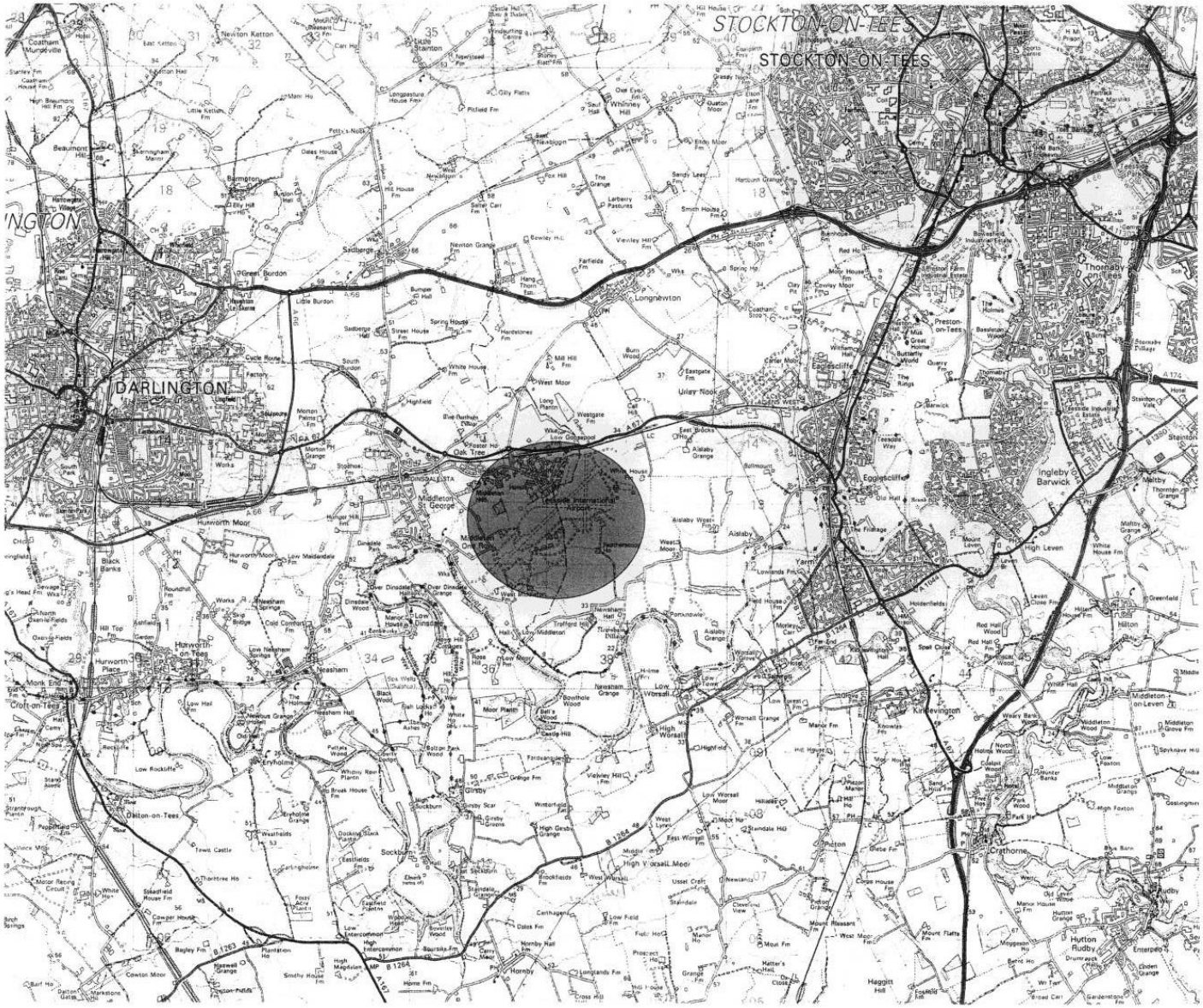
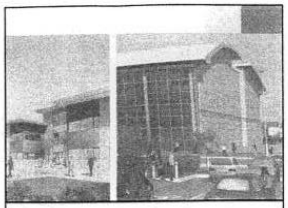
APPENDIX A

SITE LOCATION PLANS





Key / Notes

DurhamTees ValleyAirport

Plan No.

1.1

Plan Title.

Site Location

Date.

July 2004

Scale.

Not To Scale

Durham Tees Valley Airport and North side Business Park

APPENDIX B

MASTER PLAN INDICATING DEVELOPMENT SITES

APPENDIX C

ENVIRONMENTAL ASSESSMENT
NON TECHNICAL SUMMARY

Durham Tees Valley Airport
and North Side Business Park

DurhamTees ValleyAirport

Peel
PEEL AIRPORTS

Durham Tees Valley Airport

environmental statement

Non-technical summary

Prepared by

TURLEYASSOCIATES

LEACH RHODES WALKER LLP
ARCHITECTS

December 2004

This Environmental Statement (ES) has been prepared on behalf of Durham Tees Valley Airport (DTVA – formerly known as Teesside International Airport) to consider the environmental effects of two related development proposals which are the subject of planning applications for:

- expansion of the Airport, including the extension and refurbishment of the terminal building and passenger facilities to accommodate 3 million passengers per annum, and a Cargo and Maintenance Village to cater for around 26,000 tonnes of freight per annum together with related infrastructure, including aprons, taxiways, car parking and drainage,
- an aviation related B1 Business Park, hotel and public house/restaurant, which has been titled the 'North Side Business Park', on land between the existing Airport and the Oak Tree housing estate.

The methodology and coverage of the ES was subject to wide consultation. A scoping report was circulated to interested parties in summer 2004 and comments received have been incorporated in subsequent work. The ES considers a wide range of potential environmental impacts on nearby residents, wildlife and habitats, the landscape, farmland, and the surrounding road network. The economic effects of the development are also considered in detail.

In accordance with the relevant regulations the ES considers 2 scenarios:

- the environmental impacts of the proposed development by itself; and
- the environmental impacts of the proposed development cumulatively with the impacts of other nearby developments which already have planning permission. The main such development is the South Side Employment Park which will provide large scale airport related development on land south of the Airport. The impacts of that development were assessed in an ES accompanying the application which was approved in 1999.

Aviation

DTVA propose to carry out these development proposals as a part of a major investment programme to improve facilities at the Airport. Recent improvements have included a new main access road, an enhanced set down area and additional car parking. The proposed developments now planned provide new and improved accommodation for airlines, passengers and business located or which wish to locate at the Airport.

Since its conversion for civilian use in 1964, DTVA has served the Tees Valley and surrounding region for air services to major cities in the UK and Europe. The Airport caters for Domestic Scheduled traffic (with the Heathrow service of particular importance for the Teesside business economy), International Scheduled and International Charter (Inclusive Tour) Services. In recent years, low cost operators have located at the Airport rapidly increasing passenger throughput. In 2003, the Airport handled almost 700,000 passengers and approximately 1,000 tonnes of freight. There are also important general/business aviation operators, users and services located at the Airport.

In order to assist with the assessment of likely environmental impacts of the growth of the Airport, specialist consultants have prepared air travel forecasts.

It has been forecast that if no further development occurs at the Airport, the existing Terminal capacity of 1.2 million passengers per annum (around 12,600 Air Transport Movements (ATM's)) will be reached in 2007. However, if the application proposals are implemented, it is forecast that the improved Terminal capacity of 3 million passengers per annum (around 28,400 Air Transport Movements) will be reached in 2015. The Cargo and Maintenance Village will allow for an increase from approximately 7,700 tonnes (around 900 ATM's) which is the anticipated capacity reached by 2007, to 26,000 tonnes per annum (around 2,400 ATM's) in 2015.

Growth in other airport usage (for example general and business aviation including private aircraft use) has also been included in the forecasts. These comprehensive forecasts ensure that the noise, air quality and road transport implications, and socio-economic benefits of the developments, are realistically assessed.

Existing aerial view of terminal building and runway

Alternatives and Need

The ES has considered the need for the proposed developments, as well as the potential alternative locations which could accommodate the developments. The Air Transport White Paper (The Future of Air Transport, DfT 2003) acknowledges the growing need for air travel and the economic and social benefits it brings. It sets out a strategy for meeting this need whilst taking account of the environmental impacts of such development.

The White Paper concludes that DTVA, together with other regional airports in the north of England, should be expanded. In this context, providing for the proposed growth at another airport would not fulfil the objectives of the White Paper and is not considered to be a practical alternative to the proposed developments.

Alternative locations for each of the constituent parts of the proposed developments have also been considered. It has been concluded that the proposals are the most efficient means of accommodating these developments within the practical and commercial constraints of each of the different elements of the scheme.

