

Taking Britain Further – Cost planning summary

Basis of Estimate

- Costs are all at Base date - Q1 2013
- The start point for 3R works is June 2019
- Benchmarks have been used which reflect a level of construction and finish comparable to the current Heathrow environment
- Main contractors prelims, overheads and profit have been included
- HAL logistics and utilities allowances have been included in line with current Q6 guidance
- On cost allowances are deemed to include for all management and design
- Mote Carlo risk analysis has been used on the 2R masterplan figures and 'most likely' figures have been used.
- Construction risk and contingency has been applied at 15%
- No allowances have been made for any VAT
- No allowances have been made for inflation
- No formal risk modelling has been carried out
- Allowances have been made for cleaning of contaminated land and soil remediation
- No allowance has been made for modifications to off site statutory infrastructure
- Allowances have been made for diversions and connections of existing HAL utilities
- No allowances have been made for concessionaire or tenant construction and fit out
- No allowances have been made for loss of income to HAL or third parties due to closures or disruption during works
- No allowances have been made for an on-going asset replacement during expansion
- No allowance has been made for any disruption or delay caused by public consultation or planning issues
- No allowance has been made for any disruption or delay caused by archaeological issues, ecological issues or local wildlife

Assumptions

- Terminals sized at 4.2 times footprint for above ground GFA and 2.2 times footprint for basements.
- Piers sized at 3.2 times footprint for above ground GFA and 2.2 times footprint for basements.
- Terminal and Piers ratio's based upon T2A and B
- Stand Numbers calculated at an average of 6,000m² per stand
- MARS capability assumed for 50% of new stand capacity
- External nodes and VCCs assumed on every contact stand with fixed links assumed at an average length of 20m.
- Motorway tunnels currently estimated as cut and cover construction.
- Cost of land purchase - in new LHR boundary £3.6million/ha, agricultural land @ £75k/ha
- New wetland habitat costs - areas have been provided by AMEC
- Land purchase for habitat reprovion is included within the land purchase figures.
- Land purchase allowances for surface access works are included within the land purchase figures
- Listed building and decant costs have been provided by AMEC

- Property loss costs have been provided by AMEC
- Surface water flood mitigation costs have been provided by AMEC
- CIL and planning costs included
- Commercial property loss figures have been provided by CBRE
- Properties within HAL boundary have been assessed based upon figures from 2010 HAL study.
- All highway construction is assumed to be at grade unless otherwise stated
- All rail construction is assumed to be at grade unless otherwise stated
- All airfield works are assumed to be at grade unless otherwise stated

Summary of rates used

| Heathrow 2025 Master Plan Options - Rates | Unit | Mean Rate | T2 bench mark data | T5 bench mark data | Exclusions Notes |
|--|----------------|------------|--------------------|--------------------|--|
| Terminals and Piers | | | | | |
| Terminal Building - New or Extension (all in rate inc. baggage basement) | m ² | 1,344.51 | 3,496 | 3,227 | Excludes prelims, OH&P, on costs, risks, baggage / TTS / rail / nodes / VCC's; |
| Allowance for tie in to existing structure and fabric | floor | 7,500,000 | | | |
| Satellite Pier | m ² | 999.03 | 2,054 | 2,941 | |
| Fixed Links | Nr | 1,981.81 | 5,945 | | |
| Node | Nr | - | | | |
| VCC | Nr | - | | | |
| Airbridge | Nr | 365,000 | | | |
| Pre-Conditioned Air | Nr | 165,000 | | | |
| Composite rate for each stand | Nr. | 979,482 | | | |
| Operational Readiness | Item | 10,000,000 | | | |
| | | | | | |
| TTS Connection | m ² | 3,250,000 | | | |
| TTS station | m ² | 2,822 | | | |
| TTS station fit out | m ² | 1,206 | | | |
| TTS Tunnels inc. fit out (bored) | m | 33,700 | | | |
| Purchase boring machine | Item | 2,000,000 | | | |
| TTS Tunnels inc. fit out (c&C) | m | 65,000 | | | |
| TTS Rolling stock | nr | 1,720,000 | | | |

