Annexure-II

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT
Delhi International Airport (P) Limited

GMR
Udaan Bhawan, Terminal 1-B
Indira Gandhi International Airport
New Delhi 110 037, India
T +91 11 25661000
F +91 11 25672144
W www.newdelhiairport.in

Dated: March 31, 2010

Ref: DIAL/2009-10/MoCA-DF/2651

The Secretary,
Airport Economic Regulatory Authority of India
Room No-1, New Administrative Block
Safdarjang Airport
New Delhi--110003

Dear Sir,

Kind Attention: Sh. Sandeep Prakash

Sub: Levy of Development Fee at IGI Airport

1. AERA consultation paper number 04/2009-10 dated March 23, 2010.
2. Our letter number DIAL/2009-10/Fin Acc/2296 Dated February 18,2010.
3. AERA letter number AERA 200011/DIAL-DF/2009/488 Dated February 12, 2010.
4. Our letter number DIAL/2009-10/MOCA/Df/2201 Dated February 8, 2010
5. AERA letter number AERA 200011/DIAL-DF/2009/478 Dated February 04, 2010.
6. Our letter number DIAL/2009-10/MOCA/Df/ Dated January 31, 2010.
7. AERA order number 01/2009-10 dated November 4, 2009.
8. Our Letter number DIAL/ 2009-10/ MOCA/DF dated August 31, 2009.
9. MOCA order number 24011/002/2008-AD dated February 9, 2009.

Please refer to the correspondence on the above subject resting with our letter No. DIAL/2009-10/Fin Acc/2296 dated February 18, 2010 and also AERA's consultation paper No. 04/2009-10 dated March 23, 2010.Our point wise submission is as follows:

1. To recapitulate, MOCA vide their order dated February 9, 2009 (number 24011/002/2008-AD) mandated levy of DF subject to following:

- *DIAL would submit final project cost estimate within 6 months of the commencement of levy i.e. latest by 31.08.2009. The project costs so submitted including amount of contingencies and their utilization shall be audited by an independent technical auditor to be appointed by AAI or as the regulator /Government may decide.*
- *DIAL would undertake a review of the bidding process in respect of the hospitality district. They may approach the govt. with the outcome of review within 6 months from the commencement of levy i.e. latest by 31.08.2009.*

2. After formation of AERA, all the files relating to tariff fixation, levy and compliance of DF were transferred from MOCA to AERA. DIAL vide its letter reference DIAL/ 2009-10/ MOCA/DF dated August 31, 2009 approached AERA for the extension of the time for filing the project cost by six months considering that, at that stage, the final project cost estimates were not finalized.

3. AERA vide its order no. 01/2009-10 dated November 4, 2009 permitted submission of the firmed up project cost and update on the commercial property development by January 31, 2010.

4. For complying with AERA's directive for filing the project cost within the stipulated period i.e. by January 31, 2010 the approval of Board of Directors of DIAL (which comprised of independent directors and representatives from AAI and MOCA) was sought on January 20, 2010. The Board reviewed the project progress and felt the need for detailed review of project cost through a committee of the Board. The Board constituted a "Project Cost Committee" for the purpose of initiating audit and review before recommending the project cost to the Board and subsequent submission to AERA. The Project Cost Committee (PCC) comprised, inter alia, independent director and also nominees of Airport Authority of India (AAI) and Fraport. The PCC decided to appoint one of the Joint Statutory Auditors of the Company - M/s Brahmayya & Co to audit the project cost figures and submit their report to the PCC.

5. In interim, the details related to the bidding process of hospitality district were promptly submitted to AERA vide letter reference DIAL/2009-10/MOCA/DF/ dated January 31, 2010 thereby part complying with the requirements stipulated by MOCA letter reference 24011/002/2008-AD dated February 9, 2009 and AERA order number 01/2009-10 dated November 4, 2009. In response to letters from AERA dated February 4, 2010 and February 12, 2010, DIAL clarified on the audit and review process being undertaken and sought AERA's indulgence for delay in submission of project cost estimates. The PCC reviewed in detail the audit report of M/s Brahmayya & Co and thereafter recommended the project cost of Rs. 12,718 Crores to the Board. The Board, at its meeting dated March 25, 2010, approved the firmed up project cost of Rs. 12,718 Crores and authorized submission of the same to AERA along with a request for seeking an additional Development Fee (DF) of Rs. 1,654 Crores for part financing the change in project cost.

Background and Implementation Philosophy

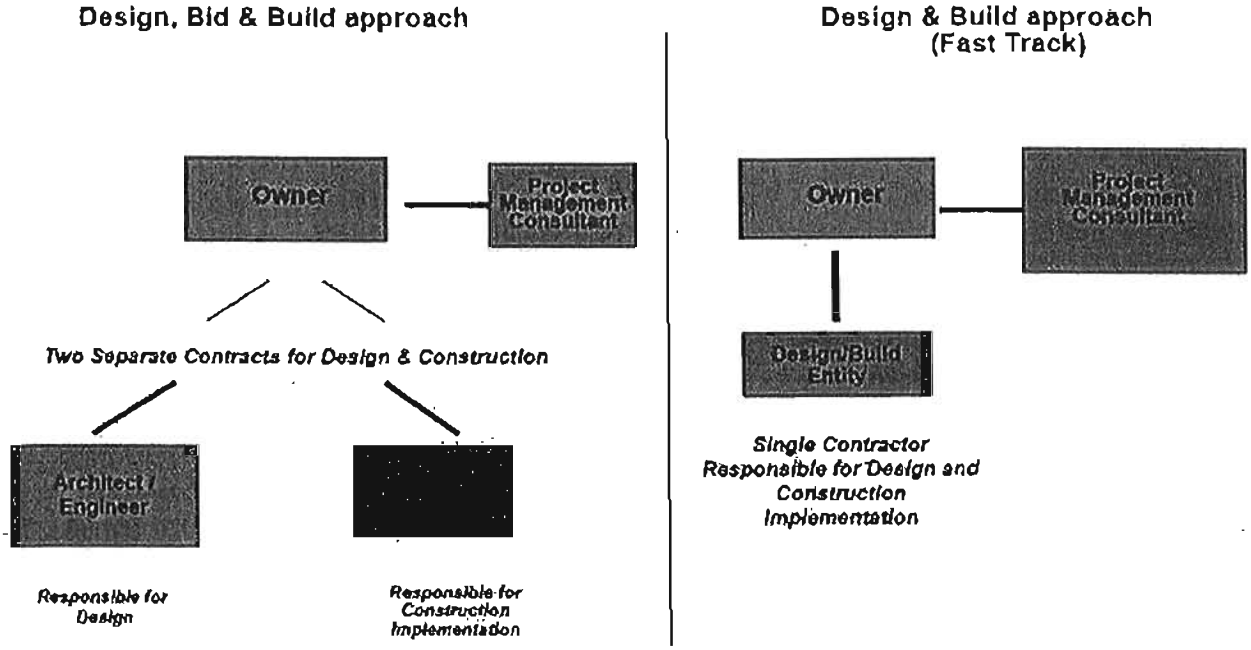
6. The background of the development especially the master plan, major development plan and the various phases of the modernization project of Delhi Airport are given as **"Annexure A".** The time available for completion of the project was 42 months. Assuming 5 to 6 months of trial runs, the effective time left for project construction was only 37 months which was highly challenging in the background of timelines of other comparable global projects:

Airports	Terminal Pax Capacity	Construction Period
Changi Airport – Singapore (T3)	22 Million	76 months
Heathrow T5 – London, UK	25 Million	60 months
Beijing Airport New terminal for Olympics – T3, China	45 Million	60 months
IGI Airport – T3, New Delhi, India	34 Million	37 months

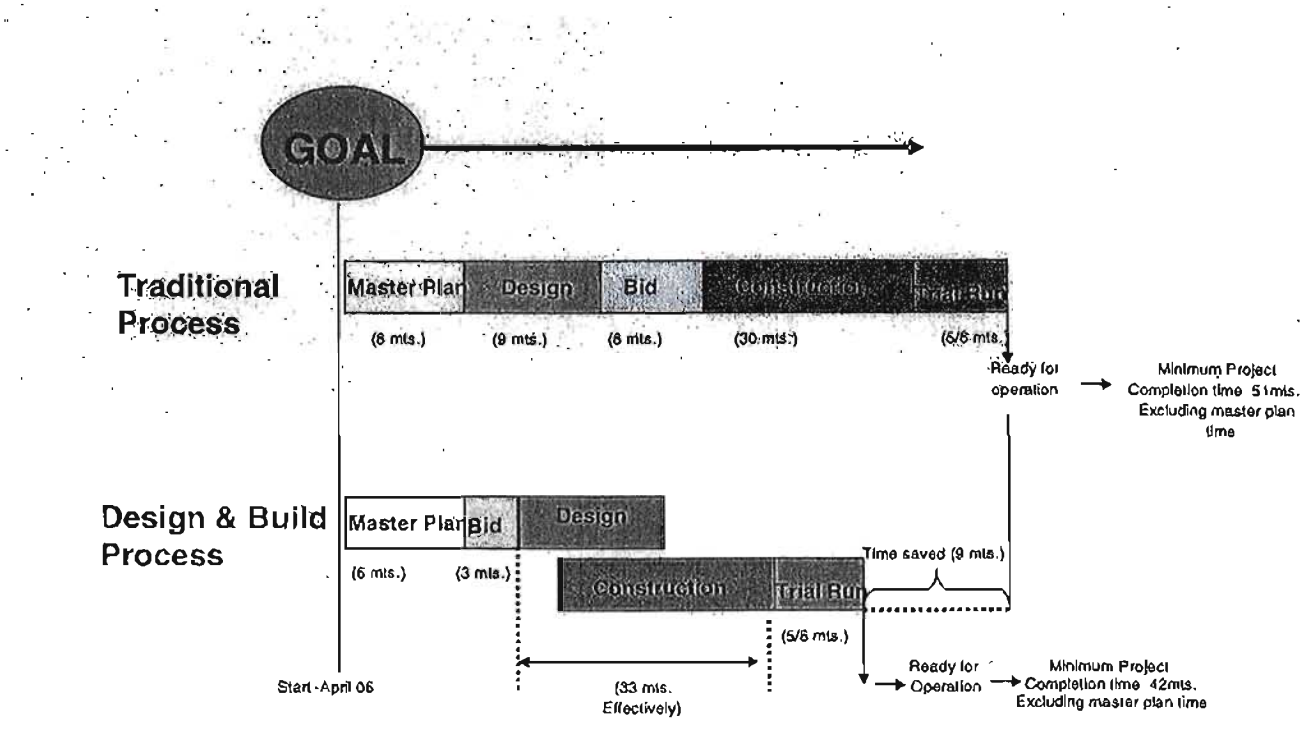
(i) Considering the challenging timelines, the following options for implementation of the project were explored:

- Traditional contracting where the construction agency is inducted after completion of the designs.

- Design and Build Methodology wherein the contractor is on board early and both design and construction proceed in parallel.
  Graphical Process flows under both the approaches are depicted as under:



(ii) A comparison of estimated completion timelines under both methods is illustrated below:



(iii) As illustrated above, in the traditional process it is necessary to complete the design process before going for invitation of bids for facility construction. However, going by this process, it would have taken around 57 months to complete the project, from the start of the concession. However, under the simultaneous "designing and construction process" the overall time would reduce to around 48 months for master plan, bidding and actual design and execution, leaving about 37 months for construction. Considering the limitation of time and after detailed discussions with experts it was decided to go in for the latter option.

(iv) For the execution of the project, two contract award options were available:

- Lump sum fixed price or
- Cost plus fee basis.

The pros and cons of following either of the above routes were deliberated in detail. In a lump sum option, as the design information available to the bidders was minimal and at a conceptual stage, it was the considered view that bidders would include disproportionate contingency in the price for managing unknown risks. Further, as design was at a conceptual stage and changes were likely to be extensive on such a complex project, claims from contractors for aborted/additional works would have been high. In the cost plus fee option as the costs would be finalized progressively upon completion of designs, the risks would be managed in a fair manner and hence both contingencies and additional claims would be minimal. The cost plus option has been used worldwide in various infrastructure projects (including airports), some examples of which are:

- Terminal 5 of Heathrow by BAA
- Reliance Petroleum Greenfield refinery at Jamnagar
- LNG Project in Egypt (5 MTPA) by Conoco Philips

(v) The Cost Plus approach was further refined to provide controls on cost as follows:

- The Contractor own work portion (CWP) was to be capped at 40% of the value of the total job. The Major material included in the CWP like cement, steel, bitumen, sand etc. to be jointly procured and all the price negotiations to be done on competitive tender basis.
- The sub contract packages were to be awarded on competitive tender basis.

(vi) After detailed deliberations, the Board of DIAL, at its meeting held on August 7, 2006 approved the implementation methodology of Design and Build using Cost Plus approach to meet the stiff time lines as per OMDA. Based on this approved implementation methodology, DIAL went ahead with construction contract awards. The steps and processes of awarding the project are elaborated in **Annexure 'B'** and the steps for project monitoring are elaborated in **Annexure 'C'**

Delhi International Airport Pvt. Ltd. New Delhi

Project Cost

7. The initial project cost estimate in June 2007 of Rs. 8,975 Crores was made for the financial closure based on the approved concept design and limited available drawings (700 nos.). The Initial cost was approved by the Board at its meeting dated December 4, 2007. In the absence of detailed designs the expertise and experience of the shareholders viz., AAI, GMR Group, Fraport and Malaysian Airports could not be much utilized for initial estimation of costs and the consortium had to rely on external agencies having experience in airport development. Given the lack of reliable information, the external agencies could also only make a "guesstimate" based on the available concept design.

The firmed up project cost has now been arrived based on:

- Actual cost of packages as awarded by a transparent & competitive bidding process. Detailed designs which have resulted in over 53,000 drawings enabling award of individual packages.
- Advanced stage of implementation.

The project cost, as audited by the Statutory Auditors M/s Brahmayya & Co and reviewed in detail by the PCC, is now firmed up at Rs. 12,718 Crores as per details given below:

Description	Amount in Rs. Crores
T1, T2 and Initial CWIP	754
Runway/Taxiway/Apron and Lighting	2,634
Terminal 3 and Associated Buildings	6,836
Airport Services Building and Airport Connection Building	160
Preliminary, Preoperative and Interest during construction	1,320
Payment to Delhi Metro	350
Upfront Fee to AAI	150
Rehabilitation of Runway 10-28	110
Payment to Delhi Jal Board for Infrastructure for water	54
New ATC Tower and associated facilities	350
Total	12,718

Notes:

1 *Security Related Capex of Rs. 341 Crores is not considered in the above project cost. If the same is not allowed by MoCA, to be charged to PSF-Security Account, it will need to be added to the above figures.*

2 *The project cost as submitted hereinabove may not necessarily tantamount to RAB for regulatory purposes, the detailed working of which shall be prepared and submitted at the time of tariff filing.*

Delhi International Airport Pvt. Ltd. New Delhi

0000041

Benchmarking

8. Schedule 21 of OMDA sets out the duty of the Independent Engineer (IE) appointed by AAI to review the "benchmarking exercise" carried out by the JVC in respect of the project specification and cost against national and international airport projects of similar scope and nature. The Project and cost specification assessment amongst the comparable airports was carried out in accordance with the OMDA. M/s Jacobs Consultancy, a globally renowned airport specialized consultancy firm, carried out the exercise to bench mark the upcoming new Terminal 3 of IGI Airport vis-à-vis similar major terminal airport developments around the world and submitted their final report in February 2009. The study used details of comparable international airports, as there were no comparable airports in India at time of the exercise. The selection of the following comparable airports was made in consultation with IE viz. Engineers India Ltd.

Asia:

- Bangkok Suvarnabhumi International Airport (BKK)
- Kuala Lumpur International Airport (KUL)
- Beijing Capital International Airport Terminal 3 (PEK)

Europe:

- London Heathrow International Airport T5 (LHR)
- Madrid Barajas International Airport T4 (MAD)

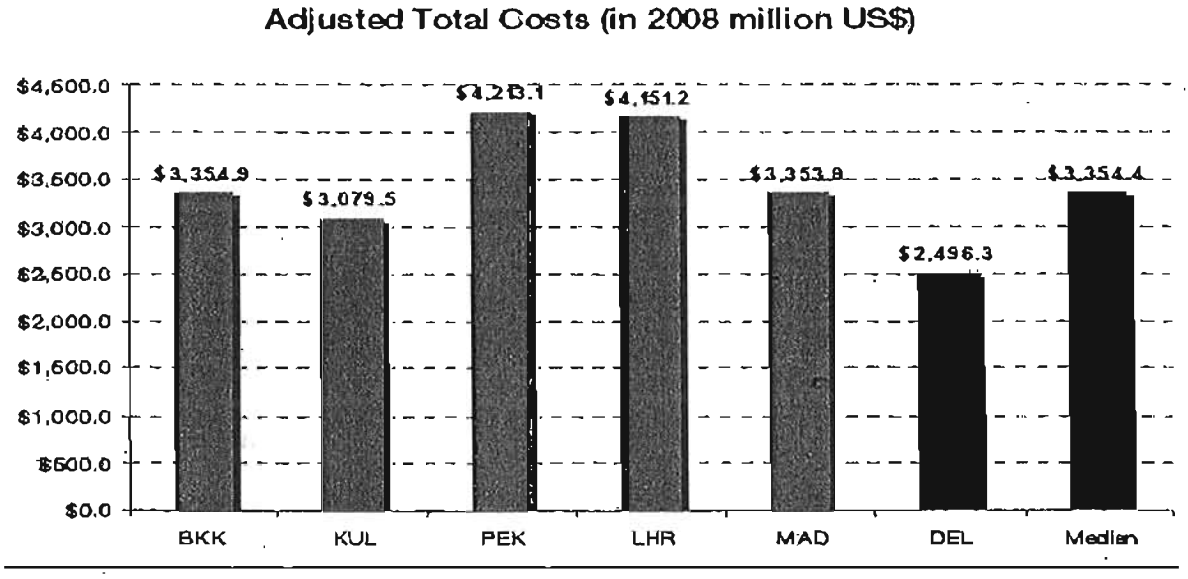
Comparison of Actual Cost of Terminals:

(i) The cost of Delhi New Terminal 3, including building services, taken for the purpose of benchmarking of terminals was USD 1,660 mn, whereas the current firmed up cost of Terminal 3 including building services is USD 1,520 mn.

Name of Airport Technical Specifications	Bangkok	Kuala Lumpur	Beijing	Heathrow	Madrid	New Delhi
3-letter IATA Airport Code	BKK	KUL	PEK	LHR	MAD	DEL
Year of Construction / Completion	2006	1998	2008	2008	2006	2010
Terminal Design Capacity (mppa)	45	25	43	28	42	34
Floor area (in '000 m2)	563	479	900	353	757	502
Floor area / Peak hour passenger (PHP) (in m2)	51.2	55.0	37.5	49.4	42.1	53.1
Floor area / Design million passengers per annum (mppa) (in m2)	12,511	19,176	20,930	12,608	18,024	14,765
Actual Terminal Cost (Mn USD)	2,800	1,600	3,800	4,100	2,948	1,660
Actual Cost / m2 (USD)	4,973	3,337	4,222	11,614	3,894	3,306

Comparison of adjusted total cost

(ii) The study compared the capital spend of the comparable facilities. For the purpose of study, USD 1,660 mn was considered as the estimated cost of Terminal 3. This estimate along with cost of other selected terminals wasadjusted for inflation, regional construction cost and construction time to arrive at 2008 USD costs. Since the break-up costs were not available for most projects, the overall actual costs (or nominal costs) were converted to the 2008 costs (real costs).Accordingly Delhi Terminal 3 cost was adjusted to USD 2,496 mn.



The details of benchmarking exercise are given in **"Annexure D"**.The study concluded that the Delhi T3 specifications and facility designs compared very favorably with the five airports identified for this comparative study.

(iii) The cost of the terminal building including the mechanical, electrical and plumbing works for the AAI Airports currently under expansion viz., Kolkata and Chennai were compared with Terminal 3 of DIAL and found comparable as follows.

Name of the Airport	Year of Completion/ expected completion	Passenger Capacity	Area (Lacs sq. mts)	Value of Terminal * (Rs. Crores)	Value per Sq.mts (Rs.)
Kolkata	2011	20	2.33	2,140	91,845
Chennai	2011	14	1.42	1,289	91,031
DIAL – Terminal 3	2010	34	5.53	5,285	95,570

** This value includes cost of terminal, building services and specialized systems like BHS, Passenger boarding bridges, escalators, lifts and travellators.*

Delhi International Airport Pvt. Ltd. New Delhi

AAI0000043

Financing

9. The means of finance, for preliminary estimate of Rs. 8,975 Crores, at the time of DF approval and for the firmed up cost of Rs. 12,718 Crores are as follows:

(Figures in Rs. Crores)

Particulars	At Financial Closure	At the time of DF Approval	Firmed up Amount
Equity	1,200	1,200	1,200
Share Application Money	-	-	1,250
Internal Accruals	50	50	50
Lease Deposits / Trade Deposits	2,739	912	1,471
Rupee Term Loan	3,650	3,650	3,650
External Commercial Borrowing (ECB)	1,336	1,336	1,616
Development Fee (incl. additional)	-	1,827	3,481
Total	**8,975**	**8,975**	**12,718**

(i) The cost variation of Rs. 3,743 Crores is proposed to be financed as follows:

(Figures in Rs. Crores)

Particulars		Amount
Project Cost		
Revised		12,718
Initial		8,975
Increase in Project Cost		**3,743**
Additional Development Fee		1,654
Other Sources		
Additional Equity Contribution	1,250	
Lease Deposit	559	
ECB	280	2,089
Additional Means of Finance		**3,743**

(ii) At the time of Financial Closure, the Equity was envisaged at Rs. 1,200 Crores. An additional amount of Rs. 1,250 Crores has already been infused by the shareholders for funding the addition in project cost. Thus, the shareholders have funded nearly twice of the commitment as envisaged in the business plan at the time of financial closure indicating and reinforcing strong shareholder commitment to the project. The cash accruals till 31st December, 2009 were Rs. 226 Crores. Out of this, an amount of Rs. Rs. 50 Crores were utilized towards the project as required in financing documents and as per the initial financing plan. The balance internal accruals of Rs. 176 Crores have been utilized to part fund the operational capital expenditure.

(iii) DIAL could garner a higher amount of Rs. 1,471 Crores as refundable lease deposits as against the estimated figure of Rs.912 Crores (made at the time of earlier DF approval). This higher collection of Rs. 559 Crores is being used for part financing the increase in project cost. The monetization of first phase of land of 45 acres has been done with great difficulty in a challenging market.

(iv) The debt requirement for the project was estimated at Rs. 4,986 Crores comprising Rupee Term Loan of Rs. 3,650 Crores and External Commercial Borrowings (ECB) of Rs. 1,336 Crores. Due to exchange fluctuation the total ECB now works out to Rs. 1,616 Crores - an increase of Rs. 280 Crores. The current business outlook and projected cash flows of DIAL have been leveraged to its full potential. Any further increase of debt will severely impinge upon the debt serviceability and the existing lenders are not in favor of any increase in debt.

Additional Development Fees

10. Initially MoCA had approved collection of DF from embarking passengers for a period of 3 years, the NPV of which, as on March 1, 2009, worked out to Rs. 1,827 Crores. Considering the firmed up project cost and available means of finance, DIAL has no recourse but to approach AERA for an additional DF of Rs. 1,654 Crores (NPV) to complete the project. As DF is reduced from the Regulatory Asset Base, this mechanism also leads to lower aero charges in the long run. It is our submission to AERA that this increase in **DF by Rs.1,654 Crores be approved for financing the change in project cost by way of increase in period of collection, keeping the per passenger charge unchanged at Rs. 200 and Rs. 1300 per embarking domestic and international passenger respectively.**

(i) As of March 1, 2010 the revised DF account stands as follows:

(Figure in Rs. Crores)

Details	Amount
Original DF approved by MoCA and Bridged by Loan (NPV as on March 1st 2009)	1,827
DF billed upto February 28, 2010 (net of interest and collection charges on receipts)	431
Balance Recoverable from Original DF Tranche	1,396
Additional requirement of DF	1,654
Balance DF (NPV) to be collected	3,050

(ii) As on February 28, 2010, out of the total billed amount, the principal amount, net of interest and collection charges on receipts, works out to Rs. 431 Crores. As such an amount of 1,396 Crores remains to be billed from the original approved DF. Assuming merger of the additional DF of Rs. 1,654 Crores with above, the period of time for charging aggregate DF is forecasted at 4 years 8 months wef March 1, 2010. This calculation along with traffic assumptions is enclosed in **Annexure 'E'**. We would like to point out that while the traffic scenario appears to have improved over last six months we expect volatility of traffic against forecasts over the next 3-5 years. Therefore we request AERA may please cap the total amount of DF and not the period of charging.

Our Submission

DIAL is at a very critical stage of project implementation as development is complete and funds are required for meeting the payment commitments. Hence, we would request for an early decision on approval of additional DF. In summary we request AERA to:

- Approve the firmed up project cost estimate as submitted hereinabove.
- The funding gap for purposes of DF be considered at Rs. 3,481 Crores (NPV as on March 1, 2010) instead of 1,267 Crores as given in the consultation paper dated March 23, 2010.
- The total DF amount may please be revised to Rs. 3,481 Crores (NPV net of collection charges), comprising of Rs. 1,827 Crores of adhoc amount approved in February 2009 and additional DF of Rs. 1,654 Crores.
- DIAL may be permitted to continue levy of the DF of Rs. 200 and Rs. 1,300 (exclusive of taxes, if any) per embarking domestic and international passenger respectively till DF collection aggregates Rs. 3,481 Crores (forecasted presently for a period of 4 years 8 months wef. March 1, 2010).

This letter may also be considered as DIAL's submission to consultation paper No. 04/2009-10 dated March 23, 2010 issued by the AERA. We will be pleased to provide any further information or clarification sought by you.

Yours Sincerely,

For Delhi International Airport Private Limited,

Sidharath Kapur
(Chief Financial Officer-Airports)

Delhi International Airport Pvt. Ltd. New Delhi

Annexure 'A'

Background of the Project

The Government of India (GoI) embarked on an ambitious airport modernization, up-gradation and development drive for the Mumbai and Delhi Airports. The GoI preferred the Private Public Partnership for these projects as the capital outlay was significantly high. Airport Authority of India (AAI) initiated the process of selection of partners in the private sector though a global competitive bidding.

AAI short listed 9 private sector consortia to participate in the bidding process out of which the six consortia submitted their technical and financial bids for Delhi & Mumbai.

On January 31, 2006, the bids of the consortia were opened and based on the evaluation process followed by AAI; the GMR Consortium was selected as the successful bidder for Delhi Airport. The project was to be undertaken though a special purpose vehicle in which AAI held 26% equity.

Delhi International Airport Private Limited (DIAL) was incorporated on March 01, 2006 with the objective of modernization and development of Delhi Airport. The GMR consortia acquired 74% equity share in DIAL with AAI retaining 26%. The initial equity composition of consortia comprised of GMR Group - 50.1% (later increased to 54% by acquiring shares held by IDF), Fraport - 10%, MAHB - 10% and IDF - 3.9%. On April 04, 2006, DIAL signed the Operation, Management and Development Agreement (OMDA) with AAI and on May 03, 2006, DIAL took over the operations of Delhi Airport. The preamble of OMDA laid down the objective of the DIAL and its schedule 3 listed down the mandatory capital programme to be completed by DIAL with strict timelines.

Post-takeover of the Airport from AAI, DIAL embarked on the journey to deliver a world class airport infrastructure in accordance with the stringent level of services as enshrined in OMDA. One of the major challenges involved modernizing the existing facilities with ongoing operations. One of the major challenges involved modernizing the existing facilities with ongoing operations. The series of progressive steps initiated to achieve the objective is elucidated in the following paragraphs:

1. Master Plan

The Master Plan is the key document which set out the plans for the staged development of the entire Airport area, covering Aeronautical Services and Non-Aeronautical Services, for a 20 year horizon.

DIAL had to prepare and submit the Master Plan to GoI within six months from OMDA signing date. The Master Plan was submitted to the AAI and MoCA on September 29, 2006 for their comments and the same was finalized in December 2006 after incorporating the observations and suggestions made by the various stake holders including MoCA, AAI, Airlines, and Government Authorities. The Master Plan envisages creation of a state-of-the-art Airport with world class facilities and was prepared up to the saturation phase. The design of all Airport facilities would comply with technical requirements, development planning principles and the stringent objective service quality requirements as per Schedule 3 of OMDA.

Delhi International Airport Pvt. Ltd. New Delhi

0000047

2. Major Development Plan

DIAL in its endeavour to provide

(i) world class facilities at the Airport;
(ii) ensure refurbishment of the existing assets; and
(iii) smooth development of the new assets at the Airport site, before the commonwealth games of 2010 developed Major Development Plans (MDP).

The MDP's detailed the existing facilities at the Airport and the proposed development during the period ending March 2010. MDP focused on renovation / expansion of T1 & T2 and construction of the new runway and a new terminal building. For the purpose of business plan, the entire construction activity till March 2010 was split into 2 phases. The MDP's envisaged in Phase 1 A and Phase 1 B are as under:

(a) Phase 1A

Phase IA comprised of 3 main components viz.

(1) Up gradation of T1 (Including construction of T1D);
(2) Up gradation of T2; and
(3) Construction of new runway and associated taxiways.

The key areas of improvement of the facilities are:

Improvement in Domestic Departures : Terminal (1B) and New Terminal (T1D)

Sl. No.	Description	Old Terminal 1B	New Terminal T1D
1.	Area	18,200 Sq m	41,690 Sq m
3.	Check-In Counters	32	72+8
4.	Security Channels	4	14
5.	No. of Boarding (Bus) Gates	7	16
6.	Commercial Area	700 Sq m	3,050 Sq m
7.	Airlines + other Offices	3,300 Sq m	9,630 Sq m
8.	Baggage Screening	Manual Screening	In line Screening
9.	Car Park	500 cars	1650 cars

Delhi International Airport Pvt. Ltd. New Delhi

0000048

Improvement in Domestic Arrivals: Terminal 1 C

Serial No	Description	Old Arrival Terminal	Revamped Arrival Terminal	Benefit to Passengers / Airlines
1	Area	8,220 Sq m	12,000 Sq m	Ten times increase in Meeters & Greeters space.
2	Reclaim Belts	5	8	Faster baggage processing
3	Commercial Area	300 Sq m	2,000 Sq m	More options to spend time while waiting
4	Airlines Offices	1,100 Sq m	600 Sq m + 2430 Sq m at G5 Building	Improved Facilities

Improvement in Terminal 2 (Arrivals)

Revamping Terminal 2 – Arrival Level Salient Features			
Sl. No.	**Description**	**Before**	**After**
1.	Immigration Hold Area	700 Sq m	1000 Sq m
2.	Immigration Counters	28	48
SUPPORT FACILITY			
3.	Passenger Services at Arrival (Toilets , etc)	1,000 Sq m	1,800 Sq m
4.	External Public Concourse Arrival	2,000 Sq m	2,500 Sq m

Delhi International Airport Pvt. Ltd. New Delhi

) Improvement in Terminal 2 (Departures)

Revamping Terminal 2 – Departure Level Salient Features			
Sl. No.	Description	Before	After
1.	Landside Check-In Concourse	4,500 Sq m	6,500 Sq m
2.	Check-in Counters	78	100
3.	X-ray Units	8	16
4.	Emigration Hold Area	550 Sq m	1300 Sq m
5.	Emigration Counters	28	52
6.	In line X-ray Units (Post Check-in)	0	8
7.	Retail Space	2,000 Sq m	2,500 Sq m
8.	Passenger Support Services (Toilets etc.)	1,100 Sq m	1,800 Sq m

(b) Phase 1B

This Phase primarily envisaged construction of the following:

(i) New Integrated Passenger Terminal Building (T3)

The new world class passenger terminal building T3 will be provided to accommodate the international and domestic legacy (full service) carriers. The building comprises of a central processor and 4 piers having a capacity of handling 34 million passengers (initially fitted out for 27 mppa).

(ii) Aprons

Aprons have been designed to handle the mix of aircraft that are currently in production or planned for future production, such as the A380 and the B787. Terminal 3 developments include Code F stands all capable of handling the A380.

(iii) Metro Link to Airport

The Airport would be connected to the city centre through a proposed high speed Metro Link. The line will approach the terminal zone from the east (NH 8, Vasant Kunj/ Radisson) and extend to Dwarka. The space for the metro link has been safeguarded within the central transportation corridor. Metro station would be connected to Terminal 3.

Delhi International Airport Pvt. Ltd. New Delhi

ANNEXURE 'B'

Salient Features of contract award process

DIAL invited bids for construction contracts for T3, runway and the associated works from reputed construction companies in December 2006 to work on a concept of "Open Book" which envisages design, specification review & finalization and procurement of bids in parallel to cut down the overall time. The selection of contractor was on a competitive global tender basis. A total of 15 companies responded and bid for participation. Out of the same, 5 companies got technically qualified viz. Taisei Corporation, Samsung Corporation, L&T, ITD (Italian and Thai Development) and Laing O' Rourke (subsequently withdrew). Thereafter RFP was issued to the 4 technically qualified parties. Out of 4 parties only two Bidders L&T and ITD finally submitted their proposals. Presentations were made by L&T & ITD on November 20th and 21st 2006 and financial bids were opened on November 22nd 2006.

Bidders were evaluated on the following parameters:

- Adequacy of company information and organizational capability
- Financial capability
- Work experience
- Design and management capacity
- Quality assurance, environment health & safety qualification
- Approach, methodology and work plan
- Interview / presentation

Based on the techno commercial evaluation Larsen & Toubro was recommended and approved by the board. As per the implementation philosophy where the design and construction is to proceed simultaneously, it was preferable to award the design to the same entity that will carry out the construction. This would provide a single point responsibility for the Employer/Client. Accordingly, DIAL awarded the design of the T3 terminal and runway works to M/s L&T.

(a) Salient Features of contract:

The contract was divided into two phases.

Phase I: Design and Procurement Activity Phase

- The detailed designs were to be developed from the preliminary design which was about 30% complete.
- Flexibility was required in the design process to accommodate a continuously evolving design as per requirements of stake holders, good industry practice etc.
- Value Engineering during the design phase:

To enable the above:

- Contractor's complete design team and experts were re-located on site.

Delhi International Airport Pvt. Ltd. New Delhi

SA0000851

- Contractor reimbursed on a man month basis based on actual deployment. Overall cap for design phase at about 2.5% of contract price (which is much lower than the industry practice of about 5%)
- As and when the design of a particular portion of the work has reached a stage when bids can be called for, then the procurement activity for the said portion starts. The procurement is on a lump sum basis :
- The works are divided as either Contractor's Works Portion (Own Works) and Major subcontract Packages that are let out to others

Phase II: Lump Sum Contract

Following the procurement of all the various packages, the contract was to be converted into a lump sum contract.

(b) Contractor's Work Portion (CWP)

The works to be designed and directly executed by L&T are called the Contractor's Works Portion. The packages considered as CWP were identified. The CWP was capped at 40% of the overall value. Before the actual start of construction of a package, Contractor to provide a lump sum cost for the CWP package with sufficient details so as to enable DIAL perform a proper evaluation.

