



Report of the Comptroller and Auditor General of India for the year ended 31 March 2011

(Report No. 4)

on

XIX Commonwealth Games - 2010

Government of National Capital Territory of Delhi

Report of the Comptroller and Auditor General of India for the year ended 31 March 2011

on

XIX Commonwealth Games - 2010

Government of National Capital Territory of Delhi

Table of Contents

		Page No.
	Preface	
	Executive Summary	i
1	Introduction	1
2.	Finances, Planning and Monitoring of Execution	5
3	Venues Developed by NDMC and PWD	11
4	Streetscaping and Beautification of Roads around CWG Venues	37
5	Upgradation of Street Lighting of Roads in Delhi	73
6	Road Signages	91
7	City Infrastructure Development: Roads and Flyovers	103
8	Renovation and Restoration of Connaught Place	123
9	Other Infrastructure Development Activities	135
10	Health Services for CWG-2010	165
11	Conclusion	179
	Annexures	180

Preface

In the meeting of the Commonwealth Games Federation (CGF) General Assembly in November 2003 at Montego Bay, Jamaica, Delhi won the bid to host the XIX Commonwealth Games 2010. Having won the bid, the host city contract was signed in November 2003 by the CGF, Indian Olympic Association, Government of India (GoI) and the Government of National Capital Territory of Delhi (GNCTD) with the Organising Committee (OC) (which was constituted later), becoming a subsequent signatory. The XIX Commonwealth Games were successfully held in Delhi from 3 to 14 October 2010.

Post completion of the Games it was decided to conduct an Audit of the expenditure incurred for the Games, which was comprehensive in nature, combining both compliance and performance related issues across multiple Ministries and Departments of GoI, GNCTD, Government of Maharashtra, the OC and various other bodies. This Report was tabled on 5 August, 2011 in the Parliament.

Meanwhile a separate Report covering the activities relating to CWG carried out by the GNCTD and its agencies including execution of project and venue development has been prepared. This Report contains the results of the audit in respect of the GNCTD, covering the period from May 2003 when the initial bid was made for hosting the games to December 2010 when most of the Games related projects and activities were completed. The expenditure figures have been brought up to date (to July 2011). Other issues and concerns which focus on agencies specific aspects would be reported separately through other audit and inspection reports depending upon their materiality and significance.

The replies of GNCTD to audit findings were received on 15 December 2011. Due consideration has been given to the responses of the government and its agencies to the observations made during the course of the audit. The audit exercise for every department and agency was signed off by an exit conference attended by the heads of the departments. In the finalisation of the audit findings, all agencies audited have been given adequate opportunity to provide clarification or state their side of the facts.

This Audit Report for the year ending March 2011 on the expenditure incurred by the Government of NCT of Delhi on XIX Commonwealth Games has been prepared for submission to the Lieutenant Governor of NCT of Delhi under Article 151(2) of the Constitution of India.

Executive Summary

India hosted one of the most successful Commonwealth games in Delhi from 3 to 14 October, 2010. These Games represented the biggest international multi-sport event held in the country. India gave its best ever performance in the Commonwealth games. The Games were also a remarkable show case of the nation's managerial and sporting capabilities that despite a multitude of adversities India emerged successful both as hosts and as competitors.

The right to host CWG-2010 was awarded in November 2003 to Delhi on the basis of the May 2003 bid of the Indian Olympic Association (IOA), and the guarantee of Government of India (GoI), in conjunction with the Government of the National Capital Territory of Delhi (GNCTD) to bear the financial liability for hosting the Games, including underwriting any shortfall between revenues and expenditure. As a signatory to the Host City Contract (HCC) the GNCTD became responsible for extending courtesy facilities for the Games Family, officials and aides, besides getting the Games infrastructure ready.

The initial budget projected in the IOA bid was highly conservative and unrealistic which led to revisions of estimates at very short intervals even upto September 2010. This evidenced a piecemeal approach for consideration/ approval of individual cost elements. The other major reason for increased costs/ estimates was delays at different stages (including delays in grant of approvals by GoI), resulting in bunching of activities towards the end and consequential increase in cost.

There were delays relating to venue development at all stages – planning delays on account of late preparation/ approval of venue briefs, return briefs, and concept designs; delays in tendering and contract award; as also in works execution and handover. In the absence of in-house design skills, the venue owners/ implementing agencies were dependent on external design consultants.

In a large number of cases, contractors including consultants were selected by not adhering to the eligibility criteria. There were also considerable variations in the performance of these consultants. The pre-qualification of bidders separately for each venue led to inconsistencies in eligibility criteria and delayed the process of award and execution. There were several deficiencies in the process of "justification". In most cases, the costs at which works were finally awarded were substantially higher than the estimated costs. The awards were then "justified" within a band of 10 per cent through calculation of justified costs (based on market assessment of the majority of items) post- financial bid opening. Instances of deviations (quantity deviations, extra items, and substituted items) from the original scope of work, with adverse implications in terms of increased cost and delays were noticed. PWD, GNCTD awarded most of its works on percentage rate tenders. This method of tendering is acceptable only when major portion of work is on account of items included in the Delhi Schedule of Rates (DSR), which was not the case in most of the venue development works. Competition was not ensured as the departments/ agencies resorted to short tendering, calling of limited tenders, accepting single tenders, adopting restrictive conditions in the NIT and awarding contracts on nomination basis.

Third Party Inspection/Quality Assurance (TPIQA) Agencies were engaged to provide an independent assessment, at various stages of the construction. While the TPIQA Agencies should be held accountable in its own right for poor quality of execution of the works, the implementing agencies were not able to closely monitor the work of the TPIQA Agencies to gain the necessary assurance from their work. Suitable penalties were not imposed in cases of failure to perform. In all seven audited roads and flyovers projects Contractor's Profit and Overhead Charges (CPOH) of 37.5 per cent for the bridge/ flyover components in contrast to CPOH of 15 per cent stipulated by CPWD was adopted. This resulted in increasing the justified cost, worked out by the department after opening of the financial bids. There were also instances of delays in achieving the milestones listed in the contracts. Compensation/ liquidated damages for delays have not been levied on the contractors in most cases.

Although the project for renovation and restoration of Connaught Place (CP) was envisaged in April 2004, it was plagued by undue delays. The approved DPR for the project was submitted only in February 2008, and it was, therefore, unreasonable to expect that the project could have been completed in time for the Games, especially in view of the constraints of traffic management considering the importance of Connaught Place to Delhi's life.

While procuring the TETRA network for common communication services covering not only the Games period but also a seven year legacy period, a proper assessment of the requirements of Delhi Police (the main user) and other public agencies as well as the replacement of existing networks with TETRA was not carried out.

The final bills for 40 projects are yet to be settled by the implementing agencies, even after nine months of conclusion of the Games.

Chapter1: Introduction



1.1 Commonwealth Games - 2010

The Commonwealth Games (CWG) is a multi-sport event held every four years among the Commonwealth Countries. The XIX Commonwealth Games (CWG-2010) were successfully hosted in Delhi from 3rd to 14th October 2010. These games represented the biggest international multi-sport event held in India.

1.2 Award of CWG-2010 to Delhi

Delhi won the right to host the Games at the Commonwealth Games Federation (CGF) General Assembly in November 2003 in Montego Bay, Jamaica. A Host City Contract (HCC) was signed in November 2003 between the Commonwealth Games Federation (CGF), Indian Olympic Association (IOA), Government of India (GoI), Government of National Capital Territory of Delhi (GNCTD), with the Organising Committee (OC) becoming a subsequent signatory in March 2005.

The chronology of events leading upto to the award of the XIX

Commonwealth Games, 2010 to Delhi is summarised below:

Table 1.1 – Chronology of events leading to award of XIX CWG to Delhi

June-July 2002	GoI conveyed its no objection to IOA making a presentation at Manchester to bid for the Games and subsequently (February 2003) reiterated its support for the proposal, in connection with a preliminary presentation to the CGF Executive Board
May 2003	IOA submitted a formal bid for the Games to the CGF
August 2003	Visit of CGF Evaluation Commission to Delhi
September 2003	Guarantees given by GoI, Lt. Governor (LG), Delhi and Chief Minister (CM), GNCTD to bear all costs and underwrite any shortfall between revenues and expenses
November 2003	CGF General Assembly voted for allotment of XIX CWG to Delhi; Host City Contract (HCC) signed

The HCC was signed on 13 November 2003 between the CGF, IOA, GoI, GNCTD and the OC. According to it the OC, IOA, GoI and GNCTD would be jointly and severally responsible for all commitments, including, without limitation, financial commitments relating to the organization and staging of the Games in accordance with the constitution and Protocols and Regulations of the CGF.

1.3 Role of LG, Delhi and GNCTD

The Group of Ministers (GoM) in its third meeting, in January 2005, decided that the LG would be overall responsible for the Games with specific reference to security, law and order and matters under Delhi Development Authority (DDA). The CM, GNCTD would look after all issues under the jurisdiction of GNCTD. The main areas of activity for GNCTD were:

- City infrastructure by Public Works Department (PWD), GNCTD, New Delhi Municipal Council (NDMC) and Municipal Corporation of Delhi (MCD);
- Venues under PWD, GNCTD, and NDMC; and
- City improvement projects under PWD, GNCTD, NDMC and MCD

1.4 Audit Objectives

The main objectives of the audit so far as it relates to GNCTD, were to assess the following:

- Adequacy and effectiveness of budgeting and financial management,
- Effectiveness and efficiency of agencies in planning, executing and delivering the Games and associated infrastructure projects

- Propriety, economy, transparency and probity (including compliance with relevant rules and regulations and accepted best practices) in procurement of goods.

1.5 Audit Scope and Coverage

A report of the Comptroller and Auditor General of India on CWG-2010 has already been tabled in the Parliament on 5 August, 2011. The scope of present audit covered activities related to CWG games carried out by GNCTD and its agencies for the period from May 2003 (submission of the bid for hosting the XIX Commonwealth Games) to December 2010 with expenditures updated to July 2011. The main activities and agencies covered in this audit are summarised in Table 1.2.

Table 1.2 - Agencies Covered in Audit

Area	Main Agencies Covered
Overall Planning and Management	Departments of the GNCTD and Departmental Committees
Venue Development	Venue owners (GNCTD, MCD, NDMC,)
City Infrastructure Projects	PWD, Deptt. of Information Technology (IT), NDMC, MCD, Delhi Jal Board (DJB), Delhi Transport Corporation (DTC) , Delhi Tourism & Transport Development Corporation (DTTDC) , Pragati Power Corporation Limited(PPCL), Delhi Transco Limited (DTL).
Health Services	Directorate of Health Services (DHS), GNCTD

1.6 Audit Methodology

The field audit was conducted between October and December 2010. An entry conference was held with the Ministry of Youth Affairs and Sports (MYAS) and representatives of GNCTD and other agencies (except the OC) on 1 November 2010.

Audit methodology covered scrutiny of records and documents of different agencies, interviews with concerned officials and persons, and physical inspection of sites, including collection of photographic evidence. Audit requisitions were issued, seeking records, information and clarifications (where necessary). Preliminary audit observations were communicated to the agencies at appropriate levels, seeking their responses.

Draft agency-specific audit findings were communicated through "Statements of Facts" (SOFs) in January-February 2011 to the concerned agencies for their

responses. Exit Conferences were also held with the concerned agencies[1] to discuss the main audit findings. The responses of the GNCTD and its agencies[2] at various levels have been examined and considered, as appropriate, in this report.

For the purpose of the present report, the departments and agencies were revisited during August and September 2011 to bring the expenditure figures up to July/August 2011. We acknowledge the co-operation and assistance extended by the Departments and other agencies of the GNCTD during the conduct of this audit.

[1] Public Works Department (1-2 February 2011), Department of Health & Family Welfare including 5 hospitals (1 February 2011), IT Department (11 February 2011), Delhi Jal Board (24 January 2011), Delhi Tourism And Transport Development Corporation (3 February 2011), Delhi Transport Corporation (28 January 2011), Delhi Transco Limited (20 January 2011), Municipal Corporation of Delhi (28 January 2011), New Delhi Municipal Council (17 February 2011).

[2] PWD (February, 2011), NDMC (February, 2011), MCD (February, 2011), DJB (January, 2011), DoHFW incuding 5 hospitals (March, 2011), IT Deptt .(February, 2011), DTTDC (February, 2011), DTC (February, 2011), DTL (February, 2011), DGPS (March, 2011) and GNCTD's reply of December 2011.

Chapter 2: Finances, Planning and Monitoring of Execution

2.1 Financial Outlay – A Macro Overview

The initial budget estimate for hosting and conducting CWG-2010 projected in the Indian Olympic Association (IOA) bid document of May 2003 was just ₹ 1200 crore, as summarised in the table given below:

Table 2.1 Budget Estimates indicated in May 2003 IOA bid

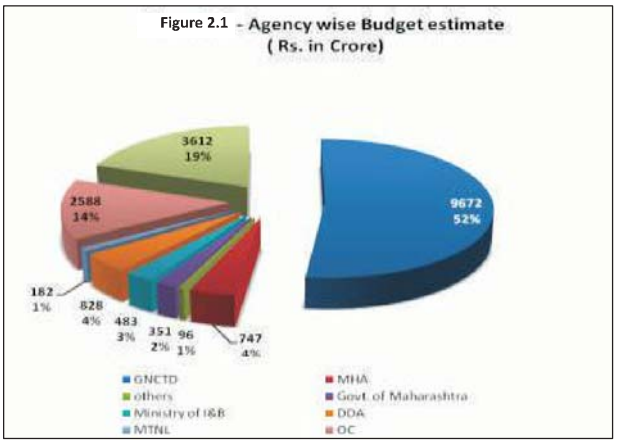
(₹ in crore)

Projected Expenditure		Sources of Finance	
Capital/ repair and renovation expenditure on stadia	1,050	Revenue Surplus from conduct of Games (revenues of ₹ 840 crore, offset by operating expenses of ₹ 635 crore)	205
		Sale of residential flats	477
City beautification and additional services	150	Grants	518
Total	**1200**	**Total**	**1200**

Note: US$ figures in IOA bid converted @ ₹45/ US$

The estimated expenditure for the Games Projects increased to ₹ 13,566 crore by July 2009 and further to ₹ 18,532.31 crore by December 2010. This excludes investments by other agencies – notably Delhi Metro Rail Corporation (DMRC) and Airports Authority of India (AAI)/ Delhi International Airport Limited (DIAL) etc.

The Agency-wise profile of budget estimates is given below:



2.1.1 Analysis of Cost

Analysis of the cost estimates[1], as considered by or intimated to the GoI, reveals the following increasing trend:

Figure 2.2 – Increasing trend of cost estimates

(₹ in. crore)



There were seven upward revisions in budget estimates from April 2007 to September 2010 at very short intervals, representing a three-fold increase (from ₹ 3566 crore to ₹ 11,687.25 crore). This was the outcome of a piecemeal approach adopted in planning in the initial stages.

2.1.2 Financial Outlay - for GNCTD

An agency-wise profile of approvals/ sanctions by GNCTD (including approvals for MCD, NDMC and other bodies) is given below:

Table 2.2 – Agency-wise profile of Approvals for GNCTD

(₹ in crore)

Agency	Sanctioned Amount
PWD	5,456
DTC	1,173
Power Department	1,100
NDMC	1,016
MCD	542
DJB	269

[1] Including ₹ 2800 crore for GNCTD and ₹ 351 crore for Government of Maharashtra

Agency	Sanctioned Amount
DHS	46
Art & Culture Deptt.	28
IT	28
Environment & Forest	7
Delhi Plant and garden Society (DPGS)	6
Grand Total	**9,672***

**This includes funding from GoI – (a) components of Jawaharlal Nehru National Urban Renewal Mission (JNNURM): ₹ 761 crore and (b) Additional Central Assistance for CWG-related projects: Rs 2800 Crore.*

(Details are given in **Annexure 2.1**)

2.1.3 Outstanding Liabilities

Audit observed that the final bills for most of the projects had not been made until August 2011 by the implementing agencies, even after nine months of conclusion of the Games. Details are given in **Annexure 2.2.**

2.2 Planning

2.2.1 Delayed Finalisation of Plans for City Infrastructure

One of the objectives of CWG-2010 was to develop state of the art city infrastructure. It was thus, essential that a comprehensive, overarching plan identifying the requirements of city infrastructure for hosting the Games be prepared and approved at the highest level.

GNCTD stated that it had taken up the issue of the need for a specific allocation of funds to fulfill the requirements of the city government for CWG-2010 with the Finance Minister (GOI) in 2004. This was followed by a letter in May 2005 to Ministry of Youth Affairs and Sports, indicating department-wise details of the requirement of funds and its justification. In the 9th meeting of the GoM in January 2006, it was decided that GNCTD should include all its requirements covering city infrastructure and venue infrastructure in its proposal to the Planning Commission. Subsequently, a committee including representatives of GNCTD headed by Member Secretary, Planning Commission finalised a list of infrastructure projects which was presented at the Committee of Secretaries (CoS) meeting held on 12 December 2006. GNCTD informed that the presentation titled "Preparing Delhi for 2010 and Beyond – Making it a world class capital" made to the CoS constituted a comprehensive city development plan for CWG-2010.

Audit scrutiny, however, revealed that the presentation to the CoS in the meeting of December 2006 could, at best, be termed as an approach to an infrastructure development plan for CWG-2010, without the necessary level of detail and rigour. The detailed planning was done in an ad hoc fashion without an integrated perspective and without a "bottom-up" assessment of needs and requirements. It was also substantially delayed.

Delayed planning was a key reason for many infrastructure projects not being completed in time. Further, it also resulted in non-availability of adequate time required for statutory clearances from various agencies e.g. Delhi Urban Art Commission (DUAC), Archaeological Survey of India (ASI), Ministry of Environment & Forest (MoEF) / Forest Department etc. (given the normal time required for due diligence of proposals by these agencies).

2.3 Co-ordination Committees

Planning, monitoring and oversight of the CWG-2010 Project, as well as co-ordination of activities across organizations / agencies, was conducted through a host of co-ordination committees at various levels.

The following table depicts the committees created at different points of times for the Games Project:

Table 2.3- Main Co-ordination Committees

Committee	Function	Period of Functioning
Government of National Capital Territory of Delhi		
***Empowered Committee under LG**	To monitor construction of required infrastructure within specified time; to include representatives of central ministries/ state Government /agencies	Decided in October 2004; never constituted
***Chief Minister's Sub Committee**	To look after all issues that come under the jurisdiction of GNCTD as per constitution	Decided in January 2005; never constituted
Empowered Committee under CS	Facilitation of clearances by various agencies of CWG related projects	From September 2006 onwards
Steering Committee	To approve venue-wise plans for installation of Closed Circuit Television (CCTV) cameras and access control equipment; covered all venues, including ex-Delhi venues, irrespective of ownership	From February 2009 onwards

**Note: These committees were disbanded before hosting of the Games in October 2010*

➢ *Empowered Committee under the Chief Secretary, Delhi*

In September 2006 an Empowered Committee under the Chairmanship of Chief Secretary, GNCTD, was set up to expedite clearances by various agencies in a time bound manner. The Committee met 27 times between October 2006 and October 2010. However, it was not empowered to issue any sanctions or approvals, which were issued through normal organizational/departmental channels. These decisions were processed through the established Departmental channels e.g. Works Advisory Board/ Technical Committee etc, and later subject to scrutiny by the GNCTD Expenditure Finance Committee, before submission to the Cabinet for approval and subsequent issue of work orders.

➢ *Steering Committee*

The Steering Committee set up in September 2009 prepared the security plans for venues and deployment of Chemical, Biological, Radiological and Nuclear (CBRN) measures for the CWG.

Apart from these committees, Unified Traffic and Transportation Infrastructure (Planning and Engineering) Centre (UTTIPEC) was also formed by a September 2008 circular of the LG, Delhi. This Centre was responsible for the preparation of transport plans for the Games family and spectators for six stand alone venues, the Games Village, linkages from airport to the Games Village, India Trade Promotion Organisation (ITPO) and other venues where the Games family was to be accommodated.

Chapter 3: Venues developed by NDMC and PWD

3.1 Introduction

The NDMC and PWD, GNCTD developed competition/training venues at Thyagaraj, Talkatora, Shivaji, and Chhattrasal Stadia and Government Model Ludlow Castle School.

The venue wise major works, their tendered cost and the contractors' details are given in Table 3.1 below:

Table 3.1 – Works at other Venues

(₹ in crore)

Work	Consultant	Estimated cost	Tendered cost	Contractor
Talkatora Indoor Stadium				
Construction of new sports facility block with basement parking	M/s Raja Aederi Consultants Pvt. Ltd	28.18	52.98	M/s Simplex Projects Limited
Addition and alteration of existing stadium		10.60	19.19	M/s Simplex Projects Limited
Shivaji Outdoor Stadium				
Construction of two hockey pitches, stadium, new sports facility block with two level basement parking	M/s Raja Aederi Consultants Pvt. Ltd	80.85	160.27	M/s China Railway Shisiju Group Corporation
Thyagaraj Stadium				
Package 1	Peddle Thorp Arch. Melborne in JV with Kapoor Associates	95.33	103.96	JMC Projects (I) Ltd
Package 2		89.01	108.80	JMC Projects (I) Ltd
Chhattrasal Stadium	Benjamin Benjamin & Vats	50.68	60.26	Era Infra Engg. Ltd.
Ludlow Castle	A.G. Krishna Menon	8.50	11.25	Arora Construction Co.(P) Ltd.

3.2 Venues developed by New Delhi Municipal Corporation (NDMC)

3.2.1 Selection of Raja Aederi Consultants Pvt. Ltd as Architect consultant

In April 2006, two separate NITs were issued for appointment of Architect Consultant for improvement/upgradation of Talkatora Indoor Stadium (TIS) and Shivaji Stadium, with the key eligibility parameter of experience in providing services for sports venues of prescribed contracted value[1]. Three bids[2] were received and the tenders opened on 23 May 2006. Based on technical bids, only two applicants were found eligible and the contract was awarded to Raja Aederi Consultants Pvt. Ltd., being the L1 bidder, for which letter of intent (LoI) was issued on 3 July 2006 and contract signed in October 2006.

Audit observed that none of the three bidders were technically eligible. While Arkitkturel Grids, was rejected for non submission of requisite documents, the technical bids submitted by Kothari & Associates and Raja Aederi Consultants (Pvt.) Ltd, were also deficient. Kothari & Associates submitted merely a list of completed works without any certificates. Raja Aederi Consultants (Pvt.) Ltd's technical bid was also ineligible on the following points

- It had submitted the bid on the basis of an unregistered Memorandum of Understanding (MoU) (written on an ordinary paper) with Sterling Engineering Consultancy Services Pvt. Ltd. dated 18 May 2006, signed five days before the opening of the bid i.e. 23 May 2006. Interestingly, the original last date of submission of bids was 16 and 17 May 2006, which was extended on the request of the potential bidders;
- Raja Aederi Consultants (Pvt.) Ltd., as such, had no independent experience in providing architectural services for sports venues of the prescribed contracted value; and
- Sterling Engineering Consultancy Services Pvt. Ltd. provided an undated experience certificate issued by another architect Shashi Prabhu & Associates, instead of the client, stating that the former had rendered Structural and Design Engineering services for an indoor stadium project of National Sports Club of India.

[1] Three completed similar works not less than ₹ 15 crore or two similar works not less than ₹ 20 crore or one similar work not less ₹ 25 crore in the last 5 years

[2] Arkitkturel Grids, Kothari & Associates and Raja Aederi Consultants (Pvt.) Ltd.

Thus, none of the applicants were technically eligible. Considering that the tender had been called in May 2006 when venue briefs were still to be received[3], there was still scope for retendering and seeking an agency suitable for executing the services required, rather than choosing from a pool of ineligible bidders.

Further, the scope of work was increased from improvement/upgradation of the stadium to designing for major new construction at the stadium with an additional fee @ 3 *per cent* of estimated cost or actual cost whichever is less with a maximum of ₹ 4.25 crore (in addition to ₹ one crore already awarded for the work relating to renovation and upgradation). As of September 2011 an amount of ₹ 4.26 crore was paid to M/s Raja Aederi Consultants (Pvt.) Ltd.

This was a violation of tendering practices as the scope of work had completely changed and had increased (November 2007) from improvement/ upgradation of both the stadia projects to designing for major new construction at the stadium based on the Venue Brief given by the M/s EKS at an approximate project cost of ₹ 204 crore for both stadia projects as against the earlier project cost of ₹ 30.45 crore for upgradation of both stadia. The revised construction programme envisaged a new five storey building with two basements and Renovation/improvement/upgradation of the existing stadia of Central Public Works Department (CPWD).

NDMC while confirming the facts stated that the evaluation of technical bid was carried out by a team of officers comprising of Engineer-in-Chief (E-in-C), Chief Architect of NDMC and Addl. Director General (ADG) rank officers of CPWD. If the appointment of fresh consultant were considered for revised scope of work, it would have delayed the whole work by one year due to procedural timeframe involved. To meet the target date of CWG, NDMC decided to continue with the same consultant for which necessary approval from the competent Authority was taken.

The reply is not tenable because from October 2006 to May/November 2008, there was sufficient time to retender and since M/s Raja Aederi was ineligible for a project valuing ₹ 30.45 crore, the award of consultancy work with project cost of ₹ 204 crore to the firm lacked justification.

3.2.2 Shivaji Stadium

3.2.2.1 Selection of China Railway Shisiju Group Corporation (CRSGC) as contractor for Shivaji Stadium

In February 2008, NIT for the composite contract for improvement/ upgradation works at Shivaji Stadium was issued. Six agencies[4] submitted

[3] Venue brief was received for Talkatora Indoor Stadium in November 2006 and that of Shivaji Stadium in May 2007.

[4] China Railway Shisiju Group Corporation; Ahulwalia Contracts (India) Ltd., JMC Projects

their bids and after opening the technical bids on 24 March 2008, all were technically qualified. On 10 April 2008, the financial bids were opened and CRSGC was declared the L1 bidder and the LOI issued on 19 May 2008.

Audit observed that CRSGC, a foreign company, with no existing established base in India was engaged and bid should have been rejected at the technical evaluation stage itself for the following reasons:

- No global tender was issued; the NIT was only published in national news papers, loaded on NDMC website and circulated to a panel of 18 Indian contractors;
- The primary eligibility condition was experience of execution of construction of new multi-storied block of Central Government or State Government departments/ Municipal Boards / Autonomous Bodies / PSUs, indicating an Indian context. CRSGC produced similar experience of working in China instead of India;
- CRSGC did not produce requisite registration certificates from competent authorities for local taxation and registered place of business in India. These were produced only after opening of the financial bid; and
- Generally, when foreign participation is envisaged, formation of JV with a local company or creation of a separate legal entity in India is insisted upon to ensure compliance with local laws, familiarity with local conditions and facilitate settlement of legal disputes, if any. No such provisions were made in this NIT.

The CRSGC should have been declared ineligible in the first instance. Further, its inability to deliver in Indian conditions and its reliance on Simplex Project Ltd., a sub-contractor for material and labour, finally reflected in the project not being completed in time for the Games. However, the exact extent of sub-contracting of the composite work by CRSGC to Simplex Project Ltd. is not known.

NDMC stated that the tenders were uploaded on NDMC and Delhi government websites and notice was forwarded to the President Contractor Association of Northern Railway, PWD & DDA, DJB for displaying on notice boards and also to 18 reputed firms. The documents submitted by CRSGC were attested by Indian Embassy at China. Eligibility of the firm was evaluated and approval of competent authority on evaluation of technical sub committee was accorded. The eligibility condition for experience did not mention that the experience of the firm had to be necessarily in India.

(India) Ltd., Nagarjuna Construction Co. Ltd., YMC Buildmore Pvt. Ltd. and Unity Infraproject Ltd.

The reply is not acceptable in view of the aforementioned conditions mandatory for executing a project under a Joint Venture.



Barricading in the names of main/sub-contractor at worksite

3.2.2.2 Inflated item rates in justified cost

NDMC while preparing the justified cost, to assess the reasonableness of the offer of L1, did not prepare it based on the most reasonable prevailing market rates available. Out of total 99 items of building structure (Justified cost ₹ 111.54 crore), six high value Delhi Schedule of Rates (DSR) items (Justified cost of ₹ 69.50 crore) constituting 62 *per cent* of the justified cost, were test checked in Audit using the coefficients/rates of material from CPWD Common Schedule of Rates (CSR) 2007, duly updated by price indices. This revealed that these items rates were inflated by 20.3 *per cent* resulting in extra cost of ₹ 14.11 crore.

NDMC replied that justification was prepared for 90 *per cent* of higher value items as per para 19.4.3.1 of CPWD Manual. The quotations were collected and enclosed wherever it was possible. In case the quotations were not available, the rates were verified from the market and for some common items the rates prevailing in the department were considered. The overall rate structure was prepared in consultation with Architect consultant and was duly scrutinized at various levels. Comparison of market rates and DSR rates plus enhancement was not considered as particular make and specification were incorporated in NIT. The method adopted by audit does not reflect true picture of prevailing market rate.

The reply is not acceptable as Audit has kept in mind provisions of Para 19.4.3.1 of CPWD manual while making calculations. In order to ensure that the justification is based on genuine market rates, written quotation is mandatory. Alternatively actual rates of similar work in other Divisions could also have been adopted. There was no evidence produced regarding such an exercise having been conducted at the time when justification was prepared.

NDMC has itself agreed on non-availability of quotations. In such a case the method of updating rates with price indices adopted by Audit is correct.

3.2.2.3 Avoidable expenditure on specialized items of Electrical works

As per CPWD manual 2007 (Para 5.6) to ensure quality, specialized works should be executed through specialized agencies. In the tender for Shivaji Stadium, items such as air conditioning plant, transformers, diesel generating sets, security system, firefighting equipments, etc. were included in a composite tender. It was however observed that around the same time NDMC invited separate tenders for such specialized works for Talkatora Stadium and due to direct participation of specialized agencies, the tender rates for the works of Talkatora Stadium were 11 to 45 *per cent* below the tendered rate of composite work of Shivaji Stadium even after considering 22.4 *per cent* discount offered by the contractor for Shivaji Stadium. Had separate tendering approach been followed in case of Shivaji Stadium also, an estimated saving of ₹ 2.23 crore could have been achieved.

NDMC replied that composite tender was floated in compliance with para No. 15.3 of CPWD Manual 2007 which states that system of composite tender shall be followed for works where sanctioned amount is more than ₹ 10 crore; and to ensure co-ordination among various agencies and in view of time constraint. The delay in completion of Shivaji Stadium project was due to pending case in court of law for vacation of the site. The reply is not acceptable since the stated coordination was not achieved and works of Shivaji stadium could not be completed but Talkatora stadium was ready in time for CWG-2010 despite separate tenders being floated. Further, NDMC's contention that delay in completion of Shivaji Stadium project was due to pending court case is not acceptable as site was clear of all hindrances in March 2009, and by taking 18 months from March 2009, the work should have been completed by August 2010. However, the same has not been completed so far (November 2011).

3.2.2.4 Unfruitful expenditure on Integrated Security System

M/s Electronics Corporation of India Limited (ECIL) was to install an Integrated Security System with CCTV Cameras at the Shivaji Stadium. The contract with ECIL for ₹ 2.21 crore was signed on 8 December 2009 by NDMC comprising of 'Legacy' and 'Non-legacy' items. The division had paid an advance of ₹ 1.18 crore on 23 December 2009 as per clause 6.6 of the agreement.

Audit observed that at the time of signing of contract and grant of advance only the work of foundation of the stadium was in progress and the integrated security system was required to be fixed just before the finishing of the

stadium and facility block. Hence work order was unnecessarily issued much in advance. Further there was contradiction in the condition for reckoning of time limit for completion of the work of security system which was 3 months or 30 June 2010 from the date of signing the contract and handing over the site with readiness whichever is later whereas the condition for grant of advance was immediately on signing the agreement. Had the condition of grant of advance been subject to handing over of the ready site then the blocking of funds of ₹ 1.18 crore in undue procurement of material would have been avoided.

NDMC stated that ECIL was awarded the work as per directions of Ministry of Home affairs. The material brought by ECIL was in the safe custody of NDMC. The advance payment of ₹ 1.18 crore has been made as per condition of agreement approved by Ministry of Home Affairs (MHA).

The reply is not tenable as due to faulty conditions in the agreement, advance payment was made prematurely to ECIL, resulting in blockage of funds.

3.2.2.5 Non-completion of the training stadium in time for CWG-2010

The venue brief for the stadium was received in May 2007, the architect was engaged in October 2006 and the composite contract for the work was awarded in May 2008, with the scheduled date of completion as November 2009. Of the major works only one hockey pitch could be prepared. The other pitch, two level basement parking, multi-storeyed facilities building and the stadium still remain incomplete (September 2011).

Audit observed that despite very close monitoring by the Empowered Committee of GNCTD, headed by the Chief Secretary, and repeated assurances by Chairman, NDMC, the facility could not be made available for CWG-2010. The main reason was the inability of NDMC to provide hindrance free site till March 2009 due to litigation with existing occupants of the restaurants and kiosks within the stadium complex. Despite, the decision to upgrade the stadium in July 2005, it is inexplicable why NDMC waited till the last minute to ensure vacation and availability of a hindrance free site.

The contractor also failed to deliver within the scheduled time of 18 months i.e. by September 2010 even after handing over of the clear site in March 2009.

NDMC replied that due to lack of hindrance free site, restricted project site and rains the work was delayed. Responsibility of contractor for failure to deliver the venue in time shall be dealt with as per provisions of agreement and extension of time shall be regulated with or without levy of compensation on merit of the case and in terms of the relevant clause of the agreement.

