq,T}$ (no haul road)	$L_{Aeq,T}$ with haul road
1 & 2	Six work areas 2A deck pile heads and beams 2A deck planks, svsc and topping Eastern Terminal Stand Extension 3A deck piles 3A pile heads and beams 2B deck noise barrier works	1 hour	53.1	53.7
3 & 4	Six work areas, higher % on time	15minutes	56.7	56.8
5 & 6	Three work areas; 2A deck pile heads and beams 2A deck planks, svsc and topping Eastern Terminal Stand Extension	15 minutes	52.8	53.2
7 & 8	Three work areas; 3A deck piles 3A pile heads and beams 2B deck noise barrier works	15 minutes	54.3	54.6

3.13 The worst case calculations demonstrate that the cumulative noise level of both fixed working and haul road HGV traffic may slightly increase the predicted noise levels. However, this increase is very small and does not materially change the overall conclusions of the construction noise assessment.

**LBN Reg 22 Request:**

*3) In the case of the 15-minute night-time criterion, and over shorter periods, noise levels are likely to be attributable to specific activities and the operation of specific plant rather than an average as per the calculations. For example, an on-time of 10% attributable to a 12-hour day is around 80 minutes.*

*On this basis, it is entirely possible for plant to be operating fully over a period of 15-minutes. The use of 'on-time' weighted assessed noise levels is not a suitable method of assessment for night-time 15-minute limits and therefore does not provide a sufficient understanding of the significance during the night.*

*The assessment should therefore be refined to provide further information of the sensitivity of these on-time assumptions on 15-minute night-time construction noise levels.*

**Response:**

- 3.14 The Construction Noise Prediction Contour Maps provided in the March 2014 ESA (ESA Appendix 3.4) include a statement of the various assumed percentage on-times of plant. These contours within the ESA are actually representative of a worst-case busy hour during the Out of Operational Hours (OOOH) periods.
- 3.15 In the existing Section 106 Agreement relating to the 2009 planning permission (Ref. 07/01510/VAR) construction noise limits at the Airport for OOOH works are expressed in terms of a 5 hour LAeq,5h parameter for Saturday afternoon, 1 hour LAeq,1h during weekday evenings and a 15 minute LAeq,15min parameter for night time works. The 15 minute average period is more onerous than other construction noise standards for large infrastructure projects. These other large infrastructure projects, such as Cross Rail, High Speed 2, Thames Tideway Tunnel and London Underground Northern Line extension, use a 1 hour averaging period at night.
- 3.16 The construction noise calculations in the ESA include all assumptions regarding percentage on-times. However, a number of sensitivity contours have been produced in light of LBN's request and these are reproduced in Appendix 3.3 and summarised below.
- 3.17 **Contour 1** – This is the same contour as produced in the Appendix 3.3 of the ESA for the “Night Deck Construction Activity” in July 2016 for reference purposes. The figure has been updated to present a worst case 1 hour noise level. This includes 6 work areas; 1- Deck Section 2A (pile heads and beams), 2- Deck Section 2A (deck planks services and toppings), 3- Eastern terminal stand extension services, 4 -Deck Section 3A (piles), 5- Deck Section 3A (pile heads and beams) and 6- Noise Barrier works. An explanation of these work sections is provided in Appendix 3.1 of the ESA with the locations identified in Appendix 3.2 of the ESSA. In practice it is very unlikely that simultaneous work will be happening in all 6 work areas during the same hour and these levels are likely to be over-predicting the 1 hour construction noise level.
- 3.18 **Contour 3**– This contour assumes that the same 6 work areas as assessed in Contour 6 are all operational and adds a higher percentage on-time for intermittent plant such as breakers, saws, casing vibration, barge engine noise etc. This would increase OOOH noise levels in the order of 3dB and these levels are also likely to be over-predicting the construction noise level.

- 3.19 **Contours 5&7** – BAP consider it very unlikely that all 6 works areas will be operational at the same time with such a high percentage on-time for intermittent plant when considered over a 15 minute period during OOOH and at night. Therefore contours 5 & 7 have been prepared which are more representative of a busy 15 minutes for the 6 work areas split into two groups of 3. These noise levels are comparable to those presented in Appendix 3.4 of the ESA and are considered to be representative of a busy 15 minute period.
- 3.20 In summary, it is feasible that there could be occasions when greater use of intermittent noisy plant could result in higher noise levels. However, BAP consider that the worst case assessment, included previously in Section 3 of the ESA, based on simultaneous working in all of the work areas is representative of typical worst-case noise levels.
- 3.21 It is also important to put into context the numbers of dwellings likely to be affected by significant levels of night time construction noise during Out of Operational Hours construction works.
- 3.22 Table 3.2 below considers three scenarios (including a scenario that looks at the number of properties potentially exposed to lower noise levels between 50 and 55 dB LAeq at night) assessed using the 2,388 noise sensitive receptors already in the CadnaA noise model. The CadnaA noise model was used in both the ES and ESA but in this ESSA analysis, a far greater number of receptors have been used in the model to investigate night time construction noise effects and impacts. These receptors were previously used to test the operational ground noise impact in Chapter 8 of the ES and take into account the variation in receiver heights for the low, medium and high rise flats.

**Table 3.2- Assessment of receptor numbers, no local screening**

Contour	Description	Time period (T)	<50	50-55	>55
1	Six work areas 2A deck pile heads and beams 2A deck planks, svsc and topping Eastern Terminal Stand Extension 3A deck piles 3A pile heads and beams 2B deck noise barrier works	1 hour	2255	125	8
3	Six work areas, higher % on time	15minutes	2057	252	79
5	Three work areas; 2A deck pile heads and beams 2A deck planks, svsc and topping Eastern Terminal Stand Extension	15 minutes	2283	98	7
7	Three work areas; 3A deck piles 3A pile heads and beams 2B deck noise barrier works	15 minutes	2207	148	33

- 3.23 Table 3.2 above includes noise from the haul road and does not include mitigation. It can be seen that generally a very small number of properties may be exposed to levels in excess of 55 dB LAeq. These are generally high level (2nd floor and above) receptors of properties closest to the works. A more significant number are exposed to levels between 50 and 55 dB LAeq. These receptors are predominately the Westland, Queensland and Dunedin House flats which overlook the airport. These have already been treated under earlier airport sound insulation schemes and only a very small minority of these flats (12 out of 233) refused

access. This means that, in practice, the vast majority of these properties will already be protected as a result of treatment under the Airport’s (First Tier) Sound Insulation Scheme. The Airport has already committed to offering those properties that previously refused the Airport’s sound insulation scheme, a further opportunity to accept the works. In addition however, as discussed below and set out at Appendix 3.4 of this ESSA, the Airport will extend the scheme to any properties likely to be exposed to greater than 55 dB LAeq,15min during the night-time period comprising works as described in the Airport’s current Second Tier Scheme. Daytime limits are also proposed which, if exceeded, will trigger further sound insulation measures for eligible dwellings.

- 3.24 Contour 3 indicates that up to 79 receptors could be exposed to levels in excess of 55 dB LAeq without including mitigation with 252 receptors exposed to levels between 50 and 55 dB LAeq. However, this represents a scenario with six work areas operating with a high % on time (40% for intermittent plant) of plant on-times and was calculated as a sensitivity test. BAP do not believe this will be representative of the worst-case 15 minutes and is very unlikely to occur. BAP consider that Contours 5 and 7 are more likely to be representative of night time piling and deck works.
- 3.25 This position is supported by a review of monitoring data from the previous Operational Improvement Programme (OIP) construction works at the Airport which indicate that the 55 dB LAeq,15min level is unlikely to have been exceeded at any of the nearest dwellings during 23 days of night time monitoring during piling works. The monitoring data is presented later in Table 3.5 below.
- 3.26 A further sensitivity test has been carried out to see the improvements available through mitigation from local screening. Local screening is unlikely to be practicable for some of the noisier activities such as piling. For some activities local screening is feasible. Noise models from typical deck construction have been modelled both with and without local screening (local 2.5m screens or hoardings). These are presented in Contours 09 & 10 and summarised below in Table 3.3.

**Table 3.3-Assessment of receptors, screening sensitivity**

Contour	Description	Time period (T)	<50	50-55	>55
09	Two work areas; 2A heads and beams (14) 2A planks, svcs, topping (15) <b>No local mitigation</b>	15 minutes	2,332	54	2
10	Two work areas; 2A heads and beams (14) 2A planks, svcs, topping (15) <b>Local screening 2.5m screen</b>	15 minutes	2,376	12	0

- 3.27 The sensitivity test demonstrates that for this source location typical night deck works it is feasible to reduce construction noise levels to below the 55 dB limit.
- 3.28 It is noted that Table 3.3 assumes fixed areas of working. As the deck works are carried out the noise sources will move west to east across the Airport site over time which will change the numbers of receptors exposed. To test the influence of this the above noise sources described on the Contour 09 map (Appendix 3.3) were moved to other locations west to east. The results of the analysis can be seen in Table 3.4 below and the contours are provided in Contours 11, 12 & 13.

**Table 3.4- Assessment of receptors, variation in source position**

Contour	Description	Time period (T)	<50	50-55	>55
11	Deck works 2A heads and beams (14) 2A planks, svcs, topping (15) <b>No local mitigation Position 1</b>	15 minutes	2,332	54	2
12	Deck works 2A heads and beams (14) 2A planks, svcs, topping (15) <b>No local mitigation Position 2</b>	15 minutes	2,290	96	2
13	Deck works 2A heads and beams (14) 2A planks, svcs, topping (15) <b>No local mitigation Position 3</b>	15 minutes	2,148	238	2

3.29 The predictions in Table 3.4 demonstrate that, for typical night deck works, the number of receptors exposed to levels of 55 dB is very low. Table 3.4 assumes no local screening. With local screening the analysis shown in Table 3.3 demonstrates it is feasible to reduce noise levels below the 55 dB limit at all receptors. Those exposed to levels of 50-55 increases as the works move from west to east. This is as the contours reach Westland, Queensland and Dunedin House flats, almost all of which have been treated under the sound insulation scheme, as noted above. These properties will therefore not be significantly affected by night construction works.

#### **Programme**

3.30 Predictions indicate that during certain periods of construction (predominantly associated with night time deck works) a very small number of receptors could be exposed to noise levels in excess of 55 dB LAeq, 15minute. This will be predominately associated with night time deck works

3.31 Out of Operational Hours deck works including night works for Sections 2A, 2B and 3A are expected to occur from September 2015 until November 2016. During this period, piling is expected to occur for around a 34 week period (excluding precast and other insitu topping works). There is then a significant period with no significant night activity until night time deck works for Sections 1B, 2C, 3B are expected to occur between January 2018 and June 2019. During this period, piling is expected to occur for around a 40 week period. Landside night works are also expected to occur within this period and also at times beyond June 2019. Predictions indicate that generally, the noise limit of 55 dB LAeq will not be exceeded at receptors as a result of these landside works.

3.32 To ensure that the community can benefit from some respite from night-time construction works, the Airport will ensure that no night-time works will occur on a Sunday. In addition, Appendix 3.3 of the ESA shows that there are significant periods of time over the CADP construction period when no night-time works will take place. Although predictions indicate that during the two construction peak periods a small number of receptors are at risk at times of being exposed to a greater noise level than 55 dB LAeq, 15min, data from measurements obtained during the OIP works indicate that actual piling construction noise levels are lower than predicted. This data indicates that piling is unlikely to generate noise above 55 dB LAeq, 15min at receptor positions, as discussed below.

### OIP Measured Noise data

3.33 Given the construction methods proposed by CADP, the potential noise impact due to construction activity for the CADP is likely to be consistent with that from the Operational Improvement Programme (OIP) project at the Airport. There were minimal complaints relating to night time noise (including piling) during the OIP works. During the OIP Apron extension project noise monitoring was carried out by the contractor. A long term noise monitor was set up at a location on the 2nd floor of the external stairs on City Aviation House at the airport. The noise monitoring data is summarised in Table below.

**Table 3.5- Summary of OIP construction noise monitoring data**

Month	Day	Period	L <sub>Aeq</sub> , 15min Mean average	Max L <sub>Aeq</sub> , 15min	Min L <sub>Aeq</sub> , 15min	Standard Deviation
Aug-07	Wednesday 8th	Night	56	59	51	2
	Thursday 9th	Night	56	61	53	2
	Friday 10th	Night	54	56	50	2
	Saturday 11th	Night	51	55	47	3
	Sunday 12th	Night	52	58	48	4
	Tuesday 14th	Night	55	58	52	2
	Wednesday 15th	Night	56	62	51	4
	Thursday 16th	Night	55	59	51	3
	Friday 17th	Night	54	58	49	2
	Saturday 18th	Night	51	55	47	3
	Tuesday 21st	Night	60	65	54	3
	Wednesday 22nd	Night	60	63	56	2
	Thursday 23rd	Night	53	59	48	3
	Friday 24th	Night	52	55	48	3
	Saturday 25th	Night	50	55	47	3
	Sunday 26th	Night	50	55	46	3
Monday 27th	Night	52	57	47	4	
Sep-07	Tuesday 4th	Night	56	62	50	3
	Wednesday 5th	Night	57	64	53	3
	Thursday 6th	Night	56	59	51	2
	Friday 7th	Night	55	59	50	2
	Saturday 8th	Night	51	58	47	3
	Sunday 9th	Night	52	60	47	4

3.34 Table 3.5 shows the noise levels at the top of City Aviation House which is not representative of the nearest dwellings that lie well beyond this location. In BAP's professional judgement, noise levels at the nearest dwellings are expected to be around 9 dB(A) lower than measured at City Aviation House given the increased distance from the airport. This measurement data indicates that noise levels from the OIP works may have rarely exceeded 55 dB LAeq, 15min. Due to the comparable noise sources and construction activity and also comparable distances from receptors to sources, similar levels are expected under the CADP construction works for the two peak periods of night time construction when piling occurs. The noise levels at the nearest receptors during the remainder of the construction programme are generally expected to be far less during night-time works.

### Construction Noise Mitigation

- 3.35 The use of a 55 dB LAeq,15min limit is considered to be an appropriate level as a trigger level for sound insulation with respect to the CADP works. Current and comparable large infrastructure projects (Cross Rail, High Speed 2, Thames Tideway Tunnel, London Underground Northern Line extension) all adopt a less stringent 1 hour 55 dB LAeq,1h threshold for sound insulation. Notwithstanding this, the shorter averaging time of 15 minutes under CADP as opposed to 1 hour offers greater protection given the baseline conditions at the nearby communities around the Airport during the night. In keeping with other large infrastructure projects offering sound insulation schemes, daytime limits are also proposed which, if exceeded, will trigger sound insulation works for eligible dwellings.
- 3.36 A draft Framework Construction Noise and Vibration Management And Mitigation Strategy (CNVMMS) has been prepared and is included at Appendix 3.4 of this ESSA. It includes the principles of a dispensation scheme relating to specific construction noise limits to be agreed via planning condition. It also includes a commitment to predict, monitor and manage the noise impact in accordance with a scheme to be agreed with the local authority. This will ensure that construction noise levels will be controlled using best practicable means. The detailed CNVMMS will include a re-assessment of noise impacts and would be finalised when a contractor is appointed.
- 3.37 A further mitigation measure, comparable again to the OIP works, is a commitment to ensure there will be no significant night time works on a Sunday night to provide a guaranteed period of respite for local residents.
- 3.38 As indicated above, most properties potentially exposed to significant noise levels will have already been treated under the Airport's airborne sound insulation scheme. The predicted numbers of properties potentially exposed to noise levels at times in excess of the 55 dB LAeq,15min level during night time works is very small. As discussed above, the majority of those properties predicted as being exposed to levels in excess of 50 dB LAeq, 15min have already been treated under previous sound insulation schemes.
- 3.39 These properties will have double glazed windows and acoustic ventilation. The Airport has committed to re-offering sound insulation works to those properties that previously refused the sound insulation works treatment under the airport's First Tier Works and now become exposed to night time construction noise above 55 dB LAeq,15min. In addition to this, for any property predicted to be exposed to more than 55 dB LAeq,15min during the night-time period, a further mitigation package of additional secondary glazing and ventilators equivalent to the Airport's current Second Tier scheme will be made available to residents. This will include a contribution towards high performance thermal double glazing should this be a resident's preference. This second tier scheme will also be made available to eligible properties exposed to construction noise levels above limits during the daytime, evening and weekend periods. The principles of such a scheme is set out in the draft Framework CNVMMS at Appendix 3.4.
- 3.40 The CNVMMS will also consider the introduction of additional construction noise mitigation for exceptional circumstances in the very unlikely event that any properties become exposed to much higher levels of construction noise at night noise (exceeding 65 dB LAeq,15min occur for a period of time). This is not predicted for the CADP construction works but if necessary

additional measures based on best practice from other comparable large infrastructure projects will be introduced.

- 3.41 Consideration has been given to the assumed height of construction noise barriers. The temporary construction barrier along Woodman Street is 3m above local ground height.
- 3.42 BAP understand that although complaints were limited for the comparable OIP works, some complaints were received due to activity within the OIP site compound. The site compound has the potential to generate various intermittent impact sounds from materials handling and also elevated noise sources from mobile cranes.
- 3.43 A standard 2.4m solid site compound perimeter fence will significantly reduce noise from material handling although this may not be adequate to significantly reduce noise from the elevated sources of the engines of crawler cranes. Acoustically an optimum hoarding height of 3.5m located close to the crawler cranes will help to mitigate this impact. Alternatively taller perimeter barriers of approximately 5m could be used. The height of the hoarding and additional local screening will be reviewed as part of the CNVMMS when a contractor is appointed and further details of construction methodology are available.

#### **Conclusion on Residual Construction Noise Effects**

- 3.44 On the basis of the additional technical assessment and proposed noise mitigation measures identified in the ES, ESA and above, it is considered that the overall residual effects of CADP construction activities would be a minor adverse impact in relation to Out of Operational Hours (OOOH) works (night time and weekends). The Construction Noise and Vibration Mitigation Strategy (CNVMMS) as well as appropriate planning conditions will ensure these mitigation measures are implemented to safeguard the amenity of the surrounding community.
- 3.45 This finding is in keeping with that found in the ES, supplemented by the ESA, that construction noise has the potential to give rise to impacts varying from minor adverse to significant moderate adverse during out of operational OOOH hours while during the daytime, negligible impacts are predicted. This ESSA has reviewed in further detail the number of receptors and the extent to which they are likely to be affected by construction noise over the key noise producing periods of the CADP construction programme during OOOH works (night time and weekends). In addition, it has taken account of the extensive noise mitigation measures that are being offered as part of CADP and as set out in the ES, ESA and ESSA to safeguard the amenity of the surrounding community. Based on this more detailed information, with the offered mitigation, the residual noise effects will give rise to a minor adverse impact during Out of Operational Hours works (night time and weekends). Any significant adverse impacts would be limited to at most a few receptors, and then only if they did not wish to take up the offer of sound insulation protection works. This conclusion is consistent with that of the ES and ESA.

## 4 REGULATION 22: CS100 NOISE AND TEST DATA

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### a) Introduction

- 4.1 This Section aims to provide clarity in relation to how the noise and test data for the next generation aircraft (Bombardier CS100) have been sourced and applied to the specific circumstances of operations at the Airport. This forms Part 1, Item 5 of LBN's letter.

### b) Regulation 22-'further information'

#### *Air Noise and Ground Noise*

**LBN Reg 22 Request:**

*5) The assessment of air noise includes data relating to the new generation CS 100 aircraft. Please clarify how the manufacturer's noise and test data has been used and translated to the specific characteristics of London City Airport.*

**Response:**

- 4.2 Aircraft and engines are independently assessed and certified for compliance with the appropriate International Civil Aviation Organisation (ICAO) standards before they enter service. This process provides noise certification data determined from a carefully controlled independent noise measurement programme undertaken in accordance with internationally recognised procedures defined by ICAO<sup>1</sup>. As the Bombardier CS100 (CS100) is not yet in operation, no such recognised noise certification data on this aircraft is currently available. To assess the noise output of new emerging aircraft, it is necessary to seek information on the noise characteristics of an aircraft from the aircraft and engine manufacturer, assuming this is available. To aid noise modelling work within the Environmental Statement, information has been received in confidence from Pratt and Whitney on the noise characteristics of engines for the CS100 aircraft. This section explains how this information has been used for the CS100 aircraft in the ES noise modelling process.
- 4.3 Noise certification data describes the noise levels, measured as effective perceived noise levels (measured in EPNdB), for departure operations and arrival operations. For departure operations, two assessment points are used. For arrival operations, one assessment point is used. These assessment points are described in Section 6 below.
- 4.4 The noise certification values provided by Pratt and Whitney for the PW1500 engines that are to be used on the CS100 aircraft relate to an estimate for an operational take-off weight of 123,000 to 129,000 lbs, typical of those expected at LCY. Also, the approach data is estimated on the basis of a 5.5 degree glide slope. When taking account of this information, the values

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<sup>1</sup> International Standards and Recommended Practices "Environmental Protection" Annex 16 to the Convention on International Civil Aviation, Volume 1 Aircraft Noise.

taken for departure and arrival and used to derive the noise modelling information for the ES are as follows:-

- Departure Sideline/Lateral Noise Certification Levels<sup>2</sup>: 87.1 EPNdB
- Departure Flyover Noise Certification Level<sup>2</sup>: 77.1 EPNdB
- Arrival Noise Certification Level<sup>2</sup> (based on 5.5 degree approach): 91.2 EPNdB

4.5 Using the Integrated Noise Model (INM) and its in-built database of aircraft, various aircraft types were modelled to calculate the noise levels at the three noise certification points. For arrival noise, a 5.5 degree approach was assumed. This process identified the Embraer 145 as providing the best fit to the CS100 data, The Embraer 145, when modelled in INM, gives rise to the following values at the three noise certification points:

- Departure Sideline/Lateral Noise Certification Levels<sup>3</sup>: 84.2 EPNdB
- Departure Flyover Noise Certification Level<sup>2</sup>: 77.2 EPNdB
- Arrival Noise Certification Level<sup>2</sup>: 91.8 EPNdB

4.6 Some adjustments were necessary to the in-built noise profile database for the Embraer 145 to match the CS100, while at the same time providing a tolerance to reflect the fact that actual noise levels might be slightly higher than predicted. The adjustments made in the noise modelling work are set out below.

- Adjustment to Departure Noise Certification Levels<sup>2</sup>: +2.9 dB
- Adjustment to Arrival Noise Certification Levels<sup>2</sup>: +0.6 dB

Contour noise modelling has therefore been based on the CS100 producing the following noises levels at the three noise certification points:

- Departure Sideline/Lateral Noise Certification Level for CS100 in Noise Model: 87.1 EPNdB
- Departure Flyover Noise Certification Level for CS100 in Noise Model: 80.1 EPNdB
- Arrival Noise Certification Level for CS100 in Noise Model: 92.4 EPNdB

4.7 As explained in paragraphs 4.31 and 4.32 of the ESA, March 2014, the CS100 has undergone flight tests in Canada since the original submission of the CADP planning application in July 2013. The results of the flight test noise measurements are described in Airbiz (2013) Porter Airlines Proposal Review - Final Report 11466R04, 27 November 2013. Included in this report are also the results of static noise tests undertaken by Pratt and Whitney on the PW1500

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<sup>2</sup> These values are provided in Appendix 4.1 of the ESA

<sup>3</sup> These values are provided in Appendix 4.1 of the ESA

engines, with results given at the noise certification points adjusted to account for the effects of other noise sources, such as the flow of air over the fuselage. These results represent an update over the data provided confidentially to LCY by P&W and used in the ES. This later data is available to view at: [www.toronto.ca/legdocs/mmis/2013/ex/bgrd/backgroundfile-64300.pdf](http://www.toronto.ca/legdocs/mmis/2013/ex/bgrd/backgroundfile-64300.pdf) and is summarised in Table 4.6 of the ESA.

4.8 A comparison of the results of these static noise tests and also the flight test noise measurements undertaken in Canada against the noise assumptions used in the Noise Model for the ES is given below:

**Table 4.1- Comparison of CS100 Noise Certification Levels**

Noise Certification Point	ES Noise Model Assumptions	P&W Static Noise Tests: Florida	Flight Test Measurements in Mirabel	ES Modelling minus Flight Test Measurements
	EPNdB	EPNdB	EPNdB	dB
Sideline/Lateral	87.1	85.3	85.2	+1.9
Flyover	80.1	80.1	80.7	-0.6
Approach	92.4	91.0	90.7	+1.7

4.9 Table 4.1 shows that in general terms, the results of the CS100 noise modelling used in the ES compare well against those determined from later static and flight testing undertaken in Florida by P&W and in Mirabel by Bombardier. It can be seen that some tolerance exists in the ES assumptions in the case of sideline noise and approach noise to account for the possibility of higher noise emissions at LCY (ie., due to load factor, glide slope, water around airport, etc). For flyover noise, where a slight shortfall exists in noise modelling assumptions compared to recent flight tests (0.6 dB), this is of less importance at LCY since it relates to a position 6.5 km from the take off point which lies well beyond the extent of the 57 dB noise contour. In contrast, the sideline and approach certification points lie closer to the airport where people at LCY are more affected by noise, and therefore of most relevance at LCY. For these positions, the noise model is overestimating the noise of the CS100 by nearly 2 decibels as compared to recent flight trials.

4.10 Table 4.7 of the ESA compares the noise certification data for various aircraft in use at London City against the CS100 flight test data. This shows that the CS100 aircraft (scheduled to be introduced to the airport in 2016) to be significantly quieter than current turbofan aircraft including the Embraer E170 and E190 and the older RJ 100.

## 5 REGULATION 22: CUMULATIVE IMPACTS

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### a) Cumulative Effects

- 5.1 Part 1, Item 6 of LBN's letter includes a request for further information in relation to the potential impacts of the submitted ABP planning application (LBN Ref: 14/00618/OUT) on the cumulative effects assessment of the ES (Chapter 18).