Socio-Economic Impacts

It is estimated that the Airport provides the equivalent of around 750 jobs and indirectly provides a further 190 to 260 jobs (in suppliers for example) in the Tees Valley sub-region. This amounts to a total of 940 to 1,010 full time equivalent jobs (rising to 1,050 to 1,130 if indirect jobs for the wider North East are included). In addition, the Airport contributes around £44 million per annum in Gross Domestic Product (GDP) to the local economy.

The proposed developments will support a net addition of around 2,300 to 2,500 jobs and add a gross value of £126 million per annum to the local economy. The construction of the developments would support the equivalent of a further 60 full time jobs.

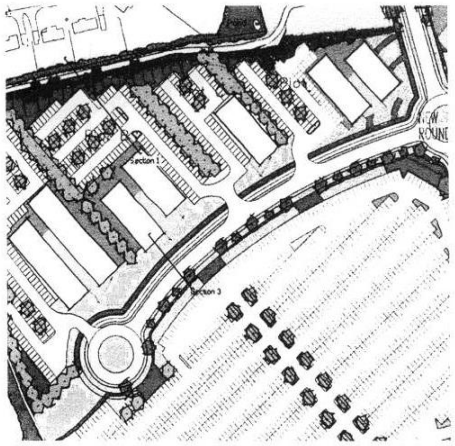
It is concluded that the proposed developments will have significant positive effects for the area, and in doing so will support regeneration of the Tees Valley sub-region where there is an acknowledged need for additional employment and support for improved business competitiveness and productivity.

Surface Access

Examination of the existing road network around the Airport shows that it can accommodate predicted traffic from the Airport (at its busiest periods) and other planned developments in the area. The Transport Assessment models the likely traffic flows on junctions in the locality. It concludes that they will continue to operate satisfactorily.

The Airport is accessible by cycle and a dedicated footpath/cycleway provides direct access to the terminal from the entrance to the Airport.

North Side Business Park detailed plan



A 'Travel Plan' and an 'Airport Surface Access Strategy' will be prepared and implemented in conjunction with the expansion of the Airport. Both of these will set targets for reducing vehicle traffic and will set out measures to encourage the use of public transport.

The Airport is also introducing a direct bus service to Darlington Station which will improve access to the Airport by public transport.

The potential to increase the number of trains stopping at the Airport's railway station has been examined but constraints on the network mean that it is not practicable to introduce additional services at this time. The site is within 2.5km of Dinsdale Railway Station which has frequent passenger services.

In conjunction with the proposed developments, the Airport will support efforts to increase public transport use by gradually reducing the amount of non-essential car parking as a proportion of the number of passengers using the Airport.

The Travel Plan and Surface Access Strategy will have positive effects in managing the traffic implications of the proposed developments, and it is concluded that there will be no material adverse traffic impact arising from the development proposals.

Geology and Hydrogeology

The proposed drainage system will ensure that the application proposals do not add to the risk of flooding in the Tees catchment. Suitable 'interceptors' will be installed to ensure that any potential sources of contamination will not enter local rivers or streams.

Sewage from the north western part of the site will be treated on site. Two options for dealing with sewage from the rest of the development have been considered. One is to extend the capacity of the Waste Water Treatment Works at Middleton One Row. (This treatment works needs to be extended to accommodate recent development in the village and additional capacity to serve the Airport development could be incorporated). If, for any reason this is not undertaken an alternative option would be to provide a treatment works within the Airport. Neither of these options would have any significant environmental impact.

The ES concludes that the development will not have an adverse impact on the geology, hydrogeology or ground conditions at the Airport.

right Section through existing housing, screen planting and car park

Aviation Hazard

The ES has considered the effects of increased air traffic at the Airport on the risk to third parties due to aircraft crashes. Even in the locations exposed to the highest risk, the risk was assessed as tolerable, provided flight operations are managed in such a way as to keep the risk of aircraft impacts As Low As Reasonably Practicable (ALARP). Elsewhere, the risk was assessed as acceptable without qualification.

The Airport currently has a Public Safety Zone (PSZ). A PSZ is an area around an airport in which planning permission for building development is restricted to limit the number of people living or working in that area in the long term. A smaller inner zone is also defined for the Airport (where the risk of an aircraft crashing at a given location is 1 in 10,000 or greater). The Airport zone does not presently include any houses or other buildings usually occupied by people and will not do so as a result of these proposals.

With the increase in aircraft movements associated with the proposed development and the South Side Employment Park, the PSZ may need to be extended at both ends of the runway. However, the new PSZ will intersect no significantly developed areas. The extension of the PSZ will constitute adequate land planning mitigation measures for the proposed development.

Landscape and Visual Impacts

The landscape and visual assessment has considered the effects of the proposed developments on the landscape character and visual quality of the area. In particular it considers any impact on the Area of High Landscape Value (AHLV) to the south west of the Airport.

The Landscape Masterplan sets out the landscaping which will be undertaken as part of the development proposals. This will include structural planting around the Cargo and Maintenance Village and within the proposed car parking areas. The North Side Business Park will have an acoustic bund and structural landscaping along its boundaries with the Oak Tree housing estate and to the western boundary of the site. These belts of planting have been designed to screen views of the development and the existing Airport, from residential areas and public footpaths, and to integrate the Business Park development with its surroundings.

All proposed planting will comply with Civil Aviation Authority guidelines, which aim to reduce flocking birds in the vicinity of the Airport (a measure designed to reduce the risk of incidences of bird strike).

The developments will result in change to both the landscape character and visual context of the area, although the proposed landscaping will be effective in minimising these impacts.

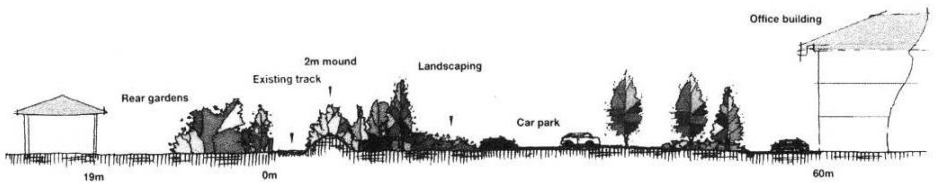
The development proposals will result in landscape character impacts through the loss of land currently in agricultural use and currently 'open' airport related land. The loss of hedgerows and trees from the site of the North Side Business Park will be compensated for within the structural landscaping proposed.

There will be some localised impacts on the visual quality of the area, including some change in views from the AHLV. People driving / walking and cycling on Dinsdale Road, the lane to the east of Brocks House, and drivers on the A67 and its footpath travelling from Longnewton, will experience medium adverse visual impacts once the developments have been constructed. However, these people will have only transient views (ie views which are not permanent and are constantly changing as a result of their movement along the road / footpath) which reduces the visual effect of the developments when compared to, for example, views from houses.

Residents at the Oak Tree Estate will also experience medium high adverse visual effects, although this will be reduced to an acceptable level once the landscaped acoustic bund around the boundaries of the North Side Business Park has been completed and its planting is established.

Taken as a whole, the landscape and visual impacts are considered to be minor. The proposed development will generally be well assimilated into the existing landscape. The landscape and visual impacts of the South Side Employment Park will be greater. These impacts were considered by the Secretary of State to be acceptable when he granted planning permission for this development. Once built, the South Side buildings will screen some views of the current proposals, especially from the south.

Whilst the development proposals will result in both landscape and visual change in the vicinity of the Airport, these impacts will be mitigated to acceptable levels.



Noise

The noise assessment concludes that there will be increases in ambient noise levels around the Airport, from road traffic and aircraft activity.

Noise arising from road traffic will mainly affect existing properties in Eaglescliffe and Longnewton. At Eaglescliffe, the noise and vibration impacts arising will not be significant, as the level of traffic noise increase predicted in this area is limited. Properties at Longnewton will benefit through the introduction of the planned Longnewton interchange.

The noise assessment concludes that the increase in aircraft related noise will be modest, even when both the application development and the South Side Employment Park scheme are developed.