The reply is not acceptable as NDMC was well aware of the cited reasons. Hindrance free site was available from March 2009. Moreover responsibility for failure to deliver the venue in time needs to be fixed.

3.2.3 Talkatora Indoor Stadium (TIS)



Talkatora Indoor Stadium – Boxing

3.2.3.1 Engagement of Simplex Projects Ltd as the main contractor

There were two major civil works to be undertaken at TIS. The tendering process for each is summarised below:

Table 3.2 – Tendering process for award of works

Work	Tendering Process	Time line	Work	Tendering Process	Time line
Sports Facility Block	NIT issued	August 2007	**Addition and Alterations**	1st Call Tender opened rejected due to high rate	November 2007 December 2007 January 2008
	Tender opened	September 2007		2nd Call Tender opened	January 2008 February 2008
	Work Awarded	December 2007		Work Awarded	April 2008

Audit noticed that though the tender was advertised in the newspapers, NDMC website and circulated among the panel of contractors, in both contracts only one bidder, Simplex Projects Ltd. responded. While NDMC chose to retender the contract for additions/alterations, it decided to accept the single bid for the construction of the sports facility block. It is pertinent to note here that the period of execution of the contract was 18 months (sports facility block) and 12 months (addition/alteration work), and, therefore, there was scope for rebidding. Further, on analysis of justified rates of items constituting 27 and 44 *per cent* of the justified cost of the two buildings works, Audit observed that these were respectively 19 and 16 *per cent* higher than CPWD DSR rates applicable. Under the circumstances, it was desirable to re-bid and test the market once again.

It was also found that in sports facility block an amount of ₹ 2.40 crore @ 5.24 *per cent* of the justified cost was added to provide for future price rise of materials due to absence of price escalation clause (10CC) in the agreement, without any supporting provision in the CPWD manual for such ad hoc percentage.

In the absence of competitive bidding and difference in the justified costs and those worked out in audit on a test check basis, it is difficult to conclude that the best price was determined for the work in a competitive market.

NDMC stated that the justified cost was prepared as per para 19.4.3.1 of CPWD Manual 2007 and in addition various factors like conveyance charges, labour and costs of engineering establishment deployed, plant and tools etc were also considered while accepting the tender and together had a financial effect of 5-10 *per cent*. Rates of non schedule items were considered by verification from specialized agencies. CPWD DSR prices indices are circulated for complete DSR and not for individual items. Rates for few items are available in Delhi Government web site also.

Further re-tendering would have consumed time which would effect the target date of completion of competition venue and there was probability of getting even higher rates in future besides loss of precious time. In respect of flooring material a sub committee has been ordered to verify the market rates and adjustment if any would be made before paying final bill.

Reply is not acceptable as the item rates adopted by NDMC were not based on quotations in writing/actual invoices of other similar works hence cannot be relied upon as prevailing market rates. Further, the total cost of transportation of labour to worksite from the labour camp would be very negligible as compared to total cost of the work. This was accepted by NDMC in its reply of December 2011. The contractor's overhead and profit covers the other miscellaneous expenditure. The price indices adopted by Audit are for specific material released by Economic Advisor and not that of CPWD. Compliance on flooring material needs to be watched.

3.2.3.2 *Quality assurance for Talkatora Indoor Stadium and Shivaji Stadium*

In November 2008, NDMC engaged SGS India Pvt. Ltd. as the Third Party Inspection/Quality Assurance (TPIQA) agency for ongoing construction/ up gradation works at Shivaji Stadium and Talkatora Indoor Stadium for a lumpsum fee of ₹ 1.06 crore. The following deficiencies in the quality of works and TPIQA services were noted:

- TPIQA was engaged in November 2008, six months after the work had commenced in Talkatora Indoor Stadium with 30 *per cent* overall achievement of work which was unsupervised by the TPIQA;
- Though the TPIQA was required to conduct quality tests of input material, it only reviewed the testing facilities of the contractors and NDMC and the reports submitted by them. It did not review the test registers maintained by NDMC;
- NDMC also did not take effective action on the suggestions put forth by TPIQA in its periodical reports; and
- CTE, CVC also found several deficiencies in the quality of work executed. Both the cube test and core test of Talkatora Indoor Stadium failed; cement consumption was also reported as low in Talkatora Indoor Stadium. NDMC had sent clarifications regarding method of checking of cement quantity, but CTE had not dropped its observations.

The quality of construction works, particularly in Talkatora Indoor Stadium, was compromised despite the engagement of SGS India Pvt. Ltd. as TPIQA. However, NDMC gave an "**excellent grading** for technical proficiency" to SGS India Pvt. Ltd., even before the completion of work.

The lump sum fees of ₹ 1.06 crore to M/s SGS for both stadia projects was not to be increased due to time and cost overrun as per clause 13 of tender documents, however, NDMC paid ₹ 1.09 crore to M/s SGS upto June 2010 despite the fact that the construction work of Shivaji Stadium was not completed.

NDMC replied that TPIQA was appointed to assist NDMC in ensuring quality of work as per contract. Extra payment beyond agreement amount shall be recovered from agency. NDMC further stated that necessary action shall be taken on the basis of the final findings of CTE. At the time of award of work 18 months for Shivaji Stadium and 12 months for Talkatora stadium were considered, however, the work was delayed and the period of TPIQA was extended. TPIQA has been paid for the period which they have rendered services and sufficient bank guarantee is lying with NDMC for affecting recovery. The reply is not acceptable as TPIQA failed to ensure the quality of

work. The fact remains that the excess payment made to M/s SGS has not been recovered till December 2011.

3.2.3.3 Excess payment of ₹0.82 crore on substituted chairs

As per clause 12 of the contract read with para 23.3 of CPWD Manual the contractor should propose revision in the rate of substituted/extra item supported by proper rate analysis within 15 days of cropping up of the said item. Under the agreement for the work, item No.98 of supplying and fixing of stadium chairs with high density plastic (HDPE 5502) seat and back with load bearing capacity of seat 200 kg, back 80 kg, of dimension 450 mm x 400 mm x 400 mm, with eight years warranty was included in the original scope of work. The contractor had quoted his rate @ ₹ 2190 per chair, whereas the justified cost was arrived at ₹ 1393.80 per chair.

This item was substituted by HBYC-33 model Tanglong make chairs with high density plastic HDPE 5502 seat and back of dimension 420 mm x 420 mm x 420 mm. The cost of substituted chair was claimed by contractor @ ₹ 6500 and quantity was also increased from 3000 to 3150 chairs. Approval in principle of the Chairman, NDMC was obtained on 9 April 2010.

The rate of the substituted item was stated to be based on market rates but no analysis, invoice, quotations, etc. was found on record hence reasonableness of rates could not be verified. Further payment for the work started from 9th RA bill (October 2009) before approval(April 2010) in principle of the Chairman, NDMC. Approval of quantity and rates has not yet been obtained (December 2011). The substituted rate was about 2.97 times the tendered rate and the increase in cost due to the substitution was ₹ 1.36 crore[5]. However even though the contractor could not produce documentary proof of rates claimed by him yet payment of ₹ 1.35 crore for 2704 chairs fixed to the maximum capacity of the stadium was released @ ₹ 5000 each as per 13th R A bill (May 2010). It was observed by Audit that in case of Siri Fort stadium the landed cost of imported (May 2010) China make similar type of tip-up chairs was ₹ 2081.25 each inclusive of Delhi VAT @ 12.5 *per cent* and by framing its rate analysis, the substituted rate per chair worked out to ₹ 2634.56. Thus even considering the part rate of ₹ 5000 per chair an excess payment of ₹ 63.96[6] lakh was made to the contractor.

Further though the said item was for providing and fixing chairs, payment for the extra 446 chairs brought to site but not fixed was also made (May 2010) @ ₹ 4000 per chair which was irregular as there was no use of extra chairs. As the contractor did not produce any proof of rate of chairs even secured advance was also not payable. This has resulted into an avoidable excess

[5] [(Rs 6500 – Rs 2190) x 3150].

[6] [(5000-2634.56) x 2704]

payment of ₹ 17.84 lakh at part rate. Thus total excess payment accounted for ₹ 0.82 crore.

NDMC stated that excess payment if any would be recovered with interest. After the audit no payment has been released to the agency till date as such recovery has not been affected. Sufficient due of contractor is pending with department for affecting such recovery. Estimates was prepared considering the original number of seats later on as per observation of fire department less number of seats provided.

The reply was not acceptable as adequate efforts had not been made to obtain source document of purchase. Further had fire safety norms been kept in mind while framing the estimates, the additional expenditure on extra chairs could have been avoided.

3.2.3.4 Irregular framing of rate analysis for deviated/ substituted /extra items

While determining the market rate for the purpose of regulating the claim of the contractor (Simplex Projects Ltd) for deviated/substituted/ extra items, 10 *per cent* over the cost of the material and labour was to be allowed to cover contractor's overhead and profit as per the contract.

In 21 of the 85 cases of claims of deviated/ substituted/ extra items reviewed by Audit it was found that the contractor's overheads and profit was taken as 15 *per cent* instead of 10 *per cent* applicable. This resulted in overpayment to the contractor of ₹ 1.17 crore and corresponding extra liability of ₹ 0.86 crore to NDMC. Details are given in **Annexure 3.1**.

In addition, in the claim for the substituted item of fixing structural glazed curtain wall system/space frame glazing system, while calculating the market rate of the tendered item, the justification rate that was determined three years ago was adopted, instead of adjusting it to the current price index or obtaining fresh rates from the market. This resulted in an undue benefit to the contractor of ₹ 0.64 crore, based on tendered rates adjusted with price index.

NDMC accepted that due to oversight excess payment has been made but till now only part payment has been made. The same will be corrected while obtaining the approval of rates of competent authority. The fact is that the part payment is more than the payment due.

3.2.3.5 Irregular payment before sanction of extra item rates

As per clause 12 of the agreement read with para 23.3 of CPWD Manual the contractor should propose revision in the rate of substituted/extra item supported by proper rate analysis within 15 days of requirement of the said item and Engineer-in-Charge (EIC) shall within one month of the receipt of

the claim supported by analysis after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. However there is no provision in the contract to make any payment unless the rates are sanctioned by the competent authority.

In the following cases payment to the contractor was released in 13th R.A. bill (May 2010), pending sanction of extra item rate, which was ₹ 0.88 crore more than the amount payable resulting in undue favour to the contractor as given in table 3.3.

Table 3.3: Irregular payment on extra items/substituted item

Extra Item No.	Details in brief	Unit	Upto date quantity executed	Rate paid	Rate sanctioned	Difference in rate	Excess payment
6	4mm ACP for HVAC duct	sqm	860.32	14500	8798	5702	4905545
10	4mm ACP for outer column cladding	sqm	1180.48	10000	7332	2668	3149521
12	Gypsum Partition	sqm	2237.61	1798.50	1449.33	349.17	781306
						TOTAL	8836372

In reply it was stated that on account part rate payment has been made for extra items. The final approval could not be completed as the work is under investigation with CBI and all the original records are with them. Further payment/recoveries shall be affected after approval of the statements from Competent Authorities.

The reply was not tenable as approval in principle to extra items was obtained (July 2010) after actual payment which was more than those approved rates. The final approval of rates has not yet been obtained (December 2011).

3.2.3.6 Avoidable expenditure on ready mix lean concrete for filling in pit of column

As an engineering practice, column pits are filled with earth excavated on site, which was also envisaged in the contract. Instead, in the instant case, the contractor was permitted to fill it with a much more expensive option of ready mix lean concrete resulting in avoidable extra cost of ₹ 1.39 crore. In addition, ₹ 0.16 crore was also paid to remove the excavated earth from site.

In its reply, NDMC stated that no space was available at the construction site to store the excavated earth and the gaps were filled up with lean concrete/Ready Mixed Concrete (RMC) with pumps for early completion of work. The picture shown by Audit was old and of the area on which building has been constructed.

Reply is not acceptable as planning failure in timing of the works caused delay. The site had adequate space for temporary stacking. The picture below indicates the space available at the construction site and relates to the time when the column footing work was in progress and construction of building is a later event.



Picture of the construction site at Talkatora Indoor stadium indicating space available for construction activity.

3.2.3.7 Single tender for electrical work of DG sets

For the work of supplying, installing, testing and commissioning of a 1000 KVA diesel generating set at TIS only one contractor (M/s Sudhir Power Projects, Gurgaon) had submitted bid for the work. Accordingly, the work was awarded to the agency at a cost of ₹ 2.06 crore (i.e., 1.67 *per cent* below estimated cost of ₹ 2.09 crore). The work was awarded on 4th July 2008 with stipulated completion period of nine months (i.e., till 03 April 2009) and contractor has been paid ₹ 1.73 crore uptill now (September 2011), the completion certificate and final bill of the work was pending.

As completion of civil work of Talkatora stadium to a certain extent was imperative for installing the DG sets, Audit observed that the work period of this tender had to be extended for a total period of 20[7] months, on nine instances (each extension of two to three months) till 03 December 2010. Thus pending completion of civil work, there was adequate time (20 months) at the disposal of tender inviting authority to go in for a second call so as to bring in more competition in this case.

In reply NDMC stated that the offer was less than the estimated cost put to tender hence was accepted. As lot of infrastructure works of CWG were in the pipeline, hence there was every possibility of getting higher rates on re-tendering. The site for installation for DG sets was not ready and to keep the contract alive the extensions were given.

[7] (3.4.2009 to 3.12.2010)

The reply was not acceptable as the offer of the single bidder, even though below the estimated cost, cannot be said to be competitive. Had re-tendering been adopted more competitive rates could have been obtained.

3.2.3.8 Non-levy and recovery of compensation for delay in completion of work

All contracts awarded by NDMC for CWG-2010 indicated stipulated dates of start and completion of work specifying that time was essence of the contract. All agreements provided for recovery of compensation @ 1.5 *per cent* per month of delay in completion of work, computed on per day basis, not exceeding 10 *per cent* of the tendered value of work. Agreements for major works also included milestones indicating stages of work for achievement by the contractor. In case of failure of the contractor to achieve the contracted milestone, specified percentage of tendered amount was to be withheld from contractors' bills for adjustment against any recovery due from contractor for slow progress and delay in completion of work. Regarding grant of Extension of time (EOT), the CPWD Manual stipulates that based on the Hindrance Register where adequate and proper grounds exist, the Engineer-in-charge can grant extension of time. Remedies for delayed completion/ inferior workmanship at disposal of the Government include levy of compensation, termination of contract, award of unexecuted work to another contractor after giving notice to the contractor, forfeiture of earnest money/ security deposit/ performance guarantee etc.

In four cases of NDMC in which provisional EOT had been granted Audit found that no compensation was levied despite delays being attributable to inadequate manpower and lack of management on the contractor's part; and delays in providing drawings for the consultancy contract. In these cases extension of time had not been decided. The maximum amount of compensation that could have been levied but short recovered or not recovered in these four cases amounted to ₹ 18.75 crore as detailed in **Annexure 3.2.**

NDMC assured that due consideration would be taken for lapses on the part of the contractor at the time of final extension of time/bill and compensation levied. NDMC confirmed the facts in its reply of December 2011.

3.3 Venues constructed by PWD, GNCTD

3.3.1 Construction/ Upgradation of Thyagaraj Stadium



Thyagaraj Stadium

3.3.1.1 Overview

Construction/ upgradation of Thyagaraj Stadium involved:

- Construction of a multipurpose air-conditioned indoor stadium with a seating capacity of 5000, which could be used for various sports;
- Two warm up courts and one competition court for net ball; and
- Synthetic track of 400m x 8 lane for athletics (training venue).

3.3.1.2 Planning and Award

Peddle Thorp Melbourne (Australia), in joint venture with Kapoor & Associates, was appointed as the design consultant at a cost of ₹ 5.98 crore in December 2006. The preliminary estimated cost of the stadium of ₹ 297.45 crore was approved by the GNCTD Cabinet in September 2007, and detailed estimates for 23 works were approved by PWD, GNCTD for ₹ 250.86 crore from September 2007 to January 2010. Against awarded cost of ₹ 297.98 crore of these works, payment of ₹ 307.69 crore had been made to the contractors till October 2011.

The main works for structures under packages I and II were awarded to JMC Projects (India) Ltd. at costs of ₹ 103.96 crore and ₹ 108.80 crore. The work of package-I was completed in April 2009 at a total expenditure of ₹ 112.09 crore while under package–II, an amount of ₹ 112.29 crore had been paid till October 2011.

3.3.1.3 *Inflation of costs in detailed estimates*

The CPWD Manual provides that percentage rate tenders should be resorted to only when the major part of the estimated cost put to tender is based on the DSR, irrespective of the value of the tenders. However, PWD, GNCTD adopted a percentage rate tender, although more than 80 *per cent* of the cost for the two packages were for non-DSR items. Since the bidder is asked to quote a single percentage rate and does not have an option of quoting different percentages for different items, any error leading to an increase in the estimated cost of an item cannot be easily factored into consideration by the bidder. Consequently, an inflated cost estimate provides a higher baseline for potential bidders. The following instances of inflation of costs in the detailed estimates were observed:

Table 3.4 – Instances of inflation of costs in the detailed estimates

(₹ in crore)

Item	Escalation in Cost Estimate
Adoption of incorrect exchange rate (₹ 43/ US$ instead of ₹ 40.28/ US$) in computing cost of imported structural steel	1.41
Adoption of higher wastage rate of 10 *per cent* (instead of 5 *per cent*) for fabrication and commissioning of trusses	2.14
Inflated estimation for Kalzip roofing @ ₹ 5627.77/ sq.m. The contractor engaged another agency to execute the item @ ₹ 4393/ sqm. Even after including CPOH[8] of 10 *per cent*, the actual market price would be only ₹ 4832.30/ sqm.	0.87

GNCTD stated in its reply that there is no inflated estimation; however, the estimated rates cannot affect the quoted rates which the contractors quote on the basis of their own assessment of the market. As such, there is no loss to the government. The reply of GNCTD is not acceptable as this was a percentage rate tender, and the estimate was prepared based on market rate which itself was inflated. Accordingly contractor quoted rates on the basis of these estimates resulting in loss to government.

3.3.1.4 *Higher cost item for detailed estimates/ execution*

Audit found the following instances of adoption of higher cost items for detailed estimates and execution from among the options provided by the

[8] Contractor's Profit and Overheads

consultant in the preliminary estimates (which included lower cost items):

Table 3.5 – Instances of adoption of higher cost items

(₹ in crore)

Item	Escalation in Cost Estimate
Use of costlier acoustic false ceiling (Sonapanel brand) costing ₹ 4208.30 / sqm against the alternative costing ₹ 1650/ sqm	1.85
Use of more expensive nylon, fire retardant carpet (of "Milliken" make), rated as moderate duty, costing ₹ 5464.30/ sqm against the estimated cost of ₹ 1539.70/ sqm for heavy duty usage	0.70
Use of costlier toilet partitions (Merino Titan Series Cubical boxes) costing ₹ 19,556/ sqm against the estimated cost of particle board partitions of ₹ 792.60/ sqm and laminated glass partitions costing ₹ 18,300/ sqm.	1.00
Installation of composite panels of paper towel dispenser, hand dryer and waste paper bins (D-Line make) in toilets @ ₹ 2.42 lakh	0.37

GNCTD stated that it is their responsibility to examine technically the options proposed by the consultant on relative merits and demerits instead of blindly choosing the cheaper option and they had executed items found more suitable. Reply of the GNCTD is not convincing, as the appointed consultant had proposed the items after considering the suggestions given by the OC in their venue brief and also considering all technical aspects of the items. The department had however chosen to go with the costlier item, thus not ensuring economy.

3.3.1.5 Overpayments to the contractor (JMC Project)

Audit observed the following overpayments to the contractor:

- There was inadmissible payment of ₹ 3.03 crore separately for plates, nuts and bolts in steel work (trusses), in addition to payment for actual length of pipe, which already included costs of plates, nuts and bolts. The GNCTD stated that bearing and truss are different structural elements and as such the sliding plates and bolts are payable separately. The agency had claimed ₹ 150.38 per kg for these elements vide their letter. However, after pursuance by the department, the agency had agreed to execute this part under item 8.1 i.e. ₹ 133 per kg, which is on the lower side, claimed by the contractor as extra item. The reply is not acceptable as being a complete item the "other component" is included in the rate for truss. The version of department is not evident from

nomenclature or any other provision of the agreement and the letter for extra item from the contractor is a later development, not on record at the time of audit.

- There was avoidable payment of ₹ 2.51 crore for plates, nuts and bolts in other item of steel works (purlins) due to not specifying the mode of measurement for payment, as was done in the case of steel work for trusses; and non adoption of uniform mode of measurement and payment. GNCTD stated in its reply that payment for steel structures has been correctly made under this item as per the special conditions attached with the agreement and no over/avoidable payment has been made. The reply is not acceptable as both the items are related to structural steel and difference was only in the origin i.e., one was Indian and the other imported. By adopting two types of measurement methods department suffered a loss of ₹ 2.50 crore.

- Para 2.4 of minutes of pre-bid meeting for phase –I (structure) works held in September 2007 states that-"The quoted rate shall be inclusive of all duties and taxes applicable on the date of receipt of tender. If there is any increase in duties or taxes after date of receipt of tender, it shall be reimbursed on production of documentary evidence if actually paid by the contractor. If there is any decrease in duties or taxes after last date of receipt of tender, same shall be recovered from the contractor's bill". However, audit revealed that the custom duty on steel was reduced in the Finance Act 2008-09, but no deduction for such reduction of duty was made from the contractor. This has resulted in an excess payment of ₹ 0.33 crore to the contractor on account of reduction in customs duty on steel. GNCTD stated that the amount recoverable was only ₹ 0.29 crore but no documentary evidence was produced to Audit.

3.3.1.6 Specifying a richer/ higher specification

Audit scrutiny revealed that costlier acoustic wall panelling (using perforated ACP) was executed even outside the Field of Play (FOP) over the corridor and external concourse, instead of applying plaster and plastic paint (as done in the VIP area); this resulted in extra cost of ₹ 1.24 crore.

In its reply GNCTD stated that the selection of type and location of wall panelling has been done judiciously, considering the requirement of acoustics, type of users of a particular area and its surrounding area. Reply of the GNCTD is not acceptable as department executed the acoustics wall panelling on both sides of the wall. The FOP area was fully covered with costly Sona panel and acoustic doors to prevent noise level from outside. Thus, the use of high cost acoustic paneling on wall of open area (concourse/corridor) was not justified.

3.3.1.7 *Procurement of Items by specifying a single Brand*

Audit scrutiny revealed that 31 items valuing ₹ 24.28 crore (**Annexure 3.3**) were included in the detailed estimates by specifying either a single brand by name, or stating the requirement as *brand "X" or equivalent*. These items were included as per the recommendations of the consultant and rate of these items decided/ analysed on the basis of single quotations. No justification was recorded for specifying the brand. Some examples of rates of single brand used for preparation of estimates are as under:

Table 3.6 – Examples of rates of single brand used for preparation of estimates

S.No.	Name of item	Brand of item	Rate of procurement (₹ per unit)
1	Hall wall hung WC. pan, seat with cover,	Roca	21,067
2	Concealed cistern	Geberit	8,254
3	Duo fix mounting element	Geberit	6,213
4	Single urinal basin with PVC 6 lts. auto flushing cistern	Roca	34,524
5	Wash basin including Sensotronic sensor faucet	Roca, Duravit, Jaguar	27,540
6	Paper towel dispenser, Hand dryer, Waste paper bin	D-line	2,41,813
7	Blower/ hand dryer	GEM or equivalent	24,356
8	Paper towel dispenser	D-line or equivalent	33,835
9	Paper waste bin	D-line or equivalent	30,445

Further, payment of ₹ 18.22 crore was made on execution of 23 items of the same brand as specified in the Bill of Quantity (BOQ) and three items worth ₹ 3.50 crore were executed as equivalent brands. Five items specified with the brand name were not executed. Thus, restricting these items to specific brands resulted in reduced competition with consequential increases in project cost.

In its reply GNCTD stated that while granting sanction to the Project, the Cabinet of GNCTD had directed that the venue should be constructed with world class specifications. Accordingly, based on the importance of the area, the specifications were decided. The reply of the GNCTD is not convincing as

department used richer specification in case of ACP panelling, toilet partition and fitting, carpet, flooring tiles, roofing, wooden blinds etc. in common area also.

3.3.1.8 Blockage of funds of ₹ 22.14 crore on installation of gas turbine

The venue brief for Thyagaraj stadium stipulated power supply from two independent feeders and power backup for critical supplies. Instead, PWD went in for two additional power generation units i.e. Solar power plant and dual-fuel gas turbine. Audit of the projects revealed the following deficiencies:

- A 2.5 MW dual-fuel gas turbine was awarded at a cost of ₹ 19.58 crore and an add-on Vapour Absorption Machine (VAM) at a cost of ₹ 2.83 crore; in addition, these works were awarded on single tender basis to Turbomach India Pvt. Ltd.
- Along with turbine, decision was also taken to install VAM, an energy efficiency booster, which could work only with gas turbine, taking total capital investment cost to ₹ 22.41 crore. The stated reason for selection of gas turbine was the green attribute, environmental friendly nature of gas turbine.
- The VAM increases the efficiency of the turbine by extracting heat from the exhaust. The VAM can save electricity of about 650 KW, equivalent to ₹ 3,380 per hour[9]. However, during each hour of operation, the turbine also incurs a loss of ₹ 1740 per hour[10] by generating power at a rate of ₹ 6.07 against grid supply of ₹ 5.2, making the whole installation including VAM of ₹ 22.41 crore, uneconomical.
- Since commissioning of turbine, 121075 KWH units have been fed to the grid (November 2010). No Power Purchase Agreement for the power generated was in place.

In its reply GNCTD also stated that the government is promoting environment friendly technologies and green building construction. Use of Gas Turbine Generating Set in combination with VAM which provides air conditioning by use of exhaust smoke from gas turbine) is a step in furtherance to the same policy. The fact is that the gas turbine was run only during the Games and since then not a single unit had been generated from the gas turbine. Further without VAM when the air conditioning is not used the rate of power generation would be higher at ₹ 8.73.

[9] ₹ 5.20 per unit cost of electricity from grid X 650 KW which is net power saved by VAM=₹ 3380 per hour

[10] ₹ 6.07- 5.2= ₹ 0.85 per KW X 2000 KW /hr= ₹ 1740 per hour

3.3.2 Construction of Chhattrasal Stadium



Chhatrasal Stadium

3.3.2.1 Overview

Chhatrasal stadium was to be upgraded as a training venue for athletics. The estimated cost of ₹ 83.00 crore was approved by the GNCTD Cabinet in August 2008, and detailed estimates of ₹ 55.87 crore were approved by PWD in December 2008. Benjamin, Benjamin and Vats were appointed in March 2008 as the design consultant at a cost of ₹ 1.33 crore. The main work for the structure was awarded to Era Infra Engineering in January 2009 for ₹ 60.26 crore. Payment of ₹ 55.37 crore had been made up to October 2011 to the contractor.

3.3.2.2 Appointment of consultant

Audit observed the following in the appointment of Benjamin, Benjamin and Vats as the design consultant:

- The condition of relevant experience vis-a-vis sports venues in the NIT was removed at the Press Notice stage;
- Different weightages for criteria for technical evaluation were used for the Chhatrasal Stadium (as compared to the Thyagaraj Stadium).
- Four firms participated and two firms with the minimum qualifying

marks of 70 qualified as given below:

Sl. No.	Points evaluated for	M/s Enarch Consultants Pvt. Ltd.	M/s Benjamin Benjamin & Vats	M/s A.G. Krishna Menon	M/s Kapoor & Associates
1	Firms' relevant experience and strength (25)	22	15	13	17
2.	Experience of the key personnel deployed (15)	12.5	10.5	12.5	12.5
3.	Technical proposal (Presentation) (60)	20	49.5	46.5	30
	Total	**54.5**	**75**	**72**	**59.5**

It was observed that that department had used the same technical parameters for evaluation of consultant in Thyagraja stadium, but used different weightages. A comparative tabulation of weightage is shown below:

S. No.	Points evaluated for	Thyagraja Stadium	Chhatrasal Stadim
1	Firms' relevant experience and strength	25	25
2.	Experience of the key personnel deployed.	60	15
3.	Technical proposal (Presentation)	15	60

Less weightage was given to experience of key personnel as can be seen from the table. If the weightages had been adopted as for Thyagaraj Stadium, Benjamin, Benjamin and Vats would not have been technically qualified.

GNCTD stated that the criteria fixed for evaluation of technical bid was approved by E-in-C and the word "sports venue" was inadvertently left out in condition of NIT. However, this had no effect on the biding process as the bid documents were sold to the intending bidders based upon the eligibility criteria mentioned in the press notice. In addition to use of different eligibility criteria, GNCTD stated that as the requirements of the two venues were quite different, same criteria for evaluation could not be applied. The reply is not acceptable as consistent criteria should have been adopted for consultant evaluation in the interest of transparency which would have resulted in selection of a consultant who had experience in sports venues.

3.3.3 Construction of Training Venue at Ludlow Castle



Training venue at Ludlow Castle School

Government Model Ludlow Castle School No. 2 was selected as a training venue for wrestling. AG Krishna Menon was appointed as the design consultant at a cost of ₹ 0.60 crore in December 2007. Estimated cost of ₹ 20.33 crore was approved by the GNCTD Cabinet in November 2008, and detailed estimates of ₹ 9.34 crore approved by PWD in December 2008. The work was awarded (January 2009) to Arora Construction Company Private Ltd. at ₹ 11.25 crore.

Audit observed that for award of design consultancy, procedure of calling Expression of Interest was not followed and limited tenders were called, on account of shortage of time. However, although the consultant appointment committee had approved the proposal for appointment in August 2007, the work was awarded to AG Krishna Menon only in December 2007, belying the sense of urgency.

In its reply GNCTD stated that the short listed consultants/architects were quite capable of providing the consultancy of such type of building. Therefore, the offer from the panel of approved architects was called. The reply of GNCTD is not acceptable as even though limited tender process was adopted due to shortage of time, yet the department had spent about six months in the process of award of work only.

Further, Audit observed that the tendered amount of construction work ₹ 11.25 crore was 32 *per cent* above the estimated cost of ₹ 8.50 crore. For this purpose, a justified cost of ₹ 10.50 crore was arrived at. Audit found undue inflation of the justified cost by ₹ 0.96 crore on account of miscellaneous charges (already included in CPOH) and higher justification

rate of structural steel (compared to the same items for Chhatrasal stadium). Thus, the work was awarded at 17.92 *per cent* above the justification cost.

GNCTD stated that the time period was kept as eight months for the work, to be completed well before beginning of Commonwealth Games to start training etc. in time. The addition of extra cost for working at odd hours, over and above the rates is also supported by paragraph 19.4.3.1 of CPWD Works Manual-2007. The reply of the GNCTD is not convincing as adding the extra amount in justification cost on account of miscellaneous charges in addition to 15 *per cent* contractor's profit (includes 7.5 *per cent* amount of miscellaneous charges) is not correct and expenditure on providing the staff car, telephone etc. to PWD staff should be met out of the contingencies of the work. On higher justification rate of structural steel the GNCTD stated that the market rate of similar items of both the stadia was same and justification prepared by the department was correct. The reply is not acceptable, as Audit had compared the justification rate of only DSR items of both the agreements and department has adopted the justification rate of non DSR items of Chhatrasal stadium.

3.4 Extra expenditure on extra, substituted and deviated items on venues

The extent of extra, substituted and deviated items in the seven works (with tendered cost of ₹ 516.71 crore) reviewed by Audit, is summarized below:

(₹ in crore)

Category	Amount
Extra items	15.13
Substituted items	8.34
Deviated items	43.72

The details of extra items, substituted items and deviated items in different works, along with audit remarks, are given in **Annexure 3.4.**

In both Talkatora Stadium and Shivaji Stadium atleast six extra/substituted items worth ₹ 9.97 crore (**Annexure 3.5**) were executed because the architect consultant had not prepared the design and estimates correctly. Adequate penal provisions had not been incorporated in the agreement as per Central Vigilance Commission (CVC) guidelines to exercise control over the consultant.

Chapter-4 Streetscaping and Beautification of Roads around CWG Venues

Streetscape generally refers to urban roadway design and conditions as they impact street users and nearby residents. Streetscapes are an important component of the public spaces where people interact, which helps define a community's aesthetic quality, identity, economic activity, health, social cohesion and opportunity and not just its mobility.

Streetscaping programmes are an important component of the efforts to redevelop urban areas and include changes to the road cross section, traffic management, sidewalk conditions, landscaping (particularly tree cover), street furniture (utility poles, benches, garbage cans etc.), building fronts, improving signages, and materials specifications.

4.1 Planning for streetscaping/beautification in Delhi

4.1.1 Lack of overarching vision

One of the objectives of CWG-2010 was the development of city infrastructure. GNCTD decided in 2004 to implement streetscaping and beautification of Delhi roads before CWG-2010. The project remained more or less dormant till May 2008, when GNCTD initiated the process for the selection of consultants.

Audit found no evidence of GNCTD having conducted detailed studies of experiences/ of streetscaping projects in Indian/ world cities, and their impact on the local community. Further, although preserving, developing and maintaining the aesthetic quality of urban and environmental design within Delhi is clearly within the remit of the Delhi Urban Art Commission (DUAC), GNCTD did not consider it necessary to obtain clearances from DUAC for implementation of the streetscaping/ beautification project. Also, considering that traffic management is a key component of streetscaping projects, there was no evidence of consultation with the Traffic Police at an appropriately early stage to assess and co-ordinate the impact of this project on the management of the huge volumes of Delhi traffic.