After the award of all the contract packages the CWP package portion works out to 37% of the total works.

The major material like cement, steel, aggregate, sand, diesel and bitumen, which constitute about 70% of direct cost of the CWP is jointly procured by L&T and DIAL.

The submission of the package details including cost as received from L&T is reviewed by an evaluation team consisting of DIAL Project Management team and Experts from Parsons Brinckerhoff team. The Technical evaluation team critically examined the following:

- The scope of work
- Working methods proposed to achieve Construction Schedule
- Resource requirement like formwork, equipment and labor considering cycle times, outputs for achieving the same
- Manpower schedule for supervision
- specifications to be used in the works including mix design
- preliminary design review to check on sizes of members, reinforcement densities etc

Three level evaluations of packages were done in following manner:

- Quantity Evaluation Team - comprised of experts and QS team from PMC and DIAL contracts and technical team wherein detailed checking of the drawings provided by L&T and estimation of quantities from the drawings for the various items of work was done. If detailed quantities could not be estimated at that point of time or if there could be savings expected in the future, then the quantities of the same have been kept as provisional to be adjusted within specified time frames.

- Commercial Evaluation Team - comprised of AVP (Head) Procurement, VP (Finance), GM (Contracts), Head (T3), DIAL, PMC experts. Here fundamentals on wastage percentages, manpower requirement, Depreciation rates for equipment, formwork, spare consumption etc. were discussed.
- Final Negotiation Team - comprised of CEO (APD), AVP (Head) Procurement, VP (Finance), GM (Contracts), Head (T3), DIAL to negotiate and agree on pending items

(c) Process Adopted for Material Procurement

The contract provides for major material used in the CWP to be jointly procured by L&T and DIAL. Major materials procured were as follows:

- Cement
- Reinforcing steel
- Sand
- Aggregates
- Diesel
- Bitumen
- Structural Steel

These constitute almost 70% of the direct cost component in CWP package and hence with joint procurement there has been a better control on availability and price. Various other materials like glass grid, water proofing etc. have been jointly procured so as to get the best prices. Various alternate sources were independently identified. The strategy adopted was as follows:

- Direct offers sought from the alternate sources.
- Independent negotiations carried out with the suppliers
- Price compared between the offers received through joint bidding process & direct procurement process.
- Order finalized based on best offers, considering quality, supply terms, applicable taxes, delivery schedule and price.

(d) Sub Contracted Packages (SCP)

The Contractor defined at the outset, the packages to be performed by subcontractors. The sub contracted works would be a minimum of 60% of overall value of the total works. The Contractor submitted

- the Contractor's subcontract procurement strategy
- the tender criteria for the subcontract tenders
- the subcontract tender procurement programme
- On sufficient development of design for a subcontract package, contractor to proceed for award of subcontract on a lump sum basis. For each subcontract package, the Contractor submitted to DIAL a list of at least 3 suitable subcontractors to tender to. DIAL will approve the list before contract was finalized. The Lump-sum offer of sub contract will comprise of

- Element 1 – Aggregate of the contract sums for each subcontract let by the Contractor;
- Element 2 – Value of the Contractor's Works Portion;
- Element 3 – Indirect taxes (like VAT, service tax, customs) for which tax credit are not available to the Contractor would also get included in the cost of the Contractor (Prime Cost).

- Invitation to Tender (ITT) for each subcontracted portion will be subject to DIAL's review. Each ITT will be issued with a series of milestone/cost centers to enable lump sum pricing.
- The Contractor shall invite tenders on an open-book, arms-length basis, and competitive basis.
- Following joint committees consisting of senior personnel formed to evaluate the Bids
  - Technical Evaluation Committee - for technical evaluation and value engineering consisting of the respective Technical Heads from L&T and DIAL & consultants
  - Commercial evaluation Committee – for discussing contractual terms etc consisting of VP- Procurement, GM-Contracts from DIAL and Head-Procurement from L&T
  - Negotiation committee- for final negotiation consisting of CEO- APD, VP- Finance, PD- L&T
- Techno commercial evaluation is used to rank the Bidders and then recommendation for award is sent to the competent authority.
- In case L&T are one of the Bidders, they are excluded from the committees as set out above.

Annexure 'C'

Project Monitoring

The project has been subject to strict monitoring at various levels. The project has been subject to review at various stages by the Project Management Consultant as also the Independent Engineer (appointed by AAI).

(a) Project Management Consultant (PMC)

US-based Project Management Consultancy M/s Parsons Brinkerhoff International Inc. was appointed as the PMC for Terminal 3 project. Parsons Brinkerhoff advised on design review, contract management, project controls, project management and coordination. In addition they also advised construction management of the passenger terminal building and airside work.

Parsons Brinkerhoff is a global consultancy and has worked on:

- Hong Kong International Airport,
- London Heathrow T5,
- Terminal1 at JFK Airport and
- Washington Dulles Airport.

In India Parsons Brinkerhoff also provided programme management services to:

- Delhi Metro (for Phase I as well as phase II) and
- The Swami Vivekananda bridge project on Hoogly river in Kolkata.

(b) Independent Engineer

The AAI have appointed Engineers India Limited as the Independent Engineers under the OMDA.

The scope of duties of Independent Engineer is:

(a) to review all designs, drawings, specifications and procurement documents to assess compliance with:

(i) Finalized Major Development Plan (if applicable)

(ii) Development Standards and Requirements as detailed in Schedule 1 and with the finalized Major Development Plan

(b) to review 'benchmarking' exercise carried out by DIAL for the project specifications and cost against national and international airport projects of similar scope and nature so as to avoid padding of costs and/ or gold plating.

(c) to review development reports submitted by the DIAL to assess compliance of works undertaken in relation to the Development Standards and Requirements as detailed in Schedule 1 and with the approved Major Development Plan. In this regard, the Independent Engineer shall ensure that:

Delhi International Airport Pvt. Ltd. New Delhi

(i) Owners requirements, Master Plan requirements, specifications and design parameters in any agreement or agreed through OMDA mechanism have been fully addressed/ complied with.

(ii) Quantity are reasonable.

(iii) Reasonable and fair time for completion of projects (excepting Mandatory Capital Projects/ Stage-I projects) has been given.

(d) To review the award of any contract in relation to any and all aspects of design, construction, completion, commission and development of the Airport or any other commercial contract to any Group Entities of the DIAL.

Independent Engineers are directly submitting the reports to AAI and have not made any adverse comments.

Delhi International Airport Pvt. Ltd. * New Delhi

JACOBS Consultancy

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT | GMR

4 SUMMARY OF FINDINGS AND CONCLUSIONS

In general it is clear that the technical specifications of DEL T3 are generally in line or better than the median values. The OMDA guidelines and subjective and objective service quality standards have ensured the provision of extremely high LoS and this in turn necessitates the provision of a higher standard of design, quality, experience and systems.

However, it is also clear from the cost data available (total cost of the project) that the project is generally just above the median cost per mppa and just below the median cost per m2 of GFA. Both these issues of technical and cost-related comparison are addressed in the following sub-sections.

4.1 Key Metrics

The following table on the next page provides a snapshot of the low, high, average and median values of key technical and cost metrics of the benchmark facilities that have been described in the earlier sections. The final column in the table below also outlines the DEL T3 values in comparison to the low, high, average and median values of the benchmark facilities.

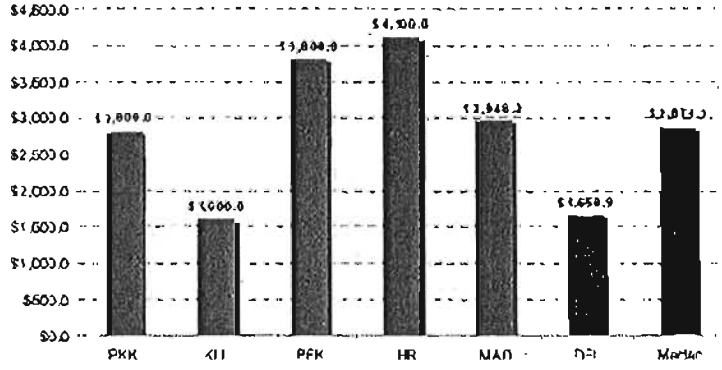
From the table it is clear that the DEL T3 specifications are in line with other benchmark facilities across the world and in general lower than the median values with the exception of certain specific categories including:

- Floor area per PHP
- Floor area per stand
- % of contact stand
- Annual passengers per stand
- Departing mppa / counter
- Arriving mppa / bag claim device / belt

However, in each of these cases, DEL T3 values are marginally higher than the median values but this can be explained by the OMDA need to provide and service a significantly higher proportion of passengers through contact stands which in turn increases the floor area per PHP and floor area per stand. This also improves the annual throughput of passengers per stand per year.

The total actual cost and adjusted cost as well as cost per m^2 of GFA and the adjusted cost per m2 of GFA are shown below.

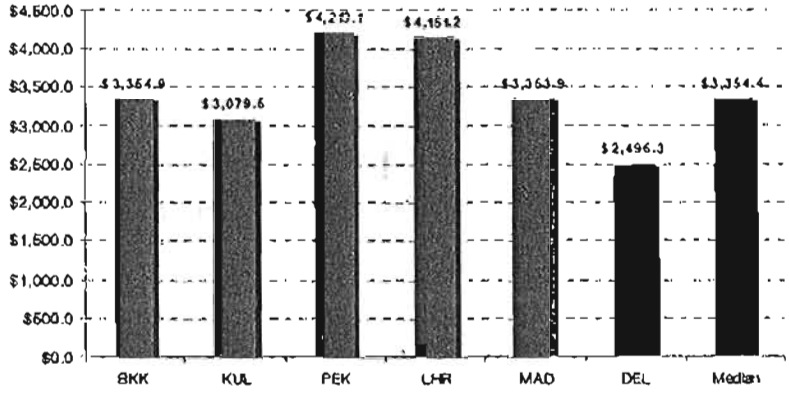
Total Actual Cost (In million US$ and documented)



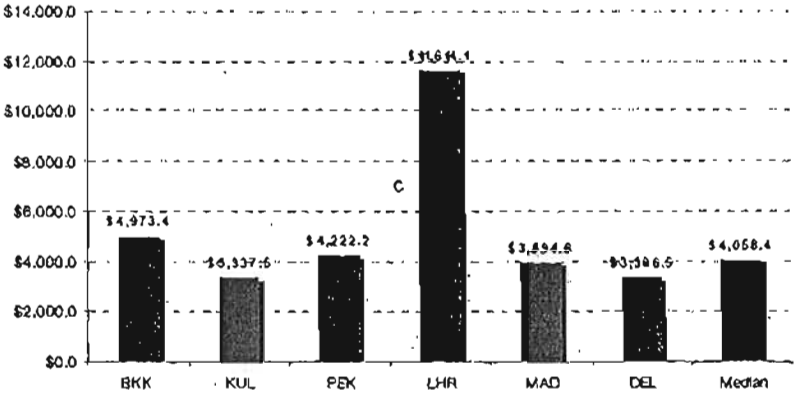
Delhi International Airport Pvt. Ltd. New Delhi

0000057

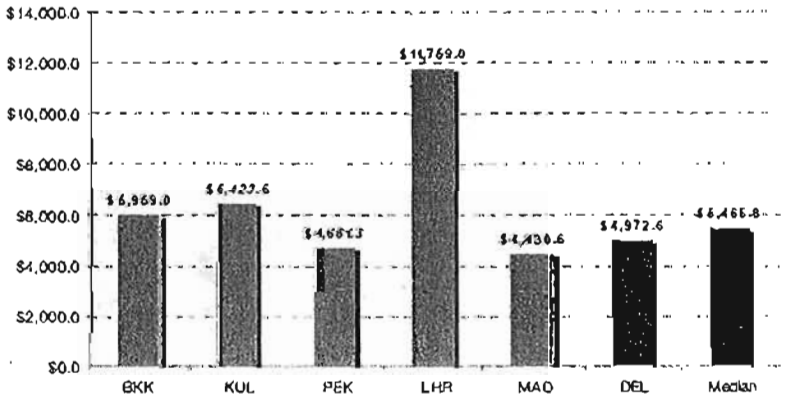
Adjusted Total Costs (In 2008 million US$)



Actual Cost / m2 of GFA (In US$)



Total Cost / m2 of GFA (in 2008 US$)

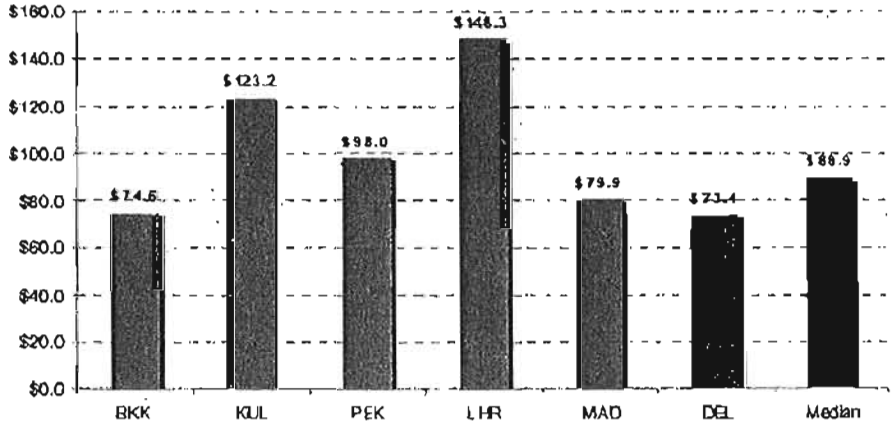


From a cost perspective, the cost of DEL T3 is lower than the median values in each category amongst the benchmark airports except on a cost per m2 of GFA basis compared to PEK T3 and MAD T4 but these two airport terminals are much larger in terms of area. What is however key is that the % of contact stands in these two terminals is far less and as a result the LoS and the efficiency achieved is also likely to be lower than DEL T3.

However on a cost per mppa basis, DEL T3 scores extremely well compared to other benchmark facilities. The actual cost / mppa and the adjusted cost per mppa (in 2008 million US$) is provided below.

From these graphs, it is clear that while the cost of LHR T5 is significantly higher than other airports due to some of the unique aspects of London's labour markets as well as the cost of services and goods in Europe, even accounting for regional factors and inflation, the cost of DEL T3 is well within the median range of values amongst the other 'world class' benchmark facilities that have been constructed recently. In addition, DEL T3 has been constructed to some of the highest LoS standards due to the OMDA requirements and in a time frame that has been unprecedented across the world let alone India. This has also led to a greater demand for advanced labour skills, design skills and equipment. Key technical and cost metrics of DEL T3 are provided on Page 53.

Total Cost / mppa (in 2008 million US$)



Delhi International Airport Private Limited

Annexure 'E'

Workings for Development Fees Receipts for 4 Years 8 months from 1-3-2010

Particulars		2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Annual Traffic for DF Collection							
Traffic Growth (% age)			14.00%	12.00%	8.00%	8.00%	8.00%
Total Pax							
Domestic Passenger (In Mn)		17.55	201.94	17.55	20.01	22.41	24.20
International Passenger (In Mn)		8.25	94.93	8.25	9.41	10.53	11.38
Total		25.80	296.87	25.80	29.41	32.94	35.58
Billed Pax							
Domestic Passenger (In Mn)		15.80	18.01	20.17	21.78	23.52	25.40
International Passenger (In Mn)		7.43	8.46	9.48	10.24	11.06	11.94
Total		23.22	26.47	29.65	32.02	34.58	37.35
Billing Traffic							
No of Months of Billing		1	12	12	12	12	7
Domestic Passenger (In Mn)		1.32	18.01	20.17	21.78	23.52	14.82
International Passenger (In Mn)		0.62	8.46	9.48	10.24	11.06	6.97
Total		1.94	26.47	29.65	32.02	34.58	21.79
Departing Passengers (As a % of Total Traffic)	50%						
Development Fee							
Domestic Rs./Pax	200						
International Rs./Pax	1,300						
DF Receipts (In Rs. Crores)							
Domestic		13	180	202	218	235	148
International		40	550	616	666	719	453
Total DF Receipts		53	730	818	883	954	601
Less: Collection Charges	5.00	0	7	7	8	9	5
Net DF Receipts		53	724	810	875	945	596

(Figures in Rs. Crores)

Total Net DF Receipts	4,003
NPV of Net DF Receipts @ 11% discount rate	3,050

DF approved by MoCA	1,827
Collected DF, net of Interest & Finance Charges till February 28, 2010	395
Existing Receivables & Bank Balances as on March 1, 2010	36
Balance DF to be billed & collected	1,396
Additional requirement of DF	1,654
Total targeted NPV of DF as on 1-Mar-2010	3,050

Notes:

1 Taxes and levies, if any, applicable is over and above the rates as specified above.

2 DF paying passengers considered at 90% of the total passengers, considering the exempted categories like, Diplomats, Infants, Transit Passengers, Personnel of Indian Armed Forces etc.

3 Discount rate of 11% has been used as per rate used in consultation paper 3/2009-2010 and also the rate used in the determination of ADF by MoCA. However the actual rate of borrowing may vary.

4 Traffic assumption as been taken at 14% pa for 2010-11 and 12% pa for 2011-12 as per rates used in consultation paper 3/2009-2010 and also the rate used in the determination of ADF by MoCA. Traffic growth thereafter for 2012-13, 2013-14 and 2014-15 has been taken at 8%pa. Please note that these traffic assumptions are indicative and used only for purpose of ADF. The traffic assumptions for tariff filing may not necessarily be the same as the said traffic assumptions used for ADF purposes.

Delhi International Airport Pvt. Ltd. New Delhi

0000060

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P) Limited

GMR

Udaan Bhawan, Terminal 1-B
Indira Gandhi International Airport
New Delhi 110 037, India
T +91 11 25661000
F +91 11 25672144
W www.newdelhiairport.in

Dated: April 01, 2010

Ref: DIAL/2009-10/MoCA-DF/2651

Urgent

The Secretary,
Airport Economic Regulatory Authority of India
Room No-1, New Administrative Block
Safdarjang Airport
New Delhi -110003

7/4

644-AERA.10

Kind Attention: Sh. Sandeep Prakash
Sub: Project Cost Audit report

OSD-II

870/Secy 7/4/10

SM (ABS) As discussed. 16/4/10

644-AERA.10 7.4.10

Dear Sir,

Please refer to our letter number DIAL/2009-10/MOCA-DF/2651 Dated 31st March 2010.

In continuation of the above we are enclosing herewith the project cost audit report dated 23rd March, 2010 prepared by M/s Brahmayya & Co., Chartered Accountants referred to in our aforesaid letter.

As the audit report contains commercially sensitive information, we request AERA not to put this report in public domain.

Thanking you.

Yours Sincerely,

For Delhi International Airport Private Limited,

Sidharath Kapur
(Chief Financial Officer-Airports)

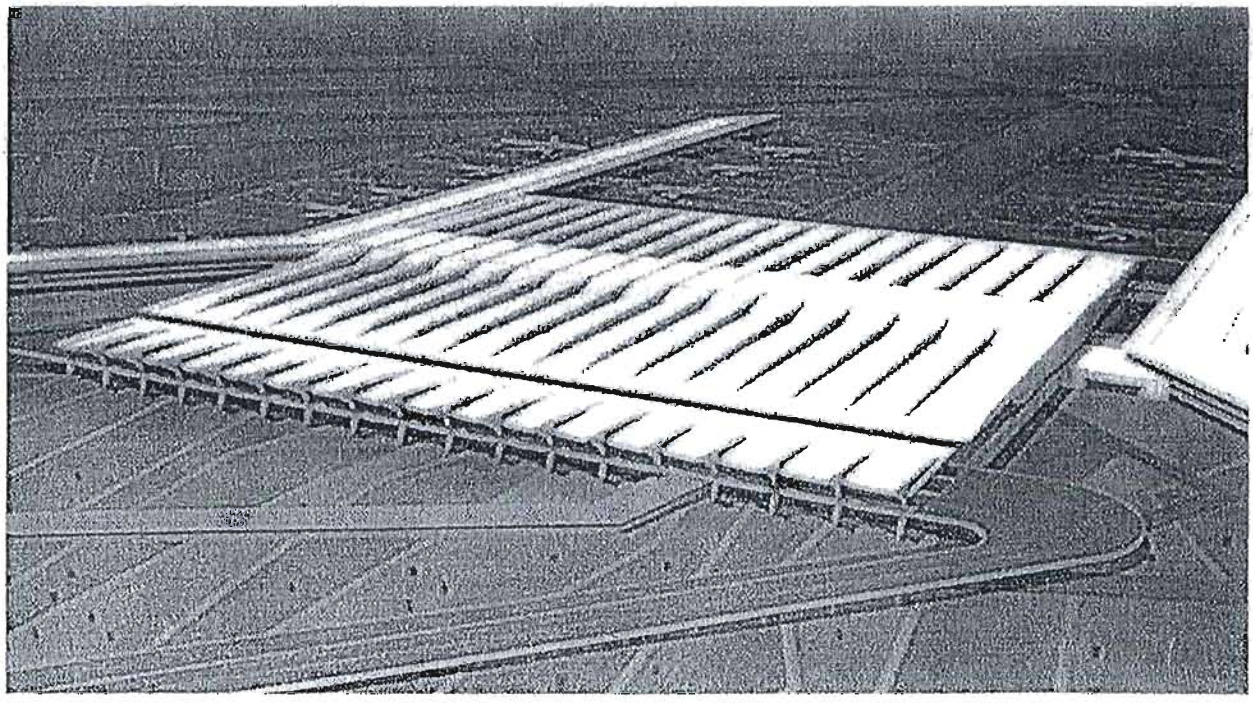
Delhi International Airport Pvt. Ltd. * New Delhi

0000061

M/s.Brahmayya & Co.,
Chartered Accountants,
2nd Floor, Khivraj Mansion,
10/2, Kasturba Road,
Bangalore -560001.

Project Cost Audit and Review Report of Delhi International Airport Private Limited

Opp. ATS Complex, Near Terminal 3
IGI Airport, New Delhi 110037



0000062

Index

0000064

Preliminary Information:

Name of the Company	Delhi International Airport Private Limited
Date of Commencement of Audit	9th February , 2010
Date of Submission of Draft Report	22nd March, 2010
Date of Completion of Audit	23rd March, 2010
Date of Submission of Final Report	23rd March, 2010
Name of the Audit Resources	Mr. Jeev Gurjalkar K Ms. Shashirekha S Katti Mr. Sudarsana Gupta M S Mr. Narendra Kumar P
Executives Contacted	Mr. Lakshmi Narayana.T.S.S.V Mr. C.R. Sridhar Mr. Naveen Malik Mr. Dinesh Bhutani Mr. Ashish Garg Mr. Naveen Khosla Mr. Rishi Joshi Mr. Dinesh Mr. Shobit Agarwal

Introduction:

Delhi International Airport Private Limited (DIAL, the Company), Company incorporated under the Companies Act, 1956. The Company has been incorporated by Airports Authority of India (AAI) to operate, maintenance and Development of Indira Gandhi International Airport (IGI).

AAI has invited various interested parties to bid for Operation, Maintenance and Development of IGI. Consortium led by GMR Group has won the Bid and has been awarded the contract. DIAL has entered into Agreement with AAI on 04th April, 2006 for Operations and Maintenance and Development Agreement (OMDA) for IGI. As per OMDA, DIAL has to construct a new Terminal for increased demand of Passengers in IGI, hence DIAL has started the construction and as per OMDA the Construction must be finished before March, 31st 2010.

DIAL Board has taken decision to award the Contract for construction of Terminal, Runway and Other Associated Works on Bid, Award, Design & Build basis, instead of popular model of completing the design first and then start the process of awarding the contract. Accordingly DIAL has issued the tenders for construction of New Terminal (T3), Runway and Other Associated Works.

The selection of contractor was done on a competitive global tender basis. Bidders were evaluated on the basis of Adequacy of company information and organizational capability, financial capability, work experience, Design and management capacity, Quality assurance, environment health & safety qualification, Approach, methodology and work plan and Interview / presentation. Based on the techno commercial evaluation Larsen & Toubro was recommended and approved by the Board of Directors of the Company. Direct contracts and sub-contract packages of L & T were generally awarded through competitive bidding process.

The Company has entered into contract with L & T on 09th December, 2006 for Construction of Terminal 3 along with Runway and other associated works on Cost plus Basis and amended from time to time. The estimated contract sum was Rs.5,400 Cores inclusive of Fee @ 20.2%. The Estimated Contract sum includes a sum of Rs.20 Crores towards Bank Guarantee charges and Other Letter of Credit Charges + Fee of 20.2% on the same. In addition Design Services and Procurement Activities (DSPA) fee as prescribed in Schedule I of the Contract with a maximum cap of Rs.133.1 Cores shall be payable. Extracts of Contract for Designing is reproduced in this report for reference (Annexure -1).

In the absence of availability of detailed design at that stage, project cost was estimated on the basis of Concept Design in the Master Plan for the purpose of achieving Financial Closure.

Scope of Engagement:

Delhi International Airport Private Limited (DIAL) has appointed Brahmayya & Co., Chartered Accountants, Bangalore to Audit the Project Cost incurred i.e. Accounted in the Books of Accounts till 28th Feb, 2010 and to review the estimated cost that would be incurred / accounted between March, 2010 till the Date of Commencement of Commercial Operations. Our Scope of work is confined to Audit and Review of the Cost numbers as submitted to us by the Management.

As per above said Engagement Letter we have been asked to review the following:

a. Hard Costs
b. Ancillary works
c. Preliminary and Pre-Operative Expenses
d. Interest During Construction Period (IDC) and Finance Charges

For the purpose of this engagement the following documents are made available for our verification:

- Summary Sheet of Project cost.
- Contract copies entered with L & T.
- Sub-Contract Copies entered through the L & T.
- Letter of Award / Purchase Order Copies entered by the DIAL directly.
- Change order list.
- Monthly Progress Report – January 2010 Submitted by L & T.
- L & T Monthly Payment Application No.37 and 38 for the months of December, 2009 and January, 2010 respectively.

0000067

Audit Procedures:

Review of major contracts has been done in the following manner:

Hard Cost:

i. Main Work (Cost of various packages for development of the Airport)

- Review of significant Contracts such as civil work and work done through subcontracts and Supplementary contracts with Larsen & Toubro Ltd (L &T) for any unusual or significant terms and note any agreement that require a change in control provision and any other significant provision that has a material effect on the company.

- Review of significant subcontracts/Latter of Awards such as contracts entered through L & T for unusual or significant terms and note any agreement that required any change in control provision and any other significant provision that has significant effect on the company.

- Review of significant contracts/Latter of Awards/Purchase orders such as DIAL has been doing on its own through its own contractors for any unusual or significant terms and note any agreement that require a change in control provision and any other significant provisions has a material effect on the company.

Ancillary Works

- Review of significant contract such as Temporary access road and Re-location expenses etc agreement for any unusual or significant terms and note any agreement that require a change in control provision and any other significant provisions has a material effect on the company

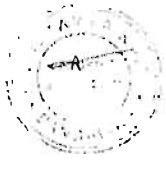
Preliminary, Pre-Operative Expenses and Interest During Construction Period

i. Interest During Construction Period and Finance Charges

- Review significant contracts such as borrowing agreements for any unusual or significant terms and note any agreement that require a change in control provision and any other significant provision that has a material effect on the Company.

ii. Consultancy, Human Resources costs and other Admin related Costs

- Review significant contracts such as Service agreement, employment agreements, facility lease agreements and equipment lease agreements for any unusual or



significant terms and note any agreements that require a change in control provision and any other significant provision that has a material effect on the Company.

(iii) Amendment to Contract entered into with L & T:

Major Contractor for construction of T3 is L & T, accordingly L&T is entitled for a fee of 20.2% of cost. Hence, DIAL has decided to do some works on its own through its own contractors to optimize the cost and to meet timelines.

To implement the above the Company has entered into the Supplementary Agreement – 3 on 08th April, 2009 and omitted some of the works from L & T Scope like –

Sl. No.	Particulars	Current Status
1	IT Systems Related.	Cost incurred by concessionaries
2	Finishes Works Related	Directly Awarded by DIAL to Contractors
3	Spine Road Related	Directly Awarded by DIAL to Contractors
4	Multi Level Car Parking	Cost incurred by concessionaries

Revised Fee Structure as per SA - 3 payable to L&T:

1. Contract for Civil Works directly to be done by L & T or through sub-contractor from L & T – 20.2% Fee.
2. Contracts relating to Finishing Works and Systems awarded by DIAL. Co-ordination fee for L & T for supervision of some of the novated contracts –7% Fee.
3. Spine road related works – 2% design fee.

Review of Claims:

Submitted by L & T:

- We have reviewed the Monthly Payment Applications No.37 and 38 submitted by L & T for the months of December, 2009 and for January, 2010. We have also reviewed the Certification done by Contract and Commercial team (C & C) of Airport Development Wing.

Submitted by Major Contractors:

- We have selected some Direct Contracts entered by the Company for the purpose of Project and reviewed the Claims made by Contractors selected randomly and reviewed

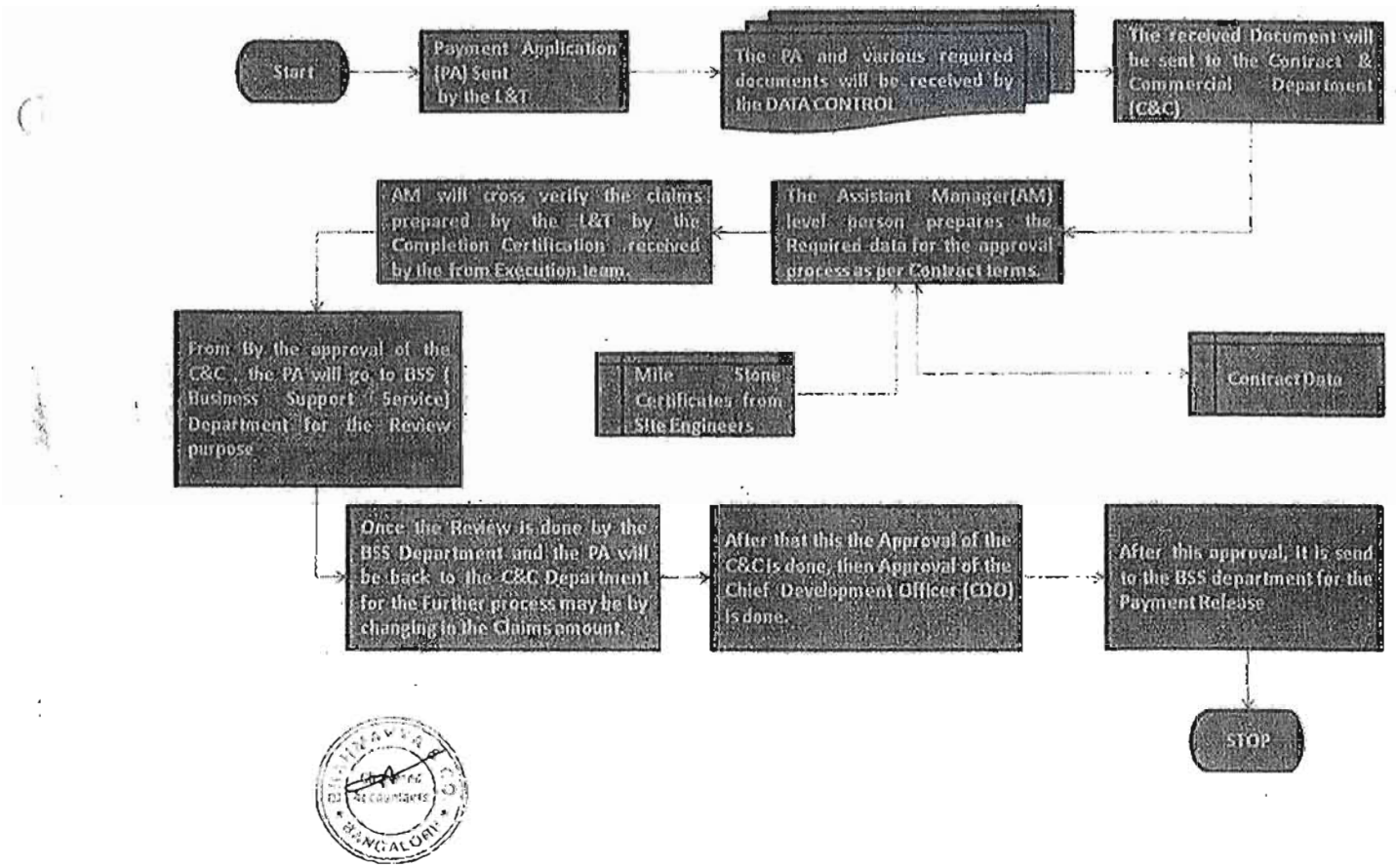
the procedure adopted by the company for the purpose of approval and release of payments.

Mapping of Claims of L & T and Other Major Sub-Contractors with Accounting System (SAP):

We have mapped the claims made by L & T and approved by C & C Department with Accounting done by the Company in their Accounting System.

Payment Process adopted by the Company for payment of L & T Bills is as follows:

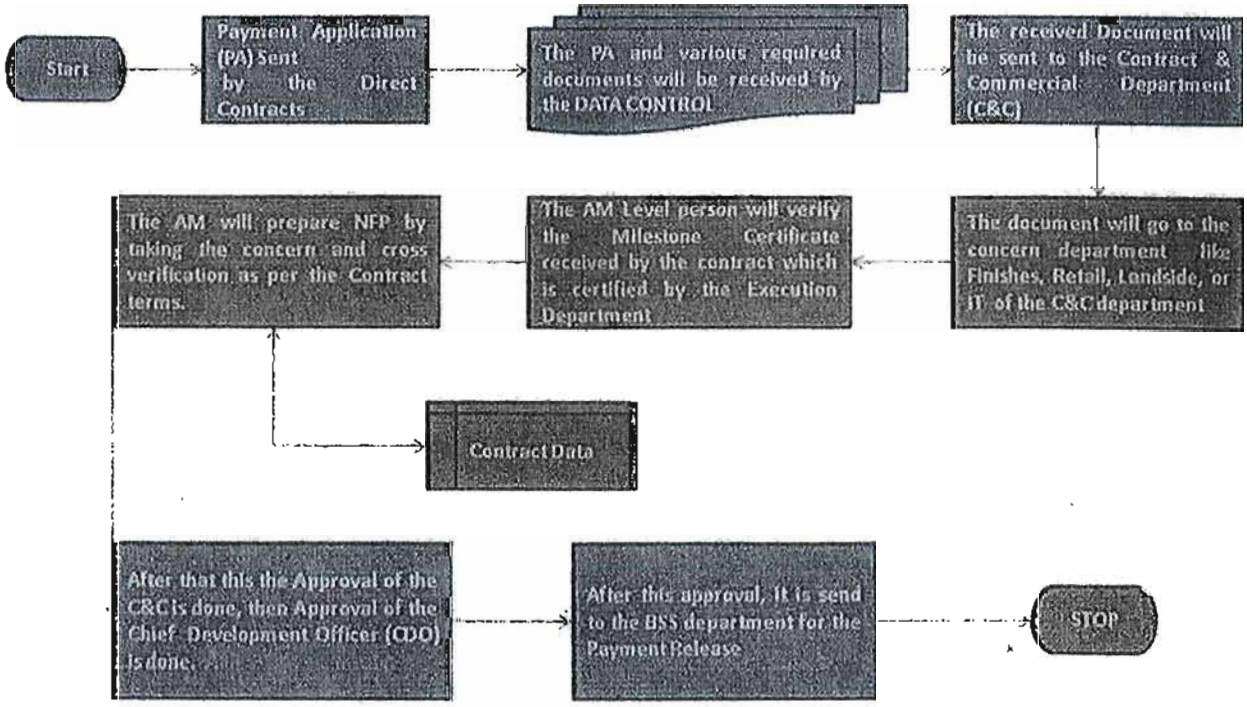
Payment Application Process Documentation - L&T



0000070

Payment Process for other than L & T Bills is as follows:

Payment Application Process Documentation - Direct Contracts



Significant Observations:

1. **Review of Contracts:**

   a. We observed that most of direct costs of L & T packages entered between L & T and the Company are to be adjusted based on the actual purchase price of major materials as applicable. (Major Materials are prescribed in Schedule 14 of the contract entered into between the Company and L & T on 09th December, 2006 – Annexure -2)

   b. In few packages, L & T's reply letter contains that the indirect costs are not accepted by L & T to the breakup of indirect cost and the Contractor has clearly mentioned in their acceptance letter towards packages that they do not agree for breakup of indirect cost since it was neither discussed nor agreed separately (for eg: acceptance letter for package No.T3-01g).

   c. L & T has claimed additional fee for designing while confirming the acceptance for all the packages, where designing is involved.