### b) Regulation 22-'further information'

#### *Cumulative Impacts*

##### **LBN Reg 22 Request 6:**

*6) Chapter 18 (Cumulative Impacts) does not take into account the live planning application submitted by ABP for the redevelopment of the site known as Royal Albert North, Beckton, E16 (Planning Application reference number 14/00618/OUT). It is acknowledged that this application was registered on the 31st March 2014, which was after the issue of our first Regulation 22 (1) letter. However, the application may be determined at the Council's Strategic Development Committee on the 17th July 2014 and, in the event that the Council resolves to grant planning permission, it will become a committed scheme for EIA purposes. As such, a decision on the ABP application may occur before any decision is made on CADP1 and CADP2. In view of the specific characteristics of the proposed ABP development, being a significant large scale major development within close proximity to London City Airport, we require the cumulative and interrelated impacts arising between the ABP development and the CADP1/2 proposals should be considered as part of the ES. The impacts should not be assessed solely in relation to Chapter 18 but should be considered where appropriate as part of the assessment of the other relevant chapter topics, particularly in relation to Chapter 8 (noise and vibration).*

### c) Preamble

- 5.2 The following Section aims to respond to LBN's request as above and provide an update to the cumulative effects assessment in view of the passage of time since to CADP planning application was submitted in July 2013, including the Royal Albert North ABP scheme.

### d) Introduction

- 5.3 In accordance with the EIA Regulations 2011 and associated guidance, the July 2013 ES took into account all known schemes in the area which were approved, subject to planning permission or otherwise designated for development at that time. The list of 'cumulative schemes' was determined in consultation with LBN, as described in ES Chapter 3: EIA Methodology, and by the application of the screening criteria described in ES Chapter 18: Cumulative Effects (Paragraphs 18.19 -18.20 and Table 18.2).

- 5.4 The ES considered two forms of cumulative effects:

- Type 1 - The combined effects of individual residual impacts of the proposed development on a particular sensitive receptor, for example, the consequence of

increased traffic flows on air quality and noise, and the effects of increased employment on travel patterns; and

- Type 2 - The combined effects from several developments in the area which individually might be insignificant, but when considered together, could result in a significant cumulative effect.

5.5 As no material changes to the CADP1 and CADP2 proposals are being made and the further information in this ESSA does not materially alter the findings of the ES and ESA, only Type 2 effects are as part of this response and update.

### **Screening and Selection of Cumulative Schemes**

5.6 The schedule of cumulative schemes (previously forming ES Table 18.2) and the figure showing the location of these schemes in relation to the CADP (previously ES Figure 18.1) have been updated by the Airport's planning advisors Quod, and are enclosed at Appendix 5.1 of this report. RPS has used these materials to determine which newly consented developments warrant consideration in the cumulative effects assessment. This exercise has been undertaken for the sake of completeness, notwithstanding the fact that LBN has only asked for the ABP Royal Albert Dock scheme to be considered.

5.7 The selection process was informed by the air noise contours prepared by BAP in order to identify which schemes would fall within 57dB<sub>LAeq, 16hr</sub> 'with development' air noise contour for 2023 (ES Figure 8.11). Supplementary screening criteria were also applied in accordance with those used in the original ES (para 18.19), namely:

- 5.8 Developments that are within 1km of the boundary of the Airport runway;
- Comprise more than 10,000 sqm of development and/ or 100 or more residential units and/ or are of a particularly sensitive nature (e.g. new schools or hospitals);
  - Expected to be built-out at the same time as the proposal and with a defined phasing and construction programme;
  - Developments which are considered likely to result in significant environmental effects of some nature, often signified by being subject to EIA; and,
  - Developments that have planning permission or a 'resolution to grant' planning permission.
  - Seven new developments were identified which may have the potential to generate cumulative effects in combination with the CADP, as shown in Table 5.1 below.

**Table 5.1 - Schemes Included in the Cumulative Effects Update**

Scheme/ (Identifier number on plan)	Application Reference/ Date Approved (if known)	Summary Description	Approximate Distance from LCY/ in 57dB contour?
ABP Royal Albert Docks  (02)	14/00618/OUT  Pending – submitted March 2014	Hybrid planning application for up to 437,185 sqm (GEA) of floorspace with part submitted in outline and part submitted in detail, where: The Outline Component comprises a business-led mixed use development for up to 374,067 sqm (GEA) of floorspace (excluding basement) for business; retail, financial and professional services, food and drink uses, community and cultural, and assembly and leisure uses; residential; car parking and energy centre; new servicing routes, highways and landscaping, public realm improvements, public open space, access, and associated development. The Detailed Component of the application seeks approval for 63,118 sqm (GEA) of floorspace comprising business, serviced apartments, retail, financial and professional services, food and drink uses, community and cultural, and assembly and leisure uses, temporary car park and energy centre (including temporary access road and associated works), access and connectivity improvements, landscaping and public realm improvements, open space and associated development, and the change of use of two existing Grade II listed buildings.	250m  Yes
Land at Gallions Reach, Atlantis Avenue, E16 2QJ  (03)	12/01576/FUL	Development of site to provide 89 residential units arranged in 3 blocks of 12, 5 and 8 storeys in height, 35 associated car parking, amenity space and cycle parking to be provided.	Approx. 300m east/ north-east of the Airport.  Yes
26-34 Tidal Basin Road, E16 1AD  (15)	13/01873/FUL  Resolution to grant 11/02/14.  Note: Supersedes previously approved development Ref. 09/02013/FUL	Redevelopment of the site to provide two residential buildings (Class C3 use) of 24 and 23 storeys respectively, comprising 360 residential units and 455sqm of flexible Class A, B1 or D1 floorspace, landscaped open space with associated basement car parking, servicing, storage, plant and works incidental to the development.	Approx 2.5km west of the Airport.  Yes.
Site We4B, Western Gateway, Canning Town, London E16 1AD  (26)	09/01288/FUL  Planning Permission Granted November 2013	Erection of new hotel (Use Class C1) of 223 bedrooms with associated restaurant, lobby and meeting rooms upon existing podium. Change of use of basement area to ancillary C1 use for sprinkler tanks, CHP plant, and five on site car spaces.	Approx 2.2 km west of the Airport.  Yes

Former Goswell Bakeries & vacant warehouses, Caxtob Street North, E16  (28)	13/01461/FUL	Mixed use development including 336 residential flats, commercial uses, car parking and public realm including pedestrian of Hoy Street.	Approx 2.5km west of the Airport  No – just outside 57dB contour.
Car Park At South East Junction Of Prestons Road And Yabsley Street, Prestons Road, London  (34)	PA/12/02107  Planning Permission Granted 20/06/13	The erection of two buildings of 7 & 26 storeys comprising 190 residential units (78 x 1 bed; 58 x 2 bed; 50 x 3 bed; 2 x 4 bed; 2 x 5 beds), 134sq.m of gym space at upper ground level, 42 car parking spaces and 244 cycling spaces at basement level, communal open space and associated works.	Approx 4.5 km west of the Airport  Yes
Poplar Business Park, 10 Prestons Road, London, E14 9RL  (36)	PA/11/03375  Planning Permission Granted 23/09/13	Demolition of existing buildings and redevelopment of the site to provide a mixed use scheme of between 3 and 22 storeys comprising 8,104 sq metres business accommodation (Use Class B1), 392 residential units (Use Class C3), associated parking and landscaping	Approx 5 km west of the Airport  Yes (just)

- 5.9 Whilst a planning decision on the ABP Royal Albert Dock development has not yet been made, for the reasons set out in LBN's letter, this report considers the potential cumulative effects of this scheme in some detail. Furthermore, at a meeting with the Council on 21<sup>st</sup> March 2014 the Airport was also requested to consider two variants of the ABP scheme – the first being the planning application scheme which derives a population of c. 1300, and the second with a population of c. 1,600 people assuming the Council's preferred tenure of 35% affordable housing and 39% family units (3 bedroom). This sensitivity test only applies to the assessment of air noise impacts as set out in the cumulative air noise effects (under heading 'e' of this section).
- 5.10 The remaining 6 consented schemes listed in Table 5.1 (collectively termed the 'other schemes') have also been included in the cumulative air noise effects (under heading 'e' of this section) and, where applicable, in other assessment topics. However, as shown above, 5 of these other schemes (Nos. 15, 26, 28, 34 and 36) are a considerable distance away from the Airport and are physically and visually disconnected from it. Therefore, with the exception of air noise from overflying aircraft, there is a negligible risk of cumulative effects occurring.
- 5.11 The Atlantis Avenue development by One Housing Group (No. 3 in Table 5.1), whilst closer to the Airport, is still some 300m from the end of the runway. This is a relatively small scale scheme (comprising 89 residential units), especially when viewed in the context of the adjoining Royal Albert Basin / IVAX Quays / Great Eastern Quays masterplan (reference 12/01881/OUT) which lies to the south and is therefore closer to the Airport. This earlier proposal (containing up to 1,187 residential units) was considered in the original cumulative effects assessment and no significant adverse effects with the CADP were identified.

5.12 A review of the Planning Statement for the Atlantis Avenue development (NLP, 8<sup>th</sup> August 2012) indicates that, whilst no ES was prepared in support of the planning application, a number of technical assessments were completed, including:

- Flood Risk Assessment by Conisbee;
- Microclimate Assessment by RWDI Consulting Engineers;
- Odour Assessment by Entran Ltd;
- Daylight and Sunlight Impact Assessment by XCo2 Energy;
- Energy Statement by XCo2 Energy;
- Sustainability Statement by XCo2 Energy;
- Noise Assessment by Sandy Brown Associates LLP; and
- Ecological Survey by Ecology Solutions.

5.13 A review of the planning application reveals that the design has taken full account of the proximity of the Airport (including noise levels) and that no significant environmental effects would arise which could accentuate or worsen the impact of the CADP scheme.

#### **Other Developments Screened Out of the Updated Cumulative Effects Assessment**

5.14 Recent planning consents which constitute detailed, reserved matters or Section 73 variations to previously approved outline schemes (e.g. We8, The Pumping Station Site, Tidal Basin Road ref. 13/02356/VAR) have also been reviewed. However, in all cases, these detailed schemes have been found to be substantially similar to the outline planning schemes which were previously assessed in the ES cumulative effects chapter. In other words, there are no significant changes to the developments (e.g. the types and intensity of use) which would create materially different environmental effects to those already considered. Moreover, the previous assessment (presented in ES Chapters 7-16 and 18) can be considered to constitute a 'worst case' on the grounds that the maximum parameters (e.g. the upper range of floorspace and number of residential units) were used in the noise modelling and other impact assessments. Therefore, such overlapping development proposals have been scoped-out of this report so as to avoid 'double counting'.

5.15 The revised plans for the redevelopment of the Silvertown Quays site, to the immediate west of the Airport, are not yet available as no planning application or ES has been made publicly available. Therefore, no proper assessment of the cumulative impacts of this scheme with CADP can be undertaken at this time. However, RPS has obtained and reviewed the EIA scoping report for this proposed development prepared by Arup on behalf of the Applicant - The Silvertown Partnership (Arup, 12<sup>th</sup> February 2014).

5.16 This scoping report confirms that the scheme will comprise *"over 2,000 new homes, a maximum of 218,000 sq. m of brand accommodation and 197,000 sq. m of B1 offices"* (Section 4: the Proposed Development). This compares to the previously approved Silvertown Quays scheme (12/01234/FUL) which also comprised a mixed use scheme, but with a significantly greater number of residential units (i.e. 4930 vs. 2000).

- 5.17 The previously consented Silvertown Quays scheme was included in the ES cumulative effects chapter (see Table 18.2) and also in the air noise assessment presented in ES Chapter 8, including Tables 8.16 and 8.17 showing the approximate number of dwellings and populations in the 57, 63 and 69 dB LAeq,16hr air noise contours (*“taking account of permitted but not yet built residential developments”*). Therefore, were this assessment to be updated using the revised Silvertown Quays scheme, it is likely that there would be a significant reduction in the number of properties within the relevant contours. Furthermore, it is likely that such a reduction would more than off-set the inclusion of “up to” 845 units now proposed at the Royal Albert Dock site.
- 5.18 It is also noted from the Arup scoping report that the new Silvertown Quays scheme has been designed so as to ensure “that the development will not present an unacceptable risk to the physical, technical and operational safeguarding of the airport”. Furthermore, it confirms that both the main CADP1 application (13/01228/FUL) and the outline application for the Hotel (CADP2 -13/01373/OUT) have been identified as “additional schemes for consideration in the cumulative assessment” (Table 2, page 14). This implies that the resulting ES supporting the forthcoming application will give due regard to the cumulative effects of the CADP and will include design and other mitigation measures to accommodate the predicted ‘with CADP’ future environmental conditions at the site.

**e) ABP Royal Albert Docks Scheme**

- 5.19 RPS has reviewed the ES prepared URS Infrastructure & Environment UK on behalf of the ABP (Royal Albert Dock - Environmental Statement Volume I; Hybrid Planning Application, Spring 2014), in order to identify whether any significant environmental effects identified in that document would have any additive, subtractive or synergistic cumulative effects in combination with the CADP. This has included a detailed appraisal of both the individual topic-based ES chapters (Nos. 5 to 16) as well as URS’s consideration of cumulative effects (Chapter 17: Cumulative Effects).
- 5.20 The Airport was consulted at an early stage in the preparation of this planning application and on aspects which determined the scope and datasets used in the EIA. This dialogue has assisted URS/ ABP in their appreciation of how the existing and future environment around the Airport (particularly air quality, noise and road traffic) would influence Royal Albert Docks site. Accordingly, the ABP ES and the conclusions reached therein are founded on a full understanding of how the Airport will develop over time, both with and without the CADP, including the realisation of the 120,000 annual movement limit under the existing 2009 planning permission (Ref. 07/01510/VAR).
- 5.21 The involvement of the Airport’s transport consultants (Vectos) in the ABP project has also ensured that the traffic model for the proposed scheme builds-in the projected base flows resultant upon the construction and operation of the CADP. This has also ensured that the assessments of the corresponding environmental effects, such as traffic-borne air quality emission and noise, takes account of the base flows with the CADP built out.
- 5.22 In addition to the ES, the ABP planning application also includes a separate Aviation Safeguarding Assessment (Avia Solutions Group, March 2014) which acknowledges the constraints placed on the development by the existence and future growth of the Airport,

including the Obstacle Limitation Surfaces (OLS), bird strike management and noise. The ES also refers to this at paragraph 3.18, concluding:

5.23 “Minimising the attractiveness of the Site to birds will also require further consideration during more detailed design of individual buildings, as well as factors such as lighting, microclimate and magnetic environment to ensure that these do not impede on the operations of the airport”.

5.24 It is apparent that the ABP ES is comprehensive in its coverage and addresses all of the applicable issues and topics contained the CADP ES. It also proposes compatible mitigation measures (e.g. a Construction Environmental Management Plan) to avoid, reduce or offset significant environmental effects in accordance with the requirements of the EIA Regulations. The ABP Chapter 18: Residual Effects Assessment and Conclusions (paragraph 18.42) states:

5.25 *“In relation to noise and vibration, local air quality, cultural heritage (buried heritage assets), ecology, traffic and transportation, and energy and water use, the ES identifies a number of best practice mitigation measures to eliminate, reduce or mitigate adverse demolition and construction effects. All the mitigation measures presented within this [ES] will be further reviewed throughout the detailed demolition and construction logistics planning and throughout preparation of the CEMP. Best practicable means of preventing, reducing and minimising environmental effects through this phase of the Proposed Development will be adopted and all measures, controls and management plans will be reviewed and agreed in consultation with LBN and local residents”.*

5.26 It then goes on to conclude (paragraph 18.44):

*“During the completed and operational phase of the Proposed Development significant adverse effects are limited and relate to the following:*

- *Overshadowing effects to surrounding amenity areas during the winter (negligible to moderate adverse).*

5.27 As the new Terminal, Passenger Pier, Hotel and other structures proposed by the CADP applications are to the south of the ABP site and, in any case, too far away and not of sufficient height to overshadow the ABP development, it can be concluded that there will be no worsening of this singular ‘significant adverse effect’. In recognition of this, the topic of ‘Daylight, Sunlight and Microclimatic Effects’ was scoped out of the CADP EIA in agreement with LBN through its scoping opinion of October 2012 (see CADP ES Chapter 3, Table 3.4: Scoped Out Issues).

5.28 Paragraph 18.43 of the ABP ES provides a summary of the positive effects of the ABP scheme (in isolation):

*“Once completed, the Proposed Development will result in the following significant beneficial effects:*

- *Townscape and visual impacts, specifically effects on views, townscape character areas and townscape setting of heritage assets (permanent, minor to moderate beneficial).*
- *Socio-economics, specifically in relation to creation of jobs and increase in spending (major beneficial) and contribution to housing targets (moderate beneficial);*

- *Water resources, drainage and flood risk, specifically in relation to improvement to flood risk (moderate beneficial); and*
- *Wind, specifically wind conditions within Phase 1A (negligible to moderate beneficial)”*

5.29 With the exception of wind conditions (which are not relevant for the reasons stated above) the CADP will provide many of the same beneficial environmental and socio-economic effects and of a similar scale of significance, as detailed in the July 2013 ES – Chapter 19: Summary of Mitigation and Residual Effects. It can therefore be concluded that aggregation of these effects from the ABP and CADP schemes will provide further net benefits to the Royal Docks area and the wider community.

#### **Relevant Conclusions of ABP/ URS’s Cumulative Effects Assessment**

5.30 URS’ assessment of Type 2 cumulative effects is set out their ES Chapter 17: Cumulative Effects Assessment. Table 17.4 of that chapter provides a list of cumulative schemes which were considered by URS and ABP’s other technical consultants, as well as indicating which topics were ‘scoped-in’ and which were ‘scoped-out’ of the assessment. The table includes the expansion of the airport under its existing 2009 planning permission (item/ row 16) as well as with CADP1 (17) and with CADP2 (18). With the exception of microclimate, all relevant EIA topics are covered in the assessment.

5.31 The chapter contains discrete sub-sections on “LCY Ground Noise” and “LCY Air Noise” which conclude the following:

*“In the planning application [CADP1], the change in ground noise due to the proposed infrastructure changes was predicted as being 0.4dB at the RAD site. A change in noise level of this magnitude is not considered to have a meaningful effect on glazing requirements for proposed buildings. Consequently, it can be concluded that ground noise as a result of improvements to LCY infrastructure will not affect glazing recommendation for buildings in the Proposed Development” (paragraph 10.2 (sic)), and*

*“Specific requirements for glazing and mechanical ventilation systems should be designed to achieve suitable internal noise levels. However, it has been demonstrated that glazing specifications can be installed to meet the BS 8233 ‘good’ criteria for the façade areas with the highest noise levels” (paragraph 17.76), and*

*“Overall, it is considered that through the use of appropriate design measures such as glazing specifications and façade insulation design, ambient noise affecting the proposed residential areas will be controlled such that the Site is suitable for the proposed use, should the London City Airport proposals be approved and built out”. (paragraph 17.77)*

5.32 Other cumulative effects are presented on a topic-by-topic basis but dealt with more generically, with the CADP scheme considered together with the other cumulative schemes which were identified by URS.

### Cumulative Effects from Construction

- 5.33 During the demolition and construction phase, cumulative effects are generally concluded to be 'negligible' or 'minor adverse' which is consistent with the levels of effect for the ABP scheme in isolation (i.e. there is no worsening of effects). URS conclude that there could be up to 'moderate adverse' effects from the generation of construction waste (para 17.48), noise (para 17.66) and groundwater/ contamination (17.83). There are also concluded to be some positive cumulative effects during this stage, including 'moderate beneficial' socio-economics/ employment effects (para 17.55). No 'major' adverse cumulative effects are identified.
- 5.34 These conclusions closely mirror those presented in the CADP ES, in both Chapter 18: Cumulative Effects and the component technical chapters 7-16. However, as stated above, the URS assessment is not solely related to the combined impacts of the ABP scheme plus the CADP. As such, the noise and other construction impacts should be considered taking account of the proximity of shared receptors, the coincidence of the respective construction programmes and the likely effectiveness of the mitigation measures which, for the CADP, are those set out in ES Chapter 6: development Programme & Construction, supplemented by further details in Section 3 and Appendix 3.1 of the March 2014 ES Addendum, and Section 3 of this Second ES Addendum (May 2014).
- 5.35 Chapter 5 of the ABP ES: Demolition and Construction sets out a range of construction mitigation measures which appear comprehensive and compatible with the Airport's own construction environmental management proposals and commitments. ABP are clearly aware of the need to minimise impacts on the Airport itself. For instance, paragraph 5.70 states:

*"The receptors considered to be most sensitive to cumulative effects during the construction phase is LCY.....etc",*

- 5.36 ABP ES Figure 5.1 (Hybrid Planning Application Indicative Construction Phasing Programme) provides detail on the phasing of the development and identifies different peaks of activity during the 13.5 year construction programme (2014 to 2028). Paragraph 5.23 states the following:

*"Owing to the long construction period (approximately 13.5 years) and the various phases of construction on the Site, three sequences and "timeslices" across the programme of works have been defined to inform the EIA. Each timeslice represents points in time when multiple works (and in the majority of cases, occupation) are likely to occur across the Site. The ES, where relevant to the assessment of demolition and construction related effects, has assessed the potential effects occurring at each of the three representative timeslices as follows:*

- Sequence 1: 3rd quarter of 2017 when infrastructure and utilities works, and Phases 1A and 1B (together accounting for approximately one third of the overall Site) are under construction and potential for occupation of some of the earlier buildings in Phase 1A;
- Sequence 2: Mid 2020 when Phases 1A, 1B, 2 and 3 are all under construction, with some occupation likely in the earlier buildings of Phases 1A, 1B and 2; and

- 3rd Quarter of 2023 when Phases 1A, 1B and 2 are completely finished (assumed to be occupied), and phases 3 and 4 are under construction”.

5.37 As shown on the corresponding CADP ‘Likely Construction Sequence’ (Figure 6.1m Rev A) and the ‘Indicative Detailed Construction Programme’ (Rev 5) contained Appendix 3.1 of the March 2014 ES Addendum, there will inevitably be some overlap in construction activities identified in the construction programme. However, there are several factors that act to reduce or mitigate for the likelihood of significant cumulative impacts occurring:

- a) ABP anticipate that the core working hours for both the demolition and construction phases would be 08:00 – 18:00 hours weekdays; 08:00 – 13:00 hours Saturday; with no working normally undertaken on Sundays or Bank Holidays (para 5.3); whereas much of CADP construction works must take place Outside of Operational Hours (OOOH) i.e. after 18:00 and before 08:00 on weekdays and at weekends from 13:00 Saturday to 12:00 on Sunday, for the reasons explained in ES Chapter 6 and the March 2014 ES Addendum. Further mitigation of these potential OOOH impacts are described in Section 3 of this Second ES Addendum;
- b) The ABP construction areas will be shielded/ enclosed by suitable hoarding and other measures will be taken to reduce noise at source because of the proximity of nearby sensitive receptors, including residents to the north and east and the LBN Council offices which sits in the centre of the development site. Therefore, significant noise impacts from these works are highly unlikely to be experienced at locations further away, including residential properties at the south side of KGV Dock;
- c) The ‘prediction noise contour maps’ contained in Appendix 3.4 of the March 2014 ES Addendum and those contained in Appendix 3.3 of this ESSA, reveal that the north side of RAD is generally not exposed to significant noise levels;
- d) The construction ‘peaks’ for the CADP works (Year 2/3 ~ 2016 and Year 4 ~ 2018) do not coincide with the ABP construction ‘timeslices’ as described above; and
- e) By time the first residential blocks in the ABP scheme are occupied (assumed to be after 2020) all major construction works for the CADP will have been completed.

5.38 In light of the above factors, it is considered that the cumulative construction impacts from the CADP and ABP schemes will be no worse than **minor adverse**.

### Cumulative Effects from Operation

5.39 The ABP ES concludes that cumulative effects during the operational phase of the scheme (assessed as the final completion date of 2028) will be largely ‘beneficial’ or ‘negligible’.

5.40 With regard to air quality, paragraph 17.62 states:

*“The traffic data provided includes the influence of local committed and cumulative developments including that of the London City Airport Expansion), therefore the cumulative air quality effects have been considered in the assessment and these are considered to be of **negligible** significance”.*

5.41 With regard to noise, paragraph 17.70 states:

*“An assessment has been done of the potential effects of the proposed extension of the London City Airport on the future occupants of the Proposed Development (which may result in increases in noise due to air and ground noise), and the mitigation measures that will need to be incorporated into the*

*Proposed Development to ensure the required noise levels are met, resulting in a negligible effect”.*

5.42 There will be a ‘minor adverse’ effect on built heritage (para 7.96) but this appears to relate to the scheme’s own impact on the Ham Creek and potential geo-archaeological and palaeo-environmental deposits at the site. As the ABP and CADP sites are spatially distinct (being separated by the Royal Albert Dock) there is no potential for cumulative impacts on buried archaeology.

5.43 There will be a ‘negligible’ to ‘minor adverse’ impact on terrestrial ecology at the ABP site from the construction (due to local habitat types and the potential presence of invertebrates) but no impact on the Dock waters or ecology. Furthermore, paragraph 17.91 concludes:

*“The cumulative effect of other schemes conjunction with the Proposed Development is considered to be up to **minor beneficial** impact to the ecological receptors identified on-site at local level”.*

5.44 The above conclusions are broadly consistent with those presented in the CADP ES, in both Chapter 18: Cumulative Effects and the component technical chapters 7-16.

5.45 No change to CADP cumulative assessment conclusions has been identified having considered the information contained in the ABP ES and the details of the ‘other schemes’ described in Section 2 of this report.

#### **f) Cumulative Air Noise Effects**

5.46 The CADP ES included an assessment of aircraft noise exposure to existing dwellings and permitted but not yet built residential developments sites. The ES airborne aircraft noise assessment has been updated to include the additional proposed residential units in the APB Business Park (assuming the “worst case” occupancy of 1600 occupants (as opposed to 1300 occupants) based on a scheme with a high percentage of family housing.) as well as those residential developments relating to other permitted developments that have been assessed subsequent to the completion and submission of the Environmental Statement in 2013. This slightly increases the potential number of both dwellings and population in the noise contours.