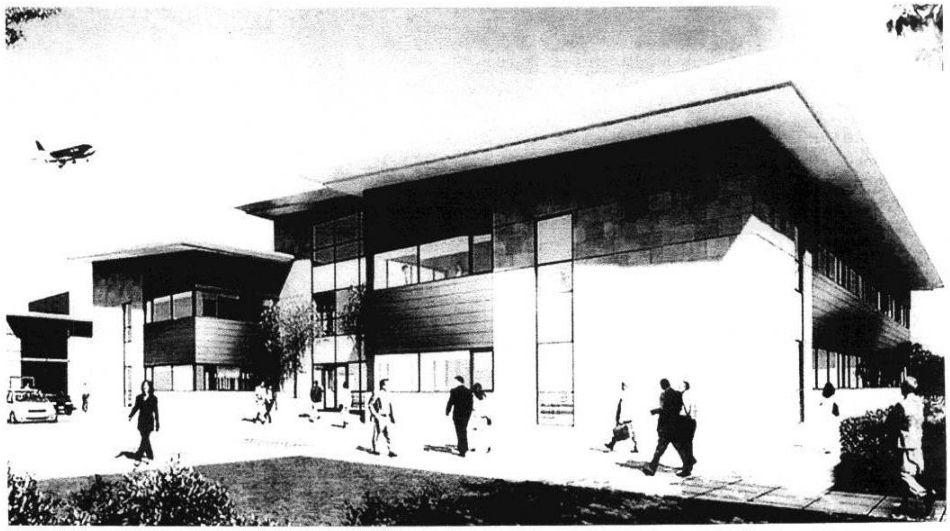
The ES sets out categories of noise based on levels of 'annoyance' caused to people living nearby. It assesses how many people will be affected in each category. During the day-time (based on 16 hour averages), no properties will become exposed to "high annoyance" levels and only 6 additional properties will be exposed to "moderate annoyance" levels. In comparison to other UK Airports, this is extremely low. Around 16 additional houses (and less than 50 overall) will be exposed to "low annoyance" levels, which again is extremely low when compared to other Regional Airports.

The impact of increased night-time flying (based on 8 hour averages) arising from the proposed development will also be small. The predicted noises associated with aircraft take-off and landing are assessed as having a low likelihood of causing sleep disturbance. If the 'South Side' scheme is built (which will involve the use of a greater number of larger aircraft) the night time impact would increase, although the 'worst case' impacts will be limited to a small number of properties.

It should be recognised that the 'South Side' impacts do not arise as a result of the current application proposals as this scheme already has planning permission - however, the cumulative position following the development of both the application schemes and the 'South Side' scheme has been assessed and it is concluded that the number of properties adversely affected will remain low.

The application will also result in noise generation other than airborne aircraft. The noise assessment concludes that ground noise, engine testing and road traffic noise will all result in perceptible, but not problematic increases in noise levels in the vicinity of the Airport.

The proposed development itself will cause no significant change in overall noise impact. There will be increases in aircraft noise exposure as the Airport develops, but only to a limited degree, in that no properties will be exposed to high annoyance levels, and only a small number will be exposed to moderate annoyance levels and a slight risk of sleep disturbance. If such increases occur mitigation measures could be applied to the few dwellings so exposed.



Cultural Heritage

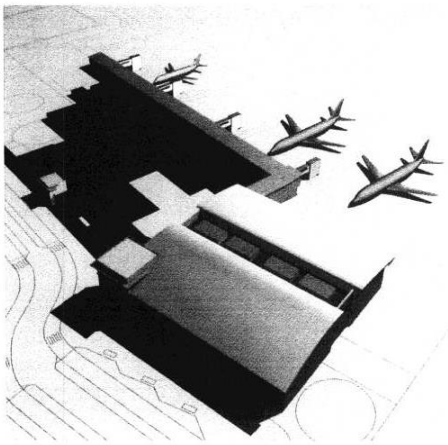
The cultural heritage impact assessment considers the effects of the proposed development on archaeology, conservation areas, historic buildings or parklands of heritage importance. It considers a number of features of interest in the vicinity of the site.

The majority of the areas where development is proposed have been disturbed by previous construction activity and any remaining archaeology now has little value. The area of the North Side Business Park and proposed location of the on-site sewage treatment works have not previously been disturbed. The potential for them to contain significant archaeology is nevertheless low and any impact can be fully mitigated by undertaking on site evaluation (for example geo-physical survey or trial trenching if required) prior to construction on these sites. Planning conditions can be attached to any planning approval which will ensure that any undiscovered archaeological remains are treated appropriately.

The development proposals will not directly affect any listed buildings and are considered to have a negligible impact on the wider setting of buildings of historic interest within and around the development areas. The scale and massing of the proposed developments, when combined with landscaping and other planting proposals, will help to ensure that the development proposals do not harm the setting of these buildings.

It is concluded that the impacts of the developments on the cultural heritage resource will be low and, with suitable mitigation, the impacts will be negligible at worst, and in many cases there will be no impact.

Illustrative aerial view of existing and proposed terminal buildings



Ecology

The ecology chapter presents the results of a number of specialist surveys of the site, including those for protected species. The developments will not affect any wildlife habitats that are nationally important and will not affect any statutory or non-statutory designated sites of importance for nature conservation.

The development will result in the loss of good quality unimproved grassland, which is considered to be important on a County wide level. Around 20% of this habitat within the site will be lost. This is considered to be of moderate significance. In any event, the effect of this will be reduced to around a 9% loss through the re-location of areas of this grassland within the areas proposed for development.

The effects of the development on birds and invertebrates are considered to be minor. Amphibian populations off-site will not be affected, nor will the use of hedges around the site by bats. No bat roost sites will be lost. Based on surveys and other available data, no other protected species will be affected.

The most significant adverse ecological impact is on the unimproved grassland. This is considered to be of moderate significance overall.

Construction Impacts

Whilst there will be some temporary increase in traffic levels, and noise and dust will be created during the construction of the proposed developments, a range of measures to manage and minimise these effects will be implemented through a Construction Management Plan. Such measures could include control of working hours, routing of construction traffic, means to control dust and wheel washing for lorries. It is considered that such measures will ensure that construction activity does not have a significant adverse impact on local residents or other sensitive receptors.

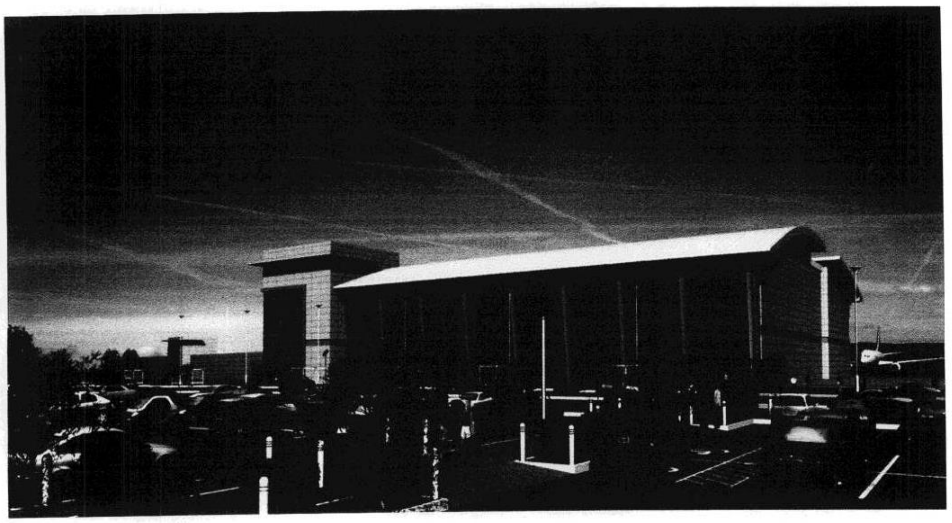
Agriculture

The ES considers the implications of the development of the parts of the site which are currently agricultural land. The quality of the agricultural land is relatively poor (grade 3b), and consequently the loss of this land is not considered to be significant. Some of the soil will be re-used for landscaping and the remainder will be appropriately handled to ensure that if it is required for re-use, its quality will not be harmed.

Cumulative Impacts

The ES has taken account of the cumulative effects of the proposed development with other planned developments near the Airport in individual chapters and the results of this process are presented above.

The potential for impact interactions (ie the possibility of certain impacts interacting to create a new impact) has also been considered and it is concluded that no such impacts are likely to occur in this instance. In order to avoid the proposed landscaping attracting flocks of birds which could present a hazard to aircraft, suitable plant species (in accordance with CAA Guidelines) will be used.



Illustrative new terminal building frontage

Conclusions

The ES has considered the relevant Environmental Impacts of the proposed expansion of Durham Tees Valley Airport and the associated North Side Business Park.

The most significant adverse impact identified relates to the loss of unimproved grassland, although with suitable treatment of the grassland and the 'translocation' of some of this habitat, this will have only a moderate adverse impact.

The remaining topic areas have found that the environmental effects of the development will be neutral or of low significance following mitigation. The proposal will have a significant positive effect on the economic regeneration of the Tees Valley by creating 2,300 to 2,500 new jobs and adding around £126 million per annum to the economy.

