THE INTEGRATION OF METROTIDAL TUNNEL AND THAMES REACH AIRPORT

EAST CONFIGURATION MINIMUM CONNECTION TIME (C) **MAY 2014**

CONTENTS

1 INTRODUCTION

The East Configuration MCT (C) integration of Metrotidal Tunnel and Thames Reach Airport is served by the April 2014 Transport Connections and described by the following East Configuration MCT (C) May 2014 drawings:-

- Airport, East Configuration MCT (C) May 2014
- Dedicated Local Surface Access, East Configuration MCT (C) May 2014

2 AIRPORT FACILITIES

Set out below is an outline of the infrastructure on and beside the airfield of the Metrotidal Tunnel and Thames Reach Airport East Configuration MCT (C) May 2014:-

On the Airfield:-

- airfield 2,160m wide x 7,600m long; area 16.42sq.km
- airfield centred on OS gridlines 79 and 84, at mean sea level over the central area of satellites, rising from the passenger terminal areas to 8m datum at the ends
- 8m datum perimeter flood bund
- infield 1,080m wide x 7,600m long; area 8.21sq.km
- runway separation centreline to centreline 1,800m
- each 8,000m long runway consists of two in-line 3,620m runways separated by 760m. The separate in-line runway lengths are sufficient for landings and take-off so that when switching approaches in response to wind direction
- rapid exit taxiways (RETs) at 1,720m, 2,100m, 2,480m, 2,860m and 3,240m serve all the gills
- 2No. passenger terminal areas (PTAs: 2 x 900 x 810m) accommodating dual, symmetrical north and south terminals each with a capacity for 50mppa providing an overall capacity of 200mppa
- axial rail and road access umbilical with 10No. satellites spaced at 380m centres between the PTAs separated by 4.14km
- 2No. PTA multi-level stations with freight passing on the lowest level flanked by car parking, passenger platforms on an intermediate level flanked by highways access and with the axial airport transit platforms on the upper level, just below the airfield pavement
- 9No. axial airport transit stops including one for each pair of satellites and one for each PTA at 760m intervals, plus one near each end for Cargo, Maintenance and Administration. The furthest passenger transit stop centre-to-centre is 2.28km from a PTA. The longest walk to reach a satellite is some 160m (190m separation of satellites plus half the length of the transit train say 200m, less half the width of the satellite say 60m, and with assistance from a 100m travellator, one in each direction discharging into the sides of the adjoining satellites.)
- 10No. satellites separated by 380m, each 1,080m long accommodate either 24No. gates, (12No. x 90m wide stands each side), or 26No. gates serving 14No. 90m wide stands at the middle of the satellite, six each side close to the axial transit platforms, and 12No. 75m wide stands, arranged six each side at the ends of the satellite. The flanks of the PTAs are 810m

long accommodating either 9No. gates for 90m wide stands or 8No. 75m wide gates and 2No.90m wide gates, and there are 10No.90m wide stands on the front of each PTA. As a result there are 26.64km of airside frontage that accommodates either 296No. gates for 90m wide stands or 320No. gates of which 168No. are for 90m wide stands and 152No.for 75m wide stands. The distribution of the 90m stands at the middle of the satellites and terminals and 75m stands at their ends or flanks helps to reduce the average walking distance within the satellite or terminal. With a satellite length of 1,080m, transit station width of say 30m, end gates 75m wide and assistance provided by 260m travellators in each wing the furthest walk within the satellite to a gate is also around 160m.

- employee circulation and linked airport baggage handling systems pass under the ends of the satellites to the PTA and Cargo + Maintenance areas
- 2No. cargo and maintenance areas (900 x 730) with a total frontage for aircraft maintenance on the north and south sides of 2.92km (4 x 730)
- Administration areas (2 x 900 x 190) at the ends of the infield with views over the pools

Beside the Airfield:-

- reservoir (R) 0.2sq.km between the southwest corner of the airfield and the Hoo hillside, within the elliptical bird strike protection zone,
- water treatment works (T) 0.2sq.km beside the southeast corner of the airfield, on the Isle of Grain within the elliptical bird strike protection zone
- fuel depot beside the Thamesport and/or the Oikos site on Canvey Island by Hole Haven (not shown on drawings)
- park-and-ride car parks beside Crossrail Plus stations (not shown on drawings)
- manufacturing and logistics facilities; occupying 30.8sq.km of existing, local commercial and industrial development sites as listed in the July 2013 submissions

3 LONG RUNWAYS, RAPID EXIT TAXIWAYS (RETs) AND TAXIING DISTANCES

The two long runways of up to 8km accommodate two in-line operational runways of 3,620m separated by 760m so that when the approach to the airport is switched to suit the wind direction the take-off and landing zones will not need to translate across the central reservation. For arrivals the longer operational runways enable the full range of approaching aircraft to be directed by the Hub Management System (HMS) to the appropriate RET and gill for their allocated gate. In this way most arrivals can reach their gill over the leading half of the infield without using the main taxiways and for the following half most will taxi on average 1,140m on the main taxiways to their gill. For departures the average taxiing distance from gill to runway on the main taxiways is some 950m.

4 OPERATIONS

The new-build hub is purpose-designed to minimise the travel times, energy consumption and carbon audit of journeys, airside, landside and for the surface access. An HMS directs both passengers and planes to the gates that provide the most efficient journey i.e. the shortest transit distances from the PTAs, the shortest taxiing distances from and to the runways and the minimum connection times between flights. This saves passenger travel time that can be used either to extend the surface access catchment area or spend using the airport facilities. It saves airline operational time by assisting quicker turn-around. It also saves airport operational overheads per passenger so that the new-build hub has the double advantage of higher capacity and lower overheads per passenger. Together these factors enable the airport to charge the higher landing fees required to develop the new hub without the overall costs to the passenger or the airline being significantly higher than for existing operations.