

London City Airport — a new approach to city centre travel

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The London Docks will soon become the base for a new form of international traffic when Britain's first inner city airport opens for business this autumn. The airport facilities are described and the progress of gaining planning consent and committing the development is recounted. The investment perspective is explained. The business passenger has been identified as the target market; the manner in which the airport and its management are aimed to serve this market is described. Means of access to and from London City Airport and its place in the overall renaissance of Docklands are also considered. The final subject area addressed is that of airline attitudes and public response.

INTRODUCTION

- 1. This paper does not aim to describe the design and construction of London City Airport as an engineering project, though perhaps one day such a paper may be written. Instead it sets out to record the project in human terms, by reference to the passengers it will serve and the facilities it will offer them, the planning and environmental issues and the political dimension of the project, the response of airlines and public to its creation, and the investment perceptions which have been the guiding force behind the development.
- 2. Before embarking on a detailed case history it may be well to give an outline description of the project as currently being built.
- 3. The site lies between the King George V

- and Royal Albert docks in the London Borough of Newham (see Fig. 1). It is within the Royal Docks development area, a part of the overall 2000 hectares of obsolete docklands being redeveloped under the auspices of the London Docklands Development Corporation (LDDC). It is within 10 km of the financial centre of London - the City.
- 4. Fig. 2 shows in simple outline the facility being provided. The overall runway length is 1080m but is misleading, for the declared runway length is 762m; the explanation is that there are two overlapping runways, this displaced threshold solution being required to meet planning constraints in relation to existing or possible future structures. The principal candidate aircraft with the STOL (short take-off and landing) characteristics

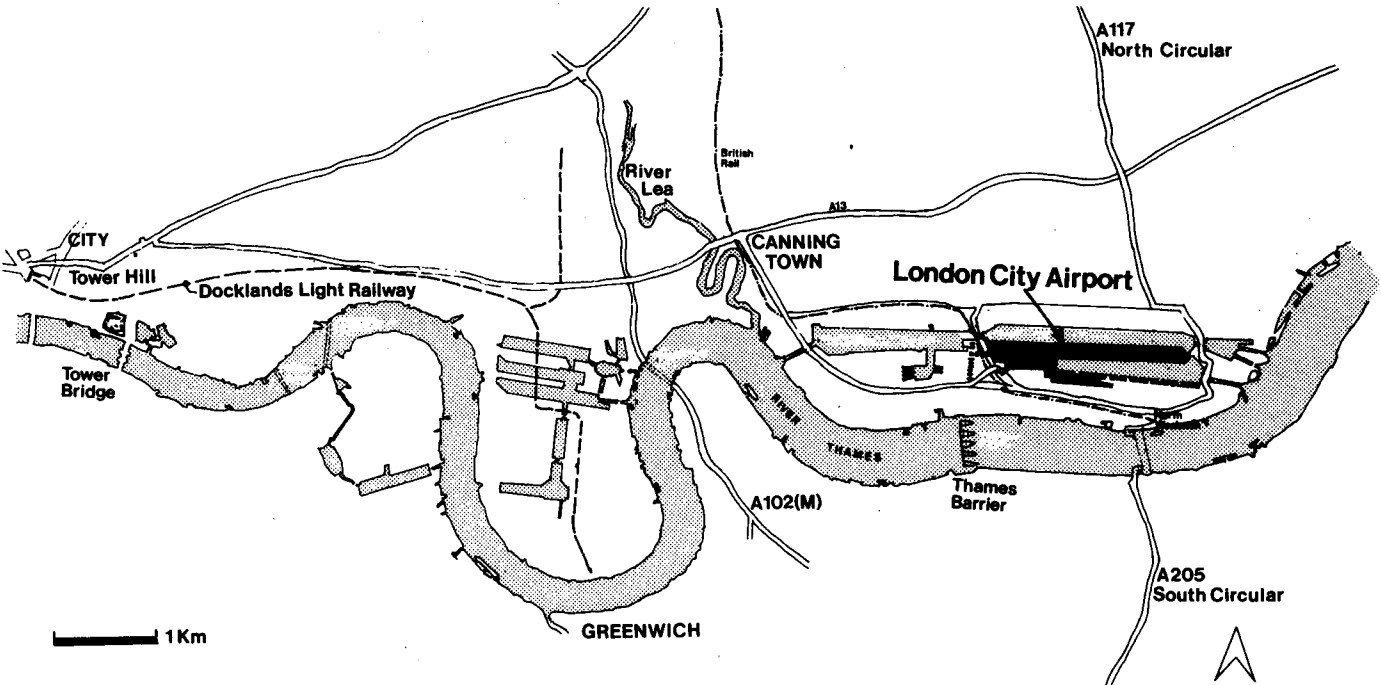


Fig. 1. Location of London City Airport
Eighth world airports conference. Thomas Telford Ltd, London, 1987

required for the airport is the de Havilland Dash 7, a 50-seat fully pressurised turboprop aircraft with exceptionally good noise characteristics.