| | | |
|--|-------|-----------|
| | | |
| Airfield | | |
| | | |
| New Runway | m² | 230 |
| New Runway shoulders | m² | 150 |
| New taxiway | m² | 210 |
| New taxiway shoulders | m² | 150 |
| Stands / Apron | m² | 220 |
| MARS, FEGP, Lighting, Barriers etc. | Nr | 280,000 |
| FEGP, Lighting, Barriers etc. | Nr | 210,000 |
| Coaching facility | Item | 2,500,000 |
| Airfield Landscaping | m² | 4 |
| | | |
| Landside Infrastructure | | |
| Multi-storey car park | space | 23,500 |
| Multi-storey car park (staff) | space | 9,000 |
| Surface Car Park | space | 1,750 |
| | | |
| Arrivals forecourt at grade | m² | 450 |
| Departures forecourt elevated | m² | 8,500 |
| Forecourt canopy | m² | 550 |
| | | |
| Provision of new ancillary facilities | | |
| MT Buildings | | |
| Staff Offices | | |
| Car Rental Parking | | |
| Car Rental Offices | | |
| Police Facilities | m2 | 1,394 |
| Fire Station | m2 | 1,394 |
| | | |
| Energy & Infrastructure | | |
| T5 Energy Centre | MW | 1,052,685 |
| Energy and Waste Facilities | MW | 1,052,686 |
| CTA Infrastructure and Airport Offices | m2 | 38 |

| | | |
|--|-----|------------|
| (Pavement Provision) | | |
| | | |
| | | |
| Airside Infrastructure | | |
| | | |
| Eastern Maintenance Base | | |
| Assumed that whilst drawing shows amendments, overall allowances will not differ greatly from the original 2R. | | |
| | | |
| A6 Airside Road Tunnels (Bored) | | - |
| Tunnel (Bored) | m | 10,070 |
| Launch & Reception Chambers | No. | 5,806,855 |
| TBM Machine | No. | 7,994,576 |
| Portals | No. | 20,093,356 |
| Fit-out | m | 2,953 |
| | | |
| A6 Airside Road Tunnels (C&C) - Inc. A6-CTA | | |
| Tunnel (C&C) | m | 29,617 |
| | | |
| Infill Balancing Ponds | | |
| Drain and infill balancing ponds to the south of T4 | | |
| | | |
| A6 Balancing Pond and Surface Water | | |
| Lining | m2 | 9 |
| Netting | m2 | 30 |
| | | |
| Balancing Pond Pipelines | | |
| Eastern Route' | m | 2,747 |
| Route From Balancing Ponds to River (Allowance Made) | m | 517 |
| | | |
| Balancing Pond Pumping Stations | | |
| Eastern Route' Pumping Stations | No. | 492,390 |
| Western Route' Pumping Stations | No. | 492,390 |

| | | |
|---|------|------------|
| | | - |
| Maintenance Hangar | m2 | 1,150 |
| Cargo Hangar | m2 | 850 |
| | | - |
| Fuel Farms - 4no Fuel Tank (200m x 90m) North of 3rd Runway (Buried into embankment) | | - |
| RC BASE : 300mm Thick | Item | 3,402,000 |
| RC WALLS : 300mm Thick x 10m High Retaining Wall and 1m high Perimeter Walls | Item | 449,820 |
| E/O for Entrance Exit Roads into Tank Farm | Item | 141,750 |
| Steel Palisade Fence + Security Gate | Item | 126,640 |
| | | |
| | | |
| Fuel Farms - 8no FUEL TANK (220m x 130m) SURFACE FARM | | |
| RC BASE : 300mm Thick | Item | 5,405,400 |
| RC WALLS : 300mm Thick x 1m High | Item | 166,320 |
| E/O for Entrance Exit Roads into Tank Farm | Item | 141,750 |
| Steel Palisade Fence + Security Gate | Item | 151,600 |
| | | - |
| Fuel Mains A6 | | - |
| Fuel Mains To above | Item | 3,800,000 |
| | | - |
| A6 Tower | | - |
| Tower | No. | 25,000,000 |
| | | |
| Approach Lighting | | - |
| Approach Lighting | No. | 1,320,000 |
| | | |
| Instrumented Runway Visual Range (IRVR) | | - |
| Instrumented Runway Visual Range (IRVR) | No. | 160,000 |
| | | |
| VHF Receiver Aerial | | - |

