

CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

CADP: NEED STATEMENT

 London City Airport
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CITY AIRPORT DEVELOPMENT PROGRAMME
NEED STATEMENT
July 2013



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Contents

	<u>Page</u>
EXECUTIVE SUMMARY.....	1
Policy Context.....	1
Demand Forecasts	2
Airport Infrastructure Requirements	3
Economic Rationale	4
1 INTRODUCTION.....	5
Planning Application 1 (CADP1)	6
Planning Application 2 (CADP2)	7
2 POLICY CONTEXT.....	8
Aviation Policy.....	8
Aviation Policy Framework.....	8
Airports Commission	13
Economic Policy Context	14
The London Plan.....	14
The Royal Docks Vision.....	15
Vision 2020 – the Greatest City on Earth	15
London Borough of Newham	16
The London Borough of Tower Hamlets.....	18
3 DEMAND FORECASTS	19
Market Background.....	19
Historic Growth.....	19
Route Network	21
Aircraft Mix	23
Load Factor	24
Catchment Area	24

Relationship to Heathrow	28
Passenger Profile	30
Diurnal Profile.....	31
Future Demand Forecasts	32
Underlying Market Forecasts	33
Forecasting Methodology	34
Planning Forecasts	40
Expected Profile of Demand	46
Changes since 2007	48
Business Aviation	49
Sensitivity Tests	50
Summary	53
 4 AIRPORT INFRASTRUCTURE REQUIREMENTS.....	 55
Current Airport Infrastructure	55
Current Airport Capacity.....	57
Capacity Assessment	60
Apron.....	60
Runway	61
Terminal	63
Capacity Required	66
Apron.....	66
Runway	69
Terminal	73
Summary	79
 5 ECONOMIC RATIONALE.....	 81
Introduction.....	81
The Airport's Contribution to the Wider Economy	81
Characteristics of Current Passenger Demand	81
Supporting Inward Investment	83
Driving Business Productivity.....	84
Gateway for Inbound Tourism.....	84
Levering Transport Investment	84
Jet Centre.....	85
Quantifiable Impacts	85
Economic Context	86
Baseline Employment	87
Social Impact.....	88
Economic Impact of the Development	88
Airport Related Development.....	90
Wider Impact of the Development	91

6	CONCLUSION	92
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APPENDIX

Justification Statement

EXECUTIVE SUMMARY

1. This Need Statement sets out the need for the development proposed under the City Airport Development Programme (CADP) and covers the aviation related elements of the requirement for additional and reconfigured aircraft stands, a parallel taxi-lane, runway and extended terminal capacity together with its economic need (CADP1). It does not address the need case for the hotel, which is covered in the Planning Statement. It should be read alongside the Planning Statement, Environmental Statement (ES), in particular Chapter 7 covering Socio-Economic, Community and Recreation aspects, and the Design and Access Statement that accompany the CADP planning submission.
2. The proposed CADP1 does not seek to change the permissible number of flights or opening hours. These will continue to be controlled through conditions and obligations attached to the existing planning permission issued in 2009 (ref. 07/01510/VAR).

Policy Context

3. This Statement sets out the policy context for the CADP1, in particular aviation policy and local economic policy. Specifically, the 2013 Aviation Policy Framework makes clear the support for the role of the aviation sector in supporting economic growth:

“The Government’s primary objective is to achieve long-term economic growth. The aviation sector is a major contributor to the economy and we support its growth within a framework which maintains a balance between the benefits of aviation and its costs, particularly its contribution to climate change and noise”.

and highlighting that:

“aviation infrastructure plays an important role in contributing to economic growth through the connectivity it helps deliver.”

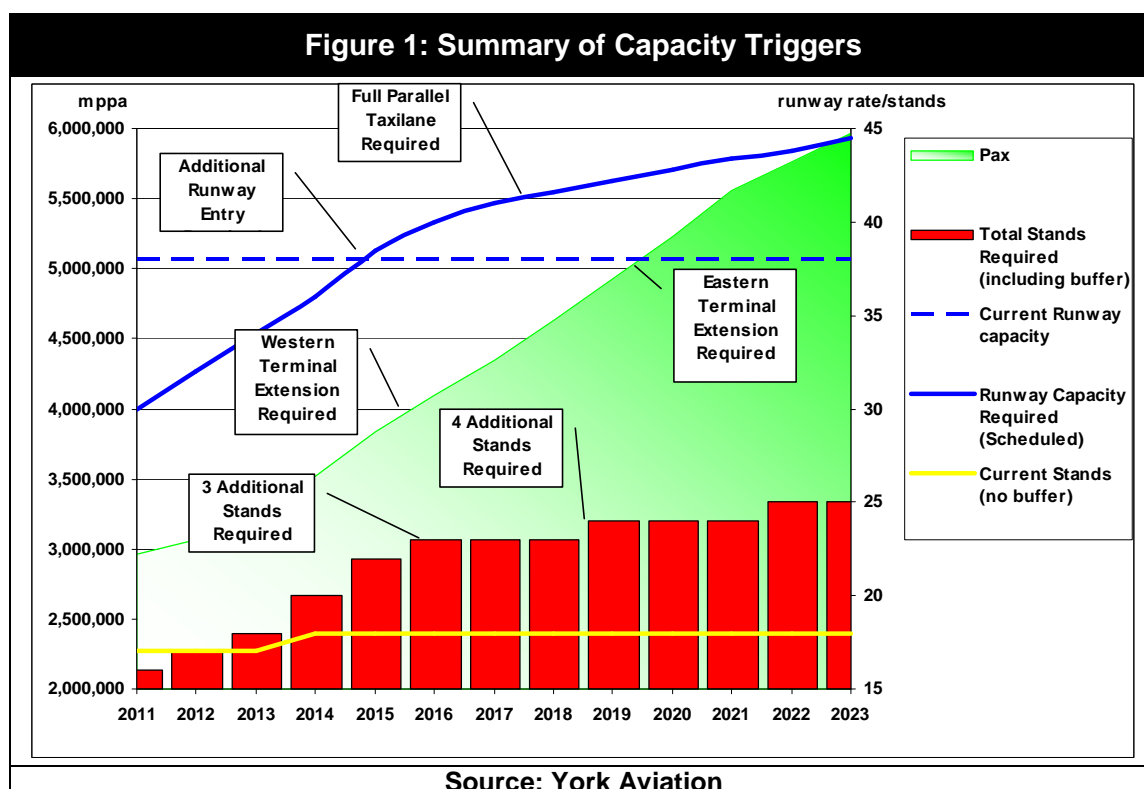
4. This Statement demonstrates that the proposed CADP1, which provides extended ground infrastructure to allow London City Airport (the Airport) to attain its consented movement limit of 120,000 noise factored movements, would be consistent with Government policy towards airports in securing the better use of an existing runway. This is particularly so in the context of the ongoing consideration as to how best to secure airport capacity in the short, medium and long term to preserve London's status as a global aviation hub. In addition, allowing the Airport to reach its optimum potential will provide a key alternative for airlines seeking to release capacity at Heathrow by relocating short haul services serving key business markets to London City.

Demand Forecasts

5. This Statement sets out the market background to the preparation of the demand forecasts for the Airport. These projections have been prepared based on the Department for Transport's latest national air passenger demand forecasts of January 2013. Allowing for increasing capacity constraints at Heathrow and taking into account the growing market for air travel in the Airport's core catchment area, the Airport is forecast to be handling approximately 6 million passengers a year by 2023 based on its consented 120,000 noise factored aircraft movements. This requires it to have the infrastructure in place to accommodate the expected profile of demand, including the introduction of physically larger, next generation, aircraft by the airlines and a predominance of peak period movements to meet the needs of business travellers. Without development forecasts have also been prepared which show that, in the absence of the proposed CADP1, the Airport would be limited to approximately 4.4 million passengers per annum by 2023 and less than its consented 120,000 noise factored movements. This compares with the current passenger throughput of just over 3 million passengers in 2012.
6. Failure to allow the Airport to extend its infrastructure to enable it to handle its consented number of aircraft movements would impact adversely on business travel demand, particularly inbound business travellers to the City of London, the Central Business District and Canary Wharf. Use of alternative airports would be costly in terms of lost productive working time, which would have further damaging economic implications. It is estimated that use of London City Airport in 2012 generated £73 million of time saving benefits compared with those same passengers having to use Heathrow.

Airport Infrastructure Requirements

7. Within this Statement, the detailed assessments which have been carried out into the capacity of the existing airport infrastructure are explained. These assessments have included detailed simulation modelling.
8. The results of these assessments show that the requirement for the proposed CADP1 is driven by three key factors; increases in peak period demand, the introduction of physically larger, new generation, aircraft and the consequent increase in passengers using the Terminal Building and ancillary infrastructure. These three factors drive the requirements for increased aircraft parking stands and taxi-lane infrastructure and extended terminal and ancillary facilities. No new runway is proposed as part of the development.
9. The triggers for the proposed infrastructure are summarised in **Figure 1**. On the basis of the demand projections, 3 additional stands, an extended taxi-lane and the Western Terminal Extension are required by 2016. A further 4 stands, completion of the parallel taxi-lane and the Eastern Terminal Extension are required by 2019.



Economic Rationale

10. Facilitating increasing passenger throughput at the Airport will make a valuable contribution to the economy of the local area around the Royal Docks as well as to the wider economy of London. The Airport is highly valued by its business users and companies across East London and the City and is an important part of making London an ideal base for European and Global operations. In 2012, an estimated £239 million worth of business travel passed through the Airport. Although it is difficult to isolate its effect on GVA within the broader growth of the Docklands area, the potential impacts are clearly highly significant. For instance, in 2012 it is estimated that the presence of London City Airport supported:
 - ➔ 5% of the location or expansion of economic activity at the financial and business services cluster at Canary Wharf amounting to £600 million of GVA;
 - ➔ 1% of the location or expansion of financial and business services activity in the City of London amounting to £350 million of GVA;
 - ➔ 5% of the growth and expansion of ExCeL amounting to £80 million of GVA.
11. The importance of the accessibility which the Airport brings is evidenced by the recent attraction of substantial foreign investments into the area, including the proposed development of a Chinese/Asian Business Park at the Royal Albert Docks, the development of the headquarters of the Indian Sahara Group at the University of East London at the Royals and the proposed development of an innovation and technology centre at Silvertown Quays.
12. The economy of Newham has been underperforming relative to the rest of the London for some time so the additional 1,500 FTE jobs (approximately) which would be created by the proposed CADP (including the hotel development) would be particularly valuable as would the contribution to local GVA of approximately £51 million per annum from CADP1 alone. In addition, a growing network of services at the Airport will enhance wider initiatives to regenerate the Royal Docks. The Airport has already been identified in earlier reports as making a major contribution to the wider economy of London. This significant wider contribution would be damaged if development of services was unable to keep pace with the growth of the economy overall, given the important role which the Airport plays in providing key business related connectivity to London's Financial Services Centre.
13. It is concluded that there is a need for the proposed CADP in order to support broader economic objectives and consistent with Government aviation policy to optimise the use of existing runway capacity at airports in the short to medium term.

1 INTRODUCTION

- 1.1 This document sets out the need for the development proposed under the City Airport Development Programme (CADP) and covers the aviation related elements of the requirement for additional and reconfigured aircraft parking stands, an extended taxi-lane parallel to the runway and terminal capacity together with its economic need. It should be read alongside the Planning Statement, Environmental Statement (ES), in particular Chapter 7 covering Socio-Economic, Community and Recreation aspects, and the Design and Access Statement that accompany the CADP planning submission.
- 1.2 London City Airport (the Airport) is a city centre airport located in the Royal Docks, six miles east of the City of London, Europe's major financial district, and two miles east of Canary Wharf, London's second business centre located in the Docklands. The unique location of the Airport means its operation is not typical of other London airports or of airports generally. The existing Airport site extends to an area of 48.5 hectares, located between the Royal Albert Dock and King George V Dock, and contains the runway, apron, main passenger terminal, the corporate aviation building (or Jet Centre) and other operational buildings. The Airport has a distinct function, serving a primarily business market, with approximately two thirds of its passengers using it for business purposes historically, around 54% in 2012 albeit with lower levels of business travel as a consequence of the Jubilee and the Olympics. This is still significantly higher than any other airport in the UK. In 2012, it handled 3.03 million passengers and 70,502 movements.
- 1.3 The Airport currently operates within the terms of a July 2009 planning permission (ref 07/01510/VAR) which enables it to operate up to 120,000 aircraft movements, subject to the operation of a noise factoring system and other controls (ref. 07/01510/VAR). The proposed CADP does not seek to change the permissible number of flights or opening hours. These will continue to be controlled through conditions and obligations attached to the existing planning permission issued in 2009 (ref. 07/01510/VAR).
- 1.4 New passenger facilities and infrastructure are required to enable the Airport to respond to forecast growth in passenger numbers (particularly at peak periods) and accommodate new generation aircraft which are physically larger than the current fleet. The Airport's constrained dockside location means that, in order to provide improvements, it needs to extend eastwards and reconfigure existing parts of the Airport to fulfil its potential.

- 1.5 The works proposed in CADP are described in two planning applications. With the exception of a landside hotel, detailed planning permission is being sought for CADP and is described in Application CADP1. Outline Planning Permission is being sought for the hotel (Application CADP2) to provide a degree of flexibility for the building which is likely to be brought forward separately by a hotel operator.
- 1.6 The description of the proposed development is as follows:

Planning Application 1 (CADP1)

Planning Application CADP1: Works 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) Works to provide 4 no. upgraded aircraft stands and 7 new aircraft parking stands;*
- (c) The extension and modification of the existing airfield to include the creation of a taxi-lane running parallel to the eastern part of the runway and connecting with the existing holding point;*
- (d) The creation of a vehicle access point over King George V Dock for emergency vehicle access;*
- (e) Laying out of replacement landside Forecourt area to include vehicle circulation, pick up and drop off areas and hard and soft landscaping;*
- (f) The Eastern Extension to the existing Terminal building (including alteration works to the existing Terminal) to provide reconfigured and additional passenger facilities and circulation areas, landside and airside offices, immigration areas, security areas, landside and airside retail and catering areas, baggage handling facilities, storage and ancillary accommodation;*
- (g) The construction of a 3 storey passenger Pier to the east of the existing Terminal to serve the proposed passenger parking stands;*
- (h) Erection of a Noise Barrier at the eastern end of the proposed Pier*
- (i) Erection of a temporary Noise Barrier along part the southern boundary of the Application Site to the north of Woodman Street;*
- (j) Western Extension and alterations to the existing Terminal to provide reconfigured additional passenger facilities and circulation areas, security areas, landside and airside offices, landside retail and catering areas and ancillary storage and accommodation;*
- (k) Western Energy Centre, storage, ancillary accommodation and landscaping to the west of the existing Terminal;*

- (l) Temporary Facilitation Works including the erection of a Noise Barrier to the south of 3 aircraft stands, a Coaching Facility and the extension to the outbound baggage area;*
- (m) Works to upgrade Hartmann Road;*
- (n) Landside passenger and staff parking, car hire parking and associated facilities, taxi feeder park and ancillary and related work;*
- (o) Eastern Energy Centre;*
- (p) Dock Source Heat Exchange System and Fish Refugia within King George V Dock; and*
- (q) Ancillary and related work.*

Planning Application 2 (CADP2)

Planning Application CADP2: *Erection of a Hotel with up to 260 bedrooms, ancillary flexible A1-A4 floorspace at ground floor, meeting/conference facilities together with associated amenity space, landscaping, plant and ancillary works.*

1.7 This Need Statement addresses the following issues:

- i. The policy context for the proposed CADP;
- ii. Forecasts of demand covering passengers and aircraft movement, including issues of competition with other London airports;
- iii. Current airport capacity and the need for additional aircraft and passenger infrastructure; and
- iv. The economic rationale for the proposed CADP.

2 POLICY CONTEXT

- 2.1 The need for the proposed CADP has to be seen in the context of UK Aviation Policy and of broader economic policies for London and the local area.

Aviation Policy

- 2.2 UK Aviation Policy has recently been revised and is now encompassed in an Aviation Policy Framework (APF), published in March 2013, following a period of consultation. Also of relevance is the work of the newly established Airports Commission, which is investigating how the UK's international aviation hub status can best be maintained and is due to produce an interim report in 2013 and a final report 2015. In highlighting the urgent need for short term solutions to meeting the airport capacity requirements of the London area over the next 5 years, the APF provides a particular context for the CADP1 proposals.

Aviation Policy Framework

- 2.3 The new APF supersedes the previous Air Transport White Paper of 2002. It does not contain any site specific policies or recommendations for development at individual airports but sets out the policies which apply to the sector as a whole:

*"It sets out the Government's objectives and principles to guide plans and decisions at the local and regional level"*¹

- 2.4 In general terms, the APF supports growth in aviation capacity recognising that:

*"The Government's primary objective is to achieve long-term economic growth. The aviation sector is a major contributor to the economy and we support its growth within a framework which maintains a balance between the benefits of aviation and its costs, particularly its contribution to climate change and noise"*²

and highlighting that:

¹ Cm 8584, Aviation Policy Framework, March 2013, Foreword.

² Ibid, Executive Summary, Paragraph 5.

“We believe that aviation infrastructure plays an important role in contributing to economic growth through the connectivity it helps deliver. For example, it provides better access to markets, enhances communications and business interactions, facilitates trade and investment and improves business efficiency through time savings, reduced costs and improved reliability for business travellers and air freight operations.”³

2.5 The APF goes on to note that:

“There is broad agreement that aviation benefits the UK economy, both at a national and a regional level. While views differ on the exact value of this benefit, depending on the assumptions and definitions used, responses to both the scoping document and the consultation demonstrated that the economic benefits are significant, particularly those benefits resulting from the connectivity provided by aviation. In addition we believe there to be social and cultural benefits from aviation.”⁴

2.6 The APF identifies the specific benefits the industry brings through its contribution to GDP and jobs, imports and exports, manufacturing and technology, greater productivity and growth, tourism, and wider societal benefits. These are summarised in the Executive Summary:

“Aviation benefits the UK economy through its direct contribution to gross domestic product (GDP) and employment, and by facilitating trade and investment, manufacturing supply chains, skills development and tourism. The whole UK aviation sector’s turnover in 2011 was around £53 billion and it generated around £18 billion of economic output. The sector employs around 220,000 workers directly and supports many more indirectly. The UK has the second largest aircraft manufacturing industry in the world after the USA and will benefit economically from growth in employment and exports from future aviation growth. Aviation also brings many wider benefits to society and individuals, including travel for leisure and visiting family and friends.”⁵

2.7 Specifically, the APF notes that the aviation sector enables productivity and growth in the following ways:

- *“enhanced access to markets and new business opportunities through improved connectivity;*
- *lower transport costs and quicker deliveries. For example, transporting freight by air allows smaller inventory holdings, and the rapid transport of perishable goods leads to increased specialisation of production which results in greater efficacies.*

³ Ibid, Paragraph 1.2.

⁴ Ibid, Paragraph 1.3.

⁵ Ibid, Executive Summary, paragraph 7.

The Organisation for Economic Co-operation and Development (OECD) notes that 40% of international freight trade by value is accounted for by airlines; and

- *facilitating inward investment and the movement of goods, people and ideas both within the UK and to and from the rest of the world thus enhancing trade and the diffusion of knowledge and innovation.”⁶*

2.8 The APF goes on to note the contribution of making efficient use of existing airport infrastructure to improving resilience and reducing delays to airlines and passengers.⁷ This is particularly relevant to the proposed CADP1 which is expressly aimed at ensuring that the Airport has appropriate infrastructure to handle its consented aircraft movement limit without giving rise to undue delays in peak periods and to provide passengers with terminal facilities consistent with attaining a high quality of service as required by the predominantly business passenger clientele.

2.9 The Government goes on to set out a key objective as:

“One of our main objectives is to ensure that the UK’s air links continue to make it one of the best connected countries in the world. This includes increasing our links to emerging markets so that the UK can compete successfully for economic growth opportunities. To achieve this objective, we believe that it is essential both to maintain the UK’s aviation hub capability and develop links from airports which provide point-to-point services (i.e. carrying few or no transfer passengers). This should be done in a balanced way, consistent with the high-level policies set out in this document and acknowledging Government’s commitment to economic growth”⁸

and:

“In the short to medium term, a key priority is to work with the aviation industry and other stakeholders to make better use of existing runway capacity at all UK airports.”⁹

2.10 Within the context of seeking to make “best use of existing airport capacity”¹⁰, the APF notes that individual proposals for airport expansion should be considered on their merits, having regard to both economic and environmental considerations.

⁶ Ibid, Paragraph 1.13.

⁷ Ibid, Paragraph 1.14.

⁸ Ibid, Executive Summary, Paragraph 9.

⁹ Ibid, Executive Summary, Paragraph 10.

¹⁰ Ibid, Paragraph 1.24.

- 2.11 The APF confirms that the Government's key priority to 2020 is *"to make better use of existing runways at all UK airports"*¹¹. A key part of the rationale for this strategy of making better use of existing runways is to *"ease pressure on our hub airport in the short term"*¹² ahead of any decisions taken on major new airport infrastructure to serve London. The primary purpose of the proposed CADP1 is to continue to meet the needs of inbound and outbound business travellers associated with the City, Canary Wharf and East London. However, by optimising the use of its consented 120,000 noise factored aircraft movement limit the Airport will also be able to make a contribution to relieving some pressure on Heathrow by providing alternative airport capacity for key business connections to short haul and domestic points, particularly in the period up to 2020, as well as continuing to meet the needs of inbound and outbound business travellers associated with the City, Canary Wharf and East London.
- 2.12 The CADP1 proposals are aimed at ensuring that the Airport can make full use of its consented runway movement limit, so ensuring that it makes 'better use' of the important runway asset. In so doing, the Airport will be seeking to ensure that it maximises point to point services to meet growing demand in its core catchment area comprising the City of London, Canary Wharf, Westminster and the wider East London area.

¹¹ Ibid, Paragraph 1.60.

¹² Ibid, Paragraph 1.109.

- 2.13 The APF stresses the significant role which air service connectivity plays in the business and financial services sector, noting that *“The financial services industry requires on average six times as much air travel as some other sectors.”*¹³ This is of particular relevance given the particular role of the Airport in serving the core financial services centre in the City and Canary Wharf. In particular, the APF cites the importance of regional airport connectivity to London in support of regional economic growth¹⁴. The Airport plays an increasingly important role in this regard given the displacement of domestic air services from Heathrow¹⁵ and in providing convenient access to Central London. Indeed, the number of destinations served from Heathrow is expected to continue to fall¹⁶, albeit British Airways has reintroduced some routes temporarily using slots gained from its acquisition of bmi. The APF gives positive support to the larger airports taking steps to displace services by smaller aircraft in order to maximise throughput overall¹⁷. This makes it even more important that there are conveniently located alternative airports serving London in order to maintain overall connectivity. The Airport is ideally placed to take up such opportunities on key business routes to European cities, as it has done in the recent past.
- 2.14 The APF notes that, based on the Department for Transport’s (DfT) latest demand projections¹⁸, all the London airports are expected to be at capacity by 2030, and could be at capacity as early as 2025¹⁹. These forecasts are discussed further in the next section of this report. However, the APF notes that Heathrow has effectively reached maximum capacity (at least in terms of runway movements) by 2011²⁰. As discussed further in Section 3, given the surface origins and destinations of much of the short haul passenger demand within the inner London area, the Airport is well placed to provide alternative services to those displaced from Heathrow in short haul business related markets, provided it has the infrastructure to handle the modern small jet aircraft ideally suited to these markets. In the context of meeting the air service needs of London as a whole, it is not a matter of allowing the Airport to operate up to its consented aircraft movement limit as an alternative to expansion elsewhere. Rather, the APF makes clear that even with all London airports, including London City Airport, attaining their maximum potential, all capacity will be taken up by 2030 under the DfT’s current Central Case forecasts.

¹³ Ibid, Paragraph 1.5.

¹⁴ Ibid, Paragraph 1.25.

¹⁵ Ibid, Paragraph 1.29.

¹⁶ Ibid, Paragraph 1.48.

¹⁷ Ibid, Paragraph 1.67.

¹⁸ UK Aviation Forecasts, January 2013.

¹⁹ APF, Paragraph 1.54

²⁰ Ibid, Paragraph 1.56.

- 2.15 The APF also notes the economic value of business and general aviation²¹. Business aviation is also a component of the traffic using the Airport, albeit it is not expected to grow to the same extent as commercial scheduled flights as the Airport attains its consented aircraft movement limit and business aviation activity is displaced.
- 2.16 The APF sets out clear objectives in terms of managing aviation's environmental impacts. The likely significant environmental effects of the proposed CADP1 are addressed within the Environmental Statement accompanying the CADP1 planning submission. The Environmental Statement concludes that the various environmental effects of the CADP1 will be both positive and negative, ranging in significance from 'negligible' to 'substantial'. Importantly, no substantial adverse effects have been identified which could not be adequately mitigated through appropriate environmental controls, including those already in place at the Airport and incorporated through the 2009 planning permission and Section 106 Agreement. With regard to the key impacts of noise, air quality and climate change, the CADP1 will result in absolute increases in these emissions. However, the impacts will be proportionately less than in the 'without development' scenario and no breaches in statutory limits are predicted.

Airports Commission

- 2.17 As noted above the APF does not set out any site-specific objectives or policies relating to individual airports. Decisions about airport capacity to meet the long term needs (post-2020) of the South East of England have been deferred pending the work of the Airports Commission, established in November 2012. The principal focus of the Airports Commission is to identify a long term solution to maintaining the UK's global hub status and to produce a final report with recommendations by summer 2015. These recommendations are then intended to be encompassed in a National Policy Statement to accelerate the resolution of any future planning application to provide such capacity.²²

²¹ Ibid, Paragraph 1.12.

²² Ibid, Executive Summary, paragraph 23.

- 2.18 However, it is clear that the APF supports making better use of existing runway capacity and that the Commission is seeking options which can be implemented speedily in order “to improve the use of existing runway capacity for the next five years”²³ to inform its Interim Report due in December 2013. The next section of the report sets out the specific contribution the Airport can make to achieving better use of scarce runway capacity at the current hub, Heathrow.

Economic Policy Context

- 2.19 Given the acknowledged importance of aviation to the economy, local economic policies also provide a context for the need for the proposed CADP1. The relevant local economic policies are set out below.

The London Plan

- 2.20 The Mayor of London published the replacement spatial development strategy for London - the London Plan – in July 2011. This is the overall strategic plan for London, which sets out a fully integrated economic, environmental, transport and social framework for the development of the capital to 2031.

- 2.21 Policy 6.6 (Aviation) states that:

“Adequate airport capacity serving a wide range of destinations is critical to the competitive position of London in a global economy.”

- 2.22 The Plan also notes that the Mayor:

“supports improvements to London’s airports that will ensure they can be used to optimum efficiency while not necessarily increasing the number of air traffic movements – improving the facilities available to passengers and providing them with the kind of experience that befits a world city, and also ensuring the availability of a range of public transport options for getting to and from airports.”²⁴

²³ Ibid, Executive Summary, paragraph 22.

²⁴ The London Plan (2011), paragraph 6.28.

- 2.23 In relation to the Royal Docks & Beckton Waterfront Opportunity Area, there is recognition that future growth is expected at the Airport as part of a strategy aimed at creating 600 jobs and 11,000 new homes²⁵. Hence, the contribution of the proposed CADP1 to creating additional jobs in the area would be consistent with the economic development objectives of the London Plan.

The Royal Docks Vision

- 2.24 A Vision for the Royal Docks was prepared by the Mayors of London and Newham and published in July 2010. Whilst this is a non-statutory planning document, the Foreword to this document makes clear that the regeneration of the Royal Docks is now an absolute priority for the Mayors of London and Newham.²⁶ The role of the Airport in supporting the regeneration of the Royal Docks is also noted in connection with the aim to create a world-class business destination:

“With the University of East London, City Airport, ExCeL and strong links to Canary Wharf, the O2 Centre and the City, the Royal Docks is already an attractive location for international business.”²⁷

- 2.25 The Vision also makes clear that future development should positively benefit the local communities and that continuing economic vitality is key to quality of life and the convergence agenda. As set out in Section 5, the Airport makes a substantial contribution in this regard with its commitment to local employment
- 2.26 In March 2011, the Royal Docks was awarded Enterprise Zone status by the UK Government, which will mean businesses locating to the area will benefit from substantial business rates relief over five years as well as a simplified planning approach to development within the zone. This further reinforces the importance of achieving economic development in the Royal Docks area.

Vision 2020 – the Greatest City on Earth

- 2.27 In June 2013, the Mayor produced his Vision 2020 – The Greatest City on Earth. This clearly identifies the Royal Docks as an opportunity area and the role of London City Airport is serving the Royals:

²⁵ Ibid, Annex 1.

²⁶ Royal Docks Vision, The Mayors of London & Newham, July 2010, Foreword.

²⁷ Ibid, page 20.

"We are returning the Royal Docks to their former glory at the forefront of international trade and exchange. This 125 hectare site - including the regeneration areas of Silvertown Quays, Royal Albert Dock and Royal Albert Basin has £22bn of development potential. Already, innovative and iconic developments are springing up to create a world class business destination - such as The Siemens Crystal and the Emirates Air Line cable car.

A new Enterprise Zone will support business ventures creating 6,000 new jobs. A beautiful 'floating village' will host just some of 11,000 new homes built. A £1bn joint public and private investment will create London's first Asian Business Park.

*We will install transport links to Crossrail 1 at Woolwich and London City Airport."*²⁸

- 2.28 The Vision also emphasises the importance of international connectivity to the London economy.²⁹

London Borough of Newham

- 2.29 The London Borough of Newham (LBN) Economic Development Strategy was published in October 2010 and sets out an ambitious Vision for the Borough, noting its strengths and weaknesses:

"Newham is at the heart of London's future. More jobs are likely to be created in the borough over the next two decades than anywhere else in London. Investment in Newham's Arc of Opportunity from the Olympic Park and Stratford Metropolitan Centre in the north to the Royal Docks in the south will create a new part of London, and transform the borough's economy and the life chances of its residents.

*Today, the scale of these opportunities is only matched by the scale of the deprivation that Newham's people face. Over the next two decades, we want to ensure that Newham's economy converges with London as a whole – people living in Newham should not be earning less than those living in the rest of this global city. To achieve this convergence, we will be attracting investment on an unprecedented scale, supporting out local business to grow and ensuring that this provides employment opportunities for our residents. We will be creating a borough where people want to live, work and stay."*³⁰

²⁸ Mayor of London, Vision 2020, page 11.

²⁹ Ibid, pages 66-67.

³⁰ Economic Development Strategy 2010-2027, London Borough of Newham, Executive Summary.