Thus, the streetscaping and beautification project was conceived without a broad vision and purpose. The project was implemented at an average awarded cost of ₹ 4.8 crore/Km.

The scope of the project expanded enormously from 2004 to 2008. Initially, it was decided to implement the project in 10 sites around games venues covering 20 km through engagement of consultants. A Board of Assessors (BoA) was constituted in October 2004 who shortlisted (2004) 19 consultants for the job. The scope of the project was subsequently widened, accommodating several roads covering 73.48 km pertaining to:

- PWD - 41.08 km;
- MCD - 22.90 km;
- DDA - 2 km;
- NDMC - 3.80 km; and
- DIMTS - 3.70 km.

The streetscaping works were split up into 16 packages (PWD: eight, MCD: two and NDMC: six). Four consultants were engaged for nine packages[1]. The scope of work involved survey, preparation of plan/ designs, cost estimation and construction supervision. The consultant selection was finalised as late as May -October 2008, after four years, which, created a situation of urgency in execution of the works.

The venture was a consultant-driven project as department did not provide any common design guidelines, with corresponding budgetary estimates per km of work. The consultants were to draw up designs and estimates for the packages allotted to them.

The department set the target for completing the project before CWG (October 2010) .The works were not fully completed before CWG-2010.

In reply the GNCTD stated that DUAC clearance was unnecessary as it was concerned only with aesthetics of structures and all works were done as per street design guidelines issued by the UTTIPEC with active coordination with the Traffic Police. The reply is not convincing because for a project of this magnitude involving beautification of roads of approximately 72 kms, there was no visible overarching plan document.

The GNCTD further maintained that all works were substantially (95 to 100 *per cent*) completed before the Games.

4.2 Selection of Consultants

4.2.1 Arbitrariness in selection of Consultants

Four consultants were selected (May 2008-October 2008) through four rounds of tenders/negotiations, as evidenced by the chronology of events given below:

Table 4.1 – Chronology of events leading to selection of consultants

Date	Events/Activities
02 May 2008	EoI for the consultancy works (split into three packages) called for from 19 short listed consultants. Two bids received from Parekh Associates (Ahmedabad based firm not on the panel) and

[1] There were 9 packages for the consultants. However, these were re-grouped into 16 packages for award of work.

Date	Events/Activities
	Oasis Designs. Bids cancelled since only Oasis Designs attended the meeting with EIC.
31 May 2008	EoI floated again, grouping the jobs in seven packages. Bids received from the same two consultants – Parekh Associates and Oasis Designs. The BoA considered the firms suitable for only one package each, leaving five packages.
07 October 2008	At the instance of the Chief Secretary, roads in the remaining five packages were regrouped into eight packages (A to H) and third call delivered to 17 of the 20 short listed consultants[2], stipulating allotment of maximum two packages to one consultant. Four consultants (Parekh Associates, Oasis Designs, Pradeep Sachdeva Design Associates and Sikka Associates) participated in the bid. No bids were received for three packages (A, B and G), and one to three bids were received for the remaining packages (C,D, E and F) at values ranging between ₹ 8.26 lakh and ₹ 15.00 lakh per km.
12 November 2008 – 11 December 2008	BoA recommended no further allotment of work to Parekh Associates as they were Ahmedabad based and had no office at Delhi, and for allotment of (at most) one more package to Oasis Designs. Before the BoA, Sikka Associates and Pradeep Associates expressed their willingness for the packages. BoA considered them to be experienced consultants, and recommended for allotting two or more packages each to these consultants.

[2] Now including Parekh Associates

Date	Events/Activities
	The Consultant Appointment Committee (CAC) accepted the recommendation of the BOA, with the modification that Oasis Design was not be given any further work (apart from the one package allotted on 31 May 2008). Package-E was scrapped. This left only two consultants (Sikka Associates and Pradeep Associates) for the seven packages. • For these seven packages, quotations were available for only two packages, with Sikka Associates quoting for package D and Pradeep Sachdeva Design Associates for packages C and D. Although the NIT prohibited allotment of more than two packages, the Chief Secretary approved allotment of more than two packages to a consultant. • It was decided to allot package D to Sikka Associates (since there were multiple bids for this package). For the remaining six packages, the two consultants submitted financial bids within one day. • Based on the financial bids, two more packages were allotted to Sikka Associates (A and C) and four to Pradeep Sachdeva Design Associates (B, F, G and H) at negotiated rates, without specifying the technical works to be done.

In all, Pradeep Associates and Sikka Associates were alloted four and three packages respectively Parekh Associates and Oasis Designs one package each[3]. Audit observed that Sikka Associates and Pradeep Associates submitted bids at the behest (12 November 2008) of the BoA for the additional packages (13 November 2008) in one day's time. No technical bids were submitted. The negotiated rates were approved by the CAC without any preliminary estimate/justification of rates and conceptual plan; these negotiated rates for the six packages ranged between ₹ 10.39 lakh and ₹ 12.50 lakh per km. In all, the consultants were engaged for the streetscaping works at a cost of ₹ 9.20 crore (averaging ₹ 12.5 lakh/km). The Administrative Approval and Expenditure Sanctions were accorded by Government on post contract stage (December 2008/April 2009). Although the process of short listing of consultants was initiated in 2004, the process was unduely delayed up to December 2008. On the ground of urgency, consultants were then selected by direct negotiation. The extra cost on engagement of consultants at variable

[3] There were 9 packages for the consultants. However, these were re-grouped into 16 packages for award of work.

rates, excess payment on account of less execution of work and non-levy of LD was ₹ 1.65 crore.

Thus, the selection of the consultants was arbitrary and non-transparent, since six packages were assigned simply on the basis of financial quotations and negotiation with two consultants, that too, without specifying the technical works to be done.

GNCTD stated that in view of the urgent need to appoint the consultant quotations were obtained from M/s Sikka Associates and M/s Pradeep Sachdeva Designer Associates on 13 November 2008 for the packages for which they had not bid earlier. Thus the facts have been accepted by the Government.

Reply is not convincing as the shortlisting of the consultants was completed in 2004 whereas actual selection was commenced as late as in May 2008. Thus, the urgency is not justifiable. Moreover, as per Manual of policies and procedure of Employment of Consultant, the appointment of consultant through direct negotiation does not provide the benefits of competition with regards to quality, cost and transparency.

Regarding extra cost on engagement of consultants at variable rates, it was stated that the rates of different stretches cannot be identical as the work required in different stretches was different and that the minimum rate of M/s Sikka was exceptional. The rates were consistent with the rates received from the earlier call of tenders. The reply is not acceptable because while tendering no differentiation was made between different stretches and rates were received in general per km of road. If stretches were to be treated differently the department should have called the tenders with appropriate specifications. Therefore the decision itself was unsound as the consultants had not communicated their designs and the department was unaware of the specifics.

Regarding non-levy of LD it was stated that levy of compensation is subject to decision of the authority competent to extend time and final action is yet to be taken in this regard.

4.3 Cost estimation for works

Out of the total estimated cost of ₹ 209.14 crore for the eight packages (PWD portion), 49 *per cent* (₹ 101.71 crore) of the cost was on items with costs based on the Delhi Schedule of Rates (DSR) and remaining 51 *per cent* (₹ 107.43 crore) on items with costs on Market Rates (MR)/Analysis of Rates. It was found that the MR were generally not supported by any quotation, indicating that the estimates were not a true reflection of the prevailing market rates and thus, were not reliable.

As pointed out earlier, the department did not provide any common design guidelines with corresponding target budgetary estimate per km of streetscaping work. The consultants formulated plans / designs and

specifications for the works. The CEs while according technical sanction, did not undertake a comparative examination of the plan/design and cost estimates (prepared by the consultants) across the eight packages with a view to bringing in a broad level of uniformity in design/specification and cost of execution. This resulted in adoption of different specifications and rates for identical items of works.

The retired Directors of CPWD appointed as Advisor to the PWD observed that the consultants had not gone into the engineering details and suggested dispensing with various unnecessary/unwarranted works during implementation of the Projects. This was not accepted, and the projects were implemented as suggested by the Consultants.

Audit observed that due to lack of uniformity in specifications, furnishings/components and rates between the estimates, the per km cost of the works ranged between ₹ 3.14 crore (roads around various games venues) and ₹ 8.27 crore (Ring Road from Ashram to Bhairon Marg Crossing).

The streetscaping works were finally awarded at per km costs ranging from ₹ 3.63 crore to ₹ 9.75 crore with an average cost of ₹ 5.32 crore. By contrast, NHAI adopts an estimated cost of ₹ 9.50 crore/ km for construction of a four-lane highway, and Indian Railways' estimated cost of construction of a railway track is around ₹ 4.1 crore/ km. Clearly, costs of this magnitude spent on streetscaping and beautification were prohibitive and represented a waste of public money.

Incidentally, the per square metre cost of surfacing the footpath varied significantly between roads, averaging ₹ 717 for paving with normal paver blocks, ₹ 1450 with vitrified tiles and ₹ 2679 with polished granite.

Department stated that estimates were prepared by consultants and were duly scrutinised by the department before accord of technical sanction by the respective competent authorities. Reply is not tenable because as per paragraph 2.5 of CPWD Manual 2007, a technical sanction amounts to a guarantee that the proposals are technically sound and that the estimates are accurately prepared and are based on adequate data. Also, streetscaping was one project and it was the prime responsibility of the departmental engineers to comply with the above rule in assessing the actual rates and specifications required for the items and follow common specifications and technical parameters across all the packages to ensure economy, efficiency and effectiveness in execution of the project, especially since external consultants had been engaged for providing the streetscaping design. Further, since all the zones were under the technical control of EIC, comparison across the zones should have been administratively ensured.

GNCTD stated (December 2011) that cost per km cannot be compared package-wise. It will vary for different roads as per work required to be done in the same package and also for different reaches on the same road. As

different designs were approved for different consultants/ packages, hence uniform design was not adopted for all packages. It was also stated that comparison with altogether different works like highways of NHAI would not be fair.

GNCTD's views can be appreciated as far as difference in design and requirement of work to be done on different roads is concerned. However, considering the scope and volume of the work, government should have conducted a preliminary study and issued general guidelines for the designs to be adopted for ensuring economy in the work. Moreover, as per paragraph 2.5 of CPWD Manual 2007, a technical sanction amounts to a guarantee that the proposals are technically sound and that the estimates are accurately prepared and are based on adequate data. Also, it was the prime responsibility of the departmental engineers to comply with the above rule in assessing the actual rates and specifications required for the items and follow common specifications and technical parameters across all the packages to ensure economy, efficiency and effectiveness in execution of the project. Further, since all the zones were under the technical control of EIC, comparison across the zones should have been administratively ensured.

4.3.1 Adoption of Richer Specifications/ Higher Rates/Short Recovery

Audit observed that consultants increased the cost of the project at the estimation stage by providing richer specifications and higher rates for various items of work, overlooking/by-passing the provisions/specifications of DSR, MoRTH, CPWD Manual and IS codes.

The consultants' estimates were cleared by the various levels upto the CE. High cost bids were approved by the Works Advisory Board (WAB) by way of irregular justification of the quoted rates at the tender stage. This resulted in loss of ₹ 59.60 crore to the Government as summarised in Table 4.2:

Table 4.2 – Adoption of Richer Specifications

Sl No	Item of work	Audit Finding	Financial Impact (₹ in crore)
1.	Use of granite and vitrified tiles for footpath	 ***Granite Paving*** GNCTD decided (July, 2008) that the pavement for pedestrian walking should be constructed with coloured cement concrete (CC) paver blocks. The consultants, however, proposed for use of gang saw cut mirror polished machine cut granite prescribed in the DSR for kitchen platforms, vanity counters, window sills and similar locations. The basic cost of granite in the market (February, 2011) was around ₹ 1022/ square metre, against which the estimates adopted were ₹ 1500/ ₹ 1765 per square metre. Also against 5 *per cent* wastage admissible as per DSR for all granite work, the consultants considered the wastage at 15 *per cent*.	27.37

Sl No	Item of work	Audit Finding	Financial Impact (₹ in crore)
		 *Vitrified paving tiles* They also proposed vitrified tiles for paving, in some packages even specifying a particular brand i.e. "Pavit". The CEs did not point out the discrepancies for rectification before putting the works to tender. This increased the cost of the item of construction of the pavement. The finished rate of Pavit brand tile (16 mm) taking into account the market cost, wastage, overheads and other factors was ₹ 965.24 per square metre (April, 2010), whereas the estimates adopted was ₹ 1854.16 per square metre.	

Sl No	Item of work	Audit Finding	Financial Impact (₹ in crore)
2	Cement Concrete paver block	 *Cement concrete paver* As per the specifications prescribed for such work under CPWD and IS code, factory made 50 mm thick paver blocks of RMC M-30 were to be fixed on 50 mm thick coarse sand spread over a hard base. The consultants proposed for fixing factory made CC paver blocks of richer specifications and of excess thickness.	12.34
3	Kerb stone	Director General (Works), CPWD acting as Advisor, PWD, observed that the CC kerb stones on the central verge and the footpaths were in good condition and need not be replaced. The option was ignored and the kerb stones were replaced as suggested by the consultants in nine[4] packages. Audit observed that the estimates provided for fixing the CC kerb stones of richer specifications deviated from the specifications as per MoRTH.	4.36

[4] YSC, Africa Avenue etc, Dr Karni Singh, CWG Village, Mall Road, Kisan Ghat etc, Bhairon Marg and two packages of MCD.

Sl No	Item of work	Audit Finding	Financial Impact (₹ in crore)
4	Non Motorised Vehicle lane	 *NMV lane with obstruction* The Non Motorised Vehicle (NMV) lanes were executed at a total cost of ₹ 9.36 crore. The designs had deviations from the guidelines issued by UTTIPEC on street design. The NMV lane also did not fully meet the intended objectives due to lack of continuity throughout the length of the roads on account of obstructions like bus stops, plaza and road crossings in the middle of the NMV track. Audit observed that while four[5] estimates provided for its execution in 150 mm thick CC, roads around CWG village/Mall Road were executed with richer specification of 200 mm thick CC.	1.76
5	Bituminous Mastic wearing course	While the estimate for the work of roads around CWG Village provided for mastic wearing course for 25 mm on the carriageway as per the MORTH and CPWD specifications, five[6] other estimates provided it for 40 mm thickness over	3.40

[5] Dr Karni Singh Shooting Range/ Bhairon Marg to ITO Fly Over/ Ashram Crossing to Bhairon Marg/roads around various games venues

[6] Kishan Ghat, Bhairon Marg, Ashram Crossing, Mall Road and Dr Karni Singh Shooting Range

Sl No	Item of work	Audit Finding	Financial Impact (₹ in crore)
		the carriageway. Audit scrutiny revealed that such work was executed on Mall Road as an extra item at higher rates.	
6	Dense Bituminous Concrete (DBC)	The estimates for roads around Yamuna Sports Complex (YSC) and roads around various Games venues (Africa Avenue) provided for execution of DBC in carriageway and service roads using 60/70 grade bitumen. However, the estimates for four[7] other works provided for using higher specification of bitumen (Polymer Modified Bitumen and Crumb Rubber Modified Bitumen) for the carriageway and service roads. Besides, the DBC was executed at variable thickness ranging between 40 mm and 50 mm.	2.10
		Total	**51.33**

GNCTD in its reply stated that richer specifications were adopted only at few places to add the element of diversity and meaningful aesthetics and that different consultants put their creative best efforts in utilizing the constrainted road space for roads users. It further gave its view on specific audit observation as follows: -

On granite paving it was stated that there was nothing on record about the decision of GNCTD of July 2008 to use coloured paver block, although there was a proposal of the government to that effect. Granite, as proposed by the consultants, was used in the footpath surface where pedestrian density was high, with the approval of the highest authority of the GNCTD. It was also stated that most of the granite has been used for plaza, ramps, table top, entry, auto lane and planters to highlight the features. Regarding 15 *percent* wastages, it was stated that the percentage was taken where granite was used in curved pattern and that such work had not been actually executed at site, though taken in estimates. Regarding use of Pavit brand tiles it was stated that the estimate has used the words 'Pavit or equivalent' in all except one package. It was further stated that Audit had used the cheapest available group of tiles whereas the consultant has adopted the costlier tiles in view of quality.

The reply is incorrect because as per the minutes of meeting chaired by CS on 16 July 2008 (item no. 2) clearly showed the decision of Delhi Government in this regard. Moreover of the total quantity of the granite of 90,684 square

[7] CWG Village, Mall road, IG Stadium and Dr Karni Singh Shooting Range

metre, the area covered in plaza, as per estimate, was for 4782 square metre (5 *per cent*) pertaining to Bhairon Marg to ITO (1102 Sqm) and Ashram Crossing to Bhairon Marg (3680 Sqm). Thus, 95 *per cent* of the granite was proposed by the consultants for the footpaths and items related to it, which is against GNCTD's specific decision to use coloured cement concrete paver blocks. The contention of the government on wastage is weak, as taking 15 *percent* wastage in estimates had increased the total estimates even if the work was not actually executed. The contention of the government regarding use of Pavit tiles is also not acceptable as economy was not considered while using a specific brand.

On Cement Concrete paver block GNCTD stated that CPWD Manual provided factory made precast paver block of M 30 or otherwise specified grade to be used and as per IS code thickness 60 mm, 80 mm,100mm and 120mm would be considered as standard thickness under this specification and that different specifications of paver blocks were prescribed by the consultants depending upon traffic category and merger of cycle track with service lane/main carriageway. However during audit it was noted that the specifications of cement concrete base, granular sub base and thickness/strength of paver blocks significantly varied across the packages irrespective of the nature of traffic.

On Kerb Stone GNCTD stated that at many places, different stretches of same roads were having different profiles of kerb stones. To give uniform and pleasant look along various stretches of the road, Consultants' proposals for improvement in central verge was approved to maintain uniformity. Reply is not acceptable in view of the fact that as per the views of the Advisor most of the kerb stones were in good condition.

On Non Motorised Vehicle Lane GNCTD stated that 90 *per cent* of the construction of NMV was in light of UTTIPEC guidelines, Delhi Master plan etc. to the extent of. The reply of the department confirms the factual position mentioned in the para.

On Bituminous Mastic Wearing Course GNCTD stated that mastic asphalt courses have been provided as per MORTH Specifications which provided thickness ranging from 25 to 50 mm. It further added that Mall Road package did not provide for mastic wearing course item and extra items rates were decided strictly as per the agreement. The reply is not acceptable as different thickness of the mastic wearing course were adopted for different roads without valid justification.

On Dense Bituminous Concrete (DBC) GNCTD stated that work had been executed in different contracts as scope and specifications contained therein after freezing the requirements and specifications and that costing was work based. It further added that PWD was introducing new technology in phased manner. Adoption of technologies as advanced by the government is not

tenable without reasonable justification as the works were executed during the same period and goals were the same. Rather this had resulted in lack of uniformity in specification in execution of works apart from avoidable extra cost.

Table 4.3 – Adoption of Higher Rates/ Short Recovery

Sl No	Item of work	Audit observation	Financial Impact (₹ in crore)
1	Kerb Channel	Compared to the rate of CC kerb channel adopted in the estimate of Yamuna Sports Complex, the estimates for five[8] projects adopted higher rates.	0.25
2	Granular Sub Base and Wet Mix Macadam	In five[9] packages, It was found that the rates for GSB and WMM were provided at higher rates compared to the rate adopted in the Estimate for Mall Road, compounded by a calculation error resulting in an even higher rate.	0.83
3	Application of tack coat	The rates for the tack coat on bituminous surface/sub base were provided at higher rates in six[10] estimates compared to the lower rate adopted in Mall Road.	0.54
4	Reinforced Cement Concrete Hume Pipes	The rates of hume pipes were higher in three[11] estimates compared to the rates adopted in the estimate in Mall Road.	0.93
5	Dismantling items	The rates for dismantling the existing works were provided at variable and higher rates in the estimates of YSC and various Games venues (Africa Avenue) compared to other estimates.	0.83
6	Aluminium Composite Panel	The rate for fabricating, supplying and installing Aluminium Composite Panel for the roads around IG Stadium (Bhairon to ITO and Ashram crossing to Bhairon) was incorrectly computed at higher rate.	0.76
7	Cement Concrete items	The analysis was incorrectly derived in six[12] estimates and fixed at higher rates due to calculation error.	0.54

[8] Ashram to Bhairon Marg, Bhairon Marg to ITO, Mall Road, CWG Village and Dr Karni Singh Shooting Range
[9] IG Stadium-3 packages, M B Road and Africa Avenue.
[10] IG Stadium-3 packages, Yamuna Sports Complex (YSC), CWG Village and MB road
[11] IG Stadium, Dr Karni Singh Shooting Range and Yamuna Sports Complex

Sl No	Item of work	Audit observation	Financial Impact (₹ in crore)
8	Short recovery for retrieved materials	The cost of the useful materials retrieved out of the dismantled works was to be deducted from the dues of the contractors. This was either not done, or done at a lower rate in five[13] estimates.	3.19
9	Geo textile fabric	Three[14] estimates adopted a higher rate for Geo textile fabric membrane in place of lower rate used in estimate of roads around IG Stadium.	0.40
		Total	**8.27**
		Grand Total	**59.60**

GNCTD stated (February 2011) that the inaccuracies in the estimated rates cannot affect the rates quoted by the contractors, as such, no loss can be attributed. The arguments are not tenable as in a percentage rate tender, the bidder can quote only a single figure (*per cent* above or below) for all the items, unlike in an item rate tender where each item is quoted for individually. This makes it essential that the base cost for the items put up for percentage rate tender are consistently and accurately assessed. The CPWD manual also prescribes use of percentage rate tender only in case where most of the items are based on DSR where the costing of the various items has been done by a panel of experts. Any discrepancy in the base rate of an item in a percentage rate tender cannot be easily factored in by the bidder, as he does not have the flexibility of quoting separate rates for different items. A higher cost estimate for any given item will lead to the advantage being passed on to the bidder along with his quoted percentage premium.

Further, the streetscaping work, though executed as multiple packages, was a single project and it was the prime responsibility of the Chief Engineers to follow common rates across all the packages for identical items, especially since multiple external consultants had been engaged for providing the design.

4.4 Tendering process

4.4.1 Use of percentage rate tender instead of item rate in PWD

CPWD Manual provides that percentage rate tenders should be resorted to only when the major part of the estimated cost is based on the Delhi Schedule of Rate (DSR), irrespective of the value of the tenders.

[12] IG Stadium (three packages), M B Road, various games venues and YSC
[13] CWG Village, YSC, Mall Road, Dr Karni Singh Shooting range and Africa Avenue
[14] Mall road, CWG Village and MB Road

Of the estimates for ₹. 209.14 crore for the eight packages under PWD, 49 *per cent* of the value of the works was estimated at the DSR and the remaining 51 *per cent* at the Market rates/Analysis of rates. Despite the above position, which did not favour the call of percentage rate tenders, the CEs chose to adopt percentage rate tenders.

GNCTD stated that around 62 *per cent* of the items are based on DSR and balance items are based on market rates analysis. Hence, major part of estimated cost put to tender is based on DSR items. It was stated that Audit's contention is based on provisions of CPWD Works Manual 2010 which was issued after commencement of the work under Audit and that CPWD works Manual 2007 also stipulates use of percentage rate tender form for development works. Since the works under audit are development works, use of percentage rate forms is codal and hence justified and percentage rate tenders are easy to award and easy to operate.

Reply of the government that percentage rate was adopted for easy award and operation of the contracts was factually not correct since the department admitted in its reply that the estimate contained (a) DSR items which contributed to almost 50 *per cent* (b) derived on rates of DSR (labour and cement) which contributed to almost 10 *per cent* and (c) derived on market rates which contributed to 40 *per cent*. The DSR component as assessed in audit was 49 *per cent*. Further, major components of the analysis of rates (10 *per cent* stated by the Government) were based on the adoption of market rates. In view of the above, the remaining items were taken under market rate.

GNCTD stated that percentage rate versus item rate tender is a matter of debate. Also the preface to the CPWD Works Manual 2007 mentions one of the salient features of the revisions as "encouraging percentage rate tenders".

4.4.2 Irregularity in award and evaluation of tender

Audit observed that repeated efforts were made to deny the award of a streetscaping and beautification package (Ring Road, Bhairon Marg to ITO Flyover) to Swadeshi Construction Company, until it chose not to bid:

- In response to the NIT (October, 2009) for execution of the streetscaping and beautification, Swadeshi Construction Company, quoting Civil Works 19.41 *per cent* above, Electrical 4.8 *per cent* above and Horticulture 4.8 *per cent* above the estimated cost, was the lowest. The NIT stipulated that in case variable percentages were quoted, the minimum of the percentages would be taken for calculating the cost of the tender. The Executive Engineer (EE), Superintending Engineer (SE) and the CE, accordingly, considered the bidder as L1 and conducted negotiations.
- Works Advisory Board (WAB), however, rejected (October, 2009) Swadeshi's tender on the ground that they had quoted component wise

rates and directed calling of fresh financial bids from those who were technically qualified in the call notice floated in October 2009.

- Financial bids were called again (October, 2009) and Swadeshi Construction quoting 16.40 *per cent* above was the lowest, but the WAB again rejected it on the ground that the firm refused to negotiate the rates and directed for retendering.
- The work was finally awarded to Sharma Construction at 9 *per cent* above the estimated cost on fresh tender (wherein Swadeshi Construction did not participate). This resulted in a loss of ₹. 1.19 crore compared to the initial valid offer of Swadeshi Construction.

GNCTD stated that Swadeshi Construction had quoted three different rates for civil, electrical and horticulture components. Considering these rates, the company was not L1 and hence its bid was rejected. The reply is factually not correct since, as per the NIT clauses, the lowest of the three different quoted rates was binding for all the components. The Executive Engineer, Superintendent Engineer and Chief Engineer accordingly, considered Swadeshi Construction the L1 bidder and conducted negotiations. Therefore, subsequent rejection of the bid by the WAB was unjustified.

4.4.3 Non-adherence to prescribed criteria

The CPWD Works Manual 2007 provided that one of the criteria for selection of the contractor for the work was that his average annual turnover during the last three years should not be less than 30 *per cent* of the estimated cost of the work and that 14 days lead time should be provided for submission of tenders. The CEs, however, enhanced the limit of average annual turnover to 45 *per cent*. Lead time between 4 days and 10 days were provided in seven of the eight packages. The works were also floated to tender by the EEs, before they were technically sanctioned by the CE. The EEs did not follow electronic-tendering despite specific instructions by government.

GNCTD stated that the annual turnover had to be enhanced because completion period of the streetscaping works had to be squeezed to finish them well in time for the Games. The reply is not tenable as due to increase of annual turnover, scope of competition was restricted and technical sanction could not be given in the absence of administrative approval and expenditure sanction.

4.4.4 Irregular justification of the quoted rates

CPWD Manual provided for comparing bid values with justified cost to assess the reasonability of the bids. The justified costs are to be arrived at by taking market rates of labour, materials and cartage, other valid charges etc. Any other suitable method can also be adopted in arriving at the justified cost depending upon the kind of work. Bids received at more than 10 *per cent* above the justified costs are not to be accepted.

The department worked out the justified rates for the various works between ₹ 41.82 crore and ₹. 19.46 crore and justified that the lowest bids were varying between minus 16 *per cent* and plus 3 *per cent* of the justified costs (**Annexure-4.1**).

Audit observed that the justified costs were not supported with evidence of correctness of the rates. Therefore, Audit adopted alternate method for arriving at the justified costs, taking into account the cost index prevailing then and found that the quoted rates of the contractors in five[15] packages were more than 10 *per cent* of the actual justified costs and thus, the bids were liable for rejection. The department, however, accepted the tenders considering them between 16 *per cent* below to 3 *per cent* above of the justified costs worked out by them. Thus, the tenders were accepted at high cost.

GNCTD stated that the justified rates were arrived at based on market rates, as per the provisions of CPWD Manual and the tenders were evaluated and accepted accordingly. It was further stated that normally it is not possible to collect quotations for each and every component as traders generally do not provide the same in the absence of firm commitment of placement of orders and if quotations were taken, their reliability can always be doubted. Therefore certificate given by the EE after market verification were taken.

Audit, however, did not find documentation in support of the market rates/analysis of rates. For this reason, as mentioned above, Audit arrived at the justified rates using the prevailing cost index on the date of tender (August 2009) and found that the five tenders were accepted beyond the permissible limit of acceptance.

4.5 Physical target vis-a-vis achievements

The works split up in 16 packages were awarded (October-November, 2009) to 10 contractors at a cost of ₹ 332.45 crore (Table 4.4) for completion by September 2010.

[15] Kisan Ghat, Ashram to Bhairon Marg, Mall Road, Dr Karni Singh Shooting range and Africa Avenue

Table 4.4 – Award of Streetscaping Work

(₹ in crore)

Sl. No.	Name of the contractor	Packages awarded	Awarded cost
1	Satya Prakash & Brothers (PWD: Four)	4	124.69
2	MBL Infrastructure (PWD: One and MCD: Two)	3	85.08
3	SAM (India) Built Well (PWD)	1	41.95
4	Sharma Constructions (PWD)	1	31.01
5	Ralhan Construction (PWD)	1	24.42
6	Devi Construction (NDMC)	1	6.56
7	India Guniting Corporation (NDMC)	1	6.48
8	Raunaq Construction (NDMC)	2	5.28
9	KBG Engineers (NDMC)	1	5.17
10	Raghav Engineer (NDMC)	1	1.81
	Total	**16**	**332.45**

While the department reported (December 2010) to have completed all the streetscaping works, Audit, however, observed that the works were not completed before the CWG (October 2010) on account of delays in execution of works by the contractors and non-providing of designs on time by the consultants. Evidently, the objective of streetscaping and beautifying the roads around CWG venues was not fully achieved.

Despite non execution of the works as per the milestones and non completion of the works by the stipulated date, LD of upto ₹ 25.96 crore was not realised.

GNCTD stated that the realization of Liquidated Damages, if any on account of delays attributable to the contractor would be decided by the competent authority after analysis of submissions made by the contractor. It was also stated that the main streetscaping work had been completed and only paid horticulture maintenance component is in progress.

4.6 Contract management

Under the project, the works were awarded to the contractors in PWD on the agreements finalized on percentage rate tender. The management of the contracts was the responsibility of the Engineers-in-Charge and the officers supervising the works. The terms and conditions of the agreements were violated on several issues leading to excess payment and undue benefits to the contractors, besides extra and excess expenditure of ₹ 8.14 crore beyond the cost of the projects as discussed in Table 4.5:

Table 4.5 – Instances of Poor Contract Management

(₹ in crore)

Sl No	Brief audit observation	Financial Impact
1	The scope of the contracts included provision for all safety measures for traffic, pedestrian workmen, machinery etc. Nothing extra was payable to the contractors on this account. It was noticed that in eight packages, an item was included in the BOQ for barricading (traffic safety), resulting in extra payment to contractors.	1.79
2	  **Red Sand Stone Bollard** **Precast Cement Concrete Bollard** In most of the landscaping works, precast CC cylindrical bollards were used in Non Motorised Vehicle lane. However, in Mall Road, precast CC bollard was replaced during execution with more expensive red sand stone readymade bollards.	0.18
3	  **Granite stone Block** **Haryana Quartzite** Audit found during execution of footpath of Mall Road, Haryana	1.45

Sl No	Brief audit observation	Financial Impact
	Quartzite stone was replaced with granite stone/slab.	
4	The scope of the work of Mall Road did not provide for execution of Dense Bituminous Macadam (DBM) in the entire stretch of the road. The contractor, Satya Prakash & Brothers Private Limited, however, executed DBM in the entire stretch. It was noticed that during the identical time period, the tendered item rates for DBM in other works were lower than his tendered rate. The execution of the item through him at higher rate translated to an additional financial advantage.	1.23
5	As per conditions of the contracts, the contractors were to remove the malba at their cost and risk. Despite the above specific provisions, the agreements provided an item in the BoQ for removal of malba, enabling extra payment to the contractors. Audit observed that Satya Prakash & Brothers Private Limited did not remove the malba from the work sites of roads around YSC and roads around CWG Village. The department removed malba through IL&FS but did not recover the cost from the contractor. IL&FS was paid ₹. 280.32 per MT of malba against ₹ 73.42 per MT as per the agreement rate for Satya Prakash & Brothers.	3.49
	Total	**8.14**

On payment for barricading GNCTD stated that the conditions were general in nature and are kept in the contract to ensure that contractors did not make extra claims over and above the items included in the schedule of quantities. Further, it is also a term of the contract that schedule of quantities supersedes other conflicting provisions of the contract. The reply is not acceptable because in keeping with the conditions of the contract the item of barricading should not have been provided in the schedule of quantities.

On replacing CC bollard with red sandstone ready-made bollards, it was stated that red sandstone is the signature stone of Delhi and was used to give an aesthetic and the characteristic Delhi look. The reply is not acceptable because if that were the case then the item should have been provided originally itself instead of as an extra item.

On Haryana Quartzite, it was stated that nowhere has this stone been replaced by Granite as the latter was executed as per drawing of the consultant and within the provision of the agreement. The reply is not tenable because as per estimate for the work of Mall Road, 48 *per cent* of the footpath stone paving for pedestrians was to be constructed with Haryana Quartzite which was replaced with the costlier granite stone.