000071

d. As per the information and explanation provided by the company, there are 426 change orders towards the project out of which 78 got cancelled and 29 are under circulation within DIAL, balance 319 Change Orders are issued to various Contractors.

In addition to the awarded Cost

- We have asked to summarize the following information

a) Contract sum as per the basic data(without effect of Change orders)
b) Package/ Milestone wise Change orders.
c) Package wise claims and payments.
d) Major Material Procurement Details (Cement, Steel and Bitamin etc.)
e) Escalation cost details.
f) Foreign Exchange Fluctuation impact.
g) DVAT and Labour Cess Impact.

Summary of Project Cost:

The preparation and presentation of Project Cost Numbers is the primary responsibility of Management.

(Rs. In Crores)

Sl. No.	Project Description	Accounted	Committed & to be Executed / Accounted	Estimated Works to be Executed	Total
1	T1 and T2	689.17	65.08	-	754.25
2	T3	7,362.44	1,971.06	296.60	9,630.10
3	Preliminary, Preoperative and IDC	1,072.08	247.78	-	1,319.86
4	Upfront Fee payable to AAI	150.00	-	-	150.00
5	Rehabiliatation of Runway	27.00	83.00	-	110.00
6	Delhi Metro Rail Corporation Limited (DMRCL)	302.12	47.88	-	350.00
7	Amount payable to Delhi Jal Board	-	54.00	-	54.00
	Sub Total	9,602.81	2,468.80	296.60	12,368.21
8	New ATC with Equipment	-	-	350.00	350.00
	Grand Total	9,602.81	2,468.80	646.60	12,718.21

0000072

Breakup of the Costs Accounted in Books of Accounts:

(Amount In Rs. Crores)

Sl. No.	Project Description	Accounted in Fixed Assets	Accouted in CWIP	Accounted In EDC	Total
1	T1 and T2	689.17	-	-	689.17
2	T3	1,407.12	5,955.32	-	7,362.44
3	Preliminary, Preoperative and IDC	239.00	-	833.08	1,072.08
4	Upfront Fee payable to AAI	150.00	-	-	150.00
5	Rehabiliatation of Runway	-	27.00	-	27.00
6	Metro	-	302.12	-	302.12
7	Amount payable to Delhi Jal Board	-	-	-	-
	Sub Total	2,485.29	6,284.44	833.08	9,602.81
8	New ATC with Equipment	-	-	-	-
	Grand Total	2,485.29	6,284.44	833.08	9,602.81

Summary of T1 and T2 Costs (Accounted and Committed to be Executed/Accounted):

Particulars		Amount (Rs. in Crores)
CWIP taken from AAI Including further amount spent		96.00
Costs of T2		
Visitors Lounge Renovation	1.11	
IT System Backbone	1.73	
Baggage Handling Systems	20.27	
Civil Works	66.17	
Renovatlon Haj Terminal	4.34	
Lifts	1.37	
Elevators	1.07	
Others	18.34	114.40
T1B, 1C, 1D and G+5		
Construction of PTB and other Associated Works	255.63	
Baggage Handling System	24.47	
Expansion of Domestic Arrival Terminal	35.34	
G + 5 Building Works	15.44	
Construction of Car Park, Road Network, Drainage and Water Supply for T1D	13.80	
Supply, Testing and Commissioning of Electrical High Side Works of Terminal - 1	26.23	
Design Consultancy Services	13.55	
Others	138.42	
Operation Readiness And Transfer (ORAT)	20.97	543.85
Total		754.25

Summary of T3 Costs (Accounted, Committed to be Executed/Accounted and Estimated Works to be Executed)

Particulars	Amount (Rs.in Crores)
L & T (Contractors Work Portion)	3,828.64
L & T (Sub-Contractors Portion)	3,454.76
Direct Contractors	1,113.39
DSPA and Start up costs to L&T (Net of Recoveries)	324.00
Value Added Tax (VAT)	174.88
Foreign Exchange Fluctutation	144.68
Change Orders	90.65
Provisions (including Fee)	296.60
Consultancy charges	202.50
Total	9,630.10

Project Cost computed based on the following:

a. OMDA

b. Contract between the Company and L & T

c. Contracts between the Company and Other Direct Contractors.

d. Pre-operative Expenses includes expenses like Salaries, Professional Charges, Interest During Construction Period (IDC) etc.,

e. Agreement with Delhi Metro Rail Corporation Limited (DMRCL)

f. Letter from Delhi Jal Board

a. OMDA:

As per OMDA the company has paid Rs.150 Crores towards upfront fee to AAI.

As per the OMDA the Company has to renovate and refurbish the existing terminals of Airport. Accordingly the company has renovated Terminal -2 (International) and refurbished the Terminals 1B and 1C and constructed new Terminal 1D (Domestic) and built an administrative building G+5.

1. T1 and T2:

The Company has incurred Rs.114.40 Crores of Hard Cost for Renovation of Terminal -- 2. Major Contracts that has been undertaken for the purposes of Terminal - 2 are as follows:

Sl. No.	Description	Name of Contractor	Capitalized Value (Amount in Rs. Crores)
1.	Visitors Lounge Renovation	LLYOD	1.11
2.	IT System Backbone	TVS	1.73
3.	Baggage Handling Systems	Siemens	20.27 ✓
4.	Civil Works	L & T	66.17
5.	Renovation Haj Terminal	SIDCO	4.34
6.	Lifts	Thysseen	1.37
7.	Elevators	Schindler	1.07
	Other Works		18.34
	Total		**114.40**

Similarly the company has refurbished Terminal 1B and T1C and Constructed a New Terminal 1D. A new G+5 building was also constructed for various administrative offices.

The Company has constructed Terminal 1D and completed various refurbishments mentioned above with an initial budget of Rs.466 Crores (i.e. Rs.490 Crores – Rs.24 Crores to be funded from Passenger Service Fee- Security Component(PSF)). Total hard cost capitalised by the company is Rs.543.85 Crores. Major Contracts that has been awarded by the Company for the above purposes are as follows:

Sl. No.	Description	Name of Contractor	Capitalized and to be Capitalized Value (Amount in Rs. Crores)
1	Construction of PTB and other Associated Works	B.L.Kashyap	255.63
2	Baggage Handling System	Vanderlande	24.47 ✓
3	Expansion of Domestic Arrival Terminal	Prathibha JV	35.34
4	G + 5 Building	CCCL	15.44
5	Construction of Car Park, Road Network, Drainage and Water Supply for T1D	H R Builders	13.80
6	Supply, Testing and Commissioning of Electrical High Side Works of Terminal – 1	Siemens Ltd.,	26.23
7	Design Consultancy Services	Hafeez	13.55
8	Operation Readiness And Transfer (ORAT)		20.97
	Other Works		138.42
		Total	543.85

0000075

2. Terminal - 3

a. Contract between the Company and L & T:

(i) L & T (Contractor Work Portion):

The Company has awarded about 25 Major Packages and several Minor packages, aggregating to Rs. 3,828.64 Crores (Net of Recoveries from PSF and Other Concessionaries)

Major Packages under taken by L & T on its own are as follows:

(Amount in Rs. Crores)

Sl. No.	Package No	Description	Value as agreed in Package (including Fees)
1	A-01	Earthworks within site boundary (for Phase 1A and 1B)	108.18
2	A-02-a	Runway and Taxiways for Phase 1A and 1B excluding drains and aprons	830.67
3	A-02-g(i)	Airside culverts and drainage works – Phase 1B	78.37
4	A-02-b	Airside culverts and drainage works for Phase 1A	175.63
5	A-02-e	Main Apron of Phase 1B stage 2	468.06
6	A-10-a	Airport service building – Civil, Arch., MEP and Finishes works	60.10
7	T3-01	New Terminal building – PTB civil structural works	1,295.76
8	T3-01-c	New Terminal building – Access Tunnel, PHE/Fire UGT, Unloading Bay, etc	117.30
9	L-01-a	New Terminal building – Forecourt civil works	115.39
10		Other Works	579.18
		Total	3,828.64

- Major Sub-Contractors awarded by L & T

The L & T has entered into sub-contracts with Various Sub-Contractors, aggregating to Rs.3,454.76 Crores (Including L & T Fee, Net of Recoveries from PSF and Other Concessionaries)

Major Packages under taken by L & T Sub-Contractors are as follows:

(Amount in Rs. Crores)

Sl. No.	Package No	Description	Name of Sub-Contractor	Value as agreed in Package (including Fees)
1	A-04	AGL and associated works	Honeywell	194.09
2	A-03	AGL Power supply	Siemens	93.36
3	A-07	Airport wide Power distribution system	Areva	153.90
4	A-07	Airport wide Power distribution system	Areva	129.96
5	A-08	Airside external services, utilities, STP, water supply, sewerage, etc	Doshi Ion	206.74
6	T3-02-a	Roof structure – PTB and forecourt	Yongnam	185.48
7	T3-02-b	Roof structure – Piers	Interarch	84.14
8	T3-03	Roof sheeting and associated works (PTB)	Interarch	118.63
9	T3-04-a	Façade - Piers, Fixed Links, bridges and nodes	Mero	241.12
10	T3-04-b	Façade – PTB, Sky lights, cleaning systems	Shenyang	216.67
11	T3-05-c	Granite Flooring	Bramco	104.57
12	T3-06	Plumbing and sanitary works	ETA	119.60
13	T3-07	Electrical systems	ABB	328.67
14	T3-08	Fire fighting and fire suppression systems	Minimax	98.91
15	T3-09	HVAC systems and associated works	ETA	449.88
16	T3-10	Elevators, escalators and Travelators (VHT)	Thyssenkrupp	191.11
17	T3-12	BHS, X Ray & screening and associated works	Siemens	160.51
18	T3-13-a	PBB – Code C stands (21 Nos.)	Shinmaywa	50.40
19	T3-13-b	PBB – Code E and F stands (63 Nos.)	Thyssenkrupp	135.42
20		Other Works		191.60
			Total	3454.76

b. Contracts Other than L & T:

There are certain contracts related to T3 which are omitted from L & T scope and awarded to other contractors directly by DIAL. However, L & T is eligible for Supervision and Co-ordination Fee for the works related to Terminal 3 on contracts executed by others.

The Company has issued more than 50 Contracts; some of the major contracts issued by the company are as follows:

(Amount in Rs. Crores)

Sl. No.	Package No	Description	Name of Contractor	Value as agreed in Package (including Fees)
1	L-01-b	Connection to NH8, enhancement of road infrastructure, etc	Oriental+others	120.28
2	T3-05-f	Suspended Ceiling – supply	Durlum/Hunter	118.10
3	T3-05-k	Railing and crash-guards	CarlF / Dharam	50.62
4		New Udaan Bhavan	BLK and Others	45.00
5		Other Works		779.39
		Total		1113.39

c. DSPA and Startup Costs incurred by DIAL:

Sl. No.	Particulars	Amount in Rs. Crores
1.	Design Services and Procurement Activities	300
2.	Startup Costs	38
	Sub-Total	338
	Less: Recoveries from Concessionaries	14
	Total	324

The Company has estimated to recover from Concessionaries an amount of Rs. 14 Crores towards Design cost and accordingly the same has been reduced from DSPA.

d. L & T Billing Status:

As per the January Monthly progress report submitted by L & T for the month January, 2010 total amount claimed by L & T is Rs.7359.23 Crores and the Company has processed an amount of Rs. 6,828.92.

L & T Billing Status Up to Jan 2010 is as follows:

(Amount in Rs.Crores)

Particulars	Amount
Claimed by L & T Up to Jan, 2010	7,359.23
Accounted by DIAL	6,828.92
Balance	530.31
Under Verification by DIAL	175.59
Additional Claim under negotiation with L & T by DIAL (DSPA)	354.72
Total	530.31

Out of the above additional claim of Rs.354.72 Crores, the company has accepted an amount of Rs.167 Crores and included in Committed to be Executed/Accounted.

e. VAT Calculations:

All the CWP packages are subject to VAT, the Company has calculated additional VAT Liability on consumption of Major Materials is as follows:

(Amount in Rs.Crores)

Particulars	Unit	Total theortical qty	wt avg unit rate	unit rate i/c fees	VAT %	Vat/unit INR	Total (Rs. In Crores)
cement ppc	MT	4,15,610	3,749	4,506	12.50%	563	23.41
opc	MT	2,51,824	4,221	5,074	12.50%	634	15.97
steel	MT	1,36,486	34,714	41,726	4.00%	1,669	22.78
agg-market	MT	35,34,836	604	726	12.50%	91	32.08
agg-3rd stage	MT	16,58,990	991	1,191	12.50%	149	24.70
coarse sand	m3	9,56,267	800	962	4.00%	38	3.68
Bitumen 60/70	MT	30,062	30,270	36,385	12.50%	4,548	13.67
Bitumen 30/40	MT	18,608	33,750	40,568	12.50%	5,071	9.44
						Total	145.73
						Add 20% for other material	29.15
						Total	174.88

0000079

f. Foreign Exchange Fluctuations:

Exposure on unpaid Foreign Currency has been calculated by adopting the exchange difference between contracted rate and RBI Rates as published on 28th February, 2010.

(Amount in Rs. Crores)

Sl No.	Particulars	Amount
	Foreign Exchange Fluctuation:	
1.	- Accounted	94.63
2.	- Committed to be Executed/Accounted	50.05
	Total	**144.68**

g. Major Material Price Adjustment Calculations:

The Company has estimated an Additional Cost of Rs.30 Crores towards Major material price adjustments calculations based on the procurement data available with the company up to 31st January, 2010 is as follows:

(Amont in Rs. Crores)

Particulars	Unit	Qty- total as per pkg	Qty procured 31Jan 2010	wt avg rate	Rate in Pkg	diff	amount up to 31-jan10	credit	Indirect	Remarks
cement ppc	MT	4,15,610	3,91,125	3,749	3,880	(131)	(5.12)		(5.32)	
opc	MT	2,51,824	1,95,250	4,221	4,200	21	0.40		0.45	
										scrap considered @20000INR/MT and
steel	MT	1,36,486	1,42,792	34,714	32,000	2,714	38.75	(8.57)	31.73	quantity @3%
agg-market	MT	35,34,836	33,02,686	604	676	(72)	(23.73)		(24.68)	
agg-3rd stage	MT	16,58,990	16,14,792	991	1,046	(55)	(8.96)		(9.99)	
coarse sand	m3	9,56,267	7,74,000	800	740	60	4.68		5.22	
Bitumen 60/70	MT		30,062	30,270	23,482	6,788	20.41		22.75	
Bitumen 30/40	MT	56,645	18,608	33,750	25,287	8,463	15.75		17.56	
Diesel	KL		30,544	32,587	31,500	1,087	3.32		3.70	
					Total		45.50	(8.57)	41.42	
					Add fees margin				8.37	
					Total				49.79	
					reduce for excess steel reinforcement, say @ 5000T				21.70	
							Net additional impact		28.09	
							Estimated Value		30.00	

h. Rate Contracts:

Based on the information and explanation given to us, DIAL has entered into item rate re-measurement contracts for some of the finishes, landscape and block works. The quantities as per the Bill of Quantities (BOQ's) in these contracts have varied during the execution based on final design. Re-measurement of quantities has been carried out and the values towards the same is considered under Committed and yet to be accounted / executed.

i. Change Orders:

Status of Change Orders is as follows:

Particulars	No.of Change Orders	Based on the estimates received from contractors (Amount in Rs. Crores)	Estimates made by the Company	Total
Proposal Received from Various Contractors	181	49 ★		49
Balance				
•Incorporated in Packages	48		---	—
•No Impact	5		---	—
•Design only Change	42			
•Reduction in Value	32		41	41
•Increase	11			
Total	319	49	41	90

★ considered at 70% of Estimation received based on the past experience of the company -

Out of Rs.90 Crores Rs.17 Crores has been finalized and for the balance of 73 Crores negotiations are initiated by the Company and the cost is yet to be finalized.

j. Provisions:

Particulars	Amount in Rs. Crores
Contigencies	100.00
Capex for Operational Requirement	27.00
Other Pending Wroks yet to be awarded	169.60
Total	296.60

(i) Contingencies:

The company has provided a sum of Rs.100 Crores towards contingencies.

(ii) Capex for Operational Requirements:

Capex for Operational Requirements of Rs.27 Crores towards new terminal operational assets like Trolley's, Tensa Barriers, Automatic Boarding Calls Machine etc.,

(iii) Other Pending Works yet to be awarded:
Other pending works of Rs.169.60 Crores yet to be awarded as provided by the Company, as under:

(i) PTB Finishing Works Rs.25 Crores;
(ii) Building Works (Art Works) Rs.7.2 Crores;
(iii) part pending of Office fit outs and Painting works Rs.10 Crores; and
(iv) Other works Rs.127.40 Crores.

k. Consultancy:

Consultancy Costs of Rs.202.50 Crores includes Consultancies given by PBI, Mott Macdonald and Others towards preparation of master plan, project management services etc., out of which an amount of Rs.180.50 has already been paid and included in Committed and Accounted and balance amount of Rs.22.Crores is included in Estimations.

3. Preliminary, Pre-operative Expenses including Interest during Construction Period:

Preliminary, Pre-Operative Costs Contains the following:

Expenses include the following relating to Airport Development:

a. Salaries and Allowances
b. Travelling Expenses
c. Professional and Consultancy Expenses
d. Bank Charges
e. Staff Welfare Expenses
f. Training Expenses
g. Insurance Charges
h. Communication Expenses
i. Electricity Expenses
j. Rent
k. Repairs and Maintenance
l. Others

Incomes received from:

(i) Interest received on temporary investment of loan funds in Bank Fixed Deposits.
(ii) Divided received from temporary investment of loan funds in Mutual Funds
(iii)Profit on Sale of Temporary Investments in Mutual Funds of Loan funds.

Interest during Construction (IDC) period includes:

(i) Interest on Rupee Term Loans
(ii) Interest on Short Term Unsecured Loans
(iii)Finance Charges like Commitment Fee, Mark to Market Settlements of ECB Loan.

Preliminary, Pre-Operative and Interest during Construction Period (IDC) incurred up to 28th February, 2010:

Particulars	Amount (Rs. in Crores)
Incurred upto 28.02.2010:	
Preliminary, Pre-Operative Expenses	285.20
IDC	829.93
Sub-Total	1,115.13
Other Income	(43.06)
Total	1,072.08

Summary of the Preliminary and Pre-operative Costs incurred till 28th February, 2010 are as follows:

Particulars	Amount (Rs. in Crores)
Bank Charges	7.01
Business Promotion	0.94
Communication Expneses	1.38
Consultancy Expneses	136.52
Electricity Expenses	0.82
Fuel Cost	0.08
Staff Welfare Expenses	5.29
Insurance	5.08
Others	0.01
Training and Meeting Expenses	0.77
Office Maintenance Expenses	2.50
Printing and Stationery	1.66
Recruitment Expenses	3.64
Rent	1.60
Repairs and Maintenance	2.65
Salaries	86.03
Travelling Expenses	27.46
Depreciation	1.75
Total	285.20

Salaries and Allowances:

The Company has identified the employees who are working for Project and created separate cost centers for the same and while processing the payroll all the expenses related these employees are posted into Pre-Operative Expenses.

Travelling Expenses:

Travelling Expenses pertain to the above employees and other travelling expenses incurred for the purpose of Project will accounted in this Travelling Expenses.

Professional and Consultancy Expenses:

Professional and Consultancy Expenses include consultancy expenses like legal, professional, HR and Others. While entering into the consultancy agreement the Company will identify the purpose of Consultancy and Project related Consultancy Expenses will be debited to this Account.

Bank Charges:

Various Bank Charges like debited into Construction Account, which is specifically used for project purposes and changes like LC Charges, Bank Commission and Other Charges are debited to this account.

Staff Welfare Expenses:

Staff Welfare Expenses related to above mentioned employees will be transferred to this account.

Training Expenses:

Training Expenses for the employees working for Project purposes are included in this account.

Insurance Charges:

Insurance Charges towards insurance of CWIP like CAR policy will be debited to this account.

Communication Expenses:

Communication Expenses includes the expenses incurred by employees working exclusively for Project and Direct Communication Expenses incurred for the purpose of Project.

Electricity Charges:

- Cost for New ATC Tower with Equipment has been estimated based on the Letter received from MoCA (Ministry of Civil Aviation).

Management Responsibilities:

Management is responsible for the integrity and objectivity of the information in these Project Cost Statements. Some of the information in the financial statements is based on management's best estimates and judgment, and gives due consideration to materiality. To fulfil its accounting and reporting responsibilities, management maintains a set of accounts that provides centralized information of the financial transactions.

Management maintains a system of financial management and internal controls designed to provide reasonable assurance that financial information provided in this Project Cost Audit is reliable and that transactions recoded are in accordance with the Generally Accepted Accounting Procedures in India and are executed in accordance with prescribed regulations. Management also seeks to ensure the objectivity and integrity of data in this Project Cost Audit by careful selection, training and development of qualified staff, by organizational arrangements that provide appropriate divisions of responsibility, and by communication programs aimed at ensuring that regulations, policies, standards and managerial authorities are understood throughout the Process.

Audit and Review Conclusions:

Project Cost Audit and Review is an assignment given by the Management of the Company to us. According to the information and explanations provided by management and based on the audit and review performed by us we draw the following conclusions:

a. We have audited the Accounted Cost and we have not noticed any material misstatements.

b. Costs committed yet to be executed / accounted have been reviewed.

c. Estimated works to be executed have been reviewed.

Disclaimer:

- We performed our Audit and Review based on the information and explanations provided to us by the Management.
- We have reviewed the Project Cost Numbers in accordance with the contracts as provided by the Management, hence we could not ascertain Cost of those contracts if any, that are in existence and has not been provided for our review / Audit.
- We have used the concept of materiality and Sampling Methods in our Audit and Review.
- As per the information and explanations provided to us by the Management there are no claims other than those mentioned in the report.

- We have relied upon the party's ledger accounts and no third party's confirmation is available.
- Estimations have been reviewed based on the information and explanation provided to us by the Management.

For Brahmayya & Co.,
Chartered Accountants

(G.Srinivas)
Partner
Place: New Delhi
Date : 23rd March, 2010

Annexures:

Annexure - 1

Appendix III to Schedule 1

Unit Rate Per Man-Month

(I) Foreign Employee (Include Design Sub-consultant personnel)

A. At Home Office

Grade of Employee	December- 06 to November-07	December- 07 to November-08	December- 08 to November-09
Director, Design Manager, Team leader, Head, Principle engineer, consultant	US$ 51367/-	US$ 56504/-	US$ 62154/-
Senior Engineer, Design Engineer	US$ 26512/-	US$ 29163/-	US$ 32080/-
CAD Persons	US$ 13,250/-	US$ 14,600/-	US$ 16,000/-

B. At Field Office

Grade of Employee	December- 06 to November-07	December- 07 to November-08	December- 08 to November-09
Director, Design Manager, Team leader, Head, Principle engineer, consultant	US$ 59878/-	US$ 65866/-	US$ 72453/-
Senior Engineer, Design Engineer	US$ 34929/-	US$ 38422/-	US$ 42264/-
CAD Persons	US$ 19126/-	US$ 21041/-	US$ 23145/-

(II) Local Employee

A At Home Office

Grade of Employee	December- 06 to November-07	December- 07 to November-08	December- 08 to November-09
Senior & Middle Management staff	Rs. 311,041/-	Rs. 388,800/-	Rs. 486,562/-
Managers, Senior Officer & offices	Rs. 188,374/-	Rs. 235,467/-	Rs. 292,361/-
Engineers	Rs. 82,367/-	Rs. 98,000/-	Rs. 117,600/-

B At Field Office

Grade of Employee	December- 06 to November-07	December- 07 to November-08	December- 08 to November-09
Senior & Middle Management staff.	Rs. 342,145/-	Rs. 427,680/-	Rs. 513,218/-
Managers, Senior Officer & offices	Rs. 207,211/-	Rs. 259,014/-	Rs.310,817/-
Engineers	Rs. 90604/-	Rs. 107,800/-	Rs. 129,360/-

NOTES:

1. The man month rates offered by the Contractor for a schedule of 6 days per week (50 hrs). Any actual man hours spent over and above the average man hours per month calculated on the basis of 50 hours per week shall be paid on a pro-rata basis.
2. Unit rates for field office shall be charged from the date the relevant person reports at the field office.

3. Unit rates for home office shall be charged from the time the relevant person reports at the home office.

4. The travel and boarding expenses for the employees travelling between home office and field office shall not be reimbursed to the Contractor by the Employer, and the same shall be included in the Unit Rates.

5. The maximum number of man months (inclusive of the man months paid for pursuant to Note 1 above) for which the Employer shall be liable to pay the Contractor towards Design Services and Procurement Activities shall not exceed man months. The maximum fee which the Employer shall be liable to pay the Contractor towards Design Services and Procurement Activities shall not exceed INR 1,331 million (INR One thousand three hundred and thirty one million).

Annexure - 2

	Major Supplies
1	Cement
2	Sand
3	Aggregate
4	Reinforcement
5	Structural Steel
6	Bitumen
7	Diesel

Annexure – III

INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P) Limited

GMR

Registered Office: New Udaan Bhawan,
Opposite Gate No. 5, Terminal 3,
International Terminal, IGI Airport,
New Delhi-110037, India
T +91 11 47176000
F +91 11 47152181
W www.newdelhiairport.in

DIAL/2010-11/Fin-Acc/944

Dated July 20, 2010,

Immediate

The Secretary,
Airport Economic Regulatory Authority of India,
AERA Building,
Administrative Complex,
Safdarjang Airport,
New Delhi – 110003

Dear Sir,

Kind Attn : Sh. Sandeeep Prakash

Sub : Cost of Project and Levy of Development Fee at IGI Airport

This is with reference to our letter no DIAL/2009-10/MoCA-DF/2651 dated March 31, 2010, submitting the Project Cost of Rs. 12,718 Crores for approval by AERA and seeking additional DF of Rs. 1,654 Crores in addition to the existing Development fee of Rs.1,827 crs (NPV basis).

The Board of Directors of DIAL in their meeting held on March 25, 2010 while approving the final Project cost of Rs. 12,718 crores had decided that an amount of Rs 341 crores relating to Security related capex (not forming part of said Project cost of Rs. 12,718 crores), be included in the Project cost in case the same is not allowed to be funded out of PSF security component by MoCA. The amount of Security equipment included the following two items:

	Rs/Crores
a) Cost of baggage handling system upto screening stage	121
b) Capital cost of boundary wall	18
	139

0000089

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P) Limited

GMR

The Ministry of Civil Aviation (MoCA) vide their circular dated 8th January, 2010 clarified, inter alia, that the above two items are to be excluded to be met from PSF security component. Subsequently, Association of Private Airport Operators (APAO) and other Industry members made a representation to MoCA. Vide letter dated 16th April, 2010, MoCA clarified that the above mentioned items cannot be met out of PSF Security component. This issue was again raised before MoCA by APAO. MoCA now vide their letter dated 5th July, 2010 (copy enclosed) have finally confirmed that the above two items cannot be met out of PSF security component and hence, would need to form part of project cost.

Accordingly the value of the above mentioned two items of Rs. 139 crores will need to be added to the project cost of Rs. 12,718 crores thereby revising the Project Cost to Rs.12,857 crores. Correspondingly, the earlier funding gap of Rs. 1,654 crores proposed to be funded (on NPV basis) by means of additional Development Fee would stand increased to Rs. 1,793 crores. We would be furnishing a certificate from our statutory auditors confirming the cost of these two items shortly.

We request you to kindly consider the said change in the project cost and corresponding increase in our request for additional Development Fee while according your approval.

Thanking you,

For Delhi International Airport Pvt Ltd
Yours faithfully,

(Sidharath Kapur)
Chief Financial Officer(Airports)

International Airport Pvt. Ltd. New Delhi

0000090

1654
139
1793

ANNEXURE - IV

FINAL REPORT

FOR

"TECHNICAL AUDIT OF DIAL's FINAL PROJECT COST ESTIMATES"

FOR

AIRPORTS AUTHORITY OF INDIA

AUGUST 2010

Rev. No	Date	Purpose	Prepared by	Reviewed by	Approved by
1	31/08/2010	REVISED AFTER COMMENTS			
0	31/07/2010	ISSUED FOR INFORMATION	AR	TRS	SM

TABLE OF CONTENT

ACRONYMS

AAI – Airports Authority of India
AERA – Airports Economic Regulatory Authority of India
AOCC – Airport Operation control Centre
ATC – Air Traffic Control
ACC – Area Control Centre
BHS – Baggage Handling System
CWP- Contractor's Work Portion
CMS – Control Monitoring System
CAPEX – Capital Expenditure
CCTV – Close Circuit Television
COMFAA – Computer software used for Runway Designing
DIAL – Delhi International Airport Limited
FIDS – Flight Information Display System
GOI – Government of India
HVAC – Heat Ventilation & Air Conditioning
HFWD – Heavy Falling Weight Deflectometer
IATA – International Air Transport Association
IE – Independent Engineer
ICAO – International Civil Aviation Organization
IDF – Indian Development Fund
ILS – Instrument Landing System
JVC – Joint Venture Company
MDP – Major Development Plan
MLCP – Multi Level Car Parking
OMDA – Operation, Management & Development Agreement
PMC – Project Management Consultancy
PCCR – Primary Computer Control Room
SCCR – Secondary Computer Control Room
SCP- Sub Contract Packages
SRFF – Satellite Rescue & Fire Fighting
TCE – Tata Consulting Engineers
UDF – User Development Fee

NAME OF WORK: AUDIT OF DIAL's FINAL PROJECT COST ESTIMATES

PROJECT: CONSTRUCTION OF INDIRA GANDHI INTERNATIONAL AIRPORT FACILITIES AT NEW DELHI

PREAMBLE

PURPOSE:

Airports Authority of India intends to carry out Technical Audit of DIAL's Final Project Cost Estimates to verify the Capital Expenditure incurred in the Construction of Airport Facilities at New Delhi.

AAI have appointed Engineers India Limited as a Technical Auditor (TA) for Audit of DIAL's Final Project Cost Estimates vide their letter no. AAI/MC/DIAL-06/DF/2010-11/117dated 13-05-2010.

SCOPE OF WORK:

I) Assess whether the project implementation plan, timeline, project cost including contingency cost estimates were developed by DIAL in accordance with approved Master Plan and Major Development Plans, any relevant agreements with GOI/ AAI and generally accepted best practices.

II) Analyze and determine the cost over-run in terms of change in technical specifications, change in scope, quantity variance and price variance. Assess the reasonableness of the said changes/ variances in view of operational requirements and price escalation.

III) Assess whether all possible technical alternatives (e.g. alternate materials, revised design, reduced material quantity, parallel processing etc.) were considered and optimum plans were selected and implemented by DIAL to contain the cost over run.

IV) Assess whether Project Management Techniques were effectively used.

V) Assist the Authority in the deliberations regarding proposal made by DIAL, based upon their Audit of the Project Cost.

EXECUTIVE SUMMARY

The objective of this study is to assess the Project Cost spent by DIAL (JVC) on the construction of different components of IGI Airport of Delhi. The Airport has been constructed on design build basis within a record time of 37 months. The Project was given a deadline of completion six months prior to the commencement of Common Wealth Games to have sufficient time to take care of the teething problems. The phase - I of the Project was having following components to be developed by 31-03-2010.

Phase 1A:

- Modernization and refurbishment of existing Terminal 1 and Terminal 2
- Construction of 3rd Runway 11/29, (Code F Compliant) of 4430 m long and 75 m wide and associated taxiways of approx. 1.4 Million Sq. M.
- Fire Stations, ARFF vehicles, electrical sub stations etc
- Construction of New Domestic Terminal 1D in lieu of T1B

Phase 1 B:

- Construction of New Integrated Terminal 3 of 5.5 Lacs Sq. M. to handle 34 million passengers annually and other landside/airside facilities
- Construction of 947,000 m2 of Apron
- Construction of Other associated buildings like Airport Services Building, Airport Connection building to Metro, Main receiving sub stations etc.
- Multi Level Car Parking (MLCP) for 4300 Cars

Others:

- Rehabilitation of Runway 10/28

General issues which have cropped up during Audit are given below

1. Uncapped Design build approach adopted by the JVC: DIAL has adopted an uncapped design build approach for the Project, and the end result is a splendid Airport completed in a crashed time schedule of 37 months with facilities at par with International Airports. However, the cost of the Project could not be contained within their cost estimation prepared at the time of financial closure. Uncapping of the cost was due to non-availability of much of the information on design part, which has been done parallely while execution.

2. Time was the Primary Target and no check kept for Cost overrun either by DIAL or their PMC. The Project stands on the testimony of time. Project duration was crashed remarkably and further linked with OMDA's stringent L.D clauses. Study shows that JVC's primary objective was shifted to Project completion and the Project Cost could not be given top priority. Initially Project estimates were prepared by MOTT Macdonald while preparing Major Development Plans. Thereafter neither JVC nor their PMC has given enough emphasis to estimated Project cost. As per Technical Auditor's observations, the detailed cost was only worked out in March 2010 at the time of submission to AERA. PMC during execution used to generate a single page report which has been provided to the Auditors for a sample. But they never emphasized to their Clients that the Project cost trend is upwards and needs to be corrected. Projects executed in our own country as well as overseas in other sectors by many Promoters shows that there is a variation limit on cost which has to be looked upon very seriously by management and their consultant.

3. PMC have not monitored Cost adherence to Original Project Cost: Project management consultant did not look at the cost increase aspects. They were more involved in engineering review and site management, but could not give trigger for cost variation.

