

YOUR LONDON AIRPORT
Gatwick

Delivery of 95% Pier Service - Tollgate 3

Capital Programme Board – February 2013



Agenda

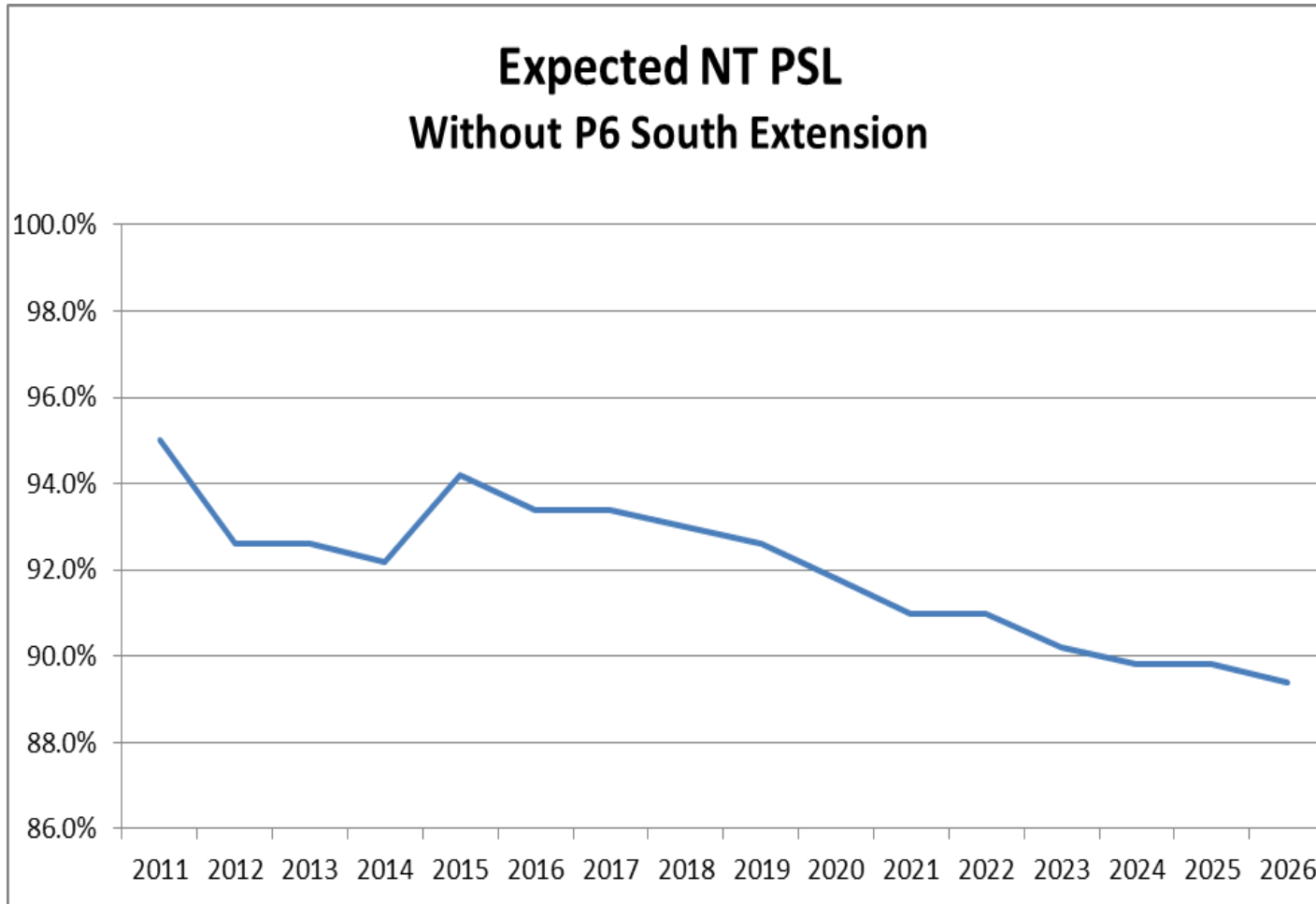
- The story so far
- Delivery of 95% Pier Service (North Terminal) - Requirements
- Pier 6 Southern Extension Preferred Option
- Do Nothing Scenario
- Phased approach to delivery plus scope reduction opportunities and cost



The story so far...



Delivery of 95% Pier Service (NT)



Requirements agreed at TG2

Project Requirements

- To meet future fleet mix requirements and support different airline operating models
- Passenger experience that allows Gatwick to compete (Premium, Economy, Passengers with Restricted Mobility)
- CAA compliance (CAP 168)
- Safety Regulation Group (SRG) approved solution
- Solution delivered to Gatwick Airport Limited (GAL) engineering standards
- Delivery to environmental commitments - Section 106 – Decade of Change
- Relocation and re-provision of existing infrastructure within proposed site boundary

Service Proposition Requirements (Product Matrix)

- To meet 95% pier service levels in line with forecasts
- Closed gate rooms to support airline operations and on time performance
- Vertical segregation of arriving and departing passengers
- Comfortable gate room seating
- Space not less than IATA C
- Sufficient Toilet facilities
- Lift locations to facilitate PRM access
- Retail and vending offers consistent with passenger requirements



Site Selection

- Level 1 QFD assessed the potential site options against agreed criteria:
 - Capacity
 - Cost
 - Service
- An extension to the South of the existing Pier 6 was agreed as the preferred location for additional pier service.



Options Development Process

➔ QFD Level 2

- ➔ 31 Requirement Criteria identified
- ➔ Cross functional input
- ➔ Data populated through Concept Design

➔ Criteria categorised under:

- ➔ Capacity
- ➔ Cost
- ➔ Service (Experience)
- ➔ Service (Performance)

No.	QFD Level 2 Criteria	Measure	Category	SubQFD	Weight Factor	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F	Notes
1	Capacity (Seat Capacity)	Number of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
2	Capacity (Seat Capacity)	Number of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
3	Capacity (Seat Capacity)	Number of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
4	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
5	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
6	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
7	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
8	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
9	Capacity (Seat Capacity)	% of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
10	Number of Seats (max. 1000 seats)	Number of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
11	Seat Capacity (max. 1000 seats)	Number of Seats (max. 1000 seats)	Capacity	M	100%	0	0	0	0	0	0	
12	Cost per Seat (max. 1000 seats)	Cost per Seat (max. 1000 seats)	Cost	M	100%	0	0	0	0	0	0	
13	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	
14	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	
15	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	
16	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	
17	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	
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31	QFD Level 2 Criteria	QFD Level 2 Criteria	Cost	M	100%	0	0	0	0	0	0	

Category	Weight	SubQFD	Weight
Capacity	30%	10	30
Cost	30%	10	30
Service (Experience)	30%	10	30
Service (Performance)	30%	10	30



Do Nothing

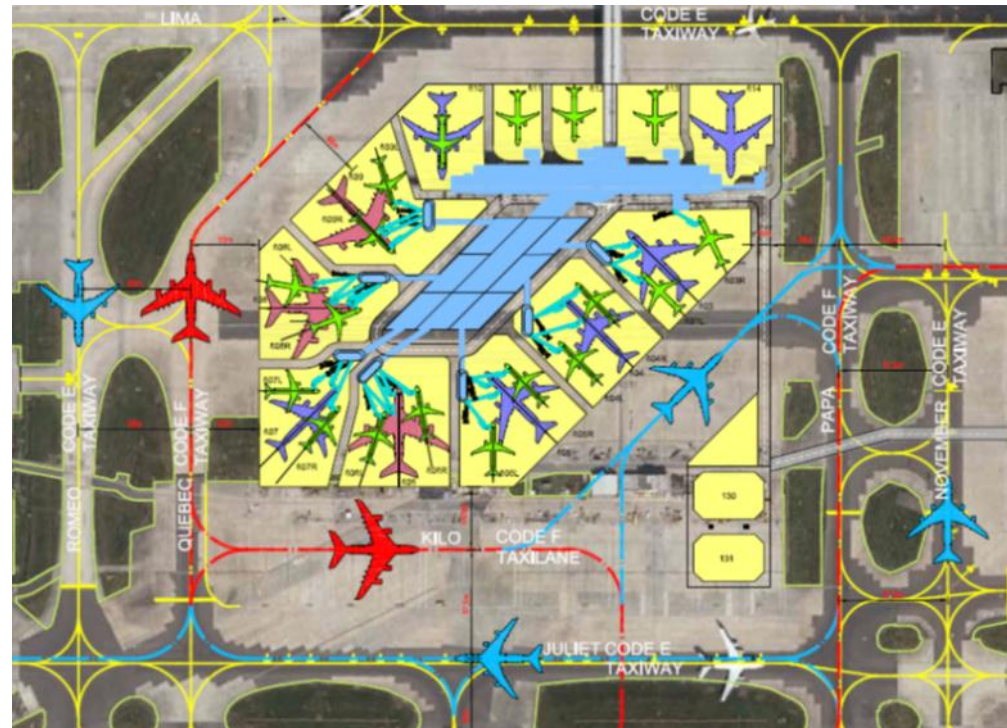
- ➔ Asset database outlines all pavement / AGL / other assets due for replacement
- ➔ Cost of asset replacement to 2020 in the Pier 6 South site area, if Pier 6 Southern Extension were not built, would be **circa £29.5m**

Asset Reference / Maximo Number	Description (includes grid number on sheet)	Use	Business Unit / Asset Steward	Assessment Type	Date of Assessment	Last Inspect date	Residual Life (years) as at assessment date	Residual life (years) as 2013	Key characteristics for high level costing e.g. type of material	Quantity (e.g. area, linear length, number etc.)	Rate to refurbish / replace per unit	Economic Service Life Asset (years)	Maintenance Regime based on condition
Main Runway													
Northern Runway													
SC154-C	Stand 154 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	15/11/2003	13	12	PCC	672	0	30	Routine Maintenance
SC155-A	Stand 155 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	4	3	PCC	1,210	0	30	Prognosed Maintenance
SC155-B	Stand 155 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	11	10	PCC	1,810	0	30	Routine Maintenance
SC155-C	Stand 155 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	15/11/2003	10	3	PCC	848	0	30	Routine Maintenance
SC156-A	Stand 156 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	7	6	PCC	1,885	0	30	Prognosed Maintenance
SC156-B	Stand 156 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	12	11	PCC	1,335	0	30	Routine Maintenance
SC156-C	Stand 156 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	15/11/2003	2	1	PCC	752	0	30	Major Refurbish
SC157-A	Stand 157 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	12	11	PCC	325	0	30	Routine Maintenance
SC157-B	Stand 157 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	13	12	PCC	2,570	0	30	Routine Maintenance
SC158-A	Stand 158 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	8	7	PCC	1,735	0	30	Routine Maintenance
SC158-B	Stand 158 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	13	12	PCC	2,140	0	30	Routine Maintenance
SC159-A	Stand 159 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	11	10	PCC	1,470	0	30	Routine Maintenance
SC159-B	Stand 159 (Cargo Area)	APRON	Airfield	Predictive Modelling	28/02/2012	21/07/2010	12	11	PCC	1,450	0	30	Routine Maintenance
SC1-A	STAND CARGO 1	APRON	Airfield	Predictive Modelling	28/02/2012	25/03/1936	3	2	PCC	1,875	0	30	Prognosed Maintenance
SC1-B	STAND CARGO 1	APRON	Airfield	Predictive Modelling	28/02/2012	25/03/1936	6	5	PCC	1,875	0	30	Prognosed Maintenance
SC3-A	STAND C3 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	03/12/1936	0	-1	PCC	2,665	0	30	Major Refurbish
SC3-B	STAND C3 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	02/04/1979	0	-1	PCC	375	0	30	Major Refurbish
SC5-A	STAND C5 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	03/12/1936	0	-1	PCC	2,665	0	30	Major Refurbish
SC5-B	STAND C5 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	02/04/1979	0	-1	PCC	375	0	30	Major Refurbish
SC7-A	STAND C7 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	03/12/1936	0	-1	PCC	2,665	0	30	Major Refurbish
SC7-B	STAND C7 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	02/04/1979	0	-1	PCC	375	0	30	Major Refurbish
SC9-A	STAND C9 (CARGO A)	APRON	Airfield	Predictive Modelling	28/02/2012	03/12/1936	0	-1	PCC	5,530	0	30	Major Refurbish
SC9-A	LEASED CARGO ARE	APRON	Airfield	Predictive Modelling	28/02/2012	03/10/1993	0	-1	PCC	8,400	0	30	Major Refurbish
				Predictive	28/02/2012			3			0	30	Routine