5.47 For the purposes of comparison, the dwelling and population counts have been determined based on the Airport’s Standard Instrument Departure (SID’s) routes used in the Environmental Statement, as opposed to the actual mean departure routes discussed in Section [2.1.3] of the Second ES Addendum.

#### **Re-assessment**

5.48 Table 5.1 below sets out the additional residential developments that have been included in this analysis based on the criteria set out in paragraph 5.8 above. The predicted air noise level, in terms of dB LAeq,16h is given for each, based on average mode operations at the Airport.

**Table 5.1 - Air Noise Levels at Land Proposed for Regeneration and Development (dB L<sub>Aeq,16h</sub>)**

Development Scheme Locations	Curr. (2012)	2017	2019		2021		2023	
			With dev.	W/o dev.	With dev.	W/o dev.	With dev.	W/o dev.
ABP Royal Albert Docks (02)	59	61	62	61	62	61	62	61
26-34 Tidal Basin Road, E16 1AD (15)	63	61	61	60	61	61	61	61
Former Goswell Bakeries & vacant warehouses, Caxtob Street North, E16 (28)	56	57	57	57	57	57	57	57
Car Park At South East Junction Of Prestons Road And Yabsley Street, Prestons Road, London (34)	56	57	57	57	57	57	57	57
Poplar Business Park, 10 Prestons Road, London, E14 9RL (36)	56	57	58	57	58	57	58	57

- 5.49 The above sites are additional to or modified versions of those considered and presented in Table 8.27 of the CADP ES. In contrast, the planning permission for one site previously considered, the Unex Site, has lapsed and this has been removed from the assessment of the dwelling and population counts within noise contours presented in Tables 5.6 and 5.7 below. Atlantis House is not included in the above analysis as this was previously included within the ES assessment, as part of the Great Eastern Quays site. Site We4B Western Gateway relates to a hotel application and has not been included above.
- 5.50 It is of planning relevance to consider the above sites using PPG 24, accepting that this has now been withdrawn and replaced by the National Planning Policy Framework but is still used in practice to inform Local Authorities on the suitability of a site for residential development. Reviewing the future noise exposure of the above development sites, without CADP, finds that all of them fall into Noise Exposure Category B (NEC B). For sites that lie in NEC B, PPG 24 states that conditions should be imposed to ensure an adequate level of protection against noise.
- 5.51 Considering the future noise exposure in 2023, with the proposed CADP, all of these sites remain within Noise Exposure Category B. This indicates that the CADP has no material impact on the planning status or suitability of these sites for residential development.
- 5.52 The number of dwellings and population, including permitted but not yet built residential developments, are set out below.

**Table 5.6- Approximate number of dwellings in contours (including permitted but not yet built residential developments), LAeq,16h average mode, summer day**

Scenario Contour, LAeq,16h	Current (2012)	2017	2019		2021		2023	
			With dev.	Without dev.	With dev.	Without dev.	With dev.	Without dev.
57 dB	8,300	28,700	29,900	25,700	30,900	27,000	31,000	26,500
63 dB	400	6,200	6,300	4,900	6,700	5,500	6,700	5,500
69 dB	0	0	0	0	0	0	0	0

Note: Counts include 5000 dwellings for the permitted Silvertown Quays development although a new scheme is currently proposed containing only around 2000 dwellings.

**Table 5.7- Approximate population in contours (including permitted but not yet built residential developments), LAeq,16h average mode, summer day**

Scenario Contour, LAeq,16h	Current (2012)	2017	2019		2021		2023	
			With dev.	Without dev.	With dev.	Without dev.	With dev.	Without dev.
57 dB	17,900	70,500	73,500	63,100	76,100	66,500	76,200	65,000
63 dB	1,000	16,300	16,500	13,000	17,500	14,500	17,500	14,500
69 dB	0	0	0	0	0	0	0	0

Note: Counts include population for 5000 dwellings for the permitted Silvertown Quays development although a new scheme is currently proposed containing only around 2000 dwellings.

5.53 Comparing the above dwelling and population counts with those presented in Tables 8.16 and 8.17 of the CADP Environmental Statement shows only minor changes. No increases in the number of dwellings within the 63 dB noise contours or higher noise contours occur. Within the 57 dB contour, a small increase in the number of dwellings arises. For example, in 2023 without the CADP development, the number of dwellings inside the 57 dB contour increases now to 26,500 from 26,400 in the CADP ES. With the CADP in place in 2023, the number increases now to 31,000 from 30,600 in the CADP ES, an increase of 400 dwellings. This relatively small increase over the estimates presented in the CADP ES would be more than offset if an adjustment was made to account for the latest Silvertown Scheme development which plans to include 2000 dwellings as opposed to the 5000 included in these counts.

5.54 In summary, the inclusion of the APB development and any additional development changes that have arisen since the publication of the CAPD ES in July 2013 does not materially affect the number of dwellings and population that will be affected by the CADP development and therefore have no impact on the air noise conclusions of the CADP ES which still remain valid.

#### **g) Summary**

5.55 The likely significant environmental effects of the ABP Scheme have been considered as part of this Update to the Cumulative Effects assessment in response to LBN's Regulation 22 letter of 23rd May 2014. Additionally, as described in Section 1, six 'other' development schemes which have been approved since July 2013 were included in this assessment for the sake of completeness.

5.56 As summarised in Table 5.8 below, none of these schemes will give rise to any new or materially different or significant cumulative effects to those set out in the CADP ES, as described in Chapter 18 and Chapters 7-16.

**Table 5.8- Summary of Cumulative Impacts**

Potential Impact Areas	Overall Cumulative Impact in CADP ES	Overall Cumulative Impact in CADP ES with the ABP Royal Albert Dock Scheme and Other Schemes
Socio Economics	Moderate Beneficial (except for potential adverse effect of enlarged PSZ)	Moderate Beneficial
Noise	Negligible	Negligible
Air Quality	Negligible to Minor Adverse	Negligible to Minor Adverse
Townscape and Visual	Minor Beneficial	Minor Beneficial
Traffic and Transportation	Negligible	Negligible
Water Resources and Flood Risk	Negligible	Negligible
Ecology and Biodiversity	Negligible	Negligible
Cultural Heritage	Negligible	Negligible
Waste	Negligible to Minor Adverse	Negligible to Minor Adverse
Ground Contamination	Negligible	Negligible

- 5.57 It is acknowledged that the construction works have the greatest potential to result in cumulative effect interactions, particularly in view of the relative proximity of the CADP and ABP sites and the extended duration of both construction programmes. However, for the reasons set out in this report, such effects are likely to be no worse than 'minor adverse'. The ABP scheme has been designed in full knowledge of the CADP proposals and appropriate design and other mitigation measures have been put forward to ensure that acceptable environmental conditions are achieved and maintained throughout the construction works and subsequent occupation and operation of the development,
- 5.58 It is likely that the 'other' developments identified Table 5.1 will have mitigation in place to avoid any adverse effects from their construction and operation. For example, by the implementation of a Construction Logistics Plan (CLP) and Construction Environmental Management Plan (CEMP) to control emissions or other pollution during this phase.
- 5.59 In conclusion, there would be no significant adverse cumulative impacts as a result of the proposed CADP in combination with the developments considered above or those assessed previously in the July 2013 CADP ES.

## 6 FURTHER CLARIFICATIONS

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### a) Introduction

- 6.1 The following Section aims to clarify the terminology used within Section 4 of the ESA (namely 'Sideline', 'Flyover' and 'Approach') which were not previously defined in the March 2014 ESA, as well as providing a further update on calculations used in the assessment of 'Air Quality Neutral' status of the CADP following the publication of the Supplementary Planning Guidance (SPG) on Sustainable Design and Construction, adopted by the Mayor in April.
- 6.2 Neither of these aspects of further information have been requested by LBN but are included here for the sake of completeness.

### b) ICAO Terminology

- 6.3 The ESA did not include an explanation of the following terms: Sideline/lateral, Flyover and Approach. These were also missing within the Glossary and Abbreviation section (Section 11 of the ESA). These terms were used to respond to LBN's Regulation 22 Request, Item 11 in relation to aircraft noise certification data (Tables 4.6 and 4.7) and relate to measurement positions which are used when a new aircraft type is tested in accordance with International noise standards. This allows a like for like comparison for various aircraft types.
- 6.4 It is considered that the implications of the relevant part of the ESA including tables 4.6 and 4.7 can be understood without a detailed understanding of the terminology but for completeness, the International Civil Aviation Organization (ICAO) defines these three terms as:
- **Sideline/lateral** – for jet-powered aeroplanes: the point on a line parallel to, and 450m from, the runway centre line, where the noise level is a maximum during take-off;
  - **Flyover** – the point on the extended centre line of the runway and at a distance of 6.5km from the start of roll;
  - **Approach** – the point on the ground, on the extended centre line of the runway 2,000m from the threshold. On level ground this corresponds to a position 120 m (394ft) vertically below the 3 degree descent path originating from a point 300m beyond the threshold.
- 6.5 An illustration of the 3 different flight positions is shown in the figure within Appendix 6.1- Aircraft Noise Certification Measurement Points.

### c) GLA Sustainable Design and Construction SPG and Air Quality Neutral

- 6.6 The Greater London Authority's (GLA) Supplementary Planning Guidance (SPG) on Sustainable Design and Construction was adopted by the Mayor in April 2014. The SPG was drafted at the time that the ESA was submitted.
- 6.7 Para 4.3.14 states "*the London Plan and the Mayor's Air Quality Strategy set out that developments are to be at least "air quality neutral"*". To enable the implementation of this

policy, emission benchmarks have been produced for buildings' operation and transport across London based on the latest technology (including its effectiveness and viability).

- 6.8 The analysis against these benchmarks set out in the ESA (March 2014) was based on the draft SPG that was available at the time. An update has been provided due to the updated Building Emission Benchmarks within the SPG which are based on the 2010 LAEI. There are no changes to the benchmark trip rates.
- 6.9 A revised assessment has been carried out as set out in Table 6.1 (which now replaces Table 5.2 in the ESA).

**Table 6.1: Calculation of Total Benchmarked Building NOx Emissions**

Land Use	GFA (m <sup>2</sup> )	BEB (gNOx/m <sup>2</sup> /annum)	Benchmarked Emissions (kg/annum)
<b>A1</b>	1,376	22.6	31.1
<b>A3</b>	2,610	75.2	196.3
<b>B1</b>	10,481	30.8	322.8
<b>B8<sup>a</sup></b>	2,570	23.6	60.7
<b>C1</b>	14,000	70.9	992.6
<b>Sui Generis (A1)</b>	16,773	22.6	379.1
<b>Total Benchmarked Building Emission</b>			<b>1,982.6</b>

<sup>a</sup> The B8 use is for the provision of storage for the A1 (retail) use, and not general warehousing. The B8 use could be assumed to be part of A1, but this would have little effect of the calculated Total Benchmarked Building Emission, and would not affect the outcome.

- 6.10 The updated Benchmarked Building Emission is calculated to be 1,982.6 kgNOx/annum. This compares with the previously stated Total Building Emission of 1,129.7 kgNOx/annum. The CADP proposals remain below the benchmark.
- 6.11 The assessment carried out is fully consistent with Para 4.3.14 of the SPG, and it is concluded that the CADP proposals are "air quality neutral".
- 6.12 This minor clarification does not materially change the air quality assessment within the CADP ES (Chapter 9).

## 7 SUMMARY

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### a) Environmental Statement Second Addendum (ESSA)

7.1 The main purpose of this ESSA is to respond to Part 1 of LBN's Regulation 22 requests as set out in Sections 2 to 5 of this report. In addition, minor clarifications on the terminology and information contained in the ESA (March 2014) have been provided within Section 6.

7.2 A summary of the Sections within this ESSA is provided below.

#### **Section 2: Regulation 22 Matters- Further Information, Part 1, Item 1: Air Noise and Ground Noise**

7.3 As requested by LBN, air noise contours have been generated using the actual tracks flown by aircraft rather than using the London City Airport published Standard Instrument Departure (SIDs) Routes and commentary is provided on these new contours. For each noise contour, data relating to the contour area, number of dwellings and the population count within each contour band has been determined. A comparison is given with the same information contained in the ES, with and without permitted development.

7.4 Figures 2.2 to 2.4 within Appendix 2.2 include the noise contours for 2012, 2023 Without CADP Development and 2023 With CADP respectively. Each contour plan shows a set of noise contours presented in the ES based on aircraft departing along the Airport's SIDs compared against those determined from the actual departure tracks.

7.5 To conclude, this assessment indicates that there is no material difference between the areas of the key noise contours and the dwelling and population counts contained within them whether calculated from the published the Airport's SIDs (as used in the ES) or the actual departure tracks as determined from the Airport's noise monitoring and flight track keeping system. Accordingly, the conclusions concerning air noise in the noise chapter of the ES (as supplemented by the ESA and this ESSA) remain unchanged as a result of this analysis.

#### **Section 3: Regulation 22 Matters- Further Information, Part 1, Items 2-4: Construction Noise**

7.6 As requested by LBN Items 2-4, further information is provided in Section 3 with regard to Construction Noise, including cumulative night time noise emissions from different sources (e.g. the haul road and specific plant) under 'worst case' scenarios and on-time periods.

7.7 A review has been undertaken of the number of receptors and the extent to which they are likely to be affected by construction noise over the key noise producing periods of the CADP construction programme during Out of Operational Hours ('OOOH') works at night time and weekends. In addition, account has been taken of the extensive noise mitigation measures that are being offered as part of CADP and as set out in the ES, ESA and ESSA to safeguard the amenity of the surrounding community. Based on this more detailed information, with the offered mitigation, the residual noise effects will give rise to a minor adverse impact during OOOH works. Any significant adverse impacts would be limited to at most a few receptors, and then only if they did not wish to take up the offer of sound insulation protection works described in the CNVMMS. This conclusion is consistent with that of the ES and ESA.

**Section 4: Regulation 22 Matters- Further Information, Part 1, Item 5: CS100**

- 7.8 Part 1, Item 5 of the letter relates to the Bombardier CS100 and the manufacturer's noise and test data used within the noise assessment of the ES, which was previously provided in the March 2014 ESA (pages 31 and 32 and Appendix 4.1 B).
- 7.9 To aid noise modelling work within the ES, information has been received in confidence from Pratt and Whitney on the noise characteristics of engines for the CS100 aircraft. The noise certification values provided by Pratt and Whitney for the PW1500 engines that are to be used on the CS100 aircraft relate to an estimate for an operational take-off weight of 123,000 to 129,000 lbs, typical of those expected at London City Airport. Also, the approach data is estimated on the basis of the 5.5 degree glide slope which applies at the Airport. This data has been described and an explanation provided as to how the Integrated Noise Model (INM) has been used to convert this data into a form suitable for CS100 noise modelling purposes for the ES.
- 7.10 The results of the CS100 noise modelling used in the ES compare well against those determined from later static and flight testing undertaken in Florida by P&W and in Mirabel by Bombardier. Some tolerance exists in the ES assumptions in the case of sideline noise and approach noise to account for the possibility of higher noise emissions at the Airport.
- 7.11 When comparing the noise certification data for various aircraft in use at London City against the CS100 flight test data, this shows the CS100 aircraft to be significantly quieter than current turbofan aircraft including the Embraer E170 and E190 and the older RJ 100.

**Section 5: Regulation 22 Matters- Further Information, Part 1, Item 6: Cumulative Impacts**

- 7.12 The potential environmental effects of the ABP Scheme have been considered in detail with reference to the ES prepared by the Applicant's consultants URS (Royal Albert Dock - Environmental Statement Volume I; Hybrid Planning Application, Spring 2014), in order to identify whether any significant environmental effects identified in that document would have any additive, subtractive or synergistic cumulative effects in combination with the CADP.
- 7.13 Additionally, as described in Section 5 and Table 5.1, six other development schemes which have been approved since July 2013 were included in the updated cumulative effects assessment for the sake of completeness. Five of these schemes (Nos. 15, 26, 28, 34 and 36 in Table 5.1) are a considerable distance away from the Airport and are physically and visually disconnected from it. Therefore, with the exception of air noise from overflying aircraft, there is a negligible risk of cumulative effects occurring.
- 7.14 The Atlantis Avenue development by One Housing Group (No. 3 in Table 5.1), whilst closer to the Airport, is still some 300m from the end of the runway. This is a relatively small scale scheme (comprising 89 residential units), especially when viewed in the context of the adjoining Royal Albert Basin / IVAX Quays / Great Eastern Quays masterplan (reference 12/01881/OUT) which lies to the south and is therefore closer to the Airport. This earlier proposal (containing up to 1,187 residential units) was considered in the original cumulative effects assessment and no significant adverse effects with the CADP were identified.

- 7.15 Other recent planning consents which constitute detailed, reserved matters or Section 73 variations to previously approved outline schemes (e.g. We8, The Pumping Station Site, Tidal Basin Road ref. 13/02356/VAR) have also been reviewed. However, in all cases, these detailed schemes have been found to be substantially similar to the outline planning schemes which were previously assessed in the ES cumulative effects chapter. In other words, there are no significant changes to the developments (e.g. the types and intensity of use) which would create materially different environmental effects to those already considered.
- 7.16 It is acknowledged that the construction works have the greatest potential to result in cumulative effect interactions, particularly in view of the relative proximity of the CADP and ABP sites and the extended duration of both construction programmes. However, for the reasons set out in Section 5, such effects are likely to be no worse than 'minor adverse'. The ABP scheme has been designed in full knowledge of the CADP proposals and appropriate design and other mitigation measures have been put forward to ensure that acceptable environmental conditions are achieved and maintained throughout the construction works and subsequent occupation and operation of the development.
- 7.17 In conclusion, the response and update within Section 5 finds that there would be no significant adverse cumulative impacts as a result of the proposed CADP in combination with the ABP scheme, the other the recently consented developments or those assessed previously in the ES.

#### **Section 6: Further Clarifications not included within LBN's Regulation 22 Letter**

- 7.18 Section 6 of this ESSA consists of two minor clarifications that were not requested within LBN's letter but that relate to the information submitted in the ES Addendum (March 2014).
- 7.19 An explanation of the terms 'Sideline/lateral', 'Flyover' and 'Approach' is provided. These were used within Section 4 of the March ESA (pages 31 and 32) in order to present the CS100 noise testing data obtained from a flight trial in Canada (Table 4.6) and to compare the noise characteristics of this 'new generation' aircraft with the noise certification data of other aircraft in operation at the Airport (Table 4.7). As these terms were not described within the Glossary and Abbreviation section of the ES Addendum (Section 11), for the sake of completeness, the International Civil Aviation Organization (ICAO) definitions of these terms have been included within this Section of the ESSA.
- 7.20 An assessment of 'Air Quality Neutral' status has been undertaken. The GLA Supplementary Planning Guidance (SPG) on Sustainable Design and Construction was adopted by the Mayor in April 2014. The SPG was draft at the time that the ESA was submitted (March 2014) and therefore a provisional assessment of the CADP against these criteria was undertaken using Building Emission Benchmarks (BEM) in the draft SPG. This analysis was provided at pages 42-44 of the ESA. As the final published SPG contains slightly different BEM factors, the data has been reanalysed and is presented in this section of the ESSA for the sake of completeness. This shows that the new BEM have no material bearing of the conclusions of the original assessment.



**Section 7: Summary, Section 8: Glossary**

7.21 This Section provides a Summary of the ESSA and the terminology and abbreviations used within this ESSA are provided within a Glossary and Abbreviations list in Section 8 below.

**Appendices**

7.22 This ESSA should be read in conjunction with the corresponding appendices.

## 8 GLOSSARY AND ABBREVIATIONS

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<b>Acronym</b>	<b>Meaning</b>
BAP	Bickerdike Allen Partners
CADP	City Airport Development Programme
CAH	City Aviation House
CEMP	Construction Environmental Management Plan
CLP	Construction Logistics Plan
dB	Decibel
EIA	Environmental Impact Assessment
EPNdB	Effective Perceived Noise levels (db-decibels)
ES	Environmental Statement
ESA	Environmental Statement Addendum
ESSA	Environmental Statement Second Addendum
ETE	Eastern Terminal Extension
HGVs	Heavy Goods Vehicles
LBN	London Borough of Newham
LCY	London City Airport (“the Airport”)
M	Metres
Mg	Milligram
NTS	Non-Technical Summary
OIP	Operational Improvements Project
OOOH	Out of Operational Hours Working
SIDs	Standard Instrument Departure Routes
SIS	Sound Insulation Scheme
WTE	Western Terminal Extension

<b>Term</b>	<b>Meaning</b>
Air Noise	Refers to the noise pollution produced by any aircraft or its components, during various phases of a flight.
Aircraft Movements	Any aircraft take-off or landing at an airport. These could be either commercial or non-commercial flights. For airport traffic purposes one arrival and one departure are counted as two movements.

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Airfield	An area of land set aside for the takeoff, landing, and maintenance of aircraft.
Airside	The side of an airport terminal from which aircraft can be observed; the area beyond security checks and passport and customs control.
Approach	The point on the ground, on the extended centre line of the runway 2,000m from the threshold. On level ground this corresponds to a position 120 m (394ft) vertically below the 3 degree descent path originating from a point 300m beyond the threshold.
Apron	That part of an airport, other than the manoeuvring areas intended to accommodate the loading and unloading of passengers and cargo, the refuelling, servicing, maintenance and parking of aircraft, and any movement of aircraft, vehicles and pedestrians necessary for such purposes. Also referred to as the 'Ramp'.
Arrivals Concourse	Landside area receiving arriving passengers who have emerged from the baggage reclaim or customs facilities, usually containing a 'meters and greeters area' as well as retail and other support functions.
Baggage Reclaim	The baggage claim area is an airport terminology that describes the area of an airport terminal where one claims checked-in baggage.
Baseline	2012 constitutes the most reliable and robust 'baseline year' and ensures a full calendar year of data can be assessed.
Bombardier CS100	The Bombardier C Series is a family of narrow body, twin-engined, medium range jet airliners
Code C aircraft	A standard of aircraft size specified by the International Civil Aviation Organization.
Crossrail	A railway construction project under way mainly in central London. Its aim is to provide a high-frequency commuter/suburban passenger service.
Design year	This year represents the completion of the CADP1 and CADP2 works.
Dolphins	Structural remains are visible in the dock, in the form of fixed jetties known as 'Dolphins'.
Eastern Ancillary Buildings	including: Taxi /Car Rental Services Building, Taxi Marshall's Kiosk, Vehicle Control Point facility, and Eastern Energy Centre;
Eastern Energy Centre	(Specific to the Airport) Proposed Energy Centre situated in the eastern Dockside area and housing various elements of plant that service the proposed Eastern Terminal Extension and proposed Forecourt. Part of the Completed CADP.
Eastern Terminal Extension	(Specific to the Airport) Proposed Eastern Extension of the main Terminal, including the Arrivals Concourse Building, the Main Processor Building, the Outbound Baggage Extension, the Eastern Pier and Noise Barrier. Part of the Completed CADP.
Effective Perceived noise levels (EPNdB)	This is a unit of noise measurement, measured in EPNdB, Its measurement involves analyses of the frequency spectra of noise events as well as the duration of the sound
Facilitating Works	(Specific to the Airport) Part of the Interim CADP, including the temporary Coaching Building and associated link bridge, airside road alterations, extension of the concrete deck for an expanded outbound baggage facility (OBB), a new light-weight enclosure for expanded OBB, and Noise Barrier. Part of the Interim CADP.
Flyover	The point on the extended centre line of the runway and at a distance of 6.5km from the start of roll



Forecourt	(Specific to the Airport) Proposed new multi-modal transport area including pick-up and drop-off accommodation for buses, taxis, and private cars, as well as landscaped areas adjacent to the Eastern Terminal Extension. Part of the Completed CADP.
Ground Noise	Noise referred to by aircrafts on the ground
Hotel	(Specific to the Airport) Dockside facility with up to 260 bedrooms, submitted as a separate outline application: 'Planning Application CADP2'.
Interim CADP	(Specific to the Airport) The compliment of projects that includes: Phase 1 Western Terminal Extension, Western Energy Centre, temporary OBB extension, temporary Coaching Facility, temporary Noise Barrier, additional 3 stands, and a portion of taxi lane. These elements are submitted as a separate detailed application: 'Planning Application CADP1'.
Jet Centre	Corporate Aviation Centre located at the western side of the Airport.
L <sub>A90</sub>	Statistically the LA90 value is often used to describe background noise levels and is defined as the level exceeded for 90% of the measured time.
L <sub>Aeq</sub>	The Equivalent Continuous sound Level (LAeq) is the level of a notional steady sound, which at a given position and over a defined period of time would have the same A-weighted acoustic energy as the fluctuating noise.
Lift	Lift is the force that directly opposes the weight of an aircraft and holds the aircraft in the air.
Load Factors	The average assumed passenger occupancy of a flight, expressed as a percentage.
Noise Barrier	A physical barrier to provide noise insulation
Noise Contours	A continuous line on a map that represents equal levels of noise exposure.
Noise Factored Movements	A numerical factor applied to a noise source, dependent on the time, type or level of noise produced which have an effect of limiting the number a aircraft using the Airport
Out of Operational Hours (OOOH)	Periods when the Airport is closed. Out of the following operational hours: 06:30 to 22:00 hours during the week; 06:30 to 12:00 on Saturdays and, 12:30 to 22:00 on Sundays.
Pier	A building housing departing gate areas, departures corridors, as well as arrivals corridors that permit the circulation of passengers to and from the aircraft stands in a controlled fashion.
Pilling	Post like foundation driven into the ground to support a structure.
Residual Effect	The remaining effects of an impact after mitigation has been implemented
Service Yard	(Specific to the Airport) The triangle-shaped external space between the west extent of the existing Terminal building and Hartmann Road utilised for temporary accommodation and service deliveries. Otherwise known as the 'Triangle'.
Sideline/lateral	For jet-powered aeroplanes: the point on a line parallel to, and 450m from, the runway centre line, where the noise level is a maximum during take-off
SIDS	Standard Instrument Departure Routes (SIDs) A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated air traffic service route, at which the en-route phase of a flight commences.