4. No estimation from DIAL for CWP's: DIAL has not done detailed estimation for any of the CWP. They have reviewed the estimates prepared by L&T while evaluation & recommendation of CWP. The negotiations done by DIAL were hypothetical and were not supported with back up documents.

5. No estimation either from DIAL or L&T for SCP's: For awarding works to sub-contractors, neither DIAL nor L&T had detailed estimation. Negotiations and price reductions were done on notional basis.

Technical Auditors have worked exhaustively and found few variations from MDP which have been discussed later in the report. The cost of the Project is within the cost bench marked by M/s Jacobs Consultancy, but it is on the upper side for some works when we gauge it with best industrial practices prevailing in India. Best industrial practices mean the norms followed by construction industry for various Infrastructure Projects being executed by CPWD, various PSU's and private promoters in India.

Various clauses and annexures of this report will elaborate the basis of increase in cost. There was a slippage on the part of JVC regarding non-approval of various changes made during execution stage. The main area of concern is the increase in area of Terminal Building from 4.5 Lac Sq. m. worked out by MOTT Macdonald in MDP to 5.53 Sq. M. actually constructed at site. Due to this increase in area, all other items of the Project have increased proportionately. JVC have not taken any approval either from MOCA or AAI for this major change.

Due to high risk involved in the Project, the % age of risk premium considered by Principal contractor and sub-contractor are also high which are totally borne by JVC resulting into further increase in Project Cost.

As per Technical Auditor, the amount to be excluded from the Project cost is shown in Annexure – IV of this Report.

The summary of Project Cost is depicted below.

Summary of Project Cost ₹ in Crore

DESCRIPTION	INITIAL COST AS PER DIAL	FINAL COST AS PER DIAL	COST AS PER AUDITOR	REMARKS
T1, T2 & Initial CWIP	762	754	754	
Runway/Taxiway/Apron/Lighting	1765	2634	2,610.18	Reduction in cost of Apron, Refer clause no 5.1
Terminal - 3 and Associated Buildings	4669	6836	6,373.50	Refer Annexure – III & IV
Airport Services Building & Airport Connection Building	-	160	160	
Preliminary, Preoperative & IDC	1279	1320	1,320	
METRO	350	350	350	
Upfront Fee paid to AAI	150	150	-	Refer Financial Consultant's comment
Rehabilitation of Runway 10-28	-	110	90	Refer clause no 5.5 of the Report
Delhi Jal Boaard Infrastructure Funding	-	54	54	
New ATC Tower with Equipments	-	350	-	Refer clause no 5.3 of the Report
Security Capex	-	139	139	
Total Project Cost	**8975**	**12,857**	**11,850.68**	

Note: Security related Capex of ₹ 139 crore has been considered against cost of Baggage handling system up to screening stage and Capital cost incurred on Boundary wall & Chain linking fencing. This has been considered after receiving AERA's letter no. F. No. AERA/20011/DIAL-DF/2009-10/VOL-III dated 21st July 2010 with an attachment of MoCA's letter no AV.13028/01/2009-AS dated 05/07/2010. Therefore, the Project cost submitted by DIAL have been revised from ₹ 12,718 Crore to ₹ 12,857 Crore.

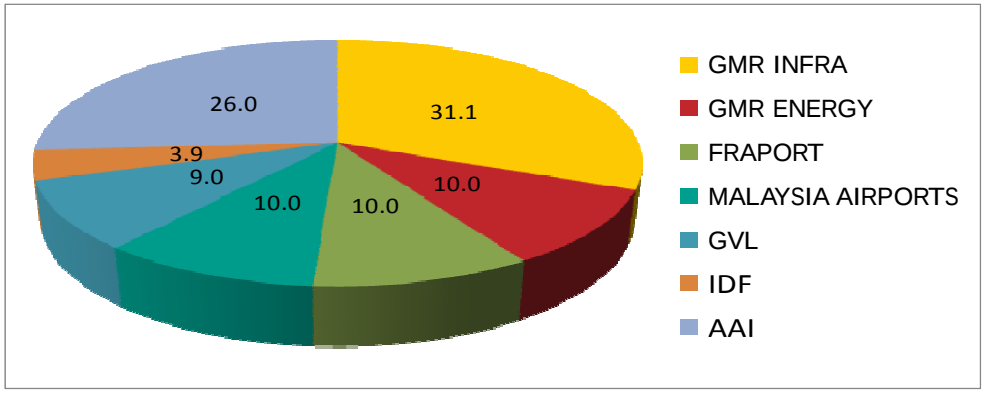
1.0 INTRODUCTION

The concession for Indira Gandhi International airport is a part of the process that the Indian Government has been implementing under the auspices of the AAI to privatize the Indian airport system which follows a world wide trend that began in the 1980's in the U.K and gathered increasing momentum throughout the world aviation industry.

AAI shortlisted 9 private sector consortia to participate in the bidding process out of which six consortia submitted their technical and financial bids for Delhi & Mumbai. On January 31, 2006, the bids of the shortlisted consortia were opened and based on the evaluation process followed by AAI, the GMR-led consortium was selected as the successful bidder for Delhi Airport. The GMR led consortium, Delhi International Airports Limited (DIAL), a Private Limited Company under Indian Companies Act, was entrusted to develop and operate the Airport under PPP mode for a period of 30 years and was allotted land of 2000 Hectares at Delhi. The consortium partners of DIAL are shown below.

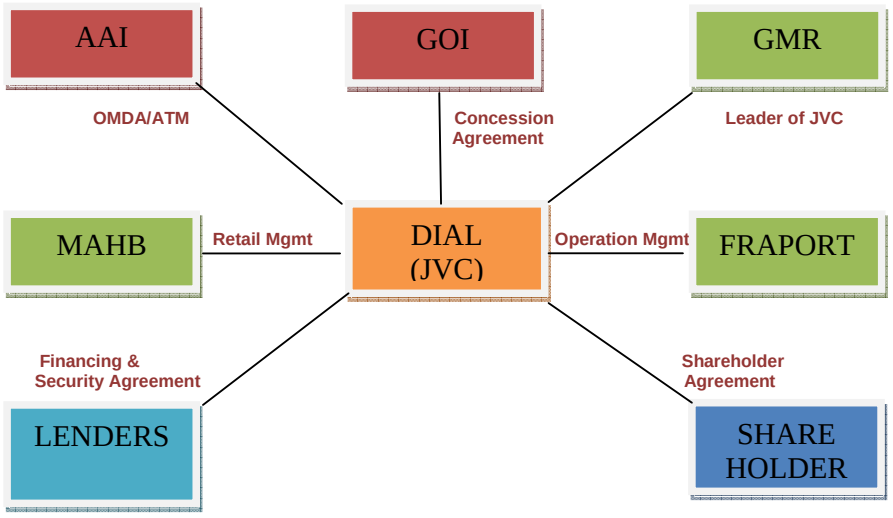
Sr. No.	Shareholder	Percentage Shareholding
1	GMR Infrastructure Limited	31.10%
2	GMR Energy Limited	10%
3	Fraport AG Frankfurt Airport Services Worldwide	10%
4	Malaysia Airports (Mauritius) Pvt. Limited	10%
5	GVL Investments Pvt. Limited	9%
6	India Development Fund	3.9%
7	AAI	26%

In order to develop the Brownfield airport, an Operation, Management and Development Agreement (OMDA) was signed between Airports Authority of India and Delhi International Airport Pvt. Limited (DIAL) on 4th April 2006. A State support Agreement between the President of India on behalf of Government of India and Delhi International Airport Pvt. Limited was signed on 26th April 2006. Finance closure and construction of the different works started in 2007 and Phase I A of the construction was commissioned in year 2008. The construction works of Phase I B were completed on 31-03-2010. The % age of share of the partners in the Consortium can be depicted as follows:



The legal framework of the Consortium can be depicted as below:

The Legal Framework



With reference to imposition of development fee (DF) at Delhi International Airport, the capital expenditure incurred in construction of the same came up for examination of Airports Authority of India (AAI). Airports Authority of India (AAI) vide their letter no. AAI/MC/DIAL-06/DF/2010-11/117dated 13-05-2010 appointed EIL as Technical Auditor for carrying out Audit of DIAL's Final Project estimates.

2.0 PROJECT DETAILS & SCOPE OF WORK

The Brownfield airport covers an area of 2000 Hectares. M/s Mott MacDonald prepared the Master Plan and the Major Development Plan in 2006. The chief objectives of the master plan were to achieve a scheme that would meet the forecast traffic for the 20 year forecast horizon, achieve the maximum processing ability of the site available and to ensure that the initial phase (phase I) could be delivered by 2010, in time for the Commonwealth Games. This required that the master plan was generated using a rigorous and re-iterative selection process in order to provide the optimal and customised solution specific to the existing site conditions. The Master Plan was developed keeping the following criteria in view.

i) Optimal operational efficiency
ii) Optimal site utilization for the phase 2010/12 development
iii) Maximum flexibility related to common user facilities
iv) Passenger travel distances
v) Modular expandability
vi) Optimal CAPEX expenditure

The Airport development was proposed to be carried out in four phases, the phase 4 will be commissioned in year 2021for capacity horizon 2026.

Master Plan of the Airport includes provision of the following Mandatory Capital Projects at Phase I (IA & IB):

- New Parallel Runway – (Runway 11R/29L)
- Initial Parallel Taxiway to Runway 11R/29L
- High speed exit Taxiways and other Entry/Exit Taxiways to Runway 10R/29L
- Pair of cross link Taxiways
- Satellite Rescue and Fire Station
- New link Taxiway from Taxiway P to Taxiway C and E
- New International/Domestic Terminal development
- New landside road to International/Domestic Complex
- New car park (Multi level car parking)
- Expand Apron at International/Domestic Terminal
- New elevated terminal front (departures) road
- New ground level terminal front road
- Taxi/coach park
- Close terminal access road to non-airport through traffic
- Rapid exit taxiway for landing Runway 10 – completed by AAI in Feb' 2006

- Domestic apron – 5 additional bay– completed by AAI in Feb' 2006
- Second source of power supply– established by AAI in Dec' 2005
- Docking Guidance system for T2– completed by AAI in Oct' 2005
- Ceremonial lounge T2
- Crash fire tenders
- New taxiway parallel to Runway 9/27 between taxiway D and associated rapid exit taxiway
- Expansion of international apron to provide for peak stand demand prior to completion of major terminal development
- Redevelop terminal 1B/arrival
- Provision of in-line X-ray baggage scanning system
- Reconfiguration, relocation, expansion of critical passenger processing and operational support areas within the existing terminal facilities, including at least the area listed.
- Upgrade general aesthetics of all terminals
- Traffic plan outside the terminal
- Upgrade signage within all terminals
- Upgrade flight information and PA system
- Improve passenger amenities within all terminals
- Upgrade retail offering within the terminal
- Public information displays in all terminals
- T1 (A/B arrival) and T2 traffic improvement scheme

Development of the airport had been planned to be in Phases depending upon the growth in traffic figures projected to be handled by the Airport.

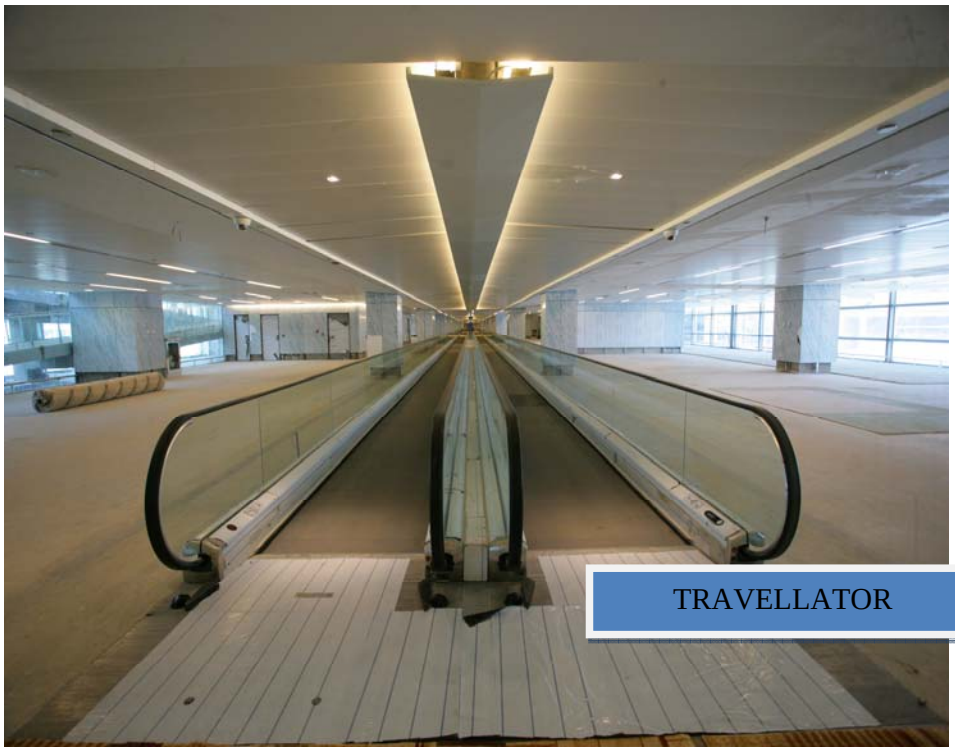
The major works of Airport include the following:

- New Runway 11R/29L of approximately 4430 m length with ILS Category C facilities
- Five Parallel Taxiways, 11 Rapid Exit Taxiways (RET) and 2 connections for new Runway 11R/29L
- Passenger Terminal Building (for domestic & international traffic) of 5,53,870 Sq. m. floor space (designed for 34 million passengers annually and complying with the peak hour demand of approx. 9450 passengers in peak hour) having raft foundations with all civil, structural and finishing works and double basement with utilities. The salient features of PTB and associated works are shown below:

- 8 Level Terminal Building and 2 connected Piers of 1.2 KM length each
- 168 Check in counters
- In line baggage handling system – 12,800 bags/hour capacity with tilt tray sorter
- 49 outbound and 46 inbound immigration counters
- 8 Chillers each of capacity 2500 TR capacity
- 2875 CCTV Cameras
- 8000 speakers for public address system
- 12 KM of aviation fuel hydrant system
- MLCP for 4300 cars
- 92 Automated Walkways (Travellators), 63 Elevators and 34 Escalators

i) Passenger Terminal Building- Departure Level

ii) Travellators in Piers



TRAVELLATOR

iii) MUDRAS IN CANYON

MUDRAS IN CANYON

iv) Passenger Boarding Bridge: 78 Nos

PBB

v) Baggage Reclaim Belt & In-line X-ray machine :

a. 14 Nos. Baggage reclaim belt

b. 41 Nos. of In-line X-ray machines

Baggage Reclaim & In-line X-Ray Machine

vi) Flight Information Display System & Signages

vii) All works related to the IT system including networking etc.,

3.0 EIL's APPROACH METHODOLOGY FOR AUDIT

3.1 Comparison of actually implemented facilities with provisions in Master Plan, Major Development Plans, any relevant agreements with GOI/AAI and generally accepted best practices

3.2 Comparison of Timelines as per OMDA

3.3 Determination of cost over- runs in terms of technical specifications, variation in scope of work in view of operational requirement and escalation if any

3.4 Assessment of optimum plans from various possible technical alternatives

3.5 Assessment of utilization of Project Management Techniques effectively for all the components

3.6 EIL's team have studied the following documents furnished by DIAL.

(i) Concessionaire Agreement & its Amendments
(ii) State Support Agreement
(iii) Delegation of Powers
(iv) Master Plan and Major Development Plan
(v) Specifications
(vi) Drawings of key components
(vii) Break up of initial Project Cost
(viii) Break up of Final Project Cost
(ix) Contract Document for M/s Larsen & Toubro Ltd.
(x) CWP – Runway & Taxiway and Passenger Terminal Building
(xi) SCP – HVAC
(xii) Report on Project Cost (Audited by M/s Brahmayya & Co., Chartered Accountants) dated March 2010 submitted by DIAL to AERA
(xiii) Overall Project Schedule, Monthly Progress Reports
(xiv) Quality Assurance System
(xv) Commercial, Contracts and Procurement Management Manual as per ISO 9001:2000

4.0 ASSESSMENT OF PROJECT IMPLEMENTATION WITH RESPECT TO MASTERPLAN, MDP ETC.

The Project implementation plans, timelines were developed generally in line with the requirement of approved master plans, major development plans and generally accepted best practices, refer Annexure –I & II. Some variations have been observed during technical audit and are indicated as follows:

4.1 Terminal Building T3

The area of Terminal Building T3 as per approved major development plan (MDP) is 4,51,644 Sq. m. for horizon year 2016 to cater to 34 million passenger per annum. However, the actual area provided is 5,53,887 Sq. m. It is stated by DIAL that this has been necessitated due to additional area requirement by stakeholders and change in scope during the detailed design that was not envisaged at MDP stage like MEP Plant in sub-basement & basement (sub-station etc.); Meeters & Greeters area at arrival level; actual requirements of BHS plant & custom offices; forecourt at departure level; additional requirement of food court (at CIP, Office & Hotel levels) & retail area; ramp access to baggage hall at apron level, additional staff access & office requirements of ground handling agencies. Variance Analysis of area for Passenger Terminal Building and Piers from originally estimated to actual constructed is shown in Table No 3 of the Report.

The factors depicted below are the basis of area increase in Terminal Building which was not envisaged at the time of finalization of MDP.

4.1.1 The sub-stations constructed at basement & sub-basement level are part of Passenger Terminal Building. This has saved on the cost of cables and utility tunnels from a remote sub-station to PTB. It is the latest trend all around the world to construct the sub-stations within Terminal Buildings to save land around for additional Aprons etc.

4.1.2 MOTT Macdonald during the preparation of Major Development Plan had kept a provision of External Concourse/meters & greeters area at arrival level (refer clause no 3.5.6, table no 3.5 of MDP), but they had not considered the area while designing initial layout of PTB. The area shown in MDP for external landside arrivals concourse is 4106 Sq. M, which has not been considered for summation while calculating sub total of internal & external landside arrival concourse. It is only during detailed engineering, that the exact layout for meter & greeters could be demarcated and put for construction.

4.1.3 As per MDP, the baggage handling system shall be designed for Level 1 to Level 4 of security check, however during execution it was decided to incorporate Level 5 also at Mezzanine Level. Due to this change and additional area provided for customs, the overall area has been increased at this level.

4.1.4 M/s MOTT Macdonald had omitted inclusion of forecourt (at departure level) in Major Development Plan. As per clause no. 3.5.6 - theoretical floor area, refer table no 3.5 of MDP, the forecourt area was not at all considered at the time of finalization of Major Development Plan. The same has been included by DIAL while execution.

4.1.5 Apron Level ramp access for baggage & office requirements of ground handling agencies, oil companies & airlines was not considered by M/s MOTT Macdonald while preparing MDP, however it was decided during execution to provide such facilities in Terminal area.

4.1.6 As per clause no C1.9.1, Chapter C - Master Planning of IATA, average floor area/PHP is 45. IATA have mentioned average value of 45 by considering floor area/PHP of few airports in Asia & Pacific Region. The average figure of 45 does not make anything stringent to be followed by airport operators. IATA also shows the Floor area/PHP for Singapore (SIN) - T3 as 61 and Incheon International Airport (ICN) as 55. IATA have not mentioned anywhere about area to be considered for utilities like sub-stations etc. for calculating floor area/PHP. In modern scenario, utilities are becoming the integral part of Terminal Buildings which are also significantly increasing area of Terminal Building. Moreover, in order to meet the service quality requirements of OMDA, the additional areas have been arrived at during detailed design.

IATA has standards for specific areas of passenger terminal so that in the passenger processing area and in the lounges etc., an acceptable level of comfort and passenger convenience is maintained but it does not have a standard for overall size. These are however IATA standards and not necessarily global benchmarks that all airport terminals are planned and designed for. As a result, there is wide variation on the interpretation of this metrix across the world.

4.1.7 Hence the area for PTB & Piers constructed by DIAL seems to be reasonable.

4.2 Airport Service Building & Airport Connection Building

Airport service building was originally a part of T3 to provide Airport operation control centre and control centre for various systems including IT. But during course of construction, it was decided to construct a separate Airport service building to house various facilities viz IT systems, the Airport operation command and control centre (AOCC), emergency response interaction centre, security operation control and command centre etc. The dedicated building constructed is Ground + Four Floors and having built up area approximately 4400 Sq. M.

The airport connection building is connecting underground metro station, terminal 3 and multi level car parking. The overall area of the building is 9000 Sq. M. This has elevators/inclined travellators for inter-connection.

Total built up area of these two buildings comes around 13400 Sq. M. And the cost as per the CWP given to L&T is ₹ 160 Crore.

4.3 Apron

As per the cost report submitted by DIAL dated March 2010, Apron area shown in preliminary estimates are 7,00,755 Sq. M. which includes 34,200 Sq. M. of unpaved area, whereas the actual works done at site as per the information furnished by DIAL is of 9,47,000 Sq. m. (including unpaved area & turfing). Table no.1 below shows the area actually done at site.

Table No. 1

Description	Rigid Type (in Sq. M.)	Flexible Type (in Sq. M.)	Shoulder Type (in Sq. M.)	Turfing area (in Sq. M.)	Total area (in Sq. M.)
Total net area of main apron	693715	6353	6190	93991	800249
Remote apron 301 to 305	53059				53059
Taxiway 6 & 7 Tie ins	6280	1800	8700		16780
S-taxiway & fillet	12388		4957		17345
Taxiway shoulder strengthening works near main apron		59567			59567
Total	**765442**	**67720**	**19847**	**93991**	**947000**
As per Preliminary Estimates	666555			34200	700755
Variation in Preliminary & Final Quantities	**98887**	**67720**	**19847**	**59791**	**246245**

4.4 ATC & Associated Buildings

As per Approved Master Plan, the commissioning date for New ATC centre/Tower is shown as 2016 in phase III for capacity horizon 2021 (refer Chapter 4, Clause 4.2—Phasing and Migration strategy). However the competent authority, AAI has taken the decision regarding pre-ponement of construction of new ATC Tower and associated area control centre (ACC) from the earlier schedule of 2016 to December 2011 due to operational necessities vide letter nos. F.No. AV.20036/017/2008-AD dated 19-01-2010 and AAI/MC/DIAL-06/DF/2010-11 dated 25-06-2010.

4.5 MLCP in Domestic area

Total Multi Level car parking in front of Terminal T1 required is 1200+800=2000 cars as per MDP (figure 20.3). However the MLCP has not been constructed and open surface parking for 1218 cars, 16 buses and 60 special/VIP cars (total parking for 1294 vehicles) is actually provided.

4.6 Baggage Handling System for T-3

As per Master plan, clause no 13.3 (page no. 13-16), the check- in is arranged in 7 check-in islands, each island having two rows of 13 desks each making a total of 182 desks. In the initial phase only 5 check-in island will be installed along with 5 associated makeup carousels in the baggage hall. As passenger growth begins to absorb check-in capacity the additional 2 check-in islands and associated make up carousels will be installed in the Terminal. The system and Building envelope will be designed to allow for this future provisions to cater for the projected 2016 demand.

Since the Traffic growth was incremental, DIAL has taken the decision to provide 2 nos. additional check in Islands.

Also there was no provision of automatic sortation system in Master Plan/Major Development Plan, but visualizing the air traffic and facilitating passenger movement it was decided by DIAL to provide automatic sortation system for Terminal T-3.

4.7 Control & Monitoring System

There is no provision of control & monitoring system in Master Plan for efficient energy management, however CMS has been introduced as a part of detailed design of the HVAC system.

4.8 Cargo Apron

As per Major Development Plans, six Cargo remote stands in phase 1A were scheduled to be provided by DIAL for the benefit of International traffic. These stands refer to freight operations on completion of the phase 1B passenger terminal development. However the work on these remote cargo stands has not been executed by DIAL since cargo generally comes in the belly of aircrafts and cargo aircrafts handling bulk cargo are not anticipated in near future.

4.9 Rehabilitation & strengthening works of 10-28 Runway

The Rehabilitation and strengthening works of 10-28 Runway are not part of Master Plan. After investigative survey of core analysis, pavement classification index (PCI) and Geotechnical survey, it was decided to carry out Rehabilitation of 10-28 Runway. DIAL has awarded the works to M/s NAPC Limited on competitive bidding basis.

As per the Technical specifications and special conditions issued by DIAL, the Runway has to be designed for a life of 20 years and compliance with code 4E of ICAO, Annexure – 14 (Aerodrome Design Manual). Also as stated by DIAL, the PCN value assessed at approximately 135/F/B/W/T (based on assessment done through COMFAA software by Designer). However, the actual PCN will be assessed by way of HFWD investigations on completion of works on Runway.

The scope of work as per the contract between M/s DIAL and M/s NAPC limited is shown below.

i) The rehabilitation of Runway 10/28 along with the construction of all the Taxiway intersections

ii) The Airfield Ground Lighting for the Runway is also to be re-laid for which the pit and duct system is to be provided by the contractor.

iii) Three sub-stations of (approximately) 500 Sq. M. area each

iv) Drainage along the Runway strip (150 M on either side of the Runway) also needs to be rehabilitated

The Cross-section & Contractual details of rehabilitation works have been furnished by DIAL and it is found that the works undertaken shall be considered as Capitalized expenditure and not a regular maintenance expenditure.

4.10 Project Cost

The cost estimates prepared by DIAL at the time of financial closure were only preliminary cost estimates and not the detailed cost estimates due to lack of detailed drawings.

As per the cost estimates prepared by DIAL at the time of financial closure, the total cost of the Project was earmarked as ₹ 8,975 Crore. However the Capitalized Budget as per the approved major development plan was ₹ 6,756 Crore (Refer chapter no 6, page no 6-1 of MDP).

The Final Project cost worked out by DIAL and submitted to AERA is ₹ 12,718 Crore.

Table no. 2 below shows the Project cost shown in MDP, Project cost at the time of Financial closure and Final Project Cost incurred by DIAL.

PROJECT COST

Table No. 2

Project Cost (T1, T2 & T3)	PROJECT COST AS PER APPROVED MDP (₹ IN CRORE)	PROJECT COST AT THE TIME OF FINANCIAL CLOSURE (₹ IN CRORE)	FINAL PROJECT COST AS PER DIAL (₹ IN CRORE)
Airfield (Runway, Taxiways, etc)	368.80	1,765	2,634
Apron	252.50		
Passenger Terminals (Incl. City side access roads, bridges, etc)	4,098.40	4,669	6,836
Cargo Terminals	22.00	Nil	Nil
Airport Service Building & Airport Connection Building	Nil	Nil	160
General Aviation Terminal	130.00	762	754
Rebuilding of Terminal 1B and Revamping Arrival Terminal	340.00		
Revamping of Terminal 2	105.00		
Total Hard Costs	5,316.70	7,196	10,384
Preliminaries & Other Overheads	244.00	1,279	1,320
Funding Costs (IDC & Lenders Fee)	534.00		
Contingency	512.00		
Upfront Fee paid to AAI	150.00	150	150
Metro	Nil	350	350
Rehabilitation of Runway 10-28	Nil	Nil	110
Delhi Jal Board Infrastructure Funding	Nil	Nil	54
New ATC Tower with Equipment	Nil	Nil	350
Security Capex	Nil	Nil	139
Total Project Cost	**6,756.70**	**8,975**	**12,857**

VARIANCE OF PRELIMINARY ESTIMATED AREA vs ACTUAL CONSTRUCTED FOR TERMINAL BUILDING T-3

Table No 3

Sl. No.	FLOOR AREA	LEVEL (in Mtrs)	AREA AS PER MDP (in Sq. M.)	ESTIMATED AREA (in Sq. M.)	AREA AS PER DIAL (in Sq. M.)	ACTUAL AREA AS PER AUDITOR (in Sq. M.)	VARIANCE (in Sq. M.)	REMARKS
A	**Passenger Terminal Building**							
1	Sub Basement & Basement Level	-8.05, -5.50	**451644**	44784	55738	55738	10954.00	Increase in area due to provision of sub-stations at basement & sub-basement level is accepted, since it has saved cost of cables and utility tunnels otherwise required, if remote sub-stations are provided at site.
2	Arrival Level i/c Meeters & Greeters	+ 0		76429	86314	86314	9885.00	Increase in area due to provision of External concourse/Meeters & Greeters area is accepted, since it was not considered at the time of MDP.
3	Mezzanine Level	+ 5		36106	40420	38506	2400.00	Increase in area due to incorporation of Level 5 in Baggage Handling System and provision of additional area at Mezzanine floor for customs is accepted.
4	Departure Level i/c forecourt	+ 10		57553	66180	66180	8627.00	Provision of Forecourt at Departure level is accepted, since it was omitted at the time of MDP preparation/preliminary design stage.

5	CIP, Office & Hotel Level	+16.00 +20.00 +24.00		46607	55259	46607	0.00	Additional Requirement of food court & retail areas at CIP, Office and Hotel level are not accepted by the Auditor. Hence the cost has been decreased proportionally. **(Refer Note 2)**
	Sub Total of PTB			**261479**	**303911**	**293345**	**31866.00**	
B	**Piers**							
6	Arrival & Departure Level	+6.00 +10.00		173600	174727	174727	1127.00	
7	Apron Level i/c ramp access to baggage hall	+ 0		27400	66669	66669	39269.00	Increase in area due to provisions of Apron Level Ramp access for baggage and office requirement for ground handling agencies, oil companies and airlines is accepted, since it was not envisaged at the time of MDP/Preliminary Design stage.
8	Node Area			7700	8580	8580	880.00	
	Sub Total of Piers			**208700**	**249976**	**249976**	**41276.00**	
	GRAND TOTAL		****451644**	*** 470179**	**# 553887**	**543321**	**73142.00**	

Note 1: * Estimated area at the time of Financial Closure - 4,70,179 Sq. M.
Actual area constructed at site as per DIAL - 5,53,887 Sq. M.
**The area as per MDP is 4,51,644 Sq. M. and is not demarcated level wise.

Note 2: The additional areas have been arrived at during the detailed design, so as to provide the required facilities, in order to meet the service quality requirements as set out in OMDA. As part of project cost, the facilities have been developed for passenger conveniences, though not specifically mentioned in the master plan. Hence cost towards this shall not form basis of determination of development fees.

5.0 COST OVERRUN IN TERMS OF CHANGE IN TECHNICAL SPECIFICATIONS, CHANGE IN SCOPE, QUANTITY VARIANCE AND PRICE VARIANCE:

5.1 Apron

5.1.1 Apron area shown in preliminary estimates are 7,00,755 Sq. M., whereas the actual works done at site as per DIAL is of 9,47,000 Sq. m. (including unpaved area & turfing).

5.1.2 As per Annexure B-13 of Report on Project Cost submitted by DIAL, the total area of Apron is 9,47,000 Sq. m. It has been observed that the area increase is around 2,46,245 Sq. M. from original which includes PQC pavement, flexible pavement, shoulder strengthening and turfing etc. DIAL has worked out unit rate of Apron by considering total cost incurred on Apron package by total area in Sq. M. The rate considered by DIAL to form basis of cost increase in Apron is ₹ 3910/- per Sq. M. which should have been split into four separate sub-components to arrive at total cost increase in Apron.

5.1.3 The cost impact of ₹ 96 Crore shown by DIAL is not technically acceptable and cost variance of ₹ 72.46 Crore is tenable. The amount of ₹ 23.82 Crore is not technically acceptable. The table no. 4 below shows the actual cost impact worked out by Technical Auditor.

Table no. 4

Item	UOM	As per DIAL			As per Technical Auditor		
		Quantity	Rate	Amount	Quantity	Rate	Amount
PQC	Sq M	98887	3910	386648170	98887	4806	475250922
Flexible Pavement	Sq M	67720	3910	264785200	67720	3015	204175800
Shoulder	Sq M	19847	3910	77601770	19847	2120	42075640
Turfing	Sq M	59791	3910	233782810	59791	52	3109132
Total (Amount in ₹)				**962817950**			**724611494**

5.1.4 The rates worked out by Technical Auditor are based on MoRTH Guidelines and prevailing rates of material in Market. The per sq. m. rates of PQC, Flexible Pavement, Shoulder and Turfing are worked out as ₹ 4806, ₹ 3015, ₹ 2120 and ₹ 52 respectively.

5.2 Terminal Building T3

5.2.1 The area of Terminal Building T3 as per approved major development plans (MDP) is 4,51,644 Sq. m. for horizon year 2016 to cater to 34 million passenger per annum. However, the actual area provided as per DIAL is 5,53,887 Sq. m. (Technical Auditor have verified and accepted only 5,43,321Sq. M. as shown in Table No. 3 of this report). It is stated by DIAL that this has been necessitated due to additional area requirement by stakeholders and change in scope during the detailed design that was not envisaged at MDP stage like sub-station, forecourt at departure level, additional area for BHS plant, ramp access to baggage hall at apron level, additional requirement of food court, meters & greeters area and additional staff access etc.

5.2.2 DIAL has indicated an additional cost of ₹ 1015 Crore due to change in area/Volume/specifications. However as per Technical Auditor, the cost variance due to change in area/volume/specification is worked out as ₹ 885.17 Crore. The cost shown by DIAL in their cost report has been decreased proportionately due to reduction in area. This has been shown in Annexure – III of this report.

5.3 ATC & Associated Works

5.3.1 As per Approved Master Plan, the commissioning date for New ATC centre/Tower is shown as 2016 in phase III for capacity horizon 2021 (refer Chapter 4, Clause 4.2—Phasing and Migration strategy). However as stated by AAI vide their letter no AAI/MC/DIAL-06/DF/2010-11 dated 25-06-2010, the competent authority, AAI has taken the decision regarding pre-ponement of construction of new ATC Tower and associated area control centre (ACC) from the earlier schedule of 2016 to December 2011 due to operational necessities.

5.3.1.1 Total height of ATC is 90 meter.

5.3.1.2 As per schedule furnished by DIAL to AAI vide letter no. DIAL/AAI/0277 dated 05-05-2010, the completion of concept design & commencement of detailed engineering by mid June 2010. But no progress has been made on the same by DIAL.

5.3.1.3 Construction schedule of one year for 90 meter high ATC & associated Buildings is highly unlikely.

5.3.2 Since the schedule construction of ATC & associated works is scheduled to start from December 2010, the cost of ₹ 350 Crore should not be considered as part of Project cost.

5.3.3 The same can be considered by Competent Authority for levy of DF only after implementation of ATC and associated Buildings.

5.4 Reinforcement in PTB, Piers & Associated works

5.4.1 Due to increase in area of Passenger Terminal Building & Piers (18% from original area); and change in scope during detailed engineering, the reinforcement steel has increased from 59,203 MT to 1,16,847 MT. This increase is due to under-estimation done by DIAL at the time of financial closure. As stated by DIAL, the Reinforcement was estimated on the basis of thumb rule i.e density of Reinforcement for various structural components multiply by concrete quantity for such components as per industry practice.