APPENDIX D

NOISE CONTOUR MAPS FOR DAYTIME AND NIGHT TIME NOISE ASSESSMENTS

APPENDIX E

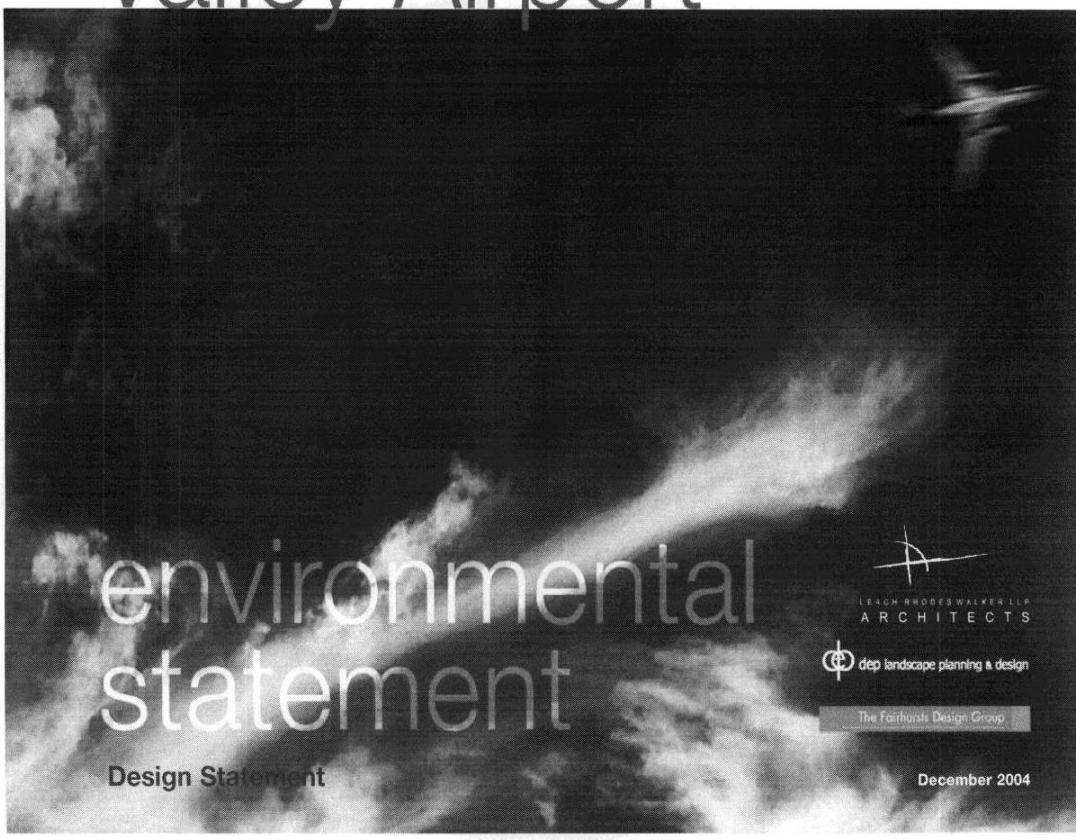
DESIGN STATEMENT

Durham Tees Valley Airport
and North Side Business Park

DurhamTees ValleyAirport

Peel
PEEL AIRPORTS

Durham Tees Valley Airport



environmental statement

Design Statement

LEACH RHODES WALKER LLP
ARCHITECTS

dep landscape planning & design

The Fairhurst Design Group

December 2004

Durham Tees Valley Airport

DESIGN STATEMENT

PASSENGER TERMINAL FACILITY, CARGO/MAINTENANCE VILLAGE,
NORTH SIDE BUSINESS PARK AND HOTEL

INTRODUCTION

This report has been prepared by Leach Rhodes Walker LLP in support of the Planning Application for development at Durham Tees Valley Airport (DTVA)

The report briefly outlines the historical and the present context of the site and identifies the functionality, design concepts and proposals with regard to the existing and proposed terminal buildings, cargo/maintenance village, North Side Business Park and Hotel.

The first phase of development works at DTVA was completed in May 2004, under previous planning approvals and consisted of two separate contracts, one dealing with refurbishment of areas of the terminal building and baggage system amendments and one external works contract to generate increased car parking and set down facilities and to provide a link to the new estate access road which was recently constructed by ONE North East, the Regional Development Agency.

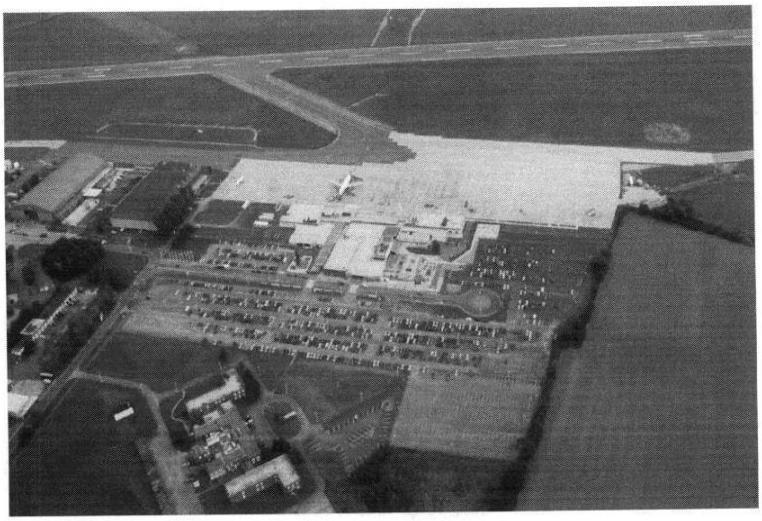


Fig.1. Existing terminal building, car park, apron and runway from the North.

History

The current Airport started life as the Middleton St George Bomber Command Station. Development began on site in circa 1940. The site continued to service the RAF until circa 1964 when the site was acquired by the Regional Council for conversion into a Civil Airport. The terminal opened in November 1966 and has gradually developed into the structure it is today.

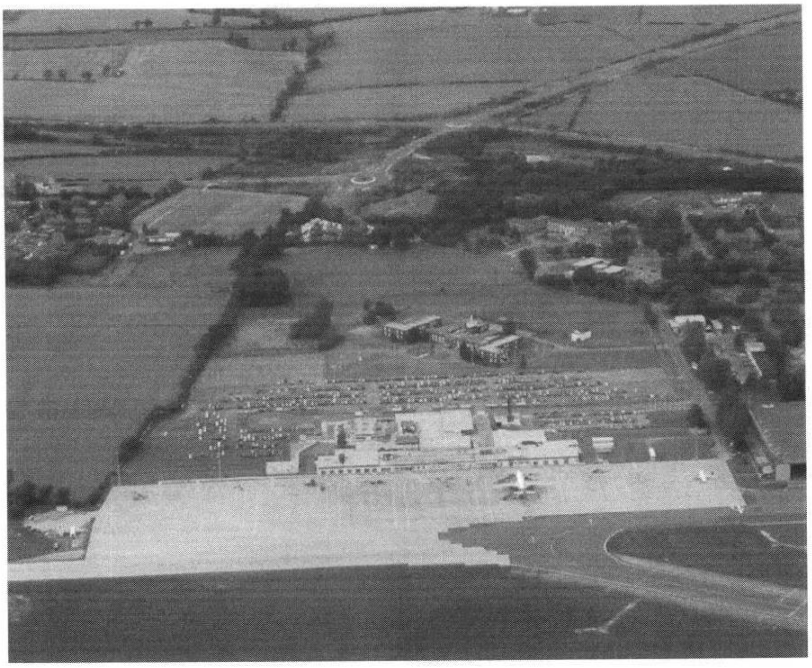


Fig.2. View from South

Context
The existing airfield, located approximately five miles (8km) due east of the centre of Darlington, measures approx. 550 acres (223 Ha) in area and is surrounded by land of varied uses including aviation related, commercial, light industrial, agricultural and some residential.

EXISTING SITUATION

The existing terminal building, although dated in design terms, has an identifiable asset value and as such has to form part of any immediate development plans. Current passenger throughput is approx. 0.9million passengers per annum (mppa), but it has the ability to accommodate up to approx. 1.2mppa.

It is generally agreed that the existing facilities fall short of an acceptable service standard when compared to recent airport developments and that an improvement in design quality and passenger service levels will be required for any expansion proposals. A full schedule of the current facilities areas has been produced and reviewed against IATA (International Air Transport Association) and other recent design standards. This has been linked to the future projected passenger numbers increase and developed into a brief for the proposed functional and operational improvements.

The existing principally single storey* terminal building currently caters for all arriving and departing passengers and is approximately 8500m2 (91,500sq.ft.) in area. There are current planning approvals in place for the extension of the building by a further 1000m2 (10,750Sq.ft.)