- 2.30 London City Airport is cited as one of LBN's unique strengths, and its role in the regeneration of the Royal Docks is noted:

*"The Royal Docks is ideally placed as a business and leisure destination with the waterfront, London City Airport, ExCeL, the University of East London, the historic presence of Tate and Lyle and the proximity to Canary Wharf and the O2 Centre."*³¹

*"Visitors to ExCeL and the Siemens Centre, as well as those utilising City Airport, will provide a critical mass of custom to support a flourishing business-tourism sector including hotels, restaurants, retail, and business-related leisure."*³²

- 2.31 The Development Strategy also notes the achievements of the Airport's 'Take Off into Work' initiative:

*"This Embedded Project Management scheme has also shown significant benefits through London City Airport's Take Off into Work Scheme. The scheme provides employability training to unemployed residents, including workshops on airport careers, CV and interview preparation and placement opportunities across a number of airport departments and other companies based at the airport. To date 108 Newham residents have been employed. The programme is delivered by ELBA in partnership with London City Airport and Workplace."*³³

- 2.32 The CADP investment by the Airport would make a valuable contribution to achieving the objectives set out in the Economic Development Strategy for Newham through both the creation of local jobs and in improving accessibility in support of the growth of the other enterprises in the area.

³¹ Ibid, page 22

³² Ibid, page 24

³³ Ibid, page 48

The London Borough of Tower Hamlets

2.33 The Tower Hamlets Employment Strategy of April 2011 states that:

“The London Borough of Tower Hamlets is experiencing rapid change as it emerges from a history of deprivation to become an extension of the economic powerhouse of Central London. The Borough’s economy is worth over £6bn a year and provides 5% of all the jobs in the capital. With nearly three jobs for every two residents, and with its economy expected to grow by up to 50% in the next 20 years, Tower Hamlets is a place of opportunity. Great challenges remain, however. The Borough’s history of deprivation casts a shadow, and the Borough remains the third most deprived authority in the country and the second in London. Unemployment, at 13%, is twice the London average, and many claimants have been unemployed for two years or more. Despite the many opportunities available, less than 20% of jobs in the Borough go to residents.”³⁴

2.34 The growth of the financial services sector also supports supply chain clusters in the Borough, as is noted in the Borough’s Enterprise Strategy:

“Tower Hamlets has a strong base on which to build, including its strategic location and a positive economic outlook. It has experienced very rapid employment growth and is functionally part of the central London economy. The profound shift to financial services creates additional jobs in associated sectors and this business cluster will continue to be vital to the development of the borough.”³⁵

2.35 London City Airport makes a valuable contribution to providing the international connectivity required by the important financial services sector as well as contributing job opportunities for local residents.

2.36 The Airport also makes a positive contribution to other neighbouring boroughs, even though formal economic policies may not be published. Further detail of the wider economic and social impacts of the proposed CADP is given in Chapter 7 of the ES.

2.37 Overall, the economic policies for the Local Area as defined in the Section 106 Agreement relating to the 2009 Planning Approval, and from which 61% of employees are drawn, provide a very supportive context for the proposed CADP.

³⁴ Employment Strategy (April 2011), Tower Hamlets, Executive Summary.

³⁵ Enterprise Strategy (May 2012), Tower Hamlets, Executive Summary.

3 DEMAND FORECASTS

Market Background

Historic Growth

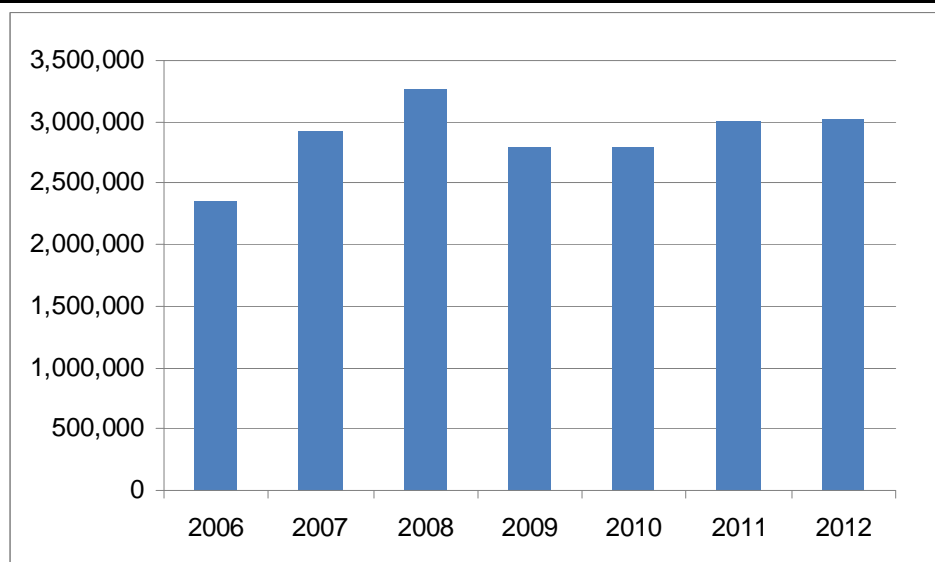
- 3.1 Over the period since 2002, London City Airport has experienced significant growth in passenger numbers, more than doubling throughput to a peak of 3.25 million passengers in 2008. Over the period 2002 - 2008 passenger traffic grew at a CAGR³⁶ of 12.6%. Over the more recent period 2006 – 2012 through the recession the Airport has experience growth at a CAGR of 4.2%, in the context of a decline of 0.2% in passenger numbers over the London airports as a whole in the same period and a decline over the UK as a whole of 1.0%.
- 3.2 In 2012, the Airport handled 3.03 million passengers, representing an increase of 0.8% over 2011, consistent with UK airports overall³⁷. Traffic growth at the Airport was adversely impacted around the Jubilee weekend in 2012 and during the Olympic Games, like other London airports, because of a down turn in business travel during the period as business visitors sought to avoid London. The underlying trend over the remainder of the year was for growth of around 2.3%³⁸.
- 3.3 The historic passenger and movement trends at the Airport are shown in **Figures 3.1** and **3.2**. The aircraft movement figures include both movements associated with scheduled services and business aviation aircraft using the Jet Centre.

³⁶ Compound Annual Growth Rate.

³⁷ Civil Aviation Authority (CAA) Airport Statistics 2012.

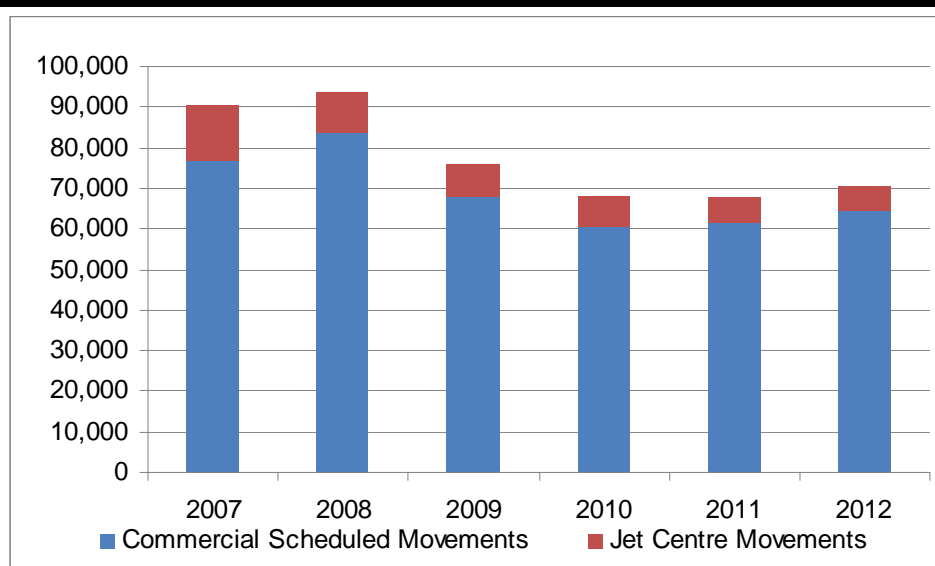
³⁸ London City Airport Passenger Statistics.

Figure 3.1: London City Airport Annual Passengers 2007-2012



Source: London City Airport

Figure 3.2: Aircraft Movements 2007-2012



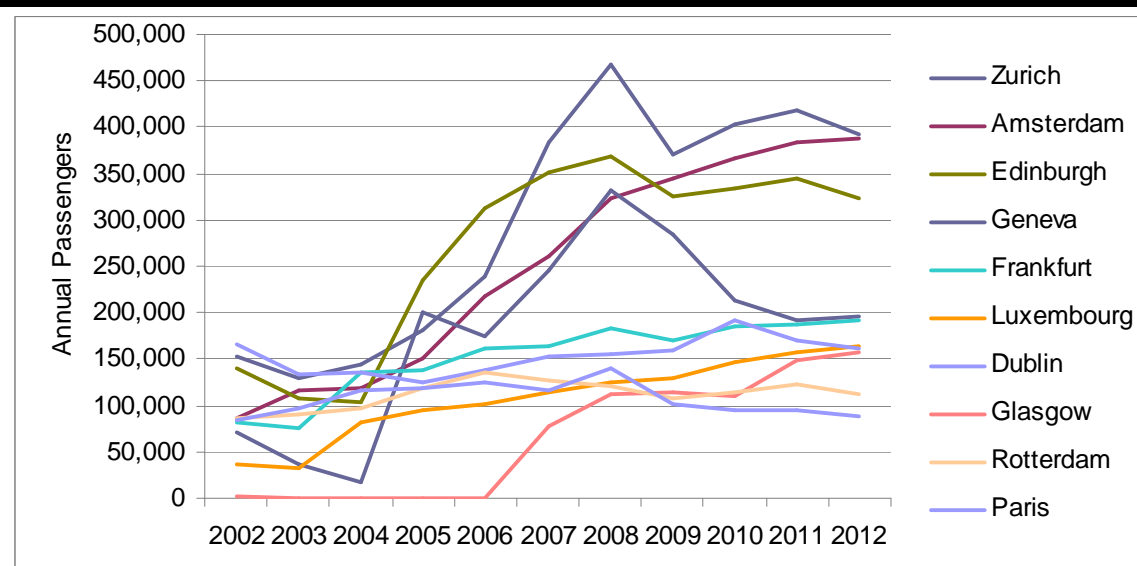
Source: CAA Statistics/London City Airport

- 3.4 The strong performance is a result of the strength of the local business travel market, which has bounced back well following the recession and is also partly explained by some airlines relocating short haul business services from Heathrow, particularly prior to the recession. Although there was a downturn in traffic over the period 2009-2010, this was largely explained by the recession, which impacted particularly adversely on the financial services sector in the short term and which forms the core of the Airport's catchment area. Some airlines also took advantage of slots which became available at Heathrow, relocating some services back to Heathrow in order to maintain their slot portfolios there. However, it is reasonable to expect the trend of short haul routes or frequencies being relocated away from Heathrow to resume, as has happened with the route to Basel, as Heathrow is now operating at full capacity again and as airlines prioritise larger aircraft operating long haul routes. This is discussed further below and in describing how the forecasts have been built up. The relocation of some services from Heathrow is expected to augment demand growth arising in the Airport's catchment area due to increases in economic activity more generally.

Route Network

- 3.5 In recent years, the Airport's route network has shifted more towards services to European cities as near domestic routes, such as to Manchester, have been impacted by competition from rail and increased taxes. The Airport's route network is particularly focussed around a core of key routes to major business centres such as Zurich, Amsterdam, Edinburgh, Geneva, Dublin and Frankfurt, as illustrated in **Figure 3.3**, which account for 72% of all passengers using the Airport. These services already operate at high frequency and growth has come largely through increases in the size of aircraft operating, whilst maintaining the number of flights at the peak times to meet the needs of business travellers.

Figure 3.3: London City Airport Core Routes 2002-2012



Source: CAA Statistics

3.6 The current Airport route network³⁹ is shown in **Table 3.1**.

Table 3.1: London City Airport Current Destination Served (June 2013)

Aberdeen	Amsterdam	Angers
Antwerp	Avignon	Barcelona
Basel	Berne	Billund
Brest	Brive	Deauville
Dresden	Dublin	Dundee
Edinburgh	Florence	Frankfurt
Geneva	Glasgow	Guernsey
Ibiza	Isle of Man	Jersey
Kristiansand	Luxembourg	Madrid
Mahon	Malaga	Milan (LIN)
Munster	Nantes	New York (JFK)
Nice	Nuremberg	Paderborn
Palma	Paris (ORY)	Pau
Quimper	Rome	Rotterdam
Stockholm (ARN)	Toulon	Venice
Zurich		

Source: OAG

³⁹ Some routes are operated seasonally. In addition, services will operate to Chambéry, Faro and Granada later in 2013.

Aircraft Mix

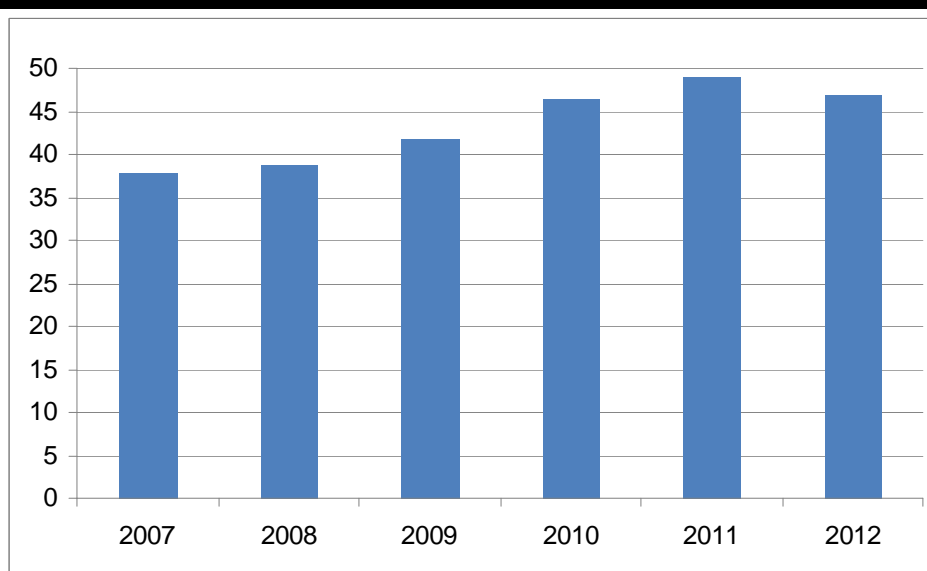
3.7 The current mix of aircraft using the Airport in 2012 is shown in **Table 3.2**.

Table 3.2: Annual Movements by Aircraft Type 2012	
Aircraft Type	Annual
Airbus A318	1,058
ATR-42	1,468
ATR-72	8
BAe-146/Avro RJ	17,347
Dornier 328	4,361
Dornier 328 Jet	32
Bombardier Q400	3,548
Embraer E170	8,933
Embraer E190	13,745
Fokker 50	13,335
Saab 2000	940
Commercial/Scheduled	64,775
Beechjet 400A	155
Canadair Challenger	132
Cessna Citation	1,112
Cessna 560XL Citation XL	1,612
Embraer 135	106
Dassault Falcon	334
Dassault Falcon 7X	464
Raytheon Hawker 800XP	1,528
Learjet 40/45	113
Other	171
Business Aviation	5,727
Total	70,502
Source: London City Airport	

Load Factor

- 3.8 In **Figure 3.4**, the increase in the average numbers of passengers per movement over the period from 2007 is illustrated. The small downturn in 2012 is largely as a result of the Jubilee/Olympic effects noted above. The increase has arisen due to the combination of growth in the physical capacity of the aircraft operating at the Airport and the average load factor, which currently lies at approximately 61%, consistent with the high business component on the flights and a high proportion of passengers travelling on flexible fares.

Figure 3.4: Average Passengers per Scheduled Movement 2007-2012

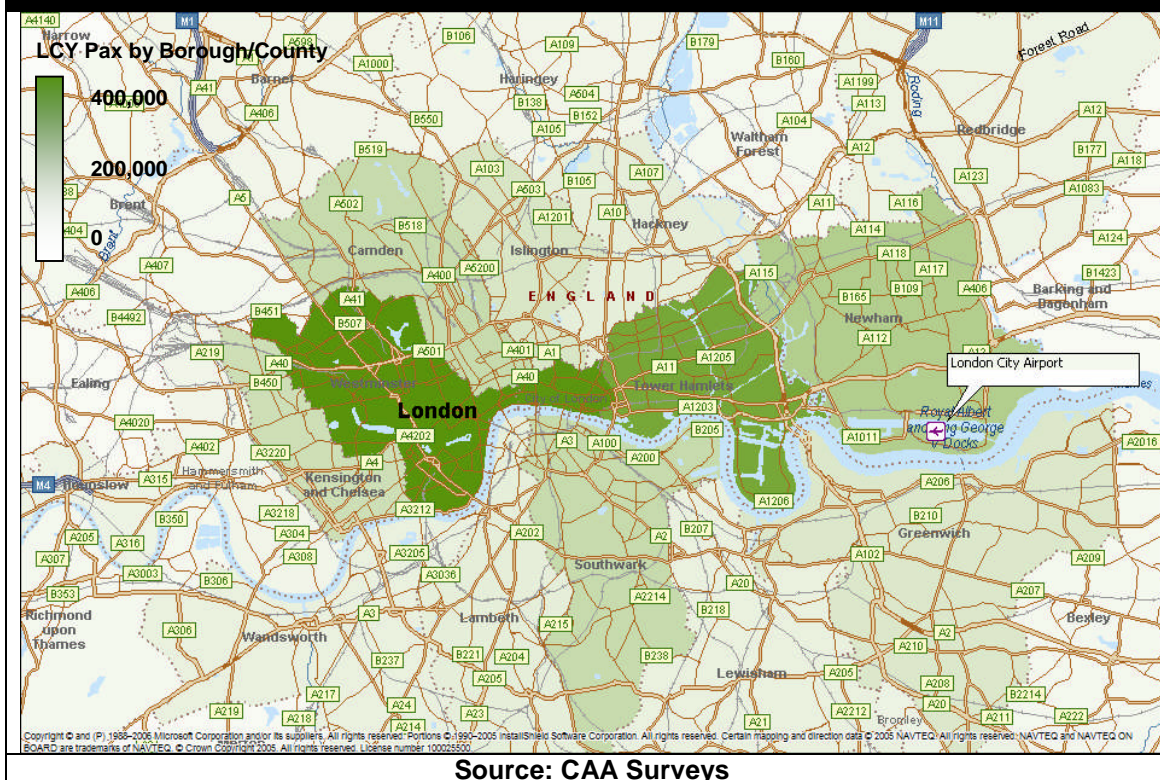


Source: London City Airport

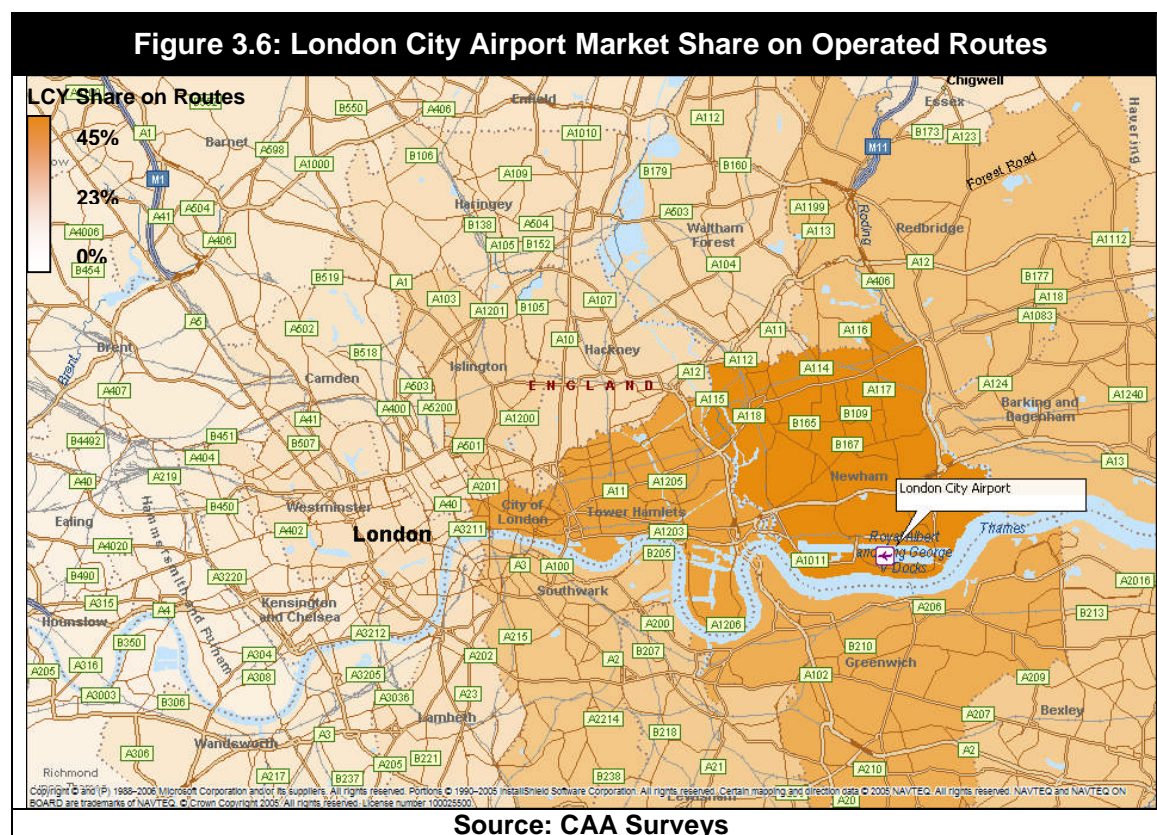
Catchment Area

- 3.9 The Airport serves a catchment area heavily concentrated in Central London and the Docklands. Using the latest available data for the Airport from the CAA Passenger Survey 2012 the catchment area is illustrated in **Figure 3.5**. The Airport draws a large number of passengers from Westminster (13.1% of all passengers), the City of London (12.7%) and Tower Hamlets (10.5%). Overall 70.9% of passengers come from the central and eastern part of London, with 29.1% drawn from a wider catchment reflecting, in part, a number of unique destinations operated from the Airport, such as Antwerp and Berne.

Figure 3.5: London City Airport Catchment Area



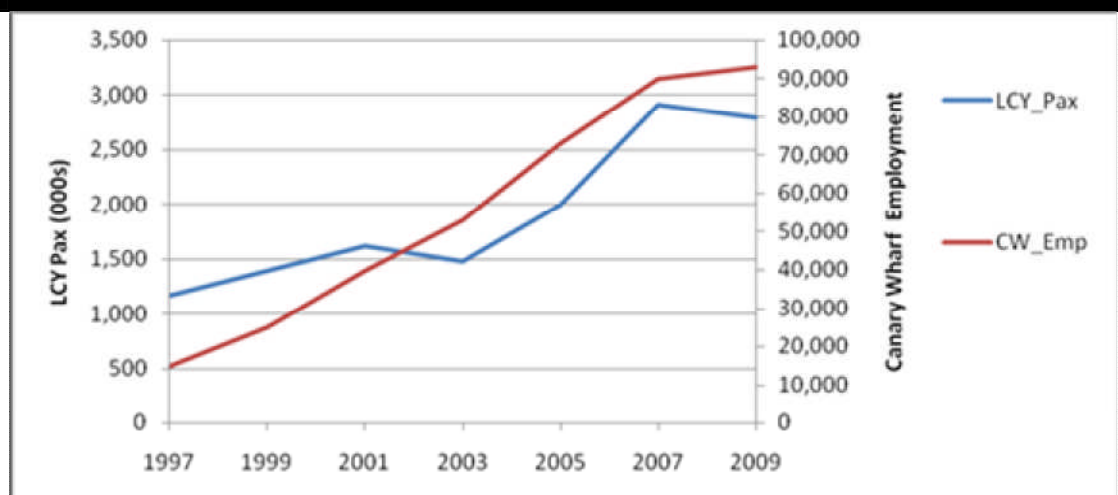
3.10 More significantly, the Airport commands a high market share on the routes it serves from within its local catchment area, indicating a strong preference by travellers to and from the areas to use the Airport due to its convenient access, particularly by public transport using the DLR connection. The Airport commands particularly high market shares of demand in Tower Hamlets, Newham, the City of London, Greenwich and Southwark as illustrated in **Figure 3.6**.



3.11 Historically, growth of the passenger demand using the Airport has closely mirrored employment growth in Canary Wharf and the Docklands more generally. This is illustrated in **Figure 3.7**. Employment in this area is expected to double over the next 10 – 15 years⁴⁰ providing a strong context for continued growth at the Airport.

⁴⁰ Interview with Tower Hamlets, Environmental Statement Chapter 7.

Figure 3.7: London City Airport Passenger Growth and Growth in Canary Wharf Employment



Source: Canary Wharf and London City Airport

- 3.12 In preparing the demand forecasts, consideration was given to the implications that the opening of Crossrail might have on demand to use the Airport. Whilst Crossrail will improve public transport journey times to Heathrow from key parts of the Airport's catchment area by around 15 minutes, based on planning information produced by Crossrail, the journey times will still be significantly greater than time taken to reach London City Airport. Current journey times are shown in **Table 3.3**⁴¹, against which those to Heathrow would be reduced by 15 minutes with Crossrail in operation. When taken together with the much shorter transit time through the Airport, which is a key part of its proposition, compared to Heathrow, London City Airport will still command a substantial journey time advantage for the key parts of its catchment area such that Crossrail is not expected to impact on demand projections for the Airport. Furthermore, the Crossrail Station at Custom House will provide improved journey times to the Airport, particularly from parts of Westminster, which will enable the Airport to increase its market share of what is the largest single air travel market in London.

⁴¹ Journey times are median times. Tower Hamlets taken as Canary Wharf, Newham as Stratford, Westminster as Westminster and the City as Bank. Heathrow is taken as Terminal 5.

Table 3.3: Public Transport Journey Times from Key Boroughs to Airports (mins)

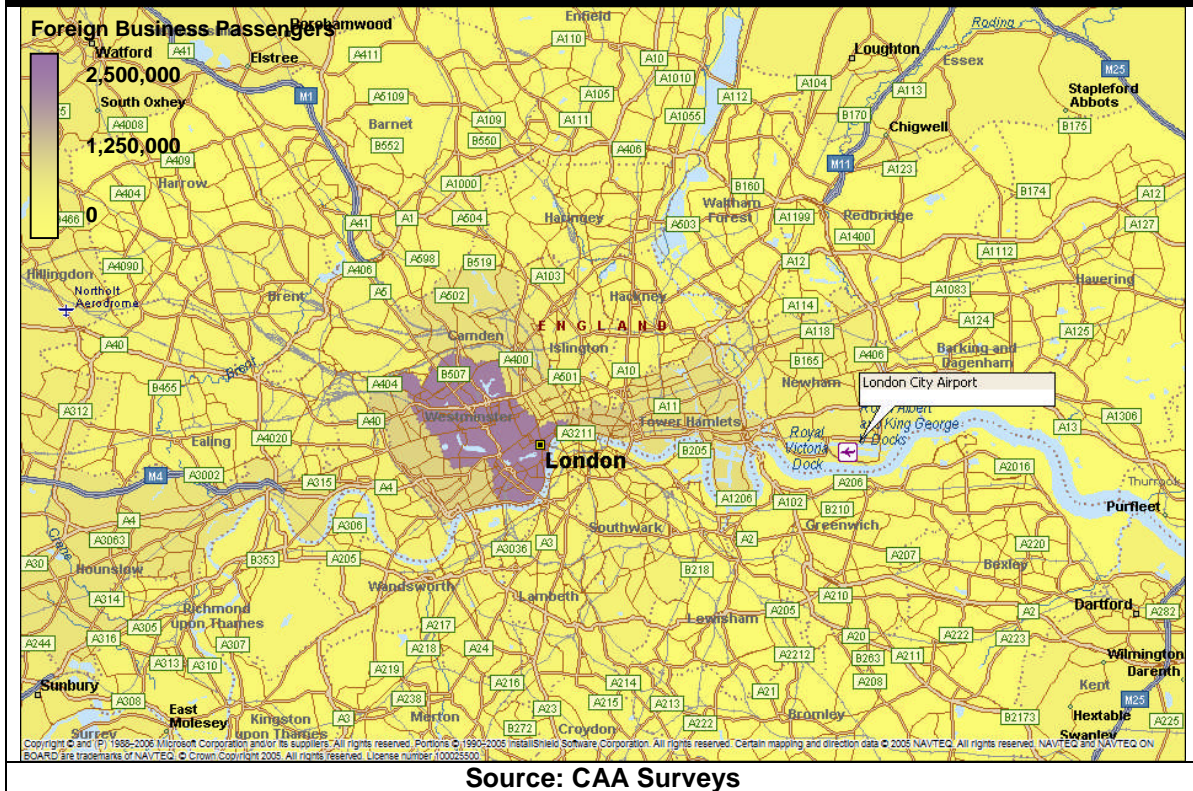
	London City	Heathrow	Gatwick	Stansted	Luton	Southend
City of London	22	55	44	56	72	61
City of Westminster	27	47	43	65	73	72
Newham	15	67	56	52	77	44
Tower Hamlets (Canary Wharf)	15	57	43	65	72	61

Source: TfL Journey Planner

Relationship to Heathrow

- 3.13 Another important factor in considering the future prospects for the development of the route network at the Airport is the erosion of the short haul network at Heathrow. Over the period 2005-2012, Heathrow lost services to 13 European/domestic destinations and, given that Heathrow is operating at full (over 98%) capacity, further erosion of the short haul network is highly likely in order that scarce slots can be used for more profitable long haul services. This is consistent with the policy expectations set out in the APF, as discussed in paragraphs 2.13 and 2.14 above. The Airport is particularly well located to provide an alternative to meeting the demand for such services arising from Central London, particularly for core business markets. By providing a convenient location for airlines to develop short haul business oriented routes to serve the core Central Business District markets, the Airport can assist in relieving capacity at Heathrow by allowing larger aircraft operations to replace smaller aircraft operations there, so increasing the number of passengers which can be handled there in line with policy. Hence, provided it has sufficient infrastructure, the Airport can make a contribution to meeting short to medium term policy objectives in this regard.
- 3.14 The other London airports; Gatwick, Stansted, Luton and Southend are less well placed to serve these business markets and to meet the needs of inbound visitors to the Central Business District of London. The destination of foreign business travellers is heavily concentrated in Central London, as illustrated in **Figure 3.8**, and for which the Airport is by far the most convenient alternative. There would be inefficiencies and journey time penalties if such travellers had to use these other airports which could make London a less attractive place in which to do business. The other airports are expected to play a much greater role in meeting the requirements of UK outbound travellers, particularly those in leisure markets, as they are located closer to the main residential areas generating high volumes of such passengers and able to handle larger aircraft necessary to operate such services viably for the airlines.

Figure 3.8: Concentration of Foreign Business Travellers



Passenger Profile

- 3.15 In considering the role of the Airport, the composition of its traffic is key. **Table 3.4**, sets out the composition of passenger demand using the Airport in 2012 compared to the other London airports based on CAA survey data⁴². Significantly, the Airport has a much higher proportion of passengers travelling for business reasons than any other airport at 54%, according to CAA survey data for 2012⁴³, with the next highest being Heathrow at 30%. The volume of business travel in 2012 was adversely affected by the Jubilee and the Olympics, so the underlying proportion is likely to be higher in practice. The Airport also has the highest proportion of foreign resident passengers using it after Heathrow. Even within the UK resident passengers, a substantial proportion is inbound to London, particularly from Scotland. Overall analysis of CAA survey data shows that 60% of all passengers were travelling inbound to London, principally Central London and the Central Business District, showing the importance of the Airport for bringing business to London. As discussed in paragraph 3.32, the proportion of business flights and passengers is expected to grow again in future to the levels observed historically, which are closer to two thirds of passengers travelling for business reasons.
- 3.16 Other airports would provide a much less attractive alternative for these passengers given the substantially greater journey times and the longer transit time through the airport. For example, the public transport journey time from the Airport to Canary Wharf is 15 minutes, with equivalent journey times from Gatwick, Stansted, Luton and Southend being 43, 65, 72 and 61 minutes respectively⁴⁴. Hence, there is a cost in lost productive time if passengers cannot use the Airport. These journey time savings have been quantified in the socio-economic assessment in the CADP Environmental Statement (refer to Chapter 7) and amount to some £73 million a year compared to those passengers using Heathrow once the faster transit time through the Airport is taken into account.