5. The passenger terminal is situated at the western end of the King George V dock, the departure pier extending westwards and offering ten aircraft stands. The fire, rescue and maintenance (FRM) building, fuel store and maintenance hangar are all sited at the west end of the airport. Car parking, at ground level, will be close to the terminal, on the south side of the King George V dock. The terminal is designed to handle 1.2 million passenger movements per year, this number relating to the constraints on numbers of aircraft movements imposed within the granted planning consent.

6. Dash 7 operations will focus principally within a range of 400 nautical miles, a circle of this radius containing a market of some 150 million persons, twice the number to be found within an equivalent circle centred on New York City. It is expected that London City services will be particularly useful to business travellers, and the design of the facility is based on this perceived market sector.

Case History

7. London City Airport is a development which has been created by, and at the time of writing is wholly owned by, John Mowlem & Co PLC.

8. The genesis of the idea was early in 1981 when Philip Beck, Chairman of Mowlem discussed with Reg Ward, Chief Executive of LDDC, the possibility of an airport for STOL aircraft as an element within the latter's concept of creating a transport interchange in the Royal Docks area. The centre quay between the Royal Albert and the King George V docks was identified as having many desirable characteristics

and detailed feasibility studies were set in hand. In these early days help was afforded by Bill Bryce of Brymon Airways, for example in organising a trial landing by a Dash 7 in Docklands for the purpose of educating public and politicians and assuaging their fears of the environmental impact of a STOLport in the East End.

9. A key feature of the site was that it was in east London in an area remote from the main airports and particularly close to the City. The perceived market was for business travellers to and from central London to domestic and shorthaul European destinations. There was also hope that Docklands itself would undergo a renaissance and become in its own right a thriving area generating business for the airport.

10. Although a greater runway length could have been accommodated on the site itself, the design had to take into account some tall mill buildings to the west and the intended future East London River Crossing bridge to the east. Allowing for these obstructions only aircraft with exceptional STOL characteristics would be able to use the airport, the Dash 7 being very much the candidate aircraft. Right from the start, therefore, the investor had to be aware not only of the innovation risk attached to such a novel venture but also the risk imposed by limitations of aircraft types. Nonetheless it seemed that there was a unique opportunity and that the inner city airport concept could be an idea whose time had come. An initial financial model indicated attractive returns; in December 1982 a planning application was submitted to the LDDC, the planning authority for the area.

11. The land was in the ownership of the Port of London Authority (PLA). Following confidential discussions with the Authority, Mowlem in 1982 agreed heads of terms for a long lease for