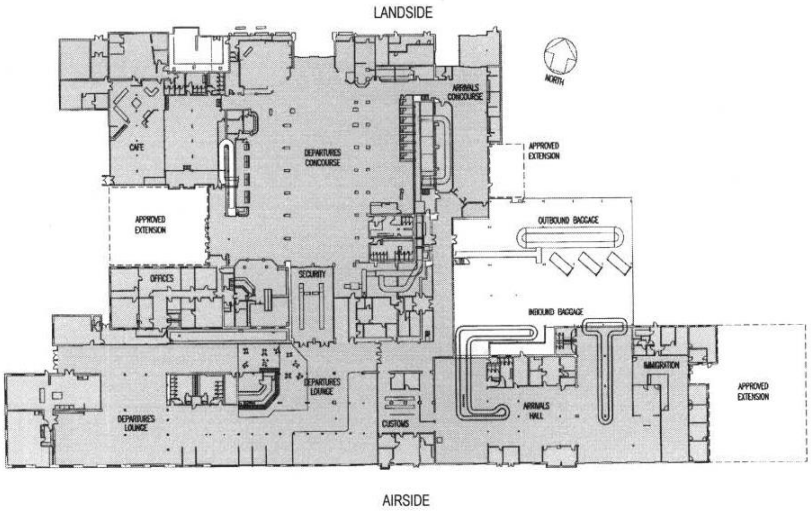


Fig.3. Existing terminal building footprint with approved areas shown dotted

*First floor level over the current offices contains further office space, meeting rooms and board room facilities.

Functional relationships and deficiencies of current facilities

Access to the building for departing passengers is on the north elevation directly across the new set down area from the new and previous car parks. The entrance doors lead straight into the departures concourse which houses the information point, concessions, a bar area, travel agent, ticket desks, catering outlet, foreign exchange, access to the operational offices, toilets, check-in desk facilities and access to the security control area for passengers only. The concourse is deficient in area by approx. 35% when related to similar recent airport projects and IATA standards, the concourse also has no growth potential for check-in desks, tickets desks or concessions.

There are currently 18 check-in desks (two of which were added as part of recent works) split between east and west banks in the departures concourse. The two banks both feed onto one single collector line (part of which is subterranean and subject to maintenance/access problems) which is directed through a Hold Baggage Screening xray and on to the east under the arrivals corridor to the outbound baggage carousel at which stage baggage is manually handled to the appropriate aircraft.

Turning east upon entering the building will direct the public to the arrivals concourse which contains waiting space for 'meeters and greeters'. This area has benefited from recent minor refurbishment works, but is also undersized in respect of passenger flows, at peak times by approx. 100% when related to recent design standards.

To the west of the departures concourse is the landside restaurant, kitchens and seating areas through which the viewing area and staff car park can be reached. The restaurant is tired and dated in design terms, and is visually 'hidden' behind the west check-in bank.

Post check-in, passengers are processed via security control through to the airside lounge and gates, where there are further concessions, a café/bar, business lounges and toilet facilities. The airside lounge areas again suffer from inadequate space allocation, and this, considered with a very low ceiling height, means that at peak times it can become uncomfortably busy. The recent relocation of the existing bar/café and provision of an extra gate has increased usable area within the existing lounge. The gate lounge seating areas equate to approx. 500m2 whilst design standards generally dictate a minimum of 200m2 per gate (1000m2 for five gates) and therefore the current airside lounge facility is under provided by 50%.

There are currently 5 gates/gate lounges servicing the passenger apron, which holds a maximum of 6 aircraft. Passengers are currently led by ground handling staff from the gate lounges via an open pedestrian walkway to the appropriate stand where the aircraft are boarded.

Arriving passengers disembark the aircraft on stand and are again led across the apron and passenger walkways to the appropriate entrance doors. International, Domestic and Common Travel Area passengers are segregated upon arrival and are processed within the relevant channels through to the arrivals hall.

There are currently two arrivals carousels processing inbound baggage. A current planning approval will allow for the extension of the arrivals hall to accommodate a further carousel and amended control authority facilities.

The arrivals hall also accommodates Immigration offices and interview rooms, Police offices, Customs search areas, offices and interview rooms and passenger and staff toilets. There are also various tenants' offices and staff facilities in the area. The area is undersized and becomes very crowded when simultaneous flights are disembarked. IATA data gives a figure of between 450 – 550m2 per reclaim device whilst DTV airport currently operates at approx 300m2 per reclaim device.
Passing through the recently refurbished customs control/search area passengers are directed along another recently refurbished corridor to the arrivals concourse where there are car hire, vending and public waiting areas. Exiting the building via a dedicated arrivals entrance directions are given to car parks, bussing and taxi facilities.

Areas of plant serving the existing building are located to the north of the departures concourse, in the airside lounge, in the arrivals hall and also on the building roof.
Externally, to the east of the terminal is a service area, bus parking facility and outbound baggage handling canopies, to the west there is also a service area and staff parking spaces. The car hire storage compound has also recently been relocated to the western end of the terminal building.

Forecasts anticipate a steady growth in passenger numbers, this will mean that the current service levels maintained by the existing terminal building and site (although already low) will be unable to be met, resultant in both passenger and airline inconvenience.

Design

The existing terminal building has been subject to intermittent and sporadic growth on a 'needs must' basis over a number of years. The building has suffered from this process in terms of its design quality and operational/functional suitability with little consideration being given to the 'image' of the terminal as a public building and a gateway for visitors to the region. Recent extensions to the lounges and arrivals hall have had little alternative but to follow the precedent set by the existing buildings aesthetic.

Fig.4. Existing terminal frontage.

Public/Passengers arriving at the terminal by road are greeted externally by a very confusing frontage which has elements of blue tiles, white tiles, curtain walling, concrete and render. These elements are not conducive to the clear message that passengers require upon arrival at a passenger transport facility. A clear architectural message is required to be developed for future proposals.

Recent works to the set down area and roads have improved functionality to the terminal frontage and the introduction of a coherent hard landscaping scheme has eased the passage of pedestrian traffic from car parks to entrance.

Fig.5. Existing terminal departures concourse

The internal finishes are considered to be minimal in quality and cost, which can be proved counter productive when assessed against long term maintenance requirements. Generally the selection of materials, lighting, furnishings and graphics are not appropriate to an international airport terminal.

Fig.6. Existing terminal departures lounge

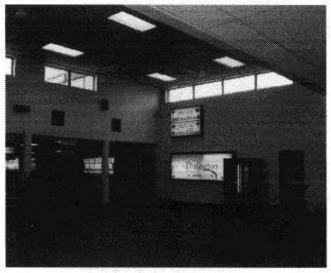


Fig.7. Existing terminal arrivals hall

THE BRIEF

Leach Rhodes Walker and the design team were appointed by Durham Tees Valley Airport Ltd. in mid 2003 with a brief to consider how the terminal building, together with the required increase in landside and airside infrastructure, could be developed to meet the needs of the projections for increased in passenger numbers.

Design Team

Architects: Airport

LEACH RHODES WALKER LLP
ARCHITECTS

Architects : Business Park and Hotel

The Fairhursts Design Group

Landscaping consultants:

dep landscape planning & design

Civil and Structural Engineers:

Scott Wilson

Development objectives

A list of requirements/deficiencies of the current terminal was developed with the airport operational and commercial staff. This list was then prioritised and a project initiated to respond as necessary.
As such, the design team have established the following objectives as a guideline for expansion of the terminal, car parks, set down and associated facilities to cater for a passenger throughput of 3mppa which is the forecast throughput according to the Airports professional air traffic advisors for the year 2015 based on known growth and prospective future trends. They also estimate a prospective freight throughput for that year of almost 26,000 tonnes. A new cargo/maintenance village is planned to cater for this growth, including associated taxiways and apron areas.

- The terminal building and site wide development must safely and efficiently **accommodate air traffic demand**
- The terminal complex, including set down areas, road systems, car parks, facilities for public transport and associated airside improvements must meet the needs of passengers, airlines and tenants through **functional and efficient design**
- The design solution must be **aesthetically pleasing** and should contribute to the local environment in terms of physical form
- The terminal building and surrounding site must be **easily accessible** to the disabled passenger

- The proposed facilities should be **user friendly** from a passenger, operator and concessionaire point of view
- Proposals should advocate and allow for **intuitive wayfinding**, graphics and signage should be functional and minimal in appearance.
- Unimpeded and **clear passenger flows** are of paramount importance to operators and airlines, as such, facilities should strive to simplify processing of passengers whilst still enhancing the overall experience of travel
- **Enhanced revenue potential** must be created through uncomplicated concessionary layouts, designed to maximise exposure to passengers and public alike.
- The building fabric and mechanical/electrical systems must be carefully selected to allow for issues of **maintenance, energy efficiency and operational economy**
- The design must be able to accommodate the **requirements of regulatory bodies** and authorities
- Aspects of **aviation security** should be integrated in to the base design at an early stage through consultation with appropriate consultants
- The terminal building and associated areas should be designed to allow for **minimal disruption** to operations during construction.
- To provide **accommodation for the operational and aviation departments** of new based operators at the airport which will provide support facilities requiring an airport presence.
- To provide hangarage and maintenance facilities **for new based aircraft** linked to the existing airside businesses and runway with new 'code D' parallel taxiways.
- To develop commercial opportunities for **existing and new tenants** to increase their operations.
- To provide business and office space to accommodate companies wishing to locate at the Airport in a **quality business park environment**.
- To expand the commercial opportunities for the development of the airport business and to maximise its contribution to the **regional economy**.