5.4.2 DIAL in their Project Cost Report has shown an increase in cost of steel from ₹ 27,000 per MT (considered during preliminary Project cost estimates) to ₹ 43,143 per MT (Avg. escalated cost during construction). However, as per the data provided in Project cost report, the avg. price of reinforcement steel during execution is ₹ 36,660/- per MT. Also as stated by DIAL, the original rate of ₹ 27,000/- per MT is having labour component of ₹ 3000/- per MT towards shifting, cutting, bending and placing of reinforcement. As per Technical Auditor, the maximum rate acceptable towards site shifting, cutting, bending and placing is ₹ 4,000/- per MT only. However, the rate considered for this item under CWP's awarded to L&T is ₹ 7,155/- per MT which is quite a high in Indian Construction Industry practices.

5.4.3 As per the calculation, the impact of price increase is ₹ 156.57 Crore in Terminal and ₹ 17.75 Crore in Air/Land side which is coming together around ₹ 174.33 Crore. However DIAL has claimed an impact of ₹ 210 Crore on increase in cost of steel which is technically not feasible. The table no. 5 below shows actual cost impact worked out by Technical Auditor.

Table No. 5

Item	UOM	Rate (In ₹)			Terminal T-3		Air/Land side		Total Amount
		Initial	Actual	Difference	Quantity	Amount (₹ in Crore)	Quantity	Amount (₹ in Crore)	(₹ in Crore)
Reinforcement Steel	MT	24000	36660	12660	*114618	145.10	13000	16.45	161.56
Cost towards shifting, cutting, bending & placing of Reinforcement	MT	3000	4000	1000	*114618	11.47	13000	1.3	12.77
Total		**27000**	**40660**	**13660**		**156.57**		**17.75**	**174.33**

Note: The average cost of reinforcement steel worked out to ₹ 36,660 per MT (as per annexure -C of Project Cost report) instead of ₹ 43,143 per MT shown by DIAL in their material price variance statement, page no 24 of Project cost report submitted by DIAL.

* The quantity of Reinforcement has been proportionately reduced from 116847 MT to 114618 MT due to reduction in area (refer Table No. 3, page no 22 & 23 of this repoprt)

As per Technical Auditor, the quantity of Reinforcement steel provided for PTB & Piers is found to be reasonable.

5.5 Rehabilitation of 10-28 Runway

5.5.1 The Rehabilitation and strengthening works of 10-28 Runway are not the part of Master Plan. After investigative survey of core analysis, pavement classification index (PCI) and Geotechnical survey, it was decided to carry out Rehabilitation of 10-28 Runway. DIAL has awarded the works to M/s NAPC Limited on competitive bidding basis.

5.5.2 The cost shown by DIAL in the cost report is ₹ 110 Crore. However as per the Auditor's estimation, the actual cost worked out to be ₹ 90 Crore. Hence the amount of ₹ 90 Crore is tenable for Rehabilitation of 10-28 Runway.

5.5.3 The cost worked out by Technical Auditor are based on MoRTH Guidelines and prevailing rates of material in Market.

5.5.4 As reported by DIAL on 26th August 2010, the physical progress achieved at site is around 88%.

5.6 Upfront Fee Paid to AAI

5.6.1 As per OMDA clause no 11.1.1, "the JVC shall pay to AAI an upfront fee of ₹ 150 Crore on or before the effective Date. It is mutually agreed that the upfront fee is non-refundable and payable only once during the term of this agreement".

5.6.2 As per state support agreement- clause no 3.1.1, it is clearly stated that "the upfront fee payable by JVC to AAI under OMDA shall not be included as part of costs for provision of Aeronautical Services and no pass-through would be available in relation to same".

5.7 Benchmarking Report

5.7.1 As per the Bench marking report submitted by M/s Jacobs, the Project cost benchmarked for Terminal T-3 is US $ 1789 Million (₹ 8945 Crore).

5.7.2 The bench marking done is in association with four other similar types of recent International airports which are already in operation is shown below. The table no. 6 below shows the actual cost of IGIA, Delhi vs recent constructed International Airports.

Terminal Costs in US $ (Conversion factor : 1 US $ = ₹ 50)

Table No 6

Overall Cost Parameters	BKK (Bangkok)	KUL (Kuala Lumpur)	PEK (Beijing)	LHR (London Heathrow)	MAD (Madrid)	DEL Estimate of IGIA, Delhi	Actual Cost of IGIA, Delhi
Terminal Design Capacity (mppa)	45.0	25.0	43.0	28.0	42.0	34.0	-
Floor Area (in Sq. M.)	563000	479404	900000	353020	757000	553887	-
Total actual cost (in million US $)	2800.00	1600.00	3800.00	4100.00	2948.20	1789.00	1367.20
Actual cost per mppa (in million US $)	62.20	64.00	88.40	146.40	70.20	52.60	40.21
Actual Cost/m2 of GFA (in US $)	4973.40	3337.50	4222.20	11614.10	3894.60	3563.80	2468.37

6.0 ASSESSMENT OF POSSIBLE TECHNICAL ALTERNATIVES APPLIED TO CONTAIN THE COST OVERRUN

As reported by DIAL, there are instances of alternate approach, methods, design parameters, reduced material quantity, optimum plans used by DIAL for cost containment. A few attempts made by DIAL are shown below.

6.1 The length of service tunnel has been reduced from 1.8 KM to 525 M.

6.2 In fire detection and protection works, the cost has been reduced by adapting ductile iron pipes instead of HDPE pipes and optimization of gas suppression system.

6.3 The earlier proposed Granite flooring in Piers has been replaced by Carpeting & screed concreting.

6.4 The strategy of combination of local make with foreign make for electrical high end fittings have saved cost to DIAL.

6.5 Various optimization measures including change of cable to aluminium from copper for HT and change of combination of digital automatic light intensity controller have been taken to bring the cost component down.

6.6 For Finishing items, rationalization of specification has been done to contain the cost overrun.

7.0 ASSESSMENT OF PROJECT MANAGEMENT TECHNIQUES USED BY DIAL

7.1 DIAL has standardized tendering/procurement guidelines (as shown in Commercial, Contracts and Procurement Manual as per ISO 9001:2000) for each stage relating to short listing of vendors, techno-commercial evaluation, price opening of techno-commercially successful bidders and recommendation of award to successful bidder. At no stage the detailed estimation has ever been done by DIAL. The standardized procedure for Contracts & procurement shows that estimation has to be done by the contractor, DIAL will only review the estimates prepared by agencies.

7.2 There was a system defined for finalizing Contractor's work portion (CWP's) in Commercial Contract and Procurement Manual. L&T used to submit estimation for Direct & Indirect Cost which were further reviewed and refined by DIAL on the basis of their observations. The rate analysis provided by the contractor were further negotiated by DIAL.

7.3 The indirect cost content considered by L&T for various CWP's was high. The percentage of Indirect cost considered for various CWP's is varying from 11% to 16.5%. As per Auditor's assessment, it should have been kept between 10-12%. More detailing should have been done at the time of awarding the packages to agency. Neither DIAL nor PMC have verified the actual expenditure for Indirect cost.

7.4 Tendering has been done by L&T along with DIAL team for all the Sub-contract Packages (SCP's). However, no estimation has done either by DIAL or L&T. Negotiations had been done with all the techno-commercially successful bidders are on random basis and didn't have DIAL's own supporting cost estimates to yard stick the quotes given by Sub-contractors.

7.5 Under the unique administrative model evolved by DIAL to prepare DOP, the company has delegated all the powers to the Managing Director of DIAL. The recommendation for all major CWP has been approved by the Managing Director. No other member from JVC was given such power.

7.6 There was no regular monitoring of cost by PMC, though it is clear in clause no. 12.7 of PMC scope of services, schedule 2 of PMC agreement with DIAL which clarifies that PMC has to provide cost control advice. In that case, a separate Cost Consultant should have been appointed by DIAL to monitor the followings.

7.6.1 Give early warning of any actual and potential variance in the overall and/or individual project costings

7.6.2 Maintain overall and/or individual project cost control systems/budget control software systems

7.6.3 In relation to Project contracts, prepare cost reports showing the original budget, revised outcome estimate and variance for each budget item

7.7 As stated by DIAL, the man months required for Design of different components of Airport exceeded the estimated design efforts considered during agreement with L&T. This implies that there has been extra expenditure incurred by DIAL on design. The actual man months has been evaluated by experts from DIAL and also validated by their PMC. Accordingly, an additional payment of ₹ 153 Crore was made to the contractor for increase in scope. This has been explained by DIAL during their response to checklist 3 (version date 09 June 2010)

7.8 DIAL was planning to subcontract the entire works of IT system to a single entity, who was supposed to integrate 12 different systems (for which approved Vendors had been specified), but DIAL could not get the techno-commercial evaluation done for such a huge network. Finally after a gap of one year they had realized that it is not possible to award this work to one organization and modified their strategy to award the works of IT system to various agencies who are specialized in their proven field. They procured different systems from different contractors and got it integrated by a single agency. This has delayed the start date of IT activities.

7.9 The contractor had designed the foundation design of Passenger Terminal Building as Pile foundation but did not consider the ground water table available around the site. Based on the above consideration, the design had to be modified from Pile foundation to Raft foundation.

8.0 RECOMMENDATIONS

8.1 There is a need to develop a suitable mechanism at the national level for Projects of this nature so that accountability issues such as Cost Overrun are not placed at unreasonable risk in the interest of Project expediency.

8.2 The company should formulate and manualise the guidelines relating to estimation & Costing of the Project. Management shall review Project Cost quarterly and take the immediate course of action for any variation.

8.3 The company should evolve a system of finalizing the cost estimates before inviting the bids to maintain transparency and to ensure reasonableness of the offers received.

8.4 The company needs to further strengthen its system of processing of bids to bring the Project cost further down.

8.5 The Project cost including design should have been capped to avoid cost overrun, but unfortunately no steps have been taken to contain Project cost. The Auditors advise the implementing agencies to cap the Project cost in future for such type of Mega Projects.

8.6 The risk involvement and efforts required for CWP (contractor's work portion) and SCP (sub-contract package) are entirely different, however DIAL has kept same 20.20% fee structure for both types of contracts to be executed by L&T. The fee for SCP should have been kept around 10%.

8.7 Independent Cost Consultant should have been appointed right from beginning of the Project who would have been held responsible for cost overrun. They should have given triggers of cost overrun during different phases of the project implementation.

9.0 ACKNOWLEDGEMENT

9.1 Audit team acknowledges the advice given by AERA/AAI from time to time for compiling this study.

9.2 Audit team acknowledges the co-operation and assistance provided by DIAL management at all levels at various stages of the audit.

10.0 CONCLUSION

The development of the airport has been done by a consortium, which has members who have proven technologies in their respective fields of Project implementation and has accordingly contributed towards achieving this cherished goal. The cost incurred on the Project is somehow high but is in limit as provided in Benchmarking report. However there are few instances in the Project execution where Auditors found the cost is high.

The major cost increase is due to increase in area/volume of the facilities & increase in prices of the material during the course of Project execution. The area of Passenger Terminal Building & Apron has increased from original estimates.

The Project was linked with Common Wealth Games, due to which the penalty clauses formulated in OMDA were exceptionally high. The concessionaire would have paid a lot of money against penalty, had they failed in completing the works as shown in MCP. The Project duration has been crashed by adopting Design-Build approach strategy which have resulted into risk sharing among Main contractor and sub-contractors. The risk premium of all major contributors in the Project implementation is remarkably high which has been shared by DIAL in totality. It seems that the Main Contractor, sub-contractors/vendors have worked out their rates by considering a substantial risk premium.

There is likely to be significant investment in development of International Airport in the years to come and future phases of development of IGIA which shall be carried out with more emphasis on cost control. The major variation in area/volume /specifications during execution of any similar Project shall be got approved from MoCA/AAI before actually implementing it on ground. The cost estimates should be ready with the developer before floating NIT or calling quotations from competitive bidders.

ANNEXURE - V

KPMG

STRICTLY CONFIDENTIAL

Airports Authority of India

Review of DIAL's final project cost estimate

Final Report

15 October 2010

STATEMENT OF CONFIDENTIALITY

1. This report has been prepared by KPMG Advisory Services Pvt Ltd ('KPMG'), an Indian limited liability company and a member firm of the KPMG network of independent member firms affiliated with KPMG International, a Swiss cooperative.
2. This report is provided to Airports Authority of India ('AAI') and Airport Economic Regulatory Authority of India ('AERA'), pursuant to the Award Letter (AAI/MC/DIAL-06/DF/2010-11/118, dated 12 May 2010) issued by AAI. It is subject in all respects to the terms and conditions of the said letter and of the proposal submitted by KPMG to AAI, including restrictions on disclosure of the contents of this report, in part or full, to third parties.
3. If this report is received by anyone other than AAI and AERA, the recipient is placed on notice that the attached report has been prepared solely for our clients for their own internal use. This report and its contents may not be shared with or disclosed to anyone by the recipient without the express written consent of AERA, AAI and KPMG. KPMG shall have no liability, and shall pursue all available legal and equitable remedies against the recipient, for the unauthorized use or distribution of this report.

ABBREVIATIONS USED

AAI: Airports Authority of India
ACCC: Australian Competition and Consumer Commission
AEL: Airport Express Line
AERA: Airport Economic Regulatory Authority
ASPAC: Asia Pacific
ATC: Air Traffic Control
BAA: British Airports Authority
BHS: Baggage handling system
BKK: Suvarnabhumi International Airport
CIQ: Custom, Immigration & Quarantine
CWIP: Construction work in progress
CWP: Contractor's Work Portion
DEL: Indira Gandhi International Airport
DF: Development Fee
DIAL: Delhi International Airport Private Limited
DMRC: Delhi Metro Rail Corporation
DXB: Dubai International Airport
EIL: Engineers India Limited
EPC: Engineering, Procurement and commissioning
GFA: Gross Floor Area
GoI: Government of India
GoNCT: Government of National Capital Territory of Delhi
HKG: Hong Kong International Airport
IATA: International Air Transport Association
ICN: Incheon International Airport
IDC: Interest during construction
IDP: Initial Development Plan
IE: Independent Engineer
IGIA: Indira Gandhi International Airport
JVC: Joint Venture Company
KUL: Kuala Lumpur International Airport
L&T: Larsen & Toubro Limited
LHR: Heathrow Airport
MAD: Madrid Barajas Airport
MCP: Mandatory Capital Projects
MDP: Major Development Plan
MIS: Management Information System
MoCA: Ministry of Civil Aviation
mppa: Million Passengers per Annum
NASA: National Aeronautics and Space Administration, USA
OMDA: Operation, Management and Development Agreement
PBB: Passenger boarding bridge
PCN: Pavement Classification Number
PEK: Beijing International Airport
PHP: Peak Hour Passenger
PMC: Project Management Consultant
PPP: Purchasing power parity
PSF: Passenger service fee
SCP: Sub Contractors Package
SIN: Singapore Changi International Airport
SKU: Stock keeping unit
SSA: State Support Agreement
T3: Terminal 3
TAV: Tepe Akfen Vie
USD: United States Dollar

TABLE OF CONTENTS

I. CONTEXT SETTING

Background

1. Delhi International Airport Private Limited ('DIAL') is responsible for operating, maintaining, developing, designing, constructing, upgrading, modernizing, financing and managing the Indira Gandhi International Airport ('IGIA'), New Delhi. A brief chronology of events related to IGIA's development program ('the Project') is as follows:

S No	Date	Milestone
1	4 April 2006	OMDA Signing Date
2	3 May 2006	Takeover of airport and various facilities
3	7 Aug 2006	DIAL Board gives approval to proceed on 'design and build' using 'cost plus' payment approach
4	26 Sep 2006	Submission of Master Plan/ MDP
5	7 Dec 2006	Board Approval for award of T3, runway and associated works contract to L&T
6	9 Dec 2006	Signing of T3 Contract with L&T
7	7 Dec 2007	Financial Closure (Estimated project cost = ₹ 8,975 Cr)
8	21 Aug 2008	Inauguration of New Runway 29-11
9	21 April 2009	Completion of Terminal 1D
10	31 Mar 2010	Completion of T3-Terminal development

2. As per the Master Plan (Dec 2006), the estimated project cost was ₹ 6,756 cr. DIAL's letter to AAI dated 18 January 2008 indicated a project cost estimate of **₹ 8,975 cr** for Phase I of the Project. The financial closure was done on this amount. The breakup of the same is as follows:

S No	Description	Amount (₹ cr)
1	T1, T2 & initial CWIP	762
2	Runway/taxiway/apron/lighting	1,765
3	Terminal 3 and Associated Buildings	4,669
4	Preliminary, Preoperative and IDC	1,279
5	Delhi Metro	350
6	Upfront payment to AAI	150
	TOTAL	**8,975**

3. Ministry of Civil Aviation ('MoCA'), Government of India ('GoI') vide order dated 9 February 2009 (number 24011/002/2008-AD) allowed the levy of Development Fee ('DF') on departing passengers at IGIA, subject to DIAL submitting final project cost estimate within six months of the commencement of levy. In the said order, the project cost estimate of ₹ 8,975 was treated as the baseline.
4. DIAL submitted the final audited project cost of the Project to Airport Economic Regulatory Authority of India ('AERA') vide letter dated 31 March 2010. The amount is **₹ 12,718 cr**. The variation between the estimated and final project cost is **₹ 3,743 cr**.

5. As per DIAL, the breakup of the final project cost estimate is as follows:

S No	Description	Amount (₹ cr)
1	T1, T2 & initial CWIP	754
2	Runway/taxiway/apron/lighting	2,634
3	Terminal 3 ('T3') and Associated Buildings	6,836
4	Preliminary, Preoperative and IDC	1,320
5	Delhi Metro	350
6	Upfront payment to AAI	150
7	Airport Services Building & Airport Connection Building	160
8	Rehabilitation of Runway 10 – 28	110
9	Delhi Jal Board infrastructure funding	54
10	New ATC Tower with Equipment	350
11	**TOTAL**	**12,718**
12	Initial project cost estimate (18 Jan 2008)	8,975
13	**Difference**	**3,743**

6. Airports Authority of India ('AAI') vide its letter dated 12 May 2010 engaged KPMG Advisory Services Private Limited ('KPMG') to review DIAL's final project cost with a view to assess the reasonableness of the same from a management process perspective.

KPMG's Scope of Work

7. Assess whether industry good practices and the provisions of any relevant agreements with GoI/AAI were duly followed by DIAL in:
   a. Procurement of goods and services (e.g. procurement planning, rationalization of number of SKU's, bulk purchasing, competitive bidding, price negotiations etc.)
   b. Appointing the project implementation team with relevant skills and experience.
   c. Maintaining a comprehensive MIS to highlight the projected and actual cost overrun.
   d. Identifying mid-course corrections to arrest the cost over run and implementing the same in a proactive manner.
   e. Informing MoCA, AAI and DIAL's Board of Directors, in advance, about projected cost over run and seeking their advice to mitigate the same.
   f. Assist the Authority in the deliberations regarding proposal made by DIAL, based upon their audit of the project cost.

KPMG's Scope exclusions

8. The following activities did not form part of KPMG's scope of work:
   a. Due diligence of the master plan for IGI Airport.
   b. Review of the original funding plan of DIAL and making any recommendations thereupon.
   c. Conducting physical visits to DIAL premises and carrying out physical inspections and/or financial audit.
   d. Revalidating any projections submitted by DIAL.
   e. Conducting any assessment of design, engineering and technical issues and making any recommendations thereupon.
   f. Legal vetting of government covenants/agreements/contracts.

g. Responding to any request for information/clarification/explanation by any entity, other than the client
h. Updating of any deliverable after the conclusion of the engagement
i. Providing duty of care to any entity, other than the client.
j. Providing any service not specifically mentioned in the 'Scope of Work'.

9. KPMG has carried out the study in co-ordination with Engineers India Limited (EIL), appointed by AAI as the Technical Auditor for the same purpose.
10. As per letter dated 20 July 2010, DIAL has informed that MoCA has not allowed funding of cost of baggage handling system ('BHS') up to screening stage and the cost of boundary wall, through the PSF security component. These need to be added to the project cost. This has, therefore, increased the project cost by ₹ 139 cr to **₹ 12,857 cr**. The project cost increase over the initial estimate of ₹ 8,975 is **₹ 3,882**.

II. KPMG's APPROACH

Coverage of the study

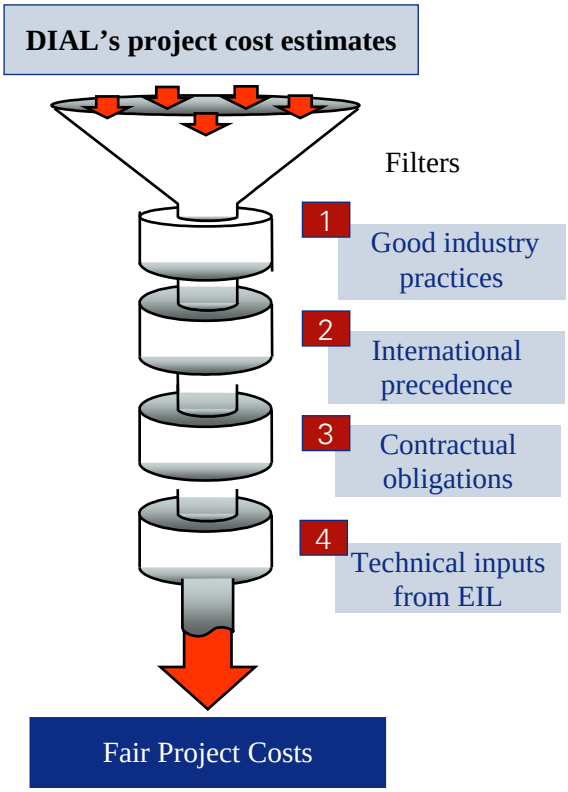
11. The key aspects studied by KPMG under each stage of the project are as follows:

Plan	Design	Procure	Execute	Monitor
• As given (Master Plan)	• Covered by EIL	• Contracting • Bulk procurement • Negotiations • Order quantity • Vendor base • Compliance • Group entity	• Team • Reporting • Controls • Communication • Compliance • Non - MCP • Responsiveness	• MIS -Schedule -Costs • Accuracy • Variance

12. As per provisions of the OMDA, the Master Plan for IGIA has been duly approved by AAI. It is therefore taken as given and has not been commented upon. The airport design and other technical aspects (including quantity variance and price variance) have been analyzed by EIL.
13. The broad approach followed by KPMG to analyze the above mentioned areas is as shown below:

Plan	Research	Analyze	Discuss	Report
• Approach • Timelines • Evaluation criteria • Information Checklist	• Comparable projects -Features -Risks -Cost -Processes • Good practices	• Deviations • Monitoring & Control • Key management decisions • Compliance with contract provisions • Communication • Implementation • EIL observations	With • EIL • AERA • AAI • DIAL	• Deviations from contracts • Deviations from good practices • Acceptable cost variation from a process perspective

14. The key evaluation filters used to review DIAL's processes and procedures are as shown below:



Contextual framework of our approach

15. Defining the "prescribed process": Since the OMDA does not provide a clearly prescribed process for review of capital expenditure, we summarize below the broad range of options, and highlight our assumption on the implicit approach. This is important because our evaluation of "actual process" has to be against the context of the "prescribed process".
16. Following are the two broad set of approaches that regulators use in approving investments (sometimes a combination of these is also used)
    a. Ex-ante determination, with prescribed mechanisms for true-ing up for "uncontrollable variations"
    b. Ex-post determination, with prescribed mechanisms (like audit to determine actual spend, prudency test, use of competitive processes, etc)
17. According to Schedule 21 (b) of OMDA, one of the duties of the Independent Engineer appointed jointly by AAI and DIAL is to "…review the benchmarking exercise carried out by JVC for the project specifications and cost against national and international airport projects of similar scope and nature so as to avoid padding of costs and/ or gold plating". The Benchmarking Report was submitted by Jacobs Consultancy in Feb 2009, by when part of the contracting had been accomplished.
18. The underlying approach in the OMDA therefore appears to be one of ex-post determination. The risks inherent in the same are as follows:
    a. There can be wide variation in views on what was to be delivered (the physical infrastructure) and the appropriate cost for it. This is visible in the wide range of opinions possible regarding

IGI Airport – satisfaction of having a world class airport and dissatisfaction at increase in project cost

b. It provides no commonly accepted baseline (neither cost, nor process) for the regulator (who needs to ultimately have a project cost for determining the Regulated Asset Base and hence tariffs) to assess the "actual" against. It hence necessitates an ex-post determination of the "desired" process/outcome.

19. That ex-ante is a better approach over ex-post determination has been voiced by many practitioners. For instance, the Australian Competition and Consumer Commission (ACCC) intends to shift from a ex-post prudency test to a forward-looking firm ex-ante cap approach when regulating energy markets. Under this new approach, an assessment of investment needs will be made at the start of the price control period, and incorporated into estimated required price levels. At the end of the price control period, the ACCC will roll into the asset base the lesser of the actual investment or the estimate made at the start of the price control. It will not engage in a detailed assessment of the individual investments made as part of the ex-post review. Any expenditure above the cap level will require additional justification.[1]

20. In applying the ex-post approach in the present context, our review has been done along two streams:

a. assessment of final project cost estimate, covered in Chapter III; and

b. assessment of the process followed in arriving at the final project cost estimate, covered in Chapter IV.

Activities undertaken

21. KPMG held meetings with senior management of AERA, AAI and DIAL, reviewed Project documents and conducted extensive research. KPMG's analysis is based on a review of the following key documents:

a. DIAL's submissions to AERA in March 2010 including its Project Cost Report.

b. Responses to KPMG's information checklists (Annex 6) along with supporting information that included:

i. Master Plan and Major Development Plans of IGI Airport

ii. Correspondence between stakeholders including DIAL, AAI and MoCA.

iii. Jacobs Consultancy's ('Jacobs') Benchmarking Assessment Report ('Jacobs Benchmarking Report') submitted on February 2009

iv. Jacobs Terminal Benchmarking Analysis Report ('Jacobs Terminal Benchmarking Report') submitted on September 2010

v. Comments from AAI's Independent Engineer

vi. Comments from DIAL's Project Management Consultant ('PMC').

vii. Contract between DIAL and L&T

viii. Agreements between L&T and sub contractors for sub contracted packages

22. The list of all documents reviewed for the purposes of our analysis is presented in Annex 1. KPMG's team visited the Project site on 17 May, 21 May, 1 June and 23 June 2010 to review documents and to hold discussions with DIAL management.

[1] John Willet, Commissioner, ACCC, July 2004

III. ASSESSMENT OF FINAL PROJECT COST

23. DIAL's final project cost estimate needs to be assessed in two parts, namely whether the most appropriate techno-commercial solution was designed for meeting the requirements in OMDA, and whether it was delivered in the least cost manner. This primarily requires a technical assessment, and accordingly EIL has been engaged to answer these. We have provided the following assessments on this question, which can provide inputs into EIL's final assessment.
24. Based on such assessment, one would need to take a view on which factors are to be considered "controllable" and which are to be considered "uncontrollable" (which could be a potentially debatable exercise, given that this classification is being done post-facto).
25. There are certain cost elements included in DIAL's application, which do not merit inclusion in the present project cost, in the context of the present capital expenditure approval regime. These are:
    a. Costs not already incurred – this would be consistent with the current approach of ex-post assessment, and such costs should be considered after they have been incurred, or until a different capital expenditure approval regime is put into place
    b. Costs disallowed by the OMDA/SSA.
    c. Costs disallowed as per accounting standards
26. Cost not already incurred
    a. ATC Tower and Technical Block (Cost = ₹ 350 cr):
        i. As per letter from MoCA to AAI dated 19 Jan 2010, DIAL would bear the cost of shifting of ATC tower and its associated facilities at an approximate cost of ₹ 350 cr. This cost is yet to be incurred.
        ii. Cost of ATC Tower and Technical Block (₹ 350 cr) should be excluded from the Project cost.
    b. Other costs not incurred as on date (₹ 297 cr) :
        i. DIAL has included provisions for contingencies (₹ 100 cr), expenditure for operational requirements (₹ 27 cr) and other pending works (₹ 170 cr). As per accounts audited by M/s Brahmayya & Co, this expenditure has not been incurred as on 28 Feb 2010.
        ii. A certificate has been submitted by M/s Brahmayya & Co that states that contracts/works awarded subsequent to Project cost audit and review report and additional expenditure during construction period till 31 Jul 2010 is ₹ 285.34 cr.
        iii. Since the submission by DIAL for approval of Project Cost is based on cut-off date of 28 Feb 2010, contracts awarded and expenditure incurred beyond this date is not included in this review.
27. Costs disallowed by the OMDA/SSA
    a. Upfront fee to AAI (₹ 150 cr):
        i. As per clause 3.1.1 of State Support Agreement, "… The Upfront Fee and the Annual Fee paid/payable by the JVC to AAI under the OMDA shall not be included as part of costs for provision of Aeronautical Services and no pass-through would be available in relation to the same."
        ii. The upfront fee of ₹ 150 cr should be excluded from the Project cost.

28. Costs disallowed as per accounting standards
    a. Rehabilitation of Runway 10-28 (Cost impact = ₹ 110 cr):
        i. DIAL classifies this cost as capital expenditure as per Accounting Standard 10. As per paragraph 12.1 of Accounting Standard 10, "Only expenditure that increases the future benefits from the existing assets beyond its previously assessed standard of performance is included in the gross book value." This implies that the incremental expenditure, over and above the cost of normal repairs, that leads to an increase in the runway's life or load bearing capacity beyond its original design specifications can be capitalized.
        ii. The Pavement Classification Number (PCN) of Runway 10-28 had decreased from a design level of 106 to 99. Post rehabilitation, the PCN is estimated to increase to 135. EIL has estimated the fair cost of rehabilitation for upgrading to PCN standard 135 as ₹ 90 cr based on technical grounds. Based on the above, ₹ 17.5 cr can be considered as the proportionate amount spent on rehabilitation of runway to initial PCN value [2] and the balance ₹ 72.5 cr (90 less 17.5 equals 72.5) can be treated as fair project cost.
        iii. An amount of ₹ 37.5 cr (110 less 72.5 equals 37.5) may therefore be excluded from the Project cost. Of this ₹ 17.5 cr may be treated as operating expense in the financial year in which it is incurred.

29. A summary of cost elements that can not be included in DIAL's project cost estimates is as follows:

S No	Cost head	Proposed exclusion (₹ cr)	Rationale
1.	Upfront Fee paid to AAI	150	As per SSA, upfront fee is not a pass-through expenditure
2.	Rehabilitation of runway 10-28	37.5	₹ 20 cr excluded by EIL on technical grounds. Balance ₹ 17.5 cr can be claimed as operating expense (subject to statutory audit) in the financial year in which it is incurred
3.	ATC Tower	350	Fixed cost contracts not entered into by DIAL as on 28 Feb 2010.
4.	Provisions	297	Fixed cost contracts not entered into by DIAL as on 28 Feb 2010.
	Total	**834.5**	

30. Benchmarking of T3 with comparable global airports:
    a. Benchmarking for purpose of arriving at an allowable project cost is a fairly specialized exercise, requiring prudent choice of comparators and careful normalization of various cost drivers. Such an exercise is beyond the scope of our work. We have done a high level review of the benchmarking inputs to assess whether there appears to be significant variations, and whether there seems to be a need for a more detailed and specific benchmarking exercise. .
    b. The Jacobs Benchmarking Report benchmarked T3 at IGI Airport (IATA code 'DEL') against comparable, recently executed airport projects, namely – Suvarnabhumi International Airport

[2] Original PCN = 106; pre-rehabilitation PCN = 99; post-rehabilitation PCN = 135. Amount spent = ₹ 110 cr. Amount approved by EIL = Rs 90 cr. Proportionate amount to be treated as operating cost = 90*(106-99)/(135-99) = ₹ 17.5 cr

('BKK'), Beijing International Airport ('PEK'), Heathrow Terminal 5 ('LHR'), Kuala Lumpur International Airport ('KUL') and Madrid Barajas Terminal 4 ('MAD').

c. A further submission by Jacobs Consultancy has also benchmarked T3 area against Dubai International Airport Terminal 3 ('DXB'), Hong Kong International Airport Terminal 1 ('HKG'), Incheon International Airport Terminal ('ICN') and Singapore Changi International Airport Terminal 3 ('SIN').

d. As per Jacobs Benchmarking Report, the construction of T3 was completed in 3.1 years while the median construction period of other benchmarked airports is 5 years.

	BKK	**PEK**	**LHR**	**MAD**	**KUL**	**Median**	**DEL**
Construction period (Yrs)	5.0	4.3	6.0	5.8	4.5	5.0	3.1

Source: Jacobs Benchmarking Report

e. The development of a new terminal at a brownfield airport within the short timeline is a commendable achievement. The achievement is significant, given the large number of government and private agencies involved in the project and the various approvals and clearances required for a project of this magnitude.

f. The terminal has been constructed to ensure IATA level of service 'C' standards as per the OMDA. IATA norms are global quality benchmarks for international airports to ensure passenger convenience and are used worldwide for designing airports.

g. As per the Jacobs Benchmarking Report, the facilities provided at T3 are in line with other benchmarked airports around the world on a per Peak Hour Passenger ('PHP') basis. The benchmarked airports, themselves, are ranked among the top 16 airports in the world by Skytrax.

S No	**Facility**	**BKK**	**PEK**	**LHR**	**MAD**	**KUL**	**Median**	**DEL**
1	Contact Stands	51	66	60	64	46		48
2	Contact Stands per 1000 PHP	4.6	4.6	8.4	3.6	5.3	4.6	5.1
3	Check in counters (excluding self service)	360	292	54	174	216		196
4	Check in counters per 1000 PHP	33	20	8	10	25	20	20
5	Baggage claim belts	27	17	11	20	12		14
6	Baggage claim belts per 1000 PHP	2.5	1.2	1.5	1.1	1.4	1.4	1.5
7	Short term parking	6,100	7,000	3,800	9,000	6,206		4,300
8	Parking per 1000 PHP	554	487	531	500	712	531	455

Source: Jacobs Benchmarking Report, Jacobs Terminal Benchmarking Report

h. As per the Jacobs Benchmarking Report, the total adjusted cost for T3 (after adjusting for foreign exchange rate, inflation, project duration; and purchasing power parity multiplier applied to a part of the project cost) is the lowest while per unit (PHP) adjusted cost for T3 lies within the range of the benchmarked airports.

S No	Cost	BKK	KUL	PEK	LHR	MAD	Median	DEL
1	Adjusted Costs (2008, USD mn)	3,354	3,080	4,213	4,151	3,353	3,354	2,496
2	Cost/Area (2008, USD/sqm)	5,957	6,423	4,681	11,758	4,429	5,957	4,506
3	Cost/100 PHP (2008 USD mn)	30	35	29	58	19	30	26

Source: Jacobs Benchmarking Report, Jacobs Terminal Benchmarking Report

i. As per the Jacobs Benchmarking Report, the purchasing power parity (PPP) multiplier (3.218 as per IATA ADRM 2004) has been applied to DIAL's cost of perimetric works and shell and core works, in the above comparison. These form around 39% of the project cost.

j. According to Jacobs Benchmarking Report, while labour in India might be markedly cheaper than in the UK and Europe, the cost of any specialized automated and other airport specific systems are comparable across the world. Hence the PPP multiplier has not been applied to cost of fit-outs (55% of project cost) and baggage handling system (BHS) costs (6% of project cost).