| | | |
|---|-----|-----------|
| VHF Receiver Aerial | No. | 265,000 |
| | | - |
| Distance Measuring Equipment | | - |
| Distance Measuring Equipment | No. | 1,265,000 |
| | | - |
| Digitally Resolved Direction Finder | | - |
| Digitally Resolved Direction Finder | No. | 850,000 |
| | | - |
| Instrument Landing System (ILS) | | - |
| Instrument Landing System (ILS) | No. | 1,320,000 |
| | | - |
| Microwave Landing System (MLS) | | - |
| Microwave Landing System (MLS) | No. | 3,700,000 |
| | | - |
| Fibre link from MLS to new control tower | | - |
| Fibre link from MLS to new control tower | No. | 530,000 |
| | | - |
| Surface Movement Radar | | - |
| Surface Movement Radar | No. | 4,220,000 |
| | | - |
| Wavy Wall | | - |
| Wavy Wall | m2 | 584 |
| | | - |
| Site Security Fence | | - |
| Security Fence | m | 153 |
| | | - |
| Control Posts | | - |
| Control Posts | No. | 4,950,000 |
| | | - |
| CCTV To Perimeter | | |

| | | |
|--|------|---------|
| Fence | | - |
| CCTV Masts + Cameras to Perimeter Area of T6 | Item | 360,000 |
| Cabling + Ductwork + Junction Boxes | Item | 657,143 |
| CCTV Masts + Cameras to Perimeter of existing bath road / NPR area | Item | 240,000 |
| Cabling + Ductwork | Item | 328,571 |
| | | - |
| Airside Vehicle Maintenance | | - |
| Airside Vehicle Maintenance | m2 | 3,247 |
| | | - |
| Snowbase | | - |
| Snowbase | m2 | 1,554 |
| | | - |
| Airfield Operations Control Building | | - |
| Airfield Operations Control Building | m2 | 2,352 |
| | | |
| Fire Station | | - |
| Airside fire station | m2 | 2,352 |
| | | |
| | | |
| Decants | | |
| | | |
| Utility Decants | | |
| Bath Road | | - |
| Sewer Diversion Bath Road | m | 1,782 |
| Other Foul + Clean Water Pipework | m | 376 |
| Gas Diversions | m | 28 |
| Fibre Optics / Telecoms | m | 9 |
| Sub Stations | No. | 30,000 |
| | | - |
| Northern Perimeter Road | | - |
| Other Foul + Clean Water Pipework | m | 376 |
| Gas Diversions | m | 28 |

| | | |
|---|-----|--------|
| Fibre Optics / Telecoms | m | 9 |
| Sub Stations | No. | 30,000 |
| | | - |
| Structural Decants | | - |
| Listed Buildings | | - |
| Listed Buildings - Grade II | m3 | 38 |
| | | |
| Bath Road | | |
| Decant and demolition of MT, offices and hotels along Bath Road | | |
| | | |
| Demolition of decked car parks along Bath Road | | |
| | | |
| Demolition of surface car parking and rental facilities along Bath Road | | |
| | | |
| Demolition of Bath Road including ramps | | |
| | | |
| Demolition of transit system from T5 to car parks | | |
| | | - |
| Carparks | | - |
| Car Park (surface) | m2 | 24 |
| Car Park (multi-storey) | m3 | 30 |
| | | |
| Commercial / Public / Residential | | - |
| General Commercial | m3 | 9 |
| Hotel | m3 | 9 |
| Residential | m3 | 9 |
| School | m3 | 9 |
| | | - |
| Site Clearance | | - |
| Main Land take | m2 | 14 |
| Balancing Pond | m2 | 14 |
| Bath Road - remaining area to be cleared for | | |