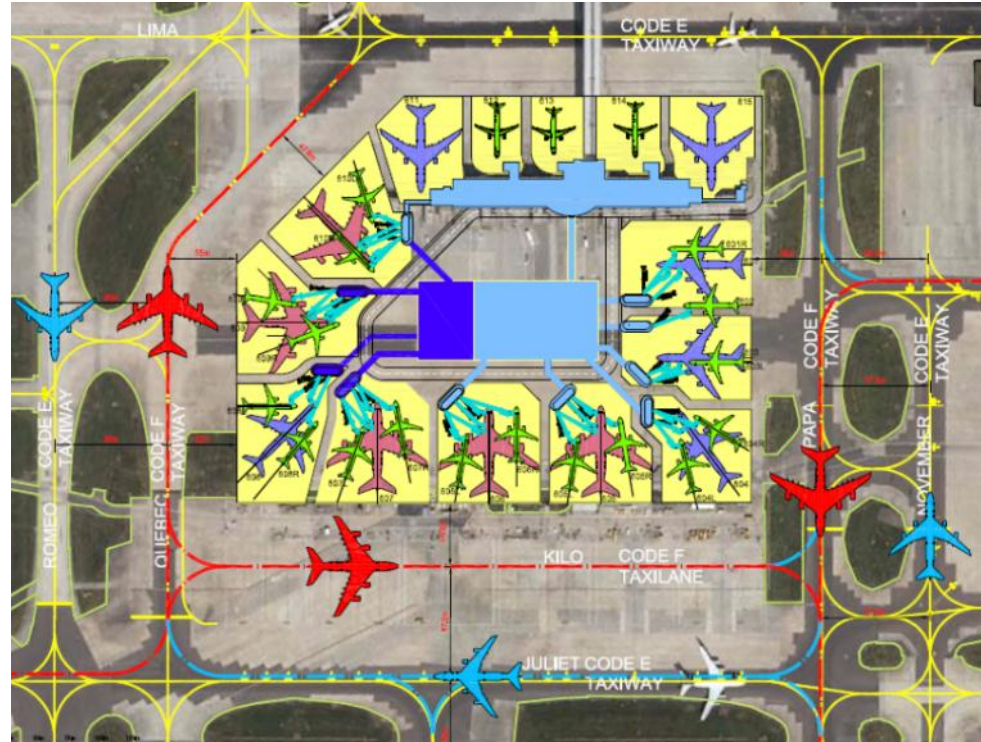
Option B

- ✈️ circa **£180m**
- ✈️ NATS driven option to avoid push back onto Papa/November
- ✈️ Building shape makes for difficult to operate stands in SW corner of site
- ✈️ Insufficient gateroom and circulation space



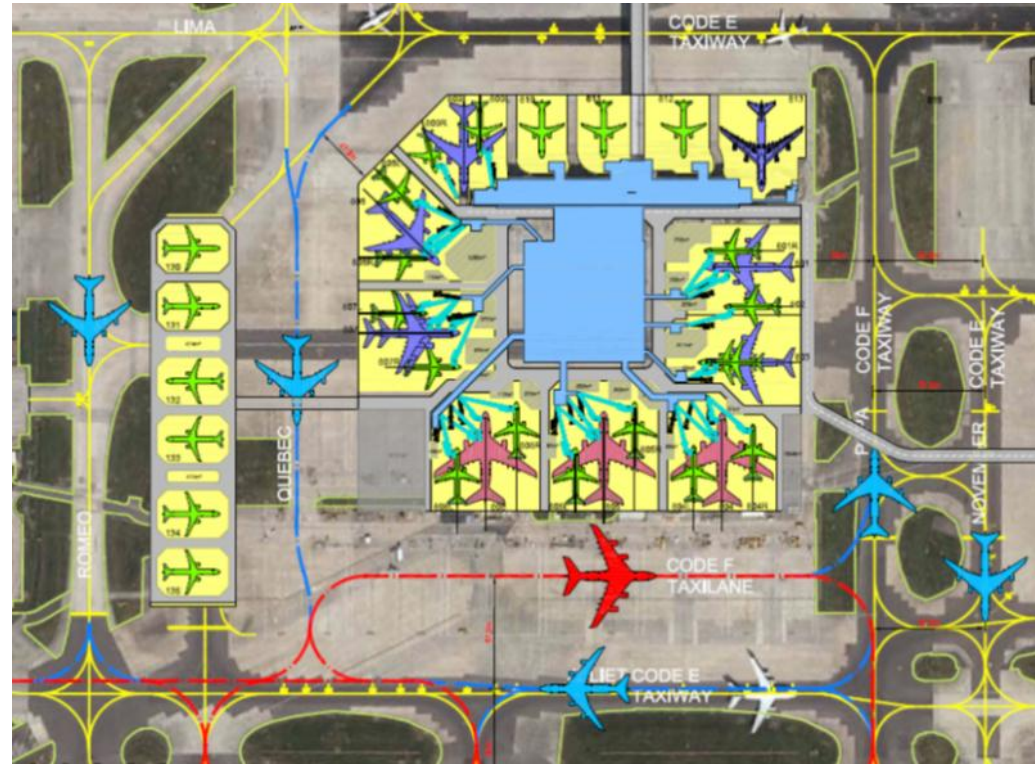
Option C

- circa **£210m**
- Modelling showed that pushback onto Papa/November was not a significant issue
- How many aircraft is it possible to fit on the site?



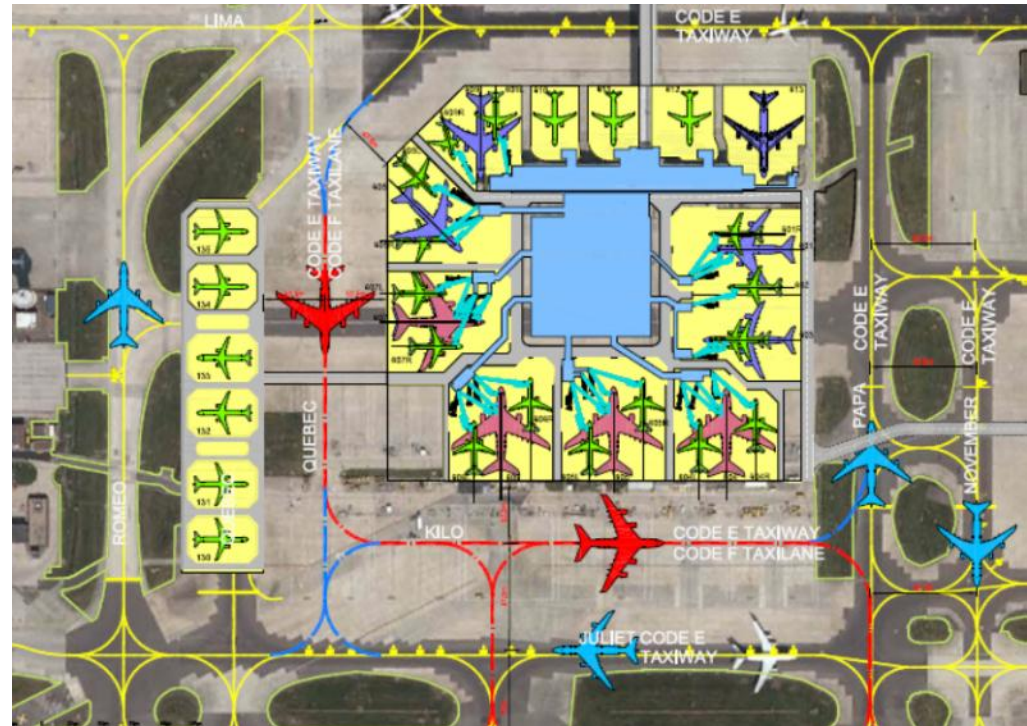
Option D

- circa **£185m**
- Use whole site, but provide sufficient space on stand to satisfy all airline operating models
- Less aircraft, but stands optimised for performance
- Break into Pier 6 façade for optimum passenger experience and circulation space
- Optional Remote / push and hold stands

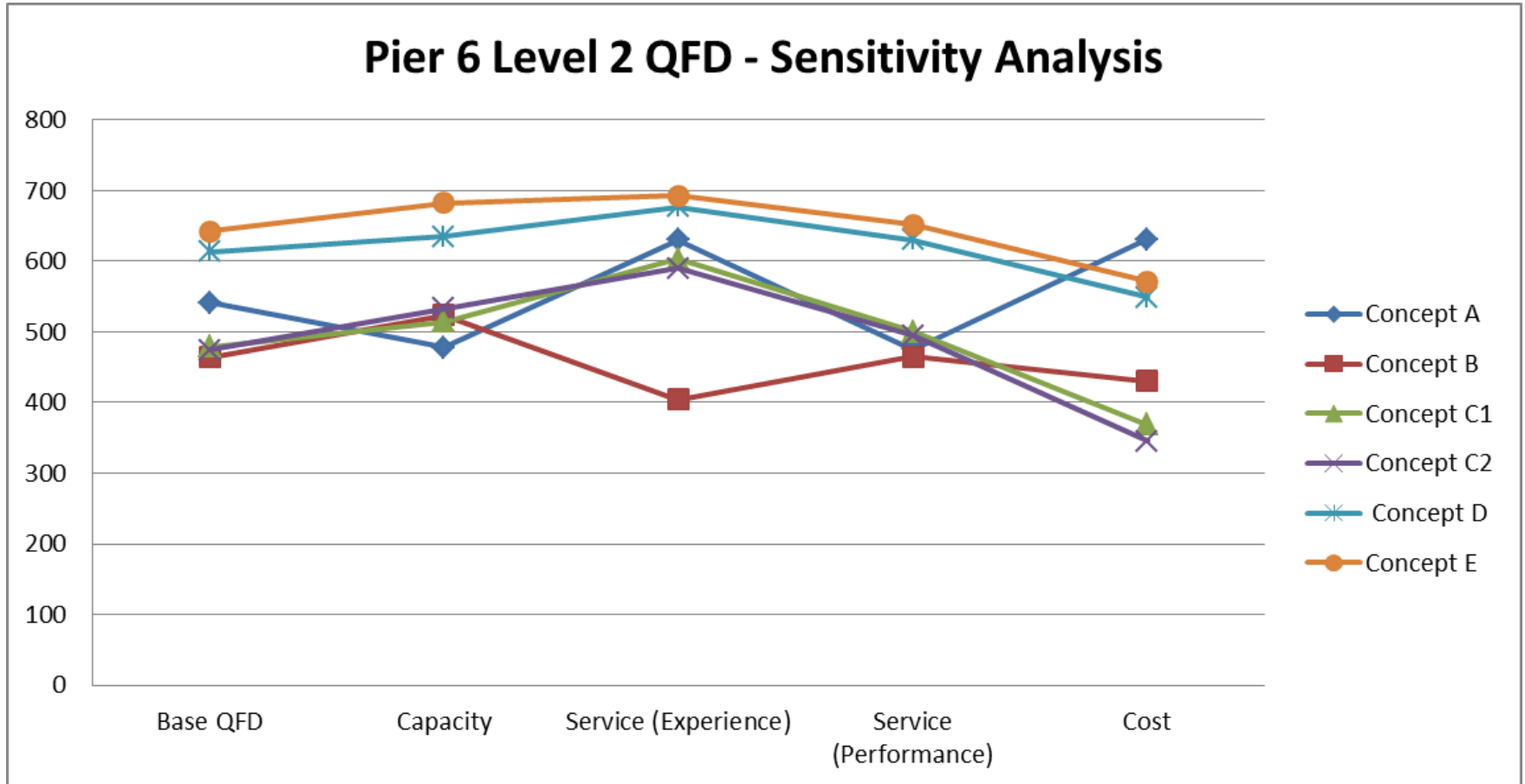


Option E – Revised Business Plan to 2024

- circa **£185m**
- As Option D, but reconfiguration to provide space for additional Code F stand



