Boris Johnson has commissioned engineer Doug Oakervee to undertake a feasibility study for an airport in the Thames as a replacement to Heathrow.

**PROPOSAL IS STRATEGIC AND THEREFORE LACKS DETAIL. STRATEGIC VISION COULD BE ENHANCED.**

### Existing: Road Infrastructure South East
- **Existing:** Road infrastructure south east
- **Boris’s proposals:**
- **Assessment:**
- **Proposed enhancement:**

### Existing: 2009 Contour Analysis
- **Existing:** 2009 contour analysis
- **2050 Rising Seal Level Projection
- **Boris’s proposals:**
- **Proposed enhancement:**

### Existing: Thames Estuary
- **Existing:** Thames estuary
- **Developer’s proposals:**
- **Assessment:**
- **Proposed enhancement:**

### Developer’s Proposals
- **Proposals include a new bridge between T.E.A. and Isle of Sheppey.**
- **No road links between Essex and T.E.A.**
- **No fast route between East Kent and T.E.A.**
- **An enhanced strategy would consider effects of sea level rise. A tidal surge barrier is proposed to reduce impact of highest tides.**

### Assessment
- **Boris’s proposals are unclear as to his strategy toward rising sea levels. Tidal barriers or other forms of prevention are not mentioned.**
- **The engineered edges and mass are unnatural and ecologically inappropriate to its sea location.**
- **Varied edge to create a wide range of maritime habitats and activities.**

### Proposed Enhancement
- **Terminals are obtrusive to the visual character of the Estuary and the wide reaching horizontal views.**
- **The mass of buildings can be screened from view, behind new landform.**
- **By massing the island to create a strong horizontal plane, the landscape character of the Thames Estuary is retained.**

---

**ELEANOR ATKINSON: THAMES ESTUARY AIRPORT 2009**
THAMES ESTUARY AIRPORT

TIDE LEVELS:
MLWS: 0m
MLWN: 0m
MHWS: 4.8m
MHWN: 4.1m
MHWN 2050: 7m

FISHERIES
Improvements in Thames water quality have allowed fisheries including sole, eel, skate, bass, winkles and cockles (largest in the UK)

RECREATION
3 million people a year use the Thames for recreation

The coast: views + visual movement (from Leysdown-on-Sea, Kent) horizontal nature of land and seascape

THAMES ESTUARY AIRPORT

ELEANOR ATKINSON: THAMES ESTUARY AIRPORT 2009
Masterplan:

A tidal surge barrier links Kent to Essex.

Thames Island is the hub of the development. The rail station, marina, sea-port, airport and road infrastructure will create links and opportunities for the South East that are unsurpassed in this region. This new infrastructure will support a range of facilities on the Thames Island, such as Conference Facilities, Hotel, Marine Research Facilities, Sailing Schools.

Thames Island will not only be a transfer point, but a destination. The parks, promenades, beaches and sailing school will attract visitors in their own right.

Thames Island is designed to be self-sufficient in the following ways: 3 tidal lagoons will create the Hydro-electric power required to power the Thames Island, reed beds and bio-remediation systems are designed to treat grey and black water, and a Seaport positioned alongside the Thames shipping channel will allow deliveries to Thames Island.
THAMES ESTUARY AIRPORT

Tidal Lagoons for the creation of Hydro-electric power

Tidal Surge Barrier

Tidal Lagoons for the creation of Hydro-electric power

Tidal Surge Barrier

main shipping channel

Seaport

Runways

Thames Island

existing north kent windfarm

Tidal Surge Barrier

Tidal Lagoons for the creation of Hydro-electric power

habitat extension to compensate for loss of habitat due to construction of infrastructural links

Infrastructural layers

layer 1: 5-10m above sea bed
main facilities on island including airport, main rail station, marina and conference facilities

layer 2: 0-5m above sea bed
transport infrastructure (road, service routes, parking and rail)

layer 3: beneath sea bed
rail station and rail line to essex
THAMES ESTUARY AIRPORT