Masterplan

On the basis of these objectives the team initially undertook a masterplanning exercise to establish baseline criteria for development, with the aid of facilities planning schedules and aviation forecasts provided by the airports aviation consultants in association with the marketing department.

From this process, an Airport Masterplan was finalised to cater for anticipated and planned development at the Airport to the planning year of 2015. This relates to both the Airport Expansion Development Works and the North Side Business Park, as described in detail below. The text is best read in association with the separate Masterplan drawing. There is also a Landscape Masterplan showing the development works set within the proposed landscaping structure.

AIRPORT EXPANSION DEVELOPMENT WORKS

The proposed development has been formulated in accordance with guidance for the preparation of Airport Masterplans issued by the Dft in July 2004.

A review of siting was initially carried out and several schemes were considered, with the requirement to link the new and existing facilities being a defining factor in this procedure. The availability of land for development and longer term development flexibility, as well as the prevalence of existing buildings to the east drove the decision to site the new terminal to the west of the existing building.

This new terminal extension will house predominantly departures facilities, ie. check-in concourse and outbound baggage system at ground level, with departure lounges and associated facilities at upper levels. This will allow these functions to be removed from the existing terminal building to free up areas for associated uses such as expansion/improvement of arrivals areas, security control, landside lounges and retail areas.

There will be an expansion to the current car parking facility to the north and west and amendments to the set down area. Construction of extended aprons, taxiways and associated facilities are proposed to the airside together with a 20,000m2 cargo/maintenance village.

These are all described in further detail below and shown on the overall airport Masterplan.

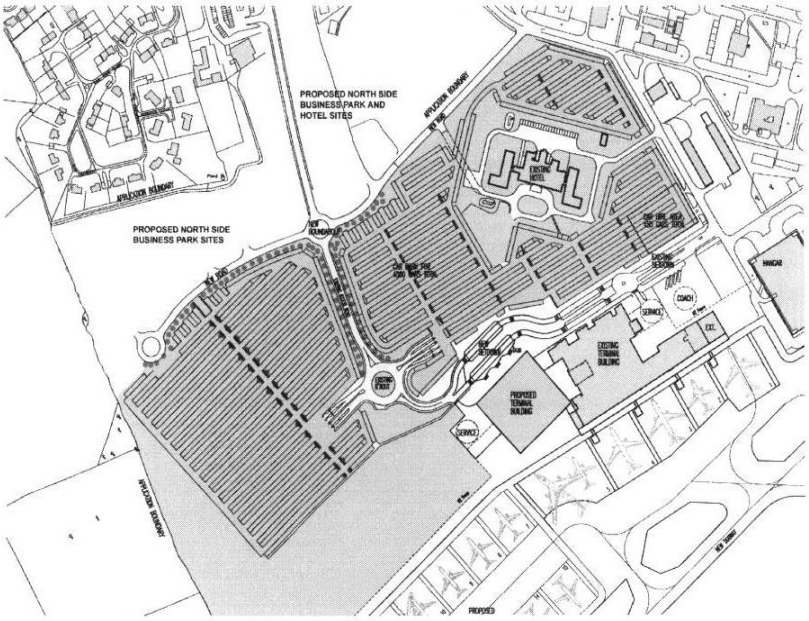


Fig.8. Proposed 3mppa Airport site planning

Proposed airport terminal building extension.

The proposed new terminal building has been rotated to run parallel to the runway at a distance of 402.0m from the runway centreline which will maximise land use and apron/taxiway efficiency.

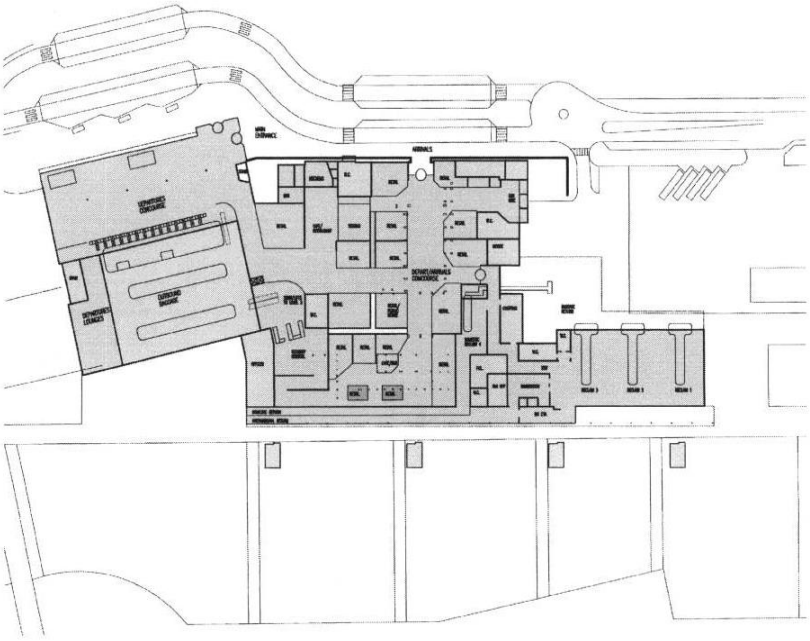


Fig.9. Proposed indicative ground floor layout

A new entrance will be created into the check-in concourse on the north elevation from the set down area where passengers will proceed directly to check-in or, via the link corridor, to the existing building and the landside departures facilities and lounges.

There will be 30 No. check-in desks in the new concourse, designed to allow easy access for all, including provision for the wheelchair user and induction loops for the hard of hearing. An oversize baggage facility will also be provided linked directly through to the baggage hall. Facilities for airline ticket desks and money exchange will also be available.
In design terms the concourse is an important starting point for passengers, this area will be the first impression that the public receive of the Airport and as such needs to reflect the aspirations of the operators and airlines.

At first floor, reached by returning through the existing terminal building, there is a large floor plate over the baggage and departures concourse areas which will house new retail/restaurant facilities and gate lounges. A linear strip of new terminal building is also proposed along the southern (airside) face of the existing structure. This will house gate lounges at first floor and return corridors from the new

passenger apron at ground floor level. It is proposed that four gate bridges will connect the first floor of the terminal building directly to aircraft stands.
Further intermediate and upper levels will house mezzanines for offices, future return corridors, VIP lounges and a plant deck.

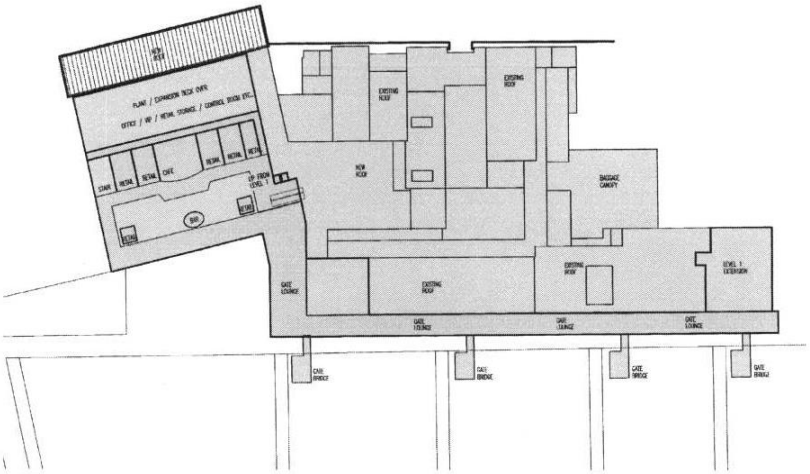


Fig.10. Proposed indicative first floor layout

In sectional composition the new terminal building will have a double storey entrance area and frontage, surrounded by glazed elements where possible, to allow maximum penetration of natural light. The double storey frontage reduces to single storey at ground floor towards the check-in facilities, beyond which the outbound baggage system is situated with direct airside access to the apron.

At first floor level the landside aspect is designated as the retail and operational core while on the airside views out over the apron will be allowed through the use of large glazed areas.

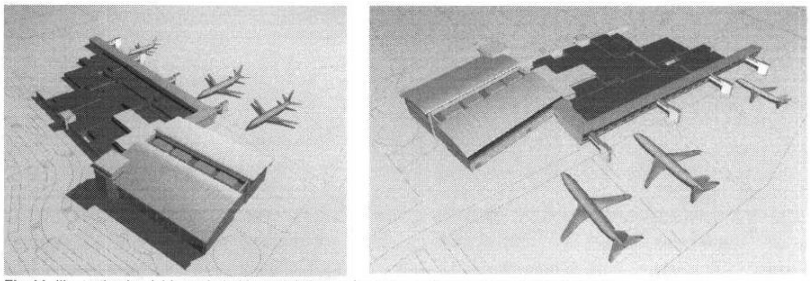


Fig.11. Illustrative landside and airside aerial views of existing and proposed terminal buildings

Elevationally it is proposed that the building will be wrapped in a mix of flat metallic panels and horizontally emphasised cladding, with areas of glazing to the permanent facades (north and south). The structure of the building will be expressed and used to enhance its architectural appeal.