Study Area	Designated area defined for an assessment.
Taxilane	Zone for circulation of aircraft moving between the runway and the stands.
Terminal	(Specific to the Airport) A temporary two-storey structure comprising three coaching gate room for departing passengers, and linked to the main terminal departures lounge at the upper level. Part of the Interim CADP.
Transitional Phase	During 2019, the majority of the proposed CADP works will be under construction. This year therefore represents an interim scenario ongoing construction and partial operation of the CADP. The forecasts that have been calculated are based on the infrastructure that will be in place at this time.
Triangle	(Specific to the Airport) See 'Service Yard'.
Western Energy Centre	(Specific to the Airport) Proposed Energy Centre situated in the western Service Yard and housing various elements of plant that services the Western Terminal Extension and the Facilitating Works Coaching Facility.





## **APPENDIX 1.1**

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London Borough of Newham's Regulation 22 Letter, 23<sup>rd</sup> May 2014





Sean Bashforth,  
Quod  
Quod Ingeni Building  
17 Broadwick Street,  
London,  
W1F 0AX

Colm Lacey,  
Director of Strategic Regeneration, Planning and  
Olympic Legacy (Acting)

Development Management  
Newham Dockside  
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E mail: [sunil.sahadevan@newham.gov.uk](mailto:sunil.sahadevan@newham.gov.uk)  
Ask for: Sunil Sahadevan

Our ref: 13/01228/FUL and 13/01373/OUT

Dear Sean Bashforth,

Date: 23<sup>rd</sup> May 2014

**Town and Country Planning Act 1990 (As amended)**  
**Re: London City Airport, Hartmann Road, Silvertown, London, E16 2PX**  
**Planning Applications 13/01228/FUL (CADP1) & 13/01373/OUT (CADP2)**

**13/01228/FUL CADP1: Full planning application to demolish existing buildings and structures and provide additional infrastructure and passenger facilities at London City Airport without changes to the number of permitted flights or opening hours previously permitted pursuant to planning permission 07/01510/VAR. Detailed planning permission is being sought for:**

- (a) Demolition of existing buildings and structures;**
- (b) 4 no. upgraded aircraft stands and 7 new aircraft parking stands;**
- (c) Extension and modification of the existing airfield, including the creation of an extended taxiway;**
- (d) Emergency vehicle access point over King George V Dock;**
- (e) Replacement landside Forecourt to include vehicle circulation, pick up and drop off areas and hard and soft landscaping;**
- (f) Eastern Extension to the existing Terminal Building (including alteration works to the existing Terminal);**
- (g) Construction of a 3 storey passenger pier to the east of the existing Terminal;**
- (h) Erection of Noise Barriers;**
- (i) Western Extension and alterations to the existing Terminal;**
- (j) Western Energy Centre, storage, ancillary accommodation and landscaping;**
- (k) Facilitation Works including temporary coaching facility and extension to the outbound baggage area;**
- (l) Upgrading works to Hartmann Road;**
- (n) Passenger and staff parking, car hire parking, taxi feeder park and ancillary and related work;**
- (o) Eastern Energy Centre;**
- (p) Dock Source Heat Exchange System within King George V Dock; and**
- (q) Ancillary and related work.**

**13/01373/OUT CADP2: Outline application for the erection of a Hotel with up to 260 bedrooms, ancillary flexible A1-A4 floor space at ground floor, meeting/conference facilities together with associated amenity space, landscaping, plant and ancillary works.**

**Requirements under Regulation 22 (1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 to provide further information in respect of the Environmental Statement.**

I am writing with regard to the above planning applications which are currently under consideration by this Local Planning Authority.

This letter is a formal request under Regulation 22 (1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 ('the Regulations') requiring the applicant to provide further information in respect of the Environmental Statement.

The applications have been subject to consultation with statutory consultees and the public. Following consideration of the planning applications and the consultation responses the Council has identified a number of areas where it is considered that further information and/or clarification is required.

This formal request follows the first formal Regulation 22 (1) request, which we issued on the 21<sup>st</sup> January 2014, and to which you responded on the 10<sup>th</sup> March 2014. We have now identified where further additional information and clarification is required.

This letter is in two parts; Part 1 formally identifies Regulation 22 matters where additional information is required regarding the Environmental Statement; and Part 2 sets out areas where we consider further information/clarification is required on non-Regulation 22 matters.

### **Part 1: Regulation 22 matters – 'Further Information'**

Regulation 22 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 allows a Local Planning Authority to request additional information in relation to an Environmental Statement.

The London Borough of Newham is of the opinion, pursuant to Regulation 22, that the Environmental Statement (ES) should contain the following further information in order for the Local Planning Authority to fully assess the planning applications.

Issues where further information is required have been identified in the ES generally and more specifically the following Chapters; 'Noise and Vibration' and 'Cumulative Impacts', as set out below.

### **Chapter 8 - Noise and Vibration**

#### **Air Noise and Ground Noise**

1. In LCA's Regulation 22 response (10<sup>th</sup> March 2014), Figure 4.2.1 showed how actual departure tracks differ from the standard instrument departure routes (SIDs) at London City Airport. The noise contours for the Environmental Statement and also those produced annually for sound insulation assessment purposes are based on the London City Airport's published SIDs. Although it is accepted that for the key contours (57 dB and higher), the differences are expected to be small, we request that contours are generated using the actual tracks flown from London City Airport aircraft rather than using the London City Airport published SIDs.

## Construction Noise

2. When calculating likely noise emissions, the haul road noise and construction noise need to be considered cumulatively to establish the worst case 15 minute noise levels.
3. In the case of the 15-minute night-time criterion, and over shorter periods, noise levels are likely to be attributable to specific activities and the operation of specific plant rather than an average as per the calculations. For example, an on-time of 10% attributable to a 12-hour day is around 80 minutes.

On this basis, it is entirely possible for plant to be operating fully over a period of 15-minutes. The use of 'on-time' weighted assessed noise levels is not a suitable method of assessment for night-time 15-minute limits and therefore does not provide a sufficient understanding of the significance during the night.

The assessment should therefore be refined to provide further information of the sensitivity of these on-time assumptions on 15-minute night-time construction noise levels.

4. It is not clear what method has been adopted to assess the haul road. However should a BS5228:2009 approach have been taken, these noise levels should be added to the noise from the construction plant assessments when evaluating significance, particularly if the site routes will be used purely by construction vehicles. If not, an assessment based on changes in overall road traffic noise is more appropriate.

It should be noted that the assessment is based on construction traffic being limited to daytime hours only. This assumption should be confirmed and the noise from any haul activities included as part of the overall noise assessment.

## CS100

5. The assessment of air noise includes data relating to the new generation CS 100 aircraft. Please clarify how the manufacturer's noise and test data has been used and translated to the specific characteristics of London City Airport.

## **Chapter 18 (Cumulative Impacts)**

6. Chapter 18 (Cumulative Impacts) does not take into account the live planning application submitted by ABP for the redevelopment of the site known as Royal Albert North, Beckton, E16 (Planning Application reference number 14/00618/OUT). It is acknowledged that this application was registered on the 31<sup>st</sup> March 2014, which was after the issue of our first Regulation 22 (1) letter. However, the application may be determined at the Council's Strategic Development Committee on the 17<sup>th</sup> July 2014 and, in the event that the Council resolves to grant planning permission, it will become a committed scheme for EIA purposes. As such, a decision on the ABP application may occur before any decision is made on CADP1 and CADP2. In view of the specific characteristics of the proposed ABP development, being a significant large scale major development within close proximity to London City Airport, we require the cumulative and interrelated impacts arising between the ABP development and the CADP1/2 proposals should be considered as part of the ES. The impacts should not be assessed solely in relation to Chapter 18 but should be considered where appropriate as part of the assessment of the other relevant chapter topics, particularly in relation to Chapter 8 (noise and vibration).

## **Part 2: Non Regulation 22 Additional Information / Clarifications**

### **Health Impact Assessment**

1. In LCA's response to the first Regulation 22 request (received on the 10<sup>th</sup> March 2014), further information was provided in relation to noise and its potential impact on schools and hospitals. Likewise, further information has been provided in relation to night time construction noise and possible sleep disturbance. This Regulation 22 also requests for further information to be provided in relation to noise, as detailed in Part 1 above. All new information that is provided in the ES and subsequent addendums is to be considered in the HIA.
2. It is considered that the annoyance is under-estimated in the HIA as the latest dose-response relationships have not been considered. This is to be considered.
3. Cardio-vascular effects were not quantified and also require consideration.
4. Similar to 5, Part 1 above, the health impacts of the proposals upon the Royals Business Park should be considered. Specifically in relation to planning application reference number 14/00618/OUT as mentioned above.
5. For clarification, though the submitted Health Impact Assessment is a separate document, reference to it is included within Chapter 7 (Socio-Economics, Community and Recreation) of the ES. However, as a separate document it is considered that the additional information requested above, does not form part of a formal Regulation 22 (1) request.

### **Needs Statement**

Further clarification/information is required regarding:

1. the size of the proposed Terminal Building, which appears excessively large in certain areas (i.e. international reclaim and baggage make-up and sortation), and yet under provided in others such as check-in and security search;
2. how the space released following the relocation of arrivals into the Eastern extension will be re-utilised for other purposes; and
3. the status of the Airport's 2006 Masterplan and its relationship to CADP.

### **Summary**

It is the view of the Local Planning Authority that the requested information is provided at Part 1 of this letter is required in order to enable a proper assessment of the likely environmental impacts of the proposal and the appropriate mitigation required. Where the applicant considers such further information, or additional information and clarification is unnecessary or has already been satisfactorily provided, the applicant should provide full details in its response to this request.

Once all the requested information has been provided the London Borough of Newham will advertise the availability of the information in accordance with the provisions of Regulation 22 of the Regulations. The advertisement will explain where the information can be viewed for a period not less than 21 days from the date of the advertisement. The Council will also write to statutory consultees notifying them that this information has been received and allowing not less than 21 days to comment.

The London Borough of Newham reserves the right to make additional requests for information where necessary.

Six hard copies and 5 digital (CD) copies of the information should be submitted.

If you require any clarification in relation to this letter please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Sunil Sahadevan', written over a horizontal line.

Sunil Sahadevan  
Principal Planning Officer  
For the London Borough of Newham

c.c. David Thomson, RPS, 14 Cornhill, London, EC3V 3ND

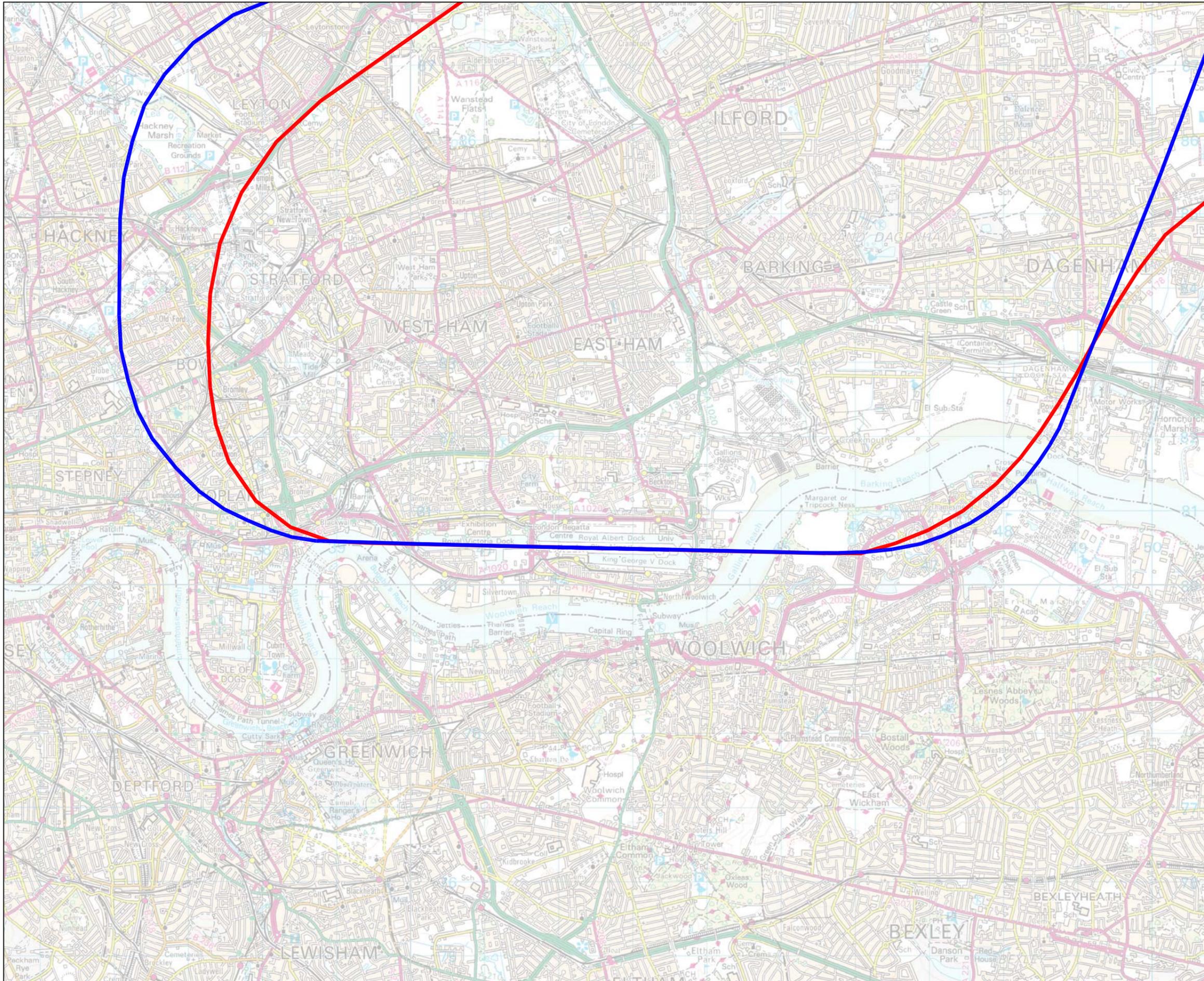




## **APPENDIX 2.1**

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Figure 2.1-Comparison between LCY SIDS and Actual Mean Departure Tracks



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Legend

- Actual Mean Departure Tracks
- LCY SIDs

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Drawing Title  
**LONDON CITY AIRPORT**

Comparison between LCY SIDs and  
Actual Mean Departure Tracks

Scale at A3  
**1:50,000**

Date: **May 2014**

Drawing Number  
**A9575/N06/01**



## **APPENDIX 2.2**

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Figures 2.2-2.4

Air Noise Contours Comparison showing revised track effect



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Legend

- - Mean Departure Track Contours
- - SIDs Contours

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Drawing Title  
**LONDON CITY AIRPORT**

**L<sub>Aeq,16h</sub> airborne aircraft noise contours**  
**54 - 72 in 3 dB steps**  
**2012 - Summer Average Mode**  
**Comparison showing revised track effect**

Scale at A3  
**1:50,000**

Date: **May 2014**

Drawing Number  
**A9575/N06/02**



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Legend

- - - Mean Departure Track Contours
- - - SIDs Contours

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Drawing Title  
**LONDON CITY AIRPORT**

**L<sub>Aeq,16h</sub> airborne aircraft noise contours**

**54 - 72 in 3 dB steps**

**2023 - Summer Average Mode  
Without CADP**

**Comparison showing revised track effect**

Scale at A3  
**1:50,000**

Date: **May 2014**

Drawing Number  
**A9575/N06/03**



**Bickerdike  
Allen  
Partners**  
Architecture  
Acoustics  
Technology

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 www.bickerdikeallen.com F: 0207 625 0250

Legend

- - Mean Departure Track Contours
- - SIDs Contours

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Drawing Title  
**LONDON CITY AIRPORT**

**L<sub>Aeq,16h</sub> airborne aircraft noise contours**  
**54 - 72 in 3 dB steps**  
**2023 - Summer Average Mode With CADP**  
**Comparison showing revised track effect**

Scale at A3  
**1:50,000**

Date: **May 2014**

Drawing Number  
**A9575/N06/04**

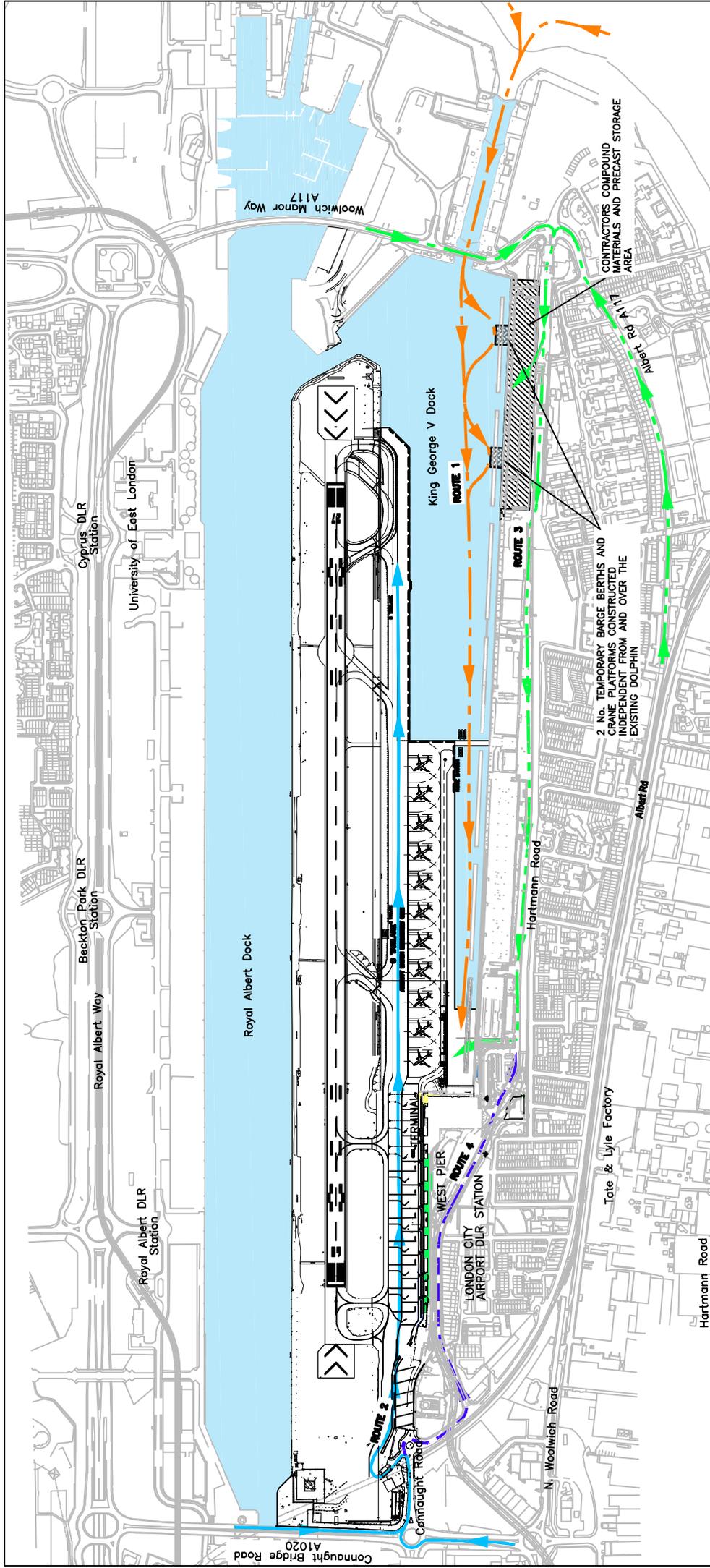


## **APPENDIX 3.1**

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Schematic Layout of Contractors Facilities and Access

Figure 6.9 from the CADP ES- Chapter 6 : Development Programme and Construction



KEY:

- - - ROUTE 1 - BARGE ACCESS
- ROUTE 2 - AIRSIDE SITE ACCESS
- - - ROUTE 3 - COMPOUND AND LANDSIDE SITE ACCESS
- - - ROUTE 4 - SECONDARY COMPOUND AND LANDSIDE SITE ACCESS

-  CONTRACTORS COMPOUND, MATERIALS AND PRECAST STORAGE AREA
-  TEMPORARY BARGE BERTHS AND CRANE PLATFORMS
-  EXISTING DOLPHINS CUT DOWN BELOW WATER LEVEL.

SCHEMATIC LAYOUT OF CONTRACTORS FACILITIES AND ACCESS

Fig. 6.9



## **APPENDIX 3.2**

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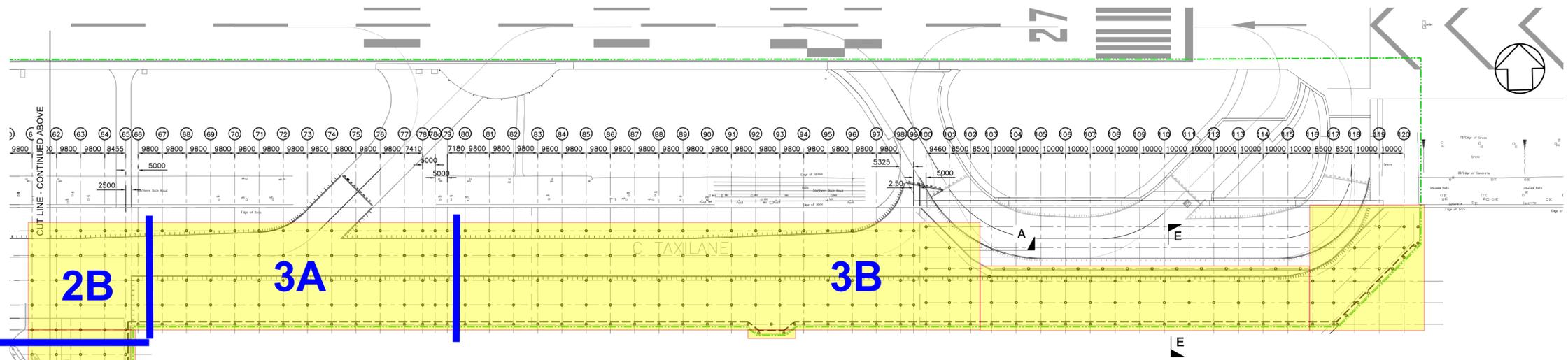
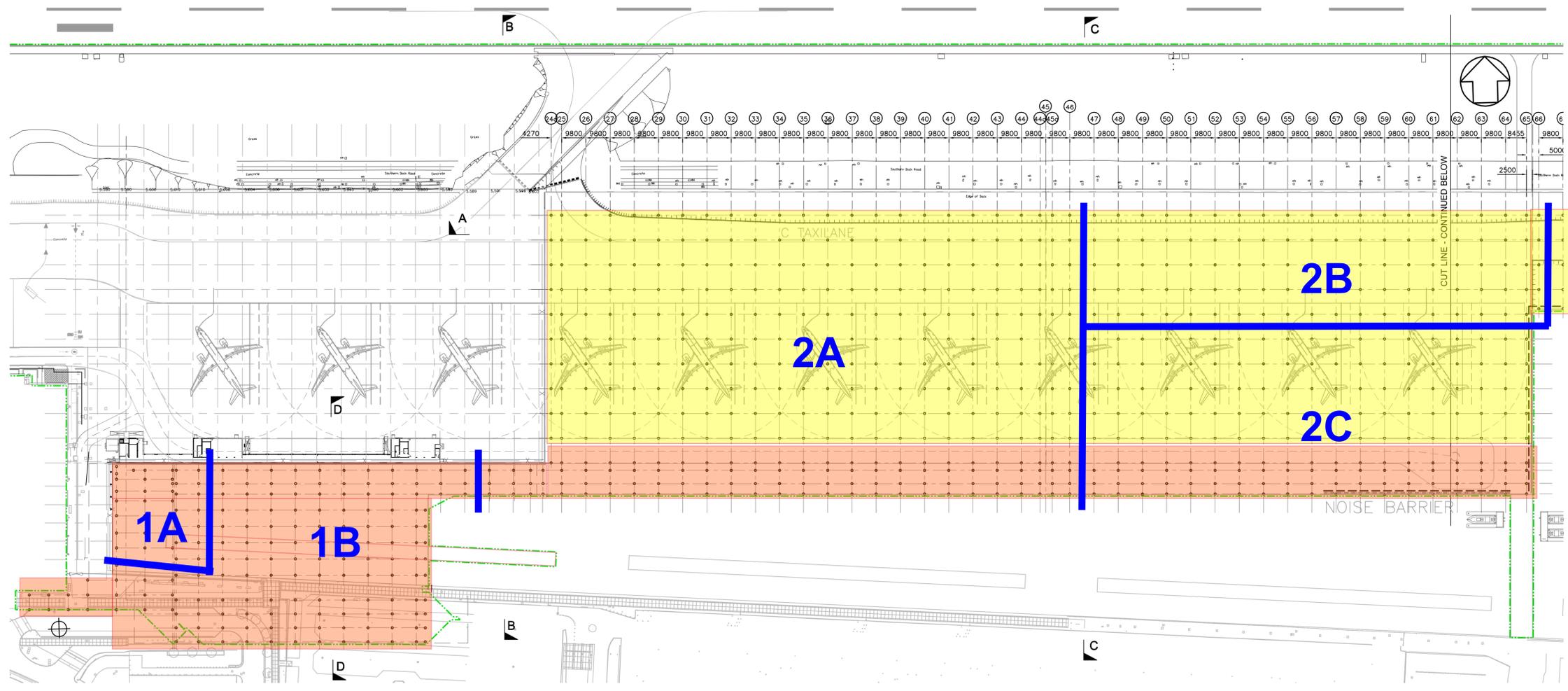
Markup of Drawing CA0L-900 Rev E with Working Hours and Piling Zones Annotated

**NOTES**

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE SURVEY DATUM.
3. FOR SECTIONS REFER TO Dwg.Nos. CA0L-910, CA0L-911 AND CA0D-921.
4. PILE POSITIONS MAY BE SUBJECT TO ADJUSTMENT AT DETAIL DESIGN STAGE

**KEY**

PROPOSAL BOUNDARY - ALL INFORMATION OUTSIDE OF THE PROPOSAL BOUNDARY IS FOR ILLUSTRATION PURPOSES ONLY.