Regarding use of DBM on Mall Road it was stated that the requirement was based on the expert technical recommendation of IIT, Roorkee. The reply however does not address the audit observation that the work had been allowed to be executed though not in scope of work and the work had been executed by the contractor though the EE had directed (February 2010) him not to execute the DBM beyond the scope of the agreement. No programme was submitted to the Engineer-in-Charge by the contractor for approval before executing the DBM.

Regarding removal of malba, GNCTD agreed that there was a condition in the agreement about removal of malba by the contractor at his own cost. It was intimated that a recovery of ₹ 7.46 lakh in this respect had been made from the contractor. The remaining cost of malba belonged to malba dumped by local people or otherwise. The reply is not tenable as it is not supported with documentary evidence that additional malba was dumped by local people or otherwise.

4.7 Third Party Quality Assurance/Control (TPQC)

The agreements provided for Third Party Quality Control (TPQC) for the projects either by the Delhi College of Engineering (DCE)/CRRI/IIT, Roorkee or any other agency appointed by the EIC for independent quality assessment/control. Necessary tests of the materials and specifications were to be conducted in the laboratory of DCE/PWD/CRRI/IIT Delhi/IIT Roorkee or any other laboratory approved by the EIC.

The TPQC works were entrusted (March/April, 2010) for four packages each to the DCE (Dr S K Singh for three packages of IG Stadium and roads around various Games venues) and IIT Roorkee (Dr S S Jain for the Yamuna Sports Complex, around the Games Village, M B Road and Mall Road) after lapse of about 50 *per cent* of the period of the agreements. While the scope of the works for Dr Singh covered the civil works in entirety, for Dr Jain it covered only the bituminous and concrete items.

Audit observed that the team led by Dr Jain visited the work sites for two days each and submitted job mix reports of bituminous items for three packages and rated the standard of work as very good. Dr Singh conducted site visits between eight to 14 days for four packages and submitted two-three page reports for each package broadly indicative of visual work supervision suggesting minor improvements in finishing items. The amount of supervision provided by TPQC, and the quality and quantity of output by the consultants leads one to the conclusion that the TPQC had actually failed to provide independent quality assurance to the management of the specifications and materials used in the works rendering the expenditure of ₹ 1.47 crore (Dr. S S Jain: ₹ 0.48 crore and Dr. S K Singh: ₹ 0.99 crore) on TPQC wasteful.

GNCTD stated that reports submitted by third party were prepared after extensive inspection and testing by them. Since all the test reports as well as

the work were found to be satisfactory, they have suggested minor changes, wherever required. So, engagement of third party for quality control by the Government was a conscious decision to ensure the quality. As regards their frequency of inspections, they were comparable to those done by quality assurance wing of CPWD or CTE wing of CVC. Quantity of time devoted by these units and third party consultants on inspection of works is similar and hence there is no laxity on their part. The reply is not acceptable because the stated quality assurance would not have been achieved given the inadequate quantities of time devoted by the consultants for these works. Further the TPQCS were awarded after 50 *per cent* of the period of the agreements had elapsed.

4.8 Horticulture Works

4.8.1 Adoption of different rates in the estimates for identical items

As per CPWD Works Manual, the detailed estimate should be based on the rates given in the DSR for those items of work covered by it and by analysing market rates for the remaining items. Audit noticed significant variations between rates adopted in the estimates for identical items of horticulture work across the packages under PWD. The variations ranged between 12 and 400 *per cent*. The adoption of variable rates for same items without considering the minimum possible rate/DSR rate led to extra cost of ₹. 1.08 crore as shown in the table in **Annexure 4.2.**

GNCTD in its reply attributed the adoption of different rates in the estimates to differences in specifications of lead, size of plants and other charges. The reply is not acceptable because estimates should be consistent and justified. The differing specifications should have been justified in the estimates itself which was not the case. Therefore, the reply given by the government is an afterthought. The difference arose because of different consultants adopting different estimates. The department on its part did not independently study them even when estimates were approved at almost the same time. As has already been emphasized, percentage tender is a one line tender wherein the contractor can quote either above or below the estimate. Therefore through percentage premium the benefit will go to the contractor.

4.9 Unwarranted Costly Electrical Furnishing

The consultants suggested design for electrical lighting work by specifying costly electrical furnishing, some of which were imported. The quotations for the items were also obtained by them. The estimates were technically sanctioned by the CEs without verifying the actual cost of the items prevailing in the market. The possibility of procuring such items from indigenous companies was not explored.

Audit observed one instance where electrical fittings costing over ₹ 50 lakh were installed in a small area of 10m x15m.



Fittings worth over ₹50 lakh installed opposite IG Stadium

A few high cost electrical fixtures are given in Table 4.6. Each of these items was specified by brand name without giving a generic description, thereby favouring a particular manufacturing company. Further, these high cost items were included in a percentage rate tender, whereby the true cost of procurement cannot be easily assessed. Examination of some invoices suggested that the costs of the fixtures were far less than the costs adopted in the estimates. Due to adoption of high cost, undue benefit of ₹ 0.83 crore **(Annexure-4.3)** for these items alone was passed on to the contractors and the government was burdened by this expenditure.

Table 4.6 Instances of high cost electrical items

	Item	Rate per unit (₹ in lakh)	Amount (₹ in crore)	Photograph of the item
1	**Nemo Torch** Keselec Schreder (Roads around IG Stadium)	4.30	1.05	
2	**Trapeze Pole** Keselec Schreder (Roads around IG Stadium)	4.54	0.33	

	Item	Rate per unit (₹ in lakh)	Amount (₹ in crore)	Photograph of the item
3	**Decorative Street light-** JUNIPER, Bajaj (Roads around IG Stadium)	0.33	2.07	
4	**Nemo Pole** Keselec Schreder (Roads around IG Stadium)	0.49	0.75	

	Item	Rate per unit (₹ in lakh)	Amount (₹ in crore)	Photograph of the item
5	**Berlin Lamp & Pole** Philips/Bajaj (Roads around IG Stadium)	0.37	1.2	
6	**T5 Light fixture** ATL (Roads around IG Stadium)	0.08	0.71	
7	**Bollard** Keselec Schreder (Roads around IG Stadium)	0.28	0.48	

	Item	Rate per unit (₹ in lakh)	Amount (₹ in crore)	Photograph of the item
8	Schreder-CFL36 Watt (Safdarjung Flyover)	2.91	1.11	

GNCTD stated that the consultant suggested design for electrical work by specifying suitable electrical furnishing keeping in view the importance and use of the area around IGI stadium and the Delhi Secretariat. In the area Bhairon Road, a Plaza was constructed and the consultant constructed the fittings accordingly. The quotations for the items were obtained by the consultants from the respective manufacturer/ authorized dealers/ distributors of the fittings. It was further stated that in the tender document atleast two other options of equivalent make were also available for the contractor to choose from. The fact remains that the recommendations of the consultant were accepted without exploiting the indigenous options.

4.10 Street furniture in the vicinity of Games venues

4.10.1 Planning for Street Furniture

Street Furniture (SF) is a collective term for objects and pieces of equipment installed on streets and roads for various purposes. As part of city infrastructure upgradation, the streetscaping and beautification consultants (appointed between May 2008 to November 2008 by different agencies) also prepared the street furniture plans for the three agencies (MCD, PWD and

CPWD). The street furniture items to be put up included information kiosks, police booths, vending kiosks, public toilets, tree guards, bus queue shelters, dust bins, information panels, benches and free standing panels. The consultants provided street furniture drawings containing nature, quantum and location of the SF items in accordance with their overall landscaping plan for identified roads.

NDMC was appointed as the nodal agency in August 2008 for the project. DIMTS was appointed as the Transaction Advisor (June 2009) on nomination basis for evaluating EOI submissions; data collection and project structuring; and preparation of bid documents and bid process management.



Street furniture - Public convenience

The SF project was to be implemented on BOT basis, with advertisements on the street furniture created and revenue from operations during the contract period in the form of quarterly concession fee (QCF) being the revenue source.

To achieve uniformity in design of SF items around a particular venue, DIMTS, in consultation with NDMC/MCD/ PWD grouped roads around the Games venues into five clusters – Delhi University, IGI Stadium, R.K. Khanna Tennis Complex, Siri Fort Sports Complex and Dr. Karni Singh Shooting Range, and the Games Village and Yamuna Sports Complex.

The chronology of events for the planning and award of contracts for street furniture is summarised below:

Table 4.7 – Chronology of Events for Award of Street Furniture Contracts

Time	Events/Activity
August 2008	NDMC appointed as nodal agency
May-November 2008	Streetscaping consultants appointed by different agencies
May 2009	EOI called by NDMC
June 2009	DIMTS appointed as Transaction Advisor
June 2009	Short listing of bidders
November 2009	Street furniture requirement report by DIMTS
January 2010	Issue of RFP by MCD for 3 clusters
April 2010	Issue of RFP by DTTDC (on behalf of PWD) for 5 clusters
February/ May 2010	Opening of financial bids by MCD and DTTDC/ PWD
March/ June 2010	Award by MCD for clusters 2,3 and 4 for concession period of 7 years
May/ June 2010	Award by DTTDC/PWD for clusters 1, 2, 3, 4 and 5 for concession period of 15 years

4.10.2 Tendering irregularities

Out of eight companies that responded to the EoI floated in May 2009 by NDMC, five companies fulfilled the criteria of net worth given in the EoI document and were also pre-qualified for issuing of RFPs.

- J.C.Decaux Advertising Pvt. Ltd.
- Graphisads Pvt. Ltd.
- Laqshya Media Pvt. Ltd.
- Adlabs Films ltd.
- Hindustan Publicity Pvt. Ltd.

A sixth company, MEC, did not fulfil the net worth criteria, but was irregularly pre-qualified on the strength of its parent company.



Street furniture - Traffic police booth

Audit found the following deficiencies in the tendering procedure adopted by the agencies:

- Selection of six bidders merely on the basis of net worth fixed for each cluster was restrictive. The value of work in the desired field in the last few years was not considered at all. Further, DTTDC (which implemented the project on behalf of PWD) and MCD increased the net worth criteria fixed by NDMC (differently for different clusters), making it even more restrictive.

The DTTDC stated that the net worth method is a more scientific parameter to decide the financial capabilities of the agencies. It was also stated that the estimated expenditure to be incurred on the installation of the street furniture for each cluster was worked out by DIMTS for PWD and the net worth required for each cluster was based on these calculations.

The reply of the DTTDC management is not acceptable because when the tenders were invited by NDMC for selection of bidders for all the projects to be undertaken by PWD, CPWD, MCD, NDMC and DDA, the limit of minimum net worth required was ` 1 crore only. NDMC also had, at that time, with the help of DIMTS, indicated the specification of street furniture items and the cost per unit and the cluster-wise estimated project cost. However when the DTTDC issued the RFP it had not indicated the project cost in it at all. As far as transferring the risk is concerned, the contractor is liable only up to the performance bank guarantee provided. Also the fact that weightage of 80 marks was given for the technical bid shows that work experience was important and should have been specifically enquired about specially when

DTTDC itself in reply said that operation and maintenance of street furniture is a specialised activity.

- Six bidders quoted for four clusters in case of DTTDC/ PWD. In the technical evaluation by the Board of Assessors, the minimum qualifying marks were fixed as 70 for the technical bid. Two agencies, MEC and Hindustan Publicity Pvt. Ltd. scored less than 70 marks and their financial bids were not opened. Thus, in three out of four clusters, single bids were received/ remained.
- Bids for cluster 5, i.e. Games Village and Yamuna Sports Complex were re-tendered by DTTDC with modified numbers of street furniture items, modified net worth and bid security required from the three eligible bidders, giving them 7 days for bidding. The work was awarded to the sole bidder Adlabs Films Ltd (Reliance Media World).
- All the four bidders who had qualified the technical bids for DTTDC/ PWD, secured one contract each. There was no need for urgency for re-tendering for cluster 5, since the stipulated time for completion of four months from the Letter of Award fell beyond the date of conclusion of the Games.
- In case of MCD too, single bids were received for three clusters - Graphisads for IGI and JLN Complex cluster and R.K. Khanna cluster, and MEC for the Siri Fort Sports Complex cluster. The single bids were accepted on the ground that the captioned projects related to the CWG. The works were awarded just three and a half months before the Games, with a completion period of three months.

The agencies had not estimated the revenue expectation from the clusters, and no reserve price was fixed. Since nearly all 7 out of 8 were single bids, there was lack of competitive tension, and there is no assurance regarding generation of maximum revenue.

The table below shows wide variations between the monthly concession rates (calculated on a per sq.m basis) across different agencies, which further confirms inadequate exploitation of the full revenue potential and corresponding undue favour to the bidding contractors.

Table 4.8 – Wide range of monthly concession rates for street furniture items

(Range of rates in ₹ per sq.m)

Street Furniture items	PWD/ DTTDC		MCD		CPWD	Other benchmarks
	Minimum	Maximum	Minimum	Maximum		
Public toilets	54	714	238	472	270	MCD High End Toilets (IRR statement)- 1291 DIP[16]- 2985 DTC – 796 to 1592
Vending Kiosks	32	606	33	152	161	
Police booths	32	303	20	48	161	
Information Panels	76	1816	91	439	380	
Free standing panels	124	629	97	850	692	
Auto pre paid booths	32	397	-	-	159	



The rates for PWD/DTTDC and MCD are comparatively lower, despite the concession period of 15 years and 7 years (against the original period of three years indicated in the EOI). The long term revenue loss would be large although it cannot be fully quantified in the absence of reliable and comparable benchmarks.

The revenue from advertisements is singularly based on the location of such advertising displays taking into account the importance of the road, visibility of the panels, traffic density in the area, stoppage time, etc. Comparing the location of the panels at ITO with Mehrauli Badarpur Road (Majedia to Prahaladpur) or Yamuna Sports Complex in East Delhi will be an irrational exercise and have no relationship with the Opportunity to See (OTS)

[16] Department of Information and Publicity

mechanism of revenue generation prevailing in the industry. The DTTDC stated that the agreement is also based on a dynamic revenue sharing model under which the concessionaires have to share 16 *per cent* of the revenue generated with DTTDC. As per the conditions of the agreement the concessionaire has to operate the entire project only through an exclusive account, to be audited by DTTDC on quarterly basis. This provision of the agreement would provide full details of the revenue generation to DTTDC and would safeguard the interest of DTTDC in case of any higher generation of revenue at a later date or from any particular cluster.

The averment of Audit is that the agencies at the time of RFP had not worked out the estimated revenue (reserve price). Further the percentage of share of revenue of 16 *per cent* is on the overall revenue generated. This does not safeguard revenue of the government because not all furniture items are public utility items having a high maintenance cost. While it is alright to fix a lesser percentage for public utility items like toilets, in case of items like free standing panels the share should have been 50:50 like in the case of MCD which takes 50 *per cent* of revenue from the DTC, being the land owning agency. Basically revenue should be decided unit-wise, of a smaller percentage where capital cost is more and of a larger percentage where capital cost is less. The audit point is further borne out by the fact that the DTTDC has made changes, post tender, in the area given for advertisements in favour of generation of more revenue for the concessionaire. The DTTDC in its note dated 2 July 2010 stated and approved that "as per the agreement conditions the area of advertisement on information panels shall not be more than 50 *per cent* of either side. However, in a meeting taken by Chief secretary this issue was discussed with the preferred bidder and it was agreed that this provision can be relaxed to have full advertisement on one side and public messages on other alternate panels." In another note dated 15 September 2010 the dimension/height of police booth/ auto booth was increased to 4.16 meters instead of 3 meters provided in the agreement, that has resulted in additional advertisement space due to increased heights of the booths. The DTTDC itself has noted that the matter of additional revenue from additional advertisement space would be decided after the CWG.



4.10.3 Status of work

The delayed planning and award of SF contracts for different clusters meant that most were not ready in time for CWG-2010. Most of the SF clusters for DTTDC/PWD (which were awarded later than MCD) were incomplete, ranging from 60 – 90 *per cent* for 4 clusters, with only one cluster complete as of March 2011. The MCD cluster had, however, been completed as of March 2011.

The DTTDC replied that the provision of street furniture involves procuring the equipment, installing the same on prepared foundations, providing services like water supply, sewage, electricity etc. The progress of the work was directly dependent on the co-operation of different departments/ organisations like PWD, DJB, BSES, NDPL, etc. Thus, wherever PWD had completed the street scaping work, decision was taken on a case to case basis to provide or not to provide the furniture. In July 2010, the GNCTD, in view of the incessant rains in the unusually strong monsoons, decided to stop all earth/foundation works and no digging/earth work was allowed after 31 July 2010. In addition the area immediately around the Games Venues was taken over by the security agencies of CWG, which did not allow entry to any other agencies to execute any kind of work.

The reply is not acceptable because the purpose of beautification before the Games was not served. Lack of coordination should not be an issue as there were high powered committees set up only to coordinate. Further J C Decaux and Adlabs had specifically informed that they would not be able to complete the work because they were importing the street furniture items and excessive time would be taken in their shipment which shows that the implementation plan portion at the time of technical evaluation was not ensured. In this connection, DTTDC stated that as already pointed out, provision of street furniture was not restricted to Commonwealth Games only but these facilities are meant to continue for use of the public for the coming 15 years as provided in the agreements.

Chapter 5: Upgradation of Street Lighting of Roads in Delhi

5.1 Introduction

The project for "Modernisation of Delhi Street Lighting System" was conceived by GNCTD in June 2006 for completion within 2 years. Accordingly, standards for integrated street lighting project for Delhi were released in October 2006 by GNCTD and were subsequently revised in November 2006, after considering suggestions/ observations of vendors and implementing agencies. The standards were to be followed by all the agencies. The lighting standards were designed to meet the following objectives:

- To adopt the latest technology in street lighting based on international standards adapted to Delhi's conditions.
- Use of energy efficient electrical equipments.
- Use of automatic switching on and off and monitoring of street lights, thus saving energy consumption and enabling quick maintenance of equipments.
- Improving the urban landscape of Delhi
- Prepare for Commonwealth Games, 2010.

The standards prescribed the technical specifications like the type and wattage of lamps and luminaries, the height of electric poles, maximum spacing between the poles and desired illumination levels for various types of roads (Dual/single carriageway, service road, slip road etc.) but were brand neutral.



Modernised Street Lighting in Delhi

The standard also gave guidance on the contractual obligations to be fulfilled by various agencies in implementing the lighting systems and maintenance of these systems.

The work was implemented by PWD, MCD and NDMC. The details of length of road and tendered cost for the works under the three agencies are tabulated below:

Table 5.1 – Summary of Street Lighting Works

(₹ in crore)

Sl. No.	Agency	Road Length (km)	Total Tendered Cost
1	PWD	444.39	154.95
2	MCD	258.56	96.53
3	NDMC	86.00	34.40

Audit acknowledges the improvement in illumination levels of Delhi roads, brought in by the implementation of a well prepared lighting standards document, which has contributed to an overall consistency in implementation and marked improvement in urban landscape and city infrastructure.

5.2 Use of imported luminaries

5.2.1 Decision on use of imported luminaries

The initial proposal for street lighting in PWD was sent for government approval in November 2006 but was not sanctioned on account of change in scope of work. A revised estimate involving use of indigenously manufactured luminaries was sent in May 2007 and was accorded approval in June 2007, but the approval was withdrawn in the same month.

Meanwhile, the Chief Minister (CM) desired (July 2007) that while PWD was implementing a comprehensive plan for street lighting, such lighting may be demonstrated on at least one or two roads in time for Diwali 2007. PWD invited spot quotations to install street lighting on a sample stretch of roads. The sequence of events is as detailed below:

Table 5.2 – Chronology of Events for Street lighting on Sample Road

Period	Event
July 2007	• Spot quotation from three firms using indigenous luminaries for a sample stretch of roads was invited.
August 2007	• Second call for spot quotation was invited from the same three firms on the same conditions. The bidders now quoted for imported and indigenous luminaries. While Philips quoted only for indigenous luminaries, Trilux quoted for imported luminaries and Keselec-Schreder quoted for both indigenous and imported luminaries.
September 2007	• Third call for spot quotation from same three firms invited in two separate sections, one each for imported

	and indigenous luminaries. The work was however not executed. • Sample luminaries of some of the leading manufacturers were displayed before the CM in September 2007.
October 2007	• Indigenous and imported luminaries installed on a sample stretch were inspected by the CM, and also by the PWD minister.

Based on the inspection and approval of CM, PWD decided to use imported luminaries on 'A' category roads, a mix of imported and indigenous luminaries on 'B' category roads, and only indigenous luminaries on 'C' category roads.

It may be noted that this 'A', 'B' and 'C' categorisation of roads was not specified in the lighting standard. Thereafter, PWD revised the preliminary estimate by incorporating use of imported along with indigenous luminaries.

The GNCTD in its reply stated that there was no alternative left with PWD but to purchase imported luminaries in order to meet the Standards of Integrated Street Lighting Committee (SISLC), besides having adequate competition among global leaders in luminaries.

The reply is not acceptable as the objective of the department to meet the world class lighting standards as required by SISLC could have been met through indigenous luminaries which was evident from the department's third party test reports of both indigenous and imported luminaries which did not differ in any aspect.

Further, the decision of PWD on use of imported luminaries on 'A' category roads was also adopted by MCD and NDMC. NDMC specified all of its roads as 'A' category, and called tenders for imported luminaries only.

A total of ₹ 41.37 crore was spent as on July 2011 on procurement of imported luminaries, with ₹ 24.52 crore by PWD, ₹ 6.51 crore by MCD and ₹ 10.34 crore by NDMC.

The imported luminaries were procured at a cost much higher than the price at which indigenous luminaries were procured, leading to avoidable extra expenditure of ₹ 28.12 crore (July 2011) across the three agencies (PWD, NDMC, MCD) as tabulated below:

Table 5.3 – Avoidable Expenditure on Imported Luminaries

(₹ in crore)

Agency Name	Number of imported luminaries (provisional)	Average cost of procurement	Additional expenditure incurred*
PWD	9,063	27,235	16.89
MCD	2,337	27,824	4.50
NDMC	4,166	24,758	6.73
Total	**15,637**		**28.12**

** Against average procurement cost of indigenous luminary (400 W and 250W) of ₹ 8600 in MCD*

The GNCTD stated that the expenditure on imported luminaries worked out to 45 *per cent* and 15 *per cent* of the total cost of the luminaries and total cost of the project respectively. The fact however remains that the opportunity for economy was lost.

Differentiation between indigenous and imported luminaries is starkly exemplified in the case of a luminary of Keselec-Schreder make (Ambar-3), procured by PWD as an indigenous luminary at ₹ 15,160 but by MCD as an imported luminary at over twice the cost at ₹ 32,000.



Ambar-3, Imported (MCD), Price: ₹32,000



Ambar-3, Indigenous (PWD), Price: ₹15,160

5.2.2 Enrolment of imported luminaries

The technical specifications for both imported and indigenous luminaries were identical, and technical test reports of the imported and indigenous luminaries supplied by the various firms were equally compliant with specifications for luminaries given in the lighting standards.

PWD selected and enrolled as approved, the models demonstrated by the bidders, except SpaceAge which was later declared qualified. No techno-economic evaluation of the options offered by the bidders in support of such selection was available in the records. Consequently, models of various companies of different repute and of different price ranges were selected at the same level.

In the case of selection of luminaries of General Electric (GE) and Al-Babtain brands offered by SpaceAge, no evidence of any on-site demonstration was found on record. Further, at the time of award of work to SpaceAge, the Works Advisory Board (September 2008) had desired that luminaries of GE make should be used by SpaceAge. PWD was unable to enforce the same, and could not prevent SpaceAge from installing luminaries of Al-Babtain make in place of GE. Further no information is available in the M-3 Division.

In reply to the audit observations on use of imported luminaries leading to avoidable expenditure of ₹ 10.02 crore discussed in para 5.3.1, PWD stated that these were specified for use on selected roads on account of the imported luminaries having the following advantages over the indigenous ones: The

GNCTD in its latest reply (December 2011) stated that Board of Assessors (BoA) had approved both imported and indigenous fittings to be used in different categories of city roads. The reply is not tenable as there was no evidence on record.

- 10 to 15 *per cent* more efficiency as measured by the higher light output ratio
- Better aesthetic appearance and finish
- Lower maintenance cost

The department's reasoning regarding superiority of imported luminaries on account of higher light output ratio is not acceptable. If light output ratio was considered such a critical performance parameter, it should have been included in the lighting standard issued by GNCTD, and also specified by PWD as a requirement for imported luminaries, which was not done. Further, product brochures of none of the luminaries used in PWD (indigenous or imported) speak about the light output ratio, let alone state its value. Of the luminary test reports supplied by the department, Audit observed that the light output ratio of imported luminaries varied from 78.4 to 88.9, while for indigenous luminaries, it varied from 75.3 to 89.5. This is at variance with the department's assertion that imported luminaries were having efficiency greater than the indigenous luminaries by 10 to 15 *per cent*.

No documentary evidence has been provided regarding lower maintenance costs for imported luminaries. In any case, all luminaries are under a six year comprehensive maintenance contract, and none of the bidders were asked to quote separately for maintenance of indigenous and imported luminaries, as should have been the case if the maintenance costs were known to be substantially different.

5.3 High Cost of procurement of luminaries

Audit found that the procurement process did not ensure procurement at competitive rates, as explained below:

5.3.1 High cost procurement of imported luminaries

Audit scrutiny of the actual price of the imported luminaries that had been installed by the successful bidders, as ascertained from the invoices, revealed a wide gap between the imported price, including cartage, supply, installation, testing and commissioning (SITC), cost of bulb, contractor profit of 10 *per cent* for PWD and 15 *per cent* for MCD and NDMC and cost of maintenance during Defect Liability Period (DLP) and the price paid by the department for

the same fittings, is given in the table below:

Table 5.4 – Gap between import price and price actually paid for imported luminaries and extra profit thereof

(Amount in ₹)

Name of executing agency	Make & Brand	Cost including mark up (fair price)	Contracted procurement price	Higher price paid per luminary	Extra profit (₹ in crore)
PWD, Zone M1	Trilux: Lumega 900	26,222	28,242	2,020	0.79
PWD, Zone M2	Schreder: Maya-Maxi /Sapphire 3	16,325	26,371	10,046	3.53
PWD, Zone M3	Al-Babtain-smart /05	9,318	25,704	16,386	2.68
MCD	Schreder: Ambar 3	11,082	31,328*	20,246	1.01
MCD	Philips: Modena	22,660	26,421*	3,761	0.62
NDMC	Philips: Modena	22,386	24,819*	2,433	1.39
Total profit on account of price premium (₹ in crore)					**10.02**

* *Weighted Average Cost of procurement*

The cost of procurement by all agencies was substantially higher than the imported price including cartage, SITC, cost of bulb, contractor profit of 10 *per cent* for PWD and 15 *per cent* for MCD and NDMC and cost of maintenance during Defect Liability Period (DLP) being higher by 8 *per cent* to 183 *per cent*. The selection of imported luminary make and fixure of their base price at high levels, particularly in case of SpaceAge and Keselec Schreder(176 to 183 *per cent*), was in violation of financial propriety. A price premium was being paid simply on account of the luminaries being imported. Consequently, contractors managed to earn extra profit of ₹ 10.02 crore.

The GNCTD stated that the justification statement which was prepared at the time of award, was now superimposed with the rates worked out in the report by CAG for item No.12(a) and 13(a) i.e., for imported fittings in all the three tenders with overhead and profit duly modified from 10 *per cent* to 15 *per cent*. Even by considering the rates assumed/adopted by Audit as justified rates, the total quoted amount in each case is within permissible limits for award of work. The effect of this item is only 5 *per cent* to 10 *per cent* of the total tendered amount and therefore the difference in rates worked out by CAG has got negligible effect on the tendered amount.

The reply is not acceptable because the justified statement was not prepared at the time of award of contract in October 2008 and hence did not depict the market rate at the time of acceptance of the tender.

5.3.2 High cost of procurement of indigenous luminaries in PWD

Audit noticed that both PWD and MCD had used a combination of indigenous and imported luminaries for their street lighting projects. The analysed rate for providing and fitting of indigenous luminary by PWD was ₹ 15,522 per unit (Philips Velocity 400W) based on a single quotation, whereas these (Model MC3 by Keselec-Schreder and Model Velocity by Philips) were supplied in MCD by two leading manufacturers at ₹ 9100 per unit.

Thus, the execution of items of the same make at higher rate by PWD resulted in an extra expenditure of ₹ 5.59 crore as of December 2010.

5.4 Restrictive and non-competitive conditions in tendering

5.4.1 Conditions in Expression of Interest (EOI)

The lighting standards prescribed pre-qualification criteria for the prospective bidders. Both PWD and MCD prescribed more restrictive eligibility criteria for financial and technical capability, while NDMC used the list of vendors declared eligible by PWD.

- Audit found that PWD kept the required annual turnover at ₹ 40 crore in place of ₹ 20 crore indicated in the lighting standards, thereby restricting participation. The limit also exceeded 30 *per cent* of estimated cost criteria of Central Vigilance Commission (CVC). MCD made the pre-qualification criteria for both the phases stricter by fixing the condition of average annual turnover at 30 *per cent* of estimated cost during the last seven years instead of three years.
- The lighting standards stipulated that *"the main contractor shall procure items from respective manufacturers."* However, both PWD and MCD in their EOI specifically stated that the bidder should be a manufacturer of luminaries of international repute. This severely restricted the competition.

The parameter of being a luminary manufacturer of "international repute" did not specify how the clause would be assessed and was very selectively applied. While initially, SpaceAge Switchgear India Limited was found as ineligible, and later found eligible during reassessment done when the firm represented to the CM, its compliance with requirement of being a manufacturer of luminaries of international repute was never assessed. The vendor installed luminaries from a Saudi Arabian firm, Al Babtain, with whom the vendor had no declared standing relationship, putting to question the eligibility of the vendor as a manufacturer of luminaries of international repute.

The restrictive clause led to rejection of two firms, Street Scape, Australia and Utkal Galvanizers Ltd on the grounds that they did not have luminaries' manufacturers as lead partners.

PWD, in its reply, stated that the competent authority, Chief Engineer, had taken the decision that luminary manufacturers should be made the lead partner for execution of work for the following reasons:

- proper maintenance of the luminaries during the 6 year maintenance period.
- genuineness of the supplies
- their perception that only a few reputed luminary manufacturers are equipped for providing design work for illumination.

In case of MCD, the Government stated that the main objective of framing pre qualification criteria was to obtain best quality of work, timely supply of material, healthy competition and reasonableness of rates. The EOI also allowed not only individual company but also joint ventures. The main goal of addition of criterion of luminaries manufacturer of international repute was based on –(i) its support required at the stage of survey, design, O&M, (ii) uninterrupted availability of spares (iii) bleak possibility of contractor backing out in the middle as he had his reputation on stake.

The reply is not acceptable as both PWD and MCD did not comply with the comprehensive guidelines framed by the Government itself. The benefits of increased competition could have been brought in by complying with the GNCTD prepared lighting standards requirement of the main contractor procuring the luminaries from the manufacturers. Such benefits would have been far in excess of the perceived benefits stated by PWD.

5.5 Division of work in PWD

The street lighting work in PWD was divided into three parts (August 2007) on the grounds of administrative convenience and early completion, but with the apparent intention of giving one work each to each of the three shortlisted (initially) firms. Further, Notice Inviting Tender (NIT) stipulated that only one work alone would be given to one contractor. In this situation, the pre-qualified vendors were not given equal opportunity in the financial bidding in all the three divisions of PWD resulting in lesser competition among the pre-qualified vendors as only one among the four pre-qualified bidders ran the risk of not winning any bid.

5.5.1 Irregularities in assessing qualification of a firm in PWD

Spaceage Switch Gears Ltd. submitted (July 2007) EOI as a manufacturer of luminaries of international repute, and of poles in India. The bid by the firm was neither as a Joint Venture (JV) nor as a consortium, but was in the name of Spaceage Switch Gears Ltd.

The Board of assessors (BoA) disqualified (November 2007) the firm on the following grounds:

- Non supply of imported as well as indigenous fittings

- Non clarification of works done by their foreign concern
- The firm could not obtain the required qualifying marks of 75 out of 100, scoring only 48 marks out of 85.

On being disqualified by the BoA, the firm appealed (November 2007) to the CM for inclusion as a tenderer for the work. The vendor's plea to the CM was forwarded to the E-in-C. Subsequently, a re-assessment of the eligibility of the firm was done by the BoA, who, this time, found the firm to be qualified.

Audit found that the following aspects of the re-evaluation, leading to an increase in the score from 48 to 67 (out of 85), as unreasonable:

- The score for experience in similar class of work increased from 10 to 15 (out of 15), though the relevant work was done by another firm, related by having a common majority shareholder, but which was in fact, a separate legal entity, and not a part of the bidding entity as a JV or consortium member.
- The firm did not submit any new financial statements in support of the required average annual turnover, yet its score increased from 10 to 19 (out of 19).
- The firm did not submit any new documents relating to personnel, establishment, and plant and equipment, yet its score in this regard increased from 10 to 12.
- The score on presentation before the BoA was also increased from 13 to 16.

Subsequently, the financial bid of Spaceage was the lowest for M3 zone but the Works Advisory Board (WAB) constituted for acceptance of tender did not approve the award of work in March 2008 and called for retendering, on the grounds that the firm had already been rejected by the BoA, and the reassessment and subsequent inclusion was improper. Incidentally, two of the members forming the BOAs were also members of the WAB, but both the boards took the diametrically opposite decisions unanimously regarding the firm's eligibility.

The firm approached (May 2008) the Hon'ble Delhi High Court which quashed the decision of WAB of rejection of tender (July 2008). In view of urgency of work, the Government decided (September 2008) to award the work to the firm.