Fig.12. Illustrative new terminal building frontage

Proposed improvements to existing terminal

The existing terminal building is retained in the current proposals and will be utilised operationally as a landside departure lounge facility and arrivals concourse. Major internal refurbishment/demolition and rebuilding works are proposed to transform the existing building and its current image. The expansion of retail and catering areas is enabled by relocation of large operational areas such as outbound baggage handling lines, check-in desks and xray equipment into the new building.

A new frontage is proposed across the main elevation of the existing building, which will combine with and complement the image of the new terminal producing a single coherent architectural statement.
It is also proposed to construct a new 2 storey link corridor across the airside elevation of the existing building, this area will house outbound gate lounges and return corridors with direct access to the aircraft apron. It is envisaged that large areas of the existing building roof will be overlayed with a new waterproof membrane.

General parameters

Height of building 20.0m	
Level 1 - Ground floor existing building	9,500m2
Level 1 - Ground floor proposed	7,500m2
Level 2 – Mezzanine floors	2,000m2
Level 3 – First floor proposed	6,500m2
Level 4 – Plant and office space	2,500m2
Total (Incl. existing and future)	**28,000m2**

Fig.13. Schedule of areas

Proposed materials
(Further details of a typical unit and illustrative specifications are given in Appendix A)

External Wall Cladding
- Metallic flat cladding panels
- Horizontal feature cladding

Fascias & Soffits
- Aluminium flat panel

Roof Finishes
- Self-finished aluminium standing seam roof material.
- Flat roof membrane

Glazing & Curtain Walling
- Aluminium frames.

External Doors
- Powder coated metal doors and frames.

Canopies and external support steelwork
- Powder coated steel with glazed canopies.

Landside infrastructure
A new 'sense of arrival' to the site has been created by the construction of the new airport access road and set down area, which has greatly improved public and private transport links in the area.

The recent car park extension and drop off/set down forms part of the planned growth to facilities and additional car parking spaces are indicated on land to the north and west of the current facility. There is designated car hire parking situated to the east of the existing car parks for 150 vehicles. The original areas of the existing car park will be remarked to conform to current car parking standards, providing a nett loss to these areas, the car parking bays lost through remarking will be allowed for within areas of new car parking and are included within the proposed 4500 new spaces.

New bus stops will be created adjacent to the terminal building for ease of access and to provide a very clear public transport interface. A parking area for coaches is indicated to the east.

Airside infrastructure
Within the airside 'restricted zone' area of the airport there are several proposals aimed at increasing both passenger throughput and operational efficiency in terms of infrastructure betterment. The existing apron area is to be extended to provide new aircraft parking positions; these will be linked to the existing apron and to the proposed new taxiway to create a more efficient one-way apron system. The existing taxiway running east-west, to the north of the runway, will be extended and upgraded to accommodate increased aircraft movements, currently a degree of back tracking on the runway is required which limits efficiency. A new apron area is also proposed to service the Cargo and Maintenance Village, linked to the existing eastern apron, which will be strengthened.

Landscape proposals
Within the operational boundaries of the Airport the landscaping proposals will be low level, planting and hedging mixed with grassed areas where appropriate. Hard landscaping will be introduced through the use of block paving to pedestrian circulation areas and crossings, with the car park surfaces in tarmacadum. All landscaping will with CAA requirements in respect of limiting bird attractants.

Proposed Cargo and Maintenance Village
The proposed Cargo and Maintenance Village is to be situated at the north eastern end of the runway on land currently occupied by existing taxiways and aprons. An area is indicated on the Airport Masterplan together with associated new apron and taxiway requirements.

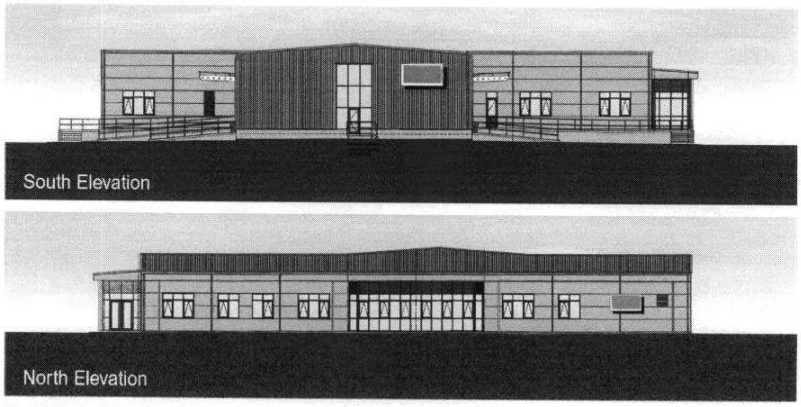


Fig.14. Typical elevation of Cargo and Maintenance Village

The building footprints equate to approx 20,000m2 with approx. 50,000m2 of associated apron.
It is envisaged that this area will house a mixture of airside and landside cargo and related distribution buildings, maintenance hangars and general aviation facilities.

Proposed heights of hangars would be specific to aircraft types but are generally a maximum of circa 25.0m high.
The design of these structures would follow similar principles to existing buildings in the area, having profiled metal cladding with pitched roofs.

NORTH SIDE HOTEL AND BUSINESS PARK

The proposed development of Durham Tees Valley Airport includes a business park and hotel with pub/restaurant to provide facilities that complement the overall provision of facilities expected at a modern airport.

The intention is to create a quality environment that enhances the approach to the airport, especially from the roundabout on the A67 which now forms the 'gateway' to the redeveloped airport zone.

Proposed Hotel and Restaurant

A 100 bed lodge type hotel is proposed with 138 car parking spaces and associated pub/restaurant facility. The hotel is prominently located at the new roundabout along the airport access and creates a visual statement to the passenger that they have arrived at the Airport. The hotel may be up to 3 storeys in height and designed to present a modern and prominent façade to the roundabout.

Proposed materials will be robust; masonry with well-proportioned windows creating a horizontal rhythm along the main elevation which faces the gateway to the airport zone.
Additional finishes/colours will be introduced at the prominent corner to provide a vertical dimension to the building that anchors it to the roundabout.
The self-contained pub/restaurant to the north of the hotel is designed in complimentary fashion with shared surface parking and a dedicated service area properly screened from the access road.

The boundary landscaping will be softened at appropriate areas, especially the roundabout, to create an uncluttered approach.

Landscape

On the eastern flank of the access road is a linear site, which is bounded to the east by retained strong hedges and trees which forms a division between the mobile homes' sales' site and the playing field. This hedge will be retained, as will the hedgerow trees and the plantation of trees further south.

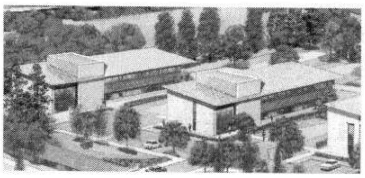
The development of the hotel is planned at the southern end of this development site, adjacent to a point where a new roundabout is proposed. The hotel car parking would extend northwards where, adjacent to the access road main roundabout, a family restaurant/public house would be sited. Ground level here is 5 metres lower than the road and roundabout which will help enclose this 2 storey building. The car park is to be planted with trees and therefore the combination of the access avenue trees to the west of this site, the retained hedge and plantation to the east and the car park planting, would amount to significant screening and filtering of views of these facilities when seen within the development complex.

Fig.15. Section 2 -Through Access Road and Hotel Site to existing Oak Tree Close

North Side Business Park

The proposed business park is to be located at the northern boundary of the site next to the residential area known as Oak Tree estate. To the west lies undeveloped land. The main access to the airport from the A67 will be improved by structural planting, due to be planted in winter 04/05, street lighting and co-ordinated signage/furniture. This will establish the enhanced image of quality with an integrated approach to design to be promoted across the airport development.

18,600m2 (200,000 sq ft) of B1 office development is proposed which will offer a high standard of business facilities that reinforce the quality feel and will be compatible with the development of the Airport terminal building.



Layout and massing

The development would consist of series of units on individual rectangular plots aligned between the northern boundary and new curvilinear access road.

The buildings are to be a maximum of 3 storeys high to suit the low density/rural context of the area.

The orientation of the buildings would be at right angles to the runway and would form, along with the landscape, a strong rectilinear grain when viewed from the air. This orientation would also allow vistas through the business park from the residential estate.