**Key**

- Likely Out of Airport Hours Pile Casing Instillation
- Likely Weekday Pile Casing Instillation
- Indicative Piling Zone Boundary

E	R.WOOD	02/07/2013	W.HELLER	02/07/2013
ISSUED FOR PLANNING, REVISED TO LCY COMMENTS				
D	R.WOOD	13/06/2013	W.HELLER	13/06/2013
ISSUED FOR PLANNING, REVISED TO LCY COMMENTS				
C	R.WOOD	04/04/2013	W.HELLER	04/04/2013
ISSUED FOR PLANNING, REVISED TO LCY COMMENTS				
B	R.WOOD	22/03/2013	W.HELLER	22/03/2013
ISSUED FOR PLANNING				
A	R.WOOD	11/03/2013	W.HELLER	11/03/2013
PRELIMINARY PLANNING SET				
Rev	Revised By	Date	Checked By	Date

**Draft - For Illustration**



Project  
CITY AIRPORT  
DEVELOPMENT PROGRAMME

Markup of Drawing  
CA0L-900 Rev E with  
Working Hours and Piling  
Zones Annotated

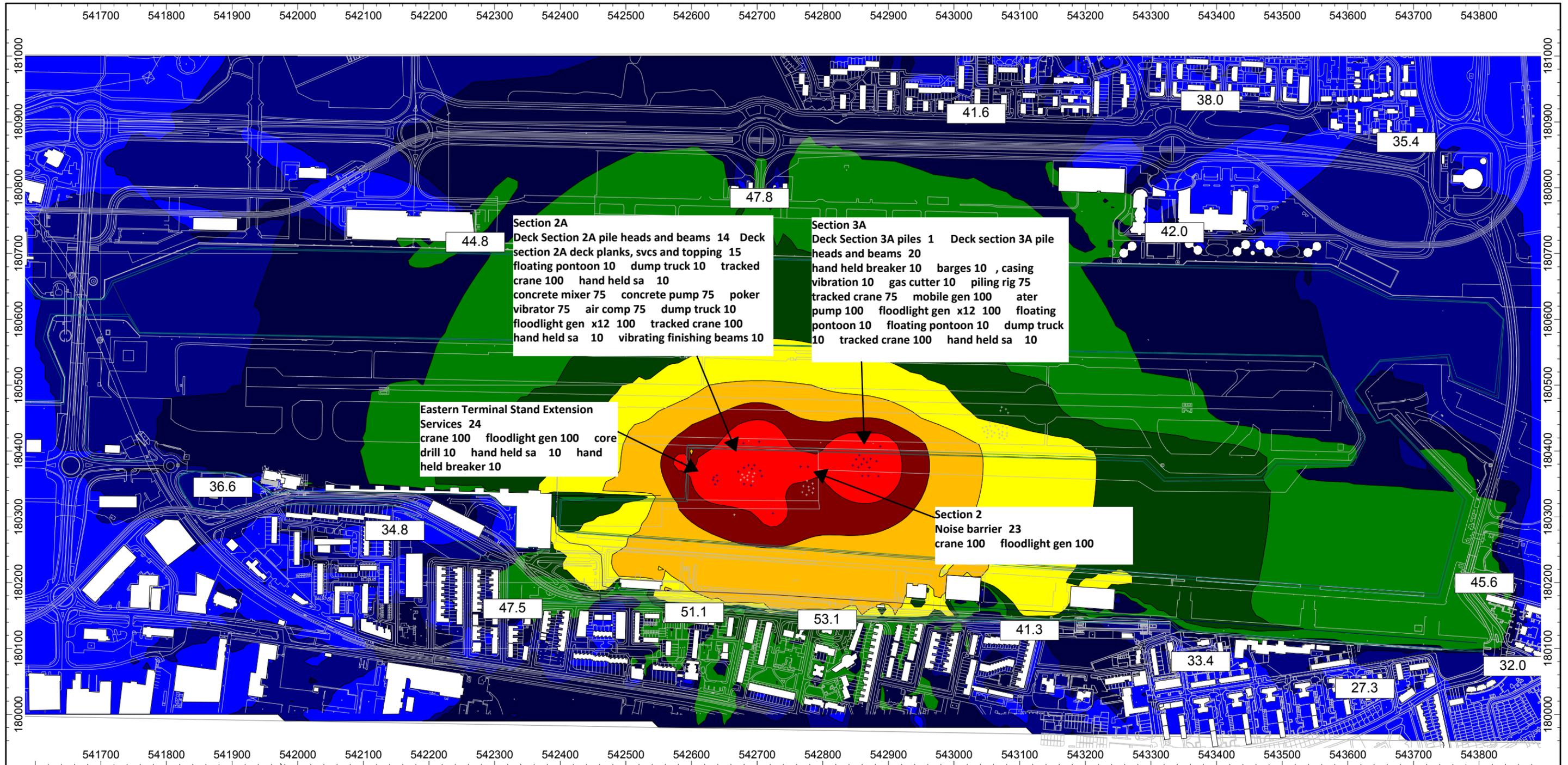




## **APPENDIX 3.3**

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Construction Noise Contours 01-13



Construction Noise LAeq,1h dB(A)  
Receiver height 4m  
Grid spacing 10 x 10 m

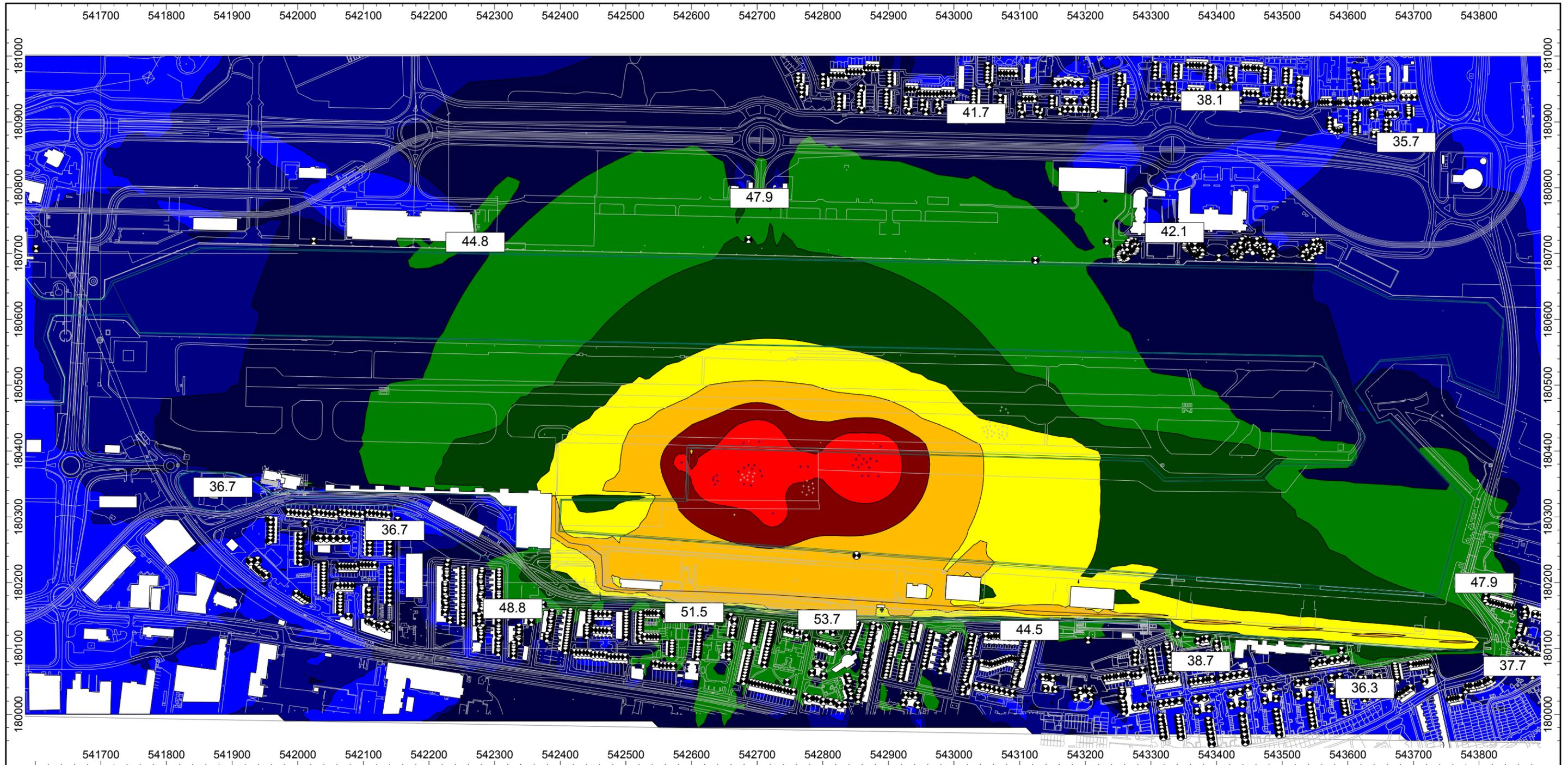
Blue	... < 35.0 dB(A)
Dark Blue	35.0 <= ... < 40.0 dB(A)
Dark Green	40.0 <= ... < 45.0 dB(A)
Green	45.0 <= ... < 50.0 dB(A)
Light Green	50.0 <= ... < 55.0 dB(A)
Yellow	55.0 <= ... < 60.0 dB(A)
Orange	60.0 <= ... < 65.0 dB(A)
Red-Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

Not to scale A9575 v1.0 28.02.14

A9575\_N10 - London City Airport - Construction Noise Contour 01

**London City Airport - Out of Operational Hours (OOOH) Programme 1st July 2016**

CadnaA Construction Noise OOOH Works



Construction Noise LAeq,1hr dB(A)  
Receiver height 4m  
Grid spacing 10 x 10 m

Not to scale

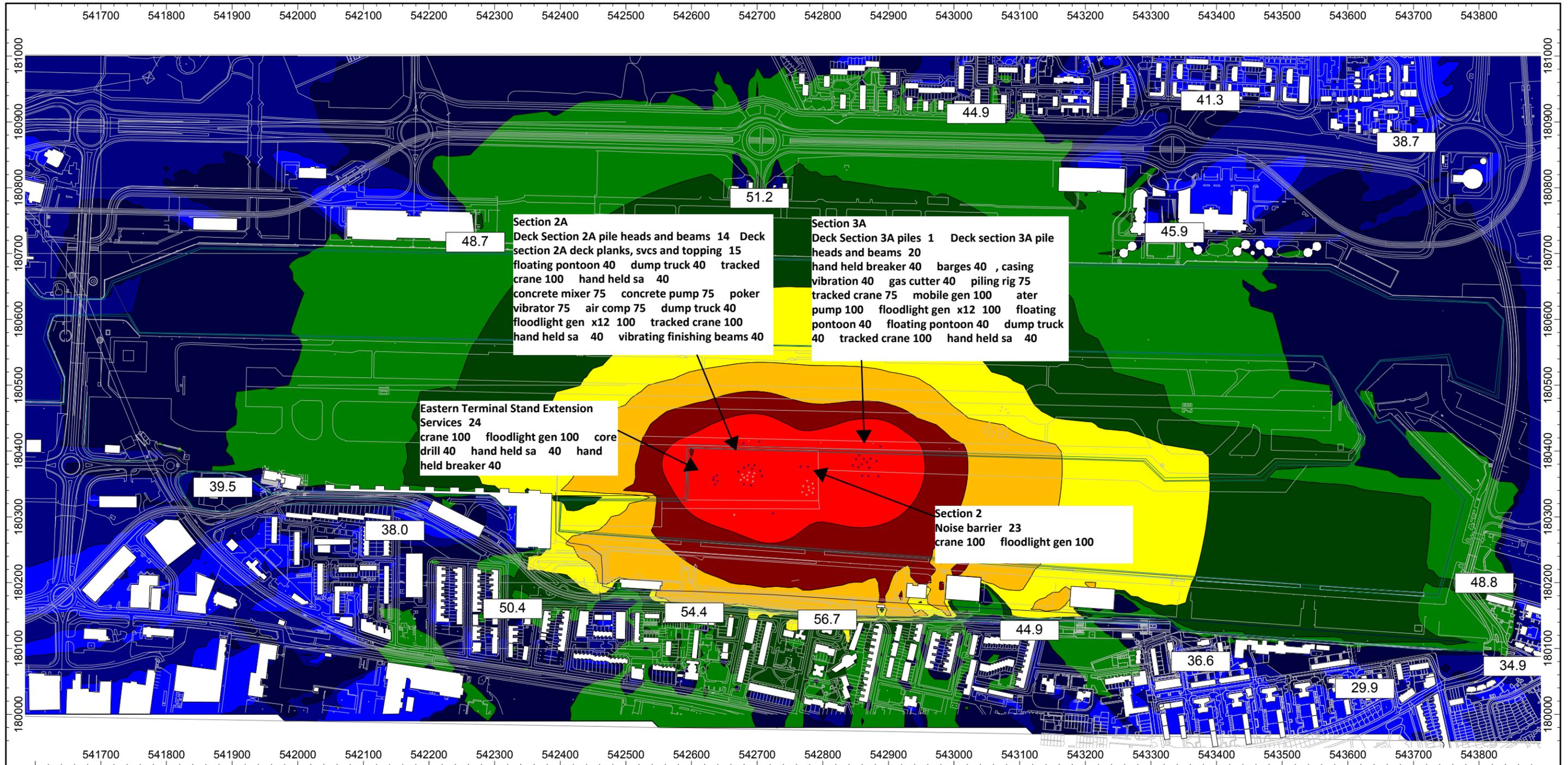
A9575 v3.0 09.05.14

A9575\_N10 - London City Airport - Construction Noise Contour 02

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
(Night Deck Construction Activity with haul road)**

CadnaA Construction Noise OOH Works

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

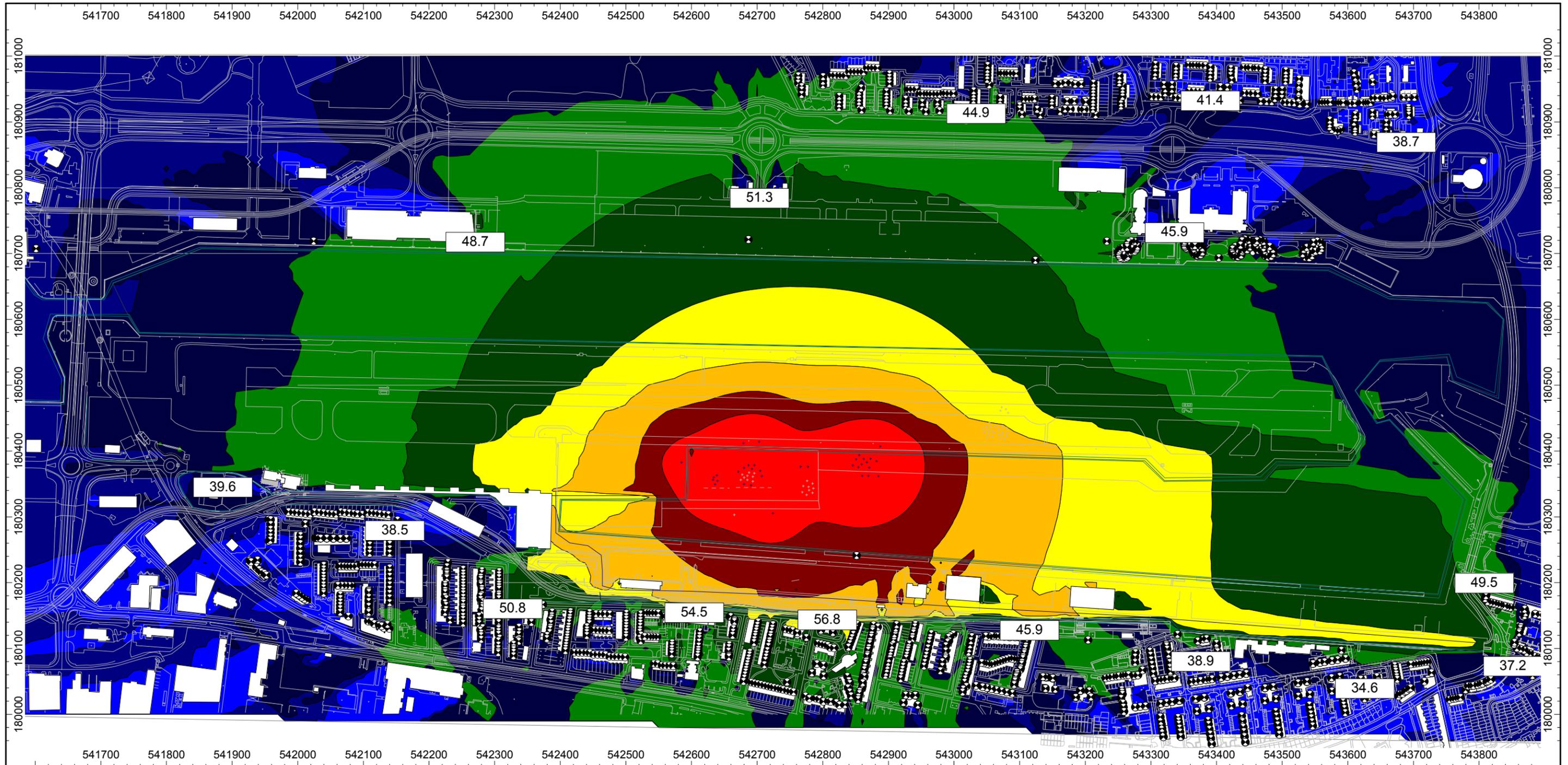
A9575 v2.0 11.04.14

A9575\_N10 - London City Airport - Construction Noise Contour 03

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Night Deck Construction Activity, Worst Case)**

CadnaA Construction Noise OOH Works



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

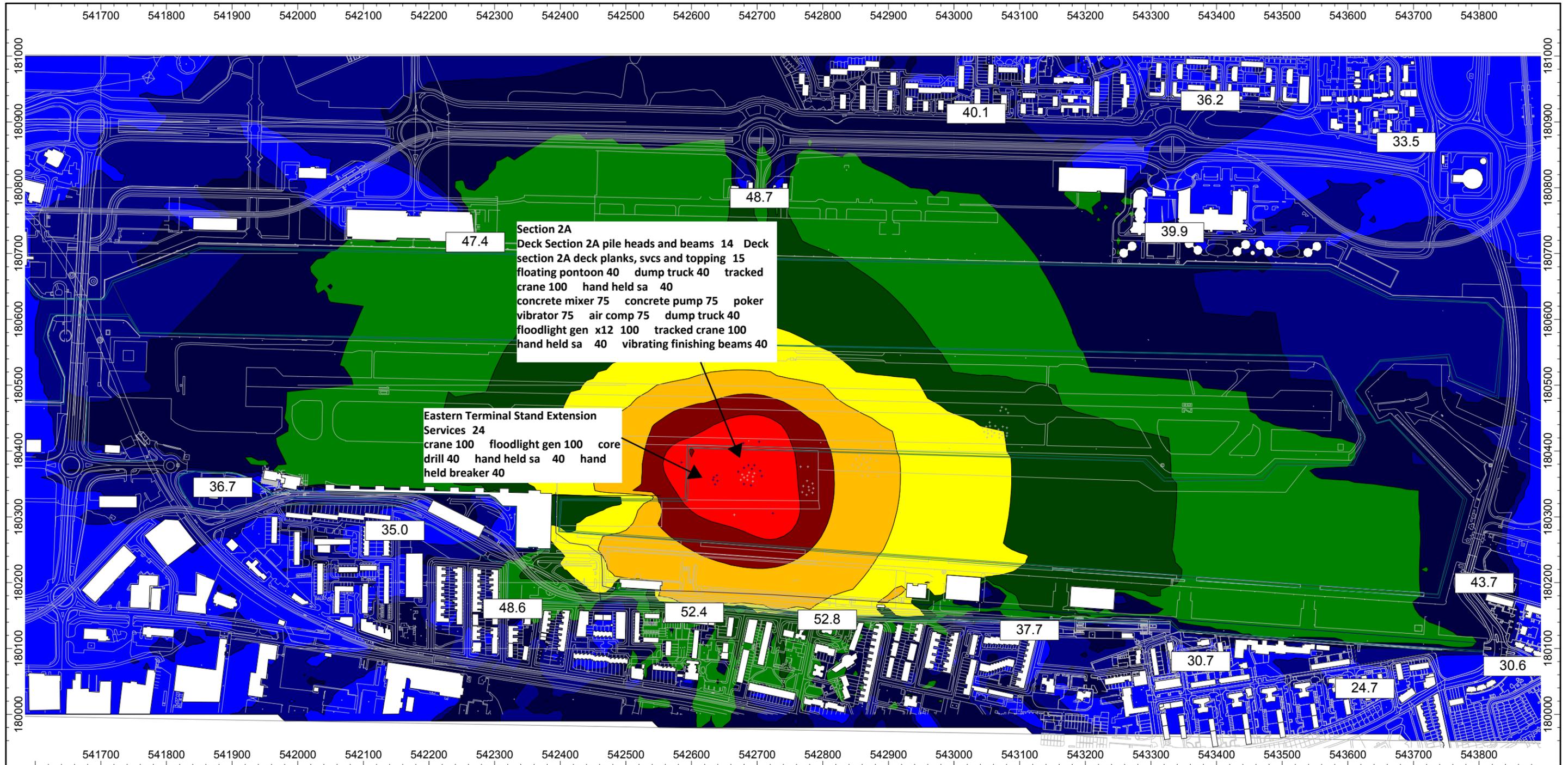
A9575 v3.0 09.05.14

A9575\_N10 - London City Airport - Construction Noise Contour 04

- ... <math>35.0 \text{ dB(A)}</math>
- $35.0 \leq \dots < 40.0 \text{ dB(A)}$
- $40.0 \leq \dots < 45.0 \text{ dB(A)}$
- $45.0 \leq \dots < 50.0 \text{ dB(A)}$
- $50.0 \leq \dots < 55.0 \text{ dB(A)}$
- $55.0 \leq \dots < 60.0 \text{ dB(A)}$
- $60.0 \leq \dots < 65.0 \text{ dB(A)}$
- $65.0 \leq \dots < 70.0 \text{ dB(A)}$
- $70.0 \leq \dots \text{ dB(A)}$

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Night Deck Construction Activity, Worst Case with haul road)**

CadnaA Construction Noise OOH Works



**Section 2A**  
 Deck Section 2A pile heads and beams 14 Deck section 2A deck planks, svcs and topping 15 floating pontoon 40 dump truck 40 tracked crane 100 hand held sa 40 concrete mixer 75 concrete pump 75 poker vibrator 75 air comp 75 dump truck 40 floodlight gen x12 100 tracked crane 100 hand held sa 40 vibrating finishing beams 40

**Eastern Terminal Stand Extension Services 24**  
 crane 100 floodlight gen 100 core drill 40 hand held sa 40 hand held breaker 40

Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

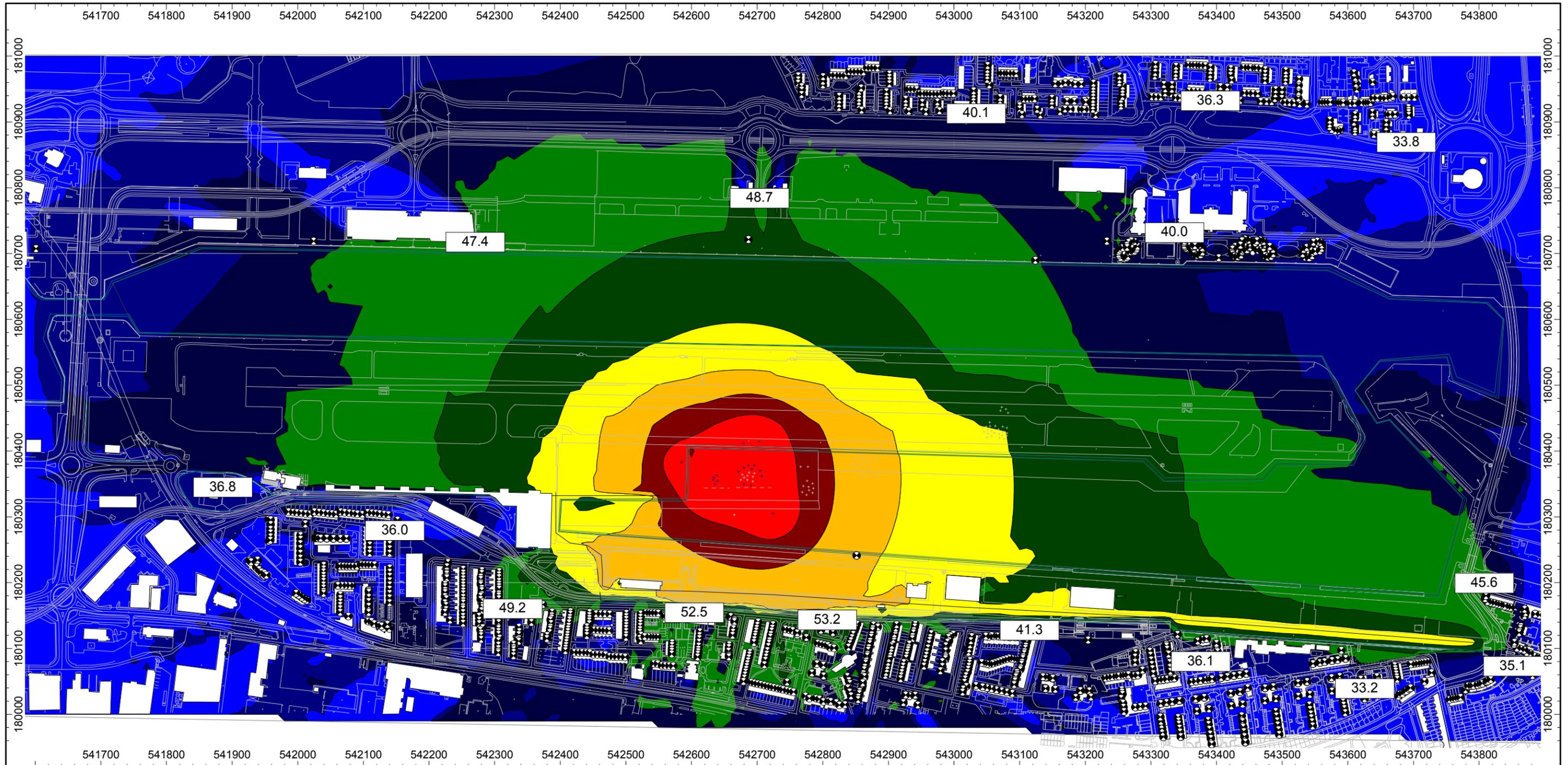
A9575 v2.0 11.04.14

A9575\_N10 - London City Airport - Construction Noise Contour 05

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016 (Typical (Section 2A and ETSE))**