31. Gross Floor Area (GFA) of Terminal 3:

The cost of procurement of goods and services for the Project is closely linked to the size and scale of T3. Though commenting on design and engineering related issues are outside KPMG's scope of work, at a macro level, it is important to study how the GFA of T3 was finalized over time and how it compares with global standards. The analysis below and the response from DIAL need to be subjected to technical analysis by EIL.

a. As per Major Development Plan (MDP) dated December 2006, the GFA for T3 was estimated as 451,644 sqm for 34 mppa capacity.

b. DIAL has indicated that they received around 700 drawings at the MDP stage. The GFA calculated from these drawings worked out to 470,179 sqm. Initial project cost estimates for the purpose of financial closure were therefore based on 470,179 sqm. Given the design Peak Hour Passenger (PHP) capacity of 9,450 for T3, the GFA works out to around 50 sqm/ PHP.

c. As per DIAL's letter to AAI (dated 18 Jan 2008) the GFA had to be enhanced to 500,000 sqm to handle a capacity of 37 mppa (against the mandated capacity of 34 mppa). The corresponding project cost was ₹ 8,975 cr. Using DIAL's estimates as above, the GFA for a terminal with capacity of 34 mppa should have been 460,000 sqm, using simple approximation.

d. As per DIAL's project cost report (dated March 2010), GFA has increased from 470,179 sqm to 553,887 sqm. The corresponding capacity is stated as 34 mppa. The GFA works out to around 59 sqm/PHP.

e. Jacobs Benchmarking Report submitted in February 2009 had mentioned PHP of PEK as 24,000. However, in its second submission (Jacobs Terminal Benchmarking Report) the PHP of PEK has been reduced to 14,360. With a PHP of 24,000 the median GFA of benchmarked airports was around 51 sqm/PHP.

f. DIAL's letter to AERA dated 09 September 2010 mentions the reasoning provided by Jacobs for the difference in PHP of PEK. According to Jacobs, 24,000 PHP is the planned PHP figure for the ultimate build out to cater to between 65-70 mppa and would be finalized in the next master plan. However, it is not clear from Jacobs' submission whether the incremental increase in capacity from 43 mppa to 65-70 mppa would also require an increase in GFA or would it be a result of efficient use of the existing terminal area.

g. Jacobs Terminal Benchmarking Report mentions that airports have variation in facilities due to economic and political drivers that drive regulations in each nation. Countries such as United Arab Emirates and China have political systems which are in wide contrast with India. For instance Dubai T3 and Heathrow T5 were completed in the same year (2008) and have the same design capacity (28 mppa). While Dubai's design PHP is around 19% greater than LHR T5, its GFA is nearly 235% larger than that of the latter. If one excludes Dubai and Beijing airports as benchmarks, the median GFA/PHP works out to 51.2 sqm/PHP.

h. At a macro level, without any detailed technical analysis, the GFA for T3 floor area under different scenarios is as follows:

S No	Reference	sqm/PHP	GFA for T3 (sqm)
1	Airports in ASPAC region (IATA Manual)	38	430,666
2	DIAL's letter to AAI, dated 18 Jan 2008, adjusted for 34 mppa	49	460,000
3	Jacobs Benchmarking Analysis (9 leading airports)	54	510,300
4	Jacobs Benchmarking Analysis excluding DXB and PEK	51	483,840
5	T3 Master Plan (Dec 2006)	50	470,179
6	**Actual Gross Floor Area of T3 (Mar 2010)**	**59**	**553,887**

i. DIAL has indicated that one of the reasons why T3 size exceeds IATA standards is that the OMDA requirements are stricter than IATA Standards. Schedule 1 of the OMDA requires the design of T3 to conform to best practices set out in IATA Manual. Service quality requirements are laid down in Schedule 3 of OMDA. Comparison of the two standards (OMDA and IATA) indicates that on one parameter, OMDA requirement exceeds the IATA guideline. For passengers at the departure gate, OMDA mandates 80% seating available to passengers as compared to 70% in the IATA Manual. The impact of this parameter on GFA of T3 may be ascertained technically by EIL. The comparison between OMDA requirements and IATA standards is presented in Annex 2.

j. The actual GFA of T3 – 553,887 sqm – exceeds the Master Plan mandated GFA of 470,179 sqm by 83,708 sqm. The increase in GFA has led to increase in the Project cost. No prior approval was taken from the DIAL Board for the same. The DIAL Board was apprised of the increase in GFA and the cost variation thereof by way of the Project Cost Report in March 2010.

k. As per DIAL, the GFA for T3 has been increased on account of shifting of power sub-substations inside T3, providing a larger area for 'meeters and greeters' and providing additional office space for airline and ground-handling staff at each contact gate. Further, according to DIAL, some of the unique features of IGIA – higher origin-destination traffic (and hence greater number of check-in counters, baggage handling, forecourt, meeter-greeter area etc); higher norms for passenger boarding through contact gates, segregation of domestic and international passengers etc have also contributed to higher GFA requirements.

l. As mentioned earlier, the purpose of the analysis above is to highlight the process by which the GFA was evolved and its comparison with leading airports. The reasonableness of the increase in GFA (over the one mandated in the Master Plan) and the technical rationale provided by DIAL may be assessed by EIL.

IV. ASSESSMENT OF PROCESSES FOLLOWED

32. KPMG's scope of work is primarily to comment on the process aspects of arriving at the final project cost estimate. As discussed above, in absence of a set of prescribed processes as the baseline, the next best option is to test the "actual processes" against the list of "desired processes". The limitations and contestability of this approach needs to be recognized, and hence the application of the findings of this exercise will need to be accordingly moderated.
33. In the following sections we explore the following areas – the process followed for arriving at the project cost, the procurement processes, corrective actions taken on a proactive basis to arrest cost escalation, quality and comprehensiveness of the MIS; and the process followed for informing MoCA, AAI and the DIAL Board about the project cost escalation on a regular basis.

Project approach

34. The Project was implemented using a 'cost plus percentage of cost' approach. Is this approach an efficient one, given that it was a design-build project?
    a. According to DIAL, the reason for not going for fixed price contracts is that there were significant project uncertainties (due to few number of drawings available), limited number of interested bidders for the EPC contract (given the tight timeline) and that the bidders may have quoted a high risk premium.
    b. Uncapped 'cost plus percentage of cost' contracts are the riskiest contracts, as the entire risk of cost over-run is borne by the developer.
    c. Due to their inherent high level of risk, 'cost plus percentage of cost' contracts are either prohibited or restricted in contracts that are funded by agencies such as Asian Development Bank, World Bank etc.
    d. When uncapped 'cost plus percentage of cost approach' is applied to design-build (DB) projects, the risks are magnified due to the inherent conflict of interest in respect of the EPC contractor (responsible for both design and execution). Without cost escalation mitigation techniques and strong monitoring procedures, project cost of an uncapped cost plus percentage of cost can significantly increase over initial estimates.
    e. Alternate approaches to uncapped cost plus percentage of costs include: Guaranteed Maximum Price and Progressive Lump Sum approach. Details about these are presented in Annex 4 and Annex 5.
    f. DIAL could have explored these alternative approaches. Given the global airport experience of the members of the DIAL JV and the successful development of the Hyderabad and Istanbul airports by the lead member of the DIAL JV, we have reason to believe that the ability of bidders to negotiate an irrationally high risk premium was limited.

Project cost finalization

35. Was the right process followed for finalization of the project cost?
    a. The cost estimates at different stages of the Project are indicated below:
        i. Initial Development Plan ('IDP') stage (May 2006) was ₹ 3,287 cr.
        ii. As per the Master Plan (Dec 2006), estimated project cost was ₹ 6,756 cr.
        iii. As per letter dated 18 Jan 2008 from DIAL to AAI, project cost at financial closure stage (Dec 2007) was ₹ 8,975 cr.
        iv. Interim estimate from DIAL (letter dated 14 Jan 2009) was ₹ 10,500 cr.
        v. Final project cost as per DIAL's Project Cost Report (March 2010) is ₹ 12,718 cr.

vi. As per letter dated 20 July 2010, with the inclusion of security capex of ₹ 139 cr, project cost has increased to ₹ 12,857 cr

b. The OMDA does not specify the approach to be followed for project cost estimation. It however specifies (Clauses 8.4 and 8.5) that all contracts shall be at arms length basis and should be based on competitive bidding (if the value exceeds the stipulated amount). Schedule 21b of the OMDA mentions that the role of the Independent Engineer (IE) is to review the benchmarking exercise carried out by DIAL for the project specifications and cost, against national and international airport projects of similar scope and nature so as to avoid padding of costs and/ or gold plating.

c. As per DIAL's design build approach, around 40% of the packages (by value) were designed and implemented by L&T. The cost of the same was fixed after negotiations between DIAL and L&T. For the balance packages, L&T carried out the design and then the same was sub-contracted to contractors on a competitive bidding basis. The negotiated price arrived at between DIAL and the sub-contractor formed part of the final project cost estimate. Under this approach, the project cost estimate would change till the last package was awarded.

d. In most public infrastructure projects in India, bidders decide their project cost at the bidding stage, with a limited period access to the data-room and project site. The same is then taken as final.

e. As seen above Project cost estimates have been revised upwards at different stages of the Project. According to DIAL, the project cost estimate at financial closure stage (Dec 2007) was a rough estimate though DIAL had full control of the IGI airport for over 1.5 years by then. A contingency of ₹ 694 cr was also included in the project cost estimate of ₹ 8,975 cr.

f. Project cost estimates were sought from EPC contractors during bid stage. No commitment was sought from the EPC Contractor to adhere to the said project cost during the actual project despite the fact that:

   i. Contractor was well aware of technical specifications of the project as specified by the OMDA

   ii. During tender phase contractor was also provided with soil testing report, environment audit report and site survey report.

g. The uncapped design-build approach was approved by the DIAL Board on 7 Aug 2006. Considering the experience and skill-set of DIAL's consortium members, as well as the EPC contractor, a firm project cost could have been estimated within a reasonable period with due contingencies built in. The firm project cost should have been discussed with the DIAL Board, and frozen after incorporating modifications, if any.

Risk mitigation processes

36. Has DIAL applied the right mitigation processes to control risks inherent in cost plus percentage of costs contracts?

The various cost control techniques generally used are as follows:

a. *Benchmarking of costs against comparable projects to identify and control cost over-runs*: DIAL engaged Jacobs, in compliance with Schedule 21of the OMDA, to carry out the benchmarking exercise to test the reasonableness of its capital expenditure. The report of the consultant however, was submitted in February 2009, by when the selection of many contractors had already been accomplished.

b. *Incentivizing contractor to control costs through 'sharing of pain-gain' while executing the project*: Incentives/ penalties can be built into contracts by adjusting contractor's fee depending upon target and actual costs incurred. We have received no evidence to suggest

that any part of the project cost escalation was to be shared by DIAL's contractor through the relevant contract terms/clauses. International examples are provided in Annex 4 and Annex 5.

c. *Dis-incentivizing contractor to increase costs by capping contractor's fee at a fixed absolute level than as a percentage of base cost*: DIAL's contractor cost was a percentage of base cost for all packages.

d. *Engaging an external Project Management Consultant (PMC)*: DIAL engaged Parsons Brinckerhoff International Inc as the PMC. As per Schedule 2 of the Project Management Agreement, the scope of PMC included providing cost control advice, early warnings of variance, advice to DIAL on necessary alterations to ensure cost economy and assessment of possible cost implications of proposed design changes. As per DIAL, all the packages were thoroughly reviewed in terms of design optimization, value engineering and quantification by the experts comprising DIAL & PMC, before awarding any package. KPMG has reviewed three cost monitoring reports of the PMC dated Sep 2008, Mar 2009 and Mar 2010. In none of the reports have we found any comparison between a package's original and final cost estimate; an analysis of the reasons behind cost escalation, and the corrective measures to be undertaken going forward.

e. *Conducting an independent valuation of costs estimated by the contractor*. This has been done by DIAL in many cases. DIAL has shared details of instances wherein contractor's and sub-contractor's quotations have been reduced post negotiation.

Award of contracts

37. Were the right processes followed for award of contracts?

a. Selection of Contractor:

i. Since the Project follows a design-build approach with the EPC contractor's payment linked to a cost plus basis, the entire risk of cost escalation is borne by DIAL and not the EPC contractor. Despite this only two contractors – L&T and ITD – submitted their bid.

ii. According to DIAL, many of the leading global EPC contractors that DIAL contacted expressed low interest in the Project due to the challenging timeline. Some of the leading contractors were also engaged in other airport projects and had limited bandwidth.

iii. The other reason for limited competition could be that JV/ consortia were not allowed to bid. Clause 6(c) of Invitation to Tender for Terminal, Runway and Associated works states: "Tenders submitted by joint ventures/consortia of two or more companies/firms/entities as partners or two entities with any partnering arrangements will <u>not</u> be accepted."

iv. DIAL is itself a joint-venture company comprising different corporate entities with varied skill-sets. Allowing JVs to bid for the EPC Contractor's role could have brought in a combination of design, construction and financial strengths of two or more partners, with a clearly identified and accountable Lead Member.

v. Allowing joint ventures/consortia to bid for contracts could have increased competition and would have provided DIAL with a better negotiating position, especially given the short timeline for Project completion.

vi. According to DIAL, engaging a JVC as a Contractor has high performance risk, based on DIAL's experience of developing the Hyderabad International Airport. DIAL felt that given the challenging timeline, it was critical to get the most experienced contractor, and the potential risk of a consortium not meeting the delivery requirements was not acceptable.

vii. Globally, airport development projects have been awarded to joint ventures/consortia. A list of airport development projects which have been developed by joint venture/consortia is presented in Annex 3.

viii. DIAL in its response has mentioned that Heathrow, Muscat and Doha projects (quoted in Annex 3) are running behind schedule with cost overruns. The Sacramento project is currently under implementation; thus the success or failure cannot be judged presently. As per DIAL, this evaluation buttresses the point that joint ventures/consortia do not have a track record of success and it would have been a risky decision by DIAL to consider JVs/consortia to bid for construction contract. Certain references which underscore the problems and track record of joint ventures were also been provided by DIAL.

ix. JVs in Abu Dhabi and Sacramento airport projects do not have performance issues. The increased timelines in some of the other projects highlighted by DIAL are due to technical difficulties and/or change in scope. These do not indicate poor performance of JVs/consortia in airport projects.

b. Contractor Fee:

i. Contractor's fee was 20.2% of base cost for the Contractor's Work Portion (CWP) and Sub Contractors Package (SCP). This fee was discovered through a competitive process. CWP for Contractor was capped at 40% of the project cost.

ii. A review of Contractor's contract indicates that cost escalation of a particular package automatically implies higher fee to Contractor. Mechanisms for limiting contractor fee and incentivizing adherence to cost targets were not built into the contract.

iii. According to DIAL, effective fee of contractor is 15.25% based on payment of ₹ 1,195 cr. This fee percentage is lower due to various negotiations, value engineering of packages and constitution of cost control committee.

iv. DIAL could have tried to freeze a fixed fee for Contractor based on reasonable estimates, given the design-build approach adopted for the Project and the need to eliminate any incentive for the Contractor to escalate project costs.

c. Contractors Work Portion Costs:

i. Cost estimates provided by L&T were checked by DIAL. As per DIAL, they have successfully reduced the cost estimated by L&T on many packages through negotiations.

ii. For Heathrow Terminal 5, BAA used costs of similar projects as benchmarks. These costs were also independently validated.

iii. In Checklist 2, DIAL was requested to provide instances where benchmarking of cost of key packages with comparable airports was done prior to the award of packages. We have received no evidence to that effect.

Project implementation team

38. DIAL engaged experienced staff and external firms to execute the project. DIAL employed services of a globally reputed firm, Parsons Brinckerhoff, as project management consultants. DIAL's internal and external teams appear to be well qualified and experienced to handle this Project.

MIS and Communication

39. Was project cost escalation properly monitored and communicated to designated authorities?

a. **Management Information System:** The MIS for a complex project should be robust enough to identify the risk of cost escalation in advance. The project cost estimate of ₹ 8,975 cr was not treated as a target cost. All submissions from DIAL refer to this figure as a rough estimate based on limited number of drawings. It appears that the MIS did not map the individual package costs with the initial estimates and identify deviations on a proactive basis.

b. **Project Management Consultant**: As indicated earlier, the PMC did not monitor cost variation of different packages vis-à-vis the initial estimate of project cost of ₹ 8,975 cr.

c. **Communication with DIAL Board**: DIAL board on 7 Aug 2006 approved design-build approach on a cost-plus basis, and delegated powers to Chairman and Managing Director of DIAL to take all actions to implement the contract. The project cost details were communicated to the DIAL Board as follows:

- ₹ 8,975 cr on 4 Dec 2007
- ₹ 10,500 cr on 14 Jan 2009
- ₹ 12,718 cr on 25 Mar 2010.

The escalation in project cost has been communicated after 12-15 months each. In each case, the escalation has been upwards of 15% over the previously communicated figure. As per DIAL, since the Board had approved the uncapped design-build approach, no further approvals from the Board were deemed necessary.

d. **Communication with AAI**: As per clause 10.1 of OMDA, "…The JVC shall submit the following reports to AAI on a regular basis: (a) Latest update of Business Plan..." The Business Plan was to be updated periodically from time to time. The initial Business Plan was prepared on 16 Mar 2006. In a letter dated 18 Jan 2008, an updated Business Plan was provided to AAI with a project cost estimate of ₹ 8,975 cr. The Business Plan has not been updated regularly by DIAL. It appears that DIAL has not fully complied with the OMDA provision in respect of communication with AAI.

V. CONCLUSION

40. DIAL has completed the Project in a time of 37 months which is significantly lower than that of comparable global airports. As per the Jacobs Benchmarking Report, the facilities provided at T3 are comparable to the benchmarked airports. Further, the total adjusted cost for T3 (adjusted by Jacobs for foreign exchange rates, inflation, project duration, and purchasing power parity on select costs etc) is the lowest among the benchmarked airports.

41. KPMG's scope of work is of ex-post review as against ex-ante determination. The risks inherent in the same are as follows:
    a. There can be wide variation in views on what was to be delivered (the physical infrastructure) and the appropriate cost for it. This is visible in the wide range of opinions possible regarding IGI Airport – satisfaction of having a world class airport and dissatisfaction at increase in project cost.
    b. It provides no commonly accepted baseline (neither cost, nor process) for the regulator (who needs to ultimately have a project cost for determining the Regulated Asset Base and hence tariffs) to assess the "actual" against.

42. The Project cost estimate has increased from ₹ 8,975 cr at the time of financial closure (7 Dec 2007) to ₹ 12,718 as on 31 Mar 2010. The technical rationale for the increase would be assessed by the technical auditor – EIL. We have commented on the process issues.

43. Our review has been done along two streams:
    a. Assessment of final project cost estimate; and
    b. Assessment of the process followed in arriving at the final project cost estimate

44. There are certain cost elements included in DIAL's application, which do not merit inclusion in the present project cost, in the context of the present capital expenditure approval regime. These are:
    a. Costs not already incurred
    b. Costs disallowed by the OMDA/SSA.
    c. Costs disallowed as per accounting standards

45. Based on the above, we propose that an amount of **₹ 834.5 cr** be considered for exclusion from DIAL's final project cost of ₹ 12,857 cr (₹ 12,718 cr plus security related expenditure of ₹ 139 = ₹ 12,857 cr). The break-up of the proposed exclusion and the rationale thereof is presented in Chapter III.

46. Our assessment of the processes followed by DIAL is as follows:
    a. The key reason behind the increase in the project cost estimate is the design-build approach adopted by DIAL. A part of the increase is also due to unforeseen scope additions (Delhi Metro, ATC tower etc).
    b. The risk mitigation steps undertaken by DIAL to prevent cost escalation are not entirely compliant with international best practices. At no stage was the project cost capped and the risk of escalation shared with the EPC contractor. The contract terms with the EPC contractor did not have any incentives and penalties to enable better control on cost. The Project Management Consultant did not look at the cost escalation aspect with reference to initial estimate of project costs.
    c. The increase in project cost was not communicated to MoCA and AAI on a regular and proactive basis.

d. The Gross Floor Area (GFA) of T3 exceeds the one mandated by the Master Plan by nearly 84,000 sqm. No prior approval was taken from the DIAL Board for the same. The DIAL Board was apprised of the increase in GFA, and the cost variation thereof, by way of the Project Cost Report dated March 2010. The GFA per Peak Hour Passenger (PHP) of T3 is higher than most leading airports in the Asia Pacific region. The technical reasonableness of the increased GFA could be assessed by EIL.

e. It is difficult and subjective to assess the impact of the process related issues in rupee terms.

***

VI. ANNEXES

Annex 1: List of documents reviewed

1. Correspondence between DIAL and AERA dated 31 March 2010
2. Presentation by DIAL to AERA dated 29 April 2010
3. Report on project cost by DIAL dated March 2010
4. Jacobs Consultancy's Benchmarking Assessment report dated February 2009
5. Jacobs Consultancy's Terminal Benchmarking Analysis dated September 2010
6. Master Plan dated December 2006
7. Major Development Plans dated December 2006
8. Traffic Forecasting report for Delhi airport dated December 2006
9. Operation, Management and Development Agreement between AAI and DIAL dated April 2006
10. Shareholders Agreement for DIAL dated 4 April 2006,
11. State Support Agreement between DIAL and The President of India dated 26 April 2006
12. Agreement between DMRC and DIAL dated April 20 2009
13. Correspondence between DIAL and MoCA dated 22 October 2006, 27 October 2006, 8 November 2006, 1 November 2007, 14 January 2009, 19 January 2010 and 27 January 2010.
14. Correspondence between DIAL and AAI dated 18 January 2008,
15. Monthly progress report submitted by DIAL to Independent Engineer
16. Design services and procurement activities schedule
17. Project quality management plan dated 28 June 2007
18. Contract between DIAL and L&T for terminal, runway and associated works dated 9 December 2006
19. DIAL's response to questions asked in checklist 1 – 6 by KPMG and EIL
20. Contract between L&T and sub contractor for selected packages
21. Bid documents for award of sub contractor packages for selected packages
22. DIAL's response to KPMG observations

Annex 2: Comparison of OMDA and IATA quality standards

S No	Performance Parameter	IATA Manual	OMDA	Comparison
1	Transfer Process - Minimum connect times	Dom to Int'l: 35-45 min Int'l to Int'l : 45 -60 min	Dom to Int'l: 60 min Int'l to Int'l: 45 min	Domestic/International: OMDA is lenient
2	Check in Maximum queuing time	Business Class: 3-5 min Economy Class: 15-20 min	5 minutes for business class 20 minutes for economy	Similar standards
3	Security check - Waiting time	Maximum Queuing time of 3-5 min	95% passengers wait less than 10 min	OMDA is lenient
4	CIQ Checking time in queue	10 min for Inbound passport control	95% passengers wait less than 10 min	Similar standards
5	Baggage delivery time for bag delivery from aircraft arrival	Business Class: NB – 15 min WB – 20 min; Economy Class: NB – 25 min WB – 40 min	Domestic- First bag 10 min, last bag 30 min International-First bag 15 min, last bag 40 min from on blocks time.	Similar standards
6	Passenger arrival process - Time from aircraft arrival to kerbside	Business Class: 20-25 mins Economy Class: 40-45 mins	95% passengers take less than 45 min	Business class: OMDA is lenient Economy class: Similar standards
7	% passengers served by PBB	90 – 95% passengers on an annual basis	90 % of annual passengers	Similar standards
8	**Gate Lounges Seating availability**	**Seats for 70% of passengers**	**Seats for 80% of gate lounge population**	**OMDA is stricter**

Annex 3: List of airports constructed by joint venture/consortia

S No	Airport/City	JV/Consortia Partners	Actual Performance
1.	Heathrow, London	Laing O'Rourke and Ferrovial Agroman	The contract was signed on 5 March 2010 with an estimated completion date of early 2014.
2.	Muscat, Oman	Tepe Akfen Vie (TAV) Construction and CCC	Technical difficulties (hitting seawater while excavation) have increased timeline of the project.
3.	Abu Dhabi, UAE	Al Habtoor, Murray & Roberts	No performance issues.
4.	Doha, Qatar	Tepe Akfen Vie(TAV) Construction and Taisei	Scope change and concurrent completion of multiple phases (increase in capacity by 12 MPPA) has increased timeline of the project.
5.	Sacramento, USA	Austin Commercial and Walsh Construction	JV plans to complete the project ahead of schedule.

a. JVs in Abu Dhabi and Sacramento airport projects do not have performance issues and have/plan to successfully complete the projects.

b. The increased timelines in some of the projects are due to technical difficulties/change in scope. These do not indicate poor performance of JVs/Consortia in such projects.

c. JVs such as Al Habtoor Murray & Roberts have worked on several airport projects.

Annex 4: Cost control with Design Build Approach

S No	Approach	Key Features	Examples
1.	**Negotiated Lump Sum**	Contractor agrees to a specified price for the services in the contract. Contractor receives the agreed price irrespective of the cost incurred.	**London Luton Airport Expansion** Phase one expansion consisting of new departure building apron and taxiway, lighting, parking and access roads awarded on a lump sum design build basis. Project cost of USD 140 million in two years.
2.	**Guaranteed Maximum Price**	Contractor is compensated for actual costs incurred plus a fixed fee subject to a ceiling price. The contractor is responsible for cost over runs in the project.	**San Jose International Airport** Contracts for Terminal Area Improvement Program were awarded on a Guaranteed Maximum Price negotiated at different levels of design. Project cost of USD 750 million
3.	**Progressive Lump Sum**	To ensure adequate cost control a review of the design process is conducted at different stages of completion. At the completion of review, client and contractor can negotiate to fix the lump sum construction cost. If agreement cannot be reached, the client can opt to shift the project to another approach/contractor.	**Chicago O'Hare Terminal 6 Program** The contract as a progressive lump-sum negotiation process, which calls for review of the design process at the 30%, 60%, and 100% stages. At the 30% stage, contractor submitted the cost for full design services, which the client accepted. At the 60% stage, the client and contractor have the option of entering into negotiations to fix the lump-sum construction cost. If agreement cannot be reached, the design work continues to 100% and negotiations for final construction costs can be entered into. If agreement cannot be reached at this point, the client can shift the process to a more traditional approach. Project cost of USD 1 billion.

Annex 5: Alternative fee basis in cost plus contracts

S No	Approach	Key Features	Examples
1.	**Cost plus fixed fee**	Cost reimbursement contract in which the contractor's fee is fixed. Does not provide incentives to contractor to control costs as the costs are reimbursed. However, as compared to Cost plus percentage of cost fee, it removes the incentives for the contractor to increase costs for gaining higher profits.	**Portland International Airport** Involves using a quality-based selection process to choose a contractor, bring the contractor on during design and negotiate a cost-plus-fixed-fee contract for the work prior to design completion.
2.	**Cost plus incentive fee**	Cost reimbursement contract with an initially negotiated fee. Fee can adjusted later by a formula based on the relationship of total allowable costs to total target costs. Cost in excess of the target cost is only partially paid according to a Client/Contractor ratio, thus reducing contractor's profit. Contractor's profit increases when actual costs are below the target cost defined in the contract incentivizing contractor to control costs	**Heathrow Terminal 5 Construction** BAA used cost information from other projects, validated independently, to set cost targets. If the costs were lower than the target cost, the savings were shared with the relevant partners.
3.	**Cost plus award fee**	Cost-reimbursement contract that provides for a fee consisting of a base amount fixed at inception of the contract and an award. The contractor may earn the award in whole or in part during performance in areas such as quality, timeliness, technical ingenuity, and cost-effective management.	To tie the contractor to the quality of the end product. Development for Orion project awarded on a cost plus award fee basis by NASA

Annex 6: Information checklists submitted to DIAL

Review of DIAL's Final Project Cost Estimate

Checklist 1

[Note: Please submit all financial data {eg item no I (5, 6, 7, 15, 21, 27) and II (1c) etc} duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/ MD of DIAL certifying that the information/ data provided to AERA and AERA's consultants (EIL and KPMG) is true, fair, complete and without any omissions.]

I. Please provide the following documents/ data:

1. Copies of audited annual reports of DIAL for FY 06-07, FY 07-08 and FY 08-09.
2. Copies of un-audited annual report of DIAL for FY 09-10.
3. Copies of approved Master Plan, MCP and MDP for IGIA and changes made thereof.
4. Copies of OMDA, Lease Deed, Share Holders' Agreement (SHA) and State Support Agreement (SSA) with Central and State Governments.
5. Detailed break up of the initial project cost of INR 8,975 cr by specific package.
6. Detailed break up of the final project cost of INR 12,718 cr by specific package.
7. Details of bids for major contracts (say above INR 50 cr) including - projected costs, actual costs, rationale for variation (if any), bids received, bid selected and outcome of price negotiation
8. Copies of contracts with L&T and other sub-contractors (for contracts above INR 50 cr). Detailed list of work orders/purchase orders issued to other EPC/non-EPC contractors/suppliers
9. For each package incurring a cost overrun of 10% or more, the rationale for quantity variance and price variance thereof. Please provide details of major variation or change orders.
10. Detailed list of Work orders/Purchase orders issued to other EPC/non-EPC contractors/suppliers.
11. Copies of written communication between DIAL and key entities like MoCA, AERA, AAI and DIAL Board, related to project cost.
12. Copies of written communication submitted by statutory auditor to the DIAL Board or management related to project cost.
13. Copies of written communication submitted by Lenders' Engineer related to project cost.
14. Copies of the comments given by the Independent Engineer to DIAL on the Design Basis Report and Scheme Design Report of different facilities.
15. Cost breakup of key non-MCP expenditure like Terminal 1D, G+5 building & utility tunnels etc.
16. Copies of agreements/correspondence related to payments to be made to Delhi Metro Rail Corporation (DMRC) and Delhi Jal Board (DJB).
17. Copies of agreements/correspondence between AAI and DIAL related to treatment of ATC tower and associated facilities as part of DIAL's project cost.
18. Rationale for treating upfront fee to AAI, rehabilitation of runway 10/28 and security related capital expenditure as part of DIAL's capital cost.

19. Details of cost (Budgeted) for rehabilitation of Runway 10-28. Details of bidding strategy adopted for awarding this work.
20. Details of new ATC tower & associated facilities (Budgeted cost since not implemented).
21. Details of security related capital expenditure.
22. Copies of the entire benchmarking report submitted by Jacobs Consultancy to DIAL.
23. Overview of the project management process (planning, design, procurement, construction and monitoring etc) followed for construction of Hyderabad Airport. Please highlight key differences vis-à-vis the process followed for IGI Airport.
24. Copies of outline specifications for all components.
25. Copies of As-built Drawings or latest approved construction drawings. Please furnish the list of drawings (with Drawing no. & Title) which can enable us to specify the drawings required by our team to proceed with the review.
26. Copies of documents showing detailed capitalization approach of DIAL and list of payments made.
27. Copies of the fixed asset register. If not available then CWIP register as on 31 March 2010.
28. Overall Project Schedule, Work Breakdown Structure and Monthly Progress Reports during Starting Phase, Peak Period and ending phase of the Project for T1, T2 as well as T3 Projects.
29. Detailed organization structure of DIAL's project management team (covering all aspects like tendering, negotiation, contracting, project planning, project monitoring, financial control etc).
30. Delegation of Power (DoP) document for DIAL clearly listing the different levels of hierarchy and their authorized limits for approving decisions related to planning, design, operational, and financial matters.
31. Quality Assurance System & List of non-conformances

II. Please provide documents pertaining to the following:

1. Procurement Process:

a. Procurement strategy and process for high value purchases.

b. Minimum number of offers sought from alternate sources for procurement for each major head of expenditure and the major criteria considered for selection of vendors.

c. Details of bulk purchasing done for major items (name of item, order size – projected and actual, name of suppliers, bids received, bulk price – projected and final, discount obtained over initial offer etc)

d. Premium paid, if any, for speedier procurement of goods and services.

e. Minimum threshold for order placement for key commodities. Details of instances when the minimum threshold was breached and the premium paid thereof.

f. Details of procurement from any group entity of the JVC or the contractor (L&T) or any of its key shareholders.

g. Terms of contracts with contactor and sub-contractor pertaining to cost escalation post award of contract.

2. Project Implementation

a. List of 10 senior-most members of DIAL's project implementation team (covering aspects like tendering, negotiation, contracting, project planning, project monitoring, financial control etc) and their curriculum vitae, highlighting their airport development experience.

b. List of policies and procedures put in place by DIAL to predict, identify and address cost overruns. Please provide list of specific instances and the specific action taken.

c. Copies of the reports submitted and comments given by the PMC relating to their supervision of work.

3. MIS

a. Key features of the project MIS (structure, coverage, complexity, inter-linkage with different packages, frequency of data updating, persons responsible etc).

b. Steps taken to ensure accuracy of information in the MIS.

c. Nature of checks and alerts inbuilt in the MIS to identify cost overruns.

d. Specific instances of how the project MIS was used by the DIAL management to address cost overrun.

4. Communication and Control

a. Frequency of communication to MoCA/AAI/BoD about projected cost overrun.

b. Actions suggested by MoCA/AAI/BoD to restrict the cost overrun. Actions implemented by DIAL based on the above suggestion and results thereof.

***

Review of DIAL's Final Project Cost Estimate

Checklist 2

[Note: Please submit all financial data duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/MD of DIAL certifying that the information/data provided to AERA and AERA's consultants (EIL and KPMG) is true, fair, complete and without any omissions.]

1. Please provide details of deviations in project costs and corresponding queries as per format in Annex 1.
2. Once a higher cost estimate was arrived at during the design stage for a particular package, who was the person authorized to approve the same? What measures did he take to mitigate the cost over-run?
3. Once a higher cost overrun was observed or anticipated for a particular package, who was the person authorized to approve the same? What measures did he take to mitigate the cost over-run?
4. How were the packages identified for the Contractor's Works Portion (CWP) selected?
5. Was any benchmarking done on costs submitted by L&T for CWP?
6. Was any CWP bid out to other parties if L&T's quotation was found high?
7. For the CWP package 'Runway and taxiway for Phase 1A and 1B', the reduction in L&T's prime cost after negotiation is over ₹ 330 cr (31% of L&T's initial quote). What were the key cost heads under which such a significant reduction was achieved?
8. What was the methodology used for arriving at the lowest possible cost for each of the following inputs for the CWP packages:
   a. Labor
   b. Equipment
   c. Overhead
   d. Supervision etc
9. Slide 39 of the presentation submitted by DIAL (dated 29 Apr 2010) presents L&T's prime cost excluding fees. Please provide the 'fees' charged by L&T for EACH CWP and SCP package. In each case, please highlight if it was a fixed fee (₹ cr) or a percentage of the prime cost of the corresponding CWP and SCP.
10. Please confirm if L&T's 'fees' for SCP packages was over and above the 40% cap fixed for L&T's payout for CWP.
11. Please provide the contingency built in project cost estimates for EACH CWP and SCP package.
12. How was the material for the SCP procured (eg structural steel works for piers)? Was it done by DIAL or by the sub-contractor or done jointly? If done jointly, please provide the value of materials procured jointly for EACH SCP package and the savings achieved thereof.