Table 3.4: South East Airports Business/Leisure Proportions				
Airport	Foreign		UK	
	Business	Leisure	Business	Leisure
London City	27%	20%	27%	26%
Gatwick	6%	22%	9%	62%
Heathrow	17%	42%	12%	29%
Luton	5%	24%	10%	60%
Stansted	6%	37%	8%	49%
Source: CAA Survey				

⁴² Data is not available for Southend Airport

⁴³ Previous survey data for 2010 showed 63% business travel, whereas the Airport's own surveys suggest the current proportion of business travel is 61%.

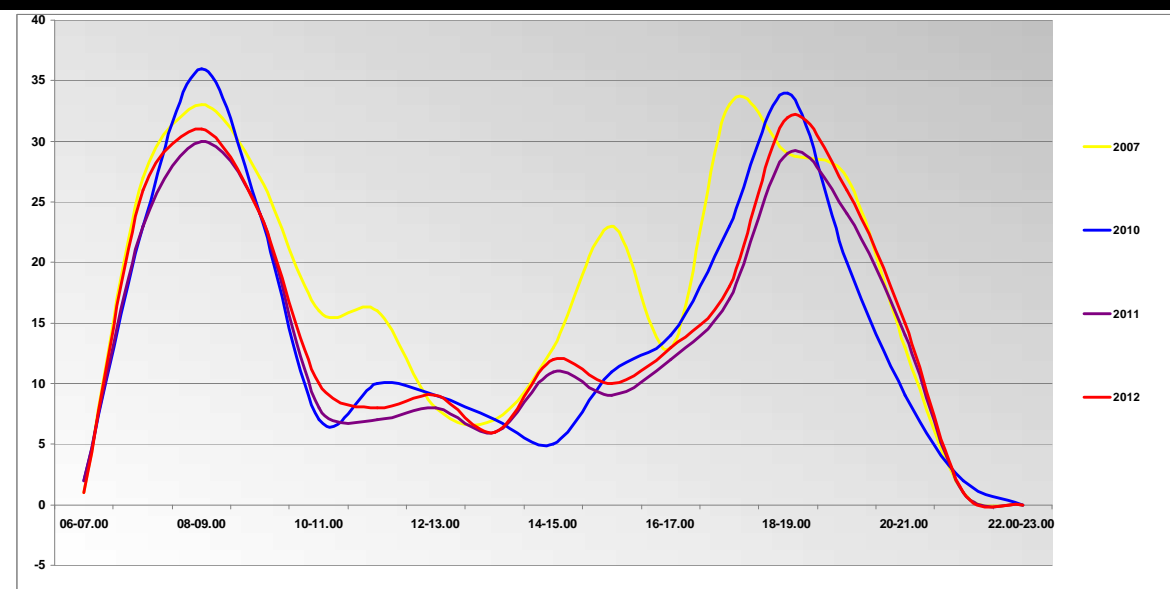
⁴⁴ Transport for London journey planner/National Rail.

- 3.17 Overall, the forecasts presented in this Statement are considered to be robust to any competitive effects of greater competition from these airports, which is likely to be mainly in outbound leisure markets rather than the core inbound business market. The proposed CADP1 is driven by three factors:
- i. the expected increase in peak period demand, which is mainly to service the business market, which is unlikely to be affected by competition due to the Airport's unique position in terms of reduced journey and processing times;
 - ii. the introduction of physically larger, new generation, aircraft, which is expected to occur independently of any competition from other airports due to advances in technology; and
 - iii. the consequent increase in passengers using the terminal, which will arise because of the other two factors and, therefore, is independent of the effects of competition from other airports.
- 3.18 Further information on the daily demand peaks is set out below. The basis of the forecasts is then explained in more detail.

Diurnal Profile

- 3.19 Because of the dominance of business travellers using the Airport, in particular inbound business travellers, the principal flows of demand are inbound to London City in the early morning and travelling outbound in the early evening. This is shown in the diurnal profile of demand in **Figure 3.9**. Initially, as a consequence of falling demand levels in the recession, airlines consolidated frequencies of service resulting in the loss of the secondary mid to late afternoon peak of movements. As a result of upsizing of aircraft and the quest for higher load factors, there has been further consolidation of movements for the same passenger volume. Concentrating movements into peak periods has increased pressure on the Airport's infrastructure as explained in Section 4.

Figure 3.9: Historic Diurnal Profile of Movements



Source: OAG

- 3.20 The analysis set out above highlights the importance of business travel within the Airport's traffic mix, which in turn drives the need for flights in the early morning and evening periods to enable day return business trips. The role of the Airport is not expected to change and this underpins the approach to preparing the future demand forecasts associated with the proposed CADP1.

Future Demand Forecasts

- 3.21 The passenger and movement forecasts for London City Airport have been produced largely on a bottom up route by route basis but taking into account the expected growth in the underlying market in the Airport's catchment area, i.e. a semi-bottom up approach.⁴⁵

⁴⁵ Top down forecasts are produced by examining overall market growth rates and estimating the market share for an airport as a share of the national total. Bottom up forecasts are produced at the individual route level based on how airlines are expected to grow their networks.

- 3.22 Top down passenger allocation modelling, which explicitly takes into account the competitive interaction between airports, as used by the DfT, is less reliable for the Airport as the limitations on the size of aircraft which can operate mean that the demand/frequency relationships are different for the Airport and such models cannot reliably model the competitive interaction between it and other airports. Nonetheless, the competitive relationship between London City and the other London airports is explicitly considered in the approach adopted by considering specifically how its market share may be expected to change as services expand or contract at other airports. The methodology for forecasting future demand is set out step by step below.

Underlying Market Forecasts

- 3.23 The passenger and air transport movement demand forecasts for the proposed CADP1 have been updated based on the latest DfT UK Aviation Forecasts published in January 2013⁴⁶. The DfT derives its national air passenger demand forecasts using econometric methods, which project future air passenger demand to and from the United Kingdom by market segment (UK business, UK leisure, foreign business, foreign leisure) by world region based on expected changes in economic activity (GDP), air fares, and exchange rates. Other factors such as consumer spending and international trade were also taken into account in leisure and business markets respectively. These are used to derive unconstrained market demand projections before the effects of any airport capacity constraints are considered and reflect the true underlying expectations of economically driven market demand growth.
- 3.24 The growth rates which have been used to project forwards the underlying market in the Airport's catchment area are set out in **Table 3.5**. These are taken from the DfT's underlying growth projections for the period to 2020 and from 2020 to 2030 for passengers by market segment originating in or destined for the UK, i.e. excluding international to international transfer passengers using UK airports⁴⁷. The growth rates used are those relevant to short haul travel and are on an unconstrained basis, relating to the underlying demand for air travel, i.e. before the application of constraints arising from shortage of capacity at Heathrow in particular.

⁴⁶ UK Aviation Forecasts 2013

⁴⁷ Such passengers are principally transferring between long haul and short haul flights and hence are not relevant to future projections of demand at the Airport.

Table 3.5: DfT Short Haul Unconstrained Growth Rates				
	2010- 2015	2016- 2020	2021- 2025	2026- 2030
Foreign Business	1.9%	1.9%	2.0%	2.0%
Foreign Leisure	1.8%	1.8%	1.7%	1.7%
UK Business	3.3%	3.3%	2.5%	2.5%
UK Leisure	2.1%	2.1%	2.2%	2.2%
Source: DfT UK Aviation Forecasts 2013				

Forecasting Methodology

- 3.25 The traffic forecasts that have been compiled for the Airport, both for movements and passengers, are derived through a semi bottom-up approach, combining econometric market growth rates in the underlying market with market capture performance and capacity constraints based around a network of routes which reflects the nature of the Airport market. Specific forecasts have been prepared for 2019, 2021 and 2023 for planning purposes with other years interpolated.
- 3.26 The CADP1 forecasts are broadly derived through the following stages:
- i. The underlying demand from within the Airport's catchment to a range of existing, historic and potential short haul destinations is determined from the CAA survey data for 2012, and includes passengers using other airports;
 - ii. This underlying demand is then projected forward based on a set of growth rates as set out above;
 - iii. Market capture rates are then determined and applied to this underlying demand to determine the market potential for new services, or growth in existing services, based on daily departure frequencies;
 - iv. Assumptions about route introductions, including daily frequencies, are tested to develop a realistic route network. The inclusion of a service adds additional passengers to the Airport's throughput; and
 - v. Assumptions about aircraft size and load factors are applied to check the services may be viable, and to ensure that, where demand exceeds capacity, the forecasts only include a realistic level of passenger throughput.

Catchment Area

- 3.27 The catchment area described earlier in this section is used as a basis, which covers demand from all districts from which the Airport drew passengers nationally in 2012. The geographic extent of the primary catchment area is not expected to change, and for the purposes of forecasting, the primary catchment area is determined as the 17 boroughs identified in **Table 3.6**. In 2012, the Airport drew demand from a further 240 boroughs and districts nationally. The remaining districts of London and the South East are grouped together and combined with demand drawn from districts outside of the South East at a route by route level to form a secondary catchment area which in combination makes up the total market from which the Airport draws passengers.

Table 3.6: Primary Catchment Boroughs		
Barking & Dagenham	Hackney	Redbridge
Bexley	Islington	Southwark
Camden	Kensington & Chelsea	Tower Hamlets
City Of London	Lambeth	Waltham Forest
City Of Westminster	Lewisham	Wandsworth
Greenwich	Newham	

Adjustments to Market Growth

- 3.28 The underlying market growth rates are then applied to the 2012 base levels of demand in each of the Boroughs and the remaining market to produce an estimate of the underlying market demand from which the Airport can draw.
- 3.29 The growth rates have been further adjusted to reflect the expectation that the economy and population in East London will grow faster than the rest of London and to reflect the expectation of faster market growth in the area local to the Airport, specifically Tower Hamlets and Newham as a result of specific regeneration and growth initiatives. The growth rates for employment have been calculated for these Boroughs and also as an average for the whole of London, taken from the Greater London Authority's Borough Employment Projections to 2031. The difference between each Borough and the London average was then applied directly to the general air travel growth rate, thus the uplift is based on the expected growth in employment for the each Borough by comparison to the London average and is set out in **Table 3.7**.

- 3.30 Employment was selected in favour of population because of the Airport's high dependency on business travel and, in particular, the importance of inbound travel through the Airport, the business element of which is linked to employment growth. These uplifts are applied to the growth rates, not the overall market. Hence, the effect amounts to an uplift of no more than 0.2% of the overall market assumed for the Airport over the period to 2020, and less thereafter, but it is considered reasonable to allow for faster growth in demand in the local area for which the Airport would be the preferred airport.

Table 3.7: Employment Related Growth Rate Uplift				
	2010-2015	2016-2020	2021-2025	2026-2030
Newham	0.7%	0.6%	0.0%	0.1%
Tower Hamlets	1.3%	1.5%	0.8%	0.6%

Route Network

- 3.31 Given the constraints on the infrastructure at London City Airport, its primary role is expected to remain in providing links to key European and UK cities. The advent of larger aircraft allows the range of destinations which can be served within Europe to widen to points in Central and Eastern Europe and, as has been seen, services can operate on a restricted basis to the eastern seaboard of the USA. To produce the forecasts, demand to a range of European cities which could be served from London City has been explicitly considered, including destinations already served. The underlying demand for these destinations was based on the route by route market data by Borough from the CAA 2012 survey data uplifted in line with the growth rates above. The range of destinations considered is set out in **Table 3.8**.

Table 3.8 Market Assessed Routes				
Aberdeen	Copenhagen	Guernsey	Milan (LIN)	Prague
Amsterdam	Cork	Hamburg	Milan (MXP)	Rome (FCO)
Antwerp	Dublin	Hanover	Munich	Rotterdam
Barcelona	Dundee	Helsinki	Nantes	Stockholm (ARN)
Basle	Dusseldorf	Isle of Man	New York (JFK)	Strasbourg
Belfast (BHD)	Edinburgh	Jersey	Nice	Stuttgart
Berlin (TXL)	Eindhoven	Kristiansand	Nuremberg	Venice
Berne	Florence	Lisbon	Oslo	Vienna
Billund	Frankfurt	Luxembourg	Paderborn	Warsaw
Brussels	Geneva	Madrid	Paris (CDG)	Zurich
Cologne/Bonn	Glasgow	Manchester	Paris (ORY)	

3.32 Destinations which are principally leisure markets have been excluded, such as Malaga, as, while some services do operate in off-peak periods to such destinations today, the airlines are expected to focus in the longer term on core business city markets where they can attain higher yields, particularly as the Airport moves towards its 120,000 noise factored movement constraint. Frequency growth on core markets will effectively 'crowd out' leisure routes to a large extent, which in any event have to compete with lower fare offers with more economical larger aircraft from the other London airports. It should be noted that not all routes shown in Table 3.7 were found to have sufficient demand to support services in the final forecasts. Further, allowance has been made for some small niche routes, such as Florence, Kristiansand, Central France and a small number of leisure services within the final forecasts. It should be noted that it is more difficult to be precise as to exactly which of these smaller routes will be operated on a year by year basis.

Market Capture

3.33 In general, at the Airport, the proportion of local demand captured (the market capture rate) from each Borough is closely related to service frequency. The market capture from each Borough is calculated at the route level based on either the current performance for existing routes, or an average market capture based on anticipated operating frequencies (for new routes and for those existing routes which grow in frequency over time). The average capture is based on the following frequency categories:

- i. Once-Daily;
- ii. Twice-Daily;
- iii. Medium Frequency (3-9 flights/day); and
- iv. High Frequency (more than 10 flights/day).

3.34 The average market capture has been calculated using existing routes which fall into each category, but excluding unique routes served solely from the Airport as these would distort the market capture rates assumed. Several rules have been applied to the market capture:

- i. Where there is no change in service frequency expected over time, existing routes will continue to capture the same level of demand;

- ii. Where existing routes grow in frequency and move into the next category, they draw demand based on the higher of either their current capture, or the average for that category;
 - iii. New routes are assumed to capture from the market based on the average associated with their frequency category. Over time, their market capture increases as with existing routes;
 - iv. All market captures have a limit of 100% per district.
- 3.35 Explicit prediction of which short haul routes and frequencies would be displaced from Heathrow is not possible. Nonetheless, it has been assumed that the Airport will be able to incrementally improve its market share in the selected markets from its core catchment area. It has been assumed therefore that the market capture rate will increase by 1% (of the underlying market share) per annum uplift applied annually up to a ceiling as defined above.
- 3.36 Whilst the approach starts with assumptions about the size of the underlying market and the Airport's expected market share/capture, in many cases and over time, the potential market capture exceeds the capacity available given aircraft sizes, frequencies and likely load factors which can be operated at the Airport. Hence, the unconstrained assessment of the route by route markets for the Airport is often higher than could be carried at sensible load factors and frequencies given the size of aircraft which can be operated to the Airport and bearing in mind the lower realistic load factors for business oriented routes. The forecasts are effectively capacity constrained forecasts having regard to how airlines can viably increase frequencies to serve each route, the appropriate frequency of service (simply adding middle of the day frequencies on business routes is not appropriate to the demand base) and appropriate aircraft size. Overall, by 2021, the forecasts are restricted by the Airport capacity available given the movement limit of 120,000 noise factored movements per annum and limits on the size of aircraft which can use the Airport as well as the weekend closure of the Airport on Saturday afternoons and Sunday mornings.
- 3.37 Because of the ability of the Airport to increase its market share in the face of capacity constraints at Heathrow and a more buoyant local economy, the Airport is still able to exhibit growth faster than both the DfT average national forecast and a simple GDP multiple up until the period when its own capacity constraints are reached and subject to the required new infrastructure being in place.

Fleet Mix

3.38 The aircraft types assumed to be operated within the forecasts are broadly based on current and anticipated new aircraft types, including the Bombardier C-Series which will be introduced by SWISS in 2016. However, at this time fleet replacement strategies are unknown for major carriers at the Airport, including CityJet and British Airways, so assumptions have been made regarding future fleets. In general, it is assumed that over the period to 2021:

- i. British Airways will continue operating Embraer E170 and E190 jets, albeit these may be of newer, quieter variants;
- ii. Swiss will move completely to Bombardier C-Series soon after aircraft delivery;
- iii. Lufthansa will continue to operate Embraer E190 jets as today but may also use smaller aircraft, such as the Dash8-Q400 and ATR turboprops when new routes are introduced; and
- iv. CityJet will start to replace its fleet with new generation, quieter, Embraer E190 aircraft and Dash8-Q400 aircraft in the medium term.

3.39 Route by route assumptions have been made for other airlines, which generally see these increase aircraft size marginally as demand grows. Further increases in aircraft size are expected towards 2023 although, in practice, some of these airlines may seek to re-equip to larger aircraft from an earlier date, for example British Airways are expected to re-equip between 2016 and 2018, as could CityJet under new ownership. This could result in faster introduction of larger types and, possibly, a greater number operating at the Airport, subject to the limits of the infrastructure being provided. These are reflected in a sensitivity test as set out below. Larger aircraft are those which are currently unable to use the taxi-lane in front of the West Pier at the Airport. This will be explained further in the next section, but this would include A318 aircraft and the Bombardier C-Series and other new aircraft of a similar size, which are referred to generically as 'Larger Code C' aircraft in this report, reflecting their categorisation according to the CAA.

Load Factor

- 3.40 A maximum average load factor has been assumed for each route from the Airport, i.e. an upper limit on load factors. In the period to 2016, this upper limit on route by route annual average load factor has been set at the same level as the 2010 load factor average of 62%, which is slightly above the level observed in 2012. In practice, as airlines replace aircraft or increase frequencies, load factors may dip on individual routes. In the longer term to 2021 and beyond to 2023, it is assumed that growth in the maximum average load factor of between 0.2%-0.3% per annum compound will be achieved. However, the outturn load factor is dictated by the expected introduction of new aircraft types and growth in frequency which can result in step changes in capacity which it takes a period for the passenger market to catch up with, depressing load factors in the intervening period. These load factor and aircraft size assumptions drive the aircraft movement forecasts. In terms of the daily profile of demand, it is assumed that load factors will be higher on peak period flights than on off-peak flights in the range 85-90% across all peak period flights.

Planning Forecasts

- 3.41 Forecasts have been prepared for the assessment years 2019, 2021 and 2023 to reflect the completion of key phases in the construction of the proposed CADP1. In addition, projections have also been produced for 2017 for the With Development case to allow assessment of interim effects. The passenger and movement forecasts for scheduled services are shown in **Table 3.9**. In the Without Development case, both the number of scheduled aircraft movements and the size of aircraft which can be operated are constrained by the existing infrastructure, as explained in the next section.

Table 3.9: London City Airport Apron Planning Application Forecasts									
	2012	2017		2019		2021		2023	
	Baseline	With Development	With Development	With Development	Without Development	With Development	Without Development	With Development	Without Development
Scheduled Movements	64,775	92,149	98,802	84,941	104,901	88,822	107,119	87,713	
Passengers	3,029,013	4,304,000	4,871,000	4,154,000	5,512,000	4,391,000	5,874,000	4,435,000	
Average Load Factor	60.8%	57.40%	58.8%	58.5%	60.2%	60.2%	60.8%	61.7%	
Business Aviation Movements	5,727	7,700	8,100	8,100	6,400	8,500	3,920	9,000	

Note: Test and Training Movements are excluded

Source: York Aviation

3.42 Detailed projections of movements by aircraft type have also been prepared to inform the Environmental Statement accompanying the CADP1 planning submission. These include non-passenger carrying positioning movements as well as business aviation movements. These are shown in **Table 3.10** for the With Development case and in **Table 3.11** for the Without Development case. In addition, there could be up to 200 test and training movements each year, principally by Embraer aircraft under either scenario. Taking into account the mix of aircraft expected to use the Airport, it will reach its noise factored movement limit of 120,000 annual aircraft movements at approximately 111,000 actual aircraft movements in 2023. Even with the proposed CADP in place, the Airport will be operating under a degree of capacity constraint from 2021, hence the slowing of growth beyond this point.

Table 3.10: Annual Movements by Aircraft Type With Development				
Aircraft Type	2017 Annual	2019 Annual	2021 Annual	2023 Annual
Airbus A318	1,220	1,220	1,220	1,220
ATR-42	2,218	4,990	4,436	4,990
Avro RJ85	7,208	-	-	-
Bombardier Q400	11,643	23,841	27,722	26,613
Canadair C100	8,871	9,980	9,980	14,416
Embraer E170	12,752	15,524	16,633	6,653
Embraer E190	36,039	43,247	44,910	53,227
Fokker F50	12,198	-	-	-
Commercial/Scheduled	92,149	98,802	104,901	107,119
Beechjet 400A	701	737	582	357
Cessna 550 Citation Bravo	1,560	1,641	1,297	794
Cessna 560XL Citation XL	2,361	2,483	1,962	1,202
Embraer Legacy	88	93	73	45
Dassault Falcon 7X	589	619	489	300
Raytheon Hawker 800XP	1,972	2,075	1,639	1,004
Learjet 45	430	452	357	219
Business Aviation	7,700	8,100	6,400	3,920
Total	99,849	106,902	111,301	111,039
Source: York Aviation				

Table 3.11: Annual Movements by Aircraft Type Without Development			
Aircraft Type	2019 Annual	2021 Annual	2023 Annual
Airbus A318	1,220	1,220	1,220
ATR-42	26,059	22,732	22,732
Bombardier Q400	2,772	7,208	7,208
Canadair C100	8,871	8,871	8,871
Embraer E170	9,980	12,752	12,752
Embraer E190	36,039	36,039	34,930
Commercial/Scheduled	84,941	88,822	87,713
Beechjet 400A	737	773	819
Cessna 550 Citation Bravo	1,641	1,722	1,823
Cessna 560XL Citation XL	2,483	2,606	2,759
Embraer Legacy	93	97	103
Dassault Falcon 7X	619	650	688
Raytheon Hawker 800XP	2,075	2,177	2,305
Learjet 45	452	474	502
Business Aviation	8,100	8,500	9,000
Total	93,041	97,322	96,713

- 3.43 Specific high and low forecasts have not been prepared in relation to the CADP1 proposals as ultimately these do not alter the scale of the infrastructure required to handle 120,000 noise factored movements. In the event of higher or lower economic growth, there would be only marginal adjustments to the projections. In the case of lower growth, this would simply mean that there is a closer match between the capacity on offer at the Airport and the seat capacity which the airlines are able to operate to the Airport on many routes. In the case of faster demand growth, this would accelerate the phasing of the CADP1 development up to the achievement of the defined movement limit.
- 3.44 The expected breakdown of passengers by route at 2023 is shown in **Table 3.12**, including expected frequencies of service by route and aircraft type(s). The table also shows where a route is capacity constrained by aircraft size and load factor, i.e. there is surplus demand that would have chosen to use the Airport if the infrastructure was able to accommodate larger aircraft. This list is indicative of the overall route structure and passenger volumes by route that, in practice, may vary within the overall total.

Table 3.12: Forecast Passengers by Route and Flight Frequencies with Development 2023				
	Weekday Deps	Forecast Passengers	Capacity Constrained	Aircraft Type
Aberdeen	3	81,161	✓	E170
Amsterdam	15	537,731		E190/C100
Antwerp	4	92,907		Q400
Barcelona	3	106,791	✓	E190
Basel	3	105,348		C100
Belfast (BHD)	3	106,791	✓	E190
Berlin	3	81,601		E190
Billund	2	24,140		ATR-42
Cologne/Bonn	3	79,025	✓	Q400
Copenhagen	5	159,474	✓	Q400/E190
Dublin	7	222,849		E190
Dundee	2	36,440		Q400
Dusseldorf	5	150,219	✓	Q400/E190
Edinburgh	12	438,004		E190/C100
Eindhoven	2	52,683	✓	Q400
Florence	1	35,597	✓	E190
Frankfurt	10	330,340	✓	E190
Geneva	6	234,940	✓	C100
Glasgow	11	353,736		E190
Guernsey	1	17,798	✓	ATR-42
Hamburg	2	46,915		Q400
Hanover	3	50,359		ATR-42
Helsinki	2	32,895		E190
Isle of Man	3	61,416		E170
Jersey	3	53,395	✓	ATR-42
Luxembourg	7	193,647	✓	Q400/E190
Madrid	3	106,791	✓	E190
Milan (LIN)	3	106,791	✓	E190
Milan (MXP)	3	106,791	✓	E190
Munich	6	195,071	✓	E190/Q400
Nantes	2	34,810		Q400
New York (JFK)	2	22,782	✓	A318
Nice	1	33,929		E190
Oslo	3	97,536	✓	E190/Q400
Paris (ORY)	5	122,505		Q400
Prague	2	48,875		E190
Rome (FCO)	2	71,194	✓	E190
Rotterdam	7	146,148		Q400

Stockholm (ARN)	3	106,791	✓	E190
Stuttgart	3	79,025	✓	Q400
Venice	1	35,597	✓	E190
Vienna	2	49,637		E190
Warsaw	3	81,161	✓	E170
Zurich	13	494,798	✓	E190/C100
Leisure	2	61,939	✓	E190/Q400
Others (BRN, NUE, PAD, KRS)	6	185,816	✓	E190/Q400
Source: York Aviation				

3.45 The level of excess demand at the individual route level demonstrates the robustness of the forecasts due to the extent to which individual route projections have been capped to the capacity which the airlines are able to operate viably within the overall movement limits and physical infrastructure constraints at the Airport. To the extent that there is excess demand on individual routes, or indeed demand in the catchment area for routes which are not viable from the Airport, these passengers will have to use other London airports and/or to fly indirectly to their destination. This will involve additional costs of access to the alternative airport, so resulting in lost productivity. This is the same as happens today on routes which are capacity constrained. Ultimately, passengers will seek to use the flight which gives them the best choice of flight time, fare and access time/cost and if that is not available to them choose the next best alternative.

3.46 Based on the passenger demand forecasts and the expected schedule of airline operations with aircraft types able to use the Airport, the average numbers of passengers per scheduled movement is expected to increase from approximately 47 in 2010 to 55 in 2023 in the With Development case but be constrained to approximately 51 passengers per aircraft in the Without Development case.

3.47 Despite the reservations about the robustness of top down forecasting methodologies for preparing forecasts for the Airport, given its unique characteristics, it is worthy of note that the DfT latest forecasts show the Airport handling some 4.9 million passengers a year by 2020 and 6.2 million in 2030, taking account of capacity limitations at the other airports⁴⁸, which are all expected to be full by 2030 highlighting the importance of the contribution which London City can make with CADP implemented. Even in the event of capacity at other airports being unconstrained, demand is still expected to reach 6.2 million passengers by 2030⁴⁹, showing the contribution which the Airport is expected to make even in the event of longer term developments at other airports. This provides confidence that the forecasts underpinning the CADP1 proposals are robust to subsequent decisions to permit an increase in capacity at one or more other airports serving the London area.

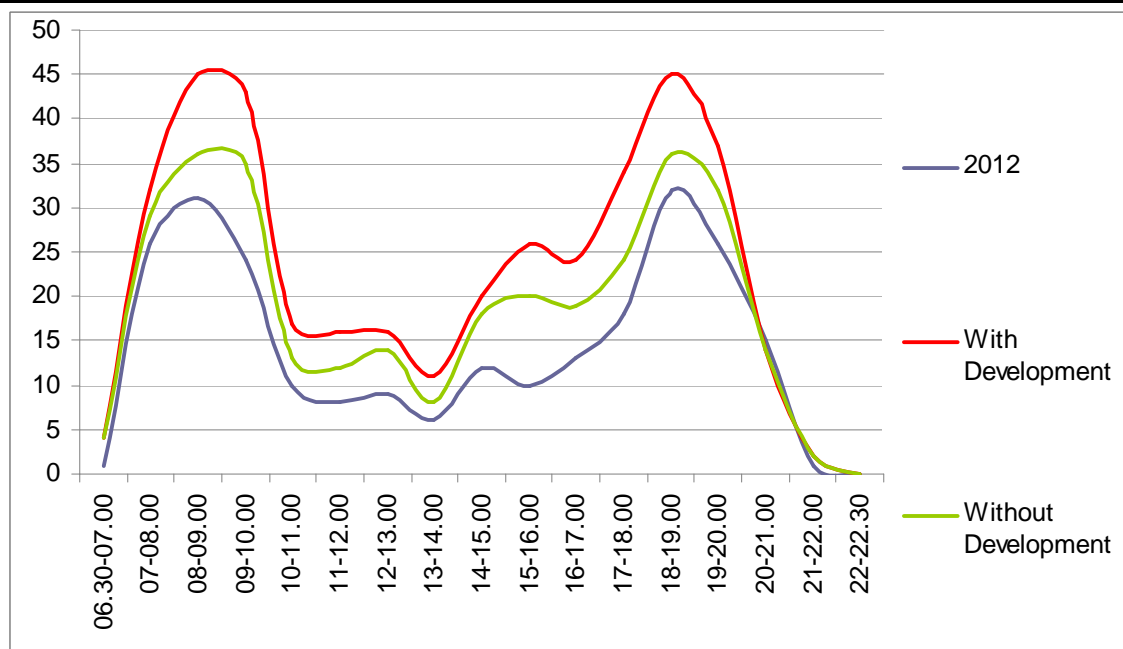
Expected Profile of Demand

3.48 Based on the expected profile of services as set out in Table 3.10, the profile of demand over a typical busy day is expected to develop from the current pattern with some reintroduction of a mid-afternoon peak as seen in 2007 (Figure 3.9). The expected changes to the profile of aircraft movements over time are shown in **Figure 3.10**. The expected evolution of the daily profile of passenger demand is shown in **Figure 3.11**. It should be noted that these graphs illustrate movements and passengers arriving and departing on the runway. Peaks of demand in the terminal and in terms of surface access will be lagged.

⁴⁸ Department for Transport, UK Aviation Forecasts 2013, Annex E.2.