Level 2 QFD Option Selection



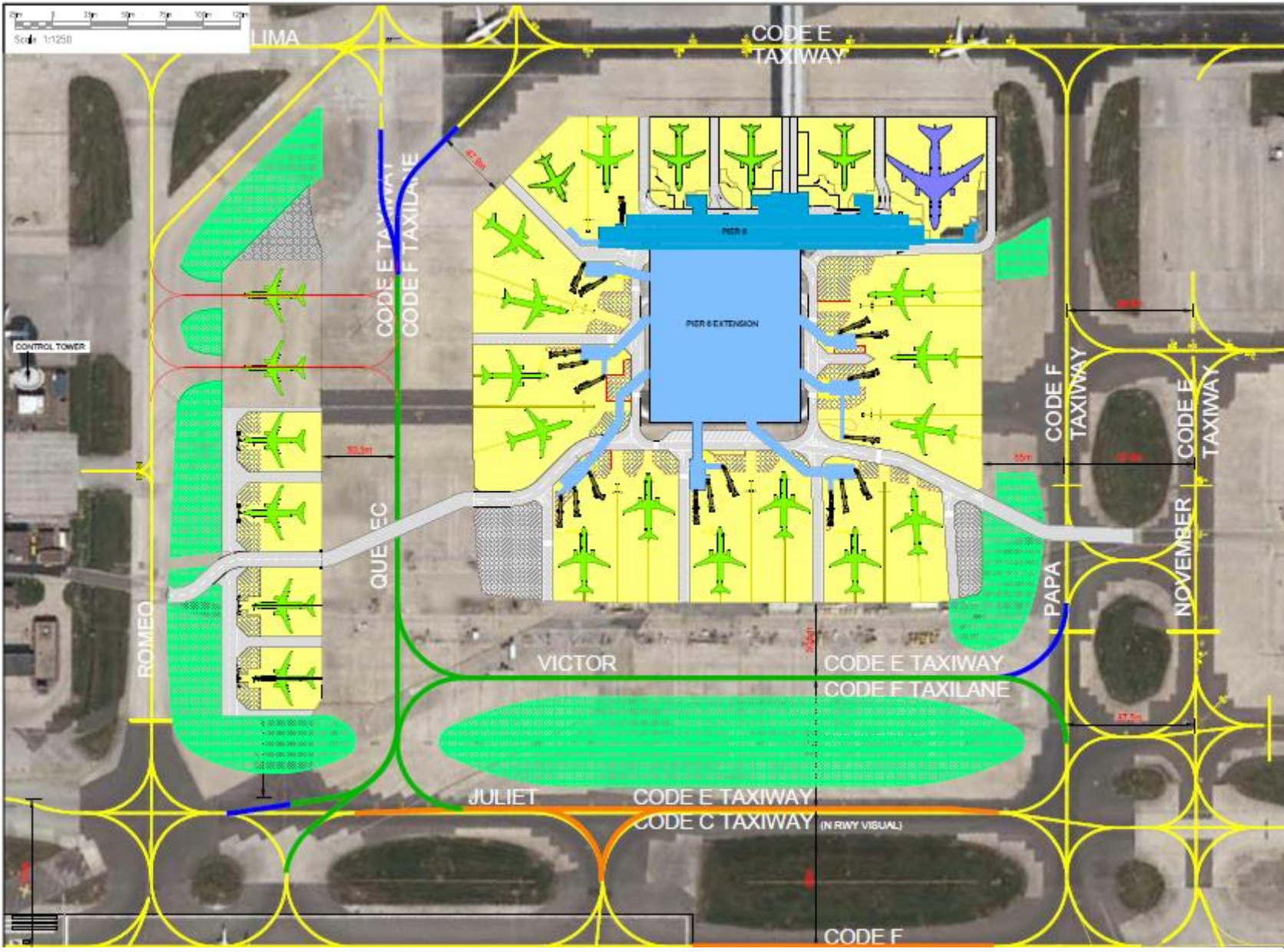
Options Development since April 2012

→ Benefits (Option A to Option E):

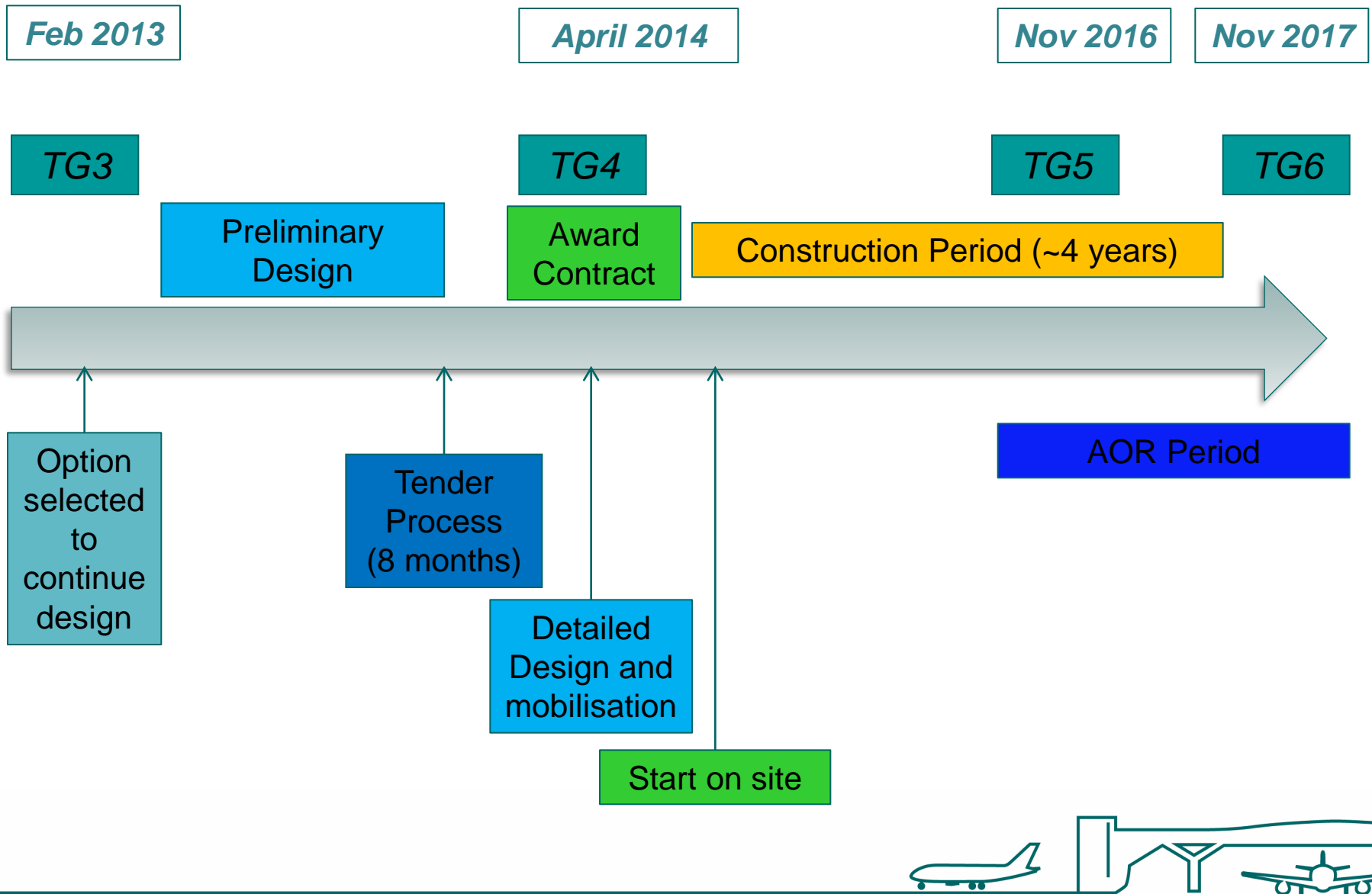
- No stands have operating or stand planning restrictions
- Building – gate space to IATA C, with effective circulation and queuing space for passengers
- Operationally efficient stands to assist On Time Performance
- CIP Lounge product with views across the airfield and direct boarding to long haul stands
- Stands provide flexible MARs centrelines with safe walking routes and ability to board using rear steps
- Remote / Push and Hold stands



Site Layout



Pier 6 Southern Extension – Programme



Pier 6 Southern Extension - Financials

Tollgate 3 Option

→ GAL Management	£1.96m
→ Design	£5.48m
→ (Tender Process	£0.53m)
→ (Construction	£175.5m)
→ General	£0.59m
→ Risk	£0.17m
→ <i>Previously approved</i>	<i>£6.98m</i>
→ TOTAL REQUEST	£1.2m
→ <i>Funds required</i>	<i>£8.2m</i>
→ TOTAL AFC	£184.2m



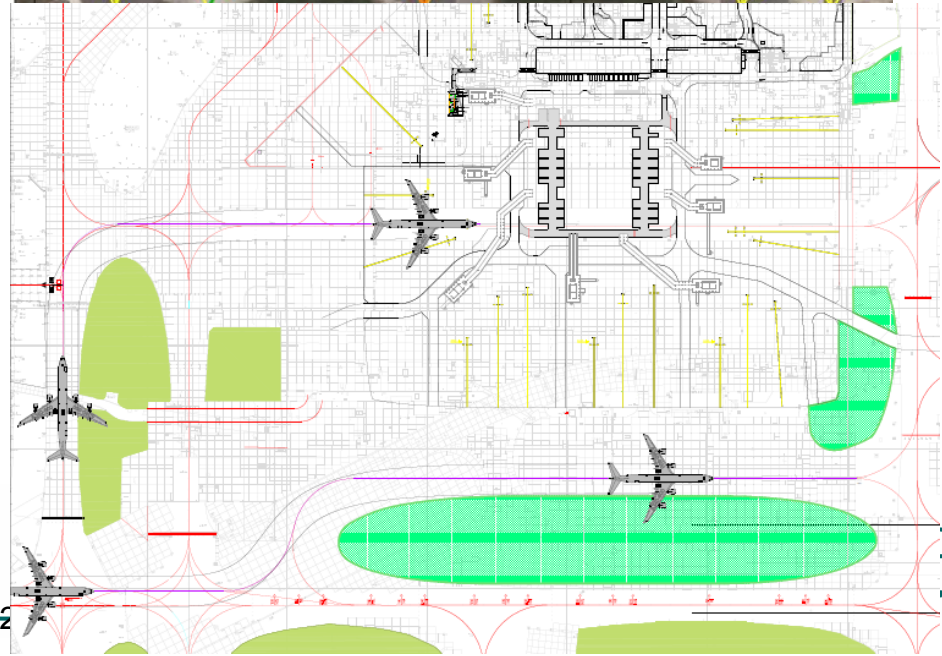
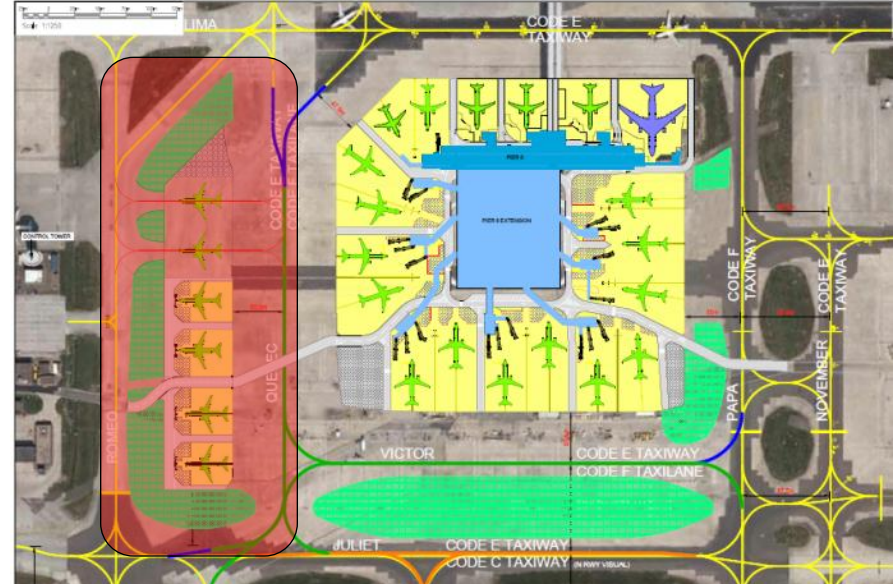
Phased Construction and scope opportunities