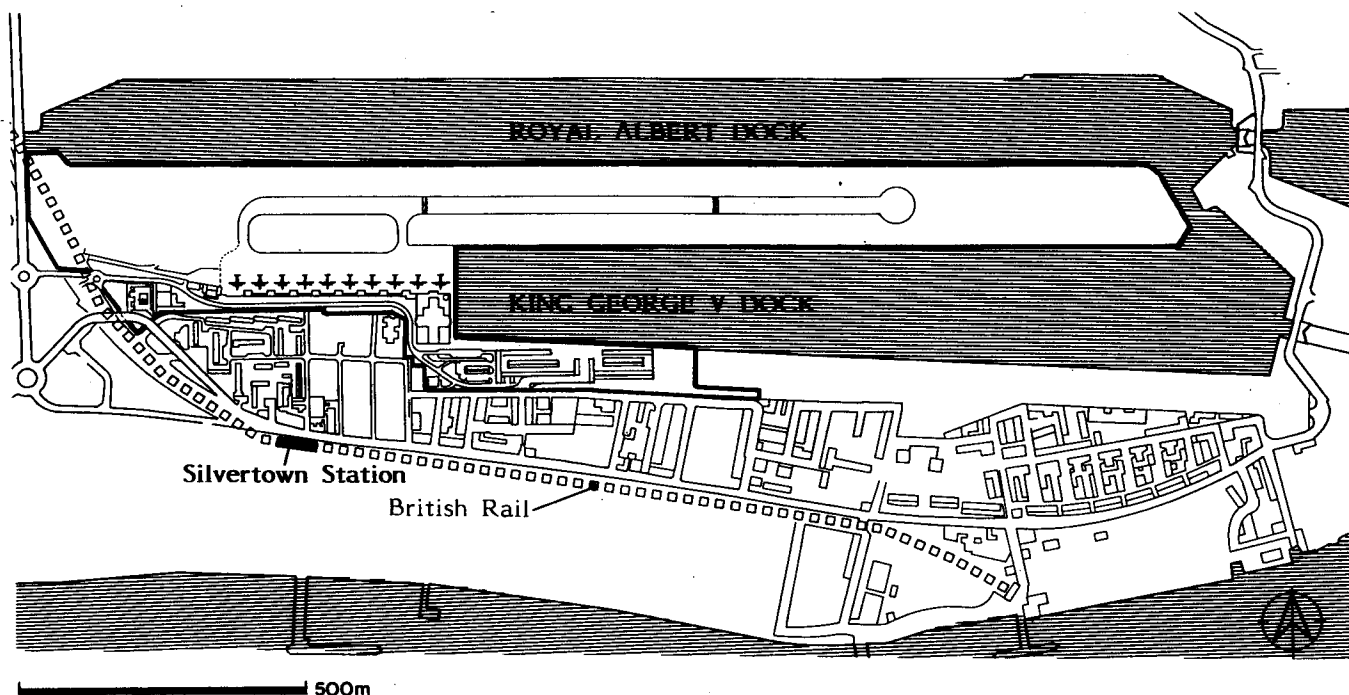


Fig. 2. General layout

use of the site as an airport. By March 1983, a formal "Agreement for Lease" was signed providing, in effect, an option on the land while the designs and the financial appraisal were developed up to the point of an investment decision.

12. In January 1983 notification was received that the planning application had been called in by the Secretary of State and that there would be a public inquiry. Mowlem appointed lawyers and experts to prepare the case. The hearing was scheduled to start at the beginning of June and was thought likely to last some five weeks. Two public opinion polls showed the local population to be strongly in favour. Naturally enough, some local people opposed the airport because of environmental concern; the major opposition, however, emerged from political bodies, namely the London Borough of Newham and the Greater London Council; the LDDC supported the application. Such was the range of evidence heard that the inquiry did not conclude until the end of October 1983, twenty-one weeks after it started.

13. It was a further nineteen months (May 1985) before outline planning consent was finally established, the planning process being taken right through to a judicial review of the Secretary of State's decision. Various conditions were attached to the consent: noise levels were specified; limits on the number of aircraft movements per day were set, effectively limiting annual passenger movements to just over one million; it was required that the application for detailed consent should incorporate displaced threshold runways; other points of detail were also covered.

14. As soon as the public inquiry hearings had finished, the developer had had to make a decision. Either expenditure would be stopped until the outcome regarding planning consent was known or alternatively the detailed design could be progressed but at the risk of considerable further sums. The decision had been to progress the design while awaiting the planning outcome and thus when the outline consent was finally granted the developer was virtually ready to submit for detailed consent.

15. Needless to say, in the period November 1983 to May 1985 it was not just design that was undertaken but a further financial update and appraisal. The full obligations of the lease would be undertaken by Mowlem upon issuing to the PLA a "Construction Notice"; accordingly, although the development would inherently remain a speculative one, the best possible financial appraisal had to be made before issuing that "Construction Notice". From May 1985 it was not only the application for detailed consent which had to be progressed. Detailed consent was granted in February but negotiations between LDDC and PLA about freehold ownership dragged on until April 1986, ultimately being the factor determining the start date.

16. Mowlem Management Ltd (the management contractor) began work on site in April, the first task being the demolition of massive dockside buildings across most of the 40-hectare site. Notwithstanding the scale of these clearance works, by Christmas 1986 the

concrete runway was complete and the terminal building was largely roofed over. At the time of writing, the target date for start of passenger carrying operations is October 1987.

The Investment Perspective

17. Before describing in detail the facility that is now being built it is well to consider the investment perspective in this whole undertaking, for design emerges in relation to perceived investment possibility and chosen investment strategy - not vice versa.

18. Inevitably the first concept of an airport in Docklands was framed simply on the basis of its being "a good idea". More structured reasoning led to the conclusion that the principal market sector to benefit from an inner city airport would be the business sector - but would the passenger demand be quantitatively such as to justify the investment?

19. Prior to the public inquiry the LDDC had commissioned an analysis of potential passenger demand for such an airport. This was a sophisticated analysis incorporating complex appraisals of inter-modal transfer in passenger behaviour and it forecast a very strong demand for the airport. This was a comfort to Mowlem but the analysis which they themselves commissioned was of a simpler and more specific nature. It was based on a study only of existing air travellers, and was restricted to one category, terminating business passengers. By consideration of passenger origin and destination in the different London areas the numbers of passengers on different routes who would gain an overall journey time advantage was assessed. It was calculated that terminating business passengers alone would utilise the capacity available within the planning consent - which is of course a small number of passenger movements in terms of those at the major airports serving London.