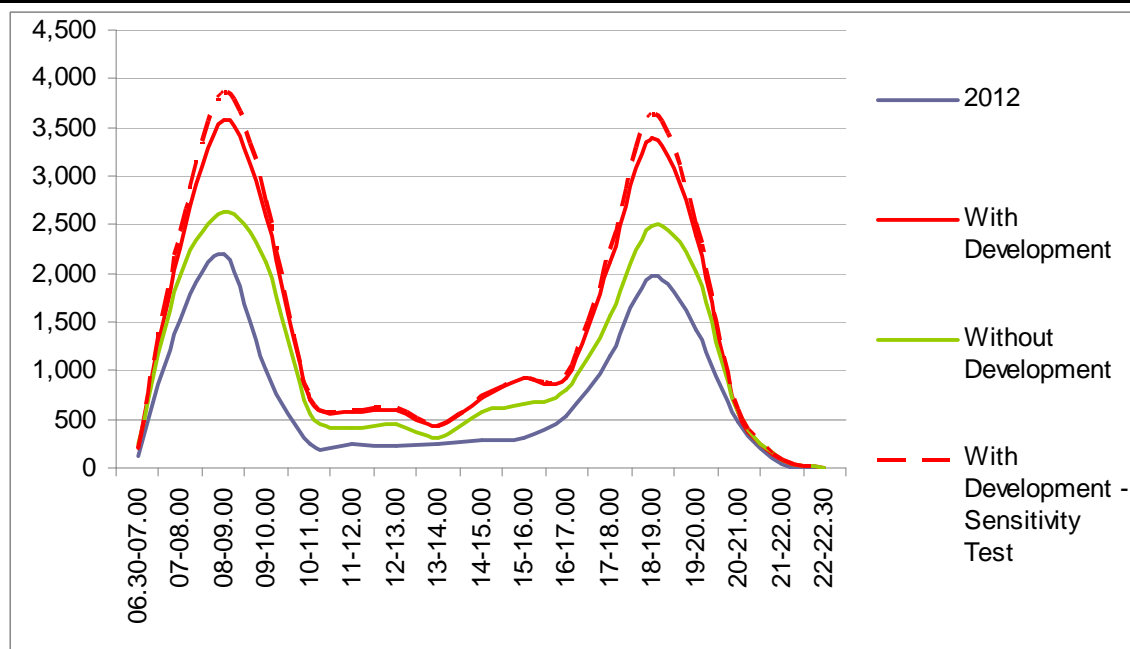
⁴⁹ Ibid, Annex D.8.

Figure 3.10: Future With Development Diurnal Profile of Movements (movements per hour)



Source: York Aviation

Figure 3.11: Future With Development Diurnal Profile of Passengers (passengers per hour)



Source: York Aviation

Changes since 2007

- 3.49 What is evident is that traffic is now more concentrated in peak periods than it was in 2007, as illustrated in Figure 3.9. This has occurred for a combination of reasons related to changes in the route network with greater concentration on key European business centres, the introduction of larger capacity aircraft resulting in lower frequencies of service being required to accommodate passenger demand, and lower demand levels overall during the recession. Whereas at the time of the 2007 planning application, for which approval was granted in 2009 (07/01510/VAR), it had been expected that the trend to greater peak spreading would continue, this has not arisen because of changes to the route network and the introduction of larger aircraft.

- 3.50 In any event, the 2007 application only considered forecasts as far ahead as 2010 and 3.9 mppa, based on the Airport's internal route development targets, and were based on 95,000 scheduled movements and 25,000 business aviation movements. These forecasts did not consider the implications of further changes to aircraft types using the Airport beyond this time threshold. Hence, these projections did not give rise for the need for additional terminal infrastructure or the changes in size of aircraft stands necessary to accommodate larger aircraft. The forecasts supporting the proposed CADP1 are based on the DfT's national growth forecasts for demand for air travel and on a detailed assessment of catchment area markets. They also consider a longer time frame to 2023 and seek to anticipate, as far as possible, the changes that the airlines will seek to make to their aircraft fleets to meet the demand in the most cost effective way possible.
- 3.51 The introduction of physically larger aircraft has also exacerbated congestion on the ground and the limitations on the use of some stands, as described in the next section, means that hourly movement capacity is less than anticipated in 2007, when up to 40 movements per hour were expected to be achieved with the existing infrastructure. The effect of these infrastructure constraints is discussed more fully in Section 4.
- 3.52 A further difference to the forecasts is in respect of business aviation movements, discussed below.

Business Aviation

- 3.53 Business aviation movements have been forecast on the basis of 'most-likely' growth rates determined by Eurocontrol for flight movements in Europe⁵⁰. The Eurocontrol growth rates cover the periods 2010-16, 2016-20 and then for five year periods to 2030. Over the period to 2020, the Eurocontrol growth rates match those calculated for scheduled passenger growth, but are higher in the longer term to 2030. The growth rates are shown in the **Table 3.13**.

Table 3.13: Underlying Business Aviation Market Growth Rates				
	2010-2016	2016-2021	2021-2026	2026-2030
Growth Rate	2.9%	2.5%	2.9%	2.8%
Source: Eurocontrol/York Aviation				

⁵⁰ Eurocontrol Long-Term Forecast: Flight Movements 2010-2030, 2010.

- 3.54 However, the market overall, and at the Airport where business aviation movements have continued to decline, has not yet started to recover in line with Eurocontrol's own forecasts, which were compiled in 2010. We have assumed, therefore, that business aviation movements will recover to 2010 levels at the Airport by around 2015 and grow at Eurocontrol rates thereafter to provide an assessment of the underlying market size. It should be noted that historic business aviation movements were substantially higher than this, peaking at over 13,000 such movements. The current projections show the potential for business aviation movements to reach 9,000 a year at the Airport. However, the projections for growth in core scheduled services mean that business aviation movements would be constrained within the 120,000 noise factored movement cap under the With Development scenario. In the Without Development scenario, the available infrastructure will constrain scheduled operations in the critical peak periods and, given the profile of demand at London City, there is limited scope for filling the off-peak periods. Hence, in the Without Development scenario, business aviation traffic is expected to reach its full potential albeit the effect of constraint on scheduled traffic means that the Airport is unlikely to reach its full consented 120,000 movement limit over the period to 2023, as shown in Table 3.9. There would be some scope for further growth in business aviation movements beyond 2023 in the Without Development scenario.
- 3.55 It is assumed that, in the Without Development scenario, the Airport will be able to maintain its market share of the business aviation market from its current, 2011, position. This is because the Airport is best located to meet the needs of such traffic seeking easy access to the City and Canary Wharf. It is better located than competing airports at Biggin Hill, Luton, Stansted, Farnborough, Southend and a number of other smaller airfields. In the With Development case, it is assumed that scheduled movements will squeeze out business aviation traffic such that its market share is expected to decline to less than half of its current share of this market. Ultimately, it will be limited largely to movements in off-peak periods making use of the existing Jet Centre apron. The business aviation movement forecasts are far lower than assumed in previous planning applications which had assumed growth in this market up to 25,000 movements a year within the overall 120,000 movement cap.

Sensitivity Tests

- 3.56 To assist with the Environmental Impact Assessment process for CADP1, two sensitivity tests have been prepared.
- 3.57 The first sensitivity test was prepared in response to queries from TfL regarding the impact of a greater introduction of larger aircraft and represents a high passenger case.

- 3.58 Infrastructure constraints, as explained in the next section, would ultimately limit the introduction of these larger types. It is estimated that the ceiling on the introduction of larger aircraft would be 8 larger Code C aircraft on the ground simultaneously in peak periods compared to 5 assumed in the core With Development forecast. Although there will be 11 stands capable of accommodating such larger aircraft, the number which can be operated in the peak period is limited by the need for such aircraft to continue to backtrack part way along the runway even with the extended taxi-lane in place. Increasing such larger aircraft movements would effectively degrade the runway capacity below that required to accommodate the Planning Application forecasts and result in fewer rather than more passengers being handled overall.
- 3.59 For the purpose of this sensitivity test, it is assumed that these larger Code C types would replace some more of E190 operations assumed in the forecasts and reflects the circumstances where the market grows more quickly on the core routes resulting in the airlines upscaling the size of the aircraft more quickly than would be expected under the core traffic growth projections. This could arise from further changes in the fleets operated by CityJet, British Airways, Lufthansa or other airlines but the extent of changes to the fleet will be limited by the physical infrastructure and the need to optimise capacity. As a consequence, further increases to the size of aircraft would have only a negligible impact on both annual and peak period passenger volumes.
- 3.60 In order to test the sensitivity of surface access requirements, peak period load factors have also been increased to 90%, on top of the additional larger aircraft assumed in the sensitivity test for the With Development scenario. This is not considered to be a realistic assumption for normal peak period operations as not all flights will operate at such a high load factor simultaneously. However, in the event that capacity constraints persist across the London airport system as a whole, load factors might eventually rise to such levels. On this basis, it is forecast that the upper bound of passengers which could be accommodated with the planned CADP1 infrastructure would be no greater than approximately 6.02 mppa over the longer term, an increase over the year of 67,000 passengers, or an increase of 1.1%. The effect of this on the daily demand profile is shown in Figure 3.11.

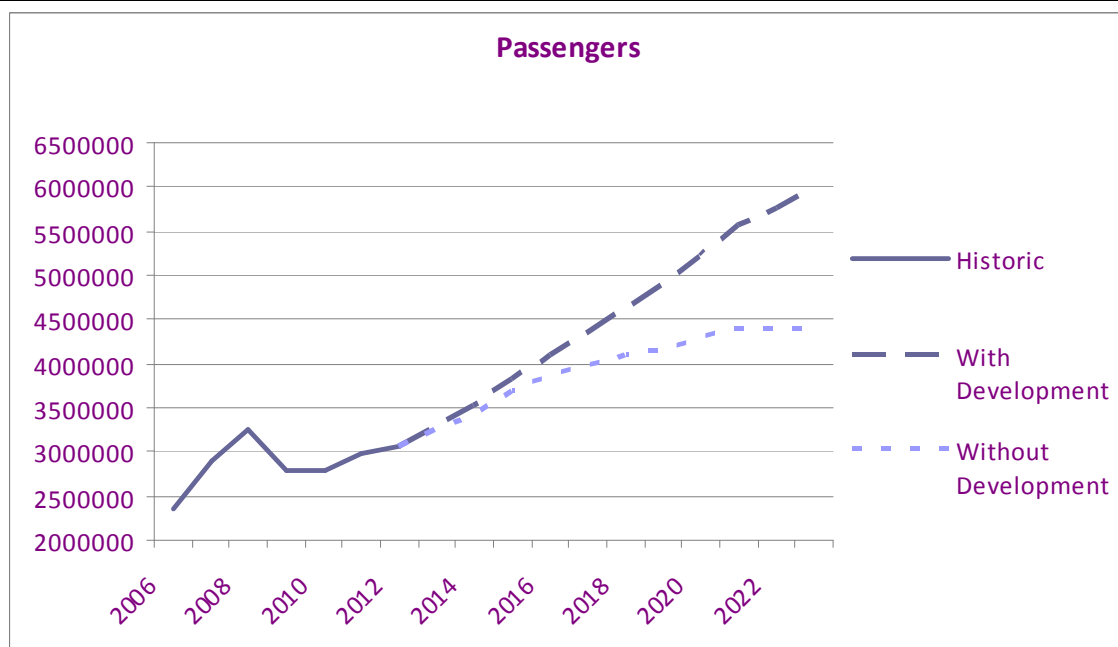
- 3.61 A second sensitivity test was prepared in response to request from the London Borough of Newham to demonstrate the worst case implications for the Public Safety Zone and represents a higher risk case. For this sensitivity test, a variant of the aircraft movement forecast has been prepared to show the maximum number of business aviation movements in 2023 on the assumption that business aviation traffic growth would constrain the number of slots available for scheduled services within the 120,000 noise factored movements. This is not believed to be realistic given the higher revenue to the Airport from scheduled service operations and the incentive that gives to increase scheduled movements to the maximum possible at the expense of business aviation traffic. This sensitivity test was prepared to assess the maximum scale of Public Safety Zone, to which business aviation movements make a disproportionate contribution. The aircraft type breakdown for this sensitivity test is shown in **Table 3.14**. As with the main scenarios, there could be an additional 200 movements for test and training purposes.

Table 3.14: Estimated Movements by Aircraft Type With Development Maximum Jet Centre		
Aircraft Type	Code	2023
Airbus A318	A318	1,220
ATR-42	AT4	4,655
Bombardier Q400	DH4	24,827
Canadair C100	C10	14,416
Embraer E170	E70	6,207
Embraer E190	E90	49,655
Commercial		100,979
Beechjet 400A	BE40	819
Cessna 550 Citation Bravo	C550	1,823
Cessna 560XL Citation XL	C56X	2,759
Embraer Legacy	ER3	103
Dassault Falcon 7X	F7X	688
Raytheon Hawker 800XP	H25B	2,305
Learjet 45	LJ45	502
Jet Centre		9,000
Total		110,179

Summary

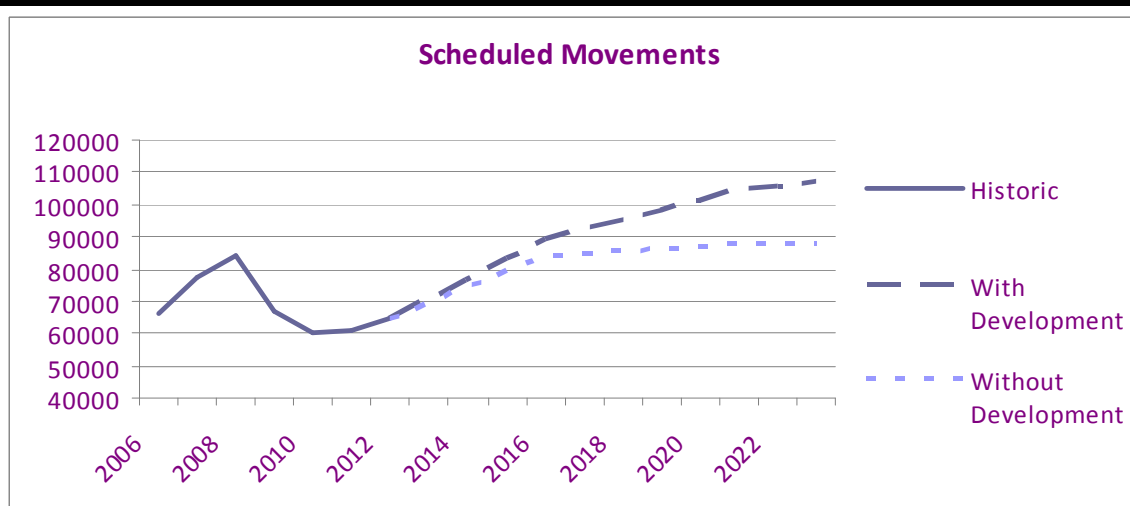
- 3.62 Forecasts have been prepared for scheduled service operations and Jet Centre operations at the Airport separately. The balance between the two types of operation will vary within the overall consented movement limit dependent on whether growth in scheduled services is constrained by the available infrastructure.
- 3.63 The passenger forecasts have been built up in detail based on expected growth in underlying demand within the Airport's catchment and taking into account how the airlines are expected to serve that demand allowing for both competition from other London airports and the specific infrastructure constraints impacting on the size of aircraft which can use the Airport. These constraints are particularly severe in the Without Development scenario but even under the With Development scenario, the Airport is expected to reach its consented movement limit by 2023 and be close to the limit from 2021. These forecasts are considered robust to the effects of increased competition from other airports but could be realised slightly earlier or slightly later dependent upon the rate at which the airlines introduce larger aircraft into their fleets and the rate of economic recovery.
- 3.64 The differences between the With and Without Development forecasts for passengers and scheduled movements are illustrated in Figures 3.12 and 3.13. With Development, the Airport will reach approximately 5.87 mppa and 107,000 scheduled movements in 2023. Without Development, the throughput of the Airport would be limited to approximately 4.44 mppa and 88,000 scheduled movements.
- 3.65 Realistic profiles of movement demand have been developed, taking into account the need for the airlines to operate the right size of aircraft to maintain viability and taking into account known and anticipated aircraft orders.
- 3.66 The forecasts set out above have been used for the assessment of the significant potential environmental impacts of the proposed CADP1 including the assessment of the Public Safety Zone.
- 3.67 Sensitivity tests have been produced to demonstrate the impact of a faster introduction of larger aircraft types and higher peak period load factors on the surface access network and to assess the worst case PSZ at 120,000 movements should business aviation activity make up a greater proportion of the total.

Figure 3.12: Passenger Forecasts With and Without Development



Source: York Aviation

Figure 3.13: Scheduled Movement Forecasts With and Without Development

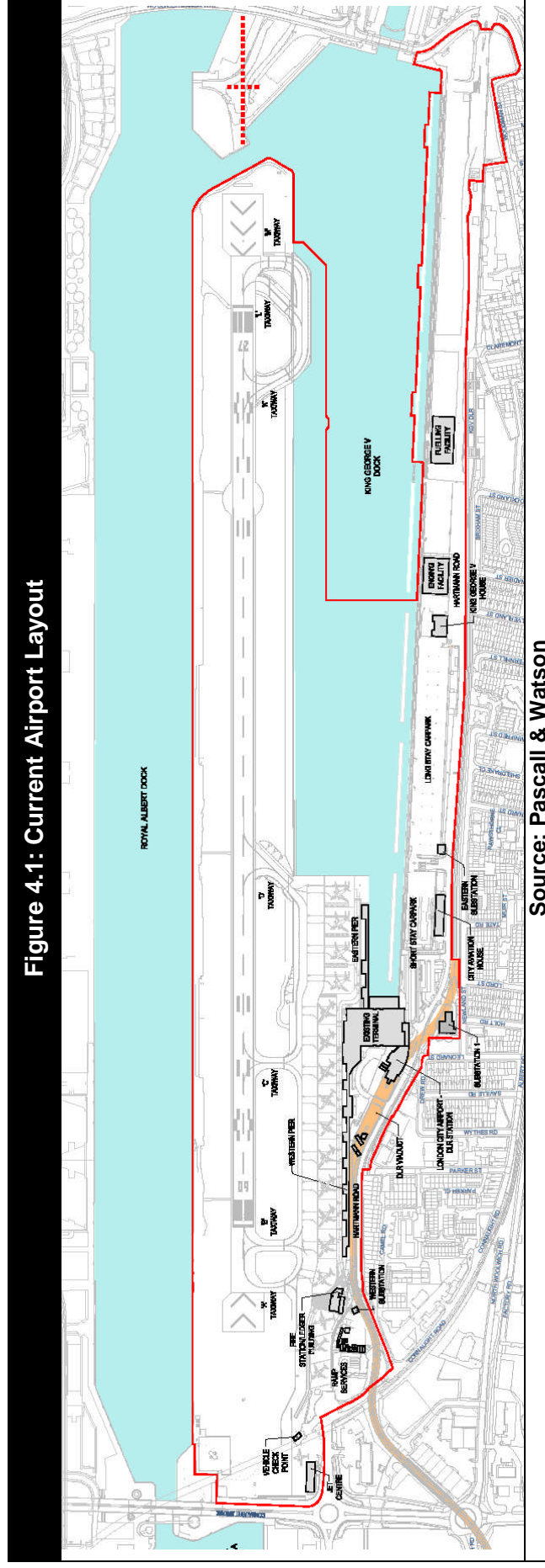


Source: York Aviation

4 AIRPORT INFRASTRUCTURE REQUIREMENTS

Current Airport Infrastructure

- 4.1 The existing Airport site extends to an area of 48.5 hectares. The Airport includes the runway, apron, main passenger Terminal Building, the Jet Centre and other operational buildings.
- 4.2 The runway, which is categorised Code 2C, is used by aircraft taking off and landing in an easterly (09) direction and westerly (27) direction. There are currently 17 stands for operational scheduled aircraft, including 4 larger stands to the east of the terminal that are capable of accommodating the largest aircraft currently operating at the Airport including the Airbus A318 (stands 21-24). Stands 12-14 are currently the most distant stands from the terminal and are served by busses rather than a passenger pier. Planning permission (ref 13/00267/FUL) was granted on 11th February 2013 to re-instate an 18th stand, which will be located adjacent to the Airport's Jet Centre. This replaces the previous Stand 11, which was lost when Stands 1 to 10 were realigned to optimise their use by the larger Embraer 170 and 190 aircraft.
- 4.3 There is no parallel taxi-lane and aircraft arriving on Rwy 09 or departing from Rwy 27, typically have to 'back-track' on the runway to take-off/taxi to the apron. A holding point for up to 3 aircraft exists at the eastern end of the runway.
- 4.4 As well as being restricted to using only the largest stands (21-24), larger Code C aircraft are too large to taxi past existing stands 1-10 for arrivals from Rwy 27 and departures on Rwy 09. These aircraft must enter/leave the runway at Link D, adjacent to stand 24 giving rise to additional back tracking on the runway. The existing Airport layout is shown in **Figure 4.1**. Link D lies at the eastern end of the existing apron area.



Note: the existing airport layout is also shown in the Planning Application Drawings forming part of the CADP1 planning submission. See Planning Application Drawing 1 – Site Plan.

- 4.5 The main passenger Terminal Building includes check-in facilities, ticket desks, security, a departure lounge, departure gate areas, domestic and international baggage reclaim, immigration and customs, shops and catering outlets. Works to refurbish the Terminal Building were completed in 2011 and included the introduction of additional security lanes and an upgraded check-in area. The compact nature of the main passenger Terminal, together with a commitment to service quality, allows the Airport to provide short check-in and boarding times in comparison with other airports, which is important to business passenger customers. The target transit time from entering the Airport to reaching the departure lounge is 20 minutes for departing passengers. Target arrival times are 15 minutes from disembarking the aircraft to leaving the passenger terminal. These times are often bettered. This customer proposition is an important part of the need for the proposed CADP1.
- 4.6 There are two passenger piers which connect the terminal to a number of the aircraft stands; the West Pier that includes small passenger lounges at ground floor and the East Pier was built more recently to serve stands 21-24.

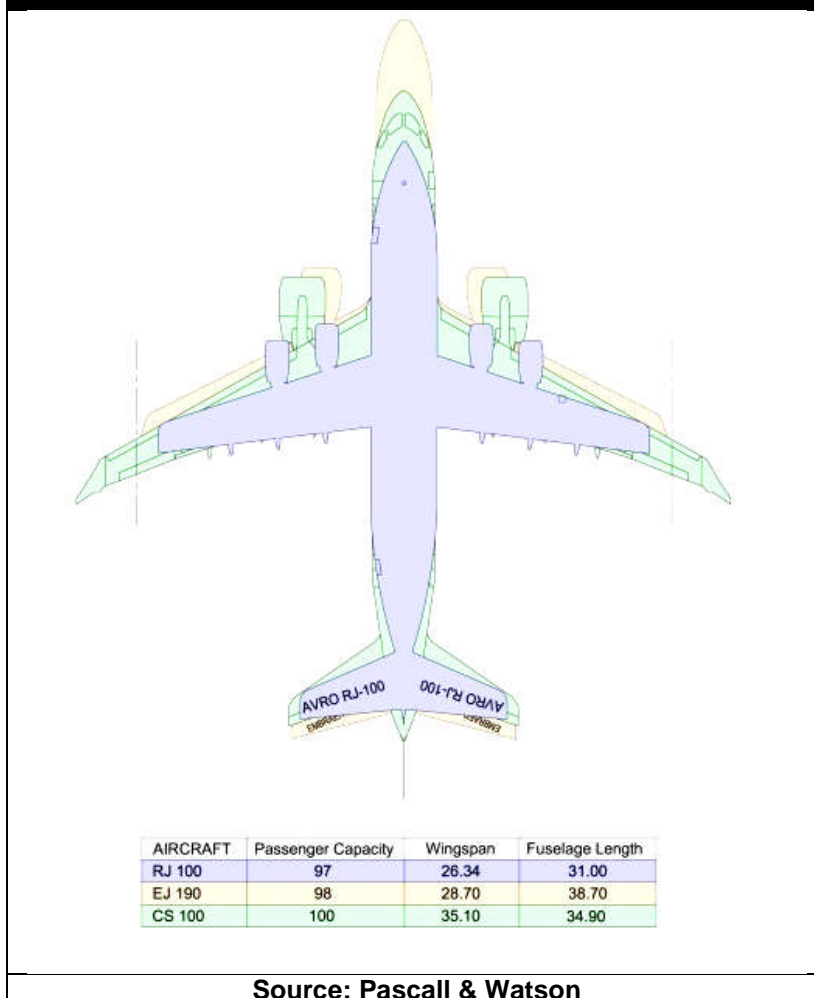
Current Airport Capacity

- 4.7 The current capacity of the Airport is limited by the available physical infrastructure. Detailed airport capacity assessments were carried out in 2008/9, following which the Airport was declared as Coordinated for slot allocation purposes, and again in 2011.
- 4.8 The capacity of the existing infrastructure is assessed as follows:
- i. **Runway** – 38 movements per hour, limited by the need for aircraft to backtrack along approximately half of the runway length when either landing or taking off;
 - ii. **Apron** – 18 aircraft stands⁵¹ equivalent to approximately 36 scheduled movements per hour, dependent on the mix of aircraft types and the turn around time of aircraft. Additional apron is available for business aviation movements associated with the Jet Centre;
 - iii. **Terminal** – approximately 1,500 passengers per hour in either direction (arriving and/or departing).

⁵¹ Once the replacement 18th stand is completed by the end of 2013.

- 4.9 Capacity is assessed as adequate to meet demand in the short term, although there are a number of level of service concerns which are being addressed by short term operational improvements within the existing terminal, including the proposed redevelopment of the West Pier aimed at improving levels of service for passengers departing from that pier. These schemes have no capacity implications.
- 4.10 There are three fundamental capacity issues in terms of the ability of the existing infrastructure to accommodate projected growth in demand:
- i. **Peaks** – as explained in Section 3 (Figure 3.10), detailed forecasts of passenger and aircraft movement demand have been prepared. Although there is expected to be some limited filling in of the off-peak period, additional peak period slots will be essential if the Airport is to be able to meet demand in its catchment area for services to key short haul business cities. New services, in particular, will need to operate at peak times as only the largest routes can support services outside of the peak, the limited niche leisure routes excepted. This drives the need for additional apron and runway capacity;
 - ii. **Planes** - the size of existing stands is not large enough to accommodate the anticipated size of new generation aircraft which the airlines will want to operate in future. New generations of aircraft are more fuel efficient and less noisy and, therefore, attractive to the airlines to operate. However, they are physically larger than those they will replace, particularly in terms of wingspan, even though when they come into operation they will not necessarily carry substantially more passengers. This is illustrated in **Figure 4.2** which compares the size of the new aircraft types, such as the C-Series (CS100) and Embraer 190 (EJ190) with the older British Aerospace RJ100 aircraft which they are expected to replace. In particular, SWISS has indicated that it intends to start to use the C-Series on all three of its routes to the Airport from 2016, all operating in the peak, which is a key driver of the timing for the proposed CADP1 as only two such aircraft can be accommodated within existing Stands 21-24 without the loss of a stand overall, with a consequent impact on airport capacity. Other airlines are expected to upgrade their aircraft using the Airport as outlined in paragraph 3.38;
 - iii. **Passengers** – the larger size of aircraft expected to be operating from the Airport will, nonetheless, carry some more passengers than the aircraft they replace over the medium term. Hence, there will be more passengers seeking to use the Terminal Building, particularly in the peak morning and early evening periods (Figure 3.11). These cannot be handled within the existing terminal whilst maintaining the fast transit time through the terminal expected by business travellers.

Figure 4.2: Comparison of Aircraft Size



4.11 The shift to larger aircraft is seen as inevitable. Whilst not necessarily carrying substantially more passengers than those they replace in the short term, they offer the airlines increased fuel efficiency as a result of extended wingspans to improve aerodynamic performance. This is already reflected in the changes which BA has made to its fleet at the Airport, replacing BAe-RJ aircraft with Embraer aircraft with, in the case of the E190, a larger wingspan. The dimensions of various aircraft types are shown in **Table 4.1**. Airlines are re-equipping their fleets more generally to attain greater operating efficiency. The Airport needs to be able to respond to airline customer demand, otherwise it risks losing services which are unlikely to be replaced as older aircraft types capable are phased out.

Table 4.1: Aircraft Size and Capacity				
Aircraft	Seats	Wingspan (m)	Length (m)	Height (m)
Existing				
Airbus A318	32 - 107	34.09	31.45	12.56
BAe 146 / RJ 100	82-112	26.21	30.99	8.61
Bombardier Dash 8 / Q400	70-78	28.42	32.84	8.36
Dornier Do328	33-39	20.98	21.22	7.24
Embraer 170	76	26.00	29.90	9.67
Embraer 190	98-112	28.72	36.24	10.28
Fokker F50	50	29.00	25.25	8.32
ATR-42	46-50	24.57	22.67	7.59
ATR-72	68-74	27.10	27.20	7.65
Saab 2000	50	24.76	27.28	7.73
Future				
Airbus A318	32 - 107	34.09	31.45	12.56
Embraer 170	76	26.00	29.90	9.67
Embraer 190	98-112	28.72	36.24	10.28
Bombardier Q400	78	28.42	32.84	8.36
ATR-42	46-50	24.57	22.67	7.59
Canadair C100	100-120	35.10	34.90	11.50

Capacity Assessment

- 4.12 Indicative busy day timetables have been developed for each of the forecast years and these have been used as a basis for assessing the capacity of each of the principal airport capacity elements. The surface access implications are considered in the separate Transport Assessment accompanying the proposed CADP planning submission.

Apron

- 4.13 The capacity of the apron has been assessed having regard to number of stands and limitations on the maximum size of aircraft which can use them. The current configuration provides for:
- i. 4 stands (21-24) capable of handling aircraft up to Airbus A318 size;

- ii. 8 stands capable of handling Embraer E190 aircraft and 2 stands capable of handling E170 aircraft (1-10);
- iii. 3 remote stands capable of handling aircraft up to E170 size (12-14)⁵².

The new stand to replace Stand 11 will be capable of handling aircraft up to ATR42 size.

4.14 Detailed assessment has shown that the existing apron is expected to be fully used in peak periods by 2014 and that areas of the Jet Centre apron will need to be used to accommodate long stopping and delayed aircraft. An airport would normally be expected to have 'buffer' aircraft parking available for aircraft which experience technical or other unforeseen delays over and above normal operational requirements amounting to approximately 10% of operational stand requirements. A key feature is that the Jet Centre apron is only able to be used by smaller aircraft and cannot be used by A318 or the anticipated C-Series aircraft. Any delayed aircraft of these types would need to be retained on the existing operational stands. Hence, the Airport currently lacks resiliency to accommodate delays, which can have consequences for robustness of the operation overall.

4.15 The capacity of the apron has been assessed and it is considered that shortage of stands will be a constraint on growth of services at the Airport from 2014. Additional operational stands will be required to accommodate growth, specifically in the critical morning and evening peak periods, and stands will need to be provided of appropriate dimension to accommodate an increasing number of larger Code C aircraft, such as the C-Series aircraft, including for delayed and long stopping aircraft over and above operational requirements.

Runway

4.16 The current capacity of the runway was assessed in detail in 2011 by National Air Traffic Services (NATS). The capacity was assessed as 38 movements per hour at an acceptable level of delay to the airlines set at 10 minutes on average over the peak period in common with the other coordinated airports serving London. To attain 38 movements per hour over a two hour peak period, adjacent hours need to operate at lower movement rates to mitigate delays.

⁵² Some additional restrictions affect the use of some stands by Q400 aircraft.