THAMES ISLAND 1:5000 AT A1

ELEANOR ATKINSON: THAMES ESTUARY AIRPORT 2009

REEDBEDS:
- grey water harvesting
  - range from 10m to 8m above sea bed

SEA BED:
- -2m AOD
- max predicted tide level 9m above sea bed

WALK AND CYCLE
ROUTE TO SEA-FORTS

REEDBEDS:
- grey water harvesting
  - range from 10m to 8m above sea bed

ENGINEERED DIKE
CONSTRUCTION
- (12m above sea bed)

RUNWAY 1
- (10m Above sea bed)

TERMINAL 1
- MID PROMENADE PARK
  - (7m above sea bed)
- COMMERCIAL AND AIRPORT

ENGINEERED DIKE
CONSTRUCTION
- (12m above sea bed)

TERMINAL 2
- COMMERCIAL AND AIRPORT

RAIL STATION

RUNWAY 2
- (8m Above sea bed)

POTENTIAL FOR 3RD RUNWAY

REEDBEDS:
- grey water harvesting
  - range from 10m to 8m above sea bed

MARINA:
- high speed water taxis
to Central London

CONFERENCE ISLAND

SAILING SCHOOL MARINA

MARINE FACILITIES

NAVIGATION TOWER

LOWER PROMENADE

UPPER PROMENADE PARK

MID PROMENADE

MARINA:
- high speed water taxis
to Central London

COMMERCIAL AND AIRPORT

SAILING SCHOOL MARINA

RECREATION BEACH

MARINE RESEARCH
FACILITIES

NAVIGATION TOWER

TERMINAL 2

NAVIGATION TOWER
THAMES ESTUARY AIRPORT

CONCEPTUAL INVESTIGATION

FLYING TO THAMES ISLAND

ENJOYING THE WAIT BEFORE THE FLIGHT

WALKING ALONG THE PROMENADES
The sectional study investigates the interface between the sea and the Thames Island, with particular attention to potential sea lavel effects.

The Island is intended to be more of a low-lying horizontal landform, in keeping with the strong visual character of the Estuary.

Vinyl Clad sheet piles to be installed around perimeter of Thames Island as shown below. The water in the Cofferdam-type construction is then replaced by sand fill, brought to the Island by barge. The sand is compacted in layers.

The detailed section shows the empty chambers, where there is no sand fill. The section investigates the opportunity to create a more dynamic promenade that interacts specifically to the tidal changes in sea level. Sound and water movement are explored.
IPE timber decking: 2500mm x 140mm x 25mm fixed to vinyl clad steel joists with stainless steel fixings.

Timber balustrade: 0.9m high, 0.6m wide

Sheet piles: 6m above sea bed

Sea bed (-2 AOD)

Vinyl clad steel joists & balustrade structure

Vinyl clad steel capping beams

Vinyl sheet piles 600mm x 300mm x 18m long

Sheet piles: 12m below sea bed

Every 4th sheet pile to be perforated to allow water movement.

Sand fill.

Details of interface of promenade with lagoons

Free movement of water through gaps between timbers, allowing fast drainage after high tides. Saline tolerant grasses are seeded in sand and boulders beneath timbers. Grasses will grow up between timbers, marking patterns of human use of the promenades. Areas that are never used are claimed by nature.

Low tide: Water will lie beneath permeable timber balustrade. Perforations within sheet piles allow for tidal movement beneath promenades, creating an equilibrium of water levels on either side of the piles.

High tide: 4.8m lower promenade will be submerged in high tides.
Link between main island and conference island is constructed of rows of vinyl sheet piles, installed approx 10m apart.

Edge treatment to marine farming is gradual, with boulders along edge of promenade.
Edge treatment to sailing lagoon is abrupt with balustrades for viewing.

details of interface of promenade with lagoons
Micro-climatic pods are designed to provide shelter from winds. The planting is reflective of coastal planting, incorporating grasses and perennials. The grasses have been selected for their height. The wind movement through the seed heads will detract from the noise of the aeroplanes above.
microclimatic pods

Allow for approx 1000 *Papaver commutatum* 'Ladybird' seeds to be sprinkled amongst shrubs and grasses.