20. As a private investment of an innovative nature and with imposed capacity limits, it was never perceived that London City Airport would be able to afford to offer cut-price landing and passenger charges nor was it expected that airlines using the airport would be able to offer cut-price fares. The airport will be selling "position" and selling it to those for whom convenience is ultimately more important than price, hence the emphasis on the business passenger in the feasibility analysis; there will of course be leisure passengers, but each one will be a bonus in terms of the basis of the investment. This conservative approach to passenger mixtures was applied because of the numerous other uncertainties inherent in the project.

21. The investment being predicated upon the business passenger, it has been felt important throughout the design process to ensure that the airport will provide the facilities and the service that the business passenger wants. Some of the most important of these characteristics are: lack of hassle; speedy check-in and other passenger processing; minimum of unscheduled delays; efficient baggage handling; good flight frequency; business quality and range of services; courteous and efficient

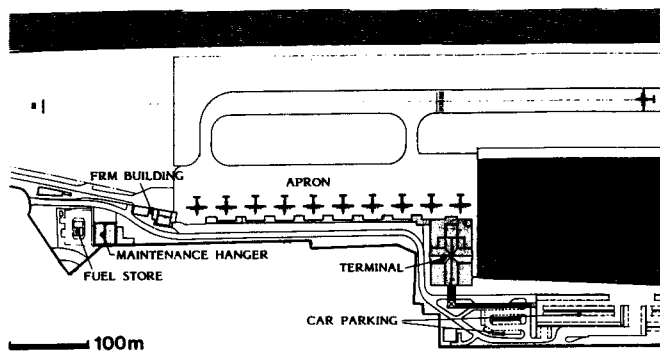


Fig. 3. Layout of airport facilities

staff. In terms of such qualities it is intended that London City offer uniquely high standards, and the means of doing so will be described later in this paper.

22. During the long run-up to the award of the outline planning consent the Mowlem expectation was to bring in risk-sharing joint venture partners prior to issuing the "Construction Notice" and being totally committed to build and operate the airport. Accordingly heads of agreement were negotiated with two partners (40% and 10% investors) such that the Mowlem interest (and risk) would be reduced to 50% of the investment.

23. For reasons connected with his own business situation, not reasons related to the project itself, the 40% investor later withdrew. Not a particularly remarkable event, one might say, but the timing made it a very significant event, for this withdrawal occurred in the same week that the resolution of land ownership was achieved (para 15). After four years of effort, the project at last had a green light to proceed but was suddenly not in compliance with the promoter's previously determined investment criteria.

24. Detailed joint venture negotiations in respect of this sort of venture are laborious and time consuming; a decision to delay until replacement investor/investors had been found and a formal shareholders agreement concluded could have led to a long delay - which would of itself damage the credibility of the project. The Mowlem board decided to commit the project at its own risk without delay; this apparent departure from previous criteria was made possible by two factors:

- 1) There was by then evidence of real airline interest to operate from London City.
- 2) In the time since the planning application Mowlem had made acquisitions and had more than doubled in size, so the airport was no longer such a large project in terms of overall resources.

25. At the time of writing Mowlem still own 100% of London City Airport Ltd. Arrangements are just being finalised for the issue of shares to the 10% minority holder originally intending to participate. There are no immediate plans for selling off any more of the company.

The Airport

26. Fig. 3 shows in greater detail the layout

of the airport facilities. A new road layout west of the airport is currently being developed by LDDC and this will incorporate a new roundabout at the entrance to London City. Entering the airport one passes the fuel farm and an aircraft maintenance hangar to the south, the FRM buildings to the north. The main approach road then runs straight towards the terminal with the passenger pier on the left. This pier has a single pitched roof rising on its north face to a height of 9m above the airport apron. This height (far greater than needed for a two-storey pier) has been constructed because the pier serves as a sound screen for residents south of the airport, adequate sound screening being a requirement of the planning consent. The approach road is to be edged with lawns on either side, with a continuous line of trees on the south and grouped planting of trees and shrubs to the north, against the face of the pier.