- Construction Sequencing
 - Phased delivery of Remote hold stands and Quebec re-alignment
 - Phased delivery of Code F capability
- Reduce flexibility of infrastructure (remove independent WIWO access to each Code C)
 - Removal of one staircase from each node
 - Maintain independent access, one via jetty, one via stairs
 - Acknowledge change to project requirements



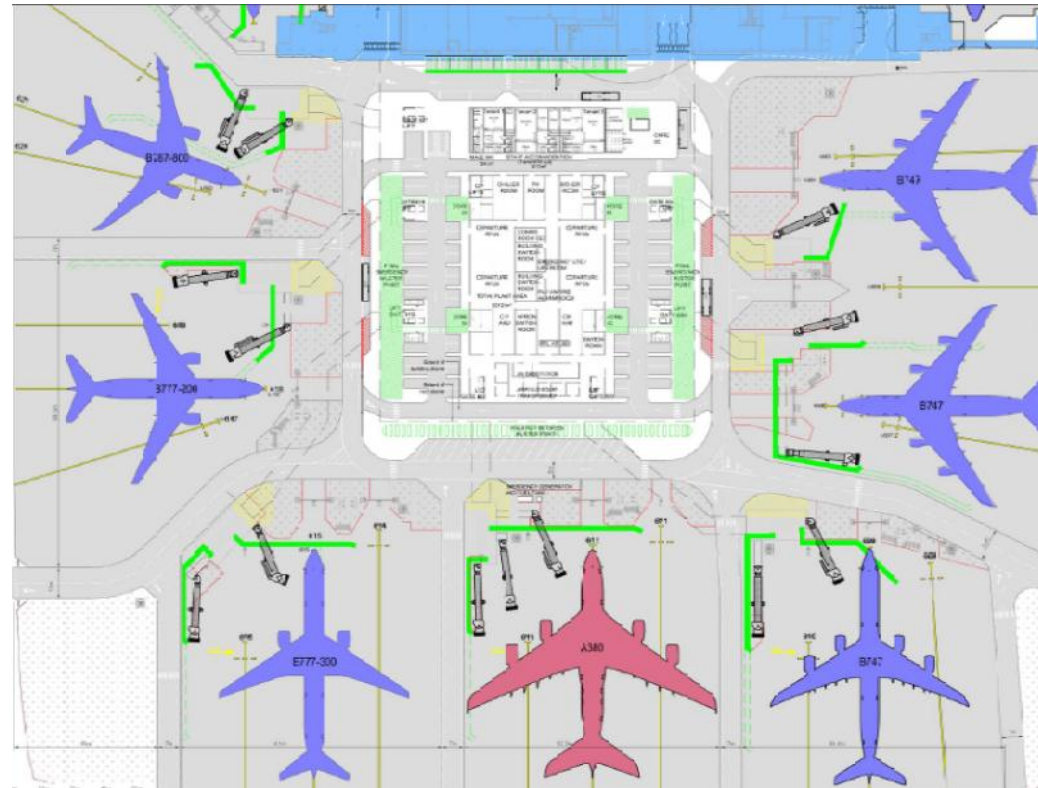
Phased delivery of Remote holds/Quebec

- circa **£20m** saving before 2020
- Additional **£30m+** to remobilise and develop later
- **Recommend** to develop opportunity post TG3



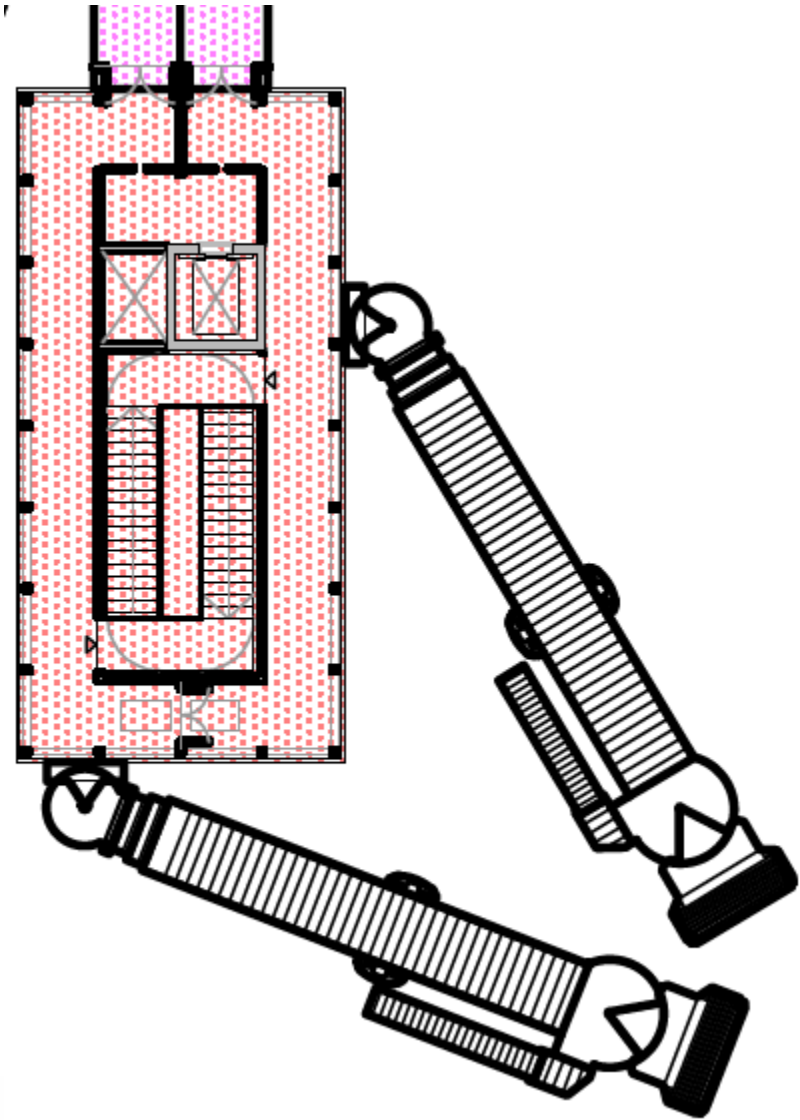
Phased delivery of Code F stands

- circa £2m saving before 2020
- Additional costs to remobilise and deliver later
- **Recommend** to develop opportunity post TG3



Reduce Flexibility - WIWO

- circa £3m saving
- Current design allows for full flexibility for steps to tarmac and airbridge access independently to both Code C centrelines on MARS stands.
- 2 independent sets of stairs in each node
- Reducing this flexibility changes project requirements but presents significant cost savings
- **Do not recommend** pursuing this opportunity



Summary

Option	Do Nothing	Tollgate 3 (build P6 2014)	Phased approach (P6 2014, Remotes/Quebec 2020)
Beyond Q5	£29.5m	£184.2m	£167
Post 2020	£??	£0	c £35m
Total	£??	£184.2m	c £200m +
Level of Disruption			



Question for CPB

- ➔ Does CPB recommend the approval of Tollgate 3 for the Pier 6 Southern Extension option to deliver 95% Pier Service for North Terminal?



Supporting Information



Pier 6 Southern Extension



Pier 6 Southern Extension

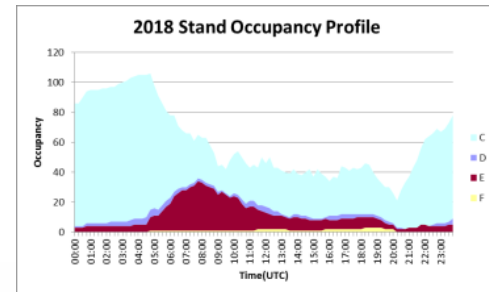
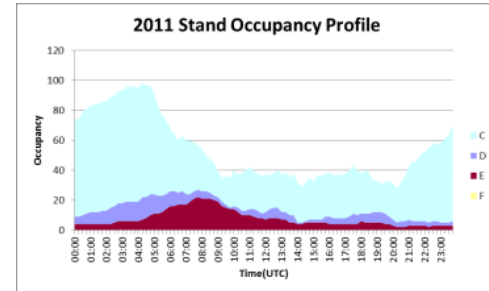
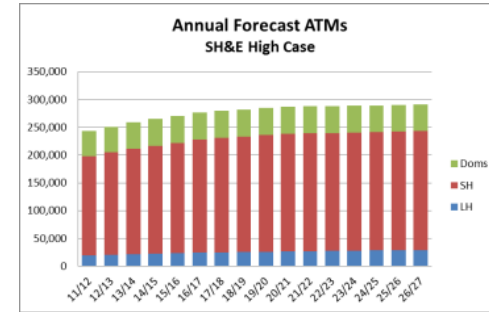
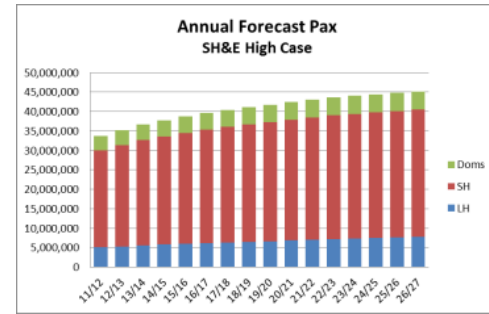
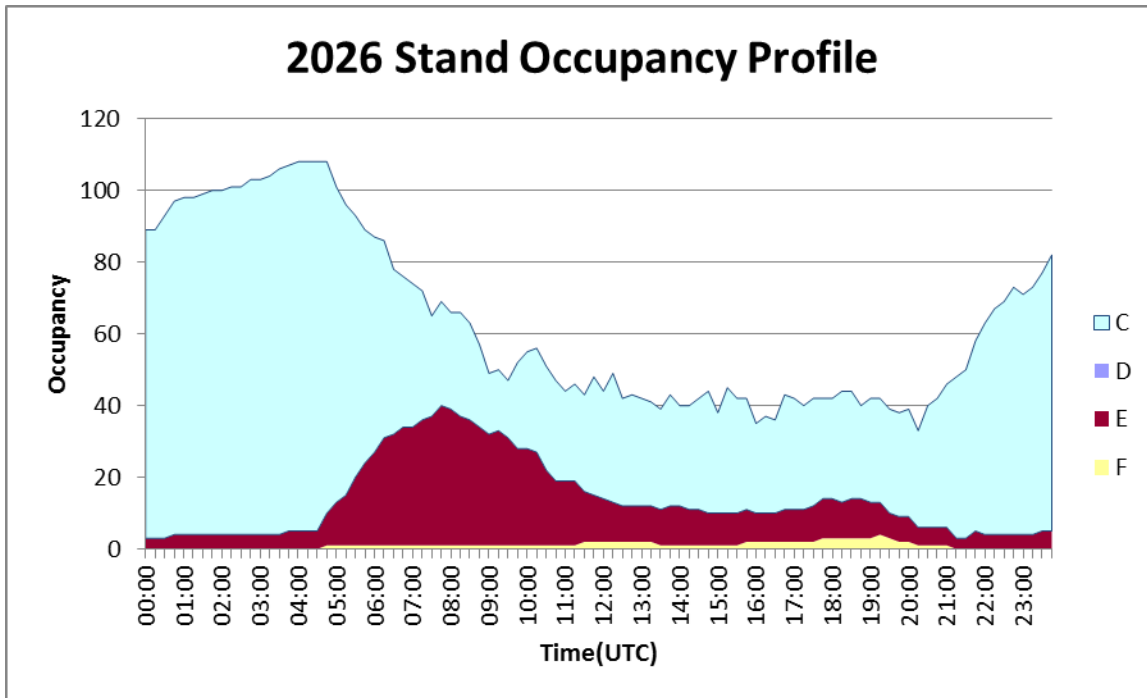