13. What was the underlying rationale behind the 70:30 (technical:financial) weightage for evaluation of bidders for SCP?
14. Why was a higher technical weightage necessary while selecting bidders for supply of items that have standard specifications eg for Granite flooring (Package T_3-20)?
15. Please provide details of packages in which the lowest cost bidder was not selected because his comprehensive score (using the 70:30 evaluation system) was lower than another bidder?

***

Review of DIAL's Final Project Cost Estimate

Checklist 3 (Version date – 09 June 2010)

Note: Please submit all financial data duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/ MD of DIAL certifying that the information/ data provided to AERA, AAI, EIL and KPMG is true, fair, complete and without any omissions.

S No	Issue	Observations	Query
A	**Planning**		
1	Estimated project cost	a. Letter from DIAL to AAI dated 18 January 2008: Reference to business plan regarding estimate of project cost of INR 8,975 cr. b. Break up of initial Cost Estimates of INR 8,975 cr has been provided in the form of a summary.	a. Please provide copy of the business plan mentioned in DIAL's letter b. Please provide back up calculations of initial cost estimates derived from 700 drawings available at project start up.
2	Base Estimated Project Cost	In DIAL's responses dated 31 May 2010 and 7 June 2010 reference has been made to the inappropriateness of the base estimated project cost of INR 8,975 cr.	Please provide breakup of independent estimate of project cost made by DIAL at the time of financial closure or at any other stage during the project execution phase.
B	**Procurement**		
3	Design Build Approach	a. The Design-Build approach (DB) was preferred over other procurement approaches primarily to save time on project execution. b. As per DIAL previous responses, the DB approach does not allow the total project cost to be capped.	a. Please list other specific measurable benefits realized through the DB approach b. Please provide examples of other similar DB projects in the global airport sector and in the Indian infrastructure sector that had an uncapped project cost. c. Please provide details of the specific cost control measures adopted by DIAL.
4	Contractor eligibility	JVs/ consortia were not allowed to bid for the contractor's position, despite the varied nature of competencies and risks involved in the project. For that matter DIAL itself is a JV company comprising different entities with different skill-sets.	a. Please explain the rationale for not allowing JVs/ consortia to bid for the contractor's position. b. Please list the SCP packages where JVs were allowed to bid.

S No	Issue	Observations	Query
5	Contractor evaluation	The two final bidders (L&T and ITD) had submitted their estimates for project costs. There is no evidence of the project cost estimates being evaluated as a parameter for determination of successful bidder.	a. Please explain whether the project cost estimates, as submitted by bidders, were used for evaluation of the bidders? b. If not, why was this information sought in the bid?
6	Contract with L&T	Contract does not mention any commitment from the contractor on limiting project costs (as submitted in its final bid) nor sharing of escalation of costs thereon.	Please outline steps taken to cap project costs with the contractor or share escalations of project costs from established levels with contractor. Please cite relevant provisions of the contract.
7	Project Terms- Project awarded on a cost plus fee basis	Clause 9.2.1 of L&T agreement with DIAL: The Contractor shall in accordance with the Design Services and Procurement Activities Programme subject to Clause 9.2.4(a) submit to Employer's Representative a lump sum, inclusive of Taxes, for each discrete package of the Contractor's Works Portion at least three(3) months before the Contractor anticipates commencement of the design and execution of the Works comprising that discrete package.	Please indicate lump sum cost provided by contractor for each major package (more than INR 50 cr) before commencement of the design and execution of the Works and the final cost incurred thereof.
8	Design stage costs of packages: Contractor entrusted with detailed design	As per response received from DIAL on 7 June 2010 a. For CWP, estimate by L&T formed basis for further discussion b. For SCP, bids received from vendors were subject to evaluation	Please list specific steps taken by DIAL to optimize design and specifications to reduce costs before award of package (for both CWP and SCP packages)

S No	Issue	Observations	Query
9	L&T Fee	a. L&T fees at 20.2% of prime costs of all packages b. Fees charged by L&T for CWP and SCP appear to be same c. Of 20.2% fees charged by L&T, 2.5% is for contractor site office, utilities at site office, management and supervisory functions and post design services and support. Fees are as % of total prime costs. d. No cap on L&T fee in INR terms. Thus if total project cost increases, L&T's fee increases, subject to the 40% limit.	a. Please provide amounts paid to L&T in form of CWP charges, L&T fees for SCP and L&T fees for import of equipment b. Please provide the rationale for keeping the same fee terms for contractor for both CWP and SCP packages c. Please provide the rationale for keeping the fees as a percentage of prime costs instead of in value terms (i.e. INR cr) d. Please list specific steps taken to limit L&T's fees in INR terms.

S No	Issue	Observations	Query
10	Contractors Work Portion Costs	a. Depreciation provided @ 3% per month in case of package on Runway and Taxiway – Phase 1A and 1B b. Rates for direct costs provided by contractor verified by procurement team c. Spare parts consumption quoted @ 15% of hire charges in case of package on Runway and Taxiway – Phase 1A and 1B d. Wastage rates fixed at 5%, 7%, 1.5% and 2.8% for aggregate, sand, cement and mix design respectively in case of package on Runway and Taxiway – Phase 1A and 1B e. Escalation fixed @ 1.5% of direct costs. Materials procured jointly by L&T and DIAL f. Contingencies fixed @ 3% of direct costs in case of package on Runway and Taxiway – Phase 1A and 1B. L&T fees (17.7% of 20.2%) includes risk premium.	a. Please explain the basis for the depreciation rate and indicate results of corresponding benchmarking exercise, if any b. Please explain benchmarking done to verify direct costs quoted by contractor c. Please explain rationale for arriving at the observed spare parts consumption rate and indicate results of benchmarking exercise, if any d. Please explain rationale for arriving at the observed wastage rates and indicate results of benchmarking exercise, if any e. Please explain basis for escalation on direct costs f. Please explain rationale for arriving at the contingency rate
C.	**Execution**		
11	Increase in design costs	a. Initial designing cost as per Notes to Schedule 1 of L&T agreement capped at INR 133.1 cr. Negotiated cost for designing between DIAL and L&T is INR 286 cr. b. L&T had estimated an overall requirement of 3,000 man months for design of the project. However, actual man months increased to 11,188.	a. Please indicate the provision in the L&T contract which allows payment of designing costs higher than the capped amount b. Please provide rationalized approach for determining the man months required for calculating scheduled and actual man months for different components of airport design. c. Please provide the basis for additional payment of INR 153 cr made to L&T.

S No	Issue	Observations	Query
12	Review of costs and designs	Review of sample PMC report does not indicate analysis of cost increases and design optimization	Please provide copies of the contract and the specific scope of work of the PMC.
13	Runway 10-28 - Capitalization of expenses incurred on its rehabilitation	a. As per response received from DIAL on 7 June 2010, rehabilitation was necessitated since runway PCN had reduced from 106 to 99 b. Life of asset has been increased to 20 years as per submission of DIAL hence AS 10 is applicable	a. Please indicate the new PCN of the runway 10-28 post rehabilitation b. Please indicate the leftover life of runway 10-28 (in years) as on date when PCN was 99 before rehabilitation.
14	ATC Tower costs	a. As per letter from MoCA to AAI dated 19 January 2010, DIAL would bear the cost of shifting of ATC tower and its associated facilities at an approximate cost of ₹ 350 cr. b. Timeline for construction/commissioning has not been mentioned	a. Please indicate the expected start date and end date for construction of the ATC Tower. b. Please share letter from AAI/MoCA confirming construction/commissioning schedule.
15	Funds given to Delhi Metro	a. Funds contributed by DIAL shall be classified as "Aero Assets" As per letter from MoCA to DIAL dated 1 November 2007 b. DIAL would contribute by way of any instrument except in the form of equity or in the form of debt. It would have exclusive commercial development rights within the airport boundary including the Metro Station. c. There is a risk that any entity developing an infrastructure that is connected with IGIA (eg an approach road/ flyover to IGIA) may ask for similar grants from DIAL.	a. Please list steps taken to lower the funds required to be contributed by DIAL. Please share relevant correspondence. b. Please list specific steps taken to negotiate for terms that enable recovery of the funds contributed. (Eg. Revenue share with DMRC). Please share relevant correspondence c. Please list specific steps taken to prevent similar demands for grants from other infrastructure providers in future.
D.	**Monitoring**		

S No	Issue	Observations	Query
16	MIS	No evidence in PMC reports of tracking of actual procurement costs of materials vs estimated costs as per master plan/financial closure submissions.	Please list specific steps taken to monitor procurement costs and to take appropriate corrective actions.
17	Communication From DIAL regarding increase in project cost to AAI	a. In letter dated 18 January 2008 to AAI, DIAL submitted details of increase in estimated project cost from INR 3,287 cr to INR 8,975 cr. b. In letter dated 14 January 2009 to AAI, DIAL indicates an increase in project to around INR10,500 cr.	Please list specific steps taken to obtain approval from the DIAL Board for increase in project costs before award of CWP/SCP packages Please provide summary details of all communication with DIAL Board, AAI, Independent Engineer and PMC regarding review of costs on periodic basis including dates, observations made by each party, corrective measures taken in light of such observations.
E.	**Design and Execution (Ref: Report on project cost submitted by DIAL in March 2010)**		
18	Floor Area Differences (Annex B1)	Floor area of PTB, Piers and Nodes has increased from 4,70,178 sq m to 5,53,887 sq m. According to DIAL, increase in area happened due to the additional demand posed by stakeholders (Airlines).	Please provide minutes of meeting/documentary evidence for such demand.
19	Reinforcement Steel (Annex B5)	Increase in floor area of PTB and Piers is approximately 18%. However, the increase in reinforcement steel is 97%.	Reinforcement steel provided is 1,16,847 MT against 59,203 MT proposed as per original estimates. Please provide detailed rationale for increase in quantity.
20	Façade (Annex B6)	Increase in floor area of PTB and Piers is approximately 18%. However the increase in façade is 152%	Please provide detailed rationale for major design change in the structure resulting an increase of 1,03,000 sq. m. of façade area.
21	Basis of unit rate of concrete (Annex B10)	In the basis of unit rate of concrete, following rates are considered. a. Plant & Machinery, small tool & tackles – ₹ 1290.15 b. Indirect Costs & Margins – ₹ 886.00	Please provide detailed calculations for arriving at ₹ 1290.15 and the rationale behind "Indirect costs & margins".

S No	Issue	Observations	Query
22	Storm-water drainage design (Annex B12)	As per original estimates, it was designed for a flow of 3,500 cusec, however, the final design was done on the flow of 7,000 cusec.	Please provide the rationale and approach at initial design stage and final implementation stage which has resulted an increase of cost from INR 126 cr to INR 252 cr.
23	Increase in Apron Area (Annex B13)	Apron area implemented is 947,000 sqm against 700,755 sqm planned originally.	Please provide the basis for the change in Apron area and the corresponding approval from DIAL Board.
24	Roads & Cross Drainage scope increase (Annex B14)	An increase in cost for Roads & Cross Drainage from ₹ 13.5 Crore to 58.3 crore	Please provide details of estimated and actual expenditure.
25	Rehabilitation works of 10 - 28 Runway	An expenditure of ₹ 27 Crore is already accounted for rehabilitation of Runway 10-28.	Please provide details of expenditure incurred so far and details of bidding procedure used for awarding this work to the contractor.
26	Site overheads of L&T	L&T claimed 6% of overheads for Runway & Taxiway on direct cost of works which is further varying from one CWP package to the other depending upon the magnitude of works.	Please provide details of expenditure actually incurred towards overheads and the procedure of verification/certification of the same by DIAL.
27	Structural Steel for Roof of PTB	An increase in cost of material for structural steel from ₹ 70,000 per MT to ₹ 1,30,000 per MT resulting an increase in cost by ₹ 84 Crore.	Please provide details of procurement of structural steel along with fabrication and erection cost.

***

Review of DIAL's Final Project Cost Estimate

Checklist 4

Note: Please submit all financial data duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/ MD of DIAL certifying that the information/ data provided to AERA, AAI, EIL and KPMG is true, fair, complete and without any omissions.

S No	Issue	Observations	Query
1	Contingency in initial cost estimate	Contingencies equaling 10% of the hard cost were included in the initial estimate of ₹ 8,975 cr.	a. Please explain rationale for arriving at the contingency rate of 10%. b. Please provide a detailed break up of the contingency rate of 10%.
2	Contingency in Contractor Work Portion Packages	Contingencies equaling 3% of direct costs have been included in individual CWP packages. For instance, contingencies of 3% were included in case of package on Runway and Taxiway – Phase 1A and 1B.	a. Please explain rationale for arriving at the contingency rate of 3%. b. Please provide a detailed break up of the contingency rate of 3%
3	Contingencies in Project	Contingencies of ₹ 100 cr have been included in the cost estimate of ₹ 12,718 cr.	a. Please explain rationale for arriving at the contingency cost of ₹ 100 cr. b. Please provide a detailed break up of the contingency cost of ₹ 100 cr.

***

Review of DIAL's Final Project Cost Estimate

Checklist 5 (Version dated 29 Jun 2010)

Note: Please submit all financial data duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/ MD of DIAL certifying that the information/ data provided to AERA, AAI, EIL and KPMG is true, fair, complete and without any omissions.

S No	Issue	Observations	Query
1	Steel	Steel price reported by DIAL in reporting price variance (Section 9b of project cost report) is ₹ 43,143 per MT. The initial price estimate was ₹ 27,000 per MT. Weighted average cost for Steel as per Annexure C of DIAL's project cost report works out to ₹ 36,661 per MT.	a. Please explain the difference in the two rates used for steel (₹ 36,661/MT and ₹ 43,137/MT). b. Please provide details of the suppliers to whom this differential rate was paid (name, month of payment, quantity, price, amount paid, reason for higher rate etc). c. Please provide details of the procurement process for selecting the said suppliers.
2	Structural steel for roofing	Price of structural steel price for roofing nearly doubled from ₹ 70,000/MT to ₹ 130,000/MT (Section 9b of project cost report).	Please provide details of procurement of structural steel (name of suppliers, quantity ordered, order price etc) on a monthly basis.
3	Glass cladding for façade	Glass price for façade more than doubled from ₹ 9325/sqm to ₹ 20,000/sqm (Section 9b of project cost report).	Please provide details of procurement of glass cladding (name of suppliers, quantity ordered, order price etc) on a monthly basis.
4	Terminal – Material cost (SCP portion)	Material content of 50% (of the total cost) and a 30% price escalation in the same has been indicated (Section 9b of project cost report). Total escalation is shown as ₹ 225 cr.	a. Please provide backup data (package description, package cost, quantity and price of materials) used for arriving at material content percentage of 50%. b. Please provide backup data used for arriving at material price escalation of 30%.

S No	Issue	Observations	Query
5	Airside – Material cost (SCP Portion)	Material content of 50% (of the total cost) and a 30% price escalation in the same has been indicated (Section 9b of project cost report). Total escalation is shown as ₹ 48 cr.	a. Please provide backup data (package description, package cost, quantity and price of materials) used for arriving at material content percentage of 50%. b. Please provide backup data used for arriving at material price escalation of 30%.
6	Existing terminals	–	Please provide details of the capacity (in MPPA) and floor area (in sqm) for Terminals 1A, 1C, 1D and 2.
7	Fuel farm, Car Park and IT	Fuel Farm, Car park and IT systems are to be developed by concessionaires other than DIAL.	Please provide the cost for development of each asset – Fuel Farm, Car park and IT systems – as included in the initial project cost estimate of ₹ 8,975 cr.
8	Communication	As per clause 10.1 of OMDA, DIAL is required to regularly submit quarterly financial accounts, annual budget and latest updates of the business plan to AAI.	Please provide copies of the quarterly financial statements, annual budget and updated business plans submitted to AAI

***

Review of DIAL's Final Project Cost Estimate

Checklist 6 (Version dated 04 July 2010)

Note: Please submit all financial data duly certified by DIAL's statutory auditor. For the rest please provide a covering letter from the CEO/ MD of DIAL certifying that the information/ data provided to AERA, AAI, EIL and KPMG is true, fair, complete and without any omissions.

S No	Issue	Observations	Query
1	Floor area of T3 (553,887 sqm)	**Information provided – T3 Area** a. As per Major Development Plan (MDP) dated December 2006, floor area for T3 was estimated as **451,644 sqm**. b. As per DIAL's letter to AAI (dated 18 Jan 2008) the floor area had to be enhanced to 500,000 sqm to handle a capacity of **37 mppa**. The corresponding project cost was ₹ 8975 cr. Using DIAL's estimates as above, the floor area for a terminal with capacity of **34 mppa** should be approx **460,000 sqm**. c. As per DIAL's project cost report (dated March 2010), floor area has increased from 470,178 sqm (mentioned in project cost report as initial floor area in the Master Plan) to **553,887 sqm**. The corresponding capacity is stated as **34 mppa**. **Rationale for Increase** d. As per DIAL's response to Checklist 3 (dated 09 June 2010), the increase in T3 floor area is attributed to i. increase in plant room area, and ii. stakeholder requirements for additional space. The breakup of the incremental area due to these reasons has not been provided. e. The only evidence of stakeholders' demands for additional space is the communication between FRRO and DIAL. The floor area involved is approx 100 sqm. 100 sqm is a small fraction of the total area increase of 83,709 sqm (553,887 sqm less 470,178 sqm). **PHP Benchmarking** f. Considering the T3 floor area as 553,887 sqm (as	a. Please provide rationale for using a different value of the floor area of T3 (as per the Master Plan). The floor area (as per MDP) is 451,644 sqm. whereas DIAL, in its Project Cost report mentions a figure of and 470,178 sqm. b. Please provide rationale for increase in terminal size (from 500,000 sqm to 553,887 sqm) while decreasing passenger capacity of terminal (from 37 mppa to 34 mppa) c. Please provide breakup of incremental floor area, the reasons thereof, the supporting letters from stakeholders and the necessary approvals taken from competent authority by DIAL. The response may be provided as per the format given in Annex 1. d. Please explain why **425,250 sqm** should

S No	Issue	Observations	Query
		per DIAL's Project cost report) and Peak Hour Passenger (PHP) volume at T3 as 9,450 (as per Jacobs Consultancy benchmarking report), the floor area per PHP works out to 59 sqm. g. The average floor area per PHP of other airports quoted in the benchmarking report - LHR, PEK, BKK and MAD - works out to 45 sqm. We have not considered KUL since its data is over 12 years old. h. As per Jacobs Consultancy report (page 34) the IATA standard for floor area per PHP is 45 sqm at the Level of Service (LoS) 'C'. Considering the IATA figure, average of benchmark airports and the PHP volume for T3, the optimal floor area for T3 should have been **425,250 sqm.**	not be treated as the optimal floor area of T3 to handle **34 mppa**.
2	Shifting of Airport Services Building (ASB) outside T3	a. Master Plan included ASB in the Terminal Area. b. As per DIAL's Project Cost report (dated March 2010), a separate building with a floor area of 4,400 sqm has been constructed as the ASB.	Please provide the corresponding reduction in floor area and cost of T3 due to the shifting of ASB out of T3.

Annex 7: Information checklists submitted to AAI

Review of DIAL's Final Project Cost Estimate

Checklist 1: Information required from AAI

Please provide the following documents/ data:

1. Copies of written communication between AAI and DIAL relating to project costs.
2. Copy of comments given by Independent Engineer on the basis of Design Basis report and Scheme Design report for different facilities.
3. Copies of agreement/correspondence between AAI and DIAL related to treatment of ATC tower and associated facilities as part of DIAL's project cost.
4. Copies of actions suggested by AAI to restrict the cost overrun.
5. Copies of communication between AAI and DIAL relating to change in specifications of the project.
6. Copies of communication between AAI and DIAL relating to ceiling for project cost.
7. Copies of the written communication from Delhi Government to AAI/ MoCA and MoCA/AAI to DIAL regarding payment of INR 350 cr by DIAL to DMRC for rail metro connectivity
8. Copies of monthly/quarterly progress reports submitted by EIL to AAI on the project.
9. Copies of written communication from AAI to MoCA with regard to project cost escalations, if any.

***

ANNEXURE VI

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

No.AAI/AAI/MC/DIAL-06/DF/2010-11/747 17th January 2011

The Secretary
Airports Economic Regulatory Authority
AERA Building
Administrative Complex
Safdarjung Airport
New Delhi – 110003

Review of levy of DF at IGI Airport – Audit of Project Cost

Sir,

Kindly refer to our letter of even number dated 11th November 2010 on the subject matter. As desired, the reasons for AAI to include of actual constructed area of T-3 for the Project Cost are given hereunder.

2. The views of AAI were based on the final Report for "Technical Audit of DIAL's Final Project Cost Estimates" dated 31st August 2010 [Report] submitted by Engineers India Limited, the Technical Auditors [TA] appointed by AAI. As per this Report, the estimated area at the time of Financial Closure was 470179m². Whereas actual area constructed by DIAL is 553887m². The difference in area is 83708m². A table given in Annexure depicts the details of floor area at the time of Financial Closure, actual area constructed by DIAL and the recommendations of TA.

3. Out of the area of 553887m² constructed by DIAL, TA has accepted 543321m² (which is 98%) and not accepted 10566m² (which is 2%) in their report. The area of 10566m² not accepted by TA is meant for the following purposes.

(a) 8652m² is for the food court and retail area at CIP, Office and Hotel level

(b) 1914m² in the mezzanine level is meant for plant rooms, DIAL BHS control room, Transfer area for passengers and stores.

4. In their report in respect of 3(a) above, TA has mentioned that additional requirement of food court and retail areas at CIP, Office and Hotel level are not accepted without specifying any reasons. Further, in respect of (b) above, the report mentions that increase in area due to incorporation of level 5 in baggage handling system and provision of additional area at Mezzanine floor for customs as acceptable but without specifying any reasons for not accepting the additional area of 1914m².

Contd....2/

0000169

राजीव गांधी भवन सफदरजंग हवाई अड्डा, नई दिल्ली - 110003 दूरभाष : 24632950 फैक्स : 91-11-24632990
Rajiv Gandhi Bhavan Safdarjung Airport, New Delhi-110003 Phone : 24632950 Fax 91-11-24632990

Contd.. from pre-age

628

5. However, AAI is of the view that the additional area of about 2 percent not accepted by the TA should also be considered, as part of the project cost, for the following reason:

a) In respect of area at 3(a) above, it would increase the commercial activities in the PTB, which will enhance passenger facilitation and also fetch additional revenue.

b) Though the area given in 3(b) does not have any commercial potential, it is still considered to accept in the project cost, as it would enhance the operational efficiency and also for the convenience of transfer of passengers both domestic and international.

6. This issue with the approval of Competent Authority.

Yours faithfully,

R Ramani

(R. Ramani)
Dy. General Manager (F&A)

Encl: Annexure

0000170

Annexure

Details of floor area at the time of Financial Closure and Actual Area Constructed by DIAL [Terminal-3]

Floor Area	Estimated area at the time of financial closure [in m^2]	Actual area constructed by DIAL [in m^2]	Difference in Area [in m^2]	Recommendations of TA
Sub Basement & Basement level	44784	55738	10954	Accepted by TA
Arrival Level i/c Meeters and Greeters	76429	86314	9885	Accepted by TA
Mezzanine Level	**36106**	**40420**	**4314 (2400)**	**Out of 4314m^2, TA accepted 2400m^2 and 1914m^2 is not accepted**
Departure level i/c forecourt	57553	66180	8627	Accepted by TA
CIP, Office & Hotel Level	**46607**	**55259**	**8652**	**Not accepted by TA**
Arrival and Departure Level	173600	174727	1127	Accepted by TA
Apron level i/c ramp access to baggage hall	27400	66669	39269	Accepted by TA
Node Area	7700	8580	880	Accepted by TA
Total	**470179**	**553887**	**83708**	

99

Annexure – VII

F. No. AERA/20011/DIAL-DF/2009-10/Vol.III/1551/1558/1559
Airports Economic Regulatory Authority of India
*****

AERA Building,
Administrative Complex,
Safdarjung Airport,
New Delhi-110 003.

Dated the 14th March, 2011.

To,

Shri S. C. Chhatwal,
Member (Finance),
Airports Authority of India,
Rajiv Gandhi Bhawan,
New Delhi.

Subject: Review of levy of DF at IGI Airport, New Delhi – Audit of Project Cost – reg.

Sir,

I am directed to refer to AAI's letter No. AAI/MC/DIAL-06/DF/2010-11/613 dated 11.11.2010 and other correspondence resting on the above subject and to say that Ministry of Civil Aviation vide letter No. AV.24011/014/2006-AD dated 8.3.2011 has in respect of the new ATC tower and associated facilities proposed at IGI Airport, stated as under:

(i) Shifting of ATC tower and other associated facilities is incidental to the overall master plan of the airport and is coming in the way of new terminal T4 to be constructed in future.

(ii) AAI has communicated that construction of the new ATC tower, Technical Block and associated ATC systems including the met facilities would cost around Rs. 350 crores.

(iii) Keeping in view the provisions of the CNS-ATM agreement signed between DIAL and AAI, the Ministry had decided vide letter F.No. AV.20036/017/2008-AD 19.1.2010 that DIAL would bear the cost of shifting of the ATC tower and its all associated facilities at approx. cost of Rs. 350 crores by treating it as a part of the overall project cost. Ministry had also decided that AAI would submit the detailed plan and the actual cost estimates would be worked out by DIAL in consultation with AAI.

In view of the above, Ministry has suggested that this Authority will need to carry out its own due diligence about the total cost of Rs. 350 crores for shifting of ATC tower and Technical Block projected by DIAL.

Cont...

2. The matter has been examined at this end and it has been observed that:

(i) The project cost presently under consideration of this Authority is relating to the construction of T3, new runway 11-29 and associated costs. The costs related to the construction of new terminal T4 to be constructed in future are, presently, not under consideration.

(ii) The Authority is not aware if AAI has submitted the detailed plan and that the actual cost estimates have been worked out by DIAL in consultation with AAI.

3. Keeping in view the above, AAI is requested to clarify/furnish comments on the following:

(i) Since the shifting is related to a work which is not, presently, in the scope of consideration of the Authority, i.e., new terminal T4 to be constructed in future, why the cost relating to such shifting should be taken into the consideration at this stage.

(ii) Detailed plan, actual cost estimates for the subject work may be furnished. It may be confirmed that the plan and cost estimates have been approved by the competent authority.

(iii) The timelines for construction of new ATC tower and technical block including met facilities may also be furnished.

Yours faithfully,

C V Deepak

(C.V. Deepak)
OSD-II
Tel:2469 5043

O/C

Copy to:

1. **Shri Oma Nand, Under Secretary, Ministry of Civil Aviation, Rajiv Gandhi Bhawan, New Delhi.**

2. **Shri Sidhartha Kapur, CFO- Airports, Delhi International Airport Pvt. Ltd., IGI Airport, New Delhi.**

0000213

Annexure – VIII

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

AAI/DIAL/2010/ 23rd March, 2011

The Chairman
Airports Economic Regulatory Authority of India,
AERA Building,
Safdarjung Airport,
New Delhi-110 003

Sub : Review of levy of DF at IGI Airport
- Audit of project cost – reg.

Sir,

Reference is made to your letter No. AERA/2011/DIAL-DF/2009-10/Vol.III dated 14th March, 2011. The following comments are offered :-

i) Master Plan 2006 of IGI Airport, approved by MOCA, provides for relocation of the existing ATC tower to a more centric location, southwest of the existing tower in land parcel 40. The new ATC tower height, for safety of operations, would have a clear line of sight of all movement area of the airfield and cater to the additional working positions and personnel to be deployed for multiple Rwy operations.

ii) The existing ATC control tower was constructed in 1994 and was made operational in Jan. 1999. At that time, IGI Airport had approx. 265 daily movements from runways 10/28 and 09/27 was primarily used for Taxiing. Domestic aircraft operated from Apron-1 (Terminal 1) while the international operations were handled from Apron-2 (Terminal 2). Thus the entire operational area was towards north of the existing tower. Commensurate with the total number of movements and the layout of movement areas, only one Tower Controller, one Surface movement, controller and one Assistant (Total 2 ATC positions with one Assistant position) alongwith one Met official and Met equipment were required to control the entire traffic. Because of the fewer operating personnel the noise levels in the tower were also minimal and the controllers were able to perform their task of air traffic control and surface movement in an efficient manner.

iii) Subsequently, when the traffic load has increased, Rwy 09/27 and 10/28 were put into use for take off and landing by implementing a new taxiway in between the runways. This has necessitated additional deployment of manpower in control tower to man the additional positions.

Contd... 2/-

0000214

राजीव गांधी भवन सफदरजंग एयरपोर्ट, नई दिल्ली - 110003 दूरभाष : 24632950 फैक्स : 91-11-24632990
Rajiv Gandhi Bhavan Safdarjung Airport, New Delhi-110003 Phone : 24632950 Fax : 91-11-24632990

iv) With the commissioning of Rwy 11/29 and Terminal-3 (with aprons 31, 32, 33 & 34), south of the existing tower, the operating scenario has undergone a total change. The present level of traffic is approx. 850 movements daily and this number is steadily growing every year which will cross more than 1000 in the immediate future. In Feb'2011 a peak hour of 70 movements has accordingly been recorded and this peak hour traffic is foreseen to grow to 85-90 movements per hour in the immediate near future. As against single dependent runway operation of 09/27 or 10/28 simultaneous parallel runway operations are currently in place in mixed mode on Rwys 10/28 & 11/29 and 09/27. Departures are released from both runways independently and arrivals are vectored on both these runways simultaneously with reduced separation of 3NM between successive movements.

v) To cater to the additional runway and increased movements, we have created additional controller positions – 3 Tower controllers, 3 SMC positions, 2 tower alpha positions, one clearance delivery position, one AIM's data entry position and one tower supervisor position – a total of 11 controller work stations. This has cramped the space to an extent that (a) no further positions can be created to handle traffic growth, (b) new positions for clearance delivery, departure planner, tower coordinator and VIP handling, though essentially required, cannot be provided, (c) There is inadequate space for display of Maps and charts and (d) the noise level in the control room has increased to an extent where controllers are not able to concentrate on their work. AAI is also in the process of implementing Datalink Communications to minimize controller Pilot voice communication, which will require additional space in control tower to install new computer systems and displays alongwith additional controller to man this position.

In addition, Central Air Traffic Flow Management system also is under implementation to dynamically optimize the capacity v/s demand so as to minimize excessive holdings in air and ground resulting in savings of fuel and flying time. There is a need for additional space to cater the work stations and display units.

vi) With the commissioning of Terminal-3 some segments of the taxiways and significant portions of the stands on Apron 32, 33 & 34 are obscured from vision due to line of sight shadows. These operations are being managed by strategic location of CCTV cameras around the concerned taxiways and ramp areas. This situation is not ideal. ICAO ATC Planning norms clearly prescribe that for operational safety reasons, an ATC tower must be so located and be of such height that all runways, taxiways, and ground movement areas must be clearly visible from the control room.

Contd...3/-

vii) Going forward, it is foreseen that IGI Airport would be handling approx. 1000 movements daily in the year 2011-12 which will cross 1500 traffic in 2015-16. This would certainly require additional controller work positions. Besides, significant additional equipment is likely to be required in areas such as Automation Systems, Met. Display AGL system control & monitoring ASMGCS display, Schmidt VCCS system, D-ATIS system, AIMS System, CNS System display, simulator training facilities, air traffic flow management system, Gagan etc. and facilities of ATC staff whose strength would increase significantly.

viii) From the foregoing paragraphs, it is evident that a new ATC Complex is an immediate requirement for IGI Airport and this cannot be linked with the programme of Terminal-4. Of course the new ATC facilities would be developed in a manner that the future requirements of IGI Airport can be met by this facility.

ix) A project brief, alongwith preliminary cost estimates and a tentative project time schedule is enclosed herewith for your ready reference. DIAL will be required to maintain close co-ordination with AAI so that the entire work is carried out strictly as per AAI requirements.

We hope that with this we have clarified the matter.

Yours faithfully,

(S.C. CHHATWAL)
MEMBER (FINANCE)

Encl : as above

0000216

Annexure – IX

-13-

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

No.AAI/DIAL/2011

31st March, 2011

The Chairman
Airports Economic Regulatory Authority of India
AERA Building
Safdarjung Airport
New Delhi – 110 003.

[Kind Attn: Shri Sandeep Prakash, Secretary, AERA]

AGM (ANS)

Sub: Review of levy of DF at IGI Airport – Audit of project cost – reg

Sir,

Further to our letter of even number dated 23rd March, 2011, it is clarified as under :

While shifting of ATC Tower was envisaged earlier in the overall Master Plan, as it was coming in the way of new Terminal-4 to be constructed in future, however, in view of the detailed reasons given in our letter dated 23rd March, 2011 stated above due to operational requirements, it has become an immediate requirement and cannot be linked with the programme of Terminal-4.

Further, it is also clarified that the cost estimate for ATC Tower has been worked out by DIAL in consultation with AAI. While they have worked out the cost estimates of civil works, the cost estimate for equipments has been given by AAI.

Yours faithfully,

(S C CHHATWAL)
Member (Finance)

0000217

राजीव गांधी भवन सफदरजंग हवाई अड्डा, नई दिल्ली - 110003 दूरभाष : 24632950 फैक्स : 91-11-24632990
Rajiv Gandhi Bhavan Safdarjung Airport, New Delhi-110003 Phone 24632950 Fax 91-11-24632990

ANNEXURE - X

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P)Limited

60/Secy/11 - 619 -
14/1/11

GMR

Registered office: New Udaan Bhawan,
Terminal 3, Opp. ATS Complex,
International Terminal, IGI Airport,
New Delhi 110037, India
T +91 11 47197000
F +91 11 47197181
W www.newdelhiairport.in

DIAL/2010-11/Fin-Acc/2203

January 13th 2011

The Chairperson
Airports Economic Regulatory Authority of India
AERA Building, Administrative Complex
Safdarjung Airport
New Delhi - 110003

13/1/2011
Secy (AERA)
DD-II
13/1/11

Dear Sir,

Subject: Levy of Development Fee at IGI Airport

This is in continuation of our earlier letter dated March 31st, 2010 on the aforementioned subject. We had submitted to AERA, the final Project Cost and further requested for approval of the gap in the means of finance through extension of the levy of Development fee to bridge the gap. In this respect, we would like to bring to your kind notice that we have again deliberated other options to bridge the aforesaid gap in the means of finance of Rs. 1,793 Crores. The options explored and their position is as under:

Funding from Debt

DIAL had appointed ICICI Bank (lead arranger) for appraising the business plan of DIAL in the year 2007. The same year, DIAL successfully concluded its financial closure (FC) with the combination of Rupee and Foreign Currency lenders. At the time of FC, the debt level of Rs. 5,200 Crores to fund the project was considered a fully leveraged position. The debt currently comprises of Indian Rupee Debt of Rs. 3650 crores and Foreign Currency Debt of USD 350 million. In April 2010, we had sought the view of ICICI Bank on possibility of raising further debt to fund the cash shortfall of Rs. 1654 crores. ICICI, vide their letter dated April 29, 2010 (copy of the same was then furnished to AERA) had indicated lack of debt serviceability and suggested exploring alternate sources. Vide our letter dated July 20, 2010, we had advised AERA the increase in funding gap due to addition of security equipment in project cost and requested for ADF to Rs. 1793 crores. We had recently approached ICICI Bank again to review the status considering, inter alia, the successful commissioning of the T3 project. ICICI Bank have re-iterated their earlier stand that any additional debt will lead to debt serviceability issues and DIAL may explore other sources of funds to bridge the funding gap of Rs. 1793 crores. The letter from ICICI Bank is self-explanatory and the same is attached for your kind reference.