Consequently, the ineligible firm got the work despite being rejected by the WAB. The department's case was greatly weakened by the irregular increase of marks by the BoA in December 2007, qualifying the firm.

The firm, SpaceAge, went on to supply low cost imported luminaries of Saudi make, costing ₹ 5,040, and charging ₹ 25,704 for the same and in the process earning a profit of ₹ 2.68 crore.

The GNCTD in its reply stated that the unprecedented worldwide recession and economic depression in the international market which started in September 2008, October 2008 and persisted quite long as the reason for the huge price variation of the fittings. However, no documents in support were furnished. The reply is not tenable because, the PWD accepted and awarded the contract to M/s SpaceAge only in October 2008 at the negotiated cost of ₹ 55.16 crore, which was 4 *per cent* above the estimated cost. The rates could have been reduced before accepting the tender as per clause 16 of NIT. The justified cost was not prepared at the time of contract in October 2008 and hence did not depict the market rate at the time of acceptance of the tender.

5.6 Deficiencies in tendering and award of work

All the agencies followed different approaches for calling of tenders. PWD called tenders based on percentage rate, MCD adopted item rate tender, while NDMC called for design based tenders.

5.6.1 Deficiency in tendering in PWD

5.6.1.1 Incorrect use of percentage rate tender by PWD

The estimates for the street lighting work prepared by PWD was based on market rate, but PWD resorted to percentage rate tendering instead of item rate, in contravention to the provisions of the (CPWD) manual.

The costs of the following items were over-estimated by PWD with direct implication on the final cost of procurement:

- **Imported luminaries**: The estimated rate for imported luminaries was kept at ₹ 27,000 per unit against the average cost including cost of bulb, cartage, one year maintenance and contractor profit of imported luminaries actually used being ₹ 17,288, while the minimum cost was just ₹ 9,318.
- **Indigenous luminaries**: The estimated cost taken by the department for indigenous luminaries was ₹ 15,522, but the same fittings were supplied in MCD at rates of ₹ 8000 to ₹ 9200 per unit.
- **Pole (12 m)**: The base rate of ₹ 26,750 taken for estimation of cost of 12 metre pole was inclusive of all charges for fabrication, supply and erection etc. but the same was again loaded, thereby inflating the cost of a pole to ₹ 31,502.

5.6.2 Deficiency in award of work in MCD

5.6.2.1 Avoidable expenditure of ₹ 2.54 crore due to non-compliance with design specifications

It was noticed in audit that the lighting standards were not complied with on many dual carriageway roads, where 10 metre poles had been used in place of the prescribed 12 metre poles. **(Annexure 5.1 and Annexure 5.2).**

This led to an estimated avoidable extra expenditure of approximately ₹ 2.54 crore due to use of larger number of poles and luminaries. It was also seen that in Phase-I of execution, the offered price of a 10 metre pole (₹ 28974) was more than the price of a 12 metre pole (₹ 28358) apparently due to post bid tampering. Installation of a 10 metre pole was more lucrative to the contractor than the 12 metre pole.

The GNCTD, in its reply stated that the designing was done by the agency concerned based on site conditions, and that approval of the competent authority, E-in-C, was taken for installing 10 m poles on 80 feet (24 m) wide road.

The reply is not acceptable because such approval, taken without a techno-commercial evaluation of the impact, and in violation of the already issued lighting standard was incorrect.

5.6.2.2 Extra cost of ₹ 0.48 crore due to specifying decorative luminaries using lamps of a particular brand in MCD

The lighting standards provided for use of 150 watt HPIT (Metal Halide) lamps for pedestrian crossing, slip roads and bus bays. However, MCD specified decorative luminaries using 140-watt lamp of a particular brand, Cosmopolis, in the agreement. As per records, a total of 670 such Cosmopolis lamp fittings at a cost of ₹ 15,000 per unit were used, whereas comparable 150-watt High Pressure Sodium Vapour (HPSV) fittings were available at ₹ 7800. In these fittings, the HPSV lamps could have been replaced with 150-watt metal halide lamps for providing white colour light, as done by PWD. Thus, specifying decorative luminaries with Cosmopolis lamps in place of standard luminaries with metal halide lamps resulted in extra cost of ₹ 0.48 crore.

In reply the GNCTD stated that the decorative luminaries were to be provided by the firm from the preferred make mentioned in tender document and that it is clearly mentioned in the item that the fitting suitable for Cosmopolis lamp without mentioning any brand was to be provided. Further, the Cosmopolis is latest Technology for white light having benefit over conventional HPIT (Metal Halide) lamp.

In Audit's opinion the reply is not convincing as MCD cannot justify the extra expenditure on Cosmopolis lamps when the desired illumination could have

been achieved by using standard luminaries with metal halide lamps as provided in lighting standards. Also the final revised version (November, 2006) of the lighting standards approved by GNCTD had removed reference to Cosmopolis lamps thereby making them brand neutral. The phrase 'new generation light sources like Cosmopolis lamps' was replaced with 'new generation light sources'.

5.6.2.3 Apparent post-tender alteration in price bids in MCD

As per the CPWD manual, the officer opening the tenders should encircle all corrections, cuttings, conditions and over-writings, number them and attest them in red ink on each page of the price bid itself.

These conditions were violated in the tendering for both phases of the work in MCD. The winning bid of Sweka Powertech for Phase-I and Phase-II had large number of over writings/ corrections/ alterations. In neither of the bids did the contractor fill up the column for 'Amount' in the schedule of quantity, and the total for the bid was struck and recorded only in one case (Phase-II).

The matter is under investigation by Central Bureau of Investigation (CBI). Photocopies of the records were obtained from CBI for the purpose of audit.

A scrutiny of price bid for Phase-I revealed that the certificate recorded by the accountant either did not tally with the number of corrections made in the page or the certificate itself had cuttings/overwriting. The final effect of overwriting and corrections in rates was to enhance the quoted price and not vice versa. Further, the corrections had not been assigned separate numbers as required.

Another correction noted was in the discount offered by the firm in the form of a note which read-"payment will be released within 10 days after submission of the RA bill, then we are ready to give discount of Nil *per cent* on the total amount". In this case also, there was apparent correction, by changing 1 *per cent* to Nil *per cent* by prefixing 'Ni' to 1 *per cent*.

The possibility of these alterations at post tender stage cannot be ruled out. The total result of enhancement of quoted amount by such alterations was ₹ 3.63 crore.

A similar pattern of alteration of bids was seen in Phase-II also. Scrutiny of price bid of M/S Sweka Power Tech Engineers Pvt. Ltd. (L-I) revealed that there were cuttings/over writings/corrections in the quoted rates of several items. The corrections made in the quoted rates against the above said items were not encircled, numbered and attested individually.

The Department in its reply intimated that the divisional accountant wrote all rates in his own handwriting on bids tendered with red ink wherever he found any cutting or overwriting; all cuttings were duly encircled and signed by the divisional accountant. Further representatives of all the bidders were present at the time of opening of bids. The stand of MCD is not acceptable as the

cuttings / over writings in price bids were not numbered serially as required under provisions. Even the certificates recorded at the end of the page were tampered/corrected (Phase-I). The column meant for filling amount was not filled in both the phases. This gave rise to the suspicion that rates were tampered with after opening the bids.

It is apparent that the corrections in two items have been made after opening of tenders. The net effect of corrections/overwriting was evident from the enhancement of tendered amount by ₹ 3.34 crore, while still keeping it below the next higher bidder (L-2) by ₹ 4.69 crore.

The details of the alterations are shown in **Annexure 5.3 and 5.4.**

The GNCTD stated that the matter was under investigation with CBI and the action against the defaulting officials would be initiated as per the outcome of the final investigation of CBI.

5.6.3 Deficiency in tendering/award of work in NDMC

5.6.3.1 Calling of design based tender by NDMC and consequent loss

NDMC opted for a "design based approach", wherein each bidder was asked to submit road wise design and compute the quantity for each item required to meet the target illumination level and to quote the rates for items required. The GNCTD's lighting standards of 2006 did not provide for calling tenders on design basis.

While the design based tender does not ensure procurement of items at the lowest cost, it also actually placed Philips at an advantageous position compared to other bidders, as despite quoting higher (item wise) for each of the key items, Philips managed to be lowest (L-1) bidder due to proposing use of lower quantities of various items.

Philips was the lowest with tendered amount of ₹ 34.40 crore against ₹ 37.32 crore quoted by Spaceage (second lowest) as detailed below:

Name of item	Ranking of M/s Philips	L1 Vendor for the item	Rate quoted by Philips	Rate quoted by L1	Item cost as percentage of total cost
11 m pole	L3	M/s Bajaj	39602	25877	29.16 *per cent*
10m pole	L3	M/s Space age	33619	28000	1.82 *per cent*
8m pole	L4	M/s Bajaj	26925	17791	5.57 *per cent*
400W HPSV	L2	M/s Keselec	25071	24900	17.61 *per*

		Schreder			*cent*
250W HPSV	L2	M/s Keselec Schreder	24445	24000	11.55 *per cent*
PVC insulated copper conductor	L4	M/s Bajaj	49	35	0.58 *per cent*
HDPE pipe 120mm	L3	M/s Bajaj	297	194	2.24 *per cent*
Laying DWC 110mm	L3	M/s Spaceage	1256	800	2.37 *per cent*
HDPE pipe 90mm	L3	M/s Spaceage	239	160	7.34 *per cent*
HDPE pipe 100mm	L3	M/s Spaceage	1269	600	10.20 *per cent*

A scrutiny of rates of 10 major items forming 88.44 *per cent* of gross tendered cost (of Philips) of ₹ 35.46 crore revealed that in none of these items Philips was the lowest bidder. The overall bid amount of Philips was lowest only due to their proposed design involving lower consumption of various items. For instance, the design proposed by Philips involved use of 3815 poles and 4166 luminaries against the estimated quantity of 6364 and 9329 respectively, while the quantities quoted by second lowest bidder were 6492 poles and 7126 luminaries.

Even the Technical Evaluation Committee (TEC) was unable to assess the different designs due to wide variation in number of poles and other infrastructure offered to be installed by the bidders. It finally recommended that the price bids may be opened after obtaining an undertaking from all the four bidding firms that they would not charge for any extra work/ infrastructure required to be provided in case the required levels of illumination as per NIT specification were not met with their design.

Audit observed that the second lowest bidder i.e. SpaceAge at the quoted quantity of Philips could have executed the work at ₹ 28.69 crore, which is less than the amount quoted by Philips by ₹ 6.77 crore.

In reply, NDMC stated that design based tenders rather than conventional mode were invited keeping in view the special needs of the NDMC area with its dense tree cover.

The "design" could have been either done in-house or could have been executed as a separate consultancy assignment, thereby providing a level playing field to obtain competitive rates for each item of work. This could have

saved a premium of ₹ 6.77 crore, which was otherwise earned by Philips on the basis of their design.

5.6.3.2 Irregular award of work in NDMC under deviation clause leading to loss

Chairman, NDMC gave approval for additional work of 18.445 km for 14 roads and service/ slip roads which were not part of the original agreement. The works were awarded on the same rates as the existing contract for street lighting with Philips (awarded in August 2009) under the deviation clause stating that the increase in quantity was under the deviation limit of 25 *per cent*. In this case, the additional work valuing ₹ 7.38 crore was for new roads not covered by the original agreement, and hence could not be construed as deviation in quantity alone. This did not have the approval of the Council, the competent authority. NDMC intimated that the Council in its meeting held subsequently on 23 February 2011, ratified the expenditure. Audit found that the agenda note put up for approval of the Council in this regard made no mention of the audit objection communicated to NDMC. Thus giving inadequate information led to the wrong decision on deviation by the Council.

Loss to NDMC on account of award of additional work under deviation clause

- The existing agreement with Philips was design based, where the work was awarded on account of the bid being of lowest total cost, and not necessarily the lowest in unit cost of the items. Thus, award of additional work to Philips at its quoted (higher) item rates led to an additional loss of ₹ 1.45 crore {₹ 7,37,89,874 X (design premium of ₹ 6,77,00,520/net contract amount of ₹ 34,40,46,038) =₹ 1,45,20,187} when compared with the rates of second lowest bidder.
- The NDMC calculated the prorata cost while awarding the additional work to M/s Philips as ₹ 7.38 crore. By applying the design parameters proportionately for the additional work, the executed quatity as per the tentative data provided by NDMC, the cost was in excess by ₹ 1.30 crore, as detailed in Table 5.5:

Table: 5.5 Excess cost due to excess execution beyond proportionate quantity by M/s Philips for 14 roads excluding slip road

Item	Quantity quoted	Rate quoted	Pro rata qty. for 14 roads 15.946/ 86 km	Actual qty. for 14 roads	Excess of actual qty. over pro rata qty	Value of excess qty. executed over pro rata qty. in ₹
11 m Pole	2611	39602	484	543	59	23,36,518
10 m pole	192	33619	36	24	-12	-4,03,428
8m pole	734	26925	136	374	238	64,08,150
400 W HPSV	2491	25071	462	414	-48	-12,03,408
250 W HPSV	1675	24445	311	552	241	58,91,245
Total						**1,30,29,077**

- It was observed that NDMC while awarding additional work, only specified that the payment for additional work is to be governed by "the deviation clause of agreement or site whichever is lower". As a result, M/s Philips had no incentive to optimise the design and conversely, maximising the use of poles and luminaries was to the advantage of M/s Philips on account of higher item rates. Accordingly, the contractor had submitted a claim of ₹ 12.06 crore (bill of 2.5 km of road length awarded in October 2010, with pro-rata cost estimate of ₹ 1 crore has not yet been submitted hence there is a difference between bill amount of ₹ 11.05 crore and claim of ₹ 12.06 crore) for additional work, thus entailing total loss of ₹ 6.13 crore (₹ 12.06 crore - ₹ 7.38 crore = ₹ 4.68 crore add loss of ₹ 1.45 crore = ₹ 6.13 crore).

NDMC, in its reply, stated that payment for additional work would be restricted on pro-rata basis or on the actual quantity executed, whichever was lower.

5.7 Delay in project initiation and completion

None of the agencies could complete the project within two years as planned.

5.7.1 Delays in PWD

PWD planned in June 2007 to complete the project by February 2009. The project was executed as 3 separate packages in three PWD zones, but the work was finally completed by September 2010 after a delay of about 19 months. There was delay at every stage, with delay in awarding of work itself of about 11 months. There were delays in execution too, as the work stipulated to be completed by January 2010 was also delayed by about eight months.

Further, PWD has not decided the penalty to be imposed on account of delay, as none of the three contractors had submitted their final bills (though they have been issued physical completion certificate in August/ September 2010).

5.7.2 Delays in MCD

The stipulated date of completion for Phase-I was 9 July 2009. However, a certificate was issued (January 2011) indicating provisional completion on

2 August 2010. MCD neither sanctioned EOT, nor recovered liquidated damages of ₹ 3.45 crore for a delay of 55 weeks.

GNCTD stated that the EOT would be decided after getting back the relevant records from the CBI.

After lapse of the stipulated date of completion of 7 July 2010 for Phase II, the contract value was enhanced from ₹ 60.74 crore to ₹ 73.36 crore by awarding additional work on 24 July 2010 with stipulated date of completion extended to December 2010. The total work was subsequently restricted to ₹ 61.99 crore for a total road length of 160.5 km on 05 August 2010, but the stipulated date of completion was not changed. Though the certificate for provisional completion of work was issued on 24 September 2010, no time extension was sanctioned. There was a delay in completion by 50 days, with a corresponding LD of ₹ 4.25 crore, which has not been levied by MCD.

GNCTD stated that EOT would be decided after taking a balanced view of the delays on the part of the contractor and recovery, if any, effected after approval of the competent authority.

5.7.3 Delays in NDMC

After approval of estimate (December 2007), NDMC delayed the tendering process. Tenders were invited in March 2009 after a delay of 14 months, and it took another five months to award the work. The contractor was given additional work for 18.45 km between December 2009 and October 2010, which would imply a proportionate increase in the time period up to November 2010. The execution of work was delayed by more than two months, and NDMC had neither issued completion certificate nor recorded the final measurement. Further, compensation for delay valuing ₹ 1.25 crore was also not levied. The Department in its reply stated that the installation work had been completed on 30 August 2010. The street lights are functioning satisfactorily since then. Minor rectification works and final measurements are in progress. Final bill had not been made out as yet. Any deduction or the recovery becoming due and recoverable will be adjusted in the final bill. Sufficient due payments to the contractor for the work done, was available for any eventual recovery.

This implies that the work was not completed as the measurement was under process. (Reply of 3 April 2011). As of July 2011, the payment was not made the effect of which will be visible in later years.

Chapter 6: Road Signages

6.1 Introduction

In February 2006, the Chief Minister (CM), Delhi desired that the entire city of Delhi should have state of the art road signages with appropriate structural system for the forthcoming CWG 2010. A presentation was made by 3M India Limited before the CM on the signage system to be developed in Delhi. In keeping with the CM's direction, a stretch of road was selected between Tilak Marg and Raj Ghat and a feeder road going up to Delhi Secretariat for a pilot project in April 2006 at an estimated cost of ₹ 1.77 crore. The pilot project was taken up (May 2008) using ASTM[1] Type XI retro-reflective (RR) sheets and was completed in December 2008 by the authorised converters of 3M India Limited and Avery Dennison, the two leading manufacturers of RR sheets of type-IX and XI.

GNCTD accorded in principle approval, in March 2009, for the work of installation of RR signages using type-IX (based on pilot study of NDMC using Type IX Retro Reflective sheet), though the pilot study by PWD was conducted using Type-XI sheeting. The type of support structure (M.S. Pipes/Tubes) and colour of signages (blue coloured sheet with white letters) was also decided.

The improvement brought to the look of Delhi by the consistent implementation of the road signages project and the aesthetic and utilitarian upgrade by the use of these signages is commendable.



Cantilever mounted signage

[1] American Society for Testing and Materials



Road name – double arrow signage



Cautionary and directional shoulder

The road signages work was carried out by NDMC and PWD in their own areas. PWD divided its work in three zones for separate tendering and awarded them in October 2009 at a total contract amount of ₹ 53.13 crore. As on 5 August 2011, the works were not completed and an amount of ₹ 40.52 crore was paid which included provisional payment of ₹ 7.61 crore for extra/substituted items under three zones, against the accepted extra items of ₹ 11.89 crore. NDMC undertook the work of signages in seven separate packages between February 2009 and October 2009 at a total contract cost of ₹ 19.52 crore.

6.2 Restrictive conditions in tendering

The department was aware that there were only two manufacturers of RR sheet and that the component of RR sheet formed about 33 *per cent* of the total project cost. Yet, the following restrictive eligibility conditions were included in the NIT, finalised on the basis of discussion between Pr. Secretary to C M, Pr. Secretary (PWD) and Pr. Chief Engineer

- The bidder shall either be a RR sheet manufacturer or shall have an exclusive Memorandum of Understanding (MoU) with the manufacturer of RR sheet in the case of a firm or Joint Venture (JV).
- Out of the three packages of road signage works, not more than two packages shall be awarded to any one RR sheet manufacturer.
- The sequence of bid opening was stated with the financial bid of Zone M1 to be opened after the other two zones (M2 and M3).

Thus, inclusion of above conditions resulted in the following:

- It enabled the RR sheet manufacturers either to collude to split the order among themselves or to consistently bid high in all the bids, knowing that no party would take all the bids.

- It presented a situation for both the sheet manufacturers to charge a premium for their association/exclusive MoU as they were an indispensable component of the bidding process.
- It was ensured that at least one zone each would be awarded to both the sheet manufacturers irrespective of the competitiveness of their bids.

Audit observed that the bidders backed by Avery-Dennison won the contracts in zones M2 and M3. However, in zone M1 the financial bid of the Avery-Dennison backed vendor (Prakash Reflective Devices) was rejected on the grounds that the turnover of the other partner (other than lead partner) of JV did not fulfill the minimum proportionate turnover criteria individually. Such extreme interpretation of the clause was not explicitly stated in the NIT or EoI, and has not been so interpreted in similar evaluation of other works in PWD such as in Streetlighting project. Consequently, in zone M1, the department was forced to accept the sole technically qualified bid of 3M-Bajaj consortium, by negotiating down the quoted rate by 15.95 *per cent* of quoted amount, but still at higher rates than M2 and M3. The estimated value of work of M1 was similar to the sum of works for M2 and M3.

The impact of the restrictive clauses was that the works in the three zones of PWD were awarded at rates higher than the three works of NDMC awarded in the same period (October, 2009). The cost of major comparable items of RR sheet and a Very High Strength Bond (VHB) tape, a proprietary product of M/s 3M-Bajaj, was higher by 21 to 73 *per cent* respectively, in PWD when compared with NDMC.

Department stated (February, 2011) that after the execution of pilot project, it was learnt that there were at least two parties (M/s 3M & Avery Dennison, both based in America) who were manufacturers of RR sheets conforming to ASTM standards. As the department was not sure of any other manufacturers of RR sheets in the world other than these two, so NIT conditions were designed in such a way that only RR sheet manufacturers (conforming to type IX ASTM standards) are permitted to participate in the bid in the form of JV/consortium. The tender cannot be called a restrictive tender in the strict sense because participation by minimum two numbers of parties competing with each other with their known background since years would ensure competitiveness in any tender.

The reply is not acceptable because competition could have been ensured by continuing with calling for authorized converters to bid as was in the case of pilot project after specifying the standards.

The lack of competition in PWD resulted in higher tender rates and consequent loss to government. In case of M-1 Zone as not more than two works would be awarded to one sheet manufacturer, only 3M-Bajaj-CBM consortium was technically qualified. 3M-Bajaj-CBM consortium quoted 8 *per cent* above estimated cost. In fact, in all the three zones, the 3M

consortium quoted varying rates, and each time higher than its competitor. The department negotiated the bid of 3M-Bajaj-CBM consortium down by ₹ 4.75 crore. The work was finally awarded to the consortium at 9.2 *per cent* below estimated cost, which was still 5.1 *per cent* higher than the rates for other two zones. Thus the acceptance of single tender at higher rate due to restricted competition resulted in a minimum loss of ₹ 1.40 crore to government.

GNCTD replied that NIT conditions were designed in this manner for faster execution and to ensure that a single agency did not take up the entire signage work for all the three zones, so that if one agency failed, the other agency could be used to counter the failure.

It was further stated that a conscious decision was taken to use type IX RR sheet in signages and make RR sheet manufacture (of type IX sheet) a party in tender participation by way of a JV or consortium as RR Sheet is the key element of signage, there were chances of short supply of RR sheet type IX due to major work in progress in Delhi before CWG 2010.

Reply is not acceptable as recourse to awarding the work to another agency in case of failure by the selected agency was always available and PWD ensuring that both the agencies were awarded a share of the work led to reduced competition.

6.3 More expensive design and execution in PWD vis-à-vis NDMC

Audit compared the cost of three similar types of signages executed by NDMC. The rates were compared with that of PWD and found that the cost of execution in PWD was substantially higher than that in NDMC. The difference in cost is both due to a higher cost of the input material and a more expensive design, consuming more of the input material. NDMC used structure of stainless steel while PWD used mild steel structures to fix the signages. The cost comparison with and without structure was worked out as tabulated below:

Table 6.1 Unit cost of signages (without structure)

(in ₹)

Signage Type	NDMC	PWD
Place Identification	31,178	56,809
Cautionary	10,029	21,510
Road name-Double arrow	18,739	42,437

Table 6.2 Unit cost of signages (with structure)

(in ₹)

Signage Type	NDMC	PWD
Place Identification	51,129	61,544
Cautionary	25,400	24,513
Road name-Double arrow	35,827	45,336

The cost incurred by PWD for various signages excluding structure work, was

substantially higher by 82 to 127 *per cent* than NDMC. This indicated inefficient and expensive design and procurement.

GNCTD stated that the signages requirement of PWD roads is entirely different than that of NDMC roads. The PWD signages were bigger and more visible both from near and far and to slow moving and fast moving vehicles and NDMC sign boards were fixed at low height and were shoulder mounted. Further PWD signages were larger and heavier than NDMC signages and PWD signage pattern was different from NDMC. The reply is not convincing as the audit observation is just indicative of unit cost with respect to the purpose. It is apparent that the structures meant to serve the same purpose costed more in PWD than NDMC.

6.4 Execution of extra and substituted items leading to cost escalation

A large number of extra/substituted items after award of work, without documented technical reasons, raises doubt on their actual utility, especially when the designs finalised by Shri. D.S Sachdeva, Advisor (without specific authority) was based on the methodology submitted by Fibrefill, one of the executors of the signage work.

Inspite of design approved by the department well in advance, in all the three zones, identical extra items were accepted valuing ₹ 11.89 crore (22.38 *per cent* of contract amount of ₹ 53.13 crore).

As tenders for the work were invited on the basis of the pilot project carried out by the PWD wherein both the sheet manufacturers had participated, it was expected that the requirements for execution of project would be well known leaving minimum possibility for substitution of items or execution of new items. This was not the case. Further, there was no uniformity in the rates proposed/approved by different zones for these identical items. The accepted amount of ₹ 11.89 crore across the three zones on extra/substituted items was primarily on account of the following items:

Table 6.3 – Approved amount of major extra/ substituted items

(₹ in crore)

Nature of extra/substituted item	Approved Amount
Substitution of MS Angle with Square Hollow Section for making signage frame	1.51
Covering rear face of signages with ACM[2] as extra item	3.79
Use of Aluminium channel/Trim as extra item	4.06
Use of Pre cast bend , bolts and anchor plates as extra item	1.71

[2] Aluminium Composite Material

In reply to audit observations on extra and substituted items, GNCTD stated that after award of work, samples were prepared with due deliberations at various levels and the designs were fine-tuned within the ambit of basic frame work. PWD in consultation with Shri D.S. Sachdeva, Adviser (PWD) who was a former DG of CPWD finalized the detailing of signages for best use and utility befitting the city environment.

As explained in the following sections, the need for these extra and substituted items, which has substantially inflated the cost of the project was not convincing.

In an item wise scrutiny of impact of substituted items on overall cost of various types of signages, Audit observed that the cost per unit increased from 21.5 *per cent* to 71.9 *per cent.*

The details of the extra/substituted items leading to the stark increase in cost are given below. The avoidable expenditure includes estimates for zone M1 for which final payments are yet to be made (July 2011).

Table 6.4 – Increase in cost on account of substituted items

(Per unit cost in ₹)

Type of Signage	Agreement Cost	Executed Cost
Gantry mounted	5,52,399	8,87,201
Cantilever mounted	1,95,272	2,37,067
Directional shoulder mounted (DSM)	54,623	87,328
Cautionary signboard	15,482	26,597
Place identification signboard	40,092	48,690
Road name signboard: Double sided	23,479	28,985
Road name signboard: Single sided	23,479	37,851
Road name signboard: Double arrow, single sided	27,259	45,082

GNCTD stated that the executions of extra/substituted items were considered necessary in order to enhance the life of signages and to improve aesthetics by preventing percolation of water inside of boards, warping of the boards etc. and further stated that extra cost has only added longevity to the signages system apart from adding aesthetics to the city. The report of the committee to finalise extra/substituted items was getting finalised soon and accordingly the rates of items would be decided.

6.4.1 Substitution of Mild Steel (MS) Angle with Square Hollow Section (SHS)

	
Square Hollow Section (SHS)	*Mild Steel (MS) Angle*

During the pilot project for signages in PWD, the frame for fixing of RR sheet was constructed using MS Angle and the same was specified at the time of tendering. No questions regarding the frame were raised by any of the bidders during the pre bid conference.

Audit observed that during issue of detailed drawing by PWD, which was done subsequent to the award of work, the item of MS frame using MS angle was substituted by SHS and contractor was paid for the difference in the rates between MS angle and SHS as extra item.

The use of costlier SHS has actually benefitted the contractor by way of reducing his fabrication cost, while increasing the cost of the project. This substitution of item would lead to avoidable expenditure of ₹1.51 crore, of which ₹ 1.07 crore[3] has already been paid by three zones as of 5 August 2011.

This also led to increase in weight of larger signage structures like gantry and cantilever, which runs counter to the reason given by the department in support of use of SHS.

GNCTD stated that payment will be made as per terms and conditions of agreement and uniformity will be kept in all zones after proper analysis in conformance of decision of the constituted committee and after approval of sanctioning authority. Difference in fabrication cost, shall be considered while finalizing the rates.

6.4.2 Sanction of work for covering rear face of signages with ACM as extra item

A successful pilot project was already complete based on which the NIT did not include in its scope of work a covering for the rear face of some of the signboards. However, during execution, the rear surfaces of signages were covered using 4mm thick ACM, which served no functional purpose and was done for the stated purpose of improved aesthetics. The execution of this extra

[3] M1- ₹. 0.35 crore, M2 ₹. 0.21 crore and M3 ₹. 0.51 crore = ₹. 1.07 crore.

item enhanced the cost of signage by ₹ 4926 per sqm leading to avoidable expenditure of ₹ 3.27 crore as of 5 August 2011.

Audit observed that since only the front portion of the signboard had information to be seen by the citizen/user, any expenditure on improving the aesthetics of the rear surface was wasteful.

Analysis of the cost components of ₹ 4926 per sqm for assessed value of work of covering the rear face with ACM, done on the basis of single quotation, revealed that the cost of VHB tape used for fixing ACM was ₹ 1666 per sqm (34 *per cent*) while ₹ 1259 per sqm (26 *per cent*) was for its routing, bending, making tray, fixing of VHB tape etc. In fact, the VHB tape used for bonding ACM with the MS frame is manufactured by 3M Limited, one of the sheet manufacturers.



Riveting of ACM to frame



Aluminium Trim peeling off from frame

During computation of cost for extra item of covering rear face of the signages with ACM, excess area (than required) was considered, causing a further loss of ₹ 0.22 crore to the government at the rate of ₹. 348.43 per sqm for 6672.67 sqm of item paid till 5 August 2011.

GNCTD stated that provision for covering the rear face of ACM has been made only for cautionary boards for concealing MS frame for aesthetic improvement and increasing the life of the signages and to avoid rusting of back cover etc. Regarding amount in escalation of cost, it was stated that final figure would be cleared after finalization of rates.

6.4.3 Wasteful expenditure on inclusion of aluminium channel/trim as extra item

The guidelines issued for execution after awarding works included an item of providing 2 mm thick Aluminium channel/ trim around the sides of RR boards for aesthetic reasons.

Consequently this item of aluminium trim was executed as an extra item. Audit observed that:

- The aluminium trim was to be fixed by using VHB tape (an expensive proprietary product of 3M), thereby exposing the trim to inevitable theft by peeling it off. It has been removed in some places, and in some other places, they are in the process of being removed.
- As the ACM sheet used in the board already had an aluminium layer as an integral part, the overlay by another aluminium layer as trim was wasteful.
- The aesthetic utility of aluminium trim on signboards mounted on gantries and cantilevers fixed at a height of above 6m, meant for vehicles running at substantial speed should have been foreseen before award of work.

Thus, the decision to use aluminium trims was unwarranted and has resulted in wasteful expenditure of ₹ 3.79 crore as of 5 August 2011. Further, an expenditure of ₹ 1.37 crore for this item was incurred by M1 and M2 zones without approval of rates by the competent authority.

Department stated (February 2011) that fixing of trim was decided after lengthy deliberations at the level of the Advisor (PWD) who happens to be the former Director General CPWD and was also approved by the GNCTD while approving the sample. As regards non-acceptance of clarification by Audit on the ground that trim pasted with VHB can easily be peeled off and was not theft proof, the department added that theft has no limit. Few places were seen in Delhi where the trim has peeled off however about 6000 boards have been installed which reflects negligible damage. The chances of this type of happening always remain on running roads in such Metro cities. Continuous maintenance is the only solution for such incidents, which is being done simultaneously. Further, the expenditure on this item was quite nominal in comparison of utility and aesthetics etc. of the trim and the payment made against this item was provisional subject to final rates to be approved by the committee and the competent authority.

Reply is not convincing as the recommendations of the Advisor are not binding on the department, further, department has accepted the changes. While selecting ACM it was stated that it is less prone to theft hence the department considered this aspect of theft prior to tendering and not while deciding extra item.

Hence, to use costly Aluminium with VHB tape by exposing it to known risk, is application of item negating the reality. This led to enhanced maintenance cost.

GNCTD stated that the decision to provide aluminum channel was taken to protect edges of the board so as to prevent tampering with RR Sheet etc. Further, such items were not foreseen at the time of preparing estimate and while calling tenders and so were not included in the tender schedule.

6.4.4 Inadmissible payment for precast bend, bolts and anchor plates as extra item

The contract provided for welded bends for the tubular support structure. The department replaced welded bends with precast bend as an extra item, despite the clarification given in the pre-bid meeting that nothing extra would be payable on this account. This replacement on the grounds of improved aesthetics without any functional purpose would lead to an additional cost of ₹ 0.83 crore (under M2 and M3 zones) against overall approved amount of ₹ 1.10 crore for the item, of which ₹ 0.57 crore has already been paid by M3 zone (July 2011).

Further, as per the description of work, rate analysis of the item, drawings appended with agreement and CPWD specifications for steel works, the component of anchor bolts and anchor plates was to be paid under the relevant item of steel work itself. However, Audit observed that the same was separately paid as extra item at the rate of ₹ 116.73 per kg instead of the agreement rate for steel work of ₹ 65 per kg, leading to inadmissible expenditure of ₹ 0.31 crore[4]. On the basis of audit observation recovery has been made by M2 zone in March 2011.