Central Circulation Area

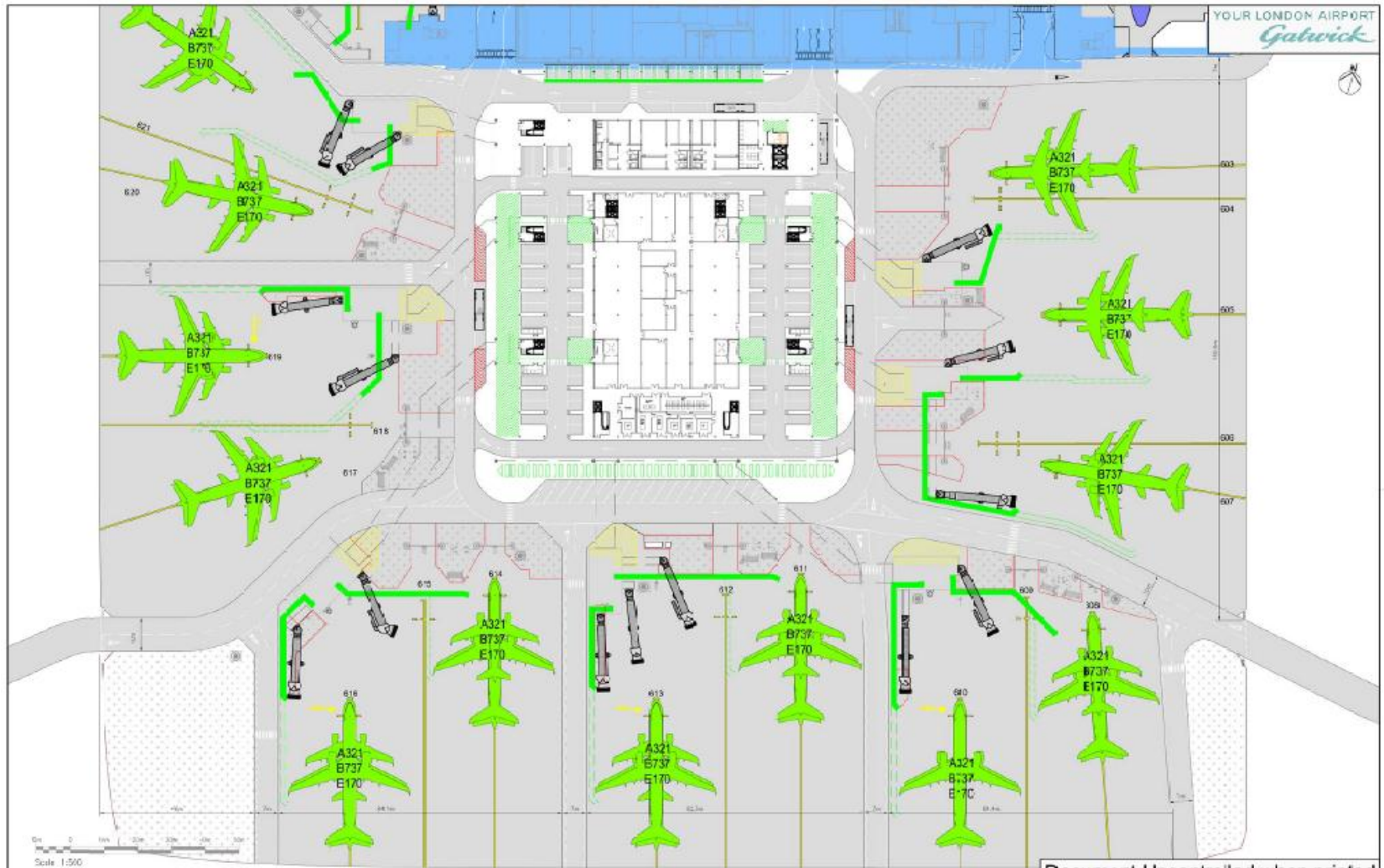


2026 Total Stand Occupancy Profile

- Similar short haul peak 2018/2026
- Long haul growth between 2018 - 2026



Apron Planning

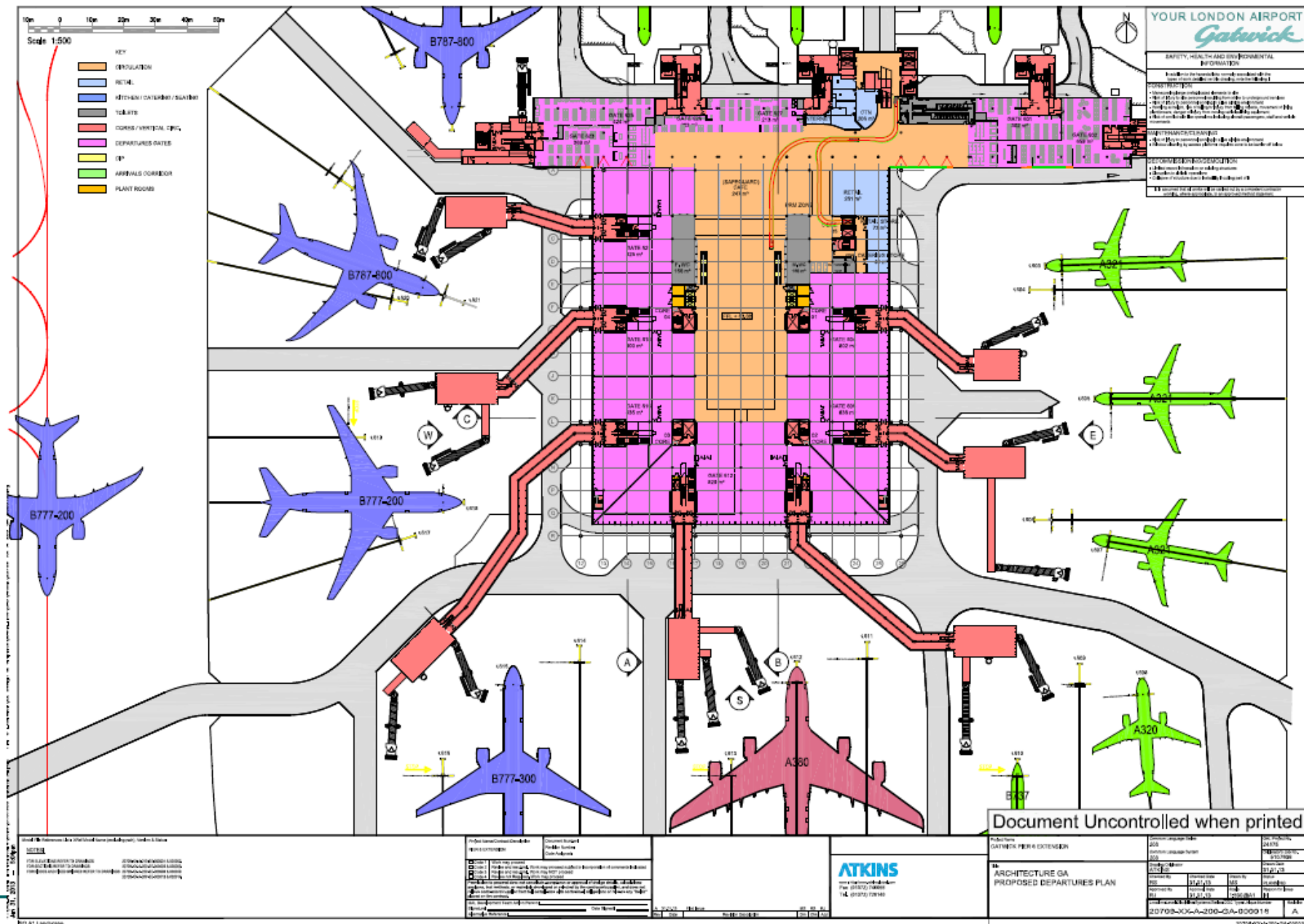


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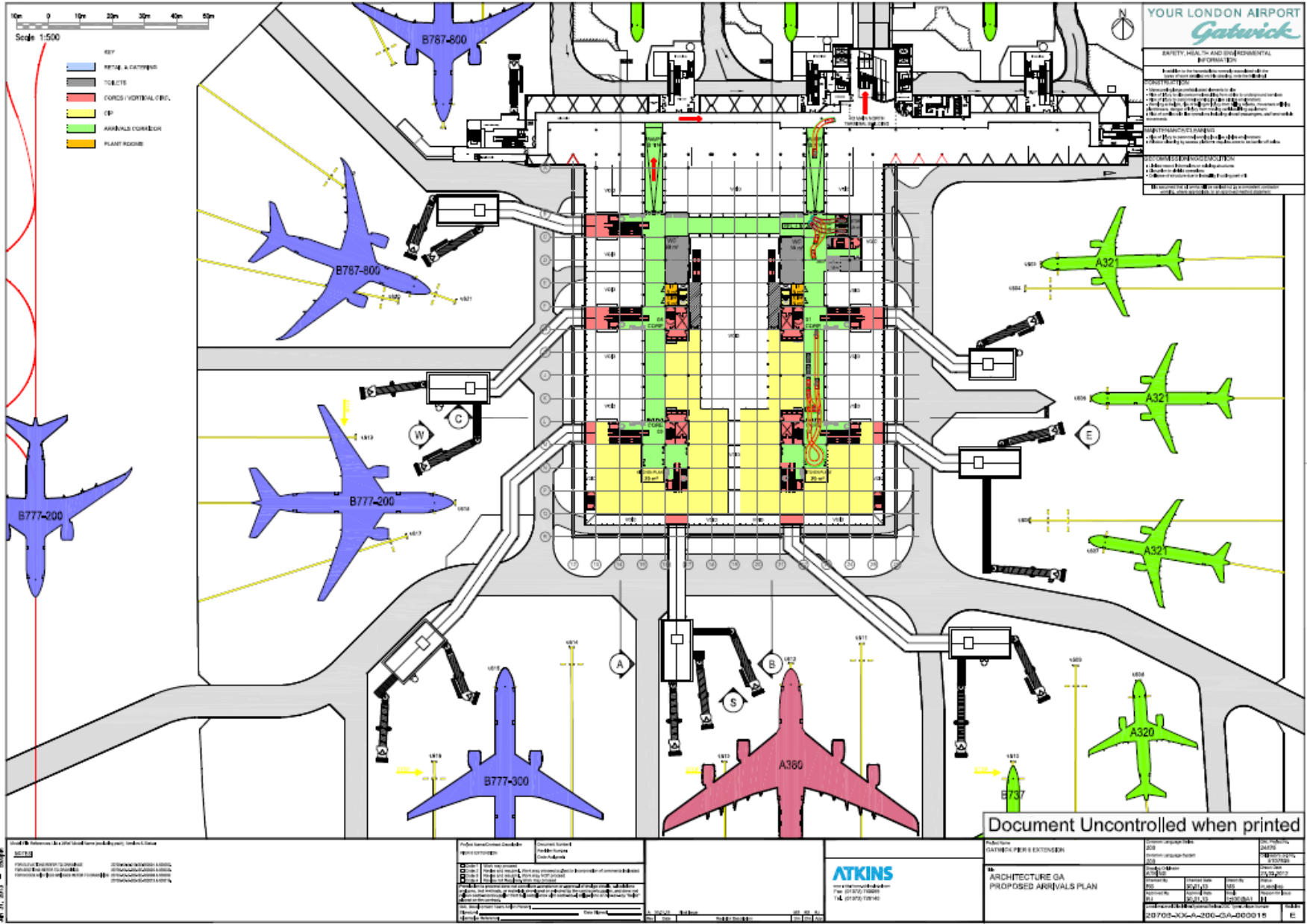
<p>GENERAL NOTES</p> <ol style="list-style-type: none"> FOR DETAILS OF STANDS 602 - 625 REFER TO DRAWING 2079-10-1-10-CA-00001 FOR DETAILS OF STAND EQUIPMENT REFER TO DRAWING 2170-KC-C-152-GA-EC001 AIRCRAFT INDICATED: CODE C - A31-311, B73-800V & E175 	<p>LEGEND</p> <table border="0"> <tr> <td></td> <td>STANDS</td> <td></td> <td>CODE B</td> <td></td> <td>STAND DEPT</td> </tr> <tr> <td></td> <td>STANDS WITH</td> <td></td> <td>CODE B</td> <td></td> <td>STANDS WITH</td> </tr> <tr> <td></td> <td>STANDS</td> <td></td> <td>CODE B</td> <td></td> <td>STANDS WITH</td> </tr> <tr> <td></td> <td>STANDS</td> <td></td> <td>CODE B</td> <td></td> <td>STANDS WITH</td> </tr> </table>		STANDS		CODE B		STAND DEPT		STANDS WITH		CODE B		STANDS WITH		STANDS		CODE B		STANDS WITH		STANDS		CODE B		STANDS WITH	<p>STAND IDENTIFICATION</p> <p>STAND NO. 611</p> <p>STAND NO. 612</p> <p>STAND NO. 613</p> <p>STAND NO. 614</p> <p>STAND NO. 615</p> <p>STAND NO. 616</p> <p>STAND NO. 617</p> <p>STAND NO. 618</p> <p>STAND NO. 619</p> <p>STAND NO. 620</p> <p>STAND NO. 621</p>	<p>ATKINS</p> <p>15, AB, 30 100 Brook Hill Drive Ft. Lee, VA 22041 Tel: (813) 750-1100 Fax: (813) 750-1100</p>	<p>Document Uncontrolled when printed</p> <p>Project: 2079-10-1-10-CA-00001</p> <p>Revision: 1</p> <p>Date: 10/08/10</p> <p>Author: [Name]</p> <p>Checked: [Name]</p> <p>Approved: [Name]</p> <p>Scale: 1:500</p> <p>Sheet: 1 of 1</p>
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	STANDS WITH		CODE B		STANDS WITH																							
	STANDS		CODE B		STANDS WITH																							
	STANDS		CODE B		STANDS WITH																							