- 4.17 Given the current stand capacity, this runway capacity provides for up to 2 business aviation movements in the peak.
- 4.18 The runway capacity was assessed on the basis of the current mix of aircraft using the Airport and taking into account backtracking of aircraft on the runway as outlined above. Current operations of the A318 take place largely outside of peak periods so the additional backtracking by those aircraft has no impact on the peak period runway capacity.
- 4.19 Runway capacity is assessed as adequate until 2015, provided that there is no increase in larger Code C aircraft, requiring additional back tracking, operating in peak periods. The early introduction of such types would erode the achievable hourly runway movement rate by approximately 1 movement for every 2 such movements in the busy period, hence the need to address the runway capacity requirement before SWISS introduce 3 peak period services by such aircraft in 2016.
- 4.20 The assessment of runway capacity has taken into account existing airspace limitations in the London area, including the interaction with Biggin Hill and Southend airports. For the future, it is assumed that airspace development will keep pace with development in demand, in line with the CAA's objectives in the Future Air Space Strategy, namely *"it is intended that airspace will not become the restricting factor for the current or future operations of airspace users."*⁵³ It is understood that the London Airspace Management Programme (LAMP) is intended to ensure sufficient airspace capacity at least to meet the levels of demand set out in the Department for Transport's 2011 forecasts⁵⁴, which should ensure more than sufficient air space capacity to accommodate the Airport's growth as its growth up to 120,000 movements was assumed in the DfT's projections. LAMP is concerned with a wider redesign of airspace to support increased demand into the London area as a whole in the medium term. It is expected that NATS will consult on the implementation of airspace changes to support overall growth in late 2013 but it is not envisaged that there will be detailed changes to the approach and departure routes to and from the Airport.

⁵³ Civil Aviation Authority, Future Air Space Strategy for the United Kingdom 2011 to 2030, Executive Summary ES3.

⁵⁴ It should be noted that these demand forecasts were higher than the latest 2013 forecasts upon which the CADP projections are based.

- 4.21 Currently, the development of the LAMP proposals has not factored in the possibility of a new airport within the Estuary, which could have wider ramifications for airports in both the UK and Europe. NATS has stated publicly that any proposal for a new airport would require further changes to airspace design in the longer term but the implications of this cannot be anticipated at this time⁵⁵. In this context, the implementation of CADP will not directly impact on the ability to accommodate a new airport in the Estuary as airspace would need to be redesigned to accommodate a new airport in any event.

Terminal

- 4.22 Terminal capacity has been assessed using detailed simulation modelling which identifies critical capacity bottlenecks. **Figures 4.3** and **4.4** illustrate a 'traffic lights' summary of the facilities required to meet the projected demand to 2023 compared to the individual facility capacity which will be available following completion of the short term terminal optimisation works, comprising improvements to Immigration, baggage handling facilities and the West Pier. 'Green' indicates adequate capacity to meet the requirements of passengers allowing for the Airport's customer service proposition, 'Yellow' indicates a facility coming under capacity pressure and 'Red' indicates a facility operating at below an acceptable level of service. This assessment is on a Without Development basis.
- 4.23 This assessment shows that, subject to completion of the short term terminal optimisation works within the existing Terminal Building, terminal capacity is adequate in the short term but that, by 2014, capacity for departing passengers will be below an acceptable standard of service, particularly in terms of the capacity of the departure lounge. Whilst refurbishment of the West Pier may provide some relief in terms of providing space for passengers to proceed earlier to the gate areas, this will still leave inadequate space within the Terminal both for passenger amenity and to increase the retail and catering areas airside of the security to zone to maximise airport revenues. The West Pier is not of itself a capacity enhancing project.
- 4.24 Subject to the short term operational improvements, the need for additional space for arriving passengers is less critical but the arrivals concourse, which is shared with the departing passenger landside concourse will be operating at a less than adequate level of service from 2018 onwards. Baggage reclaim facilities will be less than adequate from 2018.

⁵⁵ See House of Commons Transport Committee, Transcript of Oral Evidence 10th December 2012,

**City Airport Development Programme
Need Statement**

Figure 4.3: Terminal Arrivals Capacity Without Development

Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45
Arrival Pax Peak	1,153	1,264	1,375	1,486	1,622	1,695	1,747	1,798	1,798	1,798	1,844
Facility	Baseline Capacity										
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	14	14
No. of Non-Contact Stands (20% of demand = OK)	3	3	3	3	6	6	7	8	8	9	9
Pier West Corridor											
Pier East Corridor											
Domestic Entry Channels											
CTA Entry Channel											
Immigration	12	8	9	9	9	10	10	10	10	11	11
Domestic Baggage Reclaim Belt	1	1	1	1	1	1	1	1	1	1	1
Domestic Baggage Pick-Off & Circulation											
International Baggage Reclaim Belt	2	2	2	2 (poss 3)	2 (poss 3)	2 (poss 3)	2 (poss 3)	3	3	3 (poss 4)	3 (poss 4)
International Baggage Pick-Off & Circulation											
Blue Channel Exit											
Green Channel Exit, (Customs Search Area)											
Domestic Channel Exit											
Arrivals Concourse, (Circulation & Meeting Zone)	400	288	300	312	325	374	398	409	412	416	430
Combined L/S Dep'l Circ' & Arr' Concourse Peak	400	364	384	404	425	507	523	539	553	566	581

Source: York Aviation

Note: Approximate passenger projections shown throughout are With Development.

Figure 4.4: Terminal Departures Capacity Without Development

Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45
Departure Pax Peak	1,030	1,164	1,298	1,432	1,614	1,733	1,733	1,733	1,746	1,758	1,785
Facility	Baseline Capacity										
Check-In Desks	17	18	19	21	21	22	22	23	23	24	24
Self-Service Check-In Kiosks											
Baggage Sortation & Make-Up											
Landside Departures, (Circulation & Dwelling)	96	104	112	121	134	140	143	146	148	150	153
Security Channels	5	5	6	6	6	7	7	7	7	8	8
Airside Departure Lounge	688	757	826	896	969	976	997	1,018	1,049	1,079	1,106
Boarding Gate Hold Rooms											
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	14	14
No. of Non-Contact Stands (20% of demand = OK)	2	3	3	3	6	6	7	8	8	9	9
Combined L/S Dep' Circ' & Arr' Concourse Peak	364	384	404	425	487	507	523	539	553	566	581

Source: York Aviation

Note: Approximate passenger projections shown throughout are With Development.

- 4.25 The analysis also reveals that contact stands, from which passengers can walk directly to aircraft, will be inadequate in the medium term. This is proposed to be addressed by the interim provision of enhanced coaching facilities, proposed as part of CADP1, until additional pier capacity can be built.

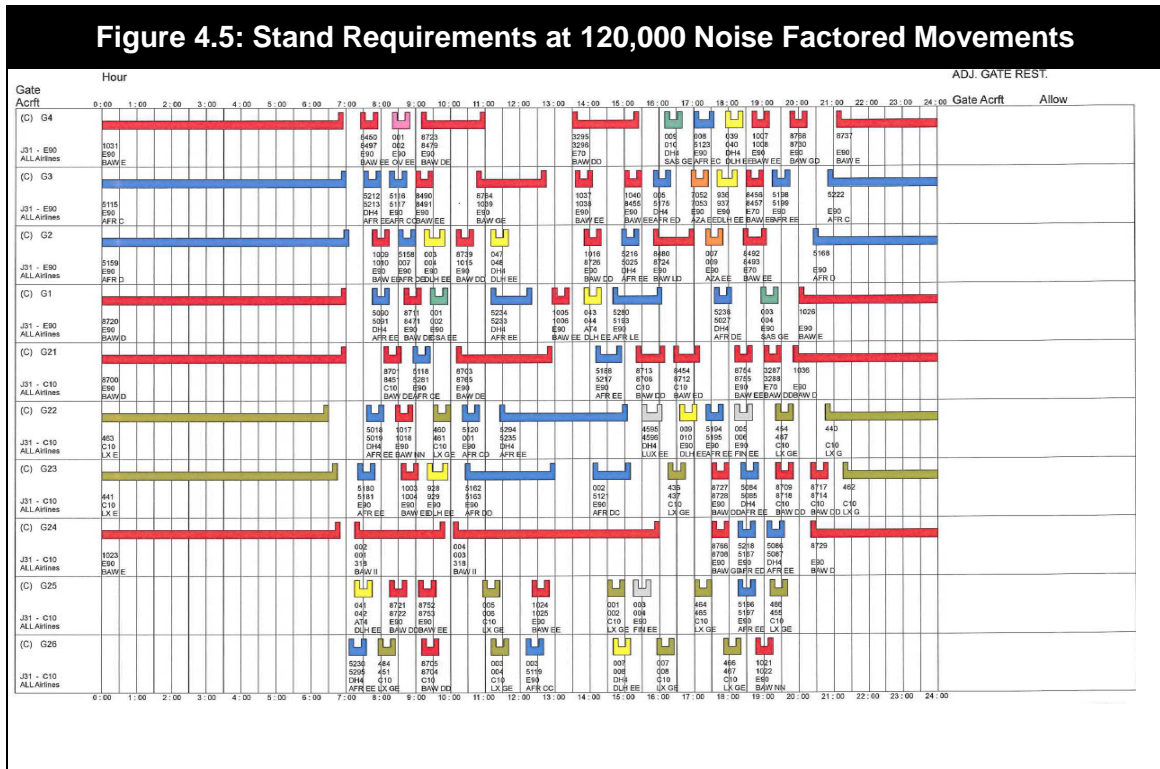
Capacity Required

- 4.26 In this section, the capacity required to meet demand is described based on two phases of development; the first equating to approximately 5 million passengers a year expected to be achieved by around 2019 and the ultimate capacity of approximately 6 million passengers a year expected to be achieved by around 2023.
- 4.27 The first phase of the CADP1 development will comprise 3 additional stands to the east, an extended parallel taxi-lane to provide one additional runway entry point further east, the first phase of the Western Terminal Extension, a temporary coaching facilities and a temporary extension to the outbound baggage handling area. The second phase will comprise a further 4 stands to the east, completion of the parallel taxi-lane and the eastern extension to the Terminal Building, along with demolition of the temporary coaching and outbound baggage facilities and upgrading of the existing stands 21-24

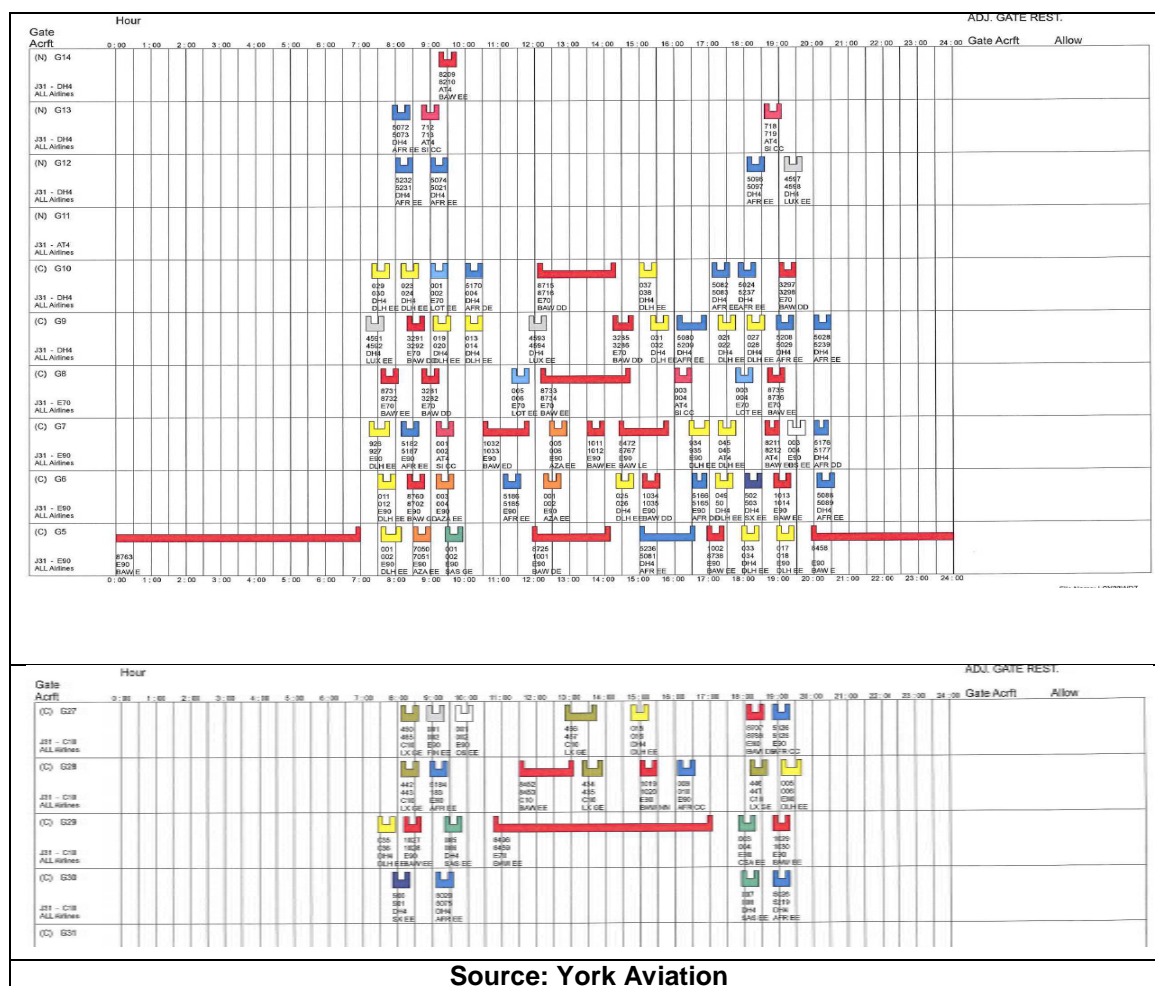
Apron

- 4.28 In the first instance, there is a requirement for a minimum of 3 additional stands, sized for larger Code C aircraft to meet demand in 2016. This would provide sufficient capacity until around 2019, assuming no other airlines introduce larger aircraft in this time frame. The need to accommodate larger aircraft in this time frame is critical given the stated intention of SWISS to change its fleet of aircraft operating to the Airport. Equally, the potential for other airlines to change to these physically larger types highlights the need for some flexibility in the provision of additional larger aircraft stands over and above the minimum assessed.
- 4.29 The number and size of stands that will be required to accommodate the predicted schedule of movements at the 120,000 noise factored limit in 2023 has been assessed in detail. As illustrated in **Figure 4.5**, the assessment is that there will be a requirement for 23 operational aircraft stands to handle a predicted runway movement rate of 45 scheduled movements per hour in the peak. This assessment assumes target operational turnaround times of 30 minutes and a buffer between operational movements on each stand of 15 minutes (to allow for normal delays).

- 4.30 In addition, a minimum of 2 stands will be required to provide an operational buffer for longer delays etc. As indicated above, by 2023, these will need to be of sufficient size to accommodate the larger Code C types.



City Airport Development Programme Need Statement



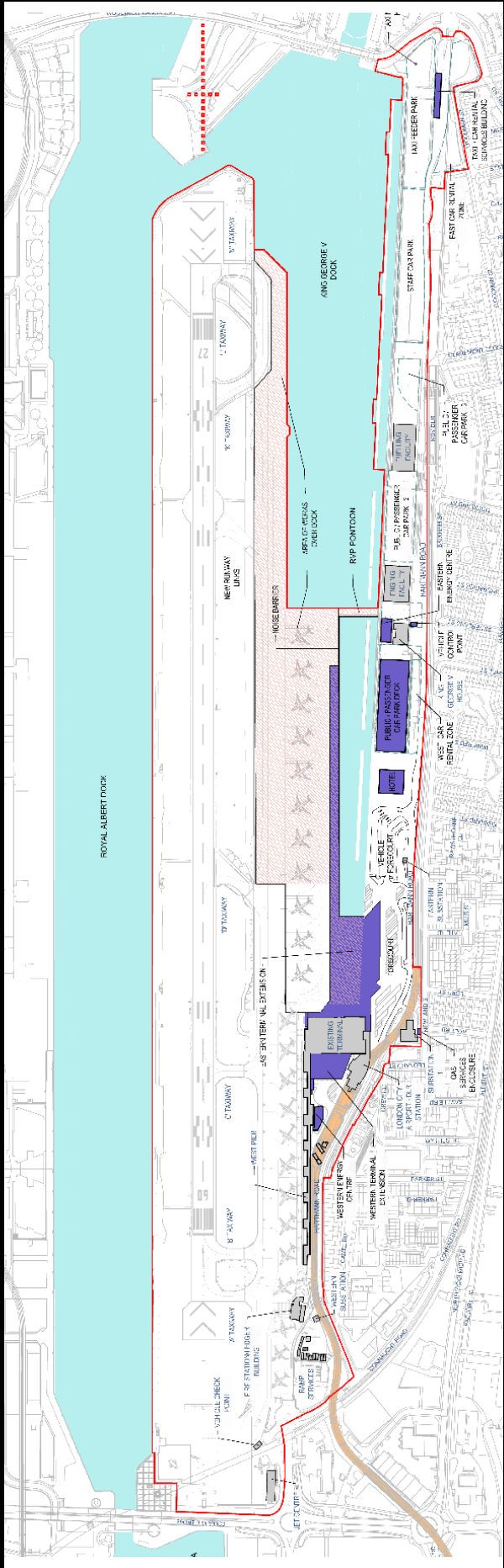
- 4.31 This amounts to a requirement for 25 stands to be available no later than 2023 compared to the 18 which will be available following replacement of Stand 11. A minimum of 7 of these stands will need to accommodate larger Code C aircraft, including the C-Series and the existing British Airways A318 operation. Given the uncertainties about the future rate of introduction of physically larger aircraft, it is considered prudent to construct all of the new stands, as well as to upgrade Stands 21-24, to accommodate these aircraft types compliant with Civil Aviation Authority requirements.

Runway

- 4.32 The hourly runway capacity required to accommodate predicted demand, based on the peaking of demand, is 45 movements per hour at 2023. This is in excess of the current runway capacity, even without the introduction of further backtracking from larger Code C aircraft which are unable to taxi on the existing taxi-lane in front of Stands 1-10.
- 4.33 Simulation modelling, using SIMMOD⁵⁶, has been undertaken in order to assess the extent of additional taxi-lane required. The future With Development configuration is shown in **Figure 4.6**. The analysis shows that an additional runway entry point, approximately two thirds of the way to the holding point between links D and K, will be required at Phase 1 to ensure sufficient runway capacity to meet demand beyond 2015 and the introduction of peak period operations by C-Series aircraft as planned by SWISS.

⁵⁶ SIMMOD is a detailed runway capacity simulation modelling tool developed initially for the Federal Aviation Administration in the USA and widely used globally to assess runway and taxiway capacity at airports.

Figure 4.6: Future Airport Layout With Development

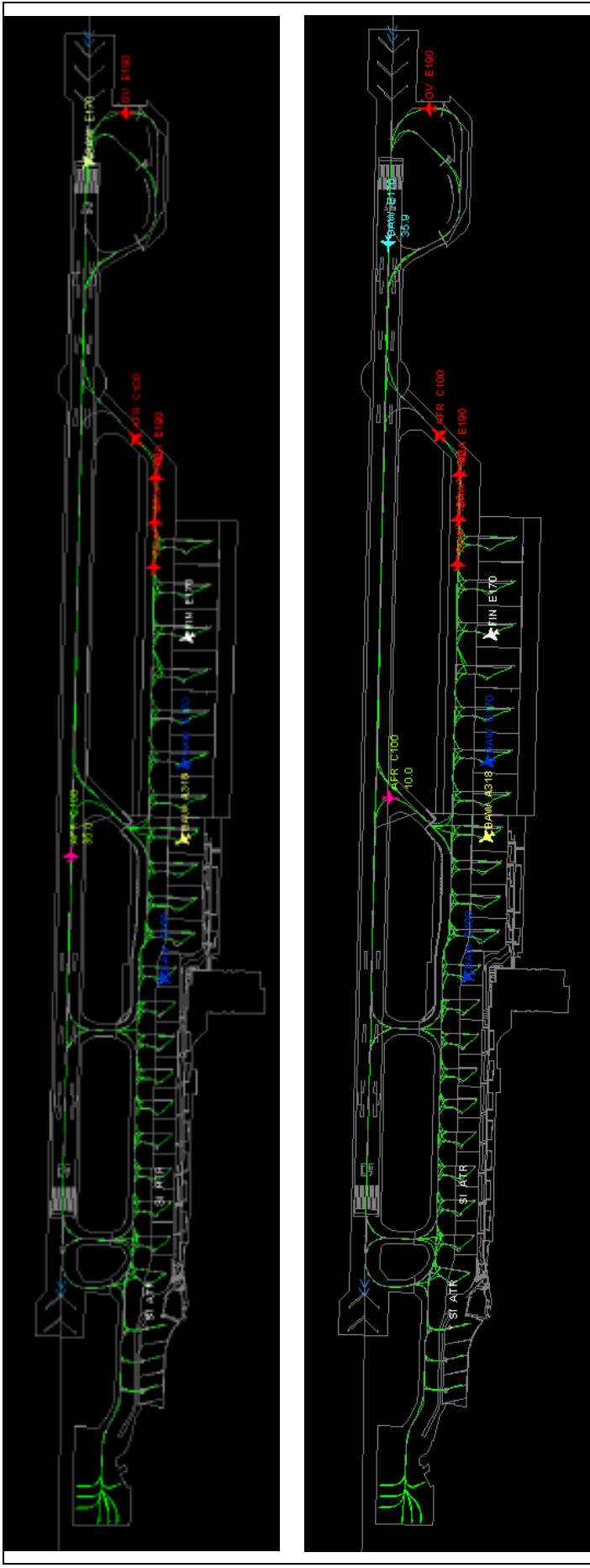


Source: Pascall & Watson

Note: See Planning Application Drawings Plan 4 – Illustrative Site Plan.

Figure 4.7: Runway Delays with Larger Code C Operations





- 4.34 Whilst it is assessed that the extension of the taxi-lane to provide one additional runway entry point would support a runway movement rate of around 45 movements per hour, as normal backtracking would be minimised, this does not take account of the impact of larger Code C aircraft and the consequent additional backtracking. **Figure 4.7** shows the implications of such additional backtracking under westerly runway operations. Aircraft shown in red represent those which are delayed and awaiting entry to the runway at 43 movements per hour and 5 larger Code C aircraft operating over the two peak hours. This shows the impact of a larger Code C aircraft landing and requiring backtracking on the runway. The number of aircraft delayed and the length of delays exceeds the acceptable level of service. The analysis also indicates that the impact will be greater when the runway operates in an easterly direction.
- 4.35 Whilst provision of a full parallel taxi-lane as part of the proposed CADP would increase runway capacity to up to 50 movements per hour, this is above the 45 movements per hour required in the absence of operations by larger Code C aircraft. However, the expected introduction of such aircraft and the required backtracking will erode the achievable movement rate to little more than 45 movements per hour on the basis of the forecast mix of aircraft. Taking into account the effect of additional backtracking, it is estimated that the maximum number of larger Code C operations which could be accommodated in each peak period without detriment to the required runway capacity would be 8, which forms the basis of the upside sensitivity test set out in Section 3.

Terminal

- 4.36 As described above, the terminal capacity required to meet demand at 120,000 noise factored movements in 2023 has been assessed. These facility requirements are illustrated in Figures 4.3 and 4.4. Further detail of the individual facility requirements is given in the Justification Statement prepared by Pascall and Watson appended to this Statement.
- 4.37 The Terminal has been sized at each phase of construction to meet critical capacity requirements. The first priority is to provide additional capacity for departing passengers and to improve the airside retail and catering offer, as well as providing a sufficient zone for security processing. Hence, it is proposed to construct the Western Extension to the Terminal building as part of the first phase of development.

- 4.38 The provision of additional aircraft stands to the east will initially increase the number of aircraft movements to be handled remotely by bus. The proposed temporary Coaching Facility will be required until such time as the East Pier is extended, expected to be as part of the development of the extended Terminal Building in Phase 2. In addition, some temporary enhancement of baggage handling facilities for departing baggage will also be required in the medium term. These will ultimately be incorporated within the extended Terminal Building in phase 2.
- 4.39 The principal drivers for the second phase of CAPD1 will be the requirement to provide additional pier capacity to maintain levels of service as the number of peak hour aircraft movements builds up, the need for additional baggage reclaim capacity including an increase in the number of belts and passenger pick off space, and additional concourse space landside by separating arriving and departing passengers. This creates space to increase landside facilities for passengers and for meeters and greeters.
- 4.40 In **Figures 4.8, 4.9, 4.10 and 4.11**, the terminal capacity assessment is illustrated on the basis of completion of Phase 1 (Interim CADP) in 2016/7 and Phase 2 (Complete CADP) in 2021, albeit the precise timing of Phase 2 is dependent on the actual rate of growth. Figures 4.8 and 4.9 show the position following completion of Phase 1 and Figures 4.10 and 4.11 following the full development. Whilst there is a degree of surplus terminal capacity in some facilities on completion of Phase 2, other facilities will be reaching full capacity at that throughput. Where potential spare capacity is provided by Phase 2, this is because it is not possible to provide smaller increments of capacity, for example in terms of the number of baggage reclaim units. The available spare capacity would, in practice, allow a very small uplift in passengers handled if a greater number of larger aircraft are introduced more quickly or post-2023 in line with the upside sensitivity test presented. Ultimately, the capacity of the Airport will be limited by apron and runway capacity within the overall consented annual movement limit.

Figure 4.8: Terminal Arrivals Capacity With Development Phase 1

Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45
Arrival Pax Peak	1,153	1,264	1,375	1,486	1,622	1,695	1,747	1,798	1,798	1,798	1,844
Facility	Baseline Capacity										
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	14	14
No. of Non-Contact Stands (20% of demand = OK)	3	3	3	3	6	6	7	8	8	9	9
Pier West Corridor											
Pier East Corridor											
Domestic Entry Channels											
CTA Entry Channel											
Immigration	12	8	9	9	9	10	10	10	10	11	11
Domestic Baggage Reclaim Belt	1	1	1	1	1	1	1	1	1	1	1
Domestic Baggage Pick-Off & Circulation											
International Baggage Reclaim Belt	2	2	2	2 (poss 3)	2 (poss 3)	2 (poss 3)	2 (poss 3)	3	3	3 (poss 4)	3 (poss 4)
International Baggage Pick-Off & Circulation											
Blue Channel Exit											
Green Channel Exit, (Customs Search Area)											
Domestic Channel Exit											
Arrivals Concourse, (Circulation & Meeting Zone)	400	288	300	312	325	387	398	409	412	416	430
Combined L/S Dep'l Circ' & Arr' Concourse Peak	400	364	384	404	425	507	523	539	553	566	581

Source: York Aviation

**City Airport Development Programme
Need Statement**

Figure 4.9: Terminal Departures Capacity With Development Phase 1												
Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7	
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45	
Departure Pax Peak	1,030	1,164	1,298	1,432	1,614	1,733	1,733	1,733	1,746	1,758	1,785	
Facility	Baseline Capacity											
Check-In Desks	19	17	18	19	21	22	22	23	23	24	24	
Self-Service Check-In Kiosks	24											
Baggage Sortation & Make-Up												
Landside Departures, (Circulation & Dwelling)	400	96	104	112	121	134	140	146	148	150	153	
Security Channels	8	5	5	6	6	7	7	7	7	8	8	
Airside Departure Lounge	800	688	757	826	896	969	976	1,018	1,049	1,079	1,106	
Boarding Gate Hold Rooms	90											
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	14	14	
No. of Non-Contact Stands (20% of demand = OK)	3	2	3	3	6	6	7	8	8	9	9	
Combined L/S Dep' Circ' & Arr' Concourse Peak	400	364	384	404	425	487	507	539	553	566	581	
Source: York Aviation												

Source: York Aviation

Note: This assumes that the upgrading of the West Pier to ensure adequate gate room levels of service, although there would be no impact on overall capacity should the West Pier works not be completed.

Figure 4.10: Terminal Arrivals Capacity With Development Phase 2

Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45
Arrival Pax Peak	1,153	1,264	1,375	1,486	1,622	1,695	1,747	1,798	1,798	1,798	1,844
Facility	Baseline Capacity										
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	21	21
No. of Non-Contact Stands (20% of demand = OK)	3	3	3	3	6	6	7	8	8	2	2
Pier West Corridor											
Pier East Corridor											
Domestic Entry Channels											
CTA Entry Channel											
Immigration	12	8	9	9	9	10	10	10	10	11	11
Domestic Baggage Reclaim Belt	1	1	1	1	1	1	1	1	1	1	1
Domestic Baggage Pick-Off & Circulation											
International Baggage Reclaim Belt	2	2	2	2 (poss 3)	2 (poss 3)	2 (poss 3)	2 (poss 3)	3	3	3 (poss 4)	3 (poss 4)
International Baggage Pick-Off & Circulation											
Blue Channel Exit											
Green Channel Exit, (Customs Search Area)											
Domestic Channel Exit											
Arrivals Concourse, (Circulation & Meeting Zone)	400	288	312	325	374	387	398	409	412	416	430
Combined L/S Dep' Circ' & Arr' Concourse Peak	400	364	404	425	487	507	523	539	553	566	581

Source: York Aviation

Figure 4.11: Terminal Departures Capacity With Development Phase 2

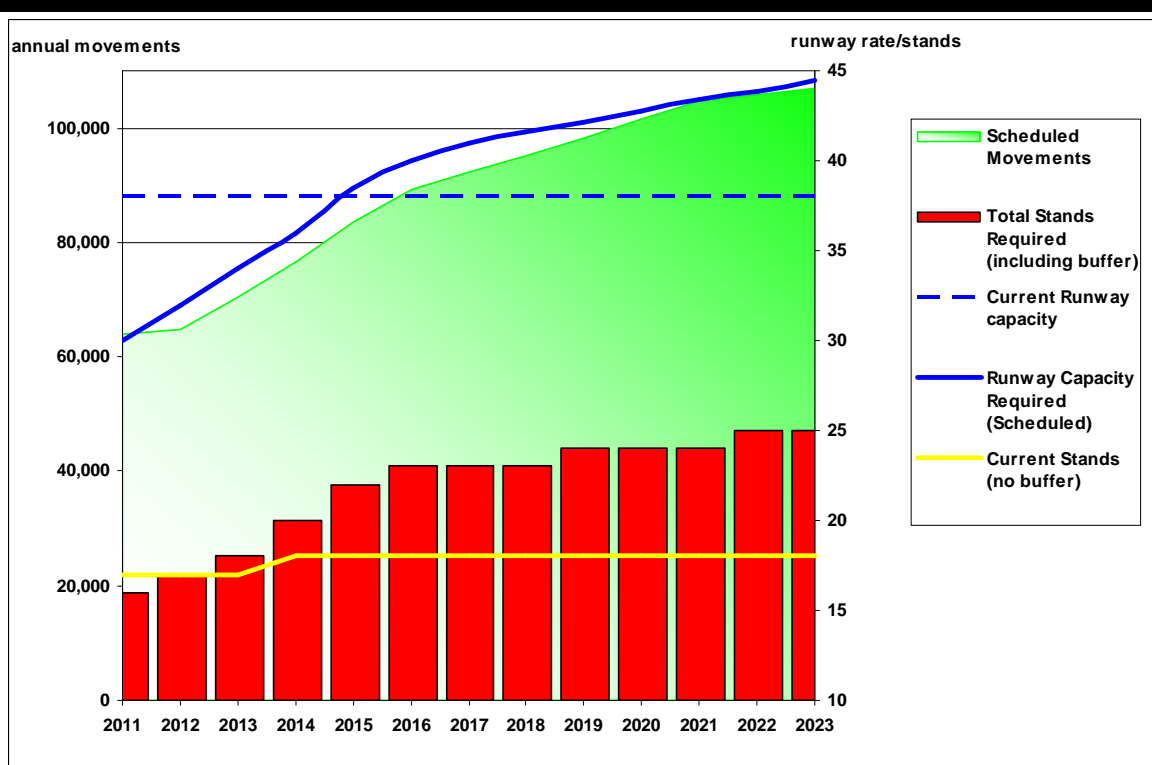
Forecast Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MPPA	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.7
Peak RWY Rate (Commercial Flights)	32	34	36	38	41	43	43	44	44	45	45
Departure Pax Peak	1,030	1,164	1,298	1,432	1,614	1,733	1,733	1,733	1,746	1,758	1,785
Facility	Baseline Capacity										
Check-In Desks	17	18	19	21	21	22	22	23	23	24	24
Self-Service Check-In Kiosks											
Baggage Sortation & Make-Up											
Landside Departures, (Circulation & Dwelling)	96	104	112	121	134	140	143	146	148	150	153
Security Channels	5	5	6	6	6	7	7	7	7	8	8
Airside Departure Lounge	688	757	826	896	969	976	997	1,018	1,049	1,079	1,106
Boarding Gate Hold Rooms											
Numbers of Contact Gates	14	14	14	14	14	14	14	14	14	21	21
No. of Non-Contact Stands (20% of demand = OK)	2	3	3	3	6	6	7	8	8	2	2
Combined L/S Dep' Circ' & Arr' Concourse Peak	364	384	404	425	487	507	523	539	553	566	581

Source: York Aviation

Summary

4.41 **Figure 4.10** summarises the airfield capacity required and the timing related to the scheduled movement demand forecasts. As can be seen the Airport will be constrained by stand capacity in the very near future and by runway capacity by 2016 on the basis of the anticipated rate of introduction of larger Code C aircraft.