27. The road passes the terminal via a narrow neck of land, illustrative of the disciplined design that has been necessary to "shoehorn" the airport on to the site. Space immediately south of the terminal affords drop-off facilities and metered car parking. Adjacent to this is the main car park. Parking initially will be at ground level, but as and when demand justifies the expenditure, it is expected that a multi-storey car park will be constructed to ensure that all passengers are parked conveniently close to the terminal rather than spreading further and further along the

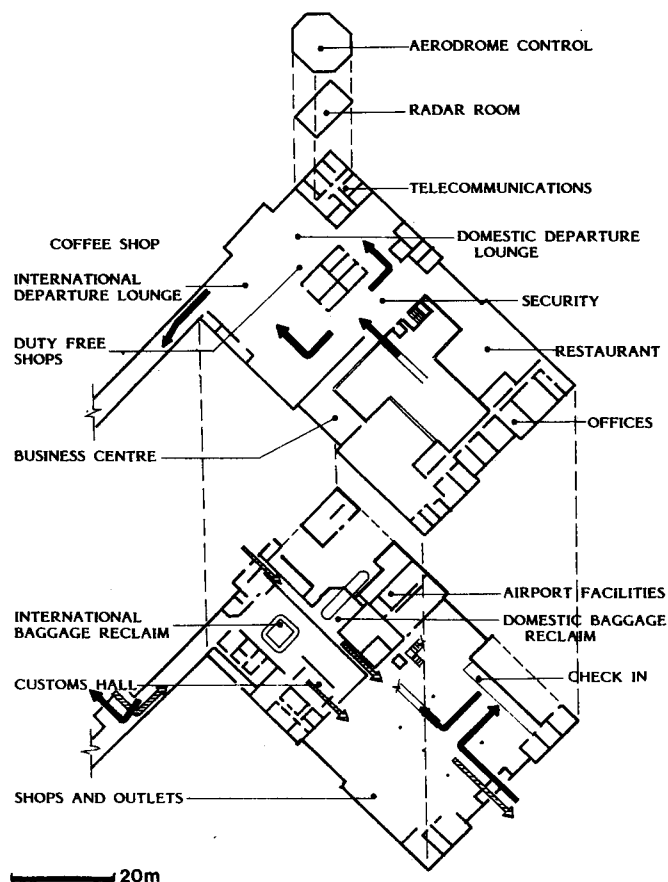


Fig. 4. Passenger flow through terminal

dockside. Access for emergency vehicles is provided between the east face of the terminal building and the western edge of the King George V dock. Entrance to the terminal is through the main doors in its south elevation.

28. Passenger flow through the terminal is illustrated in Fig. 4. The departing passenger will check in immediately to the right of the entrance door and, if departing without making use of any landside concession facilities, will proceed by escalator, stairs or lift to the departure lounges on the first floor, passing through a security check serving both domestic and international departures. Domestic passengers will, on flight call, progress directly to the domestic gate lounge; international passengers will pass along the upper level of the departure pier to the respective international gate lounges. No substantial dwell time in the gate lounges is intended.

29. Arriving domestic passengers will pass directly from the apron into the domestic baggage collection hall; arriving international passengers will progress to the international baggage collection hall via the ground level of the pier.

30. Other areas of the building are given over to operational use, to regulatory authorities, or to concessions as indicated. The nature of concessions available to the passengers is described in a later paragraph. The terminal has been sized to afford, at capacity of 1.2 million movements, a reasonably spacious environment without excessive crowd densities; in other words it has been designed to accord with the business traveller's desired ambience and lack of hassle. It can be seen from the flow direction arrows that passage through the terminal is extremely direct. While it is recognised that not all businessmen are in quite such a hurry as they think they are, and that many will have time to spare and will wish to make use of the concession and business opportunities in the terminal, the staffing levels will be set to ensure that the potential of very direct transit through the terminal is not lost and that quick times can be achieved by both arriving and departing passengers.

31. This lack of "imposed delay" will also apply in relation to the aircraft themselves. Times for embarking and alighting will be much less than would apply for larger aircraft. A



Fig. 5. Artist's impression of terminal

further saving will be that there will be little time spent in taxiing around the airport. Indeed there is hardly an opportunity to spend time so doing - a typical taxiing foray at Heathrow if applied from the end of the London City runway would get one halfway to the Bank of England!

Concession Facilities

32. Use of the title "concession facilities" does not necessarily imply that every activity will be let as a concession; it is a convenient and generally understood term for ancillary facilities available to the passenger. In the case of London City the aim has been to provide all the normal facilities, plus any others that the business passenger might want, and to provide them at a level of quality suited to this sector of the market.

33. The landside concessions available directly from the concourse will comprise banking and exchange facilities, confectionery/tobacco/newsagent and a flower shop, together with desks for car hire and hotel reservations. On the first floor, on the west side of the terminal, will be a telecommunications and business centre, while the landside bar, cafeteria and restaurant find themselves on the east side. At this point it is worth commenting that the bar and the restaurant, and also the domestic departure lounge, will command a magnificent view along the length of the King George V dock, a view which will also take in the runway itself and afford the opportunity to see the aircraft demonstrating their unusual STOL performance in landing and take-off.