Departures Level



Arrivals Level



Changes since April 2012 Business Plan - Scope

→ Detail of Additional Scope (Option A to Option E):

- Full break in to Pier 6 façade (previously narrow link bridge)
- 17,270 m² building (previously 15,472 m²)
- 175,000 m² pavement (previously 138,500 m²)
- Two CIP Lounges of 10,000 sq ft with direct access to aircraft
- Alternative enhanced Remote Stands solution
- Space safeguarded for an additional 4 No. Code F stand (one to be built – re-provision of 110)



Gateroom and space planning

IATA Level of Service A - up to 40% occupancy

- An Excellent level of service. Conditions of free flow, no delays and excellent levels of comfort.

IATA Level of Service B - up to 50% occupancy

- High levels of service. Conditions of stable flow, very few delays and high levels of comfort.

IATA Level of Service C - up to 65% occupancy

- Good level of service. Conditions of stable flow, acceptable delays and good levels of comfort.

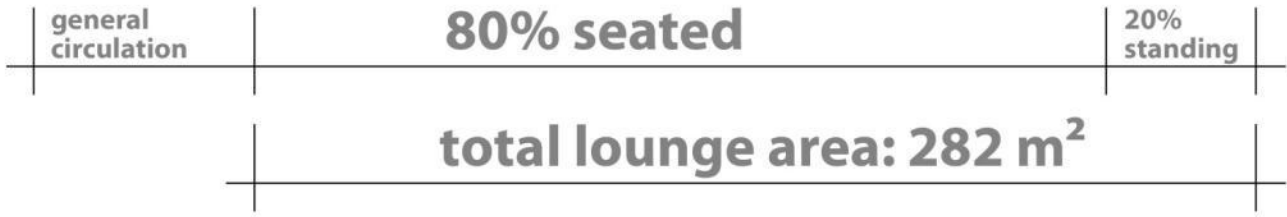
IATA Level of Service D - up to 80% occupancy

- Adequate level of service. Conditions of unstable flow, acceptable delays for short periods of time and adequate levels of comfort.

IATA Level of Service E - up to 95% occupancy

- Inadequate level of service. Conditions of unstable flow, unacceptable delays and inadequate levels of comfort.



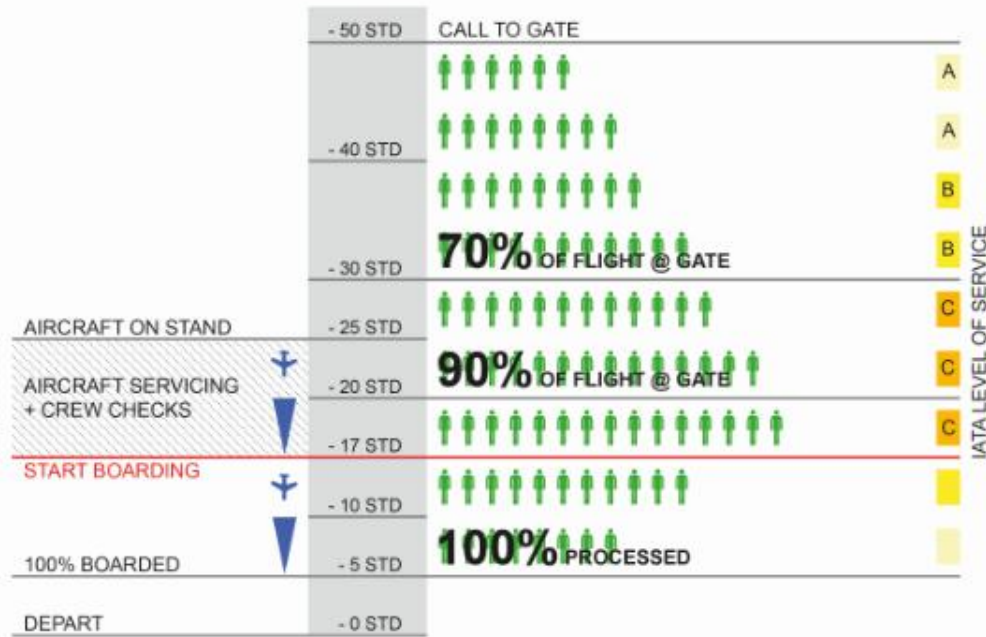


* Code C based on A321, 1-class, 220 seats

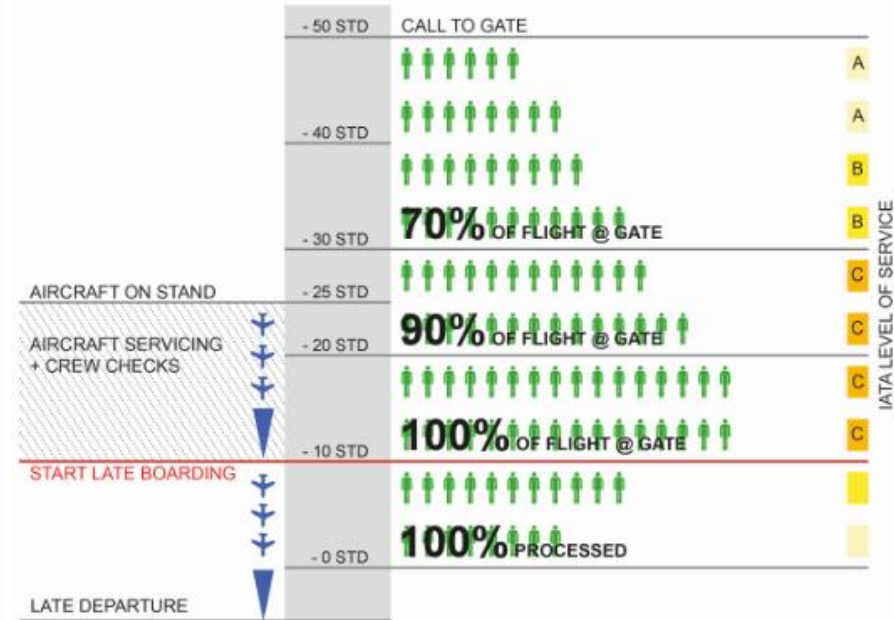
220 pax x 80% loadfactor =	176 x 20% standing =	35.2 pax	x	1.2 m ² /p	=	42 m ²
	176 x 80% seated =	140.8 pax	x	1.7 m ² /p	=	240 m ²
						282 m ²