Figure 4.10: Scheduled Movement Demand and Airfield Capacity Required



Source: York Aviation

4.42 The terminal capacity assessment set out in Figures 4.3 and 4.4 demonstrates a requirement for the Western Terminal extension at approximately 4 million passengers per annum and for the new Eastern Terminal Extension at around 5 million passengers per annum, although the precise timing needs to be kept under review in the light of changes in airline fleets.

- 4.43 At the end of the CADP1 development, the Airport will ultimately be constrained again by runway, apron and terminal capacity in the critical elements which have been sized to accommodate approximately 6 million passengers a year and 120,000 noise factored movements based on the expected aircraft mix at 2023.

5 ECONOMIC RATIONALE

Introduction

- 5.1 This section sets out an overview of the economic need for the development. Further details are given in Chapter 7 of the Environmental Statement accompanying the CADP1 planning submission. In this section, the wider economic role which the Airport plays in London's economy is explained as well as its contribution to regeneration more locally. This provides a context for the need for CADP1.

The Airport's Contribution to the Wider Economy

- 5.2 The economic need for the development is founded in the important role which the Airport plays in serving the air travel needs of the City of London, Canary Wharf, Central London and East London. The importance of the Airport is illustrated by the catchment area which it serves, as described in Section 3. The wider role which the Airport plays draws to a large extent on the characteristics of the passengers using it.

Characteristics of Current Passenger Demand

- 5.3 Section 3 has identified that 54% of passengers using the Airport in 2012⁵⁷ were travelling for business reasons, with 60% of all trips being inbound to London. This proportion is expected to increase again in future. **Table 5.1** shows the distribution of business passengers by socio-economic groups using London airports in 2012. Around 58% of business passengers using the Airport were from socio-economic groups A and B, which is higher than for any other London airport. A/B represents higher and intermediate managerial groups; C1 represents supervisory and junior managerial groups; C2 represents skilled manual workers; and D/E represents semi-skilled and unskilled manual workers, as well as state pensioners and the unemployed.

⁵⁷ Albeit this was depressed as a consequence of the Jubilee and Olympics.

Table 5.1: Business Passenger by Socio-Economic Group				
Airport	A/B	C1	C2	D/E
London City	58.3%	32.7%	5.6%	3.3%
Heathrow	46.1%	39.5%	8.5%	5.9%
Gatwick	37.0%	39.9%	15.8%	7.3%
Stansted	28.9%	44.8%	15.7%	10.6%
Luton	37.9%	36.3%	14.7%	11.1%
Source: CAA Survey				

- 5.4 The importance of London City Airport needs to be seen within the context of overarching policies seeking to rebalance the growth of London's economy towards the East. The Airport opened in 1987 and was an essential part of the proposition that has brought much needed inward investment to the area. Its development has been symbiotic with the creation of the second centre for the financial services sector in Canary Wharf. The Airport is strategically located in the heart of East London and is well placed to meet the needs of the growing economic base that is developing there, not only the financial services outpost at Canary Wharf but also in the wider Thames Gateway region. The presence of an airport on the doorstep has been and is a strong selling point for inward investors.
- 5.5 In February 2011, the Airport published a report by York Aviation⁵⁸ which set out to assess the value of the economic activity that would not have been attracted to London in the absence of the Airport and on the wider economic activity that the Airport facilitates. The aim was also to present evidence on the key role which London City Airport has played in the economic and social development of the Docklands and the wider London economy. The key findings of this report are summarised in the following paragraphs, with figures updated from 2008 to 2012 based on the latest CAA survey data available.

⁵⁸ The Impact of London City Airport on the Economy of Docklands and London, York Aviation, February 2011.

Supporting Inward Investment

- 5.6 The Airport is highly valued by its business users and companies across East London and the City and is an important part of making London an ideal base for European and Global operations. In 2012, an estimated £239 million worth of business travel passed through the Airport. Although it is difficult to isolate its effect on GVA within the broader growth of the Docklands area, the potential impacts are clearly highly significant. For instance, updating the figures in the February 2011 report to 2012 values, it is estimated that the presence of London City Airport supports:
- i. 5% of the location or expansion of economic activity at the financial and business services cluster at Canary Wharf amounting to £600 million of GVA;
 - ii. 1% of the location or expansion of financial and business services activity in the City of London amounting to £350 million of GVA;
 - iii. 5% of the growth and expansion of ExCeL amounting to £80 million of GVA.
- 5.7 The importance of the accessibility which the Airport brings is evidenced by the recent attraction of substantial foreign investments into the area, including the proposed development of a Chinese/Asian Business Park at the Royal Albert Docks, the development of the headquarters of the Indian Sahara Group at the University of East London at the Royals and the proposed development of an innovation and technology centre at Silvertown Quays. In the context of this investment, the Deputy Mayor of London, Sir Edward Lister, is reported as stating that the area would draw significant development over the next few years linked to growth at the airport, noting in particular that:
- “You have an airport that is so well connected to Europe. It’s a great location for commercial premises and other businesses that need quick communications into Europe.”⁵⁹*
- 5.8 In addition, in 2012, passengers departing from the Airport paid in excess of £22 million in Air Passenger Duty to the Exchequer.

⁵⁹ Financial Times, 11th May 2013.

Driving Business Productivity

- 5.9 The Airport's location, its easy and rapid accessibility from its key markets, such as the City of London, Canary Wharf and Westminster, and its focus on a streamlined service for business travellers enables companies and individuals to use time and resources effectively, thereby driving business productivity.
- 5.10 In 2012, around 1.6 million business passengers saved time worth an estimated £43 million in surface access time by using the Airport rather than Heathrow. Furthermore, these passengers saved a further £30 million of time through the streamlined passenger processing and short check-in times at the Airport. This equates to an estimated total time saving benefit of around £73 million in a single year. This convenience and streamlined processing has made the Airport a preferred choice for time sensitive, high value added individuals. This is apparent from analysis of the CAA Passenger Survey for 2012, which identifies that the average income of business passengers at London City Airport is around £92,000, 41% higher than the next nearest London airport, Heathrow.⁶⁰

Gateway for Inbound Tourism

- 5.11 London City Airport has not only been an important catalyst in making East London a viable and attractive place to do business and to visit, it has been and continues to be an important gateway for overseas visitors. Around 540,000 business visitors came to London through London City Airport in 2012, contributing around £347 million in consumer expenditure to the economy. Similarly, around 360,000 visitors used London City Airport to come to London either to visit friends and relatives, or for a holiday. These visitors contributed an estimated £192 million in consumer expenditure to the economy.

Levering Transport Investment

- 5.12 London City Airport was a significant factor in the impetus to construct and extend the Docklands transport network, especially in the decision to extend the Docklands Light Railway (DLR) to the Airport and then on to Woolwich Arsenal. The DLR extension south of the river would not have been constructed without the stimulus that the Airport provided to opening the line. The result is that many new sites along this route have been opened up for regeneration opportunities. Progress has been made with a number of sites such as Minoco Wharf, and Barrier Park East.

⁶⁰ Further detail on the calculation of these wider benefits is given in Chapter 7 of the ES.

- 5.13 The Airport has also been instrumental in improving bus services linking North Woolwich and Silvertown to Plaistow and Stratford and in the provision of a 24 hour service that links Manor Park and East Ham to Canning Town. There are also a considerable number of taxis serving the Airport and driving into and out of the local area as a result of the Airport's presence.
- 5.14 An efficient transport network also facilitates access to jobs for local people and extends the catchment area for jobs in East London. Without the stimulus of the Airport, the DLR extension across the river would not have been viable and access to jobs north of the river for those living in Greenwich and Bexley would have remained much more difficult. The Airport is now part of the web of transport connectivity that is opening up East London as an increasingly attractive place to be located, both for business and as a place to live.

Jet Centre

- 5.15 The Airport's proximity to Canary Wharf and the City makes it an ideal point of departure and arrival for business aviation users and there were around 5,700 business aviation movements at the Airport in 2012. The Airport's Jet Centre provides a dedicated facility for business aviation users close to the heart of London financial districts. The Jet Centre at the Airport is therefore providing an economically important package of services for business aviation users and is the only Fixed Base Operator (FBO) in the heart of London. This makes it a key attraction to the users of corporate aircraft being only six miles from the heart of London with easy access to the City and Canary Wharf.

Quantifiable Impacts

- 5.16 The assessment is based on the most recently available employment data from the Airport's records as well as research undertaken by York Aviation for the Airport, including the Economic Impact Report and Social Survey for the Airport on 'The Economic Significance of London City Airport' in late 2010⁶¹.

⁶¹ These are appended to the Environmental Statement.

- 5.17 A 'Core Study Area' was defined for the purposes of examining employment impact, based on definitions in the Airport's Section 106 Agreement (dated 9th July 2009) which indicates the area which could be expected to experience the greatest economic impact from the Airport. This area encompasses Barking and Dagenham, Bexley, Greenwich, Hackney, Havering, Lewisham, Newham, Redbridge, Southwark, Tower Hamlets, and Waltham Forest, as well as the District of Epping Forest.

Economic Context

- 5.18 The context for the assessment of the economic benefits which development at the Airport would bring is the current state of the local economy, based on the Local Area as defined in the existing Section 106 Agreement.
- 5.19 The population of Newham, from which 27% of airport employees are drawn, was estimated to be around 311,000 in 2012⁶² and the Newham Local Economic Assessment 2010 to 2027 notes that it is one of the most diverse in the country, with some 70% of residents from Black and Ethnic Minority (BAME) backgrounds. The population is set to grow by approximately 50% over the next 20 years⁶³. There are approximately 80,000 jobs in the Borough, but a job density (ratio of jobs to population) of only 0.50, as opposed to 0.88 in London as a whole. The Local Economic Assessment also notes that Newham fails to achieve its potential in terms of productivity, employment and business turnover, given its size and proximity to central London.
- 5.20 The average unemployment claimant count for the Local Area, from which 61% of airport employees are drawn, was 4.6% at the end of the year December 2012, slightly lower than in 2010 and 2011, although higher than for London as a whole (3.9%) and higher than the UK average (3.7%). Newham's rate in December 2012 was 5.0%. Tower Hamlets had a claimant count percentage of 5.6% in December 2012, Greenwich 4.5% and Barking & Dagenham's was the highest in the Study Area at 6%.

⁶² ONS mid-year population estimate from Nomis.

⁶³ Newham Local Economic Assessment 2010 to 2027, paragraph 1.8.

- 5.21 Low skills are also a barrier to getting into work and to raising productivity. The Core Study Area had a lower percentage of qualified people of working age in NVQ Level 1 and 2 when compared with London as a whole, and a higher percentage of people with no qualifications at all. Newham had the lowest percentage of the working age population with qualifications (15.3%), with Barking & Dagenham having 13.9% and Tower Hamlets 13.4%, much higher than the London and UK averages. It is in this context that the employment generated by the Airport is particularly important.
- 5.22 The Airport takes steps to ensure that jobs at the Airport are accessible to local people. The Airport has set up various initiatives to support local people into work and maintain links with local employment organisations such as Newham Workplace, Skillsmatch Tower Hamlets and Greenwich Local Labour & Business. The Airport also delivers a number of employment-related programmes and activities to local jobseekers to support their job applications. The Airport launched 'Take Off Into Work' (TOIW) in March 2009 with the objective of significantly increasing the number of Newham applicants for jobs at the Airport. The project is managed through 'Newham Workplace' which helps unemployed Newham residents to engage with employers. The Airport also invests in its employees by making comprehensive training and development programmes available to its staff.

Baseline Employment

- 5.23 The employment (rounded to the nearest 10) and GVA estimates at London City Airport for 2012 are summarised in **Table 5.2**. Terminal passenger throughput in 2012 was 3.03 million which implies a baseline employment density in 2012 of 626 onsite FTE jobs per million passengers. Of those direct (on and offsite) employees working at the Airport in 2012, it is estimated, based on security pass data provided by the Airport, that 27% were resident in Newham and 61% were resident in the Local/Study Area as a whole as defined in paragraph 5.17.

Table 5.2: Baseline Employment			
	Direct	Indirect & Induced	Total
Jobs (FTEs)	1,900	570	2,470
GVA (£million)	£84.3	£25.3	£109.6
Source: York Aviation			

Social Impact

- 5.24 The social impacts of the Airport on its surroundings are to a large degree bound up with the economic impact detailed above. However, impacts on the social dimension extend beyond the economic into issues of everyday experience and evaluation. The local community's perception of the social importance of the Airport was evaluated in a survey undertaken by McCallum Layton for the Airport in September 2010. It is clear from the survey results that the local area in which the Airport is located continues to gain in popularity as a place to move into, with a relatively high proportion of residents having recently moved into the area. The Airport was viewed more as a positive than a negative when considering a move into the area. Noise continues to be a factor in people's perceptions of the area, even though only 2.1% mentioned aircraft noise when asked unprompted which factors had got worse over the last 25 years.
- 5.25 Improvements to the local surface transport infrastructure and frequency of service were by far the most valued improvement. It is also significant that a substantial proportion (80%) of respondents expressed a positive opinion that the Airport had played a role in encouraging transport improvements that benefited local people. The most commonly cited example was the DLR extension to Woolwich. A substantial proportion of respondents also felt that the Airport was important for bringing people in to visit East London and that the Airport is supportive of the wider London economy.
- 5.26 Overall, the Airport appears to have served two distinctive roles: longer term residents recognise that the Airport has brought economic, social and infrastructure improvements to the area, although they do not place high direct value on the proximity of the Airport. More recent residents recognise the Airport's in economic and residential growth and the role it has played in drawing people into the area to live and work.

Economic Impact of the Development

- 5.27 **Table 5.3** sets out the estimated employment impact in 2019, 2021 and 2023 With and Without Development. The projections are rounded to the nearest 10.

Table 5.3: Employment Impact With and Without Development			
Without Development (FTEs)			
	Direct	Indirect & Induced	Total
Baseline (2012)	1,900	570	2,470
2019	2,190	660	2,840
2021	2,220	670	2,890
2023	2,160	650	2,810
With Development (FTEs)			
	Direct	Indirect & Induced	Total
Baseline (2012)	1,900	570	2,470
2019	2,570	770	3,340
2021	2,790	840	3,630
2023	2,860	860	3,720
Net Employment Impact (FTEs)			
	Direct	Indirect & Induced	Total
2019	380	110	500
2021	570	170	740
2023	700	210	910
Source: York Aviation (figures may not sum due to rounding)			

- 5.28 The proposed CADP1 will support an additional 960 direct onsite FTE jobs compared with the baseline level of direct onsite FTE jobs related to the operation of the Airport and an additional 1,250 FTE jobs when the indirect and induced created in the local area are included. There will also be growth in indirect and induced employment. The CADP1 will support an additional 700 direct onsite FTE jobs in 2023 when compared to the Without Development case, and an additional 910 FTE jobs overall, including indirect and induced jobs, in 2023. This increase in employment will make a significant contribution to regeneration in Newham and the surrounding areas and contribute to the achievement of policies to promote increased employment.
- 5.29 When the employment impact of the proposed hotel (CADP2) is taken into account, the total additional employment created in the local area compared to 2012 is approximately 1,500 jobs.
- 5.30 **Table 5.4** sets out the impact of the development of Gross Value Added (GVA) in the local area.

Table 5.4: GVA Impact With and Without Development			
Without Development (GVA £millions)			
	Direct	Indirect & Induced	Total
Baseline (2012)	£84.3	£25.3	£109.6
2019	£113.3	£34.0	£147.3
2021	£119.8	£35.9	£155.7
2023	£121.0	£36.3	£157.3
With Development (GVA £millions)			
	Direct	Indirect & Induced	Total
Baseline (2012)	£84.3	£25.3	£109.6
2019	£132.9	£39.9	£172.8
2021	£150.4	£45.1	£195.5
2023	£160.3	£48.1	£208.4
Net Employment Impact (GVA £millions)			
	Direct	Indirect & Induced	Total
2019	£19.6	£5.9	£25.4
2021	£30.6	£9.2	£39.8
2023	£39.3	£11.8	£51.0
Source: York Aviation			

- 5.31 The proposed CADP1 will support an additional £98.8m of GVA in the Study Area by 2023 compared with the current impact. The additional impact at 2023 with the proposed development, compared with no development, is £51m. Hence, the proposed CADP1 will make a material contribution to economic growth in the area and to reducing disparity to the economy of the rest of London.

Airport Related Development

- 5.32 In addition to the beneficial effects from the development of infrastructure at the Airport to enable to realise the potential of its consented 120,000 noise factored movements, there will be beneficial social and economic effects from the airport related development, including the Hotel on land to the south of King George V Dock, as included in the CADP2 application. These effects are set out further in the Planning Statement, although the employment impact of the hotel is included above.

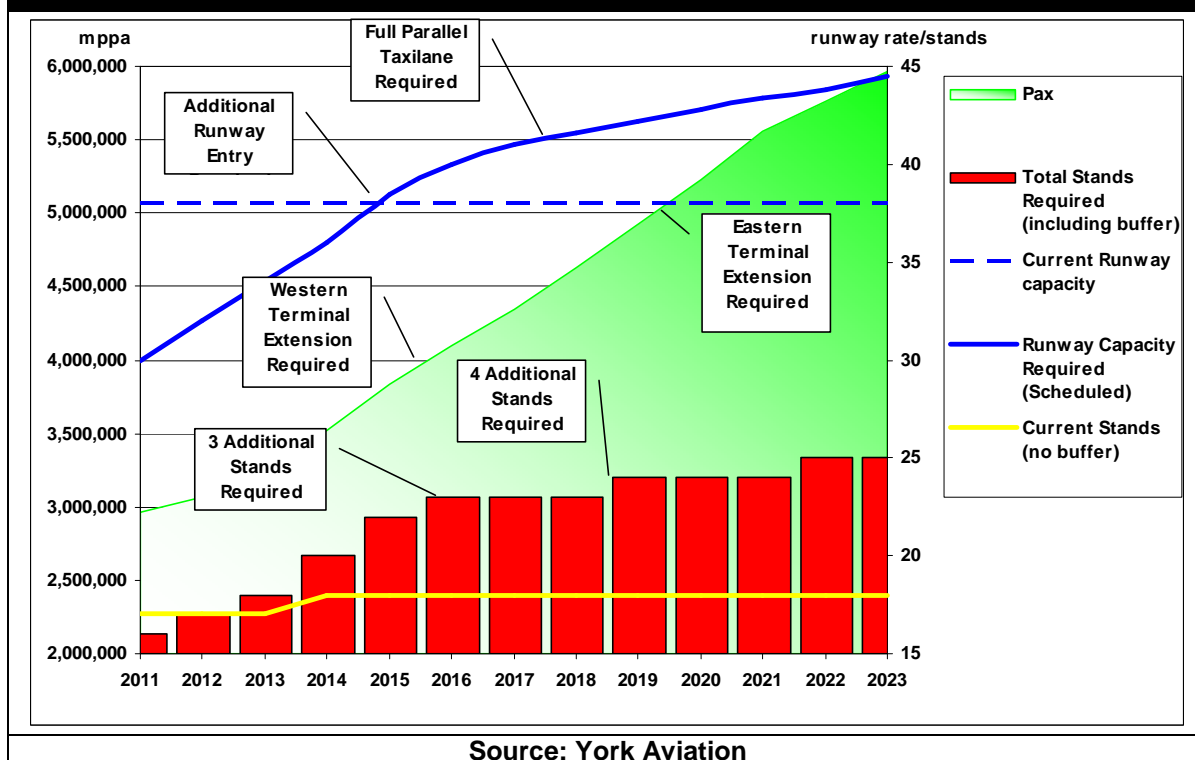
Wider Impact of the Development

- 5.33 London City Airport is now an integral part of the East London proposition, supporting the business community in Canary Wharf, the City of London and elsewhere and the continuing regeneration of the Royal Docks. The continued development of the Airport and the changing face of the Royal Docks have been concurrent and, although it could not be claimed that the regeneration of the Royal Docks and the establishment of the strong business and financial services cluster at Canary Wharf was only made possible because of the existence of the Airport, it is clear that confidence to invest has been underpinned in part by the Airport's presence and growth. Without the Airport, the costs to business and to residents in terms of access to air travel would have been substantially greater, with obvious implications for the productivity of business enterprises and their decisions to locate in the area. Although it is not possible to quantify all of the wider economic benefits that would accrue from the Airport's ability to reach its movement limits through the proposed development, there can be little doubt that the proposed development will facilitate continued economic growth and inward investment in Newham and East London.
- 5.34 In terms of the social impact, the key contribution that the Airport will be able to make to social benefits through the proposed development is by supporting employment growth, both in terms of the numbers quantified above and also in terms of proactively supporting local people into work. Overall, the proposed development will facilitate the creation of additional employment and the social benefits that brings, but is likely to have a negligible impact in terms of the local community's prevailing perception of the Airport.

6 CONCLUSION

- 6.1 In this Statement, it has been demonstrated that the proposed CADP1, which provides further infrastructure to allow London City Airport to attain its consented movement limit of 120,000 noise factored movements, would be consistent with Government policy towards airports in securing the better use of an existing runway. This is particularly so in the context of the ongoing consideration as to how best to secure airport capacity in the short, medium and long term to preserve London's status as a global aviation hub. In particular, allowing the Airport to reach its optimum potential will provide a key alternative for airlines seeking to release capacity at Heathrow by relocating short haul services serving key business markets to London City Airport.
- 6.2 Demand projections for the Airport with and without development have been prepared based on the DfT's national air passenger demand forecasts of January 2012. Allowing for increasing capacity constraints at Heathrow and taking into account the growing market for air travel in the Airport's core catchment area, the Airport is expected to be handling approximately 6 million passengers a year by 2023. Failure to allow the Airport to expand its infrastructure to enable it to handle its consented movements would impact adversely on business travel demand, particularly inbound business travellers to the City, Central Business District and Canary Wharf. Use of alternative airports would be costly in terms of lost productive working time, which would have more damaging economic implications.
- 6.3 The requirement for the proposed CADP is driven by three key factors; increases in peak period demand, the introduction of physically larger aircraft and the consequent increase in passengers using the terminal building. These three factors drive the requirements for increased aircraft parking stands and taxi-lane infrastructure and extended terminal facilities. The triggers for the proposed infrastructure are summarised in **Figure 6.1**.

Figure 6.1: Summary of Capacity Triggers



- 6.4 Facilitating increasing passenger throughput at the Airport will make a valuable contribution to the economy of the local area around the Royal Docks as well as to the wider economy of London. The economy of Newham has been underperforming relative to the rest of the London for some time so the additional 910 FTE jobs which would be created by CADP1 would be particularly valuable as would the contribution to local GVA of £51 million. In addition, a growing network of services at the Airport will enhance wider initiatives to regenerate the Royal Docks. The Airport has already been identified as making a major contribution to the wider economy of London. This significant wider contribution would be damaged if development of services was unable to keep pace with the growth of the economy overall, given the important role which the Airport plays in providing key business related connectivity to the Financial Services Centre.
- 6.5 It is concluded that there is a need for the development in order to support broader economic objectives and consistent with Government aviation policy to make better the use of existing runway capacity at airports in the short to medium term.

APPENDIX: JUSTIFICATION STATEMENT

Terminal Facility Justification Statement

City Airport Development Programme (CADP)
London City Airport

DESIGN TEAM AUTHORISATION

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<i>Project Director, Pascall+Watson</i>	Date

PROJECT TEAM AUTHORISATION

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ABOUT THIS REPORT

In preparing this report we have taken all care to ensure there are no errors or discrepancies in the information contained. In the event that errors are found, the report is not up to the standard you expect from us, or you require additional copies; please contact the author, or forward details to Pascall+Watson architects at the address below.

Prepared on behalf of:

London City Airport CADP Steering Group

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CONTENTS

Section	Page
1.0 Introduction	5
2.0 Scope and Purpose	6
3.0 Facility Capacity	7
4.0 Accommodation Summary	18
4.1 Overview	18
4.2 Summary Schedule	18
4.3 Summary Total Area Benchmarking	19
4.4 Summary Retail Area Benchmarking	19
5.0 Detailed Accommodation Schedule	20



1.0

INTRODUCTION

London City Airport (the “Airport”) offers its passengers a unique service. For the Airport to be able to meet forecast growth the existing passenger facilities and infrastructure need to be expanded. The Airport is subject to an overall limit of 120,000 noise factored movements per annum, as stipulated in the 2009 planning permission. The planning permission does not allow for this limit to be exceeded and it is a “cap” that the Airport must work within. The proposed CADP does not seek to change this limit. It is forecast that the number of passengers will increase to approximately 6 million per annum by 2023.

This document is appended to the Need Statement (prepared by York Aviation) accompanying the ‘*City Airport Development Programme*’ (CADP) planning submission. The role of this document is to provide context for the capacity and sizing that has driven the design of the Terminal buildings as shown on the Planning Drawings. It has been prepared in response to comments from the London Borough of Newham (LBN) and the Greater London Authority (GLA) during the CADP pre-application consultation process which sought confirmation from the Airport that the scale/extent of the proposed extended passenger handling facilities were commensurate to the forecast number of passengers from the 120,000 noise factored flights per annum.

2.0

SCOPE AND PURPOSE

It is the intention of this document to demonstrate that the proposed CADP Terminal buildings, within the Completed CADP, have been appropriately sized for the forecast passenger demand. The justifications fall under the following major headings:

- Facility sizing calculations deriving from international standards such as International Air Transport Association (IATA) ADRM ed.9;
- Bespoke simulation modelling (by York Aviation) as explained in the Need Statement which identifies critical capacity bottlenecks in Terminal capacity ;
- Good practice in airport terminal planning;
- Adherence to the Building Regulations and relevant standards of space applicable to public buildings;
- Instruction by the Airport in relation to the replacement of facilities that are subject to demolition as part of the proposed CADP eg. City Aviation House;
- Estimations of the capacity required for future growth of airport-specific functions such as staff offices;
- Specialist aviation retail planning advice from *Milligan*, commercial advisor to the Airport.

This document will outline where each of these sources has been relevant to the outcome shown in the illustrative proposal.

This document takes as its starting point the peak hour figures provided by *York Aviation* in the Need Statement as part of the forecast growth projections. The rationale behind facility sizing and equipment numbers is scheduled against each major facility sub-heading, with similar facilities grouped together, such as UKBA facilities. These facility types are only broken down further where this would provide useful background to the capacity provision for major spaces.

An accommodation schedule is also included, similar to that shown in the Design and Access Statement accompanying the CADP planning submission (see Tables 4.4.4.1 and 4.5.5.1), setting out a useful summary of headline areas which benefit any comparison with the existing facility provision, for example in areas such as retail and offices.

3.0

FACILITY SIZING

The following Table 3.0.1 sets out each major Terminal facility area within the proposed CADP, showing its indicative floor area, equipment numbers, and the source of their sizing/capacity.

Glossary of Terms:

- Load Factor: The ratio of the assumed average number of passengers that will occupy an aircraft, and the maximum number of passengers that the aircraft can accommodate.
- Gate Occupancy Factor: The ratio of the assumed number of passengers that will be present at a boarding gate lounge, and the maximum number of passengers that the gate lounge can accommodate.
- E-Gates: Automated passport presentation gates providing a self-service alternative to the conventional border control process.
- PRM: Passengers with restricted mobility.
- AMD: Archway metal detector used for the security screening of passengers or staff before they are permitted to proceed airside.
- P+W: Pascall+Watson (CADP Architects)

Table 3.0.1 – Terminal facility capacity schedule.

CADP ZONE/ FLOOR	FACILITY TYPE	FACILITY	INDICATIVE FLOOR AREA (m2) &/or EQUIPM'T NO.	SOURCE FOR CAPACITY
Western Terminal Extension (Completed CADP) & Reconfigured Terminal / Ground Level (including West Pier)	Commercial Space	Speciality & Convenience Retail	<ul style="list-style-type: none"> • 380 m2 	<ul style="list-style-type: none"> • General tenancy numbers and sizes were developed with LCY specialist retail advisors <i>Milligan</i>.
		Food & Beverage (incl. F+B shared seating)	<ul style="list-style-type: none"> • 322 m2 	<ul style="list-style-type: none"> • General tenancy numbers and sizes were developed with LCY specialist retail advisors <i>Milligan</i>.
		Airline Ticketing & Offices	<ul style="list-style-type: none"> • 66m2 	<ul style="list-style-type: none"> • 8no. separate agency counters required by LCY (currently 6no. agency counters – some combined); • Counter width adequate for two agents to operate with desk space for two agents in the rear offices; • Future requirements may exceed this currently proposed provision.
		Landside Retail & F+B Storage	<ul style="list-style-type: none"> • 180 m2 	<ul style="list-style-type: none"> • Total CADP scheme retail/F+B storage (527m2) is approximately 11% of the total retail/F+B space (front and back-of-house).
		Airside Retail & F+B Storage	<ul style="list-style-type: none"> • 131 m2 	<ul style="list-style-type: none"> • Total CADP scheme retail/F+B storage (527m2) is approximately 11% of the total retail/F+B space (front and back-of-house).