CadnaA Construction Noise OOH Works



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

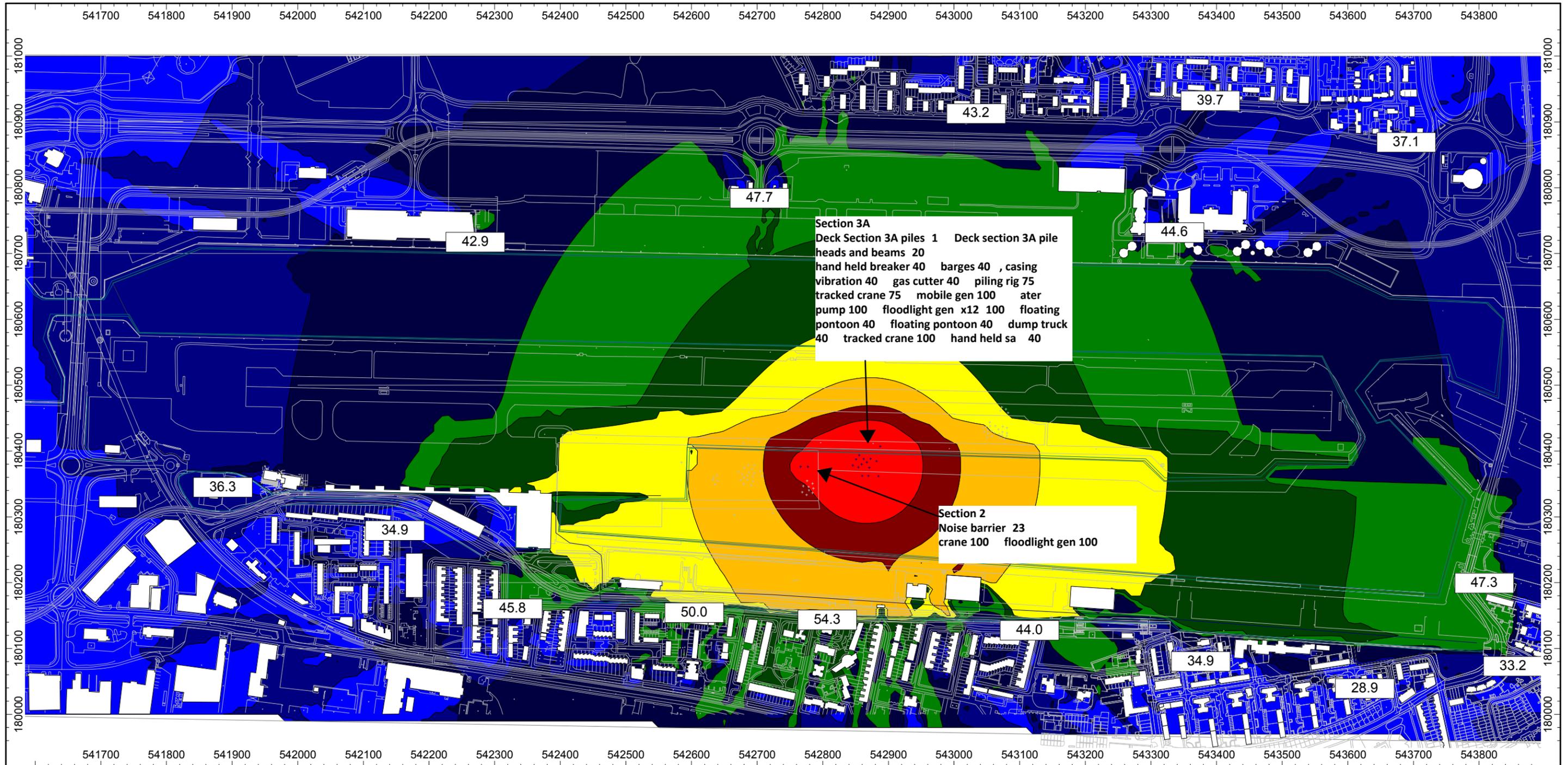
A9575 v3.0 09.05.14

A9575\_N10 - London City Airport - Construction Noise Contour 06

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Typical (Section 2A and ETSE) with haul road)**

CadnaA Construction Noise OOH Works



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Light Blue	... < 35.0 dB(A)
Blue	35.0 <= ... < 40.0 dB(A)
Dark Blue	40.0 <= ... < 45.0 dB(A)
Green	45.0 <= ... < 50.0 dB(A)
Dark Green	50.0 <= ... < 55.0 dB(A)
Yellow	55.0 <= ... < 60.0 dB(A)
Orange	60.0 <= ... < 65.0 dB(A)
Red-Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

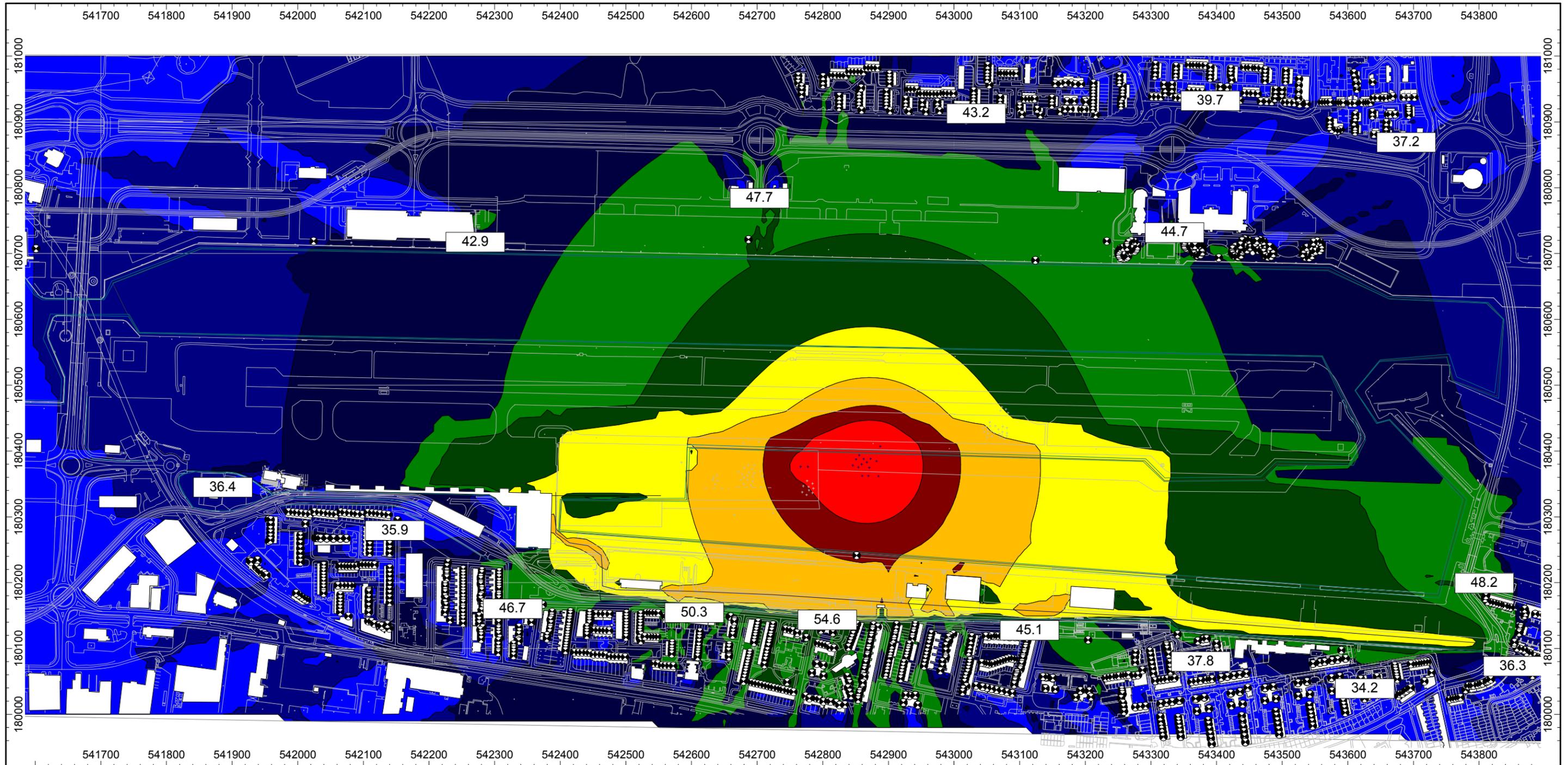
Not to scale

A9575\_N10 - London City Airport - Construction Noise Contour 07

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016 (Typical (section 3A and 2B))**

CadnaA Construction Noise OOH Works

A9575 v2.0 11.04.14



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

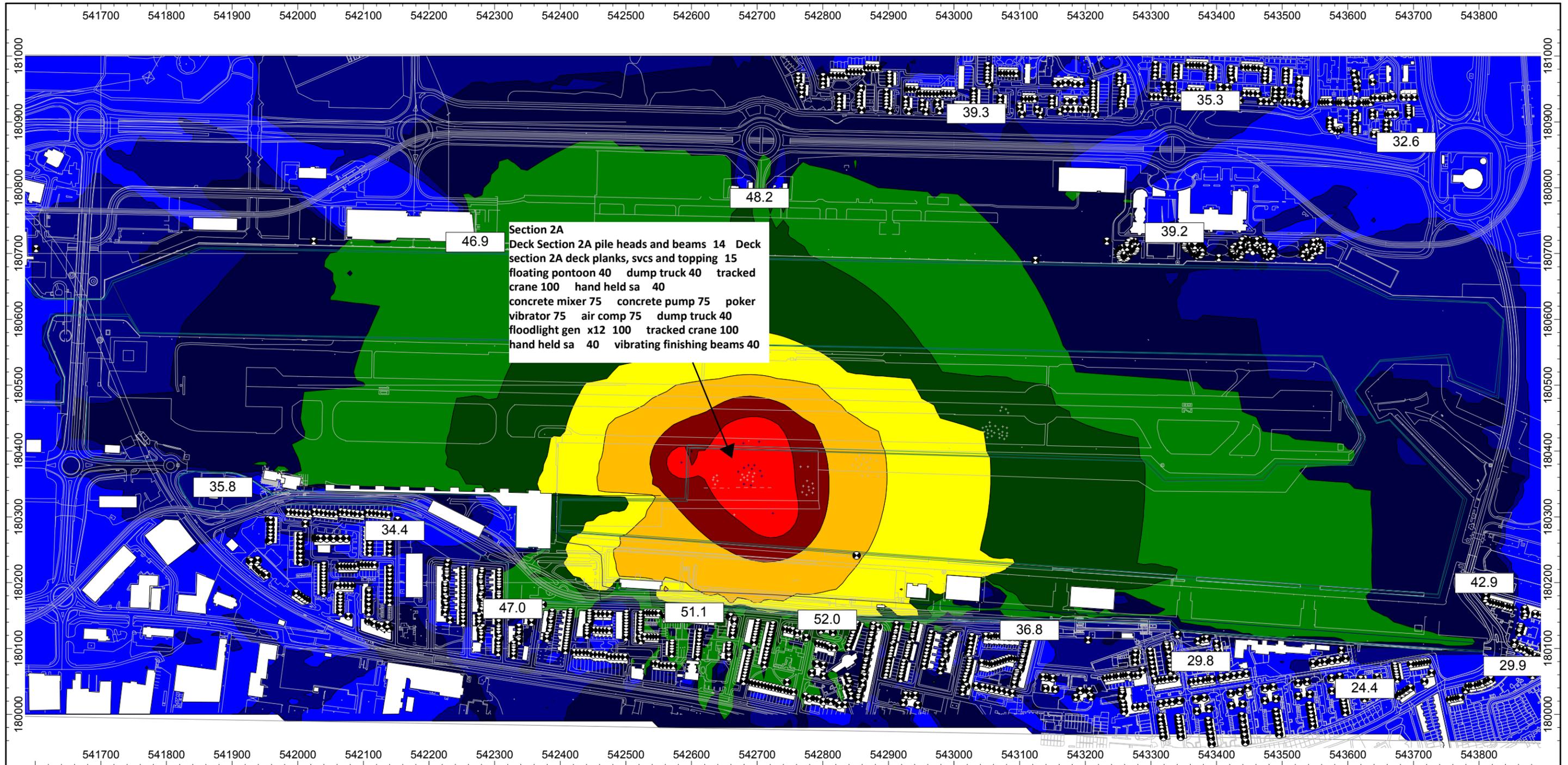
A9575 v3.0 09.05.14

A9575\_N10 - London City Airport - Construction Noise Contour 08

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Typical (sections 3A and 2B) with haul road)**

CadnaA Construction Noise OOH Works



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Blue	... < 35.0 dB(A)
Dark Blue	35.0 <= ... < 40.0 dB(A)
Light Blue	40.0 <= ... < 45.0 dB(A)
Green	45.0 <= ... < 50.0 dB(A)
Dark Green	50.0 <= ... < 55.0 dB(A)
Yellow	55.0 <= ... < 60.0 dB(A)
Orange	60.0 <= ... < 65.0 dB(A)
Red-Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

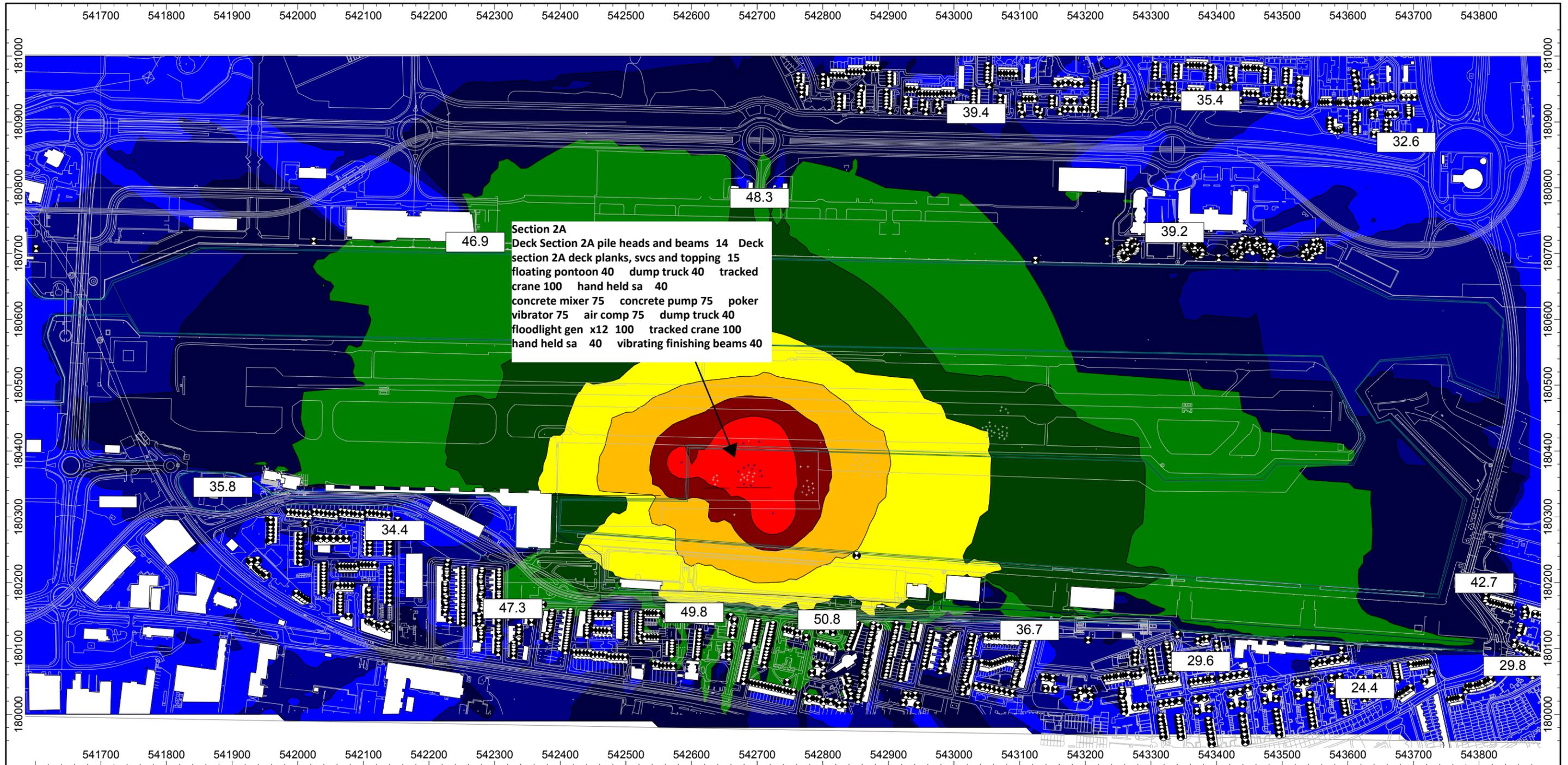
Not to scale

A9575\_N10 - London City Airport - Construction Noise Contour 09

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (2A heads and beams (14), 2A planks, svcs, topping (15) No local mitigation)**

CadnaA Construction Noise OOH Works

A9575 v2.0 11.04.14



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Blue	... < 35.0 dB(A)
Dark Blue	35.0 <= ... < 40.0 dB(A)
Medium Blue	40.0 <= ... < 45.0 dB(A)
Light Blue	45.0 <= ... < 50.0 dB(A)
Green	50.0 <= ... < 55.0 dB(A)
Yellow-Green	55.0 <= ... < 60.0 dB(A)
Yellow	60.0 <= ... < 65.0 dB(A)
Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

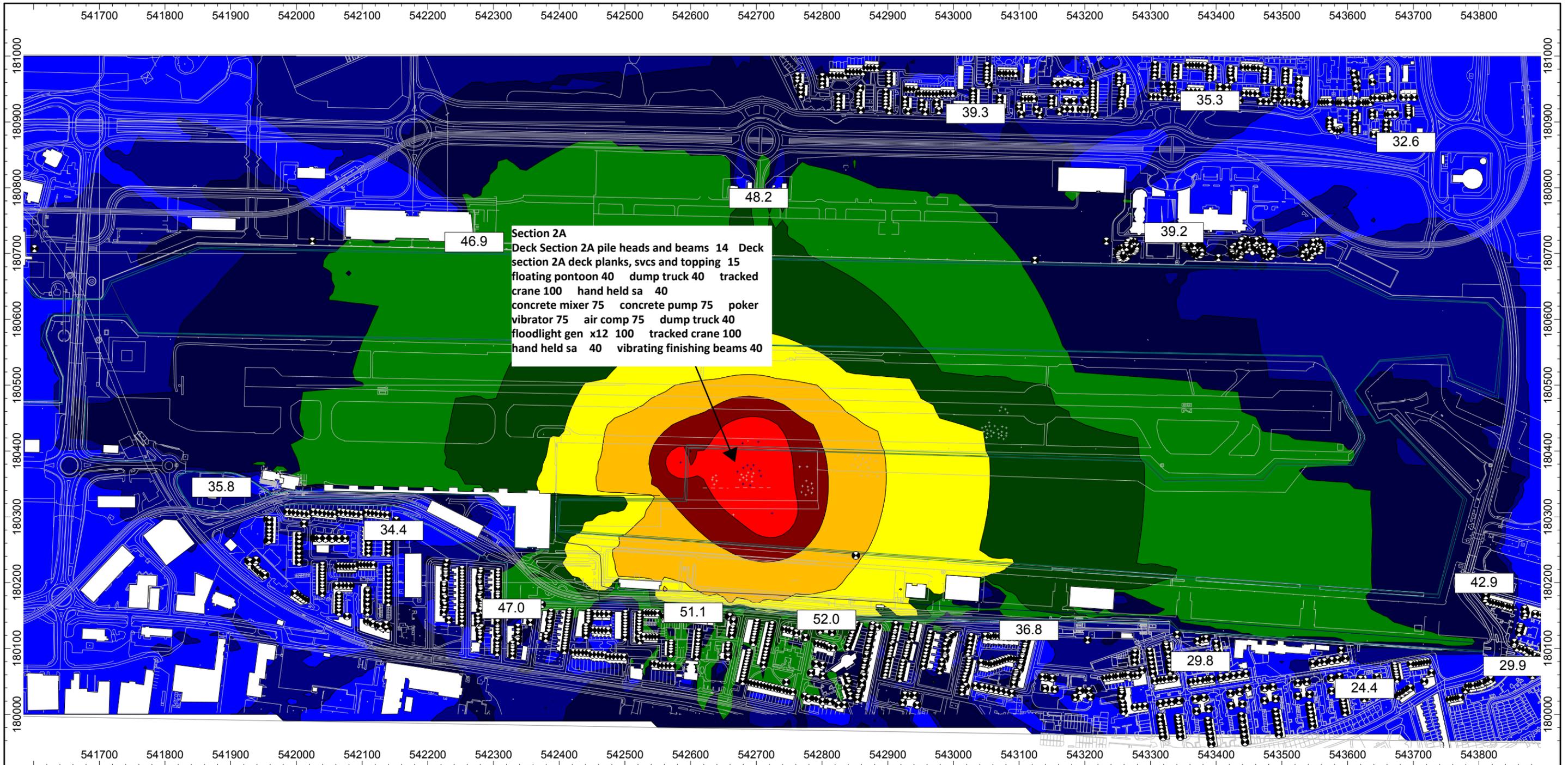
Not to scale

A9575\_N10 - London City Airport - Construction Noise Contour 10

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (2A heads and beams (14)2A planks, svcs, topping (15) Local screening)**

CadnaA Construction Noise OOH Works

A9575 v2.0 11.04.14



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Not to scale

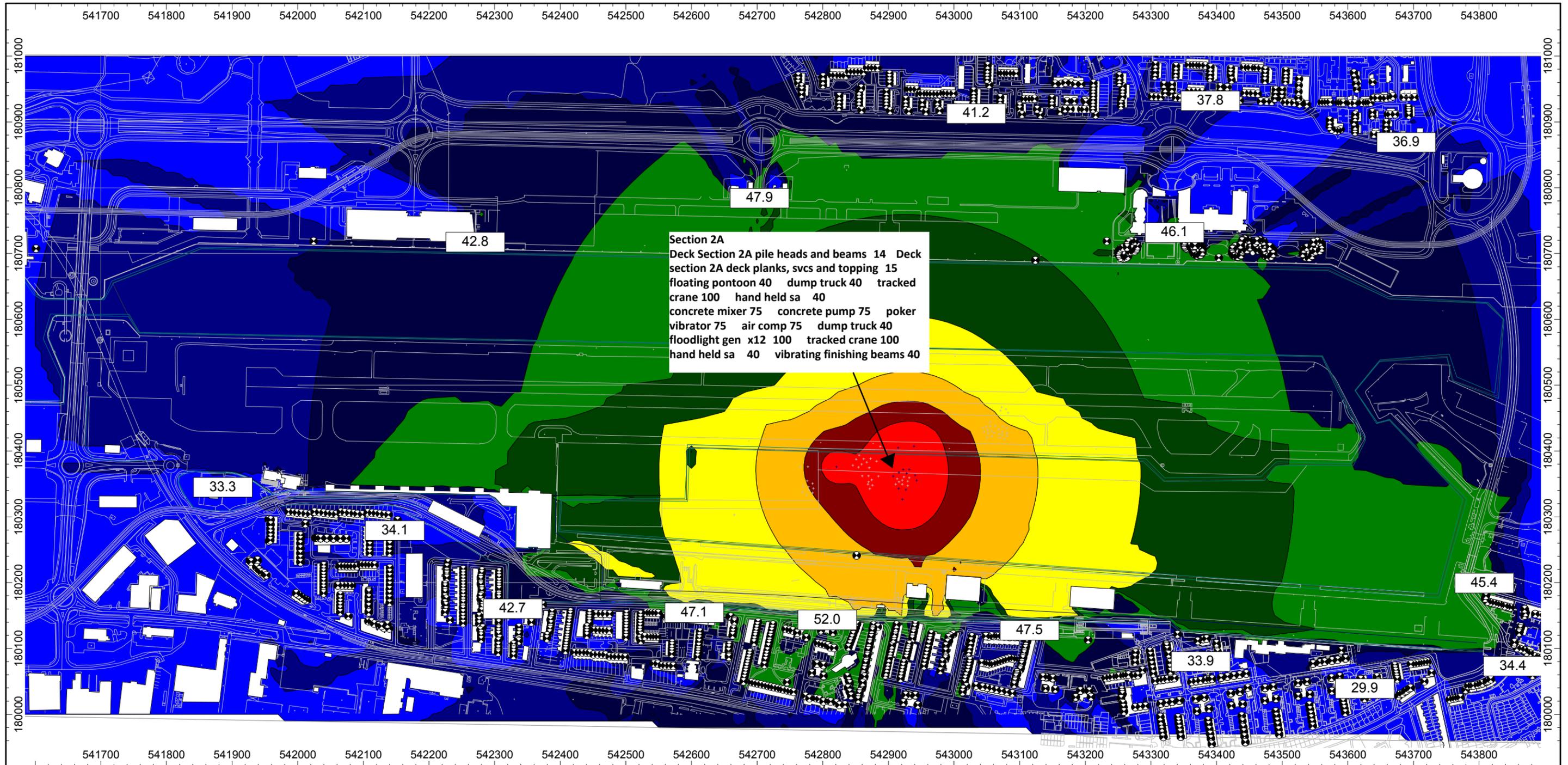
A9575 v2.0 11.04.14

**A9575\_N10 - London City Airport - Construction Noise Contour 11**

- ... < 35.0 dB(A)
- 35.0 <= ... < 40.0 dB(A)
- 40.0 <= ... < 45.0 dB(A)
- 45.0 <= ... < 50.0 dB(A)
- 50.0 <= ... < 55.0 dB(A)
- 55.0 <= ... < 60.0 dB(A)
- 60.0 <= ... < 65.0 dB(A)
- 65.0 <= ... < 70.0 dB(A)
- 70.0 <= ... dB(A)