6.5 Undue financial benefit to contractor for barricading work

During the pre bid meeting, the department clarified that the barricade can be retained by the contractor after completion of work. Audit observed that the executed quantity of this item increased by 172 *per cent*, resulting in undue financial benefit of ₹ 0.25crore[5] to contractors as of 5 August 2011.

Department stated that safety of the commuter on the road cannot be compromised. However due to wear and tear as well as continuous accidents etc. the barricading sheets can hardly be of any use except scrap after six months of their placement.

GNCTD stated (December 2011) that the quantities of barricading work actually required to ensure safety was much more than what was provided in the agreement and further stated that the cost involved in barricades is insignificant in view of the requirement of safety measures to avoid accident.

The reply is not tenable as the quantum of work of signage was not exceeded (as per paid amount), the site was available, time was agreed and the contractor had quoted rates accordingly. The time for installation and fixing was limited in case of signage. Thus, any inefficiency on the part of contractor was not to be compensated from public money.

[4] M2 ₹. 19.05 lakh and M3 ₹.11.49 lakh = ₹. 30.54 lakh i.e ₹. 0.31 crore.

[5] M1 ₹. 10.63 lakh, M2 ₹. 13.02 lakh and M3 ₹.1.70 lakh = ₹. 25.35 lakh i.e ₹. 0.25 crore.

6.6 Non imposition of penalty

Audit noted that all the three works executed by PWD were delayed by 440 days as on 31 July 2011, but penalty of ₹ 5.31 crore for the delay was not levied on contractors.

GNCTD stated (December 2011) that Superintending Engineer concerned is the final authority, under the agreement and competent to grant EOT/levy compensation for delay and a judicious decision taken after hearing all the representations will be final and binding on both the parties of the agreement.

Chapter 7: City Infrastructure Development: Roads and Flyovers

7.1 Introduction

As a part of upgradation of city infrastructure and in preparation for the Games, GNCTD had taken up 75 projects linked to city infrastructure improvement. Subsequently, 25 projects were stated to be directly linked to CWG for close monitoring.

Three projects were delinked[1] from CWG, and not taken up. In all, GNCTD undertook construction of 25 roads and bridges projects to improve infrastructure of the city during CWG 2010. Of these 25 projects, one project each was started in 2004, 2005 and 2006. Nine projects were started in first half of 2007 and four in the second half. Three projects began in first half of 2008 and four in the second half. Two projects were started as late as in 2009. Of these 25 projects, 17 were fully completed, and the remaining 8 were substantially completed and open to traffic, with physical completion status varying between 90 *per cent* and 99.5 *per cent*.

Audit selected six of these projects executed by PWD for detailed review viz. Raja Ram Kohli Marg Flyover, Ghazipur Flyover, Barapulla Elevated Road, UP Link Road, Corridor improvement on Road no.56 (Inter State Bus Terminal (ISBT)-Anand Vihar) and Ring Road Byepass. These six projects involved a total sanctioned amount of ₹ 2160 crore.

Table 7.1 – Road and flyover projects selected for detailed audit

(₹ in crore)

Name of project	Contractor	Estimated cost	Tendered amount	Date of award	Stipulated date of completion	Payment made as of Oct 2011
RR Kohli Marg Flyover	Afcons	146.40	214.57	Mar 07	Apr 09	258.26
Ghazipur Flyover	Afcons	173.36	199.79	Apr 08	Apr 10	175.79
Barapulla Elevated Road	DSC	352.40	433.71	Aug 08	Mar 10	451.35
UP Link Road	DSC	177.80	265.04	Sep 08	Apr 10	209.00
Road No. 56-Anand Vihar ISBT	Valecha	97.60	140.53	Nov 08	May 10	193.76
Ring Road Bye pass	Simplex	330.20	409.45	Dec 08 Jan 09	June 10 July 10	157.64 127.49

[1] Elevated East West Corridor, BSZ Marg Flyover, and Shastri Park Tunnel Corridor

Project Timelines: Most of the projects were awarded in 2008, with the CWG just two years away. The dates by which various important milestones were to be met for the six projects examined by Audit are tabulated below:

Table 7.2: Important Milestones for selected Road/ Flyover Projects

Name of Project	Date of Feasibility	Date of AA/ES	Date of approval of DUAC	Date of NIT	Date of award of work	Stipulated date of completion	Status as of Oct. 2011
RR Kohli Marg Flyover	Sep 05	Jul 06	Oct 06	Feb 07	Mar 07	Apr 09	Completed
Ghazipur Flyover	Aug 04	Apr 08	Jul 07	Dec 07	Apr 08	Apr 10	Flyover completed but formal completion is yet to be recorded
Elevated Road over Barapulla Nalla	June 08	Aug 08	--	Jul 08	Aug 2008	Mar 10	Connectivities under progress
UP Link Road	Mar 07	May 08	Dec 07	Jul 08	Sep 08	Apr 10	Completed
Road No.56-Anand Vihar ISBT	Sep 04	Jun 08	Jan 08	Aug 08	Nov 2008	May 10	Flyover completed but formal completion is yet to be recorded
Ring Road Bye pass	--	May 08	Sep 07	Jul 08 Sep 08	Dec o8 Jan 09	Jun 10 Jul 10	Completed

7.2 Adoption of contractor's profit and overhead charges of 37.5 *per cent* for bridge/ flyover projects

All the six PWD projects adopted contractor's profit and overhead charges (CPOH) of 37.5 *per cent*[2] for the bridge/flyover components (which represented the bulk of the work involved). This is in contrast to CPOH of 15 *per cent* (raised from 10 *per cent* in December 2007/April 2008[3]) stipulated by CPWD[4].

[2] 25 *per cent* as overhead charges, and 10 *per cent* profit thereon; this works out to an overall 37.5 *per cent*

[3] The increase was communicated by DG, CPWD in December 2007, but approved by MoUD only in April 2008.

[4] CPWD's manuals, contract clauses and other terms and conditions/ circulars are generally

The justification adduced by PWD, GNCTD for adopting this percentage of 37.5 *per cent* (as opposed to 10/15 *per cent* adopted by CPWD) is that this CPOH rate was based on the "Standard Data Book for Analysis of Rates" issued by the Ministry of Road Transport and Highways (MoRTH). The foreword to this data book indicates that it is being adopted by various agencies for projects other than National Highways (which is the primary purpose of this data book). The estimates for these projects were prepared using the data elements indicated in the data book.

Audit observed that the basic approach for the preparation of the MoRTH data book[5] highlights common elements of overhead charges for both road and bridge works, but specifies different rates for CPOH (varying from 18.8 *per cent* to 43 *per cent*) for different categories of road and bridge works. However, the MoRTH data book and the CPOH rates (indicated in the data book) have not been formally adopted by GNCTD[6]. Despite this, PWD, GNCTD have adopted the CPOH rate of 37.5 *per cent* (as per the MoRTH data book), which is substantially higher than the CPOH rate of 15 *per cent* stipulated by CPWD. This resulted in increasing the justified cost, worked out by the department after opening of the financial bids, by ₹ 352.47 crore.

PWD stated that CPOH at the rate of 37.5 *per cent* was adopted in conformity of the provisions of MoRTH Data Book. The reasons behind 25 *per cent* OH and 10 *per cent* CP as per MoRTH specification for bridges and flyovers items was that many smaller items which are incidental to bigger items such as laps and chairs in steel reinforcement, barricading, load testing of piles, establishment of laboratory with technical persons at site etc. involved in execution are not measured and paid separately. Reply is not acceptable as these items are also incidental of main items in DSR also. DSR also allows 5 *per cent* in name of waste in steel reinforcement. Moreover, in all these 6 contracts PWD included separate items for barricading and load testing in BOQ and paid separately also. While in ten states PWD Departments are adopting the MoRTH data book for the purposes of estimation of road and bridge work, in all these states the overhead and profit rates were state[7] specific.

Further, Delhi Metro Rail Corporation (DMRC), which routinely constructs elevated viaducts, similar to flyovers, does not use the MoRTH data book for

---

adopted by PWD, GNCTD.

[5] Indicated in the data book itself

[6] It is not clear when PWD, GNCTD commenced using these higher CPOH rates.

[7] (i) Orissa (10%), (ii) Haryana (10% CP + 21.5% OH), (iii) Tripura (15%), (iv) Chattisgarh (15%),

(v) Madhya Pradesh (10%), (vi) Goa (10% CP + 5%-15 % OH), (vii) Himachal Pradesh (10% CP + 10%-25 % OH), (viii) Rajasthan (10%), (ix) Assam (10% CP + 10%-20 % OH), (x) Karnataka (10% CP + 10 % OH)

its cost estimation. For any non-scheduled item of work executed by DMRC, whether following MoRTH specifications or otherwise, they apply a uniform fixed CPOH of 20 *per cent*.

It is also not clear whether the overhead components for constructing national highways (generally by NHAI) are applicable as such to the bridge and flyover projects in Delhi.

The critical importance of the CPOH rate is that once adopted for estimation purposes, the detailed estimates thus prepared constitute a baseline for potential bidders. The CPOH rate also forms an indirect input into the process of preparation of justified costs, where required, and the associated band of 5/10 *per cent* for assessing the reasonableness of rates for final award of the contract.

Thus, the use of the CPOH rate of 37.5 *per cent* for preparation of the estimates for the bridge/ flyover projects is inappropriate. GNCTD needs to carry out an in depth study of the actual elements of overhead involved (including the extent of equipment intensive construction methods actually in use for similar projects) and practices followed in other states for similar projects, before deciding on the appropriate CPOH rate for all such projects.

7.3 Irregularities in tendering procedure

7.3.1 Acceptance of bids quoted on papers other than tender documents

Rules and guidelines on form of the General Conditions of Contract (GCC), which are essentially part of NIT, stipulate that in case of item rate tenders, tenderers are expected to quote on the tender form. Any tender containing percentage below/above the rates quoted is liable to be rejected[8]. It was observed in Audit in three instances where bids were accepted by PWD despite being quoted on paper other than tender forms:

- PWD invited (July 2008) item rate tenders for work of construction of elevated road on Barapulla Nalla (in two packages) from the empanelled contractors/firms. Six bids were received for each package. The works were awarded to DSC Limited at ₹ 218.79 crore and ₹ 214.92 crore respectively for both the packages. It was however noticed that DSC became the lowest bidder not on the basis of his bid in the prescribed format of bid documents, but on the basis of separate letters quoting a lump sum amount stated to be found in envelopes containing financial bid,

[8] Audit noted many instances e.g. Ghazipur flyover, where percentage discount was offered on tender form, but accepted in violation of this system.

- Similarly in case of UP Link Road project, where PWD invited (July 2008) item rate tenders, two bids were received, and work was awarded in September 2008 to DSC Limited at a cost of ₹ 265.04 crore. Again DSC became the lowest on the basis of separate letter quoting a lump sum amount stated to be found in envelop containing financial bid.

Award of work to DSC was irregular as:

- the letters were not part of the tender documents issued by the department but were stated to be found in envelopes containing financial bids,
- in the said letters, the firm had quoted the lump sum cost "after discount on all items". It was PWD which converted the difference between the lump sum amount and amount worked out as per item wise bid, to a percentage discount to the quoted rate.

Taking cognisance of the letter which did not form part of the prescribed tender documents, and considering the lump sum cost quotation against the item rate tender was not in order and awarding of work to DSC limited was irregular. Further, Audit could not ascertain whether the said letters were submitted along with the bid documents or placed at a later stage. PWD stated that it was true that letters were not part of the tender document issued by the department but were found in envelope containing financial bid. The financial bid was evaluated in totality. Each and every word written any where in the financial bid or any letter enclosed with it could not be ignored. The reply is not acceptable as any document which was not part of prescribed tender document issued by the department is not to be considered.

7.3.2 Acceptance of bid despite over-writings/use of correction fluid

CPWD Manual prohibits the use of correction fluid anywhere in tender documents and, if used, such tender is liable for rejection. Audit observed that the bid documents of M/s Simplex Infrastructures Limited who was awarded the work of Ring Road bypass (Package II) had 12 cuttings/corrections, besides three cases of use of correction fluid for changing the figures, having an impact of increasing the bid amount by ₹ 6.23 crore.

Use of correction fluid in the tender document made it liable for rejection. In spite of these obvious shortcomings in the bid document, the department did not reject the bid.

In reply the department stated that in the tender for Package II, the tenderer M/s Simplex Infrastructures Limited have filled rates for approximately 113 items and used correcting fluid for correcting rate of three items only. The same has been duly taken cognizance of by Executive Engineer and recorded

on the corresponding pages at the time of opening of tender. 'Liable for rejection' does not mean mandatory/ summary rejection of the bid on this account and particularly when there is a difference of approximately ₹ 40 crore between the bid price of L1 & L2 on the estimated cost of ₹ 173 crore put to tender.

While there is no apparent monetary loss, but the sanctity of the bid process should be maintained and not vitiated.

7.3.3 Irregular invitation of percentage rate tender

Audit observed that tenders for RR Kohli Marg flyover were incorrectly invited (February 2007) as percentage rate tender, instead of item rate tender, as is required by the CPWD Works Manual.

Audit also noticed that though the tenders for the work were initially invited on item rate basis, yet it was subsequently changed to percentage rate tender without assigning any reason despite the fact that scheduled items based on DSR constituted only 2 *per cent* of the work.

Thus, invitation and acceptance of percentage rate tender was irregular.

GNCTD stated that there were no specific reasons recorded for initially inviting the tender on item rate basis and subsequently changing the same to percentage rate tender. Government further added that call of tenders on percentage basis is always better as tenderer cannot quote unbalanced rates during execution and try to avoid executing low rated items. The reply is not acceptable as the approving authority i.e. Chief Engineer approved for call of tenders on percentage rate without recording any reasons at the time of issue of corrigendum of item rate to percentage rate.

7.4 Unwarranted inclusion of items in Bill of Quantity (BOQ) of agreement

Audit observed that in six projects of PWD, the agencies had included separate items for providing temporary barricades and pile testing at the tendered cost of ₹ 11 crore and ₹ 11 crore respectively, against which, a payment of ₹ 14.69 crore had already been made.

Payment for both the items is inconsistent with MoRTH specifications[9] for Road and Bridge Works, against which the project costs had been estimated and executed, which clearly states that traffic safety arrangements including erection and maintenance of barricades and pile testing would be considered as incidental to the works and would be contractor's responsibility.

[9] Section 112

In reply the department stated that section 112.4 (Traffic Safety and Control) of MoRTH Specification for Road and Bridge works, is a general provision and does not mention height of barricade, sizes of members, its fixing arrangement to the ground, gap between each barricade, frequency of painting etc. The terms stipulated in the MoRTH specification are adequate in general for normal traffic on Highways & Road works in outskirts.

The reply is not acceptable because though it is true that MoRTH specification does not mention height of barricades, frequency of painting, etc. yet it is mentioned that barricades are not payable separately. If the department required specific type of barricades these could have been mentioned in special terms and conditions in the NIT without providing a line item in the BOQ.

On pile tests, the department stated that the initial load tests are carried out for checking adequacy of design load adopted for piles and in case of major deviation in actual pile load capacity, pile design is to be modified and initial load test is required to be conducted again. Thus, its quantity remained uncertain, and it is always advisable to keep separate item for initial load test and routine load test. Similarly, frequency of routine load tests and integrity test had to be defined, so that no dispute arises in case of any variation. MoRTH specifications do not stipulate the frequency of carrying out initial and routine load tests on piles.

The reply is not acceptable because clause 1118 of MoRTH specifications clearly mentions that routine and initial pile load tests shall not be measured for payment. Also, IS 2911 clearly prescribes both the minimum and maximum tests to be carried out. In case more number of tests beyond the maximum limit are required, the NIT can always provide for the same separately.

7.5 Non compliance with quality standards.

7.5.1 Usage of steel not conforming to standards in Barapulla elevated road

Audit noticed that out of 387 batches of steel consignment weighing 9048 MT, samples of 26 batches having the total batch weight of 642.01 MT and costing ₹ 5.79 crore were found, by the department, to be of weight lower than tolerance limit prescribed in IS 1786. These were, however, not rejected by the department leading to use of less than tolerance limit steel. Out of these 26 batches, samples of only four were sent to third party laboratories, which, on testing, found them to be conforming to standards. GNCTD stated that the tolerance limit for batches and individual samples were different. For payment for steel reinforcement the weight of individual sample of each batch was taken for the purpose of determining the unit mass of entire lot. This is not a quality test for steel reinforcement bars as its quality is measured by its tensile

strength and not by its weight. The reply is not acceptable because Audit has compared the batch tolerance limit mentioned in the steel mass register provided to it and found the tolerance limit to be lower than the prescribed. Further taking the weight of the steel reinforcement at the site is an integral part of the prescribed quality assurance process. However, it was seen that instead of the sub-standard steel being outrightly rejected, samples of these batches of steel which had failed in the basic tests, were sent to external labs for testing then again the same selected samples were subjected to third party tests.

7.5.2 Usage of steel not conforming to the standards in Ring Road Byepass

Another instance of non-conformity with standards was seen in the Ring Road bye-pass project where five batches of steel having total batch weight of 370.78 MT and costing ₹ 2.69 crore were found by the department to be of weight higher than tolerance limit prescribed in IS 1786. These were, however, not rejected by the department, leading to use of non-compliant steel.

GNCTD in reply stated that there could be human error in checking at site. Moreover, testing laboratory has better controlled conditions and therefore, results of the test laboratory are given more authenticity and reliability and accordingly are given precedence over results at site laboratory. As the laboratory test reports of all the steel samples were found in order, the steel reinforcement for the said lots were treated as acceptable. Reply is not acceptable as from the reply it appears that the prescribed quality assurance mechanism of on site weight checking was of no consequence, which is not a fact as it is an integral part of the quality assurance mechanism prescribed by the department itself. Moreover, the Section 26 of the CPWD Manual clearly provides that sample shall be taken and got tested by the engineer-in-charge as per the provision in this regard in the relevant BIS code. In case the test results indicate the steel arranged by the contractor does not conform to the BIS code, the same shall stand rejected.

7.5.3 Pile tests to confirm quality not carried out

Audit observed that routine tests of piles were not carried out during construction of the elevated road over Barapulla Nallah, in violation of MoRTH specifications and IS 2911-1985[10].

As per IS 2911-1985, routine tests for pile are necessary primarily to determine the safe load on pile, and between one-half *per cent* to two *per cent* of the piles are required to be tested. This translates to a minimum of seven

[10] Indian Standard Code of Practice for Design and construction of Pile Foundations

routine tests to be conducted in case of Barapulla Nallah. As not even a single routine test was carried out, Audit could not ascertain how the PWD authorities satisfied themselves that piles were executed as per the IS specifications.

PWD in November 2010 stated that these tests could not be undertaken due to shortage of time. However, GNCTD in December 2011 stated that routine test of piles were carried out. This reply could not be verified in audit as no test report was found enclosed alongwith the reply.

7.5.4 Unauthorized substitution of Portland Slag Cement with Ordinary Portland Cement

As per agreement slag cement was to be used in construction of elevated road over Barapulla Nallah. However, Audit noticed that Ordinary Portland Cement (OPC) was used in place of Portland Slag Sement without the approval of the competent authority. A total quantity of 16264 MT of OPC was used in place of slag cement. Slag cement and OPC have distinct properties and have distinct applications and uses. The use of slag cement in this project was a conscious decision by higher authorities. Substitution of slag cement with OPC without approval of competent authority has the potential of compromising the quality.

GNCTD stated that the progress of this work was being monitored by the Chief Engineer on a day-to-day basis and decisions were being taken then and there in the weekly review meetings due to urgency of this work. It was further stated that use of PPC in place of PSC was allowed by competent authority under emergent conditions of shortage of PSC in the market and as per codal provisions and therefore there is no question of compromising with the quality of work. The reply is not acceptable as NIT was approved by the Chief Engineer and as per the provisions of the CPWD Works Manual formal approval of the Chief Engineer was mandatory to substitute PSC with PPC before such substitution. Moreover, the approval of the Chief Engineer was not obtained even after one year of the commissioning of the Elevated Corridor.

7.6 Contract management

7.6.1 Adoption of revised price variation clause

Price variation in PWD is payable as per standard clauses[11] in General Conditions of Contract (GCC). Audit noticed that PWD incorporated a new clause 10CCA for price variation in all the six selected PWD projects. The standard price variation clauses of GCC stipulate that for each project, the proportion of key components of steel, cement, labour and material is computed based on the estimated usage of these items in the project, which

[11] 10C, 10CA, 10CC

varies from project to project. In contrast, the new clause introduced by PWD adopted constant percentages of use for all the components, viz, labour (22 *per cent*), steel (25 *per cent*), cement (15 *per cent*), fuel (5 *per cent*) and machinery and machine tools (18 *per cent*). Further, the CPWD manual does not prescribe any price variation payable on machinery and machine tools, though it was prescribed in this new price variation clause.

As the proportion of steel used in these projects was far higher than 25 *per cent*, and there was a downward trend in prices of steel during the construction period of four of these projects, the amount of recovery was lesser by ₹ 18.01 crore than that which would have become recoverable with the standard price variation clause.

Audit also noted that no financial or legal advice was taken by the Chief Engineer before incorporation of this new clause, as is required vide General Financial Rules (GFR) and CPWD manual.

PWD stated that the NIT approving authority could introduce additional terms and conditions in NIT to suit the exigencies of work and these would override the corresponding standard clauses of various forms.

Reply is not acceptable as only a formal, well thought out policy decision at the department level after taking financial and legal advice for amending critical conditions of the GCC can ensure that the interests of the Government are protected. This cannot be left to the discretion of individual NIT approving authority on a contract to contract basis.

7.6.2 Incorrect measurement of underweight steel resulting in excess payment of ₹0.35 crore

Audit observed that 5184.26 MT of reinforcement steel bars were found underweight by 48.842 MT in terms of standard unit weight in Ring Road Byepass project. However, while converting the length into weight for payment purpose, in violation of section 5.3.4 of CPWD specification which stipulates that if actual unit weight of reinforcement bars is less than the standard unit weight but within variation, then weight of reinforcement shall be calculated on the basis of actual unit weight. The actual unit weight has been ignored and payment was made for standard unit weight of 5233.102 MT, resulting in excess payment of ₹ 34.63 lakh. PWD stated that the provision of the agreement provides that the records for actual sectional weight of each dia of bar for every lot of steel brought to the site shall be maintained as per specification. This provision mentions about maintenance of record as per CPWD specification and not for payment. The reply is not acceptable as the payment to the contractor for reinforcement steel bar should have been made according to the CPWD specificiations.

7.6.3 Extra expenditure of ₹1.13 crore due to post tender change

In the project of construction of grade separator at ISBT Anand Vihar crossing of Road No. 56, PWD substituted the items of work, construction of three pipe culverts, with the item for executing the same using a different technology (trenchless digging). This entailed an additional expenditure of ₹ 1.13 crore. GNCTD stated that substitution was done because it was a busy road and it was difficult to cut open the road without disrupting the traffic and this situation could not be foreseen at the time of preparation of Detailed Estimates/NIT. The reply is not tenable as the traffic on this corridor was a well known fact and it should have been taken into consideration at the time of preparing detailed estimates. Had the department included the item of laying of pipe by trenchless method in the detailed estimates/NIT/ tenders competitive rates could have been quoted by the bidders and government could have got the advantage of fair market competition.

7.7 Loss due to incorrect estimations

7.7.1 Avoidable expenditure of ₹ 3.66 crore due to inaccurate estimation

- Audit observed that in RR Kohli project, the requirement of mastic asphalt had been grossly underestimated, with an estimated quantity of 6200 square meter of mastic asphalt in agreement, while the actual quantity executed was 56724 sqm. an increase in quantity by 815 *per cent*.

  The contractor was, therefore, paid for mastic asphalt as per market rate of ₹ 572 per Sqm. against the contract rate of ₹ 296, in keeping with Schedule F of the contract, which states that contractor was eligible for payment at market rates for items which had been executed beyond 30 *per cent* of the agreement quantity. This has resulted in avoidable expenditure of ₹ 1.34 crore for payment for the extra quantity of 48664 square meter of mastic asphalt at market rates.

  Similarly in the same project, the quantity of reinforcement steel increased by 197 *per cent* and department had to pay ₹ 1.94 crore extra to the agency on account of the difference in agreement rates and market rates.

  GNCTD stated that initially the project was conceived to be constructed partly on stilt and partly with a retaining wall and estimates were prepared accordingly. But the Yamuna Standing Committee approved the proposal for construction on stilts. In addition, the original scope of work had the provision of steel column and steel pier cap but later on it was changed to RCC. Due to these reasons, deviation in estimated quantities of mastic asphalt and reinforcement steel took place. Further, as per agreement escalation for steel is not payable for the quantity where market rate is

payable. Accordingly, no escalation was paid for such quantity. Had the division added escalation to the agreement rate the total rate works out to ₹ 43.17 per kg which is more than the market rates paid. The reply is not acceptable as all these factors affecting construction should have been taken care of at the time of preparation of detailed estimate. Secondly, payment under clause 10 CCA of the agreement depends upon the quantity of the steel consumed in the particular month and the difference in the cost index in that particular month. Further in working out the total rate of ₹ 43.17 per kg. the department has applied the escalated rate of steel upto the actual date of completion without restricting it to the stipulated date of completion. Also it did not consider the cost index of the month in which the steel was actually consumed.

- Audit observed that in the work of the Gazipur Project the quantities of mastic asphalt were grossly underestimated in the detailed estimates prepared by the consultant. The actual executed quantity was upto 311 *per cent* more than the estimated quantity for which department had to pay ₹ 0.38 crore extra to the agency on account of the difference in agreement rates and market rates.

  PWD stated that in pre-bid meeting, provision for RCC wearing course to be laid in underpass had been deleted from the scope of work and it was decided that type of wearing course in underpass would be decided at the time of execution. Later on bituminous wearing course was laid which resulted in excess quantity of mastic. Reply is not acceptable as in a project of such magnitude there has to be prior planning for wearing course of underpass.

7.7.2 Loss of ₹3.55 crore due to incorrect estimation

Audit observed that estimation for quantities prepared by the Tandon Consultant Pvt. Ltd. in Package-II of work relating to Elevated Road over Barapulla Nallah was not very accurate with large deviations. As a result, based on the actual executed quantities of material used, the inter-se ranking of L1 and L2 bidders changed with the bid of L2 bidder now lower by ₹ 3.55 crore than L1.

Greater accuracy in estimate preparation would have led to the work being awarded to a different contractor, and a sum of ₹ 3.55 crore could have been saved. The department did not invoke the relevant penalty clause against the consultant for his error in estimate preparation.

Department stated that at a later stage a circulation plan for movement of traffic and pedestrians around the Jawahar Lal Nehru Stadium was formulated in consultation with the MCD and CPWD, who were the other two agencies working in the same area. This circulation plan was approved by UTTIPEC

and it has increased the length of the elevated road by about 380 meters. In addition, a retaining wall was also constructed to accommodate the parking area developed by MCD. Further at the behest of Delhi Traffic Police two connectivities to this road were also taken up for construction under the same agreement. These extra items had resulted in deviation in quantities which was not due to error in the estimates but cropped up during the course of execution which could not have been anticipated at the time of framing the estimates/award of tender. The reply is not acceptable as all these aspects should have been considered at the time of planning of this elevated road with proper co-ordination with the other agencies.

7.8 Execution of works without tendering

Audit noticed that two major works were executed as deviation to ongoing works, i.e., without call of fresh tenders. The two cases are discussed in succeeding paragraphs.

7.8.1 Work costing ₹ 51 crore without tendering

During the construction of Barapulla elevated road, the Delhi Police requested PWD to provide proper connectivity of this road with Lala Lajpat Rai Marg so as to provide uninterrupted dedicated lane for athletes to move from CWG Village to all sports venues during CWG-2010. The PWD proposed to GNCTD to construct this connectivity through main contractor without calling the tenders so that work could be completed before CWG-2010. GNCTD accorded administrative approval and expenditure sanction for ₹ 51 crore for this work in July 2009. This proposal was approved by GNCTD keeping in view the fast approaching CWG 2010 but connectivities were not completed in time for the Games and the work was ongoing as of November 2011.

Despite having got the approval of GNCTD the PWD had not taken required initiatives to ensure completion of the work before CWG-2010. Even the main contractor was not officially informed regarding completion of the said connectivity before CWG. PWD did not obtain the consent of the contractor to complete the work as deviation without asking for extra time and at the time of submitting the proposal to get the work done through deviations. There was no plan/mechanism with the PWD to get the work completed before CWG-2010 which resulted in irregular award of work of ₹ 51 crore.

In their reply the PWD stated that due to shortage of time and resources the competent authority had decided to get the connectivities completed through same contract as deviation in the quantity of work and asking the ongoing contractor to take up the work as deviation in ongoing project contract was as per delegated financial powers and codal requirements prescribed in CPWD works manual. The reply is not acceptable as taking up the construction of connectivities as deviation in ongoing contract these were lying incomplete as on December 2011 due to lack of initiative by the department.

7.8.2 Work costing ₹11.63 crore undertaken without tendering

GNCTD conveyed the approval for ₹ 11.63 crore for widening of the existing bridge on Trunk Drain No. 2 at the T Junction of Road No. 56-71 and bridge on Road No. 56-58A, and widening of Road No. 56 from 6 lane to 8 lane in front of ISBT Anand Vihar to provide smooth and signal free traffic on Road No. 56. The Executive Engineer decided to get work executed (without call of open tenders and without the approval of competent authority), by Valecha Constructions, the contractor who was executing the ongoing work for "Corridor Improvement of Road No 56-ISBT Anand Vihar and allied works", so that the work could be completed before the Games. The work was in progress as of August 2011.

Audit maintains that widening of the bridges was not a part of work already being executed in that area and thus cannot be termed as deviation in any way. Hence, award of work to M/s Valecha Engineers Limited without call of open tenders was unauthorised.

GNCTD stated that it was intimated to the Principal Secretary, PWD that these works could be completed before CWG 2010 if done as deviation under ongoing contract there was likelihood that if fresh tenders had been called there would have been no response from eligible agencies for such work or PWD would have received much higher rate than the quoted rates of ongoing contract. It was further stated that these works were only extension of ongoing main work and not completely new work at a different location. Reply is not acceptable because these are mere presumptions and Administrative Approval and Expenditure Sanction was issued with the condition that PWD should complete all the codal formalities as per General Financial Rules and CPWD works manual while awarding the work. Moreover, the work could not be completed before CWG 2010 even as deviation in the ongoing contract.

7.9 Infructuous expenditure of ₹ 8.65 crore on FOBs

The work for construction of two arch foot over bridges (FOBs) was awarded to P&R Infra Projects Limited at a tendered cost of ₹ 10.35 crore to facilitate the public to reach JLN Stadium during CWG. The design of the FOB was of a suspension type, and not the ordinary pillar supported structure, and was being attempted for the first time by PWD, Delhi. Given the limited amount of time available for the Games, it may have been better for PWD to stick to the tried and tested method of FOB construction. However, PWD decided to use an imported suspension system (Macalloy make) in spite of the fact that a suspension bridge with a similar suspension system had collapsed in Glasgow in 2008. Instead of awarding the design consultancy work to a specialized agency having experience in the related field, the work was awarded as extra item to the consultant for the main work (M/s Tandon Consultancy).

The deck of one of the FOBs collapsed during construction, while concrete was being laid. After this incident no efforts were made to construct the deck of second FOB or reconstruct the deck of ill fated FOB.



Collapsed FOB near JLN Stadium

In the absence of FOBs to provide approach to Jawahar Lal Nehru Stadium (JLNS), PWD arranged for construction of temporary FOB by the Indian Army.

The Dogra Committee, set up by GNCTD to enquire into the reasons for the accident, has pointed out that the design of the joint in sufficient detail was not provided by the design consultant. The contractor devised the procedure on his own and did not obtain necessary approval for the same. Deviation from the correct design led to failure of the joint and collapse of the deck slab.

As drawings and design prepared by the consultant were subject to the approval of the department, failure of the PWD in ensuring correct methodology and design for the FOB and to identify a consultant competent to attend to this work resulted in infructuous expenditure of ₹ 8.65 crore, which has already been paid to the contractor and consultant.

In response, PWD stated that the completion of the work had only been postponed and not altogether shelved, and as such, the expenditure could not be termed as infructuous. The reply is not tenable as the main purpose of these bridges to be ultimately used by pedestrians for approaching the JLN Stadium during the Games was not fulfilled. The work has not been restarted and in any case the FOBs have no legacy value.

7.10 Extra avoidable expenditure of ₹ 0.73 crore

Specifications for road and bridge works, Ministry of Shipping, Road Transport and Highways provide that for high traffic density wearing course

comprising of 40 mm bituminous concrete overlaid with 25 mm thick bituminous mastic layer can be adopted.

However, in Ghazipur project the PWD had provided a layer of 50 mm bituminous concrete in place of prescribed 40 mm layer of bituminous concrete and 25 mm thick bituminous mastic as wearing coat on the road of Gazipur Flyover Project. Thus, over designing of wearing coat of the road had resulted in extra expenditure of ₹ 73.24 lakh on excessive bituminous concrete.