	Catering Kitchen	Kitchen serving majority of F+B tenants	<ul style="list-style-type: none"> • 359 m2 	<ul style="list-style-type: none"> • To replace the catering kitchen (267m2 incl. dry store & kitchen office) being removed at City Aviation House (and to remain landside), plus space for future growth given the increased number of F+B tenants expected, and provision for isolated kitchen to replace that removed within the service yard (Pret-A-Manger); • LCY's specialist retail advisors <i>Milligan</i> requested a far larger kitchen area (over 600m2). However the proposed area derives from the constrained space available at ground floor.
	Check-In Facilities	Check-In Desks & Conveyance	<ul style="list-style-type: none"> • 183 m2 	<ul style="list-style-type: none"> • 25no. check-in desks provided in Completed CADP as per <i>York Aviation's Traffic Light Assessment 07.03.2013</i> and in accordance with spatial fit.
		Departures Concourse / Queuing zone	<ul style="list-style-type: none"> • 240 m2 	<ul style="list-style-type: none"> • Continuation of existing flexible Check-In queue zone arrangement
		Self-Service Kiosks (SSKs)	<ul style="list-style-type: none"> • 50 m2 	<ul style="list-style-type: none"> • Flexible space provided for the current and future SSKs within the central check-in concourse area; • 24no. SSK positions notionally provided in Completed CADP as per <i>York Aviation's Traffic Light Assessment 07.03.2013</i>.
	Offices	LCY Staff Offices	<ul style="list-style-type: none"> • 520 m2 	<ul style="list-style-type: none"> • Generally replacing those displaced by the existing terminal reconfiguration at Ground Level, some facilities relocated from CAH, plus additional separate public-interface reception area and new training facility.
	Plant & Services	Risers, IT Rooms, Electrical Rooms	<ul style="list-style-type: none"> • 209 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas (proposed & existing) are equivalent to 7% of the overall West development & existing terminal floor area (excl. west energy centre); • Derived from engineering requirements for risers or plant locations.
	Public Circulation	Front-of-house corridors and concourse space	<ul style="list-style-type: none"> • 2853 m2 	<ul style="list-style-type: none"> • According to the exigencies of the terminal planning. • Area includes 611m2 existing west pier corridor space.
	General Back-of-House	Corridor	<ul style="list-style-type: none"> • 812 m2 	<ul style="list-style-type: none"> • 2.5m wide for circulation of bins/ retail cages etc. Allows for means of emergency escape with cages left to one side within corridor width.
		Bin Stores	<ul style="list-style-type: none"> • 25 m2 	<ul style="list-style-type: none"> • Adequate back-of-house locations to service office and public areas with a consolidated store.
	Toilets / Wet Areas	Public Toilets (incl. Baby Changes, Changing Places Room, Unisex Disabled WCs, Cleaner's Stores)	<ul style="list-style-type: none"> • 258 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Assembly Buildings without Intervals'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations.

	Baggage Facilities	Baggage Processing Area (within existing terminal footprint)	<ul style="list-style-type: none"> • 585 m2 	<ul style="list-style-type: none"> • Baggage conveyance equipment using larger area due to expanded check-in provision.
Western Terminal Extension (Completed CADP) & Reconfigured Terminal / First Level	Security Area	Passenger & Staff Security Screening Area	<ul style="list-style-type: none"> • 846m2 • 8no. security lanes 	<ul style="list-style-type: none"> • 8no. security lanes derived from <i>York Aviation Traffic Light Assessment</i> (Refer to the Need Statement - Figure 4.9). This is the same number of lanes as currently exists and includes the processing of staff at a specific lane. This should require an approximate processing rate of 270pax/hr, and is based upon York's observed processing rates; • Increased area provides for potential requirement for in-line body-scanners at each set of 2no. lanes and increased queuing associated with increased peak departing passenger population; • Queue space of 184m2 is split between pre-security passport presentation queuing (50-60m2) and security queuing (120-140m2). This total derives from modified IATA calculations with a small utilisation factor, 5minute queuing standard, and the 270pax/hr processing rate required for the stipulated 8 lane operation at peak.
	Airside Commercial Space	Speciality & Convenience Retail	<ul style="list-style-type: none"> • 1138 m2 	<ul style="list-style-type: none"> • General tenancy numbers and sizes were developed with LCY specialist retail advisors <i>Milligan</i>.
		Food & Beverage (incl. F+B shared seating area)	<ul style="list-style-type: none"> • 1074 m2 	<ul style="list-style-type: none"> • This includes 709m2 F+B seating that is spatially external to the individual F+B tenant spaces but is included in their leased space; • General tenancy numbers and sizes were developed with LCY specialist retail advisors <i>Milligan</i>.
		Airside Retail & F+B Storage	<ul style="list-style-type: none"> • 178 m2 	<ul style="list-style-type: none"> • Total CADP scheme retail/F+B storage (527m2) is approximately 11% of the total retail/F+B space (front and back-of-house).
	Offices	Security Staff & Special Branch Offices	<ul style="list-style-type: none"> • 84 m2 	<ul style="list-style-type: none"> • Generally replacing those displaced by the existing terminal reconfiguration at First Level.
	Plant & Services	Risers, IT Rooms, Electrical Rooms	<ul style="list-style-type: none"> • 151 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas (proposed & existing) are equivalent to 15% of the overall West development & existing terminal floor area; • Derived from engineering requirements for risers or plant locations.
	Public Circulation	Front-of-house corridors and concourse space	<ul style="list-style-type: none"> • 2028 m2 	<ul style="list-style-type: none"> • According to the exigencies of the terminal planning. • Area includes 906m2 existing west pier corridor space.

	Airside Seating	General Seating	<ul style="list-style-type: none"> • 786 m2 • 650-750 seats (4) 	<ul style="list-style-type: none"> • Unpaid seating required for passenger general amenity; • 382 existing airside departures lounge general seats (excl. F+B seats); • Assumes potential for 100% utilisation; • Total 'useable' seats for second phase is circa 1000-1100 seats.
		F+B Seating	<ul style="list-style-type: none"> • 789m2 • 700-800 seats (4) 	<ul style="list-style-type: none"> • Paid seating associated with F+B tenancies, where 70% of tenant space is assumed as available for seating; • 432 existing airside departures lounge F+B seats; • Assume potential for 50% utilisation; • Total 'useable' general & F+B seats for second phase is circa 1000-1100 seats.
	General Back-of-House	Corridor	<ul style="list-style-type: none"> • 416 m2 	<ul style="list-style-type: none"> • 2.5m wide for circulation of bins/ retail cages etc.; Allows for means of emergency escape with cages left to one side within corridor width.
	Toilets / Wet Areas	Public Toilets (incl. Baby Changes, Changing Places Room, Unisex Disabled WCs, Cleaner's Stores)	<ul style="list-style-type: none"> • 363 m2 	<ul style="list-style-type: none"> • Fitting numbers derived from BS 6465 as classification 'Assembly Buildings without Intervals'. Where planning / spatial fit encouraged a small additional numbers this was permitted; • All ancillary facilities were in accordance with Part M recommendations.
Western Terminal Extension (Completed CADP) Second Level	Offices	Security Staff & LCY Offices	<ul style="list-style-type: none"> • 1051 m2 	<ul style="list-style-type: none"> • Generally replacing those removed within City Aviation House (CAH) which are able to be replaced landside. • LCY stakeholders wished for a greater proportion of CAH accommodation to be placed landside than can be accommodated due to spatial constraints upon the Western Terminal Extension Building.
		Staff Toilets (incl. security staff areas)	<ul style="list-style-type: none"> • 73 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Workplaces'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations;
	Plant & Services	Risers, IT Rooms, Electrical Rooms	<ul style="list-style-type: none"> • 95 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas (proposed & existing) are equivalent to 7% of the overall West development & existing terminal floor area (excl. west energy centre); • Derived from engineering requirements for risers or plant locations.
		Additional Roof Plant over Existing Terminal	<ul style="list-style-type: none"> • 400 m2 	<ul style="list-style-type: none"> • As required for engineering purposes.
		Existing Terminal Plant / Services Accommodation	<ul style="list-style-type: none"> • 903 m2 	<ul style="list-style-type: none"> • Area within existing terminal envelope

Western Terminal Extension (Completed CADP) Roof Plant Level	Plant & Services	Enclosed plant & riser spaces	<ul style="list-style-type: none"> 760 m2 	<ul style="list-style-type: none"> Total enclosed services & plant areas (proposed & existing) are equivalent to 7% of the overall West development & existing terminal floor area (excl. west energy centre); Derived from engineering requirements for risers or plant locations.
		Photovoltaic Array Areas	<ul style="list-style-type: none"> 193 m2 	<ul style="list-style-type: none"> Total PV area (~2836m2) is maximised to facilitate achievement of the Buildings Regulations Approved Document Part L CO2 emissions reductions requirement of 40% from October 2018.
Western Terminal Extension (Completed CADP) Roof Level		Photovoltaic Array Areas	<ul style="list-style-type: none"> 267 m2 	<ul style="list-style-type: none"> Total PV area (~2836m2) is maximised to facilitate achievement of the Buildings Regulations Approved Document Part L CO2 emissions reductions requirement of 40% from October 2018.
Eastern Terminal Extension/ Ground Level	Baggage Reclaim	Domestic Reclaim Hall	<ul style="list-style-type: none"> 610 m2 1no. belt servicing code C aircraft (40m presentation) 	<ul style="list-style-type: none"> P+W calculated presentation length, one belt optimal given spatial fit (York Aviation confirmed); T-belt to maximum baggage presentation length; Adequate queuing depth – 4.2m around belt; Adequate circulation between reclaim belt and surrounding obstructions – 7.7m west side for secondary circulation zone & 10m east side for primary circulation zone.
		Domestic Baggage Offload	<ul style="list-style-type: none"> 1no. straight offload belt 9m presentation 	<ul style="list-style-type: none"> Current terminal facility provides 1 no. curved offload belt with an approximate useable presentation length of 4m.
	Baggage Reclaim	International Reclaim Hall	<ul style="list-style-type: none"> 1582 m2 3no. belts servicing code C aircraft (2no. at 40m presentation, 1no. at 24m presentation) 	<ul style="list-style-type: none"> Three belts required to meet operational requirement for the number of peak period flights (1); T-belts to maximum baggage presentation length; Additional requested belt as L-belt (only) due to concern regarding further expansion of the building by another structural module to the east; Adequate queuing depth – 4.2m; Adequate circulation between reclaim belts – 15.6m & 17.7m belt-to-belt partly due to spatial fit with structural module.
		International Baggage Offload	<ul style="list-style-type: none"> 3no. straight offload belts 21m total presentation 	<ul style="list-style-type: none"> Current terminal facility provides 2 no. straight offload belt with a combined presentation length of 7m.
	United Kingdom Border Agency (UKBA) Areas	Customs	<ul style="list-style-type: none"> 167 m2 1no. screening machine 	<ul style="list-style-type: none"> Area considered adequate for 'red channel' circulation with standing area for passenger processing; Includes red and green channels 3.5m wide for circulation of converging passengers through to 2.2m wide common corridor to arrivals concourse.

		Offices (incl. dedicated stores, toilets and circulation)	<ul style="list-style-type: none"> • 280 m2 	<ul style="list-style-type: none"> • Offices as briefed by UKBA, based upon their existing terminal facilities; • 1.8m wide circulation corridors for ease of movement, including link to staff stair connecting first level UKBA facilities.
	Goods & Waste	Corridor and collection point	<ul style="list-style-type: none"> • 206 m2 	<ul style="list-style-type: none"> • 2.8m deep loading dock for delivery of airside retail goods and removal of airside waste; • 2.5m wide for circulation of bins/ retail cages etc.; Allows for means of emergency escape with cages left to one side within corridor width; • Leads to 1.6m wide airside connection corridor that forms the alternative staff back-of-house link between the Eastern Terminal Extension and the reconfigured existing terminal upper floor.
		Bin Stores	<ul style="list-style-type: none"> • 93 m2 	<ul style="list-style-type: none"> • Adequate back-of-house locations to service retail areas with the minimum of waste circulation front-of-house.
	Plant & Services	Risers, IT Rooms, Electrical Rooms, Pump Rooms	<ul style="list-style-type: none"> • 402 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas are equivalent to 8% of the overall Eastern Terminal Extension floor area (excl. Eastern Energy Centre); • Derived from engineering requirements for risers or plant locations, including vacuum pump drainage rooms at this level.
	Public Circulation	Front-of-house corridors, cores and concourse space	<ul style="list-style-type: none"> • 2085 m2 	<ul style="list-style-type: none"> • According to the exigencies of the terminal planning.
		Pier Domestic Arrivals Corridor	<ul style="list-style-type: none"> • 1539 m2 	<ul style="list-style-type: none"> • 4.2m wide at cores, with single line of moving walkways (1.2m clear) spaced intermittently to leave 1.9m clear (from facade columns) for two people to pass with trolley cases.
	Landside General Seating		<ul style="list-style-type: none"> • 50-60 seats 	<ul style="list-style-type: none"> • Unpaid seating required for passenger general convenience at Meet & Greet waiting location as well as for PRMs (separate from the PRM passenger waiting area). • Max 10% of waiting population / passengers in line with IATA recommendations.
	Commercial Space	Speciality & Convenience Retail	<ul style="list-style-type: none"> • 408 m2 	<ul style="list-style-type: none"> • General tenancy numbers and sizes were developed with LCY specialist retail advisors <i>Milligan</i>. Their recommendation of approximately 795m2 landside speciality retail for the Eastern Terminal Extension could not be achieved due to spatial constraints and prioritisation of passenger amenity.
		Food & Beverage (incl. F+B shared seating area)	<ul style="list-style-type: none"> • 434 m2 	<ul style="list-style-type: none"> • General tenancy numbers and sizes were developed with LCY specialist advisors <i>Milligan Retail</i>. Their recommendation of approximately 650m2 landside food & beverage for the Eastern Terminal Extension could not be achieved due to spatial constraints and prioritisation of passenger amenity.

		Car Rental Counters & Offices, Chauffeur Counter & Office	<ul style="list-style-type: none"> • 120m2 	<ul style="list-style-type: none"> • 5no. Car Rental agency counters required by LCY for future growth (currently 3no. agency counters); • Counter width adequate for two agents to operate with desk space for two agents in the rear offices. • 1no. Chauffeur service counter (currently 1no.counter)
		Landside Retail & F+B Storage	<ul style="list-style-type: none"> • 32m2 	<ul style="list-style-type: none"> • Majority of landside retail storage available in West Terminal Extension Scheme; • Total CADD scheme retail/F+B storage (527m2) is approximately 11% of the total retail/F+B space (front and back-of-house).
	Toilets / Wet Areas	Public Toilets (incl. Baby Changes, Changing Places Room, Unisex Disabled WCs, Cleaner's Stores)	<ul style="list-style-type: none"> • 514 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Assembly Buildings without Intervals'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations; • Unisex disabled WC at each pier core, approximately every 50m along domestic arrivals corridor.
		Staff Toilets	<ul style="list-style-type: none"> • Refer to UKBA Offices 	<ul style="list-style-type: none"> • Other than dedicated facilities requested by UKBA all staff are assumed to use the public toilet facilities.
	Outbound Baggage Facilities	Baggage Carousels and Make-Up Positions (MUPs)	<ul style="list-style-type: none"> • 2163m2 • 40 MUPs provided from automatic sortation • 22 MUPs at extension carousels 	<ul style="list-style-type: none"> • Space accommodates chutes and carousels, handling area and baggage tug and trolley vehicle circulation routes and designated pedestrian walkways.
Eastern Terminal Extension / First Level	Baggage Reclaim Hall	Domestic & International Reclaim Hall Void	<ul style="list-style-type: none"> • 1415 m2 	<ul style="list-style-type: none"> • Double-height space appropriate to the depth of the reclaim halls and to facilitate access to natural light, as well as provide a sense of spaciousness for passenger experience. Also permits access to natural light for the Immigration facility and international arrivals corridor within the terminal building.
	United Kingdom Border Agency (UKBA) & Special Branch Areas	Immigration Facility	<ul style="list-style-type: none"> • 498 m2 	<ul style="list-style-type: none"> • 10no. traditional desks derived from <i>York Aviation Traffic Light Assessment 07.03.13</i> with assumption that 20% use E-Gates by 2023 (i.e. 3no. E-Gates); • 5no. E-Gates, rather than 3no., provided due to UKBA advice regarding efficiency i.e. the maximum number of machines relative to 1.2 staff for monitoring and referrals. 1no. staff for monitoring all 5 gates, with first traditional desk official covering 0.2 staff requirement for referrals; • Width of space based on required E-Gate and traditional desk numbers; • Total queuing area (196m2) is based upon IATA calculations, requiring approximately 58m2 for 133m2 traditional desk and e-gate waiting combined (191m2).

		UKBA Office	<ul style="list-style-type: none"> • 300 m2 	<ul style="list-style-type: none"> • Offices as briefed by UKBA; • 1.8m wide circulation corridors for ease of movement, including link to staff stair connecting first level UKBF facilities.
		Special Branch Offices	<ul style="list-style-type: none"> • 95 m2 	<ul style="list-style-type: none"> • Offices as briefed by SB; • Common 1.8m wide circulation corridor with UKBA; • Observation Room shared between international transfers area and immigration facility.
		Shared UKBA / Special Branch Welfare Facilities	<ul style="list-style-type: none"> • 84 m2 	<ul style="list-style-type: none"> • Shared facilities such as locker rooms, shower/change rooms, toilets and kitchen as per UKBA/SB briefing, based upon their existing terminal facilities.
	Goods & Waste	Corridor	<ul style="list-style-type: none"> • 72 m2 	<ul style="list-style-type: none"> • 2.5m wide for circulation of bins/ retail cages etc.; Allows for means of emergency escape with cages left to one side within corridor width.
		Bin Stores	<ul style="list-style-type: none"> • 23 m2 	<ul style="list-style-type: none"> • Adequate back-of-house locations to service office and public areas with a consolidated store.
	Transfers Facility	Transfers Processing	<ul style="list-style-type: none"> • 218 m2 • 2no. security lanes 	<ul style="list-style-type: none"> • LCY requirement to provide for a notional transfer product; • Assumed that 1no. machine set required to service notional transfer population; • 2 sets of machinery provided for facility redundancy; • Width of space sufficient to allow 2 sets of machinery with one AMD and one wheelchair bypass gate with associated clearances for AMD interference; • Depth of space sufficient to allow 2no. transfers passport presentation desks, minimal pre-security queuing, screening machinery with reduced input and output conveyor length, and baggage search area.
		Transfers Offices	<ul style="list-style-type: none"> • 22 m2 	<ul style="list-style-type: none"> • One transfers staff room remote from other security staff welfare facilities; • 2no. security screening interview rooms that double as private search rooms.
	Plant & Services	Risers, IT Rooms, Electrical Rooms	<ul style="list-style-type: none"> • 256 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas are equivalent to 8% of the overall Eastern Terminal Extension floor area (excl. Eastern Energy Centre); • Derived from engineering requirements for risers or plant locations.
	Public Circulation	Front-of-house corridors and cores	<ul style="list-style-type: none"> • 816 m2 	<ul style="list-style-type: none"> • According to the exigencies of the terminal planning.
		Pier International Arrivals Corridor (East & West)	<ul style="list-style-type: none"> • 2205 m2 	<ul style="list-style-type: none"> • 4.2m wide at cores, with single line of moving walkways (1.2m clear) spaced intermittently to leave 1.9m clear (from facade columns) for two people to pass with trolley cases.

	Toilets / Wet Areas	Public Toilets (incl. Baby Changes, Changing Places Room, Unisex Disabled WCs, Cleaner's Stores)	<ul style="list-style-type: none"> • 169 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Assembly Buildings without Intervals'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations; • Unisex disabled WC at each pier core, approximately every 50m along domestic arrivals corridor.
		Staff Toilets / Baggage Handlers Sanitary Facilities	<ul style="list-style-type: none"> • 49 m2 	<ul style="list-style-type: none"> • UKBA staff toilets included within UKBA offices above; • Baggage Handling office staff toilet numbers derived from BS 6465 as per classification 'Workplaces'. Where planning / spatial fit left provision for a small additional number of units this was permitted;
	Baggage Screening & Sortation Mezzanine		<ul style="list-style-type: none"> • 693 m2 	<ul style="list-style-type: none"> • As specified per the coordinated baggage specialist concept design.
	Baggage Support Accommodation	Lockers	<ul style="list-style-type: none"> • 55 m2 	<ul style="list-style-type: none"> • Lockers provided for Baggage Handling, Maintenance and HBS staff in separate facilities.
		HBS Control Room	<ul style="list-style-type: none"> • 24 m2 	<ul style="list-style-type: none"> • As per LCY stakeholder briefings.
		Staff Welfare Spaces	<ul style="list-style-type: none"> • 69 m2 	<ul style="list-style-type: none"> • Separate kitchen for Control Room staff (office workers) and baggage system staff (manual workers).
Eastern Terminal Extension / Second Level		Gate Lounges (incl. boarding card presentation area)	<ul style="list-style-type: none"> • 170m2 / gate • 80 seats / gate 	<ul style="list-style-type: none"> • 125 pax (eg.BA) for a CS100 assumed as largest aircraft passenger capacity (2); • 90% Load Factor transferred from <i>York Aviation</i> assumptions; • 90% Gate Occupancy Factor assumed; • 80% seated / 20% standing passengers assumed; • 1.7m2/seated & 1.2m2/standing assumed; • 80 seats required/gate;; 161m2 required/gate; • 10-15m2 boarding card presentation area added to accommodate 2no. desks/gate for efficient processing.
	Goods & Waste	Corridor	<ul style="list-style-type: none"> • 53 m2 	<ul style="list-style-type: none"> • 2.5m wide for circulation of bins/ retail cages etc.; Allows for means of emergency escape with cages left to one side within corridor width.
		Bin Stores	<ul style="list-style-type: none"> • 27 m2 	<ul style="list-style-type: none"> • Adequate back-of-house locations to service office and public areas with a consolidated store.
	Plant & Services	Risers, IT Rooms, Electrical Rooms	<ul style="list-style-type: none"> • 390 m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas are equivalent to 8% of the overall Eastern Terminal Extension floor area (excl. Eastern Energy Centre); • Derived from engineering requirements for risers or plant locations.

	Public Circulation	Front-of-house corridors and cores	<ul style="list-style-type: none"> • 556 m2 	<ul style="list-style-type: none"> • According to the exigencies of the terminal planning.
		Pier Domestic & International Departures Corridor	<ul style="list-style-type: none"> • 2141 m2 	<ul style="list-style-type: none"> • 3.7m wide at cores, with single line of moving walkways (1.2m clear) spaced intermittently to leave 1.8m clear for two people to pass with trolley cases.
	Commercial Space	Food & Beverage (incl. F+B seating area)	<ul style="list-style-type: none"> • 142 m2 	<ul style="list-style-type: none"> • A single F+B tenancy is proposed for any who have ascended to the second level from the lower level main departures lounge. This is most likely to offer convenience food and drink 'on-the-go'.
	Office Space	LCY Staff Offices (incl. dedicated stores, airside training rooms, kitchens etc.)	<ul style="list-style-type: none"> • 933 m2 	<ul style="list-style-type: none"> • Offices to replace those being removed at City Aviation House (those that can be airside), plus space for future growth in staff numbers. Existing CAH LCY Offices are all landside (~740m2); • 2.3m wide circulation corridors for ease of movement, or could be included in open plan format where specified.
		Third Party (eg. Airline) Staff Offices (incl. dedicated stores, airside training rooms, kitchens etc.)	<ul style="list-style-type: none"> • 1123 m2 	<ul style="list-style-type: none"> • Offices to replace those third party spaces being removed at City Aviation House (which can be airside), plus space for future growth in staff numbers or number of customer airlines or handling agencies. Existing CAH third party spaces are all landside (~705m2); • 2.3m wide circulation corridors for ease of movement, or could be included in open plan format where specified.
		Business Centre (incl. meeting rooms, kitchen, circulation, storage)	<ul style="list-style-type: none"> • 288 m2 	<ul style="list-style-type: none"> • To replace those Business Centre spaces being removed at City Aviation House (which can be airside), plus space for future growth in use with public, third parties and LCY staff able to book each meeting space. Existing CAH Business Centre is landside (~335m2) with some functionality from the existing landside facility being displaced to the proposed West Terminal Extension landside second level.
	Toilets / Wet Areas	Public Toilets (incl. Baby Changes, Changing Places Room, Unisex Disabled WCs, Cleaner's Stores)	<ul style="list-style-type: none"> • 180 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Assembly Buildings without Intervals'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations; • Unisex disabled WC at each pier core, approximately every 50m along domestic arrivals corridor.
		Staff Toilets (incl. LCY staff areas)	<ul style="list-style-type: none"> • 103 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Workplaces'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations;

		Business Centre Toilets	<ul style="list-style-type: none"> • 46 m2 	<ul style="list-style-type: none"> • Unit numbers derived from BS 6465 as per classification 'Workplaces'. Where planning / spatial fit left provision for a small additional numbers of units this was permitted; • All ancillary facilities were in accordance with Part M and BS 8300 recommendations;
		Photovoltaic Array Areas	<ul style="list-style-type: none"> • 920 m2 	<ul style="list-style-type: none"> • Total PV area (~2836m2) is maximised to facilitate achievement of the Buildings Regulations Approved Document Part L CO2 emissions reductions requirement of 40% from October 2013.
Eastern Terminal Extension / Third Level	Plant & Services	Enclosed plant & riser spaces	<ul style="list-style-type: none"> • 1447m2 	<ul style="list-style-type: none"> • Total enclosed services & plant areas are equivalent to 8% of the overall Eastern Terminal Extension floor area (excl. Eastern Energy Centre); • Derived from engineering requirements for risers or plant locations. • Exclude plant area allocated for Tenant plant (open air) space
		Photovoltaic Array Areas	<ul style="list-style-type: none"> • 1390 m2 	<ul style="list-style-type: none"> • Total PV area (~2836m2) is maximised to facilitate achievement of the Buildings Regulations Approved Document Part L CO2 emissions reductions requirement of 40% from October 2018.

- (1) With reference to the international baggage reclaim hall design, the number of belts and associated presentation length principally derive from the need to handle the volume of flights projected in the peak periods on only two reclaim belts. The design parameters for 2023 are for 45 movements per hour which is expected to be sustained over the two busy hours. Allowing for some domestic flights, around 38 international/CTA arrivals are expected over two hours. Three belts will be required to handle this number of flights, to guarantee sufficient loading length capacity for processing incoming bags without delays.
- (2) Table 3.0.2 (below) shows both single and dual class configuration passenger numbers for both the ERJ190 and CS100. The most appropriate scenario for sizing the proposed Eastern Pier gate lounges derives from the CS100's passenger capacity in a dual class configuration, with the majority of the Airport's airline routes expected to accommodate business flights rather than leisure flights. If any leisure flights did occur then the proportion of passengers standing will increase.

Maximum Aircraft Code relevant to Gate	No. of PAX	Load Factor %	Max. No of PAX	PAX Present at Gate %	No. of PAX	Seated PAX %	Standing PAX %	No. Of Seated PAX	No. Of Standing PAX	Area per Seated PAX 1.7 sq. m	Area per Standing PAX 1.2 sq. m	Floor area req'd for Seated PAX	Floor area req'd for Standing PAX	Total Gate Floor area req'd
C (ERJ190 1-class)	114	85%	97	90%	87	70%	30%	61	26	1.7	1.2	104	31	135
C (ERJ190 2-class)	98	85%	83	90%	75	80%	20%	60	15	1.7	1.2	102	18	120
C (CS100 2-class)	125	90%	113	90%	101	80%	20%	81	20	1.7	1.2	138	24	162

Table 3.0.2 – Gate room capacity assumptions by aircraft type and seating configuration.

- (3) 76% projected departure peak passenger growth derives from *York Aviation's Terminal Capacity Traffic Light Assessment* (Refer to the Need Statement Figure 4.9) showing 1,030 departure peak passengers in 2012, and 1,812 at the Completed CADP capacity design horizon at 2023. 64% projected arrival peak passenger growth derives from *York Aviation's Terminal Capacity Traffic Light Assessment* showing 1,153 arrival peak passengers in 2012, and 1,890 at the Completed CADP capacity design horizon at 2023.
- (4) The passenger amenity seating requirements are based upon an estimated peak departures lounge occupancy of 1,232 pax in the second phase of development (1,118 pax in the first phase), accounting for dwell time and 100 additional pax due to flight delay.

The seating densities have been assumed to match those of the existing Airport's departures lounge seating, however this will evolve as the detailed furniture design develops. The area of each F+B tenancy available for F+B seating has been assumed as 70%, considering the provision of a central kitchen in the ground floor of the Western Terminal Extension in the first phase of development. This proportion may decrease as the design develops and tenant's require separate kitchens within their tenant space.

The utilisation of F+B seating has been assumed as 50%, given the likelihood of traditional low-level dining tables. The utilisation of general seating is assumed as 100% with seats that are either with arm rests, high bench seating or the like, to encourage dense usage.

4.0

ACCOMMODATION SUMMARY

4.1 OVERVIEW

The following Table 4.1.1 sets out the headline areas for the Completed CADP, facilitating comparison between the existing and proposed Terminal configurations. This includes the second phase of the Western Terminal Extension.

FACILITY	EXISTING (m2)	PROPOSED (m2)
Overall Terminal (GEA)	<u>17,991</u> (OBB area included) (17,230 without OBB Enclosed Area)	<u>51,801</u> (OBB area included)
Terminal Building (GEA) (Existing Terminal footprint: includes West Pier, excludes Eastern Pier)	<u>15,455</u> (includes Pret-A-Manger kitchen cabin within existing Service Yard)	<u>15,395</u> (Pret-A-Manger kitchen cabin removed)
Proposed Western Terminal Extension (GEA)	<u>0</u>	<u>5,735</u>
Proposed Eastern Terminal Extension (GEA)	<u>1,775</u> (existing Eastern Pier)	<u>31,561</u> (includes Eastern Pier / OBB area and baggage accommodation, ground / first / second / roof plant areas within the building enclosure)
Total Landside Retail/F+B (A1-A4) Landside (Existing, Reconfigured & Proposed)	<u>924</u> (includes Pret-A-Manger kitchen, ticketing areas, chauffeur desk; also includes CAH canteen, central F+B catering kitchen etc.)	<u>2,301</u> (includes Storage, F+B kitchen and seating, chauffeur, car rental and ticketing)
Total Airside Retail/F+B (A1-A4) Airside (Existing, Reconfigured & Proposed)	<u>1,472</u> (includes F+B Kitchens)	<u>2,663</u> (includes storage & F+B seating.)
Terminal Landside Offices	<u>1,820</u> (includes 1,684 m2 from CAH)	<u>1,974</u> (Including 1,684 sq.m from CAH, which is assumed to be entirely demolished for this development)

Table 4.1.1 – CADP summary schedule of Terminal areas.

Notes

1. Floor space figures exclude roof top and below ground plant, where exposed and not fully enclosed, for which planning permission is sought in principle. Fully enclosed roof plant is included.

4.3 SUMMARY TOTAL AREA BENCHMARKING

These summary areas for the Completed CADP indicate a ratio of approximately 8,600m2 per million passengers per annum (mppa), given the 6.0mppa projected for the CADP design horizon of circa 2023. This is comparatively compact in both a UK and international airport context given an average benchmark of around 10,000m2 per mppa for a functionally-driven, efficiently designed scheme of significant scale.

4.4 SUMMARY RETAIL AREA BENCHMARKING

The existing proportion of retail/F+B space (including storage) compared to the total Terminal floor space is 14%. In the proposed CADP scheme this proportion reduces to 10% (including storage). This is in accordance with international standards, for instance the typical standard of 8-12% referenced in IATA ADREM ed.9, Section J7, p.340.