Funding from Equity

We also explored the possibility of infusing additional equity capital. You are aware that shareholders have more than doubled the equity capital from Rs. 1200 crores to Rs. 2450 crores to fund the increase in project cost. Airports Authority of India (AAI), our PPP partner and a major shareholder has, vide its letter dated January 12th 2011, expressed the view that they cannot make any further equity commitment to DIAL at this stage. Therefore it is also not possible to raise further equity capital at this stage.

Delhi International Airport (P) Ltd. New Delhi

19/Ch(AERA)
13/1/2011

0000218

Considering the aforesaid, we reiterate our request to AERA to favourably consider the levy of additional Development Fee by extension of the period of current DF levy to fund the gap in means of finance of Rs. 1793 crores.

Thanking you,

For Delhi International Airport Private Limited

(Sidharath Kapur)
Chief Financial Officer – (Airports)

Cc: Mr. Sandeep Prakash, Secretary AERA.

ANNEXURE-XI

-625-

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

GMR

Delhi International Airport (P) Limited

Registered office: New Udaan Bhawan, Terminal 3, Opp. ATS Complex, International Terminal, IGI Airport, New Delhi 110037, India
T +91 11 47197000
F +91 11 47197181
W www.newdelhiairport.in

DIAL/FIN-ACC/2010-11/2222

January 14, 2011

The Chairperson,
Airports Economic Regulatory Authority of India
AERA Building, Administrative Complex
Safdarjung Airport
New Delhi – 110003

Dear Sir,

Funding by way of Equity Share Capital

This is in continuation of our earlier letter dated January 13th 2011 wherein we had appraised you on the options explored by us in raising funds from other sources viz. additional debt and equity capital.

The details of Delhi International Airport Pvt Ltd (DIAL) debt and equity capital are as under:

Funding Source	Amount (Rs. Crores)
Equity Capital	1,200
Share Application Money	1,250
Equity Share Capital	2,450
Rupee Term Loan	3,650
Foreign Currency Loan	1,616
Total Debt	5,266
Debt Equity Ratio	2.15 : 1

The shareholders of DIAL i.e. GMR Infrastructure Ltd, GMR Energy Ltd, GMR Airport Holding Company (formerly GVL Investment Ltd), Airports Authority of India, Fraport AG and Malaysian Airport Holding Berhard are bound by the terms and conditions of the 'Shareholders Agreement'. This agreement stipulates the manner in which further equity shall be raised.

The Shareholders Agreement defines Trigger Debt Equity Ratio to mean Debt to Equity Ratio of atleast 2 (two) to one. Clause no. 3.3.1 of the said agreement states as under:

"... .if The Trigger Debt Equity Ratio is not maintained, the JVC shall not issue any fresh Equity Shares till such time as the Trigger Debt Equity Ratio is in place. Towards the end, the Private Participants (without diluting AAI(alongwith AAI Nominees) equity shareholding) hereby covenant and agree to infuse funds in such form and quantity as may be necessary to ensure that Trigger Debt Equity Ratio is maintained immediately prior to the time of any fresh issue of Equity Shares....."

0000220

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P) Limited

GMR

Thus DIAL is required to maintain a Debt to Equity ratio of atleast 2:1 and it cannot raise further equity if this ratio is breached below this level. Further it is unable to, without support of AAI, raise fresh equity as this will result in dilution of the shareholding of AAI/AAI Nominees. ICICI Bank, DIAL's Lead Arranger, has stated vide their letter dated January 13, 2011 that any additional debt will lead to debt serviceability issues and DIAL may explore other sources of funds to bridge the funding gap of Rs. 1793 crores. Airports Authority of India vide its letter dated January 13th 2011 have expressed their inability to commit further equity contribution. Given the constrain of raising further debt, the constrains of Clause 3.3.1 of Shareholders Agreement and also AAI's disinclination to infuse additional equity, DIAL is constrained from raising further equity capital from AAI/other shareholders even if other shareholders were inclined to infuse further equity capital.

Considering the aforesaid, we reiterate our request to AERA to favourably consider the levy of additional Development Fee by extension of the period of current DF levy to fund the gap in means of finance of Rs. 1793 crores.

Thanking you,

For Delhi International Airport Private Limited

(Sidharath Kapur)

Chief Financial Officer-Airports

CC:

(i) **The Secretary - AERA**

(ii) **The Member Finance – AAI along with our letter to AERA dated January 13, 2011.**

0000221

ANNEXURE - XII

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport (P) Limited

GMR

Registered office: New Udaan Bhawan,
Terminal 3, Opp. ATS Complex
International Terminal, IGI Airport,
New Delhi 110037, India
T +91 11 47197000
F +91 11 47197181
W www.newdelhiairport.in

Letter No. DIAL/2010-11/Fin-Acc/2798

The Secretary,
Airports Economic Regulatory Authority of India
AERA Building, Administrative Complex
Safdarjang Airport
New Delhi - 110003

March 25, 2011

Dear Sir,

Review of levy of DF at IGI Airport, New Delhi - Audit of Project Cost

Please refer to your letter Ref: F. No. AERA/20011/DIAL-DF/2009-IO/VOLIII dated March 14, 2011 on the above subject. We request you to please refer to our letter dated January 31, 2010 wherein we had furnished to AERA (pursuant to order no 01/2009-10 of AERA) details of the review of the bidding process in respect of the hospitality district. A copy of the said letter is enclosed for your ready reference. As advised in this communication, DIAL had followed a rigorous, transparent and aggressively marketed process, both for round 1 and round 2 of monetization of Phase I of the hospitality district aggregating 45.08 acres. The Board of Directors of DIAL had approved the allotments of parcels of both stages and had ensured value maximization and we can confirm that the observations made by the Ministry vide their letter dated February 9, 2009 were appropriately considered while reviewing the bidding process of the hospitality district.

We respond in more detail to these observations as follows:

"(a) The license fee amount/bidding amount is significantly low. and (b)The bid submission period coincided with the Mumbai terrorist attack of 26.11.2008 in which two leading hotel chains viz., Taj and Oberoi were affected. These two leading hotel chains and ITC, another hospitality group, did not participate in the bidding process."

The round 1 of the bidding process was constrained by the 26/11 terrorist attack and also the global financial meltdown. Despite these constrains, given the extensive pre-bid marketing, a healthy number of 58 bids were received. Multiple rounds of negotiations were undertaken with all the serious bidders. The bidders were asked to improve their offer beyond the highest quoted annual License Fee for each particular Asset Area. Using this process, DIAL succeeded in getting increases in the Annual License Fee of 19% to 115% of the one previously highest quoted figure with an average increase of 46.68% Further, the Board also noted that even though major Indian players did not participate in the process, the quality of development in the Hospitality District was unlikely to suffer as the selected bidders were likely to bring in reputed brands for operating the Assets from the stable of reputed national and international hospitality players like Hyatt, Accor, Dusit, Lemon Tree etc. It will also not be out of place to mention that given the aggressive marketing approach of DIAL, the aggregate amount of refundable deposits was significantly higher at Rs. 1471.51 crores against the envisaged figure of Rs. 912 crores considered while approving the original DF by MoCA.

"(c) DIAL have kept a lock-in period (till one year after commercial development of the asset) post which the developer (i.e., successful bidder) would be free to sub license the asset. It would appear that no part of the capital gains from sub-licensing would accrue to DIAL."

As considered in the RFP itself, a developer does not have the right to sub license the whole or part of the land constituting his asset area. Since the asset itself cannot be alienated, hence the question of any capital gain does not arise. Additionally the agreement with the successful bidders stipulates that the equity share-holding shall not be less that 51% from the date of execution of the project agreement and upto a period of 24 months after commercial operations of the first asset on the respective asset area.

However, the developer as a routine business activity has the right to grant operational license/lease of the built up area space within its Asset Area for operational and business purposes. Such licence/lease of built up space is a normal business activity of a developer for which it was concessioned out.

"(d) It is also learnt that DIAL have not fixed any reserve price. As such the basis for evaluation of the bid is not clear."

DIAL had taken the services of M/s Jones Lang Lasalle (JLL) to advise on structuring and evaluating the monetization of the land parcels in Phase I. JLL is a globally leading professional services firm specializing in real estate services, having over 50 years of experience in Asia Pacific, with over 19,400 employees operating in 78 offices in 13 countries across the region. Thus the entire process was carried out under the best available professional advisory.

A reserve price is more relevant in case of bidding where the seller has to compulsorily accept the price of the highest bidder without negotiation. It is pertinent that the entire process in DIAL's case was based on tender process wherein the successful bidder was determined, after prolonged and iterative competitive negotiations leading to upward price revisions. This is an effective mode of market price determination.

Further in view of the global financial crisis and its adverse impact on real estate development, it was discussed at length and decided that any fixation of reserve price either at lower level or higher level will have impact on bidding. Lower fixation of reserve price will send wrong indications to the market and potential bidders on the perceived value of the land and thus encourage bids at low value while higher level of reserve price fixation will not attract more number of bids to have good competition to enable increase of the bid values during the negotiation meetings.

It may also be pointed out that in this instance, DIAL board had internally put a threshold limit and all bids below that level were rejected.

"(e) The Hospitality District is being licensed for 57 years. Acceptance of lower than usual bids would lead to long term revenue implications for DIAL and revenue share implications for AAI"

Despite the global meltdown experienced during the time of monetization, DIAL was successful in getting higher than expected upfront deposit as a resultant of constant efforts

and various rounds of negotiations. Further, it is important to note that successful completion of monetization of Phase 1 was an imperitive given the need to fund the timely completion of the T3 project. Therefore, indefinitely postponing the monetization of Phase 1 of CPD was not an option available then. As also mentioned earlier, despite adverse market conditions, through a value maximization negotiation process, the bid values were successfully pushed upwards. The value maximization was achieved by splitting the bidding into two rounds that significantly resulted better pricing at round 2 and improved further the overall pricing. Hence efforts made by DIAL led to "higher than usual bids" rather than "lower than usual bids". As stated above, DIAL board scrutinized the bids thoroughly and did not accept bids found to be of lower than expected value and also proactive negotiation and two stage bidding led to value enhancement.

In respect of Paragraph 3 and 4 of your referred letter we respond as below:

"Further, vide your aforesaid letters dated 13.1.2011 and 14.1.2011 it has been stated that DIAL is not in a position to obtain any additional debt or to raise further equity capital at this stage. However, the attention of the Authoity has been drawn to recent newspaper report wherein it has been reported that three private equity funds will invest Rs. 1440 crores in an unlisted company of GMR group which runs the Delhi and Hyderabad airports. A copy of the report published in the Economic Times, Delhi of Thursday, the 10th March, 2011 is enclosed for ready reference. In another newsreport published in the Business Standard, Delhi of Wednesday, the 16th February, 2011 (copy enclosed), it has been reported that GMR Infrastructure has raised around Rs. 520 cores of debt from IIFCL for modernizing Delhi airport The position stated in your aforesaid letters may be clarified in view of the reported investment of Rs. 1440 crores by private equity funds and the reported debt of Rs. 520 crores raised from IIFCL."

In respect of your query on IIFCL, it is submitted that IIFCL has lent Rs. 500 crores and not Rs. 520 crores as stated in the media report. IIFCL is a member of the consortium of rupee lenders of DIAL and their loan of Rs. 500 crores is part of the total debt of Rs. 3650 crores used to finance the modernization and expansion project of Delhi Airport; thus it is not a new or additional debt. A certificate from M/s Canara Bank (Lead Lender in the Rupee Term Loan Consortia) confirming the aforesaid facts is annexed for your kind reference. (Annexure A)

As regards to your query on private equity funding, we state that GMR Group as part of the business restructuring and with a view to have focused management oversight, replicate best management practices across airports and obtain synergies of operations is consolidating its airport equity holdings under a single entity viz. GMR Airports Holding Ltd. (GAHL). As part of this process GAHL is raising upto Rs. 1550 crores from private equity funds. It is pertinent to note that these funds are being raised at the level of GAHL and not at the level of DIAL. The stipulated use of these funds is to acquire the shareholding in existing airport companies from GIL/group entities and meet operational needs of GAHL including capital needs for expansion of airport business. Considering the aforesaid, these funds cannot be made available for use at DIAL level.

Therefore it is pertinent to re-iterate submissions made in our letters dated January 13, 2011 and January 14, 2011 wherein we had stated that Airport Authority of India (AAI), our PPP partner and a major shareholder had stated that they cannot make any further equity

commitment to DIAL at this stage. Further under clause 3.3.1 of DIAL's Shareholders Agreement a minimum debt equity ratio of 2:1 is required to be maintained and it cannot raise further equity if this ratio is breached below this level. DIAL is unable to, without support of AAI, raise fresh equity as this will dilute shareholding of AAI/AAI nominees. AAI has expressed inability to commit further equity to DIAL.

We had requested ICICI Bank (Lead Arranger for the Project) to re-assess the possibility of raising additional debt for funding the shortfall. ICICI Bank post the assessment of our request has expressed vide letter January 13th 2011 their inability in accommodating any additional debt over and above the existing debt since this would have serviceability issues. A confirmation to this effect is enclosed herewith as Annexure "B". Since, the existing revenue have been considered for servicing the existing debt, any additional debt would not be able to service it and maintain the DSCR requirements.

The private equity being raised by GAHL has stipulated end use and thus cannot be used by GAHL for infusion into DAIL in any form. Considering this and also the aforesaid constrains against raising of any additional debt, restriction on raising further equity vide clause 3.3.1 of DIAL Shareholder Agreement and dis-inclination of AAI to infuse additional equity, DIAL has no option but to seek additional DF to fund the shortfall in project funding.

"Furthermore, in respect of the payment of Rs. 54 crores from DIAL to Delhi Jal Board, which has been proposed as a part of the present project cost, it may be clarified as to how much amount out of Rs. 54 crores is required for and already paid for the present project and how much amount is required for future developments in terms of the Master Plan."

One of the important utility projects required for the development of Delhi Airport was Potable Water Supply. DIAL had informed that it would require about 5.5MLD of potable water by March, 2010 by which time the 1st phase of Restructuring and Modernization of IGI Airport would be completed and Terminal-3 would be ready for Trial run. The requirement of water is estimated to increase from 5.5 MLD to 17.68 MLD by 2016 and 28 MLD by 2025. Thus the water supply infrastructure is being created by DJB for meeting current capacity of 5.5 MLD and also to take care of future growth upto 28 MLD, for which DIAL is paying an amount of Rs. 54 crores. The initial outlay of water supply infrastructure, like any utility infrastructure, needs to be flexible in a manner so as to create adequate upfront capacity to meet current demand and also take care of planned future demand as it is infeasible to enhance the infrastructure in stages in a running utility apart from the high cost that may be required at a later stage. Thus it is not relevant to split this amount between current project and future development as practically this cost is for the current project with flexibility for future requirement as DJB is providing facility to meet total water requirement of IGI Airport. Hence entire cost has been considered in the current project cost. A certificate from the statutory auditors confirming the actual payment to DJB is enclosed as Annexure "C"

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

GMR

Delhi International Airport (P)Limited

We trust the above suitably addresses the various issues raised. As the fund position of DIAL is very tight, you are requested to please approve the ADF to meet the funding gap urgently to ensure its liquidity and solvency.

Yours Sincerely,

For Delhi International Airport Private Limited

(Sidharath Kapur)

Chief Financial Officer-Airports

Enclosed:a/a

CC: Mr S C Chhatwal, Member (Finance) AAI

Mr Oma Nand, Under Secretary, MoCA

0000231

केनरा बैंक Canara Bank

REF : PCB-I 3303 CR-55 2010-11 DATE: 23/03/2011

To-

M/S DELHI INTERNATIONAL AIRPORT PRIVATE LIMITED
NEW UDAAN BHAWAN TERMINAL-3
OPPOSITE- ATC COMPLEX, IGI AIRPORT
NEW DELHI-110037

CERTIFICATE

This is to certify that M/s IIFCL is one of the members in the Consortia of lenders for the Rupee Term Loan facility aggregating Rs. 36,50,00,00,000/-(Rupees Three Thousand Six Hundred Fifty Crores only) extended to M/s Delhi International Airport Private Limited (DIAL) , having its Regd. Office at New Uddan Bhawan, Terminal 3, Opposite ATS Complex, IGI Airport, New Delhi-110 037 for the Airport Modernization Project. Further, as Rupee Facility Agent under the Consortium Arrangement, we certify that M/s IIFCL has participated in the aforementioned rupee term loan facility to the extent of Rs. 500,00,00,000/-(Rupees Five Hundred Crores only). The loan stands fully disbursed/ advanced by M/s IIFCL to M/s DIAL.

This certificate is being issued at the specific request of M/s.DIAL

Yours faithfully,

MANOHAR. V. JARTARKAR
DEPUTY GENERAL MANAGER

Nehru Place * CANARA BANK * New Delhi-19 PCB-I

PRIME CORPORATE BRANCH-1, DELHI, 1st Floor, No.1 DDA Bldg. Nehru Place, New Delhi -110019,
PHONE NO. 26411519 /26416896 FAX – 26416895 , E-MAIL : delhi2624@canbank.co.in.
SWIFT : CNRBINBBACBD , RTGS : ifsc:CNRB0002624

0000232

ICICI Bank

January 13, 2011

Mr. Sidharath Kapur (Chief Financial Officer - Airports)
Delhi International Airport Private Limited
New Udaan Bhawan, Opp. Terminal 3,
New Delhi – 110037

Sub: Projected shortfall in the means of finance
Ref: Your letter dated January 5, 2010
Ref: ICICI Bank letter dated October 01, 2008 and April 29, 2010

Dear Sir,

This refers to your request for exploring additional funding to meet the gap in the means of finance to cover the shortfall of ₹17.93 billion due to increase in the cost of modernizing and upgrading Indira Gandhi International Airport at New Delhi (the "Project").

We request you to please refer to our letter dated October 01, 2008 and April 26, 2010 (copy attached), where in we had indicated that the existing business plan with Rupee Debt of ₹ 36.50 billion and ECB of USD 350.0 million factors in all possible revenue stream of the project. Any additional debt into the project would require a separate revenue stream, outside the purview of Target Revenue computation.

While we accept your position that the traffic at the Airport has exceeded the projections and is expected to do so even for the current financial year, the same may not hold true for the entire tenor of the loan. The fall in traffic in FY2009 due to economic downturn is a case in point.

Hence, at this point in time considering commissioning of Terminal 3 (T3), we are not in a position to ascertain any additional debt that can be loaded without affecting the serviceability of the existing debt. At the same time, we would like to reiterate the limited impact any additional source of revenue would have on the Project considering the same would be needed to be shared with AAI to the tune of 45.99%.

In light of the above, alternative sources of funding for meeting the projected shortfall could be explored. However, revised business plan due to proposed increase in the project cost and the change in the means of finance will be subject to satisfactory due diligence, internal credit approvals of ICICI Bank and other lenders in the consortium.

Trust the above clarifies our position in this regard.

Thanking you

Yours faithfully

P. Suresh
Joint General Manager

ICICI Bank Limited
ICICI Bank Towers
Bandra-Kurla Complex
Tel. (91-22) 2653 1414
Fax (91-22) 2653 1122
Regd. Off. : "Landmark"
Race Course Circle

0000233

BRAHMAYYA & CO.,
CHARTERED ACCOUNTANTS

PHONE : 22274551 & 22274552
FAX . 0091-080-22212437
EMAIL : srinivas@brahmayya.com
GRAMS . "AUDITRICS"

'KHIVRAJ MANSION'
10/2, Kasturba Road,
BANGALORE - 560 001.

Auditor's Certificate

We, M/s. Brahmayya & Co., being Joint Statutory Auditors of M/s. Delhi International Airport Private Limited (the Company) having registered office at New Udaan Bhavan, Opp: Terminal 3, New Delhi – 110037, have reviewed the books of accounts and relevant records of the company. An amount of Rs.54 crores (Rupees Fifty Four Crores only) is included in our project cost audit report dated 23rd March 2010 for provision of water supply by Delhi Jal Board (DJB) to Indira Gandhi International Airport. Based on our verification we certify that as on 22nd March, 2011, the company has paid a sum of Rs.31,50,00,000/- (Rupees Thirty One Crore and Fifty Lakhs only) to DJB.

This certificate is issued at the specific request of the Company.

For Brahmayya & Co.,
Firm Registration No.000515S
Chartered Accountants

(G.Srinivas)
Partner
Membership No.086761

Place: Bangalore
Date : 22nd March, 2011

0000234

Review of levy of Developmet Fee - IGI Airport, New Delhi **Annexure XIII**

Count of period					0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5
Year					**2009**	**2009**	**2009**	**2009**	**2009**	**2009**	**2009**	**2009**	**2009**	**2009**
Month					**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Domestic Traffic	*Mn*				1.26	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
International Traffic	*Mn*				0.65	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Traffic Estimate	*Mn*				1.90	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18
DF collected (upto 31/01/2011)	*Rs. Cr.*				0.92	24.98	37.38	59.90	56.27	46.09	37.91	57.80	47.03	69.91
Additional DF billed (upto 31/01/2011)	*Rs. Cr.*													
Projected DF collection (from 1/02/2011)	*Rs. Cr.*													
Total DF	*Rs. Cr.*				0.92	24.98	37.38	59.90	56.27	46.09	37.91	57.80	47.03	69.91
Interest Rate	*% p.a.*				10.72%	10.72%	10.72%	10.72%	10.72%	10.72%	10.72%	10.72%	10.72%	10.72%
Interest Rate (tax adjusted)	*% p.m.*				0.00584	0.00584	0.00584	0.00584	0.00584	0.00584	0.00584	0.00584	0.00584	0.00584
Discount factor (as on 01 03 2009) used					0.9971	0.9913	0.9855	0.9798	0.9741	0.9685	0.9628	0.9572	0.9517	0.9462
PV of DF collection (PV as on 01.03.2009)	*Rs. Cr.*				0.92	24.76	36.84	58.69	54.81	44.64	36.50	55.33	44.75	66.14
Actual DF collection (PV as on 01.03.2009)	*Rs. Cr.*				0.92	24.76	36.84	58.69	54.81	44.64	36.50	55.33	44.75	66.14
Cumulative DF (PV as on 01.03.2009)	*Rs. Cr.*				0.92	25.68	62.52	121.21	176.02	220.66	257.16	312.49	357.24	423.38
Total DF collection (PV as on 01.03.2009)	*Rs. Cr.*	1,827.00												
Discount rate	*% p.m.*	0.64%												
NPV of total DF sanctioned as on 01 03 2009	*Rs. Cr.*	1,827.00												

Calculations with NPV as on 01.03.2010		
Period		
Discount rate w.e.f 01.03.2010		
DF Collections		
Cummulative DF Collections		
NPV of Additional DF sanctioned		
Stage 1 - Rs.994.50		
Stage 2 - Rs.1695.50		

Review of levy of Developmet Fee - IGI Airport, New Delhi

Count of period			10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5
Year			**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2010**	**2011**
Month			**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**
Domestic Traffic	*Mn*		1.48	1.48	1.48	1.50	1.52	1.54	1.55	1.57	1.59	1.61	1.63	1.64	1.66
International Traffic	*Mn*		0.69	0.69	0.69	0.70	0.70	0.71	0.71	0.72	0.72	0.73	0.73	0.74	0.74
Traffic Estimate	*Mn*		2.18	2.18	2.18	2.20	2.22	2.24	2.26	2.29	2.31	2.33	2.36	2.38	2.40
DF collected (upto 31/01/2011)	*Rs. Cr.*		62.54	59.75	70.30	54.22	60.36	58.39	49.03	49.95	47.79	66.11	63.01	57.11	55.20
Additional DF billed (upto 31/01/2011)	*Rs. Cr.*														73.44
Projected DF collection (from 1/02/2011)	*Rs. Cr.*														
Total DF	*Rs. Cr.*		62.54	59.75	70.30	54.22	60.36	58.39	49.03	49.95	47.79	66.11	63.01	57.11	128.64
Interest Rate	*% p.a.*		10.72%	10.72%	10.72%	11.03%	11.03%	11.03%	11.03%	11.03%	11.03%	11.03%	11.03%	11.03%	11.03%
Interest Rate (tax adjusted)	*% p.m.*		0.00584	0.00584	0.00584	0.00601	0.00601	0.00601	0.00601	0.00601	0.00601	0.00601	0.00601	0.00601	0.00601
Discount factor (as on 01 03 2009) used			0.9407	0.9352	0.9298	0.9242	0.9187	0.9132	0.9078	0.9023	0.8969	0.8916	0.8863	0.8810	0.8757
PV of DF collection (PV as on 01.03.2009)	*Rs. Cr.*		58.83	55.88	65.36	50.11	55.45	53.32	44.50	45.07	42.86	58.95	55.84	50.31	112.66
Actual DF collection (PV as on 01.03.2009)	*Rs. Cr.*		58.83	55.88	65.36	50.11	55.45	53.32	44.50	45.07	42.86	58.95	55.84	50.31	112.66
Cumulative DF (PV as on 01.03.2009)	*Rs. Cr.*		482.21	538.09	603.45	653.56	709.02	762.34	806.84	851.92	894.78	953.73	1,009.57	1,059.88	1,172.54
Total DF collection (PV as on 01.03.2009)	*Rs. Cr.*	1,827.00													
Discount rate	*% p.m.*	0.64%													
NPV of total DF sanctioned as on 01 03 2009	*Rs. Cr.*	1,827.00													

Calculations with NPV as on 01.03.2010		
Period		
Discount rate w.e.f 01.03.2010		
DF Collections		
Cummulative DF Collections		
NPV of Additional DF sanctioned		
Stage 1 - Rs.994.50		
Stage 2 - Rs.1695.50		

0	1	2	3	4	5	6	7	8	9	10
1	0.994029	0.988094	0.982194	0.976329	0.970499	0.964704	0.958944	0.953218	0.947526	0.941868

Review of levy of Developmet Fee - IGI Airport, New Delhi

Count of period			23.5	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	**34.5**	35.5
Year			**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2011**	**2012**	**2012**
Month			**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**
Domestic Traffic	*Mn*		1.68	1.70	1.72	1.74	1.76	1.78	1.80	1.82	1.84	1.86	1.88	**1.91**	1.93
International Traffic	*Mn*		0.75	0.75	0.76	0.76	0.77	0.77	0.78	0.78	0.79	0.79	0.80	**0.80**	0.81
Traffic Estimate	*Mn*		2.43	2.45	2.48	2.50	2.53	2.55	2.58	2.60	2.63	2.65	2.68	**2.71**	2.73
DF collected (upto 31/01/2011)	*Rs. Cr.*														
Additional DF billed (upto 31/01/2011)	*Rs. Cr.*														
Projected DF collection (from 1/02/2011)	*Rs. Cr.*		64.65	65.16	65.67	66.19	66.71	67.24	67.76	68.30	68.84	69.38	69.93	**70.48**	71.04
Total DF	*Rs. Cr.*		64.65	65.16	65.67	66.19	66.71	67.24	67.76	68.30	68.84	69.38	69.93	**70.48**	71.04
Interest Rate	*% p.a.*		11.03%	11.03%	**11.75%**	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	**11.75%**	11.75%
Interest Rate (tax adjusted)	*% p.m.*		0.00601	0.00601	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	**0.00639**	0.00639
Discount factor (as on 01 03 2009) used			0.8705	0.8653	0.8598	0.8543	0.8489	0.8435	0.8382	0.8329	0.8276	0.8223	0.8171	**0.8119**	0.8068
PV of DF collection (PV as on 01.03.2009)	*Rs. Cr.*		56.28	56.38	56.46	56.55	56.63	56.71	56.80	56.88	56.97	57.05	57.14	**57.23**	57.31
Actual DF collection (PV as on 01.03.2009)	*Rs. Cr.*		56.28	56.38	56.46	56.55	56.63	56.71	56.80	56.88	56.97	57.05	57.14	**30.60**	0.00
Cumulative DF (PV as on 01.03.2009)	*Rs. Cr.*		1,228.81	1,285.20	1,341.66	1,398.21	1,454.84	1,511.55	1,568.35	1,625.24	1,682.20	1,739.26	1,796.40	**1,827.00**	
Total DF collection (PV as on 01.03.2009)	*Rs. Cr.*	1,827.00													
Discount rate	*% p.m.*	0.64%													
NPV of total DF sanctioned as on 01 03 2009	*Rs. Cr.*	1,827.00													
Calculations with NPV as on 01.03.2010															
Period			11	12	13	14	15	16	17	18	19	20	21	22	23
Discount rate w.e.f 01.03.2010			0.936244	0.930654	0.920582	0.914741	0.908936	0.903169	0.897438	0.891744	0.886086	0.880463	0.874877	0.869325559	0.86381
DF Collections															61.36
Cummulative DF Collections															61.36
NPV of Additional DF sanctioned															
Stage 1 - Rs.994.50															
Stage 2 - Rs.1695.50															

Review of levy of Developmet Fee - IGI Airport, New Delhi

Count of period			36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5
Year			**2012**	**2012**	**2012**	**2012**	**2012**	**2012**	**2012**	**2012**	**2012**	**2012**	**2013**	**2013**	**2013**
Month			**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Domestic Traffic	*Mn*		1.95	1.97	1.99	2.02	2.04	2.06	2.09	2.11	2.13	2.16	2.18	2.21	2.23
International Traffic	*Mn*		0.81	0.82	0.82	0.83	0.83	0.84	0.85	0.85	0.86	0.86	0.87	0.87	0.88
Traffic Estimate	*Mn*		2.76	2.79	2.82	2.85	2.87	2.90	2.93	2.96	2.99	3.02	3.05	3.08	3.11
DF collected (upto 31/01/2011)	*Rs. Cr.*														
Additional DF billed (upto 31/01/2011)	*Rs. Cr.*														
Projected DF collection (from 1/02/2011)	*Rs. Cr.*		71.60	72.17	72.74	73.32	73.90	74.48	75.08	75.67	76.27	76.88	77.49	78.11	78.73
Total DF	*Rs. Cr.*		71.60	72.17	72.74	73.32	73.90	74.48	75.08	75.67	76.27	76.88	77.49	78.11	78.73
Interest Rate	*% p.a.*		11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
Interest Rate (tax adjusted)	*% p.m.*		0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639
Discount factor (as on 01 03 2009) used			0.8017	0.7966	0.7915	0.7865	0.7815	0.7765	0.7716	0.7667	0.7619	0.7570	0.7522	0.7474	0.7427
PV of DF collection (PV as on 01.03.2009)	*Rs. Cr.*		57.40	57.49	57.57	57.66	57.75	57.84	57.93	58.02	58.11	58.20	58.29	58.38	58.47
Actual DF collection (PV as on 01.03.2009)	*Rs. Cr.*		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative DF (PV as on 01.03.2009)	*Rs. Cr.*														
Total DF collection (PV as on 01.03.2009)	*Rs. Cr.*	1,827.00													
Discount rate	*% p.m.*	0.64%													
NPV of total DF sanctioned as on 01 03 2009	*Rs. Cr.*	1,827.00													
Calculations with NPV as on 01.03.2010															
Period			24	25	26	27	28	29	30	31	32	33	34	35	36
Discount rate w.e.f 01.03.2010			0.858329	0.852882	0.847471	0.842093	0.83675	0.831441	0.826165	0.820923	0.815714	0.810539	0.805396	0.800285	0.795207
DF Collections			61.46	61.55	61.64	61.74	61.83	61.93	62.02	62.12	62.22	62.31	62.41	62.51	62.61
Cummulative DF Collections			122.82	184.37	246.02	307.76	369.59	431.52	493.54	555.66	617.88	680.20	742.61	805.11	867.72
NPV of Additional DF sanctioned															
Stage 1 - Rs.994.50															
Stage 2 - Rs.1695.50															

Review of levy of Developmet Fee - IGI Airport, New Delhi

Count of period			49.5	**50.5**	51.5	52.5	53.5	54.5	55.5	56.5	57.5	58.5	59.5	60.5	61.5
Year			**2013**	**2013**	**2013**	**2013**	**2013**	**2013**	**2013**	**2013**	**2013**	**2014**	**2014**	**2014**	**2014**
Month			**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**
Domestic Traffic	*Mn*		2.26	2.28	2.31	2.34	2.36	2.39	2.42	2.45	2.47	2.50	2.53	2.56	2.59
International Traffic	*Mn*		0.89	0.89	0.90	0.90	0.91	0.92	0.92	0.93	0.93	0.94	0.95	0.95	0.96
Traffic Estimate	*Mn*		3.14	3.18	3.21	3.24	3.27	3.31	3.34	3.37	3.41	3.44	3.48	3.51	3.55
DF collected (upto 31/01/2011)	*Rs. Cr.*														
Additional DF billed (upto 31/01/2011)	*Rs. Cr.*														
Projected DF collection (from 1/02/2011)	*Rs. Cr.*		79.36	79.99	80.63	81.27	81.92	82.58	83.24	83.90	84.57	85.25	85.93	86.62	87.32
Total DF	*Rs. Cr.*		79.36	79.99	80.63	81.27	81.92	82.58	83.24	83.90	84.57	85.25	85.93	86.62	87.32
Interest Rate	*% p.a.*		11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
Interest Rate (tax adjusted)	*% p.m.*		0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639	0.00639
Discount factor (as on 01 03 2009) used			0.7380	0.7333	0.7286	0.7240	0.7194	0.7149	0.7103	0.7058	0.7013	0.6969	0.6925	0.6881	0.6837
PV of DF collection (PV as on 01.03.2009)	*Rs. Cr.*		58.56	58.66	58.75	58.84	58.94	59.03	59.13	59.22	59.32	59.41	59.51	59.60	59.70
Actual DF collection (PV as on 01.03.2009)	*Rs. Cr.*		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative DF (PV as on 01.03.2009)	*Rs. Cr.*														
Total DF collection (PV as on 01.03.2009)	*Rs. Cr.*	1,827.00													
Discount rate	*% p.m.*	0.64%													
NPV of total DF sanctioned as on 01 03 2009	*Rs. Cr.*	1,827.00													
Calculations with NPV as on 01.03.2010															
Period			37	**38**	39	40	41	42	43	44	45	46	47	48	**49**
Discount rate w.e.f 01.03.2010			0.790162	**0.785148**	0.780166	0.775216	0.770297	0.765409	0.760553	0.755727	0.750932	0.746167	0.741432	0.736728	**0.7320533**
DF Collections			62.70	**62.80**	62.90	63.00	63.10	63.20	63.31	63.41	63.51	63.61	63.71	63.82	**63.92**
Cummulative DF Collections			930.43	**993.23**	1056.13	1119.14	1182.24	1245.44	1308.75	1372.16	1435.66	1499.28	1562.99	1626.81	**1690.73**
NPV of Additional DF sanctioned															
Stage 1 - Rs.994.50															
Stage 2 - Rs.1695.50															