GNCTD stated that the richer specifications were adopted because this flyover would be the part of proposed Delhi Meerut Expressway and therefore had to be designed for 120 Km/hr., instead of 60-80 Km/hr being adopted for urban road. PWD further stated that 50 mm DBC was approved by MoRTH itself in the technical specifications while according the sanction for two other works for widening of NH-24 from 4 lanes to 8 lanes adjacent to this flyover. Thus, providing 50 mm thick Dense Bituminous Concrete (DBC) was the technical requirement. It was also added that said specification of MoRTH are for deck of bridge and flyover only. Reply is not acceptable as neither during conduct of feasibility study nor while granting approval to the proposal by GNCTD for this project was there any mention of such a corridor. Secondly this being an urban road traffic speed within the city of Delhi is restricted to 60 Km/hr. PWD itself, on eight flyovers constructed alongwith this flyover during the same period, has provided wearing course of 40 mm DBC as wearing coat on deck as well as on its approaches. Further in the said technical specifications for widening of NH-24 in two other works the wearing coat was designed with 50 mm DBC without the provision of mastic asphalt whereas the wearing coat on this flyover and its approaches was provided with 50 mm DBC overlaid with 25 mm mastic asphalt. Thus, it cannot be compared with widening of NH-24.

7.11 Unauthorised execution of work

Section 23.3.2 of CPWD Works Manual provides that no extra/substituted item should be executed or approved without the prior concurrence of the authority who accorded the Technical Sanction. Audit noticed that 12 extra items amounting to ₹ 5.90 crore were executed in work of Barapulla Project and Ring Road Bypass project without the approval of the competent authority. Though these extra items were got executed on road and bridges which have been opened for public use prior to October 2010 and completion certificate of RR bypass had already been recorded but no approval of the competent authority was obtained even after execution of these works and they were lying unapproved as on August 2011.

In the absence of the concurrence of the competent authority, the necessity of these items is uncertain. GNCTD stated that a few extra/substituted items were executed during the course of work but these were executed in the interest of work and as per provisions of the agreement. Though no formal approval of the competent authority is available on record prior to execution of such items but the tacit approval was always there since the progress of work was being monitored by the Chief Engineer on almost day-to-day basis during the course of execution. Further, in principal approval of competent authority for various extra items were deemed to have been taken during his regular site visits and accordingly execution of these items was allowed at site. Over and above, there was enough pressure on field engineers to get the work commissioned and operationalised before CWG and they were having no time to initiate in writing the proposal for obtaining in-principle approval of such items. Prestige of the nation was at stake and commissioning of the project was the only motive. The reply is not convincing as the approval of competent authority to these items has not been obtained even after one year of completion of the these works.

7.12 Other irregular payments

7.12.1 Excess payment of ₹ 1.43 crore due to violation of agreement terms

Schedule-F of the Agreement defines the percentage to be added on cost of materials and labour to cover all overheads and profit in the cost for determining the market rates of an item.

As per Schedule-F of agreements of Gazipur Project and RR Kohli Project, the CPOH was to be added at the rate of only 10 *per cent* for fixing the market rate for deviated and extra items. However, Audit noticed that the department allowed CPOH at the rate of 37.5 *per cent* and 15 *per cent* in determining the market rates of the deviated and substituted items.

Allowing the CPOH at a rate higher than that prescribed in the agreement has resulted in excess payment of ₹ 1.43 crore to the contractor for eleven items.

In their reply the GNCTD stated that after being pointed out by Audit the rates for the items which are available in DSR have now been analysed on the basis of DAR by allowing ten *per cent* CPOH and the market rates of certain items viz., Mastic asphalt, RR stone pitching etc., works out to be more than what has been sanctioned by the department based on the MoRTH Data book allowing ten *per cent* CP and twenty five *per cent* OH. Hence rates of these items have not been modified. Further, necessary recoveries are being made from the payments due to the contractors as pointed out by Audit. Reply is not acceptable as the contract permits only ten *per cent* OH on all items irrespective of their being in DSR or MoRTH.

7.12.2 Excess payment of ₹ 0.36 crore due to higher CPOH

Audit noticed that in "ISBT Anand Vihar Project, the department had not disclosed the percentage of overhead in Schedule-F of the agreement. However, the contractor's profit was decided to be added at the rate of 10 *per cent*. It was further noticed that while determining the market rates for payment of extra items/ deviated items OH at the rate of 25 *per cent* and contractor's profit at the rate of 10 *per cent* was added by the department. Whereas as per extant orders of Director General of Works, CPWD, CPOH at the rate of 15 *per cent* was to be added. Addition of OH at higher rate resulted in over payment of ₹ 0.36 crore. In their reply PWD stated that as stipulated in Clause 12 of the contract and provisions of CPWD Works Manual, the Analysis of Rate for determining market rate of deviated items shall be same as adopted in preparing justification. The extra items which are not covered by CPWD specifications and Delhi Schedule of Rates are executed as per MoRTH specification and their rates were determined in accordance with MoRTH Standard Data Book.

The reply is not acceptable as the General Conditions of the contract clearly stipulate that CPOH will be fixed @15 *per cent* for determining the market rates for all items.

7.13 Engagement of consultants in PWD

For design and implementation of flyover projects, PWD appointed consultants for feasibility study of the projects, preparation of structural designs/ drawings/ estimates/ justified amount statements, proof consultants for checking of the proposed designs and drawings. Audit noticed that:

- the works were awarded to the contractors for execution following the norms prescribed in CPWD Manual and specifications of MORTH and relevant BIS codes. Ensuring quality and specifications for the works was the responsibility of the contractors executing the works and the officers (Engineer-in-Charge, Project Manager, Chief Engineer and Engineer-in-Chief) supervising it. In addition, the consultants entrusted with the designs of the projects were also tasked with ensuring execution of the works as per the designs/drawings and specifications. However, the department had further engaged Third Party Quality Assurance (TPQA) for independent assessment of the quality and specification of the works at a total tendered cost of ₹ 14.74 crore. Although the TPQA is to be selected from among the short listed panel for such job, the department did not have any specified policy and qualifying criteria for selection of the TPQA. TPQA consultants were engaged in all the projects examined making TPQA consultancy more a norm of CPWD rather than an exception,

adding 1 to 2 *per cent* to the cost of the project. It was also observed that the quality assurance consultants are actually not independent from execution since TPQA were engaged by the Executive Engineers directly in charge of the execution and the test/investigation reports were also submitted to them. To ensure that the third party quality assurance agency is truly independent of both the executing agency, and the contractor, the TPQA should be engaged and monitored at a level higher than the Executive Engineer. Further, PWD should strengthen and streamline its systems for quality assurance and come out with clear guidelines on engagement of TPQA providing agencies. No specific reply was submitted by the GNCTD on this issue.

- as per section 53.2 of CPWD Manual, the 'quality assurance plan' has to be a part of the tender documents. However, it was noticed that in all projects the work of TPQA was awarded after two to ten months after the works commenced which not only defeated the purpose of TPQA but also resulted in non-inclusion of Quality Assurance Plan in the tender documents.

- the consultancy agreements provided for performance guarantee and performance security at five *per cent* of the tendered cost for the performance of the contract. In audit it was noted that design consultancy agreements provide a clause to deal with the post contract variations in assessed quantities if any. The agreement did not explicitly state the accountability for lack of accuracy on designs and estimation. Audit noticed gross variations in quantities of two major items viz. reinforcement work and steel liner for pile ranging between 28 and 100 *per cent* in six projects involving impact on the cost of the projects and extra payment to the contractor. Since the projects are consultant driven, in audit's view, the defect liability for the consultant should have been strengthened with specific provision for accountability for timely completion of the project, as per specified designs and also within the estimated cost.

  GNCTD stated that there have been changes in structural system from the conceptual stage to preliminary design stage and then to final stage of design due to site constraints and therefore quantities in few cases varied by more than 20 *per cent* but they had valid reasons. Reply is not acceptable as detailed estimates were to be prepared by the consultant after considering all these aspects.

Chapter 8: Renovation and Restoration of Connaught Place

8.1 Introduction



Connaught Place (CP) and its surroundings have a historical legacy and it is the Metropolitan City Center, as per the Master Plan for Delhi 2021. In April 2004, Chairman, NDMC directed that action be initiated for restoration of Connaught Place before CWG-2010. The chronology of subsequent events is summarised below:

Table8.1: Chronology of events relating to restoration of CP

Timeline	*Event*
April 2004	Direction by Chairman, NDMC to initiate action
May 2005	Cost estimate for project prepared for ₹ 76 crore
November 2005	Engineers India Limited (EIL) appointed as Project Management Consultant (PMC)
February 2006	Cost estimate and milestones for project implementation by EIL approved by Council
July/November 2007	Detailed Project Report (DPR) and revised cost estimate of ₹ 671 crore prepared by EIL/ approved by Council
February 2008	DPR sent to GNCTD and Ministry of Urban Development (MoUD) for funding under Jawaharlal Nehru National Urban Rehabilitation Mission (JNNURM).

Timeline	*Event*
	Redevelopment plan sent to Delhi Urban Art Commission (DUAC) for approval
April 2008	Administrative approval of ₹ 615.20 crore by NDMC for the project, and Engineers India Limited (EIL) appointed turnkey consultants
November 2008	DUAC clearance received

8.2 Undue Delays

As can be seen the project was plagued by undue delays. The decision to initiate action was taken in April 2004 but the Detailed Project Report (DPR) was submitted only in February 2008 and DUAC clearance received in November 2008. It was therefore, clear that the project would not have been completed in time for the Games. Further, the constraints of traffic management, considering the importance of CP to Delhi's traffic, made this task even more difficult.

In its reply (December 2011) NDMC stated that project of CP was not related to CWG. However activity of project took time due to statutory clearances at various stages and final clearance from DUAC was received on 27 November 2008.

Audit, however, observed that the Consultant appointed on nomination basis was awarded the contract of executing the whole project, without floating the tenders, just to meet CWG 2010 dead line. Single tenders at higher rates were accepted in order to meet CWG 2010 deadline. Thus despite the NDMC's averment that the CP Project was not related to CWG the CP project became interlinked with CWG 2010. Besides, EIL took 4 years to submit the DPR is indicative of poor planning.

8.3 Increase in scope of work

The original estimated cost of ₹ 76 crore in May 2005 went up nearly nine-fold to ₹ 671 crore by July 2007. This was mainly due to an increase in the scope of work on account of the following components:

Table 8.2: Increase in scope of work/ costs **(₹ in crore)**

Sr. No.	Item Description	Amount in original rough indication of cost by NDMC (May 2005)	Amount in revised indication of cost prepared by EIL (July 2007)
A. Engineering Services/Infrastructure			
1.	Overall Electrical System etc.	10.00	46.80
2.	Utility Duct/Service Tunnel in Middle Circle	--	69.21

Sr. No.	Item Description	Amount in original rough indication of cost by NDMC (May 2005)	Amount in revised indication of cost prepared by EIL (July 2007)
3.	Escalators	--	80.00
4.	Other items	20.00	46.70
	Total	**30.00**	**242.71**
B. Facade restoration/Areas to be taken up with stakeholders' participation			
1.	Façade Restoration	8.00	77.53
2.	Centralized Heating, Ventilation and Air Conditioning (HVAC).	-	55.75
	Total	**8.00**	**133.28**
C. Pedestrian movement areas			
1.	Including improvement of existing subways and new subways, Outer Circle development)	-	65.05
D. Street furniture/ inner plaza development			
1.	Underground parking	-	111.99
2.	Civil & Electrical Works (Radial Roads, Middle Circle & Inner Circle)	-	66.08
3.	Others	30.00	51.88
	Total	**30.00**	**229.95**
	Grand total	**76.00**	**670.99 (say 671.00)**

There was thus an enormous increase in the scope of work and costs. It is likely that this increase in scope and cost was driven, at least partly by the launch of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) by GoI in November 2005, and subsequent inclusion of this project under JNNURM.

Under JNNURM, the scheme launched in December 2005 with the objective of sustainable development of physical infrastructure in cities, 35 *per cent* of the cost would be funded by GoI, and 65 *per cent* would be funded directly or indirectly by GNCTD. Till August 2011, out of total expenditure of ₹ 196.5 crore on the project, ₹ 22.21 crore was met from JNNURM funds, ₹ 50.36 crore from GNCTD funds, and the remaining amount of ₹ 123.97 crore out of NDMC funds (to be reimbursed subsequently by GNCTD). The total contract value of 13 works awarded under the project was ₹ 443.80 crore as shown in **Annexure 8.1.**

In its reply (December 2011) NDMC stated the rough cost of ₹ 76 crore was mainly for the facade restoration work, improvement of civic amenities and

related work. The escalation of cost from ₹ 76 crore to ₹ 671 crore was arrived after suggestions from various statutory bodies and stake holders

8.4 Project planning

A pilot project for façade restoration of C-Block was awarded in August 2007, and completed in August 2008. The rest of the project was divided into nine packages spanning the whole of CP, with all activities getting underway around the same time. The status of implementation of various works is summarized below:

Figure 8.1 Timeline of Implementation of Works

Works	Jul, 07	May, 09	Jun, 09	Jul, 09	Nov, 09	Jan, 10	Feb, 10	Mar, 10	Apr, 10	Jun, 10	Jul, 10	Aug, 10	Aug, 11
1 (C block)*	Pilot project												
2 (Façade)													
3 (Façade)													
4 (Service corridor-middle circle)													
5 (Electrical works-outer circle, subways)													
6 (Area dev- inner and outer circle)													
7 (Façade lighting-C pilot block)													
8 (Toilets, kiosks everywhere)													
9 (Escalators in subways)													
10 (Façade – lighting- others)													
11 (Horticulture)													
12 (Signage, everywhere)													
13 (Road works in inner and outer circle)													

Note: Orange: award of work; Grey: Work in progress

* Date of Work Order 31.08.2007 and stipulated date of completion 28-02-2008. Work actually complete on 10-08-2008.

As a result, all works were underway more or less at the same time, with the scheduled completion by November 2010. It is difficult to assess the timeline

by which this project is likely to be completed to provide necessary benefits to the citizens of Delhi. A brief summary of two major works in progress is given below:

Table 8.3: Summary of two major works in progress

Work	Brief Details
Civil, Electrical and Finishing Works for Service Corridor in Middle Circle	A consortium of AFCONS-Sterling and Wilson Construction was awarded the contract in November 2009 at a cost of ₹ 236.70 crore for completion by May 2011 with the structural works to be completed by August 2010 i.e., before the Games. Audit observed that EIL accepted and NDMC approved a conditional rebate of ₹ 5 crore offered by the tenderer for working round the clock for all days of the week. The above time schedule and the estimated price were based on 24 hours working in a day and 7 days in a week, on round the clock basis.
Renovation of old subways and construction of new subways	This work was awarded to Era Infra Engineering Pvt. Ltd. in November 2009 for ₹ 56.04 crore on single tender basis on grounds of urgency and completion by CWG 2010.

In its reply (December 2011) NDMC stated that the project was well planned to achieve the targets set before CWG. The existing subways works were completed, made functional and opened to general public before CWG. Initial delays were on account of delay in several statutory clearances and the delay was primarily on account of late and very limited stage wise clearances by Delhi Traffic Police, unprecedented and prolonged rains last year and limited time available for execution of work and stoppage of works from 31 July 2010 due to CWG.

In case of 'Civil, Electrical and Finishing Works for Service Corridor in Middle Circle' NDMC stated that there was no conditional rebate offered by tenderer while rebate of ₹ 5 crore was offered as the condition of working round the clock for all days given in rebate offer letter was already there in SCC 4.5.1 of the tender.

In case of 'Renovation of old subways and construction of new subways' NDMC stated that the work has been awarded at 8.79 *per cent* above the estimated/justified cost after deleting the cost of items of the dismantled materials from the scope of work from the contract and thus the award of work at ₹ 56.04 crore against the estimated cost of ₹ 51.51 crore is well

within the permissible tolerance of 10 *per cent* as per para 19.4.3.2 of CPWD manual and norms of EIL.

The reply is not acceptable in view of the following:

The undue delays in execution of the project is indicative of the poor planning by NDMC. Further given the importance of CP to the traffic movement, limited traffic clearance was to be expected.

In case of 'Civil, Electrical and Finishing Works for Service Corridor in Middle Circle' the single tenderer initially quoted a rate ₹ 270.71 crore against a departmental estimate of ₹ 207.41 crore i.e., 30.59 *per cent* above the estimated costs. To bring the quoted rates to acceptable level so that a single tender can be accepted post tender reductions of ₹ 33.99 crore were made. This includes reduction of ₹ 23.34 crore on account of O&M Part, ₹ 5.62 crore on account of revised price for item No 8.1(d) and ₹ 5.03 crore on account of a conditional rebate. The rebate of ₹ 5.03 crore was on the condition that the site will be made available 24x7 without hindrance.

In case of 'Renovation of new subways and construction of new subways' the single tender initially quoted a rate of ₹ 56.80 crore against departmental estimate of ₹ 47.51 crore i.e. 19.6 *per cent* above the estimate. However after the tendering process was over the department revised the estimate to ₹ 51.51 crore by taking into consideration the salvage value of the dismantled Bituminous material. Also the contractor offered a further rebate of ₹ 75 lakh on item no 5.7 of the tender. These changes in the estimate and rebate offered by the contractor reduced the difference in quoted price and estimate from 19.5 *per cent* above to 8.79 *per cent* above. Thus in order to accept a single tender post tender changes were made.

8.5 Traffic Management

In April 2008 administrative approval of ₹ 615.20 crore for the CP project was given by NDMC, and Engineers India Limited (EIL) was awarded the contract of executing the whole project. EIL sought permission from the Traffic Police in December 2008, who issued a No Objection Certificate (NOC) for 240 days (effective from 1 January 2010) only in December 2009. However, the NOC was withdrawn subsequently as described below:

Due to starting of work at nine locations simultaneously, there were protests by the shopkeepers and the New Delhi Traders Association (NDTA) strongly opposed the construction and redevelopment work[1]. The Traffic Police stated that due to this construction work, a large number of buses had been diverted, creating congestion in the surrounding areas of the entire New Delhi District and Central District and asked NDMC to take a relook at the entire project of

[1] NDMC informed the Traffic Police that the traders association had been taken into confidence. However, the Traffic Police were informed by the NDTA that they had strongly opposed the construction work in their interaction with NDMC.

construction of subways and related redevelopment work in consultation with all the stakeholders i.e. Traffic Police, DTC, NDTA, etc. Pending a decision in the matter, construction work was asked to be immediately stopped, and the barricades covering the road space were removed and the NOC issued for traffic diversion during construction of the subways in the outer circle and service corridor in the middle circle was withdrawn in January 2010 by the Deputy Commissioner of Police (DCP) Traffic.

Subsequently, the Lieutenant Governor (LG) issued instructions for slowing down the pace of construction. In a meeting in January 2010 called by the LG to discuss traffic problems and access issues during renovation works in CP, the Commissioner of Police opined that the requirement of subways needed to be revisited and advised that some of the relatively less important subways could be taken up after the Commonwealth Games, and concreting of the Outer Circle road should be done lane-wise.

The LG stated that the NDTA did not have any problem with restoration of façade renovation work in the inner circle, and the problems due to ducting work in the middle circle seemed manageable by appropriate segregation of works so as to keep two roads for entry and two for exit to and from the inner circle open at all times. The major problem seemed to be with the works in the outer circle, which needed to be looked into in greater detail and the right solution found.

Till December 2010, the contractor could complete only one sub-way i.e. at Super Bazar (old); the earthwork done for the four new sub-ways had to be refilled, due to non-receipt of clearance from Delhi Police. The work of installation and commissioning of escalators in the sub-ways (awarded to a different contractor) was correspondingly delayed.



Covered subway entrance after re-filling

NDMC's response that taking up construction of subways one by one would have led to completion in eight years with associated cost over-runs and inconvenience to the people appears to be untenable, as taking up so many works simultaneously led to even greater difficulties in execution. Also a 24 X 7 schedule of construction work in CP was completely impracticable, considering the importance of CP to traffic flow in Delhi.

NDMC in December 2011 stated that the execution of the work was delayed due to non-receipt of clearance from the traffic authorities and due to unprecedented and prolonged rains. The reply is not acceptable as the delay was due to impractical and inadequate planning by NDMC.

8.6 Extra cost incurred on use of granite as flooring material in restoration of facade of C Block (sample block)

Granite was used as flooring material in the pilot project for 'C' Block, contrary to the initial DUAC approval of November 2006. Consequent to inspection, DUAC ordered sandblasting of granite flooring in November 2008 to reduce the colour contrast resulting in an avoidable expenditure of ₹ 0.19 crore on granite which was a costlier material.

In its reply NDMC stated that it is not true that DUAC objected to use of granite in flooring of corridor of 'C' Block, a pilot project and Heritage Conservation Committee (HCC) only suggested that granite is not appropriate for Architectural restoration. The reply is not tenable as is evident from the minutes of the DUAC meeting with NDMC of July 2008, where a reference to the DUAC approval of November 2006 was made wherein it was clearly stated that the floor finish of corridor had been changed to granite stone from the originally used sandstone by NDMC which was against the conservation objectives. Since 'C' Block was restored as a test case it was recommended that original sandstone flooring and original pattern be followed since granite is not appropriate for the architectural restoration that is being sought, as suggested by HCC. Later DUAC was left with no other choice but to order sandblasting of granite flooring to reduce the colour contrast for 'C' Block only.

In December 2011, NDMC stated that no sand blasting has been carried out in the flooring and no expenditure has been incurred on this account hence it is incorrect to say that ₹ 0.19 crore has been incurred on this account. The fact remains that ₹ 0.19 crore was spent on granite which is costlier material.

8.7 Inflated estimate due to inclusion of service tax in rate analysis

An amount of ₹ 2.77 crore on account of service tax was loaded in the rates of items in the detailed estimate for civil work including structural & finishing works excluding works of electrical, fire fighting, fire alarm system, Close Circuit Television (CCTV) and Public address (PA) system prepared by EIL.

As service tax was not leviable on such works, the estimate was inflated to that extent.

In its reply (February 2011) NDMC stated that M/s EIL has assured that in case the agency does not deposit service tax it would be recovered from its running account bills. The reply is however silent about the inflated estimate.

In its reply (December 2011) NDMC stated the estimation was not inflated as parts of components are only exempted from service tax. The department has not given details of components exempted from service tax, in the absence of which reply is not acceptable.

8.8 Justified cost inflated due to incorrect framing of rate analysis

Para 19.4.3.1 of the CPWD Manual 2007 provides for preparing justified cost statement based on market rate of labour, material, cartage etc. for checking the reasonability of tender rates.

The work of Area Development for Inner and Outer circle of Connaught place, was entrusted (March 2010) to M/s SCG Contracts (India) Pvt. Ltd. at a tendered cost of ₹ 35.93 crore against estimated cost of ₹ 36.40 crore and work order was issued (January 2010) with a time limit of nine months. Till the fourth running account bill dated 16 February 2011, work worth ₹ 14.81 crore only was completed. Audit observed that quotation of rate of building materials was not found on record in support of rate analysis of all the items. These rates were compared with the DSR of 2007 duly updated by price indices of cement and all commodities from official web site of Economic Advisor, Ministry of Commerce & Industry, Government of India http://eaindustry.nic.in/. Scrutiny revealed that the rates of cement and other materials were inflated by 14 *per cent* to 59 *per cent* as shown in **Annexure 8.2** resulting in inflation of justified cost by ₹ 87.30 lakh as shown in **Annexure 8.3.**

In the absence of availability of market rate for the required time, price indices released by Government of India have been used by Audit to update the rates so as to arrive at the prevalent market rates.

In its reply (December 2011) department stated that the justification of tender was prepared as per CPWD Manual and the method adopted by Audit was against the provisions of the manual.

In the absence of market quotation in the files the only method left to determine the market rate was to consider the DSR 2007 rates and update it by price indices of cement and all commodities from official website of Economic Advisor, Ministry of Commerce & Industry, Government of India http://eaindustry.nic.in/. The provisions of the manual only states to compare the market rates with quoted rates it does not specify that only quotations

obtained by the department can become the benchmark of the market rates. Also in this case quotations obtained from agencies other than for the current work cannot be considered as a benchmark for determination of the market rate as it is an afterthought.

8.9 Incorrect rate analysis

In the work "Providing and laying 18mm thick granite slabs in floors, risers, cladding, skirting, dado, in tread, landing with 20mm cement mortar (1:3)", the rate of granite was ₹ 1800/sqm inclusive of Value Added Tax (VAT) and cartage, but in the rate analysis rate of granite was taken as ₹ 1816.43/sqm and ₹ 83.56 was added for cartage. Thus, ₹ 100/sqm were added over and above the laid down rate of ₹ 1800/sqm. Further a higher co-efficient of labour was taken instead of the available coefficient in the DSR of 2007 item no.11.27 which resulted in inflating the estimate by ₹ 36.25 lakh. Details are given in **Annexure 8.4.**

In reply NDMC stated that difference of ₹ 16.43 is due to rounding and ₹ 83.56 towards re-handling cost due to space constraint. Also the co-efficient of labour was stated as based on item no 8.2.2.2 of DAR 2007 whereas Audit calculations were based on item no 11.27 of DAR meant for Kota stone.

The reply of NDMC is not acceptable because as per item specification the rate of granite to be used has been prescribed as ₹ 1800/sqm including cartage and VAT. Hence adding for VAT @ 12.5 *per cent* and for cartage @ 2 *per cent* over ₹ 1800/sqm is incorrect. Further, scrutiny of NDMC's rate analysis revealed that they also had adopted the coefficient of item no 11.27 adopted by Audit.

Further no reply has been given on addition of VAT and cartage extra as against fixed rate of ₹ 1800/sqm in the item description.

8.10 Avoidable grant of extra item against contract conditions

In area development works for inner and outer circle of CP granite stone Kerb instead of concrete Kerb was used, with a difference in expenditure of ₹ 5.61 crore. This included avoidable expenditure of ₹ 0.61 crore, due to an unjustified change in colour of granite stone kerb from 'Sindoori Red' to 'Rajashri Red' colour without the approval of competent authority i.e the Committee of Directors (as per EIL Rule). This has been done by inclusion of item no 5 in place of item no 5.1 of the contract at differential rate of ₹ 25981/cum. Further in fourth running bill in February 2011, ₹ 12.39 lakh was paid to the contractor out of extra cost of ₹ 61.08 lakh without obtaining the sanction for the same. Moreover justification for change in colour of granite was not found on record.

Further, the granite kerbs have been fixed in the busy traffic area around Central park of Connaught place where dust accumulates and as such the lustre of red colour cannot be maintained.

Pictures below shows actual granite kerb fixed at the work site





Thus, the change in colour of granite has resulted into extra cost of ₹ 61.08 lakh of which ₹ 12.39 lakh was paid in February 2011 without approval of competent authority for extra item.

NDMC in reply stated that the granite kerb stone was used keeping in mind the aesthetics and importance of the area, and the expenditure was approved by the Competent Authority.

Chapter 9 : Other Infrastructure Development Activities

9.1 Secured communication system (TETRA)

9.1.1 Introduction

TETRA or Terrestrial Trunk Radio is a professional mobile communication service which permits communication either through a network of base stations or point to point communication like a walkie-talkie. Compared to commercial mobile networks Global System for Mobile Communication, GSM or Code Division Multiple Access, CDMA TETRA's main advantages are:

- longer range which permits very high level of geographic coverage with fewer base stations;
- very fast call set-up;
- facilitation of mission critical network with a number of fall-back modes, and availability of communication services even during overload situations e.g. major public events or disasters; and
- suitability for working at high speeds e.g. high speed trains.

TETRA was specifically designed for use by government agencies, emergency services, for public safety networks, rail transportation staff for train radios, transport services and the military. As regards major sporting events, it was used for the Athens Olympics in 2004, the Doha Asian Games in 2006 and the Beijing Olympics in 2008.

The TETRA vendor was selected after following a competitive bidding process. HCL-Motorola was awarded the contract on wet lease basis for ₹ 99.81 crore for 87 month period from January 2010 to March 2017 (i.e., not only covering the CWG period but also for legacy use.)

9.1.2 Selection of TETRA and award of TETRA Contract

The decision to adopt TETRA for secured communication during CWG-2010 was taken in September 2008:

- In a meeting of the Committee of Secretaries (CoS) on 9 September 2008, Chief Secretary (CS), GNCTD, expressed the need for setting up an efficient communications system among various agencies involved in CWG-2010 arrangements. While suggesting a TETRA based solution, he proposed the setting up of a task force.
- On 11 September 2008, LG, Delhi called a meeting of senior officials of GNCTD for establishing a secure communication system for CWG-2010 on the lines of the Beijing Olympics. A presentation by the

suppliers of TETRA at Beijing was made at this meeting, and it was decided to adopt the TETRA as a secure communication network in Delhi for CWG-2010. An Inter-Agency Group (IAG) was constituted to draw up the specifications. The Department of Information Technology (DoIT) was named as the nodal agency for the project and Telecommunications Consultants India Limited (TCIL), a PSU, was hired as the Project Management Consultant.

- The decision that TETRA would be used not only for CWG 2010, but also for legacy period, was taken in September 2008 at the very first meeting of the IAG, and the requirements of different departments, as well as information on existing communication systems, was sought between October and December 2008.

An RFP was issued in April 2009. Three bids (from HCL-Motorola, TCS-EADS, and Tech Mahendra-Selex SPA) were received, all of whom were found to be technically qualified. On opening and evaluation of financial bids, HCL-Motorola was found to be L-1 (at a cost of ₹ 99.81 crore plus service tax) and was awarded the work in December 2009. All the activities to operationalise[1] the system were to be completed within 24 weeks of award of contract, but were completed in August 2010 after delay of seven weeks.

9.1.3 Legacy use of TETRA

From the beginning (in September 2008), TETRA was envisaged to cover not only CWG-2010, but also for legacy use, on a wet-lease basis for an additional period of seven years. The usage indicated by major departments during CWG-2010 and legacy are summarised below:

Table 9.1 – Planned use of TETRA

Department	CWG-2010	Legacy
Delhi Police	3656	
OC	3221	Nil
DTC	747	82
MCD	415	
Divisional Commissioner Office	170	
H&FW	362	133
PWD	100	Nil
Others	863	80

[1] In February 2010, the Department of Telecommunication granted captive license to the GNCTD for establishing wireless telegraph stations and fixed spectrum charges of ₹ 16.70 lakh p.a. for 50 base stations and 72 frequencies.

Audit observed that the Delhi Police (DP) already had an extensive integrated wireless communication system with:

- 10894 sets covering police stations, police posts, pickets, border check posts, Police Control Room (PCR) vans/ motorcycles/ ambulances and tourist PCRs;
- 42 hotlines connecting with Central Control Room (CCRs), hospitals, civic bodies, Government agencies; and
- Satellite audio phones for CCRs at selected Delhi Fire stations, mobile control rooms and rescue and relief teams.

Even though DP was the largest user of the TETRA both during CWG-2010 and the legacy period, in September 2009, DP had expressed an intention to limit their participation in the TETRA system only to CWG-2010 and withdraw the previously projected requirement for the legacy period. However, LG, Delhi prevailed upon the Commissioner of Police, Delhi not to withdraw the requirement projected for DP as withdrawal at such a late stage (of technical evaluation) would vitiate the tendering process and the entire tender ran into the risk of being cancelled.

It is also pertinent to mention here, that although DP was represented in the IAG, they chose to withdraw only at a very late stage.

The GNCTD in its reply acknowledged the change in stance by the Delhi Police and stated that the communication by the Delhi Police was in view of financial implications of hiring of sets for the legacy period and not because they did not need the technology. It was stated that the said letter of the Delhi Police was sent by them without the prior approval of the LG, Delhi who statutorily superintendents the Delhi Police under the Delhi Police Act. Accordingly the LG had properly guided the Police for usage of the TETRA system during the legacy period.

The fact remains that as the existing radio communication system of DP comprised of 10894 sets with a life of at least 15 years. It is incomprehensible how just 3656 rented sets would meet the legacy requirements of Delhi Police, especially when TETRA would not be connected or integrated with the existing communication system (as per the Department of Telecommunication's stipulation). This effectively means that TETRA users in the DP would also have to carry the existing analogue sets for communication across the DP network.

The GNCTD has explained that the Delhi police had not purchased new communication sets after 1999 and they had reached the end of their useful life. The contention of Audit is not to belie the usefulness of the TETRA technology to the Delhi Police but only to indicate that the requirements of the

Delhi Police were not carefully thought out for a comprehensive solution to use the new technology instead of going in for a piecemeal solution, given the numbers. The Government has itself stated that 900 sets are being used in Beat patrolling duties, though requirement to service all beats (2200) will be substantially higher and that the best policing can be done if the complete police force is equipped with the latest infrastructure facility. It has also been mentioned in the reply that the availability of 10,000 sets of Delhi Police was never communicated to the GNCTD by the Police.

On the necessity of carrying two communication sets by the Police, it was stated that the new technology allows over 1000 talk groups to be configured on the TETRA sets. The audit point is however about interconnection between the TETRA and analogue sets.

9.1.4 Utilisation of TETRA during CWG-2010

The implementation of the TETRA could be completed only by mid-September 2010, but its utilisation had not stabilized by the time of the Games due to insufficient time for familarisation, a fact accepted by the Government. As the setting up of Backup Control Centre was delayed by 4 to 5 months, there were cascading effects in different directions which was subsequently compounded by delay in providing fleet mapping up to mid September and in some cases even later. Infact the largest TETRA users during the CWG-2010 period – the DP were unable to use it due to poor signal quality.

The Delhi Police, which held 38 *per cent* of the sets during CWG –2010 and 79 *per cent* for legacy use, conveyed its dissatisfaction with the signal quality inside the buildings and underground after surveying the venues and other areas during CWG-2010, as detailed in **Annexure 9.1**. The Special Commissioner (Intelligence and Operations) called the TETRA system a "failure" and noted that it was the existing police communication network that was utilised successfully for security related communication during the Games. In response, GNCTD stated that the average duration of talk time on TETRA by Delhi Police was 72 hours/ day, while it was 178 hours/ day for all Departments. This, however, does not translate to effective and complete coverage, which was the grievance of the police.