The proportional increase in landside retail/F+B shop space (including car hire counter space and offices, chauffeur counter space and office, ticketing counter space and offices, but excluding central kitchen and dedicated storage) is approximately 87% and the total increase in airside retail/F+B shops space (including F&B seating but excluding storage) is approximately 60%. These cannot be directly compared to the departures and arrivals peak passenger growth as the existing landside retail is combined for both arriving and departing passengers. The proposed Terminal separates the arrivals and departures functions, thus freeing the amenities and range of commercial offerings from their spatial constraints and thus aligning more appropriately with projected passenger commercial demand. The geographical separation of arriving and departing spaces also necessitates a limited repetition of certain retail or catering offerings.

The amount of retail and catering space is also split between front-of-house (FoH) leasable space and back-of-house (BoH) retail storage space. The latter being very limited within the current terminal, currently around 5% of the total landside and airside commercial space. The illustrative CADP projects seek to increase the total proportion of retail/F+B storage to 527m², which compared to front-of-house retail/F+B space of 4964m² providing approximately 11% of BoH support facilities, which is lower than is usually applied for international terminal projects, but would be refined with further detailed stakeholder input.

5.0

DETAILED ACCOMMODATION SCHEDULE

The following Table 5.0.1 sets out the area for each existing and proposed facility within the terminal complex, including the accommodation contained within the existing City Aviation House, as proposed for demolition as part of the CADP.

EXISTING TERMINAL BUILDING & WEST PIER	
Ground / Apron Level	Area m2
Immigration (Airside)	
Immigration Hall / Passport Control Area	326.58
Interview Room 1	8.51
Interview Room 2	9.91
Forgeries	7.69
Fingerprinting TAO:117	4.54
Cleaners TAO:116	2.56
Cleaners TAO:115	2.09
Immigration Holding Room TAO:114	13.53
Airside Corridor	13.46
(Future) Immigration Holding Room G-A027	6.99
Kitchen / Restroom TAO:117	17.50
Locker Room TAO:74	7.14
Kitchen TAO:106	4.28
Border and Immigration Agency General Admin. Office TAO:73/107/108	54.00
Immigrations Office TAO:105	17.71
Immigrations Office TAO:75/102	8.92
Shower Room	2.72
WC	1.94
WC	2.19
WC Lobby	2.16
Border and Immigration Agency Office TAO:140	16.05
Border and Immigration Agency Office TAO:141	45.82
Interview Room TAO:162	6.46
Immigration Sub-Total	582.75
Special Branch (Airside)	
Special Branch General Office	44.05
Store	4.23
Communications Room	9.81
Sergeant's Office	9.68
Detective Inspector's Office	9.59
Special Branch Sub-Total	77.36
Goods Route / Both Circulation	
Goods screening room TAO:119 (Air / Landside)	23.28
Goods Out G-A024 (Landside)	4.13
Lift / Lift Lobby G-A026 (Airside)	8.79
Electrical Switch room G5 (Airside)	3.92
Lobby (Airside)	3.12
Escape Stair (South East Corner - Landside)	28.63
Corridor (South East Corner - Landside)	4.94
Corridor (South East Corner - Landside)	9.58
Escape Stair (South) adjacent to Terminal Entrance (Landside)	21.80
Corridor (South - Landside)	1.99
Escape Stair (West - Landside)	20.53
Corridor (West - Landside)	14.46

Corridor (West - Landside)	4.25
Corridor (West - Landside)	4.64
Corridor (West - Landside)	9.56
Escape Stair (North East Corner - Airside)	18.19
Goods Lift Access (North East Corner - Airside)	5.24
Goods Lift (North East Corner - Airside)	1.26
NATs / AOSU / Apron access route (Airside)	20.05
NATs / AOSU / Apron access route (Airside)	17.12
Escape Stair (East - Airside)	29.46
Escape Stair / Gate 1 Access Stair (North - Airside)	27.34
Goods Route / Both Circulation Sub-Total	282.28
LCY OPS	
Station Manager's Office G-A029 (SECURITAS - Landside)	8.34
Duty Manager's Office / PRM Office G-A030 (SECURITAS - Landside)	11.11
Bag Store G-A031 (SECURITAS - Landside)	13.59
PRM Wheelchair Store G-A028 (Landside)	6.47
Staff Security Search & X-ray (Air / Landside)	42.16
Host Office (SSP - Airside)	10.17
KGS Ops Centre TAO:68 (Airside)	16.55
KGS Crew Room TAO:69 (Airside)	14.09
LCY OPS Sub-Total	122.48
Customs (Airside)	
HM Revenue and Customs General Admin. Office TAO:80 & corridor	65.39
HM Revenue and Customs Intelligence Office TAO:93	18.74
HM Revenue and Customs Senior Detection Managers Office TAO:94	13.28
Ladies Locker Room TAO:97	8.89
Ladies Locker Room Lobby	1.52
Ladies WC	2.09
Gents Locker Room TAO:95	10.08
Gents Locker Lobby	1.51
Gents WC	1.84
HMRC Rest Room TAO:92	23.69
HMRC Data and Storage Room TAO:91	11.50
Customs Channel / HMRC Baggage Examination	132.07
HMRC Enquiries	8.14
HMRC Interview Room TAO:85	7.83
HMRC Observation Room TAO:86	5.97
HMRC Detention Cell TAO:87	9.50
Lab. Room TAO:88	7.69
Sample Analysis and Exam. Room	5.72
TAO:89	2.96
Store TAO:90	3.84
Corridor	5.46
Customs Sub-Total	347.71
Customer Service Centre (Landside)	
Customer Service Centre	59.49
Information Desk	11.96
Information Desk Store	1.70

Office 1	9.46
Office 2	12.20
Kitchen	13.11
Security Offices	20.73
CSC Lobby	1.62
Staff Break room / Kitchen	25.96
Baggage Enquiries Desk (Int / Dom Arrivals)	18.82
Customer Service Desk (adjacent to Check-In)	6.64
Customer Service Centre Sub-Total	181.69
Airfield Operations Safety Unit (Airside)	
LCY Airfield Operations Control Room	44.24
AOSU Kitchen	9.63
LCY Ops Office 1 (AOSU)	9.41
LCY Ops Office 2 (AOSU)	11.99
LCY Ops Lobby 1 (AOSU)	2.31
LCY Ops Lobby 2(AOSU)	1.18
Airfield Operations Support Unit Sub-Total	78.76
Baggage Processing Area	
OOB Cabin (Airside)	13.33
Check-In Desk Zone (Landside)	130.97
Domestic Baggage Offload Area - Belt 3 (Airside)	52.14
Departures Baggage Sortation (Airside)	276.27
Baggage reconciliation (Airside)	13.93
Baggage Screening (Airside)	29.85
Baggage Processing Area Sub-Total	516.49
Plant / Services	
Electrical Switch room G3 (Landside)	8.38
Electrical Switch room G4 (Landside)	5.80
Gas Intake Valve (Landside)	5.60
Cupboard (South East Corner) adjacent Elec Switch room G3 (Landside)	0.65
IT Data Room (Landside)	9.96
Sprinkler Room (Landside)	4.60
Telecoms room (Airside)	4.07
IT Room (Airside)	4.03
Gas Store (Padlocked - Airside)	6.90
Equipment Room (Comms Hub - Airside)	16.16
Riser G2	3.42
Plant and Equipment Room (adjacent Gate 2C)	9.20
Riser G1 (Airside)	9.74
Plant and Equipment Room (adjacent Gate 3 - Airside)	9.40
Plant and Equipment Room (adjacent Gate 4 - Airside)	9.15
Plant and Equipment Room (adjacent Gate 5 - Airside)	9.36
Plant and Equipment Room (adjacent Gate 6 - Airside)	9.29
Plant and Equipment Room (adjacent Gate 7 - Airside)	9.36
Plant and Equipment Room (adjacent Gate 8 - Airside)	9.50
Plant and Equipment Room (adjacent Gate 9 - Airside)	9.25
Plant / Services Sub-Total	153.82

Equipment / Miscellaneous Storage	
NATS / OPS Store (Airside)	10.75
Reliance Store (Cleaners Store - Airside)	9.78
Luggage Store TA0:70 (Airside)	13.02
Equipment / Miscellaneous Storage Sub-Total	33.55
Retail & Ticketing	
WH Smith (Landside)	84.44
WH Smiths Store (Landside)	6.67
WH Smiths Office (Landside)	9.50
British Airways (Landside)	14.25
Travelex Counter (Landside)	4.99
Travelex Office (Landside)	7.46
Travelex Office (Landside)	28.04
Lux Air (Landside)	15.79
City Jet / Air France (Landside)	10.76
Air France VLM (Landside)	32.94
Air France Store (Landside)	2.59
Quay Vennards (Landside)	5.28
Travelex Counter TAO:75 (Airside)	9.23
Retail & Ticketing Sub-Total	231.94
Handling Agents Accommodation	
Handling Agent (West Pier - Airside)	35.57
Handling Agent Kitchen (West Pier - Airside)	18.17
Handling Agent corridor (West Pier - Airside)	5.41
Handling Agent (West Pier - Airside)	26.42
Handling Agent (West Pier - Airside)	27.03
Retail & Ticketing Sub-Total	112.60
Food & Beverage	
Pret A Manger G-A007 (Landside)	129.70
Pret A Manger - Catering BoH (approx - Landside)	67.84
Panopolis (Landside)	124.20
Cold store and keg store (to bar above) TAO:134 (Airside)	6.00
Alcohol store (to bar above) TAO:134 (Airside)	10.42
Store TA0:136 (Airside)	5.09
Store TA0:137 & Basement Access Shaft (Airside)	19.00
Food & Beverage Sub-Total	362.25
WC	
International Arrivals A/S Toilet Block (Airside)	49.46
Landside Toilets (inc Cleaners' St/ Dis. WC / Baby Change)	110.61
Domestic Arrivals - Gents WC (Airside)	8.45
Domestic Arrivals - Ladies WC (Airside)	10.18
WC Sub-Total	178.70

Front of House Circulation / Concourses	
International Arrivals Hall (Airside)	434.80
Departures Concourse (Landside)	825.60
Departures (Check-In) Queue Zone (Landside)	153.49
Terminal Entrance G-A001 / DLR Approach (Landside)	238.68
Domestic Arrivals Corridor (Airside)	66.84
Domestic Arrivals Hall (Airside)	196.26
Domestic Arrivals Hall Exit Route 1 (Airside)	16.07
Domestic Arrivals Hall Exit Route 2 (Airside)	2.87
New Departure & Arrivals Gate (Airside)	30.86
Republic of Ireland & Channel Islands Arrivals (Airside)	25.17
Gate 2C Access (Airside)	2.66
International Arrivals (Bus route - Airside)	10.82
Arrivals Corridor (gate 3 - Airside)	88.56
Gate 3 Access (Airside)	2.50
Arrivals Corridor (gates 4 & 5 - Airside)	226.98
Gate 4 Access (Airside)	2.79
Gate 5 Access (Airside)	2.55
Arrivals Corridor (gates 6 & 7 - Airside)	227.41
Gate 6 Access (Airside)	2.82
Gate 7 Access (Airside)	2.43
Arrivals Corridor (gates 8 & 9 - Airside)	182.52
Gate 8 Access (Airside)	2.47
Gate 9 Access (Airside)	5.47
Gate 10 Access (Airside)	14.07
Front of House Circulation / Concourses Sub-Total	2764.69
Gate Lounge (Airside)	
Departure Lounge 1	57.25
Gate 2A & 2B	21.64
Gate Lounge 2C	67.36
Gate Lounge 3	64.76
Gate Lounge 4	64.85
Gate Lounge 5	64.77
Gate Lounge 6	64.69
Gate Lounge 7	65.57
Gate Lounge 8	65.46
Gate Lounge 9	61.86
Gate Lounge 10	53.64
Gate Lounge Sub-Total	651.85
Ground / Apron Level - Internal Area (approx.)	6566.32
Ground / Apron Level - Gross External Area (approx.)	7377.00

First Floor / Departures Level	
Security	
Security Staff Briefing Room F-A006 (Airside)	13.33
Private Search Room F-A007 (Airside)	8.17
Office F-A008 (Airside)	10.42
UKBA / Special Branch Interview Room F-A013 (Airside)	10.02
Security - Private Search F-A014 (Airside)	8.43
Interview Room F-A044 (Airside)	6.58
Private Search F-A045 (Airside)	7.94
Main Security Search & Queue Zone (Air / Landside)	840.50
Overflow Security Search Zone (Air / Landside)	273.51
Security Sub-Total	1178.90
NATS Offices (Airside)	
NATS Offices 1 (NE Corner)	11.32
NATS Offices 2 (Central Space)	21.11
NATS Offices 3 (North A/S Facade)	11.83
NATS Offices 4 (Central)	6.96
NATS WC 1	2.72
NATS WC 2	3.00
NATS Lobby	7.20
NATS Offices	64.14
Plant / Services	
Electrical Room F-A012 (Airside)	9.84
Riser F-A028 (Airside)	13.56
IT Room F-A015 (Airside)	10.74
Riser (adjacent NATS accommodation - Airside)	2.69
Riser (adjacent Main Toilet block - Airside)	4.61
IT Room (North near to Goods Lift area - Airside)	7.56
Riser F-A034 (adjacent to Security Office - Airside)	1.70
Riser F-A035 (adjacent to Travelex - Airside)	2.44
Plant / Services Sub-Total	53.14
Retail (Airside)	
WH Smiths	66.02
WH Smiths Store	13.57
Travelex	13.42
Aelia Duty Free	274.22
WH Smiths	77.21
Boss	45.00
Gasston (Watches)	20.90
Retail Sub-Total	510.34

Food & Beverage (F&B - Airside)	
Espressamenre illy	45.60
Espressamenre illy seating	90.04
Rhubarb (and Seating F-A024)	305.68
Rhubarb Store (south west corner)	6.89
Panopolis F-A038	32.11
Panopolis seating	42.51
Caffe Nero	29.07
Caffe Nero seating	28.31
City Bar and Grill (including seating)	273.81
City Bar and Grill (remote) seating	57.54
F&B Sub-Total	911.56
Customer Service Centre (Airside)	
Customer Service Counter	12.94
Office 1	7.92
CSC Lobby	3.04
Customer Service Centre Sub-Total	23.90
Goods Route / Both Circulation (Airside)	
Stair Core F-A011 (South East Corner)	19.89
Stair Core (Central South Facade)	26.67
Staff Return Route Stair (Central West Facade)	16.92
Stair (Central East Facade)	28.96
NATS Stair (North East Corner)	11.54
Lift (North East Corner)	2.19
Stair (Goods & Waste - North West)	23.63
Lift Lobby (Goods & Waste - North West)	12.75
Plant room access stair (Adjacent to main toilet block)	5.42
Lobby (adjacent Roof access stair)	2.31
Goods Route / Both Circulation Sub-Total	150.28
WC (Airside)	
F-A022	2.92
F-A023 Dis.WC	3.79
F-A021 WC	12.80
F-A020 WC	11.45
Main Passenger Toilet Block (Central)	101.08
WC Sub-Total	132.04

Front of House Circulation / Concourses	
Departures Lounge Circulation (and Lounge Seating - Airside)	1127.52
Stair Domestic Arrivals (Central East Façade - Airside)	28.96
Stair (Central North Facade - Airside)	28.75
Stair core adjacent to Gate lounge (Airside)	21.73
West Pier Connector corridor (Airside)	57.83
Stair to Gate 2C (Airside)	8.98
West Pier corridor to Gate 3 stair (Airside)	167.84
Stair to Gate 3 (Airside)	8.98
Stair to Gate 4 (Airside)	8.98
West Pier corridor to Gate 5 stair (Airside)	220.31
Stair to Gate 5 (Airside)	8.98
Stair to Gate 6 (Airside)	8.98
West Pier corridor to Gate 7 stair (Airside)	219.01
Stair to Gate 7 (Airside)	8.98
Stair to Gate 8 (Airside)	8.98
West Pier corridor to Gate 9 stair (Airside)	170.80
Stair to Gate 9 (Airside)	8.98
Void Main VCC circulation from Ground Level / Departures Concourse (Landside)	101.27
Front of House Circulation / Concourses Sub-Total	2215.86
Gate Lounge (Airside)	
Departure Lounge	51.79
Gate Lounge Sub-Total	51.79
Equipment / Miscellaneous Storage	
Store adjacent to Stair 9 (Airside)	11.27
Un-allocated store F-A004 (Landside)	5.20
Cleaning vehicle store (Landside)	5.81
F-A040 (Airside)	6.77
F-A018 Store (Next to Illy - Airside)	3.32
Equipment / Miscellaneous Storage Sub-Total	32.37
First / Departures Level - Internal Area (approx.)	5324.32
First / Departures Level - Gross External Area (approx.)	5993.49

Second / Plant Level	
NATS Offices (Airside)	
NATS Engineers Office Equipment Room	35.98
NATS Lobby 1	4.65
NATS Lift Lobby	1.78
NATS Kitchen	4.85
NATS WC	2.28
NATS Stair to VCR CAB	2.89
NATS Offices Sub-Total	52.43
Plant / Services (Airside)	
Southern Plant room (including mobile telephone mast control room)	124.80
Northern Plant room (including Water tanks)	616.97
Plant (adjacent to NATS accommodation)	11.17
Plant / Services Sub-Total	752.94
Both Circulation (Airside)	
Stair Core (to Southern Plant room)	4.21
Stair Core (to Northern Plant room)	4.15
Stair (to NATS accommodation)	10.13
Goods Route / Both Circulation Sub-Total	18.49
Double Height Void Space	
Double Height Void / Suspended Ceiling void	1033.94
Double Height Void Space Sub-Total	1033.94
Second / Plant Level - Internal Area (approx.)	1857.80
Second / Plant Level - Gross External Area (approx.)	2047.63
Roof Level	
NATS Offices (Airside)	
NATS VCR CAB	29.66
NATS Offices Sub-Total	29.66
Roof Level - Gross External Area (approx.)	36.70
APPROX. GEA (ALL FLOORS)	15454.82

EXISTING EAST PIER BUILDING	
Ground / Apron Level	Area m2
Plant / Services (Airside)	
Sub-Station (external)	25.35
East Apron Plant Room	18.33
Plant / Services Sub-Total	43.68
Equipment / Miscellaneous Storage (Airside)	
Store	7.28
Store 1 (adjacent dep. Lounge 22)	7.25
Equipment / Miscellaneous Storage Sub-Total	14.53
WC (Airside)	
Dis. WC (adjacent dep. Lounge 24)	4.25
WC Sub-Total	4.25
Front of House Circulation / Concourses (Airside)	
Arrivals Circulation Route	252.00
Arrivals Circulation Route	131.90
Lift & lobby	6.82
Departure Lounge 22 stair	16.54
Arrivals Stair (adjacent dep. lounge 22)	16.12
Departure Lounge 22 lobby	4.00
Departure Lounge 24 stair	16.54
Arrivals Stair (adjacent dep. lounge 24)	16.12
Departure Lounge 24 lobby	4.00
Front of House Circulation / Concourses Sub-Total	464.04
Gate Lounge (Airside)	
Departure Lounge 22	95.52
Departure Lounge 24	85.69
Gate Lounge Sub-Total	181.21
Ground / Apron Level - Gross Internal Area (approx.)	707.71
Ground / Apron Level - Gross External Area (approx.)	833.22
First Floor / Departures Level	
Front of House Circulation / Concourses (Airside)	
Departures Corridor (from main terminal building)	75.89
Domestic Arrivals	111.06
Domestic Arrivals stair	15.38
Departures corridor (to Lounge 21 +)	242.30
Departure Lounge 21 circulation and Stair	28.62
East Pier Departures corridor (to Lounge 23)	136.21
Departure Lounge 23 circulation and Stair	28.62
Stair to Departures lounge 22	20.04
Stair to Departures lounge 24	20.04
Front of House Circulation / Concourses Sub-Total	678.16

Gate Lounge (Airside)	
Departure Gate Lounge 21	57.25
Departure Gate Lounge 23	21.64
Gate Lounge Sub-Total	78.89
WC (Airside)	
Dis. WC (adjacent dep. Lounge 23)	4.25
WC Sub-Total	4.25
Plant / Services (Airside)	
Service Cupboard (adjacent to Lift)	1.55
Plant / Services Sub-Total	1.55
First / Arrivals - Internal Area (approx.)	762.85
First / Arrivals - Gross External Area (approx.)	941.95
APPROX. GEA (ALL FLOORS)	1775.17

EXISTING CIVIL AVIATION HOUSE (CAH) - ALL LANDSIDE	
Ground Level (Based on Drawing C16-006 - New Staff Restaurant)	Area m2
New Post / Scanner Room (CO.XX)	38.80
ID Unit (CO.44)	14.80
ID Unit (CO.36)	12.90
ISS	179.30
Cleaning Office	9.30
LCY Communication Office	10.20
Kitchen	6.10
Cleaners Store	3.20
Male Lockers (Initial cleaning and ISS)	13.30
Female Lockers (Initial cleaning and ISS)	11.70
Elec Riser (CO:15)	6.10
Disabled WC (CO:14)	3.21
Female Toilets (CO:13)	12.46
Male Toilets (CO:12)	13.28
Kitchen / Tea-point (CO:11)	4.00
Elec Riser (CO:10)	5.10
Plant Room	9.20
Electrical Switch room	7.65
Entrance Hall (Excluding Lift & Stair)	19.47
Services (No room name on drawings)	18.39
Cafeteria	106.59
Lobby	5.80
Office	9.10
Showers & WCs	13.20
Dry Store	6.60
Kitchen (No room name on drawings)	72.00
Cleaners Room (No room name on drawings)	2.65
Securitas Office (formerly located in a site cabin within the Triangle area)	
Ground Level Sub-Total	614.40
First Level	Area m2
Meeting Rooms	180.60
Toilets	33.50
Reception	60.90
Kitchen / Store	12.40
Post Room	4.80
BA Offices (shown on plans as Spare Offices)	71.90
BA Data Room	10.60
City Jet Offices	115.60
Presentation Suite	92.90
First Level Sub-Total	583.20
Second Level	Area m2
Tenant Offices	386.70
BA Training Room	25.90
City Jet Office	42.60
Toilets	31.30

Kitchen	10.60
Second Level Sub-Total	497.10
Third Level	Area m2
Offices	274.60
Secretarial Support	66.10
Staff Room	28.40
Toilets	30.90
Cloak Room	9.00
Server Room	18.00
Marketing / Sales	119.50
Third Level Sub-Total	546.50
Total NIA (ALL FLOORS - not incl. circulation/risers)	2241.20
APPROX. GIA (ALL FLOORS)	2800.00



EASTERN EXTENSION & EAST PIER

ILLUSTRATIVE SCHEME

Ground Level	Area m2
United Kingdom Border Agency (UKBA) Support Offices/Welfare (Airside)	157
UKBA Circulation Area (Airside)	123
Customs Channels / Screening (Airside)	166
Retail Tenant Space (Landside)	408
Letable Area (Rent-a-Car & Chauffeur - Landside)	120
Food & Beverage (F&B) Tenant Space (Landside)	249
F&B Shared Seating (Landside)	185
General Seating (Landside)	65
Retail Storage (Landside)	32
Bin Store (Landside)	70
Bin Store (Airside)	23
Toilets (Landside)	210
Toilets (International & Common Travel Area (CTA) - Airside)	134
Toilets (Domestic - Airside)	107
International Lost Luggage (Airside)	20
Domestic Lost Luggage (Airside)	15
Lost Luggage (Landside)	13
International & CTA Reclaim Hall (Airside)	1582
Domestic Reclaim Hall (Airside)	610
International & CTA Out of Gauge (OOG) (Airside)	16
Domestic OOG (Airside)	18
First Aid & Persons with Reduced Mobility (PRM) Room - Domestic (Airside)	9
First Aid & PRM Room - International & CTA (Airside)	19
First Aid & PRM Room (Landside)	27
Back of House (BoH) Circulation - Corridor & Stairs	370
BoH Goods Store	11
Goods and Waste Collection Point (Airside)	22
Front of House (FoH) Circulation Area (inc. Stairs - Landside)	1759
Front of House Circulation Area (inc. Stairs - Airside)	1865
Services Connection Point / Green Wall Plant (Landside)	19
Public Health Plant / Pump Rooms and Risers (Air / Landside)	218
Electrical and IT Rooms (inc. Distribution Boards - Air/Landside)	68
Electrical / Mechanical Risers (Air / Landside)	97
ATM & Parking Payment Machine Room (Landside)	23
Fire Reception Point (Landside)	9
Toilets - Vertical Circulation Cores (VCC Airside)	63
FoH Stair / Escalator / Circulation Area - Vertical Circulation Cores (Airside)	522
Lift Cores (Airside)	87
Airfield Operation Safety Unit (AOSU) Office (Airside)	76
Out Bound Baggage (OBB) & Hold Baggage Screening (HBS) (Airside)	2163
Ground Level Sub-Total	11750
Ground Level approx. GIA	12194
Ground Level approx. GEA	12565

Mezzanine Level	Area m2
Transfers Security (Including passport presentation - Airside)	218
Transfers Offices (Airside)	22
Immigration Hall (Airside)	498
UKBA Support Offices / Welfare (Airside)	384
Special Branch Offices (Airside)	95
UKBA / Special Branch BoH Circulation (inc. Stairs - Airside)	171
Bin Store (Airside)	23
Toilets (Airside)	110
Public Health Plant / Pump Rooms and Risers (Airside)	49
Electrical / Mechanical Risers (Airside)	103
Front of House (FoH) Circulation Area - inc. Stairs (Airside)	2614
Back of House (BoH) Circulation - Corridor & Stairs (Airside)	186
Electrical Switchrooms and IT Rooms (Airside)	104
Out Bound Baggage (OBB) & Hold Baggage Screening (HBS) - Mezzanine Deck Area	693
Baggage Screeners / Handlers facilities (including toilets - Airside)	245
Toilet Area - Vertical Circulation Cores (VCC - Airside)	59
FoH Stair / Escalator / Circulation Area - Vertical Circulation Cores (Airside)	407
Lift Cores (Airside)	50
Mezzanine Level Sub-Total	6031
Mezzanine Level approx. GIA	6465
Mezzanine Level approx. GEA	7257
Departures Level (excludes voids L/S concourse, BRH and OBB)	Area m2
Toilets (Airside)	118
Bin Store (Airside)	27
Electrical / Mechanical Risers (Airside)	110
Front of House (FoH) Circulation Area (inc. Stairs (Airside)	2279
Back of House (BoH) Circulation - Corridor & Stairs (Airside)	697
Lift Cores (Total)	50
Business Centre (Total)	288
Food & Beverage (F&B) Tenant Space (Airside)	142
LCY Offices (Airside)	933
LCY Staff Toilets	103
Electrical Switchrooms, IT & Plant Rooms (Airside)	280
Airline Tenant Offices (Airside)	1123
Gate Seating (Airside)	1565
Toilets - Vertical Circulation Cores (VCC Airside)	62
FoH Stair / Escalator / Circulation Area - Vertical Circulation Cores (Airside)	418
VCC Lift Cores (Airside)	50
VCC Cleaners Store (Airside)	54
Storage (Airside)	86
Departures Level Sub-Total	8385
Departures Level approx. GIA	8906
Departures Level approx. GEA	10127

Roof Level (Airside)	Area m2
Sprinkler tanks & pumps	227
Ventilation Plant 1	175
HV sub-station	94
LV switch room	60
Ventilation plant 2	197
CHW pumpsets	76
Air Cooled Chiller Compound	331
Domestic water services	100
Boiler plant	153
Stairs	60
Lift	12
Risers	18
Mechanical store	16
Departures Level Sub-Total	1519
Departures Level approx. GIA	1561
Departures Level approx. GEA	1612
APPROX. GIA (ALL FLOORS)	29126
APPROX. GEA (ALL FLOORS)	31561

WEST EXTENSION & TERMINAL BUILDING RECONFIGURATION INCLUDING WEST PIER

Ground Level	Area m2
Front of House (FoH) Circulation (Includes Concourse and Check-In queue space - Landside)	2853
Food & Beverage (F&B) Kitchen (Landside)	359
Retail Tenant Space including foreign Exchange (Landside)	380
Airline Ticketing Offices (Landside)	66
Back of House (BoH) Circulation - Corridor & Stairs (Air / Landside)	812
Plant / Services	209
Goods Screening & Offices (Air / Landside)	193
Storage (Airside)	44
Retail / F&B Storage (Airside)	131
F&B Tenant Space (Landside)	322
Staff Accommodation (Landside)	133
Airport Office Space (Landside)	464
Airport Office Space (Airside)	56
Storage (Landside)	26
Retail / F&B Storage (Landside)	180
Toilets (Airside)	37
Toilets (Landside)	221
Departures Gate Lounge Area (Airside)	643
Baggage Processing Area - including Check-In Desk area (Air / Landside)	768
Handling Agents Accommodation (Airside)	113
Ground Level Sub-Total	8010
Ground Level approx. GIA (Western Extension 1810)	8378
Ground Level approx. GEA (Western Extension 1898)	8873
First Level (Inc East Departures area)	Area m2
Back of House (BoH) Circulation (Landside / Airside - including stairs)	416
BoH Storage (Landside)	6
Retail / F&B Storage (Airside)	178
Plant (Landside / Airside)	151
Front of House (FoH) Circulation (including Security Search areas - Landside)	501
FoH Circulation (including security search areas - Airside)	2874
Offices (Security & NATS - Airside)	128
F&B Tenant Space (Airside)	1074
Toilets (Toilets)	363
General Lounge Seating (Airside)	709
Retail Tenant Space (Airside)	1138
Departure Gate (Airside)	52
First Level Sub-Total	7590
First Level approx. GEA (Western Extension 1788)	7781
First Level approx. GEA (Western Extension 1886)	8222

Second Level (Illustrative Layout)	Area m2
Back of House (BoH) Vertical Circulation Cores (VCC- Landside)	75
Back of House (BoH) Vertical Circulation Cores (VCC - Airside)	17
Back of House (BoH) Circulation (Landside)	374
Back of House (BoH) Circulation (Airside)	17
Toilets (Landside)	73
Airline offices (Landside)	162
Tenants Offices (Landside)	164
LCY Marketing & Sales (Landside)	164
Security Offices (Landside)	152
Storage (Landside)	12
Customer Service Centre (Landside)	110
Staff Kitchen / Rest Area (Landside)	43
Post / Scanner Room (Landside)	39
ID Unit (Landside)	36
Training Rooms (Landside)	139
LCY Comms Office (Landside)	29
Reception (Counter Area -Landside)	13
Plant (Air / Landside)	997
NATS Accommodation (Offices/Kitchen/WC - Airside)	43
Second Level Sub-Total	2659
Second Level approx. GIA (Western Extension 1794)	2778
Second Level approx. GEA (Western Extension 1951)	3108
Third Level (Airside)	Area m2
NATS VCR CAB	30
Third Level Sub-Total	30
Second Level approx. GIA	30
Second Level approx. GEA	37
APPROX. GIA (ALL FLOORS) (Western Extension 5392)	18967
APPROX. GEA (ALL FLOORS) (Western Extension 5735)	20240