34. As it is expected that three quarters of the traffic will be international, the international lounge and its concessions have been the focus of much attention during the design process. There will be a pleasant airside bar, and well presented retailing of high quality duty free and tax free goods.

External & Internal Appearance

35. Subject to the necessary cost constraints in a private development of this sort, every effort is being made in the design of the facility to ensure that its external appearance makes it a pleasing and worthy building to take its place as the first new investment in the Royal Docks redevelopment, and that the interiors are such that the users will take pleasure from them and be able to enjoy the overall ambience.

36. An artist's impression of the finished terminal viewed from the runway is given in Fig. 5. The general treatment of the cladding and glazing is such that if the reproduction were in colour it would be seen to be in a range of blue tones.

37. The chief feature of the interior design is the concourse itself, which has a clear height of 11m with clerestory glazing at its uppermost level ensuring a light and airy feel.

This feel will be further enhanced by the full height glazing of the central portals to west and east, the latter of which opens up the view of the dock.

38. Without the facility for colour reproduction, and prior to the actual completion of



Fig. 6. Artist's impression of concourse

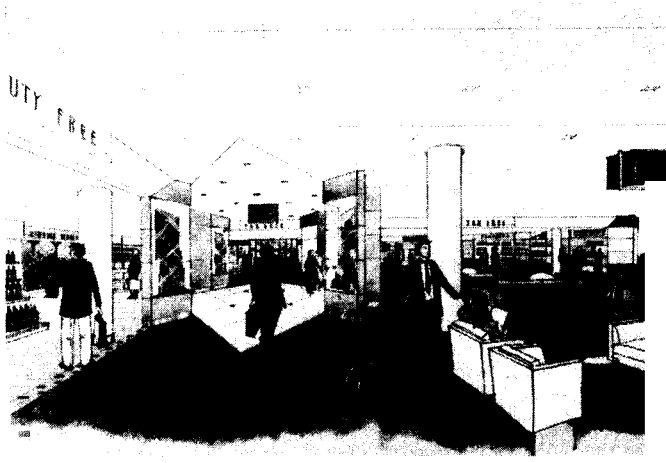


Fig. 7. Artist's impression of international departure lounge

the building it is difficult to convey any real picture of the interior design of particular areas, but Figs. 6 and 7 give a preliminary impression of the concourse itself and of the international departure lounge. Those wishing to know what the airport really looks like must come and use it.

Access to and from London City

39. It is anticipated that the majority of passengers will use cars or taxis to come to and from the airport, which lies within the central London taxi area. Even from day one, however, this will not be the only available means, for British Rail's North London Line serves this area and there is a station (currently named Silvertown) within 400m of the terminal. This will be useful to those travelling to or from the crescent of north inner London through which the line passes but it will not materially assist travellers aiming for the City itself.

40. While it is expected that road travel on

a door-to-door basis will always be favourite for the target market sector of business travellers, it is anticipated that London City will within about three years be able to offer a highly efficient rail alternative for those making the short journey to or from the City. The Docklands Light Railway is a rapid transit system currently being built for the London Transport Executive and LDDC by Mowlem in joint venture with GEC. The initial contract, due to come into service in July 1987 was for a line from Tower Hill to the southern tip of the Isle of Dogs Enterprise Zone (with a spur north to Stratford) as shown on Fig 1. At the time of writing, a parliamentary bill has been enacted authorising the extension of the Docklands Light Railway westwards to the Bank of England underground interchange, the heart of the City. It is hoped that the contract for this work will have been awarded by the time the World Airports Conference takes place. Very recently a parliamentary bill has been deposited in respect of an eastward extension to Beckton and