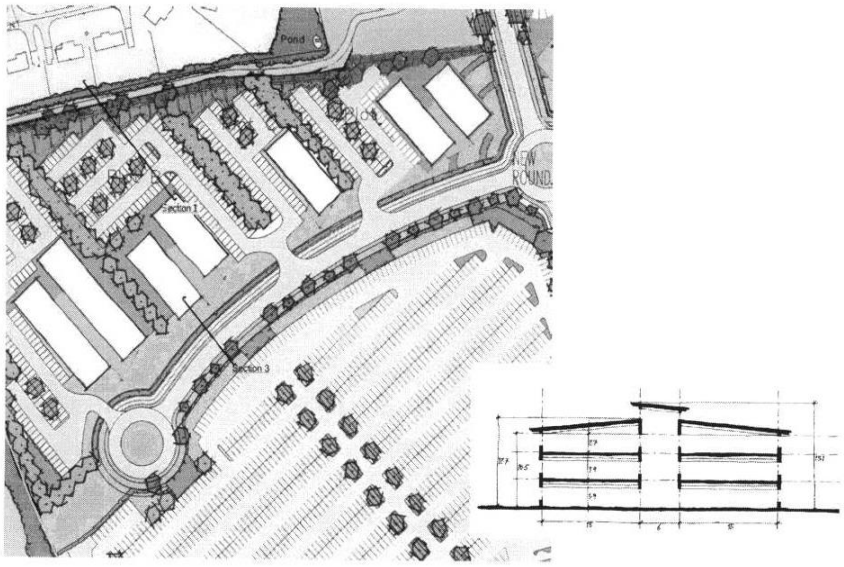


Fig.16. North Side Business Park, detailed plan and typical building section.

Architectural Image and Design

Modern, elegant and simple buildings are proposed which provide well-serviced, flexible office space that will stand the test of time.

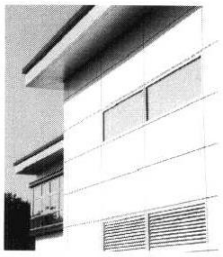
The buildings would seek to establish a quality business environment to complement the Airport redevelopment.

Buildings facades would be articulated by changes in materials and simple detailing.

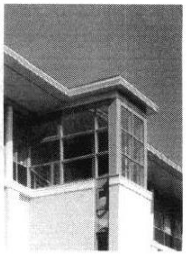
The building proportions would be modulated and the feature entrances would provide a key element to the elevational treatment.

The building footprint would be based on a simple rectangular module footplate. On the larger units, 2no footplates would be capable of being linked together by a central core.

The elevations would allow a generous level of natural light into the working office space.
Entrances would be largely glazed and located at the prominent façade/corner.



A limited palette of materials and colours are proposed to create a cohesive and clear image for the business park that would complement the proposed terminal building and the airport zone in general.
The units are to be constructed from a mix of materials - masonry, curtain walling, flat panel cladding and mono/duo pitch metal roofs with slim eaves details.



These materials would be articulated using simple detailing to give relief and accentuate the horizontal dimension.

Landscape

The proposed Business Park is set to the north of the Airport terminal car park and access is gained from the new Airport access road, designed as a tree-lined boulevard. To the west of the access road the Business Park has 2 sensitive boundaries. The western boundary forms an edge onto open agricultural land but is enclosed by an extensively overgrown hedge with individual trees, along which runs a public right of way. The amenity of the public right of way requires to be protected. This is achieved by retaining the existing hedge and reinforcing it with additional evergreen planting.

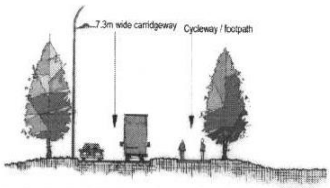


Fig.17. Section through Access Road adjacent to Farm building

The northern boundary of this section of the Business Park divides an estate of low density detached houses, known as Oak Tree Estate; each set in its own garden and with rear upper storey rooms with views across the Business Park and Airport sites in the foreground. The horizon to the south is defined by the escarpment of the Cleveland hills.

This boundary needs to become a landscape buffer to protect the visual amenity of the houses. Low mounding, with evergreen and deciduous planting over a width of some 20 metres, provides a landscape planting zone which reinforces the separation between the proposed Business Park and the housing area.

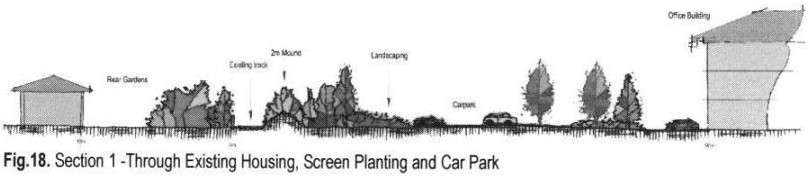


Fig.18. Section 1 -Through Existing Housing, Screen Planting and Car Park

Taking access from the Airport access road, the cul-de-sac access to the Business Park buildings in the west would be landscaped as a planted road with the Airport car park enclosed by a 1.6m high hedge and with occasional tree planting along this boundary.

Each business unit has a landscaped car park defined by compartment hedges, light tree planting and with each entrance paved and planted as emphasis points. Lighting is proposed as essentially low level fittings to minimise nighttime light levels. Open lawned frontages to the buildings from the road emphasise the parkland setting of the development.

To the south west of the access road roundabout and spur and embankments, a three storey commercial office building some 15 metres high but set down below the level of the road by some 4 metres, would announce the Airport's modernisation.

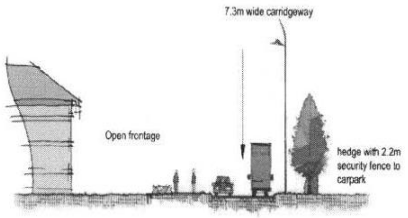


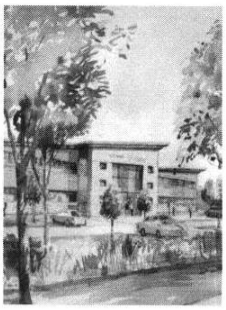
Fig.19. Section through Office Frontage

The building plot would accommodate car parking and its access point is south of the entrance roundabout along the access road spur where the new road reaches the existing surrounding land levels. The landscape proposals here are designed to protect the visual amenity of houses in the Oak Tree Estate, north of Oak Tree Farm. The office car park is to be bounded on its western side by a 2 metre high screen fence outside of which a new Griselinia hedge will be planted. Within the fence a line of new trees, planted within a 2 metre wide shrub bed, will strengthen the screening and enclosure of the office site. The car park is also to be furnished with trees. This car park will be lit by low level column-mounted light fittings and the perimeter of the office building will be paved in brick. Section 1 also shows the hedges and trees that exist along the estate access road, some 87 metres from the embankment of the new Airport access road.

The Landscape Masterplan illustrates the general arrangement of buildings, roads and car parks within a planted and landscaped setting

Compliance and Sustainability

The hotel and business park will provide robust, low maintenance accommodation that addresses relevant issues of sustainability and life cycle costing.



The scheme will be designed in accordance with British Council for Offices guidelines and will meet all current and imminent statutory regulations including the Disability Discrimination Act, Building Regulations and recommended energy efficiency (including BREEAM) and waste management policies.

APPENDIX A

AIRPORT TERMINAL BUILDING
Possible materials and colours

External Wall Cladding

- Metallic flat cladding panels - Colour RAL 9006

These panels have been utilised at many recent airport developments to produce a modern concept for aviation travel, the panels are well engineered to give very crisp and clean lines.

- Horizontal feature cladding – Colour RAL 9006/9007

To break down the scale of large areas of flat panel cladding the introduction of a simpler cladding system with a horizontal emphasis is proposed.

Fascias & Soffits

- Aluminium flat panel finish XDA489 – Colour RAL 9006/9007

Fascias and aerofoil eaves details are proposed and will be treated as the main elevations with a flat panel engineered to give a striking profile to the building.

Roof Finishes

- Self-finished aluminium standing seam roof material.
- Flat roof membrane – Colour mid-grey

Curved and flat roofs will be generated by the sectional composition of the building, those curved will be treated with an aluminium system with standing seams which produces roofs with very defined but dramatic profiles. The flat roofed areas are to be treated with a waterproof membrane.

Glazing & Curtain Walling

- Aluminium frames – Colour RAL 9006/9007

Emphasis will be given to the horizontal and vertical elements of the curtain walling by use of an oversized framing section of a similar colour to the cladding, clear glazed units will complement the frames and allow maximum interaction between internal and external areas.

External Doors

- Powder coated metal doors and frames to external elevations – Colour RAL 9006 (With contrasting colour elements)

Canopies and external support steelwork

- Powder coated white/silver – Colour RAL 9010/9007 - with clear glazed and solid canopy roofs.