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Deck works 2A heads and beams (14), 2A planks, svcs, topping (15) No local mitigation Position 1)**

CadnaA Construction Noise OOH Works



Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Blue	... < 35.0 dB(A)
Dark Blue	35.0 <= ... < 40.0 dB(A)
Medium Blue	40.0 <= ... < 45.0 dB(A)
Light Blue	45.0 <= ... < 50.0 dB(A)
Green	50.0 <= ... < 55.0 dB(A)
Yellow-Green	55.0 <= ... < 60.0 dB(A)
Yellow	60.0 <= ... < 65.0 dB(A)
Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

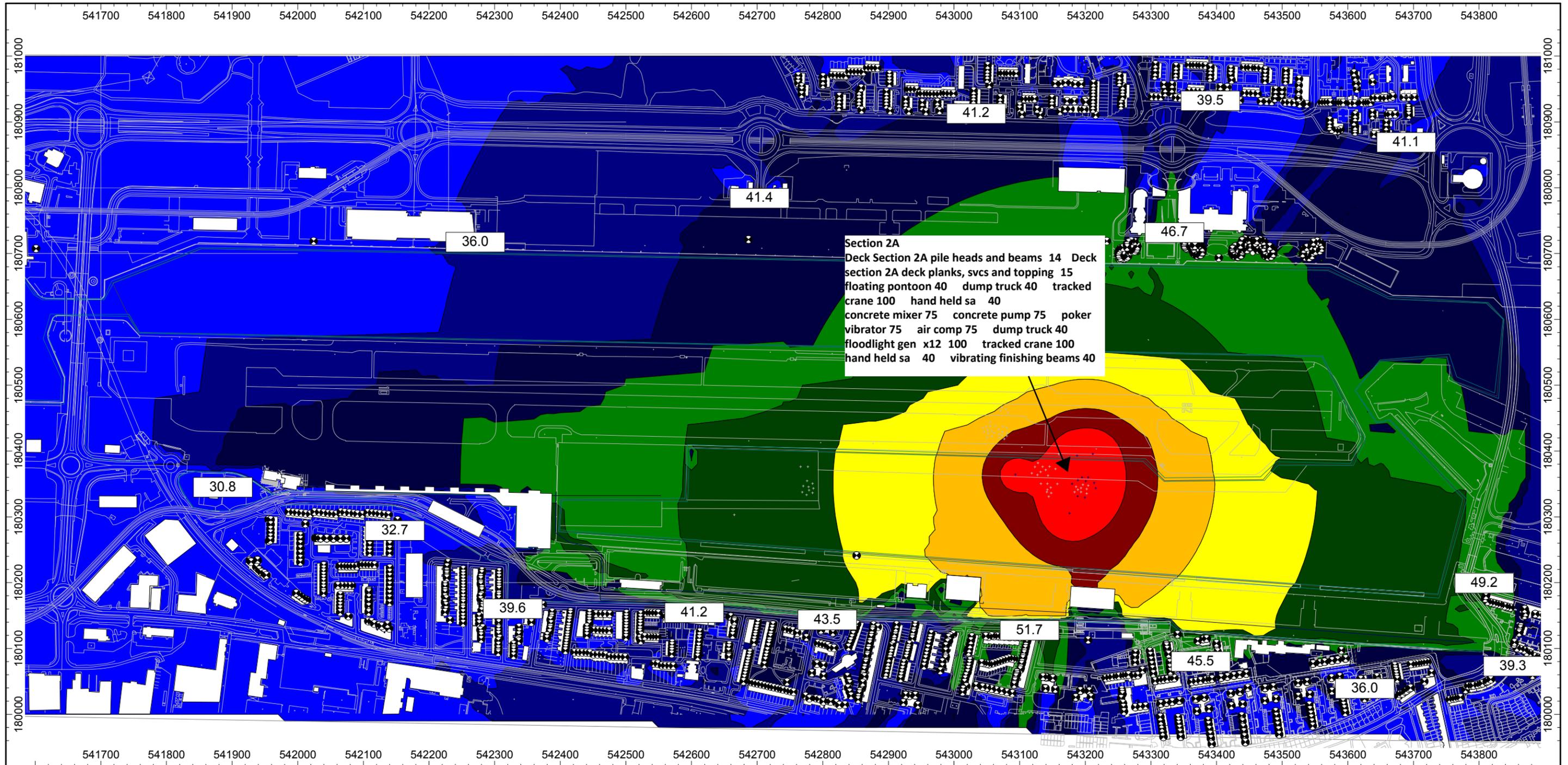
Not to scale

A9575\_N10 - London City Airport - Construction Noise Contour 12

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 (Deck works 2A heads and beams (14), 2A planks, svcs, topping (15) No local mitigation Position 2)**

CadnaA Construction Noise OOH Works

A9575 v2.0 11.04.14



Section 2A  
 Deck Section 2A pile heads and beams 14 Deck  
 section 2A deck planks, svcs and topping 15  
 floating pontoon 40 dump truck 40 tracked  
 crane 100 hand held sa 40  
 concrete mixer 75 concrete pump 75 poker  
 vibrator 75 air comp 75 dump truck 40  
 floodlight gen x12 100 tracked crane 100  
 hand held sa 40 vibrating finishing beams 40

Construction Noise LAeq,15min dB(A)  
 Receiver height 4m  
 Grid spacing 10 x 10 m

Blue	... < 35.0 dB(A)
Dark Blue	35.0 <= ... < 40.0 dB(A)
Light Blue	40.0 <= ... < 45.0 dB(A)
Green	45.0 <= ... < 50.0 dB(A)
Dark Green	50.0 <= ... < 55.0 dB(A)
Yellow	55.0 <= ... < 60.0 dB(A)
Orange	60.0 <= ... < 65.0 dB(A)
Red-Orange	65.0 <= ... < 70.0 dB(A)
Red	70.0 <= ... dB(A)

Not to scale A9575 v2.0 11.04.14

**A9575\_N10 - London City Airport - Construction Noise Contour 13**

**London City Airport - Out of Operational Hours (OOH) Programme 1st July 2016  
 ( Deck works 2A heads and beams (14)2A planks, svcs, topping (15) No local mitigation Position 3)**

CadnaA Construction Noise OOH Works



## **APPENDIX 3.4**

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Framework Construction Noise and Vibration Management and Mitigation Strategy (CNVMMS)



## **APPENDIX 3.4**

### **LONDON CITY AIRPORT**

#### **DRAFT FRAMEWORK CONSTRUCTION NOISE MANAGEMENT AND MITIGATION STRATEGY**

##### **1.0 INTRODUCTION**

The construction works associated with City Airport Development Programme (CADP) will take place periodically over a number of years, with some works taking place at night. An assessment has been undertaken and reported in the original Environmental Statement (ES) issued in July 2013 as well as the ES Addendum (March 2014) to minimise the amount of night works that need to be undertaken although there will be periods of weeks or months when such works will be necessary. The nature of the works will be similar in extent and noise emissions to those undertaken for other projects undertaken in the past at London City Airport (LCY), such as the Runway 28 Hold and Eastern Apron Works (known collectively as the Operational Improvement Programme (OIP) works), both of which involved night working.

This Draft Framework Construction Noise and Vibration Management and Mitigation Strategy (CNVMMS) builds on the principles of a scheme that has been used successfully by Bickerdike Allen Partners (BAP) on other sensitive developments, such as the British Museum and also the Victoria and Albert Museum, where the concept of seeking a dispensation is adopted in the event that any works are expected to produce noise and vibration levels above a set threshold level. This ensures that any such works can be reviewed in advance and all appropriate mitigation measures put in place prior to the works commencing.

A key feature of the strategy would require that LCY would undertake noise monitoring as a means of ensuring limits are not exceeded by any appointed contractor. For the CADP, the contractor would still be responsible for monitoring noise and vibration levels as well, to comply with contractual obligations, but would have a secondary responsibility to ensure the overall airport noise limits were not exceeded.

While the first section of this strategy document relates to management of noise, the second section describes the mitigation measures that will be applied where it is demonstrated by measurement or prediction that any dwelling is likely to become exposed to a specified level of construction noise.

## **2.0 THE MANAGEMENT STRATEGY**

### **2.1 Mechanism of Control**

The contractor will be bound by a specification relating to the control of noise and vibration of demolition and construction works. This will set out the contractual obligations to the contractor to ensure that they use plant in compliance with relevant standards and put in place best practicable means wherever necessary to comply with the stringent noise and vibration limits at the boundary of the site. The contractor will be required to produce a detailed Construction Noise and Vibration Management and Monitoring Strategy document that sets out the procedures they propose to comply with such a specification and, as part of the tender process, would need to demonstrate an understanding of the noise and vibration control requirements on the project. The draft principles of the CNVMMS are set out below and it is proposed that a detailed CNVMMS will be secured by conditions.

### **2.2 External Noise and Vibration Limits - Contractor**

The contractor will be bound by a set of external noise and vibration limits which relate to the boundary of the site where he will be able to monitor noise and vibration within his controlled site. They will be determined by measurement and/or calculation to account for the position of the site boundary relative to the nearest noise sensitive receptor.

The limits will differ according to the times of day and also the period over which the noise is produced, and would be controlled by appropriate planning conditions. .

This concept is much the same as the noise control procedures used on many other building projects and therefore will be familiar to a contractor.

### **2.3 External Noise Limits - LCY**

LCY will deploy one or up to a maximum of two mobile noise monitoring terminals in the region of the nearest noise sensitive buildings to where the construction works are to take place. The mobile nature of the monitor(s) allows ease of deployment from one area to another, as the works progress along the dock.

The external noise limits will relate to levels agreed pursuant to planning conditions, adjusted as necessary to account for the location in which the monitors are to be deployed. For example, if the LCY monitor is closer to the site than the nearest noise sensitive building, which is likely to be the case, an adjustment to account for the different separation distance from the works site will be included. Any mechanism for making such adjustments would be subject to approval with the London Borough of Newham so that these limits are agreed by all relevant parties.

For avoidance of doubt, if the LCY monitors were to be deployed at the site boundary, the limits would be identical to those applicable to the contractor, all else being equal.

## **2.4 Special Dispensation**

If it is expected or predicted that an essential demolition and construction operation is likely to give rise to noise levels at the site boundary higher than the limit(s) specified in the planning conditions and in the contract, then permission must be sought and agreement reached with the LCY Project Manager (PM) before any such operation commences. Permission will be subject to demonstrating that all best practicable measures have been incorporated, including the use of local screening where practicable. Any such permission will be subject to agreement with the local authority and the contractor shall provide all plant and operational data together with associated noise information and expected duration of the works as necessary to secure such an agreement. A full method statement with planned durations of operations and associated noise levels will be submitted to the LCY PM with this request. Any request for this special dispensation, along with associated supporting documentation, must be lodged with the PM at least 14 days before the operation is due to take place. The PM reserves the right to approve or reject the request.

## **2.5 Community Liaison and Complaint Handling**

A key aspect of minimising the impact of noise and vibration around the site will be the maintenance of good relations with those people living and working in the vicinity of the Airport site. The Airport or its contractors will appoint a person to be responsible for liaison with the local community in order to keep them informed of progress and for providing a means of treating complaints fairly and expeditiously. A progress reporting procedure shall be put into place by the contractor to regularly inform a community liaison committee comprising resident representatives (for example from the airport's Consultative Committee), London Borough of Newham representative and airport representative.

A comprehensive complaints management scheme will be put in place by the contractor and a dedicated channel (telephone line) provided to facilitate and receive complaints on a 24 hour basis. The scheme will define the means by which complaints are received, recorded, monitored, actioned and reported. Such a scheme will be subject to approval by the PM and also the London Borough of Newham.

## **2.6 Noise and Vibration Monitoring**

### **2.6.1 Noise Measurement**

The Contractor will be required to undertake noise monitoring continuously throughout the contract to ensure that demolition and construction works and associated activities are being

undertaken in a manner that ensures compliance with the specified noise level limits. The Contractor will also be required to undertake manual short-term noise measurements regularly as necessary to verify that the continuous noise monitoring is adequately reflecting the impact of noise on the surrounding buildings.

Additional to the above, noise monitoring will be undertaken at one or more locations continuously around the site throughout the duration of the works by LCY to verify that the continuous noise monitoring is adequately reflecting the impact of noise on the surrounding buildings and that the construction noise levels are in compliance with planning requirements.

#### 2.6.2 Vibration Measurement

The Contractor shall have available on site suitable vibration monitoring equipment to demonstrate compliance with the specified vibration level limits. The equipment shall be capable of monitoring peak particle velocity in three mutually perpendicular axes and shall be capable of measuring down to 0.1 mm/s.

#### 2.6.3 Contractor Noise Monitoring Alert System

The contractor shall operate an alert or traffic light type system to warn operatives and the construction manager when the site boundary noise limit is being approached and when it is being exceeded. This will provide the facility for LCY and the construction team to monitor whether limits are being approached.

#### 2.6.4 Presentation of Noise Data

The contractor shall ensure that the noise data from its continuous noise monitoring system is accessible in real time (as far as practically possible) via a web based system that is available to all relevant parties for viewing.

#### 2.6.5 LCY Noise Monitoring System

LCY shall independently operate an alert system associated with their noise monitoring system that identifies when the planning boundary limit is being approached (First Action Level - Orange alert) and when it has been exceeded (Second Action Level - Red alert). Text and e-mail alerts will be sent to the contractor and other relevant personnel to advise of this situation. An agreed procedure will be in place concerning what action arises as a result of such alerts occurring. The expectation is that works would be ceased on site should a red alert occur until an agreed set of actions are undertaken to reduce the noise levels to within agreed limits.

## **2.7 Liability for Cessation of Works due to noise Limit Exceedance**

It shall be the liability of the contractor to ensure works are carried out in a manner that conforms with the noise and vibration limits specified at the site boundary. In the event that an exceedance of the first or second action level of the LCY system occurs and it becomes necessary to cease works, an investigation shall be undertaken to check whether the cause of the exceedance is due to contractor related construction processes and also whether the noise limit requirements specified in the contract at the site boundary have been exceeded. If either is proven, the Contractor shall be held responsible for the cessation of the works. If the site boundary limits are not exceeded, and the cause of the exceedance does not relate to site activity, liability for cessation will not lie with the Contractor (for example, this could occur in the event that a car or lorry, not related to the works, parks close to the LCY monitor with its engine running).

## **3.0 THE MITIGATION STRATEGY**

### **3.1 Construction Noise Insulation Scheme**

The detailed CNVMMS to be prepared by the contractor will include provisions for a noise insulation scheme where appropriate. The scheme is intended to provide additional protection to residents in the event that it is not practicable to mitigate or reduce exposure to construction noise, during certain construction phases. The contractor will undertake and submit the results of a construction noise assessment to LCY. In doing so, it will identify any properties that it expects to be eligible for sound insulation works under this scheme. It will do this at least six months prior to starting the relevant phase of work on site or such time appropriate to the scale and nature of the works, as agreed with LCY.

The contractor will use best practicable means to minimise the extent to which noise insulation works to dwellings adjacent to the works need to be considered.

Noise insulation will be offered to qualifying parties if noise levels are predicted or measured to exceed the relevant trigger level defined in Table 1 for at least ten days out of any period of fifteen consecutive days or alternatively 40 days in any six month period.

The relevant trigger levels are shown in Table 1.

Day	Time	Averaging period, T	Noise insulation trigger level $L_{Aeq}$
Monday to Friday	0800 to 1800	10	75
	1800 to 2300	1 hr	55
Saturday	0800 to 1300	5 hr	75
Saturday	1300 to 2300	1 hr	55
Sunday	0800 to 2300	1 hr	55
Any day	2300-0800	15 min	55

**Table 1 - Construction noise thresholds for noise insulation**

Eligibility for the scheme will depend on the predicted or measured noise level following the re-assessment that will be carried out for that purpose once detailed construction plans are in place and as proposed by way of condition. The method of construction noise assessment shall be in keeping with recognised good practice and in accordance with recognised standards and guidelines. If the noise assessment indicates that a property is eligible, the offer of noise insulation will be made in accordance with the Second Tier Works Procedure set out in LCY's current Section 106 Agreement dated July 2009 or in accordance with an alternative procedure and timescales as agreed with LCY and the Local Authority. If accepted and all necessary approvals obtained, the insulation works shall be installed before the construction works that are assessed to impact the dwelling shall commence.

The form and extent of works to be offered to the owner/occupier of an eligible dwelling will be in line with the Second Tier Works described in LCY's current Section 106 Agreement dated July 2009 or as alternatively agreed with LCY and the London Borough of Newham. The Second Tier Works and Second Tier Works Procedure on which the scheme will be based are described in Appendix A of this CNVMMS.

### **3.2 Construction Noise Additional Mitigation for Exceptional Circumstances**

The CNVMMS to be prepared by the contractor will include provisions for construction noise mitigation where, by prediction or measurement, it is established that residents will or have become exposed to construction noise levels above specified trigger levels—which shall be representative of exceptional circumstances.

The contractor will also make provision within the CNVMMS for acceptance at the PM’s discretion of applications from residents for additional construction noise mitigation supported by evidence of other exceptional circumstances, such as night shift working patterns, those working in home occupations, local businesses or buildings that provide community facilities requiring a particularly quiet environment and those with a medical condition which will be seriously aggravated by construction noise.

The contractor, with PM agreement, will specify the additional mitigation which will be made available in these exceptional circumstances and consideration will be given to the possibility of introducing a scheme for temporary re-housing if appropriate.

### **4.0 THE OPERATION OF THIS STRATEGY**

The intention would be for this strategy to be in place throughout the duration of the CADP construction activity. This will ensure that the community is adequately protected throughout the works and at all times of the day or night when construction works are likely to take place.

\* \* \* \* \*

APPENDIX A

LCY SECOND TIER WORKS AND SECOND TIER WORKS PROCEDURE

(Extract from Planning Obligation by Deed of Agreement under Section 106 of the  
Town and Country Planning Act 1990 relating to London City Airport, The Royal Docks,  
London E16 2PX dated July 2009)

**1**      *Second Tier Works*

Second Tier Works means: the works described in this Part to improve further the standard of sound insulation specified in the First Tier Works and provision of any necessary acoustic ventilation as specified in the First Tier Works.

**2**      *Eligible rooms*

2.1      Any Habitable Room is eligible.

**3**      *Elevations to be treated*

3.1      All elevations are eligible for Second Tier Works.

**4**      *Glazing specification*

4.1      The Second Tier Works contractor shall initially carry out a survey of the windows to be treated and shall produce a survey report including information on current window specification (secondary glazing/thermal double or single), opening type, and any significant defects to the primary and, if applicable, secondary glazing to be agreed by LCA the Council and the occupiers of the properties. LCA and the Council shall agree which defects must be remedied to ensure that the Second Tier Works noise insulation meets the required acoustic design standard and/or so that it can be satisfactorily fixed, and shall also agree how the costs of any such remedial work shall be apportioned.

4.2      Where reasonably practicable an offer of secondary glazing and sound attenuating ventilators or a contribution towards the cost of installing high acoustic performance double glazing and sound attenuating ventilators will be made for habitable rooms with existing thermal double or single glazing of a satisfactory standard PROVIDED THAT:

- (a)      The type of secondary glazing units fitted shall relate to the form of the primary windows. The design of secondary units shall be such as to facilitate cleaning of both surfaces of the primary windows from within the treated room. Secondary units shall be either a side-hung casement type, or horizontally or vertically sliding units. Quotations shall be accompanied by full details of the systems offered.
- (b)      The installation of the high acoustic performance double glazed windows and sound attenuating ventilators will be carried out by the Second Tier Works contractor.
- (c)      Any contribution payable by LCA shall be equivalent to the cost of installing secondary glazing and sound attenuating ventilators.

4.3      Where it is not reasonably practicable to install secondary glazing over a primary thermal double glazed window within a habitable room an offer of a contribution towards high acoustic performance replacement double glazed windows and sound attenuating ventilators will be made up to a limit of 25% above the cost of installing secondary glazing and sound attenuating ventilation.

- 4.4 Where a surveyed existing double glazed window within a habitable room is found to have defects as a result of reasonable use the residential building owner will be entitled to either:
- (a) remedial works to the existing double-glazed window and the provision of a secondary system as described below and sound attenuating ventilators; or
  - (b) a contribution towards the cost of installing high acoustic performance double glazing and sound attenuating ventilators (payable on such installation) equivalent to the cost of the remedial works referred to in paragraph 4.4(a) above.
- 4.5 Where a surveyed secondary glazed window within a Habitable Room with a primary single-glazed window is found to be in satisfactory order an offer of sound attenuating vents will be made if not present and an offer to alter the existing secondary glazed window to achieve an equivalent mean sound reduction index (100 to 3150 Hz) to the secondary glazing specification described in 4.6 and 4.7 below as determined using BS EN ISO 140 Part 1 as set out in 4.7 below.
- 4.6 The secondary system shall generally comprise 4mm float glass within white polyester powder-coated aluminium frames. 6mm float glass and toughened glass shall be used where required by B.S. 6206 for safety reasons. Anodic oxidation shall comply with British Standard 1615.
- 4.7 The minimum air gap between primary and secondary panes is to be 100mm, where this can be accommodated within existing reveals PROVIDED THAT:
- (a) Where the reveal depth is insufficient to achieve an air gap of 100mm, secondary glazing shall be fitted flush with the inner face of existing walls subject to a minimum of 75mm being achieved.
  - (b) Where a minimum air gap of 75mm cannot be achieved within existing reveals and with the secondary glazing fitted flush with the inner face of existing walls boxing out of the reveals will be necessary. In these cases the reveals shall be boxed out to achieve a minimum reveal depth of 75mm.
  - (c) In all cases where a minimum gap of 100mm cannot be achieved the glass thickness of the secondary pane shall be increased to 6mm.
  - (d) The top and side reveals between primary and secondary windows are to be lined with an approved sound absorbent material treated with a suitable fungicide.
- 4.8 The secondary glazing system is to be mounted on a timber frame with painted finish. Any gaps between sub-frame and reveal shall be sealed with an approved resilient sealant.
- 4.9 The high acoustic performance double glazed unit shall generally comprise 10mm glass /12mm cavity/6.8mm acoustic laminated glass within a UPVC or aluminium frame. Toughened glass shall be used where required for safety reasons.
- 4.10 The high acoustic performance double glazed unit shall be designed to comply with relevant thermal efficiency requirements of the Building Regulations (Approved Document L).

- 4.11 Where it is necessary to remove and refix existing curtain tracks, pelmets etc., this is to be undertaken by the Second Tier Works contractor.

## **5** *Doors*

- 5.1 External doors to Habitable Rooms will be fitted with high acoustic and weather specification seals (approved by the Council) to the thresholds, jambs and heads. Opening fanlights over doors shall be sealed and fixed in a closed position. Glazed doors and fanlights shall be evaluated on an individual case by case basis to ensure sufficient sound insulation provision is achieved.
- 5.2 Fully glazed or patio doors or French windows will be treated as windows for consideration of eligibility.

## **6** *Ventilation*

- 6.1 Second Tier Works will only be carried out with appropriate sound attenuating ventilators.
- 6.2 Existing air bricks within habitable rooms shall be replaced by permanent sound- attenuating vents.
- 6.3 In addition to the replacement of existing air bricks by permanent sound attenuating vents, either two permanent sound attenuating vents or one combined mechanical and permanent sound-attenuating vent shall be provided in each room. All vents shall be in accordance with the standards given in the Noise Insulation Regulations. Mechanical vents shall be wired to the domestic supply in compliance with current IEE Regulations. Suitable ducting shall be provided from room to outside air, complete with an external grille.

## **7** *Loft insulation*

- 7.1 Where applicable an offer of installation of loft insulation will be made.
- 7.2 Where no loft insulation is present 250mm thick thermal grade mineral wool insulation will be laid in the loft.
- 7.3 Where existing loft insulation is found to be unsatisfactory further layers of insulation will be added to increase the total thickness of insulation to 250mm.

## **8** *Building, gas and electric regulations*

- 8.1 The Second Tier Works installer shall be responsible for ensuring that the property meets the ventilation requirements of the current Building and Gas Regulations on completion of sound insulation works. All additional ventilation shall be sound attenuated as provided in paragraph 6 of this Part.
- 8.2 Any requirements for additional ventilation in the future arising from amendments to the building, to its gas appliance or the Regulations, shall be the responsibility of the building owner or occupier, as the case may be.

**9**      *Blinds*

- 9.1      Free hanging venetian blinds are to be supplied and fitted between primary and secondary windows to eligible rooms. Blinds are to be white, with tilt mechanism. In no case shall it be required that blinds be fitted where following the agreement of the owners of the property it is decided that such installation would be impracticable.