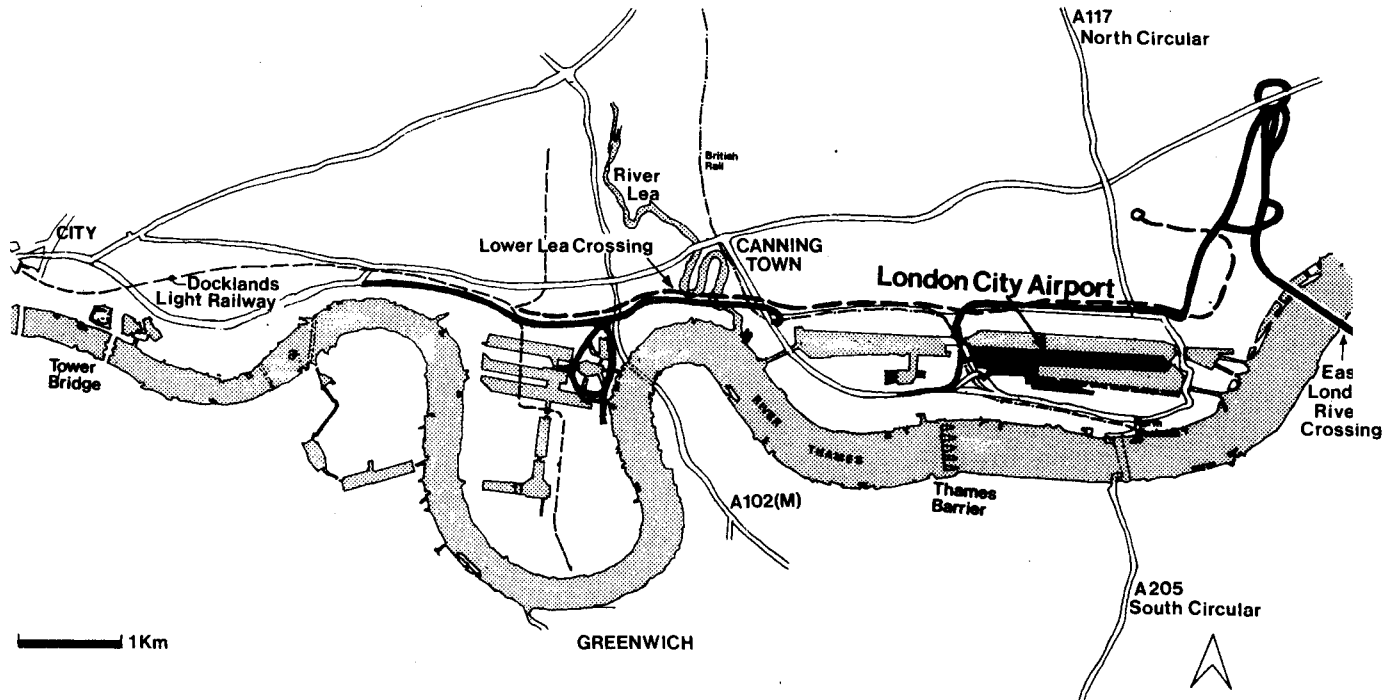


Fig. 8. Programmed improvements to road and rail infrastructure

the Royal Docks, as indicated on Fig. 8. When this part of the line is built it will not come directly to the airport terminal, but the station north of the Connaught Crossing will be not much more than one kilometre from the door of the terminal and a shuttle bus will offer passengers a high frequency service linking to the Docklands Light Railway. Overall journey time to the Bank of England will be extremely short even during rush hours.

41. At present, road access between the City and the airport is trouble free at most times of the day but there is congestion at rush hours, particularly at the Canning Town roundabout where Silvertown Way (the normal road to use coming to or from the airport) joins the A13 main eastern road.

42. With the rapid growth of activity in the area as Docklands is redeveloped, it would have to be expected that traffic conditions would get much worse if no road improvements were made. Fortunately LDDC has a comprehensive plan for new road construction which is intended to keep ahead of the growth of demand and should ensure progressive improvement in journey times to London City. The new roads planned for construction are shown on Fig. 8 and they include a new crossing of the river Lea, by-passing the whole of the Canning Town road complex. There are also plans for a new Thames crossing just east of the airport site which, if granted planning consent following its recent public inquiry, will greatly improve the passenger catchment zone south of the river. It can be seen that, in toto, the outlook for excellent access to the airport is bright.

The Renaissance of Docklands

43. The above description of forthcoming infrastructure improvements in the vicinity of London City Airport calls for a more detailed reference to the burgeoning nature of development in the area as a whole. This does not claim to be a major national airport; it is a neighbourhood airport, a community airport. It will serve the neighbourhood of central and east London, and it will serve the business and financial community. The questions of whether it is needed, and of whether it is well sited to serve these specific markets, cannot be answered in isolation from study of the dynamics of those markets. Population and business locations are not eternally static.

44. By this criterion also, it can be seen that the timing of the investment in London City is propitious. Few people taking a tour of derelict east London six years ago could have dreamed what the scene would look like today. The newspaper industry has moved collectively eastwards into new premises in Docklands; hi-tech manufacturing, telecommunications, finance, retailing and other services have done likewise; from being areas made up almost entirely of local authority housing, the boroughs of Newham and Tower Hamlets have become the focus of a boom in high quality owner-occupied residential development. The deregulation of the financial services industry (Big Bang) has generated a need for office accommodation. Much of this is being

provided in Docklands, some of the developments being on a spectacular scale.