| | | |
|--|------|-----------|
| R3 | | |
| | | - |
| A6 Street Furniture Decants | | - |
| Street Lighting Columns & Floodlights + Feeder Pillars | Item | 159,000 |
| Bus Shelters | Item | 21,600 |
| Signage : Sml / Med / Large | Item | 107,500 |
| Benches / Seating Areas | Item | 12,500 |
| Fencing + Concrete Posts + Gates | Item | 387,000 |
| Telephone Masts | Item | 14,300 |
| CCTV Masts | Item | 45,000 |
| | | - |
| | | - |
| M4 Slip Road Bridge Demolition | | - |
| Sipson Lane Bridge Heading Towards The Emirates Tunnel off the M4 Slip Road | Item | 250,000 |
| Sipson Lane Bridge (A408) Heading Towards The Emirates Tunnel off the M4 Slip Road | Item | 250,000 |
| Pedestrian Bridge Infront of the Emirates Roundabout | Item | 55,000 |
| Nimrod Bridge | Item | 250,000 |
| A4 Bridge | Item | 250,000 |
| | | |
| | | |
| | | |
| Utilities | | |
| A6 Utilities | | |
| Potable Water Allowance | Item | 2,500,000 |
| Gas Allowance | Item | 2,000,000 |
| Foul Water Allowance | Item | 8,500,000 |
| Storm Water Allowance | Item | 2,500,000 |
| Fuel and Fire Main Allowance | Item | 5,500,000 |
| HV Substations and EDF Upgrades | Item | 2,500,000 |
| ICS Allowance | Item | 5,500,000 |
| | | |

| | | | |
|--|--|------|------------|
| Enabling | | | |
| Rivers | | | |
| River Diversions | | | - |
| River Crane will be culverted under the apron extent ~ nom 400m of culvert @ 2.5m high | | m | 1,787 |
| Smaller drainage tributary will be culverted under the runway and apron ~ nom 1km of culvert @ 2.5m high | | m | 1,787 |
| | | | - |
| Environme | | | - |
| ntal | | | - |
| Environme | | | - |
| ntal | | | - |
| | Mods to Saxon Lake : Modify lake into smaller sections for Bat use and small birds only. (Allowance made for earthworks dividing walls only) | Item | 75,000 |
| | Provision of Bat Barns in Cranford Park | Item | 11,025 |
| | Great Crested Newts : Provision of new pond + Fencing | Item | 6,250 |
| | Rare plant and wildflowers translocation | Item | 20,000 |
| | Reprovisions of Saxon Lake | Item | 141,750 |
| | Reprovisions of Kingfisher wall in Colne and Sandmartin Wall in Crane | Item | 15,000 |
| | Reprovision of Old Slade Lake (35 Hectares) | Item | 26,250,000 |
| | Reduce current height of 100m flue height at Energy Centre | Item | 75,000 |
| | Woodrow / Hedgerow Planting | Item | 15,000 |
| | Water Vole Habitat Creation / Enhancement | Item | 15,000 |
| | Reptiles Habitat Creation / Enhancement | Item | 15,000 |
| | Reptile Fence Installation | Item | 5,000 |
| | Doormouse Habitat Creation / Enhancement | Item | 15,000 |
| | | | - |
| Archeolog | | | - |
| y | | | - |
| | Site Preliminaries (40 Archelogsists) | Wk | 24,000 |

[illegible]

| | | | |
|---------------------------------|---|------|-----------|
| | deemed to be inert) | | |
| | Stand Fuel (Apron 6 Only) - Excavate and Disposal | m3 | 27 |
| | | | - |
| Road Access | | | - |
| M4 Junction and Spur | | | - |
| | Impermeable Surface | m2 | 286 |
| | Permeable Surface | m2 | 10 |
| | Areas of Hard Standing (m2) | m2 | 108 |
| | Structures Under Motorway | m2 | 2,540 |
| | Junction | Item | 8,000,000 |
| | Gantries | No. | 235,168 |
| | | | - |
| Apron 6 Road Tunnels | | | - |
| | Tunnel | m | 29,617 |
| | | | - |
| A4 / CPR | | | - |
| | Impermeable Surface | m2 | 268 |
| | Permeable Surface | m2 | 10 |
| | | | - |
| M25 / T5 Junction Refurb | | | - |
| | Impermeable Surface | m2 | 286 |
| | Permeable Surface | m2 | 10 |
| | Areas of Hard Standing (m2) | m2 | 108 |
| | Bridges | m2 | 1,190 |
| | Junction | Item | 1,800,000 |

| | | | |
|--|---------------------------------------|------|-----------------|
| | Gantries | Nr | 250,000 |
| | | | - |
| | | | - |
| | Taxiway Bridge | | - |
| | Taxiway Bridge Constructio n | m2 | 1,338 |
| | | | - |
| | Rail Access | | - |
| | | | - |
| | T5 HEX Turnback | | - |
| | T5 HEX Turnback | Item | 100,000,00 0 |
| | | | - |
| | Airtrack Stockley Turnback | | - |
| | Turnback | Item | 25,000,000 |