**Part 1 - Second Tier Works Procedure**

- 1**      When it has been established that premises have Second Tier Works Eligibility LCA shall within 30 days notify the owner and the occupier of such premises of the Second Tier Works Eligibility and subsequently within six months of establishing Second Tier Works Eligibility (except in the first year of establishing Second Tier Works Eligibility when the period shall be nine months and otherwise unless the Council agrees to a longer period) seek permission from the occupier and owner (if different) of such premises to carry out the Second Tier Works.
- 2**      Subject to the grant of the requisite permission as provided in paragraph 1 of this Part, LCA shall carry out the Second Tier Works to such premises within six months of the receipt of such permission (except in the first year of establishing Second Tier Works Eligibility when the period shall be nine months and otherwise unless the Council agrees to a longer period).
- 3**      In the event that the existing defects referred to in paragraph 4.1 of Part 15 of this Schedule (Second Tier Works) are so considerable that the Airport Companies are unable to carry out the glazing elements of works referred to at paragraph 1 of Part 15 of this Schedule, the Airport Companies shall first notify the owner/occupier of the relevant premises and request that the owner/occupier undertakes remedial measures in respect of those defects and the Airport Companies shall only be obliged to carry out such works after the defects have been remedied and within six months of receipt of written notice confirming the same (or in the first year of establishing Second Tier Works Eligibility, within nine months of receipt of written notice confirming the same).
- 4**      For the avoidance of doubt in relation to any residential premises the Airport Companies shall be fully discharged from their obligations to undertake the Second Tier Works in the event that:
- (a)      the Second Tier Works if required at the premises have been completed satisfactorily or any payment in the alternative to the Second Tier Works has been made;
  - (b)      the Airport Companies under paragraph 3 of this Part have notified the owner/occupier of the relevant premises and the Council of the existing defects in the relevant premises and requested that they are remedied on at least two occasions and the Airport Companies have not received notice confirming that such defects have been remedied PROVIDED THAT:
    - (i)      the second occasion on which the Airport Companies give notice is at least three months after the first occasion; and

- (ii) on the second occasion the owner and the occupier (if different) are notified in writing that this represents the final opportunity to remedy existing defects and benefit from the Second Tier Works; and
  - (iii) at least three months have elapsed since the second occasion; and
  - (iv) the Airport Companies have notified the Council in writing of the events set out in paragraphs 4(b)(i) to (iii) of this Part;
- (c) the Airport Companies shall have sought permission for the Second Tier Works and/or in the case of a Listed Building permission for inspection of the premises pursuant to paragraph 3 of Part 3 of the Fourth Schedule from the owner and the occupier of the premises on at least two occasions and such permission has not been given by the owner and/or the occupier (either because it has been refused or the owner or the occupier has failed to answer) PROVIDED THAT:
- (i) the second occasion on which the Airport Companies seek permission is at least three months after the first occasion; and
  - (ii) on the second occasion the owner and the occupier (if different) are notified in writing that this represents the final opportunity to give permission and benefit from the Second Tier Works;
  - (iii) at least three months have elapsed since the second occasion;
  - (iv) the Airport Companies have notified the Council of the events set out at paragraphs 4(c)(i) to(iii) of this Part.





# APPENDIX 5.1

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Updated Schedule and Figure -Cumulative Schemes



**London City Airport: Table of Cumulative Schemes**

Source: ES Cumulative Schemes (July 2013 CADP Submission) & Subsequent Quod Research

The following table is referred to within Section 5 of the Environmental Statement Second Addendum (ESSA) May 2014. Section 5 includes a response to Part 1, Item 6 of LBN’s Regulation 22 Letter, providing an update to the cumulative effects assessment.

The following table provides an update of Table 18.2 within Chapter 18 of the Environmental Statement in view of the passage of time since to CADP planning application was submitted. Additions to the table below are presented in **green** font.

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
1	Silvertown Quays	03/2006 issued on 27 April 2007; 10/00860/RENEW; 12/01234/FUL	Outline planning permission for a mixed use development including: <ul style="list-style-type: none"> <li>• Residential (C2/C3) 437,220 sqm/ 4930 units;</li> <li>• Employment (B1) 7,800 sqm;</li> <li>• Retail (A1/A2) 4,320 sqm;</li> <li>• Restaurant/Bar (Class A3/A4) 5,570 sqm;</li> <li>• Flexible commercial space 7,600 sqm;</li> <li>• Community (including school) (D1) 8,000 sqm;</li> <li>• Leisure (including Aquarium) (D2) 18,925 sqm;</li> <li>• Hotel (C1) 8,000 sqm.</li> </ul> Several reserved matters applications subsequently approved. Application (ref. 10/00860/ RENEW) submitted to extend the timeframe for implementing the outline planning permission which expired on 27/04/2010. On 13 December 2010, LBN’s Strategic Development Committee resolved to grant planning permission subject to conditions and resolution of the s106 legal agreement. It is understood that the s106 remains unresolved. Application submitted for western part of site (12/01234/FUL) for 160 bed container hotel, restaurant & bar.	10/00860/RENEW – Resolution to grant December 2010. Now lapsed;  12/01234/FUL - Pending Consideration	-
2	North Side of Royal Albert Dock	N/97/0134 issued in 1998	Royal Docks Business Park Masterplan –planning permission for a business park of up to 150,000 sqm comprising B1 uses and up to 9,290 sqm of supporting A1, A2, A3 and leisure uses.	Approved	-
		14/00618/OUT  ABP Royal Albert Docks Scheme	Consolidated Description - A full description of development can be viewed at Schedule A of the hybrid planning application form. Hybrid planning application for up to 437,185 sq m (GEA) of floorspace with part submitted in outline and part	Pending – submitted March 2014	New planning application submitted since the CADP applications

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
			<p>submitted in detail, where: The Outline Component comprises a business-led mixed use development for up to 374,067 sq m (GEA) of floorspace (excluding basement) for business; retail, financial and professional services, food and drink uses, community and cultural, and assembly and leisure uses; residential; car parking and energy centre; new servicing routes, highways and landscaping, public realm improvements, public open space, access, and associated development. The Detailed Component of the application seeks approval for 63,118 sq m (GEA) of floorspace comprising business, serviced apartments, retail, financial and professional services, food and drink uses, community and cultural, and assembly and leisure uses, temporary car park and energy centre (including temporary access road and associated works), access and connectivity improvements, landscaping and public realm improvements, open space and associated development, and the change of use of two existing Grade II listed buildings.</p>		<p>Considered within Section 5 of ESSA.</p>
3	Royal Albert Basin / IVAX Quays / Great Eastern Quays	12/01881/OUT submitted 11/10/12	<p>Planning permission for mixed use development to provide: Outline, up to:</p> <ul style="list-style-type: none"> <li>• 837 residential units</li> <li>• 3,617sqm Office (B1)</li> <li>• 1,353sqm Retail (A1-A4)</li> <li>• 703sqm Community (D1)</li> <li>• 417sqm Leisure (D2) Detailed:</li> <li>• 350 residential units</li> <li>• 1,893sqm Office (B1)</li> <li>• 789sqm Retail (A1-A4)</li> <li>• 417sqm Community/Leisure (D1/D2).</li> </ul>	Approved	<p>This application was 'Pending' in ES. As the application has not altered, it is not necessary to reconsider this scheme within Section 5 of the ESSA.</p>

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
	Land at Gallions Reach, Atlantis Avenue, E16 2QJ	12/01576/FUL	Development of site to provide 89 residential units arranged in 3 blocks of 12, 5 and 8 storeys in height, 35 associated car parking, amenity space and cycle parking to be provided.	Approved	New planning application submitted since the CADP applications  Considered within Section 5 of ESSA.
4	Barrier Park East	08/01042/OUT issued on 14 December 2009	<p>Planning permission for a mixed use development comprising:</p> <ul style="list-style-type: none"> <li>• Between 750 and 780 residential dwellings</li> <li>• Retail/ commercial (A1-A5 and B1) up to maximum of 1,014 sqm</li> <li>• Community (D1) up to a maximum of 144 sqm</li> <li>• Assembly and leisure (D2) uses up to maximum of 124 sqm</li> <li>• Ancillary uses</li> <li>• Landscaping open space</li> <li>• Car parking</li> </ul> <p>Subsequent reserved matters approved refs: 12/00189/REM, 11/00379/REM, 11/00030/REM, 10/01015/REM, 09/02087/REM</p>	Approved	-
5	Minoco Wharf	07/01143/OUT (LTGDC/07/138/OUT) issued on 28 November 2008 by LBN and the LTGDC-07-138-OUT ;	<p>Planning permission issued by LBN (ref: 07/01143/OUT):</p> <ul style="list-style-type: none"> <li>• Residential (C3) maximum of 222,055 sqm or 2,598 units</li> <li>• Employment (B1) 15,000 sqm</li> <li>• Retail (A1) 2,000 sqm</li> <li>• Professional services, food and drink (A2-A5) 3,000 sqm</li> <li>• Community, health, education, cultural and assembly (D1) 4,000 sqm</li> <li>• Recreation and leisure (D2) 2,000 sqm</li> <li>• Car parking (maximum 0.5 spaces per dwelling and 1 space per 1,000 sqm for commercial)</li> </ul>	Approved	-
		11/00856/OUT; and 11/00844/LTGOUT	<p>Outline planning application for the comprehensive mixed use redevelopment of the whole site for up to 363,000 m2 (GEA) is sought, comprising: Retail (Use Class A1) not exceeding 3,250 m2 (GEA); Financial and professional services (Use Class A2) not exceeding 750 m2 (GEA); Restaurants and cafes (Use Class A3), Drinking establishments (Use Class A4) and</p>	Planning Permission Granted	-

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
			Hot food takeaways (Use Class A5) not exceeding 1,500 m2 (GEA); Business (Use Classes B1(a), (b) and (c)) not exceeding 15,000 m2 (GEA), of which not more than 5,000 m2 (GEA) will be offices (Use Class B1(a); Residential (Use Class C3) up to 329,900 m2 (GEA) and not exceeding 3,385 residential units; Non-residential institutions (Use Class D1) not exceeding 9,600 m2 (GEA); Assembly and leisure (Use Class D2) not exceeding 3,000 m2 (GEA); together with: Demolition of all existing buildings; Vehicular, cycle and pedestrian access from North Woolwich Road; Public realm, public open space and private amenity space; Covered parking areas, plant, storage and an Energy Centre (not exceeding 68,550m2).		
6	Peruvian Wharf	-	<p>In April 2010, the applicants (Colpy Limited and Haworth Limited) sought to renew planning permission for eight previously approved schemes. The original permissions were granted in 2005 for:</p> <ul style="list-style-type: none"> <li>• Full application for four-storey office B1(a)/ A1/A2/A3 building (3330 sqm)</li> <li>• Full application for seven storey 180 bed hotel (9560 sqm)</li> <li>• Outline application for six storey B1(a) business use (14,000 sqm)</li> <li>• Outline application for six storey B1(a) business use (23,220 sqm)</li> <li>• Outline application for two storey B1(a)/A1 business/shop use (1080 sqm)</li> <li>• Outline application for four-storey B1(a) business use</li> <li>• Outline application for a four-storey B1 business use (8360 sqm)</li> </ul> <p>Full application for a new road junction to North Woolwich Road and access road through the site.</p>	Understood that Mayor of London advised that the applications are non-compliant with the London Plan and have requested further information/ scheme changes	-
7	Thames Wharf	Olympic relocations – 06/01657/LTGDC issued January 2007 Asbestos storage – 08/02366/COU issued in March 2009	Olympic relocations – Temporary planning permission for Thames Wharf Olympic business relocations until 31 January 2014 (waste recycling and transfer businesses). Asbestos storage – Temporary planning permission for change of use (until 31 July 2014) of existing demolition company premises for	Approved	-

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
		Concrete batching – Planning permission (ref: 08/02289/FUL) Wharf – 08/01523/LTGDC	the receipt, transfer and secure temporary storage of asbestos waste in two sealed containers, pending removal to a licensed waste facility. Concrete batching – Planning permission for change of use to concrete batching plant and premises and associated works – No details available. Wharf – Planning permission issued by LTGDC for temporary change of use from wharf for stocking and export of scrap metal to waste to ship load facility (excavation waste) including erection of associated storage buildings expiring on 31 July 2014. Planning permission subsequently varied (ref: LTGDC-10-015-PP; 10/00323/LTGDC) to include storage of building and construction materials.		
8	UNEX	10/01538/OUT submitted on 13 July 2011	Outline planning permission for: <ul style="list-style-type: none"> <li>• Residential (1,634 units)</li> <li>• Employment (B1) (16,916 sqm)</li> <li>• A2/A3/A5 A2 (1,500 sqm)</li> <li>• D1 – (2,000 sqm)</li> <li>• D2 – (500 sqm)</li> <li>• Energy centre (5,256 sqm).</li> </ul>	Application Withdrawn (therefore not assessed further)	-
9	The Corniche Floating Village	11/00923/FUL submitted on 7 July 2011	Planning application for the construction of floating village within Royal Victoria Dock, comprising 5no. restaurants, boat bar, boat café, swimming pool, wakeboard centre, boardwalk and garden and ancillary plant. Mayor of London announced plans in March 2013 for floating village in Docks.	Pending Consideration	-
10	Gallions Reach (LB Greenwich)	Several applications (e.g. refs: 10/0175/SD and 09/2431/SD)	Several applications (e.g. refs: 10/0175/SD and 09/2431/SD) for submission of details in respect of planning permission ref: 97/0044/O (dated 18 September 1998).	Decided	-
11	Tripcock Point (LB Greenwich)	03/2618/O issued in June 2006	Outline planning permission for mixed use development including 2000 residential dwellings.	Decided	-
12	Pumping Station Site, Tidal Basin	10/00369/FUL	Planning application granted 19/03/12 for construction of: 1) a 24 storey tower containing B1/A1/A3 (at ground floor level) and 161 residential units; and, 2) three-storey block, providing	Approved	-

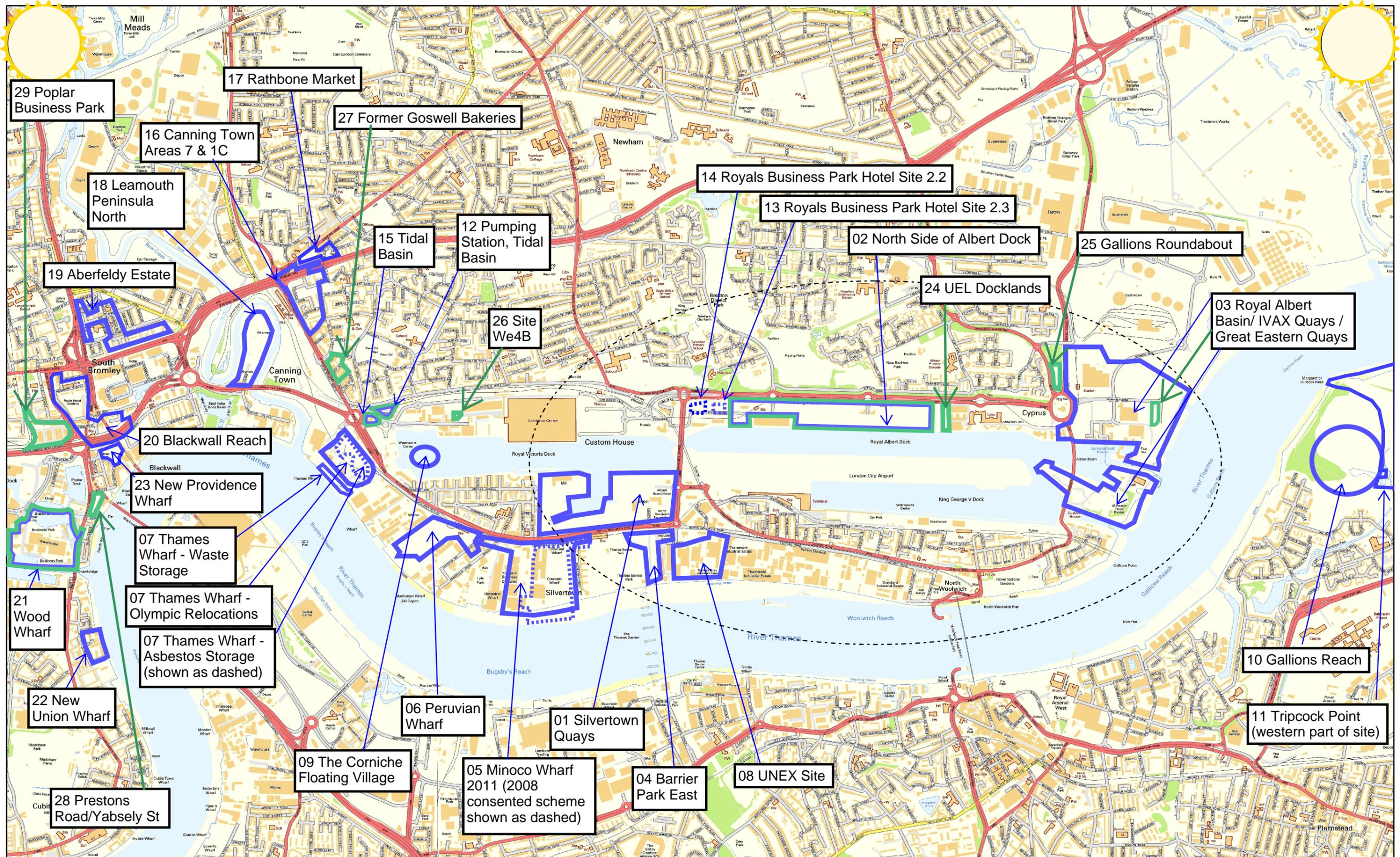
No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
			energy centre plus B1 commercial space.		
	We8, The Pumping Station Site, Tidal Basin Road, E16 1AD	13/02356/VAR	Section 73 application to vary Condition 2 (Drawing no.s) of planning consent 10/00369/FUL granted on 19th March 2012, to change the design of the tower for the consideration of 'the redevelopment of the site for the construction of a 24 storey tower containing flexible B1/A1/A3 commercial space at ground floor level and 161 residential units on the floors above. The tower will include basement parking for 32 car park spaces, 8 motorcycle and 201 cycle spaces. The construction of a neighbouring three-storey block, providing energy centre for the proposed development plus B1 commercial space. An open deck at first floor level, providing landscaped amenity space. The deck will provide facilities for residents and employees accommodated in the building. The remainder of the site will provide a further 7 car park spaces, 10 motor cycle spaces, and a further 50 bicycle spaces and landscaping.	Resolution to grant 18.03.14	As stated within Section 5 of the ESSA, this Section 73 application has not been reassessed as there are no significant changes to the development which would create materially different environmental effects to those already considered (e.g. the same number of residential units, 161).
13	Royals Business Park – Hotel Site 2.3	11/01362/FUL	Planning application for erection of a 204 bed hotel in two linked buildings over 4 floors with associated facilities and 60sqm commercial (A1-A3).	Approved	-
14	Royals Business Park – Hotel Site 2.2	11/00088/FUL	Planning permission for a five storey 131 bedroom hotel (Use Class C1) with a gross internal area of 3,914 sqm.	Approved	-
	Royal Business Park – Hotel Site 2.3	12/01910/FUL	Application for the erection of three buildings (varying in height of five to ten storeys) comprising in total 17,624sqm (GEA) of new hotel (use class C1) floorspace (364 new hotel rooms and 38 suites), 161sqm (GEA) of use class A3 floorspace and 813sqm of use class B1 floorspace with associated access and landscaping.	Approved	-
15	Tidal Basin	09/02013/FUL	Application for 25 storey residential building and 17 storey hotel building, comprising 170 residential units, 250 hotel rooms and serviced apartments, retail floor space, health club, community use, indoor children's day centre space etc.	Approved	-

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
	26-34 Tidal Basin Road, E16 1AD	13/01873/FUL	Redevelopment of the site to provide two residential buildings (Class C3 use) of 24 and 23 storey's respectively, comprising 360 residential units and 455sqm of flexible Class A, B1 or D1 floorspace, landscaped open space with associated basement car parking, servicing, storage, plant and works incidental to the development.	Resolution to grant 11/02/14	New planning application submitted since the CADP applications  Considered within Section 5 of ESSA.
16	Canning Town Areas 7 and 1C, E16	11/00662/LTGDC	Application for: In outline: mixed use scheme comprising 191,530sqm floorspace, including retail (A1-A5), residential, leisure, health, office, live/work, research & development, hotel, student accommodation, energy centre. Detailed approval for Phase 1, to include 8,200sqm GEA foodstore, 425sqm retail unit, 179 residential dwellings, energy centre, car parking and associated works.	Approved	-
17	Rathbone Market, Barking Road, E16	08/02263/LTGDC	Application for: In outline: up to 60,600sqm retail (A1-A5), offices (B1), residential (C3) and market. In detail: 25,907sqm comprising retail (A1-A5), residential (C3), parking and public realm.	Approved	-
18	Leamouth Peninsula North, Orchard Place (LB Tower Hamlets)	PA/10/01864	Application for a residential led mixed use scheme providing up to 1,706 residential units, 7,848sqm of business uses, 1,852sqm of retail, financial and professional services, food and drink (A1 to A5), 1,801sqm of leisure (D1 & D2), 2,049sqm of arts and business (D1), 4,800 sqm of education and 1,296sqm of community uses (D1), as well as an energy centre, storage and car and cycle parking.	Approved	-
19	Aberfeldy Estate, Abbot Road (LB Tower Hamlets)	PA/11/02716, PA/12/03548 and PA/13/01844	Application for creation of a new residential-led mixed use scheme comprising 1176 new homes, providing affordable homes as well as a mix of rented and privately owned accommodation. Application PA/12/03548 currently under consideration for 3	PA/11/02716 Approved	-

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
			blocks of 410 storeys comprising 342 residential units, 352sqm retail floorspace and a marketing suite of 407sqm.		
20	Blackwall Reach Regeneration (LB Tower Hamlets)	PA/12/00001 (Reserved Matters PA/12/00001 approved 23/05/13)	Outline application) for up to 1,575 residential units, 1,710sqm retail (A1-A5), 900sqm Office (B1), 500sqm Community (D1), 4,500sqm School (D1), 750sqm Energy Centre and 1,200 Faith Building (D1).	Approved	-
21	Wood Wharf (LB Tower Hamlets)	PA/11/02174	Extension of time approved 29/03/12 for: Outline: up to 1,668 residential units, Hotel, Commercial (B1), Retail (A1-A5) Community and Leisure. Detailed: creation of canal and other engineering infrastructure.	Approved.	-
		PA/13/02966	Outline application (all matters reserved) for comprehensive mixed-use redevelopment of Wood Wharf comprising: Demolition of existing buildings and structures, including dwellings at Lovegrove Walk; The erection of buildings, including tall buildings, and basements comprising: Residential units (C3), Hotel (C1), Business floorspace (B1) , Retail (A1-A5), Community and Leisure (D1 and D2), Sui Generis uses including Conference Centres, Theatres, Launderettes, and Data Centres; Associated infrastructure, including the creation of structures in lackwall Basin, the Graving Dock, and South Dock; Streets, open spaces, landscaping and public realm; Bridge links; Car, motorcycle, and bicycle parking spaces, servicing; Utilities including energy centres and electricity substation(s); and Other works incidental to the proposed development.	Pending	New planning application submitted since the CADP applications.  This proposal has not been revisited within Section 5 of the ESSA as the approved proposal (PA/11/02174) with 1,668 units has been considered in the ES (e.g. in relation to the noise assessment).
22	New Union Wharf (LB Tower Hamlets)	PA/12/00360	Application comprising 399 residential units and 103sqm Community Facility (D1)	Approved	This application was 'Pending' in ES. As the application has not altered, it is not necessary to reconsider this scheme within Section 5 of the ESSA.

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
23	New Providence Wharf (LB Tower Hamlets)	PA/06/02101	Planning Permissions for mixed use development comprising a part 12, part 44 storey building to include residential, retail and a health club. Subsequent discharge of conditions approved (PA/11/00427, PA/11/00429, PA/11/00431 & PA/11/03196).	Approved	-
24	UEL Docklands, University Way, E16 2RD	13/01449/OUT	Outline application for a 36,000 sqm extension to the existing UEL Docklands Campus for use class D1 (non-residential institution) higher education and ancillary uses. All matters reserved for subsequent approval except 'Access'.	Pending	<p>New planning application submitted since the CADP applications.</p> <p>As this is a non-residential proposal, it has not been revisited in terms of the cumulative noise assessment (Section 5 of the ESSA).</p>
25	Land North of Gallions Roundabout, Woolwich Manor Way	13/01969/FUL	Construction of new Porsche Centre comprising retail display area, aftersales facility, vehicle repair, MOT testing station, office/administration and associated training facilities. External parking and vehicle display areas.	Resolution to grant 21/01/14	<p>New planning application submitted since the CADP applications.</p> <p>As this is a non-residential proposal, it has not been revisited in terms of the cumulative noise assessment (Section 5 of the ESSA).</p>
26	Site We4B, Western Gateway, Canning Town, London E16 1AD	09/01288/FUL	Erection of new hotel (Use Class C1) of 223 bedrooms with associated restaurant, lobby and meeting rooms upon existing podium. Change of use of basement area to ancillary C1 use for sprinkler tanks, CHP plant, and five on site car spaces.	Planning Permission Granted Nov 2013	<p>New planning application submitted since the CADP applications.</p> <p>Considered within Section 5 of ESSA.</p>

No	Scheme	Application No	Application Description	Status	Considered within Section 5 of the ESSA?
27	Former Goswell Bakeries & vacant warehouses, Caxtob Street North, E16	13/01461/FUL	Mixed use development including 336 residential flats, commercial uses, car parking and public realm including pedestrian of Hoy Street.	13/01461/FUL	New planning application submitted since the CADP applications.  Considered within Section 5 of ESSA.
28	Car Park At South East Junction Of Prestons Road And Yabsley Street, Prestons Road, London	PA/12/02107	The erection of two buildings of 7 & 26 storeys comprising 190 residential units (78 x 1 bed; 58 x 2 bed; 50 x 3 bed; 2 x 4 bed; 2 x 5 beds), 134sq.m of gym space at upper ground level, 42 car parking spaces and 244 cycling spaces at basement level, communal open space and associated works.	Approved 20/06/13	New planning application submitted since the CADP applications. Considered within Section 5 of ESSA.
29	Poplar Business Park, 10 Prestons Road, London, E14 9RL	PA/11/03375	Demolition of existing buildings and redevelopment of the site to provide a mixed use scheme of between 3 and 22 storeys comprising 8,104 sq metres business accommodation (Use Class B1), 392 residential units (Use Class C3), associated parking and landscaping	Approved 23/09/13	New planning application submitted since the CADP applications. Considered within Section 5 of ESSA.



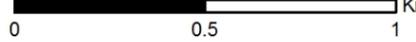
LCY: Cumulative Schemes

 Major Development Schemes (May 2014 Update)

 Approx. 1km limit from Airport runway

 Major Development Schemes



Date: May 2014  
 Project No: Q10064  
 1:18,500 @ A3  


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## **APPENDIX 6.1**

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Aircraft Noise Certification Measurement Points Figure



# AIRCRAFT NOISE CERTIFICATION MEASUREMENT POINTS

in relation to illustrative footprints