45. In short, the centre of gravity of London is moving decisively eastwards after years of drifting towards the west. Although there are great areas still awaiting development, notably the Royal Docks area itself, the momentum of change is now unstoppable. London City Airport will both feed and feed upon this change. Clearly it will be good for the airport that it be centred upon a dynamic and flourishing neighbourhood; equally the promise of the availability of the airport is a further catalyst to businesses and individuals contemplating relocation into the area. While it may be acceptable to make a long journey to or from an airport if one is going to or coming from San Francisco or Singapore, it is utterly tiresome to find a shorthaul European journey converted into a major obstacle race by problems of access to or from an airport. By resolving this problem for Docklands, and indeed for east London as a whole, London City has removed one of the disadvantages that were holding the neighbourhood down.

Airline Attitudes and Public Response

46. Before describing airline attitudes to the proposed London City development it is worth explaining that the project is perhaps even more unusual than is generally appreciated. The fact that a genuine inner city airport is novel, that an airport developed solely for STOL operations is novel, that a privately owned airport developed by a company with no previous history in the industry is novel - these aspects of London City are generally acknowledged. It is perhaps only those who stop and think about it, however, who realise that the creation of any new airport from scratch on a new site is in itself a rare event. The massive development of the airport industry in Britain since the war has been based almost without exception on the expansion of facilities which were already there, if only in the form of modest military airfields.

47. The various improbabilities summarised in the preceding paragraph possibly made interested third parties such as airlines doubtful as to whether the enthusiastic promoter visiting them to establish market interest in the new airport would ever really get around to building it. Taking into account the fact that relationships between airlines and airports are not generally established as long term contract commitments, that there was accordingly no need for airlines to "commit" themselves to use of London City, and that successful existing businesses with high public profiles do not readily attach their names to ideas which could turn out to be castles in the air, it is perhaps not surprising that the response of airlines prior to actual commitment to build was interested and polite rather than positive and definite. It was necessary for the developer to commit the investment on the basis of faith in the concept and without any guarantee that any airline would ever fly from it.

48. Once that leap of faith had been made, however, reaction from the airline industry was

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extremely positive. Five UK airlines applied to the CAA for route licences and from among these it can, at the time of writing, be said that there are two strong and determined contenders - Brymon Airways and Eurocity Express. Brymon, as British operators of the Dash 7, have identified with the project since its inception (as referred to in paragraph 8) and have remained keen as the dream has approached reality. Eurocity Express is a new airline formed by the British Midland Group for the sole purpose of capitalising on the new opportunity offered by London City; this airline will be based at the airport. By the time the World Airports Conference takes place it should be known how route licences have been awarded between the contenders.

49. Since construction of the airport began there has also been a renewal of interest from continental airlines, both in seeking route licences from their own authorities and in seeking to reserve slots at London City.

50. Meanwhile it is fair to say that the new airport has attracted a considerable amount of media coverage and public interest. The Minister of State for Aviation, Mr Michael Spicer, kindly carried out a ground breaking ceremony at the start of construction, and HRH The Prince of Wales graciously laid the foundation stone; such a degree of interest in the project has naturally helped the development of public awareness.

51. This increased public awareness has in turn made it possible for candidate airlines to carry out detailed market research studies and customer attitude surveys such as would have been difficult before the project itself was known or understood. It is fair to say that such research has confirmed a strong demand among business travellers, and an enthusiasm for the service and facilities that London City will offer.

52. Finally it must be admitted that there is one problem that neither the developer nor the airport company management has, at the time of writing, solved. How does one allocate tickets for the first public flight from London City Airport? The number of people who have asked to be on that first flight is such that if they could all be miniaturised and put on board, the first year's target total would be at once achieved. Somehow an allocation has to be decided - but so many problems have been overcome that we can surely crack that one too!

Acknowledgements

53. John Mowlem and Company PLC and London City Airport Ltd wish to acknowledge the very considerable help and sympathetic forbearance of the Civil Aviation Authority in the resolution of the many issues upon which the completion and licencing of the airport has depended.

54. The project team has been:
Architect:

R Seifert & Partners

Aviation Consultant:

World Aviation Services Ltd

Civil and Structural Engineer:

Donald Butler Associates

Services Engineer:

Sir Frederick Snow & Partners

Cost Consultant & Quantity Surveyor:

Axtell Yates Hallett

Interior Design and Concessions Consultant:

Jenkins Group

Noise Consultant:

Bickerdike Allen Partners

Airport Operations Consultant:

Lockheed Air Terminal Inc