Gateroom planning – Code C

CODE C AIRCRAFT, A319, 1-CLASS, 25MIN TURN
AIRCRAFT TURN-AROUND IDEAL BOARDING PROCESS

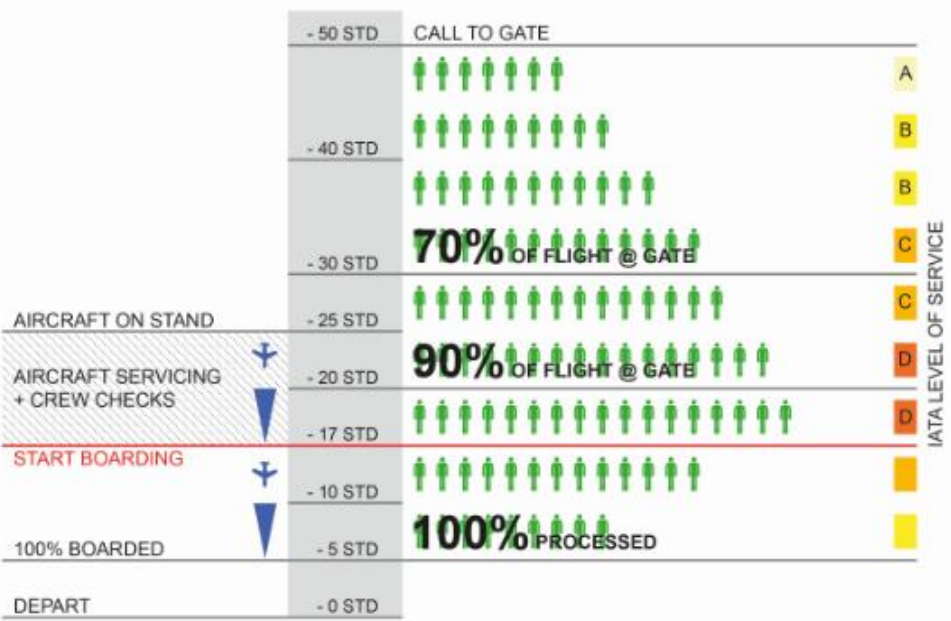


CODE C AIRCRAFT, A319, 1-CLASS, 25MIN TURN
DELAYED TURN-AROUND DELAYED BOARDING

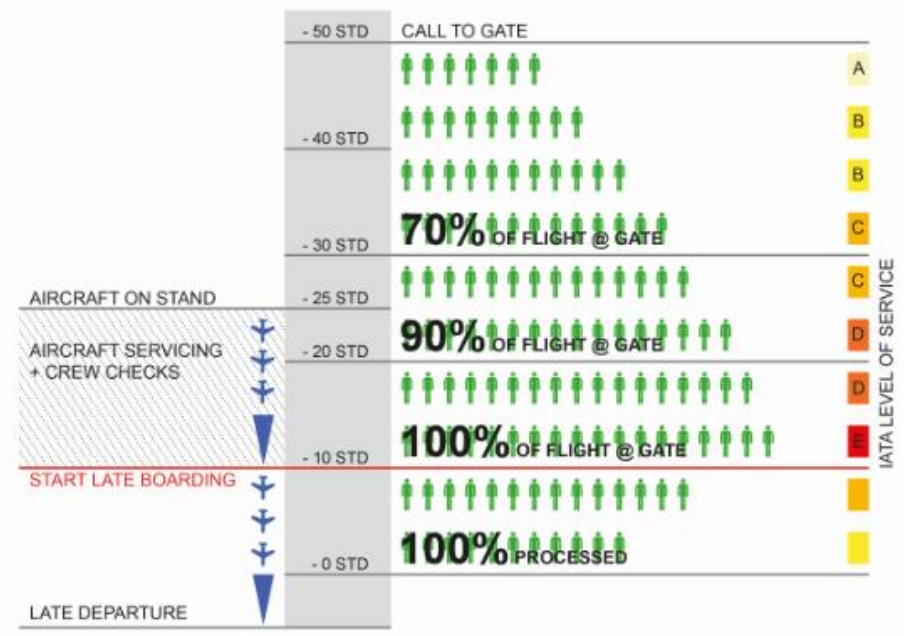


Gateroom planning – Code C

CODE C AIRCRAFT, A320, 1-CLASS, 25MIN TURN
AIRCRAFT TURN-AROUND IDEAL BOARDING PROCESS

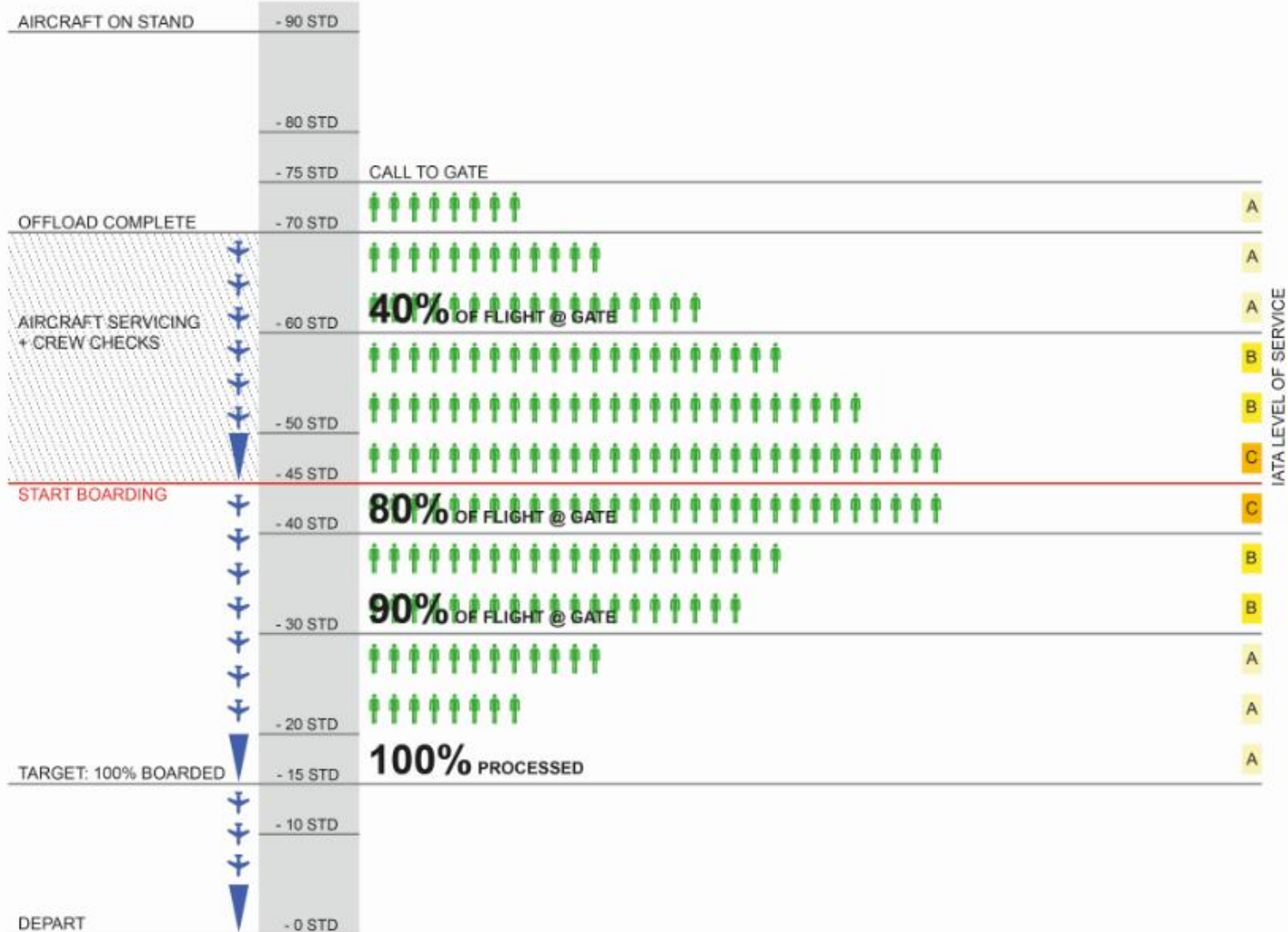


CODE C AIRCRAFT, A320, 1-CLASS, 25MIN TURN
DELAYED TURN-AROUND DELAYED BOARDING



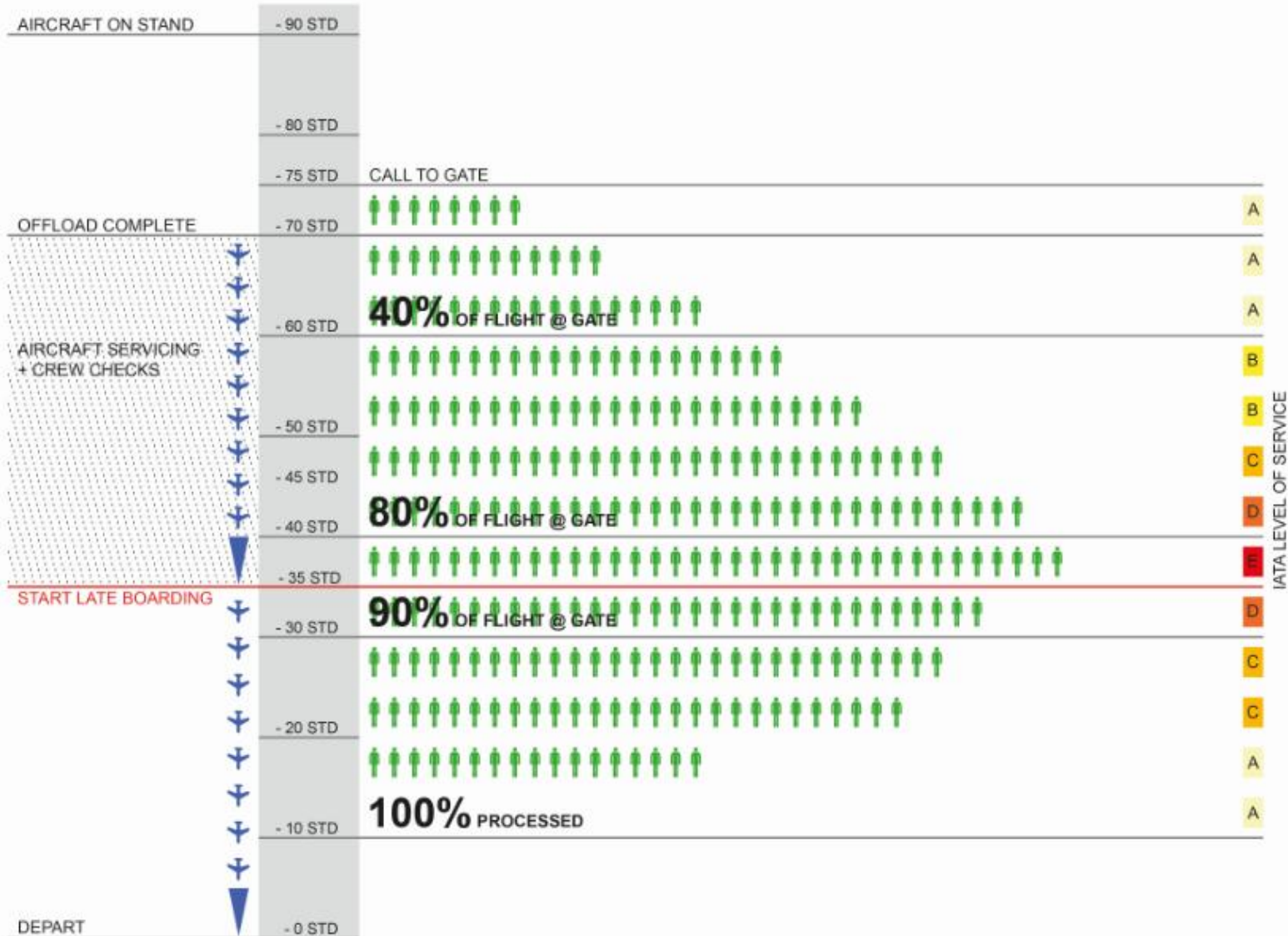
Gateroom planning – Code E

CODE E AIRCRAFT, BOEING 747-400, 3-CLASS, 90MIN TURN
 AIRCRAFT TURN-AROUND IDEAL BOARDING PROCESS



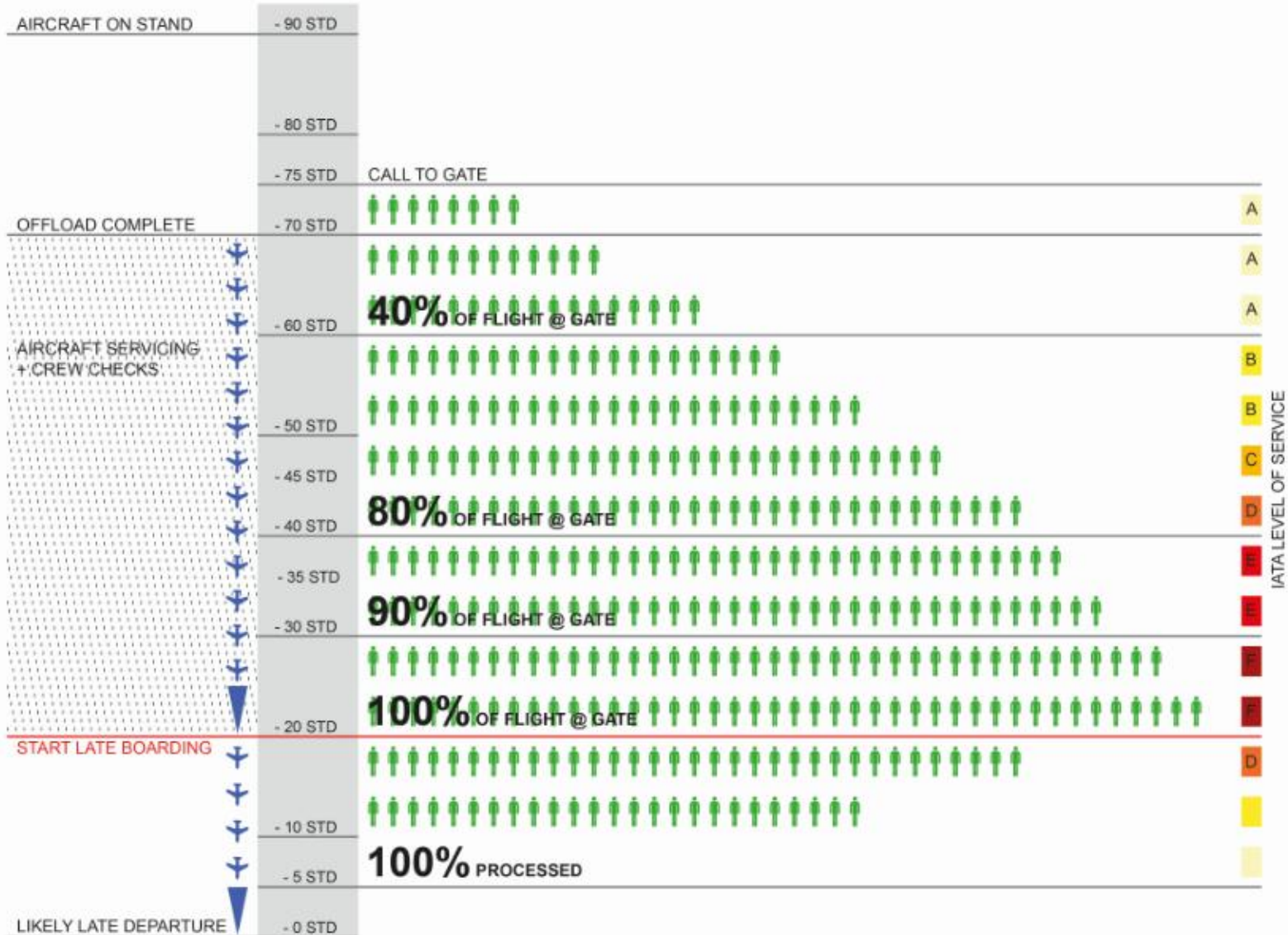
Gateroom planning – Code E

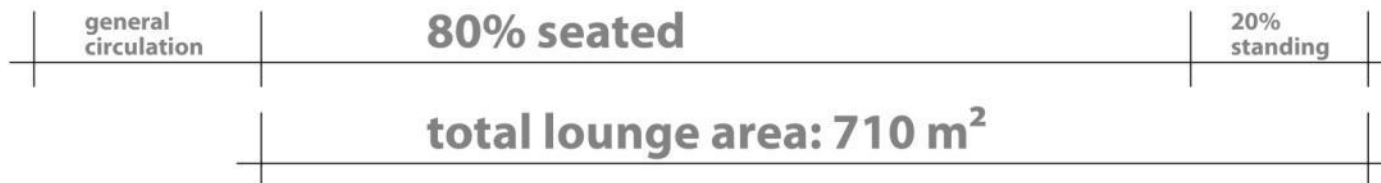
CODE E AIRCRAFT, BOEING 747-400, 3-CLASS, 90MIN TURN
 DELAYED TURN-AROUND DELAYED BOARDING



Gateroom planning – Code E

CODE E AIRCRAFT, BOEING 747-400, 3-CLASS, 90MIN TURN
 DELAYED TURN-AROUND DELAYED BOARDING





* Code F based on A380-800, 3-class, 555 seats

555 pax x 80% loadfactor =	444 x 20% standing =	88.8 pax	x	1.2 m ² /p	=	106 m ²
	444 x 80% seated =	355.2 pax	x	1.7 m ² /p	=	604 m ²
						<u>710 m²</u>



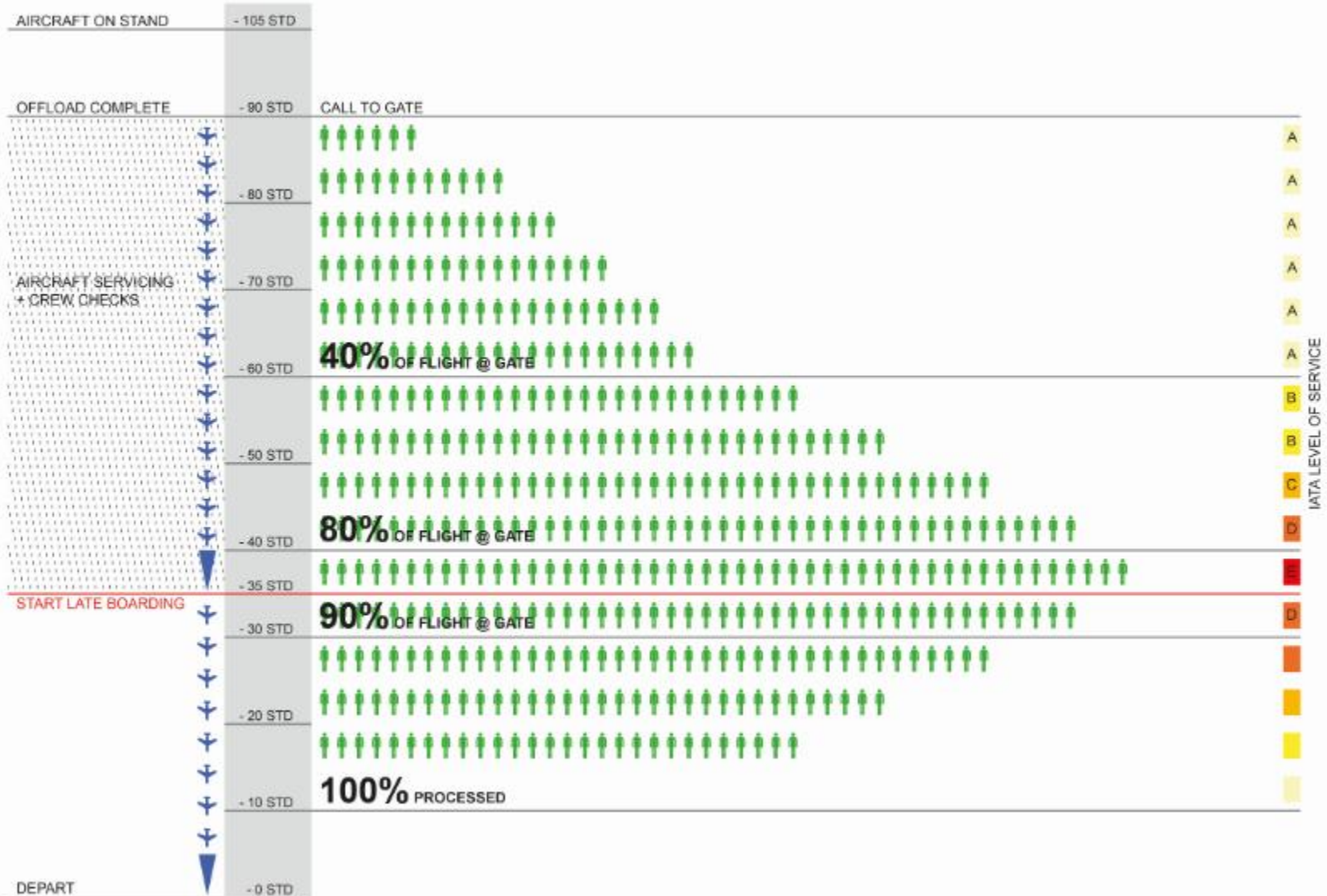
Gateroom planning - Code F

CODE F AIRCRAFT, A380-800, 3-CLASS, 105MIN TURN
 AIRCRAFT TURN-AROUND IDEAL BOARDING PROCESS



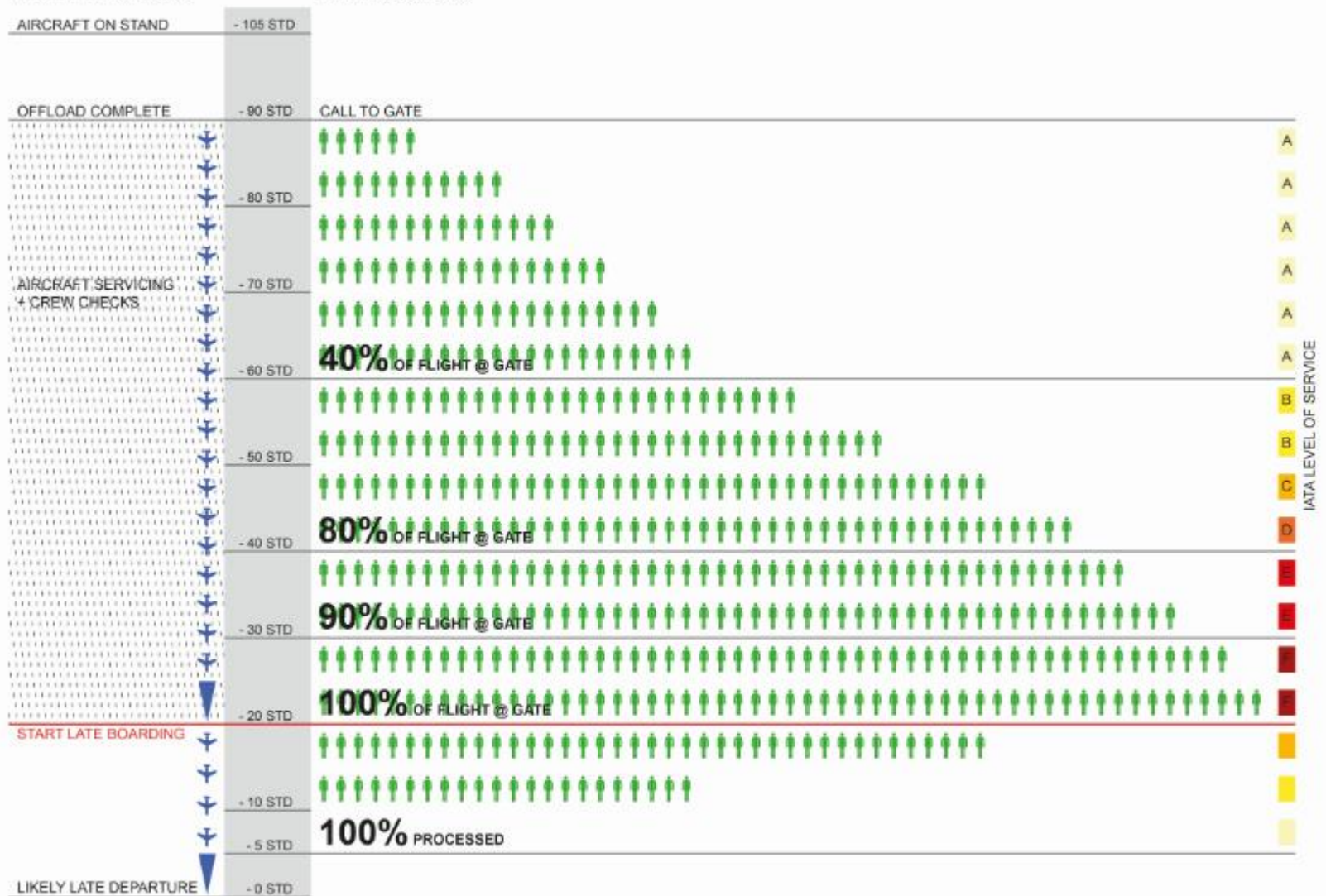
Gateroom planning - Code F

CODE F AIRCRAFT, A380-800, 3-CLASS, 105MIN TURN
 DELAYED TURN-AROUND DELAYED BOARDING



Gateroom planning - Code F

CODE F AIRCRAFT, A380-800, 3-CLASS, 105MIN TURN
 AIRCRAFT TURN-AROUND DELAYED BOARDING



Opportunity Costs

	Potential Saving
Stand 111 - Remove MARs capability	£ 600,000.00
Substation AN to remain in use in current location	£ 500,000.00
Airbridges - Safeguard only for 3rd airbridge	£ 2,200,000.00
Remote Stands not required, no Quebec Realignment	£ 18,000,000.00
CIP Lounges Capital Cost (Opex benefit of £1.3m/year)	£ 3,000,000.00
External Envelope - Reduce extent of Curtain Walling and replace with Cladding	£ 280,000.00
Arrivals Corridor Link - only construct one link into existing Pier 6	£ 300,000.00
Fixed Links - Omit Glazing and replace with Cladding	£ 230,000.00
Nodes - Omit one staircase and reduce footprint	£ 3,000,000.00
Airbridge - Remove from left hand centreline on MARS stands	£ 450,000.00
Vertical Circulation Cores - Remove escalators	£ 1,000,000.00
Total Potential Saving	£ 29,560,000.00