The GNCTD in reply has not accepted the contention of the Delhi Police of poor signal quality. The Delhi Police however in reply to the Audit observation have informed that the problems faced by the field officers in the TETRA communication during CWG 2010 were intimated to the Secretary, IT, GNCTD and HCL- Motorola from time to time and as a client the Delhi Police had clearly taken a stand that they would not be paying the rentals for the TETRA system till it is fully functional.

The vendor raised a bill of ₹ 9.46 crore for the CWG-2010 period (September –October 2010), which was not justified, considering that the system was finally optimised in mid-September 2010, and pro-rata reduction should have been made. The Government stated that no rentals have been paid as of December 2011 to the vendor.

9.1.5 Other legacy users

Even in respect of other user departments, the legacy use was not properly thought through:

- MCD had public mobile radio trunking sets and mobile phones in closed user group (CUG) mode. MCD reduced its requirement of TETRA from 500 handheld sets to 415 and deployed it in departments like horticulture, education, sanitation etc. and even the PA to the Commissioner; which is not in keeping with the objective of using TETRA for emergency services. In reply to the PAC (Lok Sabha) query MCD said that it will be making use of the TETRA sets for its top priority work i.e., sanitation. It was stated that the deployment of TETRA sets will also improve the public compliant redressal system for maintenance of sanitation system in a coordinated manner.
- DTC had 27 trunk radio sets and mobile phones provided to officers, central control rooms, and regional control rooms. DTC abandoned its functioning radio communication system in April 2010, replacing it with the TETRA system, and deployed its 82 sets in all depots (47), recovery vans (10), airport express services (9), control rooms (7) inspecting staff (6) and others (3).
- The Health and Family Welfare Department had a wireless UHF based trunk radio system and a public mobile network on CUG mode for key doctors and hospital staff. They issued 83 sets to the Employee State Insurance Corporation, who sought clarification as to how the sets were to be utilised. Of the remaining 50 sets, 17 were distributed to CMOs and other officers; and 33 static terminals were kept in the emergency rooms of various hospitals. In reply to the PAC (Lok Sabha) query the ESIC informed that it has provided Internet protocol (IP) telephone to its user units and suggested that TETRA sets may be used by CATS ambulances.
- 170 sets were given to the officers of the Revenue Department in the Divisional Commissionerates. These include 12 sets given to the Delhi Disaster Management Agency (DDMA). In reply the Government stated that that the DDMA have increased their requirement to 170 and later to 426 sets on account of security requirement communicated by the Central Industrial Security Force (CISF) for the Delhi Metro Rail Corporation (DMRC).

While the decision to employ TETRA for CWG-2010, is not being questioned but the decision to extend it for legacy use for 7 years was without a proper assessment of the requirements of either DP or other public agencies. The task of replacing the existing networks with the TETRA (since no interconnection was permitted by the DOT between the TETRA network and other networks) was not properly thought through.

Post-CWG-2010, most of these expensive TETRA sets (at monthly rentals ranging from ₹ 2168 to ₹ 2365 / month) are, in effect, no more than mobile phones as they are not being properly used for the underlying objective of mission-critical communications services for public security/ safety, emergency response and other allied public services.

The Government stated that the decision to implement TETRA for the legacy period was visionary and futuristic and that Audit had erred in its judgement of legacy use of TETRA. While Audit has no objection to the introduction of new technology, it is merely emphasizing the fact that the new users of TETRA are unable to exploit the full potential of the new technology.

9.2 Transportation services for CWG-2010

9.2.1 Introduction

GNCTD directed DTC to provide transportation services for ferrying the athletes, technical officials and media persons during the Games. The requirement of buses for ferrying in different categories was:

- 600 AC low floor buses for the athletes /Games family;
- 630 non- AC low floor buses for Delhi Police; and
- 1516 low floor (AC/Non-AC) buses to the OC for "mass Cast[2]", work force/volunteers and spectators.

[2] Cast for Ceremonies of CWG-2010

9.2.2 Purchase of low floor buses



During 2008-09, DTC procured 2500 low floor buses (1000 AC and 1500 non-AC) at an inordinately high price, which was reported in Para 5.2.6 of Report of the CAG (Civil and Commercial), GNCTD, for the year ended March 2009. Audit observed that between September and November 2009, DTC procured additional 625 buses at the same high price, exercising an option clause, which cost the exchequer an additional ₹ 61.10 crore over the estimates.

The GNCTD stated (December 2011) that while these buses may appear expensive than the conventional buses, it has been found that taking into account the longer life of the bus (12 years or 7.5 lakh kms whichever is later), the increased vehicle utilization, and availability, reduced cost of repairs and maintenance, the buses are actually more economical than the traditional buses which have a life of 8 years and 5 lakh kms and high maintenance costs. Moreover, there are obvious qualitative benefits such as increased safety, lower pollution, passenger comfort and being disabled, ladies and children friendly.

9.2.3 Incomplete implementation of LED project

Audit found that poor planning and lack of clarity till the late stage of award of the contract resulted in incomplete installation of Light Emitting Diode (LED) destination boards not only prior to CWG but even till date.

In October 2009, DTC decided to install LED Destination Boards on 1500 of its standard Buses on BOT basis in lieu of advertisement right. In November 2009, tender specifications were prepared and thereafter the issue was discussed at various levels in DTC and Transport Department, GNCTD. In February 2010, Secretary cum Commissioner Transport directed (after discussion with Minister of Transport) that the contract would be awarded on

BOT basis (in lieu of advertisement rights) and DIMTS was nominated as the Bid Process Manager.

Subsequently in July 2010, the contract was awarded to Castmaster Mobitec India Private Limited and letter of intent issued in July 2010, with the stipulation of project completion within four months.

The LED Destination Boards could be installed only in 500 buses till December 2010. As per terms of BOT contract, the concessionaire was to pay ₹ 430 per bus per month in the first year; and ₹ 473 per bus per month during second year of the contract. No such payments have been received. After the issue was raised by audit, the DTC (January 2011) raised the monthly concession fee bill for 605 buses where completion certificates had been issued, and also assured that liquidated damages would be imposed on the firm.

The GNCTD accepted the facts and stated that liquidated damages as per the contract terms shall be imposed on the firm. In December 2011 GNCTD further stated that the cases where completion certificate for 605 buses has been issued, monthly license fee of ₹ 17.86 lakh was paid till July 2011 and for non-performance of contract DTC has imposed a penalty of ₹ 1.20 crore and if required recovery suit shall be filed in court of law for recovering the liquidated damages. The fact remains that this work related to CWG 2010 and installation of LED board on all 1500 buses had to be completed by November 2010 which has not been completed by the end of December 2011.

9.2.4 Ad hocism in methodology adopted for construction of Bus Queue Shelters (BQSs)

In a meeting held by the Chief Minister, GNCTD on 22 June 2006, it was decided to upgrade 1000-1500 BQSs in the city with modern designs on Built, Operate and Transfer (BOT) basis for their upkeep and maintenance. The concessionaire would generate revenue from display of advertisements on the BQSs and pay an agreed amount as Concession Fee to GNCTD. Audit observed that for getting 1500 BQSs constructed before the Games, the DTC and the Transport Department resorted to various methods, which indicated, adhocism in implementation of such a large project. From 2006 to 2010, four models of construction of BQSs have been followed. Yet, only 472 BQSs could be completed.

The details of the various methods of construction and audit findings thereon are given below:

Figure 9.1 Different models of construction of BQS



May 2007	January 2010	April 2010	May 2010
•Construction of BQSs on BOT model in four segments •only one segment of 248 BQSs successfully awarded to Green Delhi Pvt. Ltd at a concession fee of Rs. 93,800 per BQS per month •248 completed before CWG-2010	•Construction of BQSs from GNCTD funding by DTC in 3 packages •Only one package of 157 BQSs successfully awarded to Ozone KLA JV for Rs. 18.98 crore •99 completed before CWG-2010	•Construction of BQSs by DIMTS on BOT model on nomination basis •250 BQSs awarded for a concession fee of Rs. 9259 per BQS per month or 16 per cent of earning, whichever, is higher •75 completed before CWG-2010	•Construction by GNCTD funding through DIMTS •Contract awarded on nomination basis to DIMTS for construction of 800 BQSs at a cost of Rs 97.70 crore •50 completed before CWG-2010

Table 9.2 – Main findings in respect of different models of BQS construction

Model	Observations
BOT for construction of 248 BQSs awarded to Green Delhi BQS Pvt. Ltd	• Escrow account not opened by Green Delhi BQS Pvt Ltd., though contractually required; and • It had not paid the concession fee since March 2008 following which DTC encashed its bank guarantee on two occasions and recovered ₹ 13.31 crore. The total amount outstanding from contractor as of October 2011 was ₹ 47.84 crore. • DTC gave advertising space on 79 BQSs covered under the BOT contract to OC, instead of offering its own BQSs. The OC specifically asked for these by enclosing a list and DTC agreed to OC's list without making any effort to offer its own BQSs. The GNCTD accepted that the concessionaire has not provided further bank guarantee. The DTC by giving the Green Delhi BQSs to the OC had foregone a revenue of ₹ 1.18 crore. The GNCTD further stated that the DTC had earned revenue by displaying Delhi Government's advertisements. The reply is not acceptable because had the bus shelters been given to the OC, a higher revenue would have been earned by the DTC which was foregone in favour of the contractor.
Construction of 157 BQSs by Ozone KLA JV	• The work could not be completed within the scheduled time of seven months and till 30 September 2010, only 99 BQSs were built; the project was finally completed in June 2011. • DTC was losing out on the revenue that it could have earned from advertisements on these BQSs; and • As of November 2011, ₹ 16.51 crore had been paid to the contractor by the DTC whereas no funds have been received from the GNCTD. The GNCTD stated that in the process of holding a Board meeting for the said project, a two-month delay was reasonable. They added that till 30 September 2010, 99 BQSs were operationalised while the remaining were in progress. Senior officers of DTC as well as engineers of Delhi Integrated Multi Model Transit System (DIMTS) were doing the monitoring of the said work. The funds were diverted on the instruction of the Transport Department. The reply is not acceptable as the construction of 157 BQSs was to be completed before the CWG, therefore the DTC

Model	Observations
	should have taken the necessary technical and financial approval for the said work well in advance. Further, the contractor had to construct all the BQSs before 27 August 2010 but he was able to complete them only in June 2011despite the stated monitoring by the DTC and DIMTS.
Construction of 250 BQSs by DIMTS on BOT basis	• The concession fee was based on a similar contract entered by NDMC (with JC Decaux) in 2006, when reference rates of 2007 were available; • The concession fee fixed for DIMTS of the higher of ₹9259 or 16 *per cent* of earnings, is much lower than the BOT rate of ₹ 93,800 per BQS per month fixed with Green Delhi BQS Pvt. Ltd, JC Decaux offer of ₹ 21,000 and DTC's reserve price of ₹ 20,000 for BOT I. • DIMTS had not deposited the performance security as required and the department appointed an independent engineer to review the progress of work completed by the concessionaire only in December 2010 and at the instance of Audit, also directed DIMTS to pay the concession fee in respect of the 75 completed BQSs. The GNCTD stated that the DIMTS was set up with specific purpose in mind and decision to allot the project to DIMTS was the collective decision of the Council of Ministers and the Government. Besides, as the Government has a 50 *per cent* stake in DIMTS, the performance security is assured from it. On low concession fee it was further stated that location of 250 BQSs was less attractive as compared to the NDMC area. The reply of the GNCTD is not acceptable as award of work of 250 BQSs on nomination model is in contravention of Central Vigilance Commission (CVC) guidelines. Also the concession fee as compared to the rates considered by DTC in its various BOT projects was very low given that the rates of DTC related to MCD areas also. After being pointed out by Audit, the Department directed DIMTS to pay the concession fee in accordance with the agreement. The independent engineer was also appointed only in December 2010 after a delay of more than 6 months. The performance security of ₹ 1.16 crore was finally paid only in August 2011.
Construction of 800 BQS	• Contract awarded despite the Finance Department's protestations of lack of funds;

Model	Observations
by DIMTS on nomination basis	• Mandatory contractual provisions like depositing of bank guarantee and performance security not insisted upon; • Department of Transport released payments of ₹ 42 crore (excluding Mobilization funds of ₹ 10 crore) on demand to DIMTS without having the detailed bills duly scrutinised by the engineer as required in the contract agreement; • No statutory deductions on account of Tax deducted at source (TDS) (₹ 117.42 lakh), Worker Welfare Cess (₹ 57 lakh) were made at the time of release of funds and collected only at the instance of Audit from the subsequent payment of ₹ 5 crore. • In the absence of funds, ₹ 52 crore was made available by the department from other plan schemes Major Head 5055 DD-1 (3) (1) 'Alternate mode of transport' and Major Head 5055 DD-1(1) (4) 'Purchase of land for New Bus Terminal'. The GNCTD stated that as the DIMTS is a predominantly Government controlled company, the performance security was assured and efforts were made to complete the work by seeking cooperation from the PWD, Power & National Highway Authority of India (NHAI). They further stated that concern of Finance Department regarding lack of funds was conveyed for the year 2009-10. The reply of the Government is not acceptable because BQSs were to be constructed on BOT basis only. Therefore possibility should have been explored by inviting tender by lowering the concession fee. The reply of the Government was however silent on non-preparation of detailed estimates and market rate justification for the work. As on 31 December 2010, the physical progress of work was 24.47 *per cent* whereas the project was to be completed before the CWG. It was further stated that the payments were made against running claims submitted by DIMTS in the interest of completing the work before CWG 2010 and accepted that no independent Engineer could be appointed by the Transport Department when the above stated payments were made.

As can be concluded from above, not only did the Government lose sight of its objective of creating 1000-1500 BQSs between 2007 and 2010, but, in its

very belated effort to build them before CWG-2010, failed to secure proper utilisation of public money or exploit the revenue potential of the scheme fully.

9.2.5 Award of various contracts to Delhi Integrated Multi-modal Transit System (DIMTS), a non-government company on nomination basis

As is evident from the observations given in the preceding paragraphs, DIMTS has been unduly favoured, by being awarded a number of consultancy contracts on nomination basis, despite being a non government company. The major contracts awarded to it by DTC during 2007- 2010 are summarised below.

Table 9.3 – Award of contracts to DIMTS

Particulars of Work	Type of contract and contract value	Observations
Purchase of Buses	Consultancy (PMC) ₹ 1.3 crore	DIMTS could not prepare the justified price for the low floor buses, citing reasons of lack of historical data and even delayed preparation of bid documents. The GNCTD in their reply (February 2011) stated that DIMTS has the expertise to deal with the project and it may not be appropriate to conclude that DIMTS have no expertise on the basis of its inability to assess the reasonableness of prices only. They further added that the company was engaged by the GNCTD as 'Bid process Manager (BPM) & Consultant to DTC' for augmentation of DTC city fleet by purchasing 4500 new CNG Buses in the light of commitments made before High Court of Delhi and the same may not be seen from a narrow angle. The reply of Government is not acceptable as the intended objective of appointment of DIMTS was defeated as it failed to assess the reasonableness of the rates quoted by the VMs which cost the DTC to buy buses at

Particulars of Work	Type of contract and contract value	Observations
		higher prices
LED Destination Board in Standard Buses	Consultancy (BPM) ₹ 0.32 crore	DIMTS was appointed directly by Secretary cum Commissioner (Transport). When DTC refused to pay more than ₹ 16 lakh for the work (that it considered to be the rate payable for work of bid processing) the claim of DIMTS of ₹ 32 lakh was released directly by the Transport Department. The GNCTD stated that since DIMTS has 50 *per cent* share with the government. and considering the urgency of work it was appointed as Project Management Consultant (PMC). The appointment of DIMTS on the basis of urgency is not justified as the work was allotted to it in March 2010 and subsequently work was allotted to concessionaire in July 2010. The work was not scheduled to be completed before the CWG and has not been completed even upto November 2011.
Construction of 500 BQSs by DTC	Consultancy (PMC) ₹ 1.55 crore	The DTC Board had earlier decided to make DIMTS BPM only and if it was required, have a third party as PMC for transparency. However, DIMTS was appointed PMC and ex post facto approval of Board was taken. In the work of construction of 157 BQSs by DTC had the appointment of DIMTS been restricted to bid-processing work only as per the initial proposal, the cost of consultancy could have been ₹ 21.25 lakh (based on lump sum fee as proposed by DIMTS, proportionately calculated for 500 BQSs,) against the present liability of ₹ 1.55 crore. There was no penalty clause or any

Particulars of Work	Type of contract and contract value	Observations
		performance guarantee clause included in the agreement with DIMTS. The GNCTD stated that DTC did not have adequate capability to supervise and check the quality of work regarding construction of 500 BQSs which was a very big project. So the DIMTS was appointed Project Management Consultant instead of Bid Process Manager (BPM) at an agreed fee @ 3.75 *per cent* of cost of project if the award had been issued for 500 or more BQSs and in case of less than 500 BQSs, it would be 5 *per cent* of the project cost. They further stated that Hon'ble Minister had eventually agreed to DTC proposal on 12 August 2009 for DIMTS as PMC in place of BPM only. The reply is not acceptable because as per the Board's and the Minister's decision DIMTS was to be a BPM only and if any additional help was required, it was to be done through a third party to maintain transparency. Further no documentary evidence has been attached with the reply in support of this contention.
Project of Construction of 250 BQSs on PPP model allotted by DoT	Construction (PPP)	Citing reason of urgency before the Games, GNCTD awarded the work of construction of 800 BQSs (for ₹ 96.70 crore) from government funding and 250 BQSs on PPP model to DIMTS, with several favours/relaxations mentioned in paragraph 9.2.4. The work was, however, not completed. The GNCTD stated that the decision to award the work to DIMTS was a collective decision of the Council of Ministers and the Government.
Project of Construction of 800 BQSs by DoT	Construction ₹ 96.70 crore	

Frequent nomination of DIMTS by GNCTD is to be viewed in the context of its legal identity. It is a joint venture of GNCTD with Infrastructure Development Finance Company, IDFC (a private sector company) with 50:50 share holding, and is not a Government Company as per the Companies Act, 1956 provisions. Effectively, while it is engaged on nomination basis on the justification that it is a joint venture of GNCTD with Chief Secretary, Delhi as its Chairman, it is not bound by any established Government financial procedures. Unlike Government Companies which come under the audit preview of the Comptroller and Auditor General of India, all activities of DIMTS are outside the audit purview.

Audit had earlier reviewed the execution of the Bus Rapid Transit Corridor (BRTC) in paragraph 4.8 of the Audit Report on the GNCTD for the year ended March 2008. In this report, Audit had commented adversely on the need to hire DIMTS as supervision consultants in addition to RITES who was the Project Management Consultant and also highlighted certain instances of undue benefits to DIMTS. The functioning of the Transport Department was also reviewed in paragraph 4.1.6 of the Audit Report on GNCTD for the year ended March 2009 wherein the irrational rate of fees for works assigned to DIMTS, despite its being a private company was commented upon. The present audit focused on the Transport Department, since DIMTS was not within the purview of audit.

9.2.6 Construction of bus parking at Ash Pond opposite Millennium Park

In October 2009, the LG, Delhi on the recommendations of the Chief Secretary and the CM, GNCTD, approved the proposal to develop Athlete Bus Parking Facility at the Ash Pond opposite the Millennium Park. Thereafter, in December 2009, Transport Department sanctioned the work at an estimated cost of ₹ 61 crore.

Audit observed that DTC had not obtained the necessary approvals for the use of the land from the DDA, which was the land owning agency. The construction was in violation of the Master Plan for Delhi 2021 and the proposed[3] Zonal plan earmarks the area as being meant for recreation (green)[4].

In reply to the Yamuna Jiye Abhiyaan and in reply to the audit observation, the Secretary-cum-Transport Commissioner stated that all the structures in the facility were semi-permanent in nature and it would be necessary to continue to use the facility so long as the Government was unable to make alternative provisions for bus parking. In December 2009, LG, Delhi directed the DDA

[3] Although the zonal plan has been approved, the notification is yet to be issued

[4] Permitted recreational uses include green stretches, bio-diversity park, forest, botanical park/ herbal park, science park, theme park etc. without pucca / permanent construction

to place the matter to change the land use of this site for Bus Depot in the Zonal Development Plan for Zone 'O' before the Authority.' DTC also sent a letter to DDA requesting for change in land use.

The management while confirming the facts (December 2010) stated that the DTC was presently using the depot for operation and maintenance of 800 buses and if the facility cannot be used by DTC, expenditure would in any case be reimbursed by the DDA, therefore the question of expenditure going waste did not arise. Further, the GNCTD in their reply (December 2011) added that the structure built and the facility developed were either temporary or semi-permanent type including carpeting of the parking area with bituminous surface and the approval of DDA was neither required nor obtained.

The above reply confirms Audit's view that the expenditure incurred on construction of the bus parking would be rendered wasteful even if not reimbursed by DDA and the fact remains that the stated objective of Zone 'O' was not realised. Moreover, the structure is violative of the zonal plan and includes permanent structures like workshop, baggage scanning work, washing pit with underground tank, bituminous road, boundary wall, sub station and high mast light costing about ₹ 47.90 crore.

9.3 Power services

9.3.1 Power Generation

GNCTD planned to commission a new power plant at Bawana to make available 1250 MW of power before the Games, on the grounds of increasing dependence on own sources of generation from the current 17 *per cent* to 50 *per cent*. The target, was however, not met, as the 1500 MW Bawana gas based power project was delayed (by eight months as of October 2010, despite an expenditure of ₹ 2330 crore) for the following reasons.

- After the Pragati Power Company Ltd (a GNCTD PSU) put up a proposal for the project in 2003, the Cabinet of GNCTD finally approved the setting up of the 1000 MW power plant at Bawana under government execution only in November 2006. GNCTD took over three years to decide whether the project should be Government funded, private funded or a PPP, as also whether to set up two power plants at Bawana and Pragati Maidan or a single plant at Bawana.
- The turnkey contractor, BHEL, who was awarded the work in April 2008, could not reportedly mobilise adequate resources at the site.

Consequently, the Ministry of Power allocated additional power supply of 100 MW to GNCTD for the CWG period (after taking into account internal and external sources of power) from the unallocated power of the central generating stations of the Northern Region.

9.3.2 Power transmission

The total capacity of 220 KVA electrical sub-stations was targeted to be increased from 6920 MVA in 2009-10 to 12,340 MVA by 2011-12. As a first priority, Delhi Transco Ltd. (DTL), a GNCTD PSU, took up projects of setting up five 220 KVA electrical sub stations (AIIMS, Ridge Valley, Electric Lane and Masjid Moth and Airport Complex) and 7 corresponding cabling projects in south and central Delhi, to strengthen the power supply position for completion in time for the Games.

Most of these projects were awarded very late (in the second half of 2009) and could not be completed before the Games. Only two (Ridge Valley and Airport Complex,) out of five sub-stations were completed and two (Ridge Valley to Naraina and Bamnauli Mehrauli (LILO at Airport complex) out of seven cabling projects had been completed. Reasons given by DTL for delay included non-availability of land and permission for cutting trees from the Forest Department; clearances from GAIL and other civic agencies, unprecedented rains, traffic permissions etc. These hindrances, together with delayed award, made delayed completion almost inevitable.

Audit observed that the contract award process was not transparent, as DTL had applied conditions inconsistently to award contracts to bidders as discussed below:

Irregular tender evaluation for construction, testing and commissioning of 220 KV GIS at Ridge Valley leading to selection of favoured bidder

In response to the global (ICB) tender for supply erection, testing and commissioning of 220 KV GIS Ridge Valley floated on 14 November 2006 with date of submission of bid document as 29 January 2007, 8 bidders submitted their bids.

DTL amended a clause asking for compliance with latest International Electro-technical code (IEC) relating to type test. As a result, three parties submitted the techno-commercial bid. M/s Hyosung, Korea was the lowest and the contract was awarded to them at a price of ₹ 77.87 crore. Audit found that after awarding the contract, type test was waived. It is observed that if the management of DTL had waived the condition of type test before award of contract L-1 would become L-2. The difference amounted to ₹ 2.84 crore.

The work was awarded to M/s Hyosung Corporation Ltd on 12 March 2008 with the completion period of 18 months. The sub-station was energized on 17 September 2010. Some electrical and civil work is still not completed even after 15 months of scheduled date of completion. The Company has provisionally released the Liquidated Damages (LD) of an amount of ₹ 1.32

crore without any justification. This shows undue favour to the contractor and resulted into loss of ₹ 1.32 crore to the DTL.

The GNCTD in their reply stated that the terms and conditions of the tender clarify that for the purpose of tender evaluation, the charges of type test shall be included, however, the type test may be conducted or waived at the discretion of DTL based on the technical requirement.

Further on the issue, it was stated that the type test condition was kept in the tender keeping in view the situation that if a firm which has not supplied the equipments in India becomes L-1, then it would be prudent to get their equipment, in GIS sub-stations type tested. If type test was not included in the tender, then a situation could have arisen when the type test cost is added to the offer of these firms and they may become L-2 and L-3 post bid. Since before opening and finalization of the tender the L-1 would not be known hence it would not be possible to know whether the type test would be required to be done or not. This will only be known after L-1 is selected. This is why the condition of type test was incorporated keeping in view that if not required, the same shall be waived off or not waived off depending upon the selected bidder's past record of execution of similar cases in India. In the present case L-1 bidder Hyosung was selected through transparent bidding process and they had already supplied at least two GIS sub-stations, which are functioning satisfactorily in and around Delhi. In fact one of the GIS sub-station was executed by PGCIL on behalf of DTL and paid by DTL.

The reply is not acceptable because if execution of similar cases in India was the criterion for conduct or waiver of type test, it should have been stated so upfront in the NIT, so that the bidders got a chance to quote with full information. In any case the fact of supply of equipment to India would have been known at the time of evaluation of technical bid itself and the L-2 bidder Areva, France was technically qualified and had supplied atleast 34 GIS systems of 220 KV in the country to NHPC, BNVNL and NTPC. So at the time of comparison of financial bids, its type test should also have been waived and compared.

On LD it was stated that the execution of project was delayed due to various reasons beyond the control of DTL including non-availability of land from BSES and permission to cut trees from Forest Department and accordingly provisional time extension was given to the party without prejudice to DTL's rights to levy LD as per provisions of contract agreement as well as DTL's delegation of powers. The final decision of levy of LD shall be decided on completion of contract on merit basis, however 15 *per cent* amount is already available with DTL against the contract and as such there is no loss to DTL on this account.

The reply is not tenable, as these facts have not been found recorded in hindrance register at the time of audit. Also initial deduction of LD and

thereafter releasing of LD without any justification and approval from competent authority shows undue favor to the contractor. Further no decision regarding levy of liquidated damages has been taken even after expiry of one year of completion as confirmed in GNCTD's reply of December 2011.

Irregular restriction of competition by reducing the time of completion of work from 18 months (time period for similar project at Ridge Valley) to 12-15 months

In the contract for the 220 KV sub-station at Airport complex, DTL included a restrictive clause in the contract stating that the completion period for the contract should be 12 months in view of CWG-2010, when the previously awarded Ridge Valley stipulated a completion time of 18 months. Accordingly, bid of M/s Areva was rejected as it had stipulated a completion period of 18 months. In this work also M/s Hyosung was the L-1 bidder, but actually took 21 months to complete the project.

The GNCTD replied in December 2011 that the completion period had already been standardized as 12-15 months range for all 220 KV sub-station projects. Accordingly, tender for Ridge Valley as well as Airport sub-stations were floated with standard completion period of 12 months. However, completion period of Ridge Valley project was changed to 18 months on the request of prospective bidders in the pre-bid conference. No such request for change of completion time period was received from prospective bidders in case of airport sub-station and hence it was retained as 12 months.

The reply is not acceptable as the contractor could not complete the work within the 12 months timeframe assured by him, taking 21 months, which shows that the clause was restrictive to keep out competition and favour a particular bidder.

9.4 Other infrastructural facilities

9.4.1 Construction of 1 MGD Water Treatment Plant by DJB

In August 2006, DDA indicated its requirements of water and sewage disposal of 1 MGD and 0.80 MGD respectively for the Games Village, Akshardham Temple and surrounding areas to the Delhi Jal Board (DJB), and asked them to make necessary arrangements. Incidentally, DJB had already decided to set up a separate 1 MGD Water Treatment Plant.

A contract for setting up a 1 MGD Water Treatment Plant (WTP), with membrane filtration technology was awarded by DJB to VA Tech Wabag in October 2008 at a cost of ₹ 28.20 crore, with an additional ₹ 7 crore for 1 year of Defect Liability Period (₹ 1.56 crore) and 3 years of operation and maintenance (₹ 5.44 crore). The WTP was scheduled for completion by January 2010. Figure 9.2 depicts the chronology of events.

Figure 9.2 : Chronology of events for award of work for construction of WTP

Figure 9.2



The WTP was over designed for the following reasons:

- **The need for a separate 1 MGD WTP was not clear -** DDA indicated its water and sewage disposal requirements for the Games Village, Akshardham Temple in August 2006 and asked DJB to make necessary arrangements; it did not specifically indicate the need for a separate 1 MGD WTP. There was no evidence of a formal request from DDA for construction of a separate WTP. Incidentally, DJB had already engaged STUP Consultants in July 2006 itself for a separate 1 MGD water treatment plant. DJB's reply that the plant was constructed to create an independent source of water free from dependence on external sources *"as the Sonia Vihar WTP is dependent on Uttar Pradesh for its supplies"* is unconvincing.

In its reply GNCTD stated that the Sonia Vihar water was not considered absolutely safe against any possibility of disruption due to accident /sabotage as it was carried through a long transmission and distribution network and it would not have met the requirement without further treatment. Accordingly, dedicated WTP was planned based on ground water sources and Sonia Vihar

water was used as a standby source. It was also claimed that the WTP had a legacy value as it was to serve the DDA complex post Games.

The reply is not acceptable as DDA had only projected its water requirement and did not ask for a dedicated WTP at Games Village. Government could not provide any documentary evidence in support of its contention that the Games Village would require water of higher standard quality than was being supplied from Sonia Vihar WTP. The need for a separate WTP remains questionable even after the Games as plant was shut down for three months and currently running at 50 *per cent* of its capacity.

- **Over-designed plant with expensive membrane filtration technology -**

The water quality requirement was specified as conforming to WHO standards. However, the technology for the WTP was subsequently changed in 2008-09 to membrane filtration technology, on the purported grounds of a "green project with zero discharge". Audit got the source water[5] tested in January 2011 for 14 parameters indicated in the NIT of June 2008, and found that all parameters (except for total hardness) were met. Such hardness could have been easily treated with the lime and lime-soda softening process, in accordance with the Ministry of Urban Development's Manual on Water Supply and Treatment (which is based on WHO standards). DJB's argument that higher treatments were necessary to bring the water to WHO standards, particularly of turbidity below 0.5 NTU, is not tenable. WHO standards have left the level of turbidity undefined, since it is material only for effective disinfection of water; otherwise, water with turbidity of 5 NTU or less is usually acceptable to consumers[6]. Further confirmation of the plant's overdesign is derived from the fact that the proof of experience accepted in respect of VA Tech Wabag (the single and winning bidder) was that of a fully automated "Treated Refinery Effluent Recycle Plant", and not a mere Water Treatment Plant.

In its reply GNCTD stated that it normally constructed WTPs for treatment of surface water. In this case, the source of raw water was through a Ranney Well and few tubewells which contained high chemical contents such as iron, ammonia, dissolved solids, hardness etc. The parameters existing in the raw water sources were analysed over a period from 2003 to 2008 and the treatment process was finalized to bring the parameters within the prescribed limit based on examinations of the variations / trends of these parameters. Regarding water quality of the source tested by Audit in January 2011, DJB contended that the samples from Ranney Well were drawn by audit while the same was not in regular use for the last two months resulting in stagnant water

[5] Ranney Well P4

[6] water tests showed the turbidity less than 1 NTU.

which could not represent the true parameters of raw water. The testing as carried out by Audit was not relevant according to the reply of the Government. Regarding turbidity it was stated that the acceptable limit of median turbidity as per WHO guidelines was below 0.1 NTU however DJB decided to keep the turbidity value as 0.5 NTU. The WTP was designed as per the requirement of an international sports meet as guided by the source water quality parameters.

The reply is not tenable as any international sports meet should not require any specific design for WTP and the parameters of raw water collected by Audit were of raw water source available at the time of testing. The reply did not explain how the sample collected by Audit did not represent the true parameters of raw water, in case the Ranney Well was not in regular use. Moreover, WHO standards have left the level of turbidity undefined. Also, in general the water quality reports of the drinking water reservoirs of Delhi (UGR Majlis Park 2, Nangloi 35 and Bhagirathi 3) show that the turbidity of water ranged between 2 and 4 NTU. That the plant was over-designed is also borne out by the fact that the proof of experience accepted for M/s VA Tech Wabag by DJB was that of "a fully automated Treated Refinery Effluent Recycle Plant (TTP) on turnkey basis including civil works for generating demineralised quality of water suitable for process/boiler feed for power generation from the treated effluent". The major process equipments involved were " solids contact clarifier with lime handling system, dual media filters, ultra filtration plant, micron filtration, reverse osmosis blocks (primary, reject and permeate blocks) followed by degasification and the final polishing mixed bed exchangers with regeneration and tank ages system".

Further, the award of the contract to VA Tech Wabag was also flawed and irregular for the following reasons:

- **Undue and inexplicable delays -**

The entire process took an unduly long 26 months from July 2006 (appointment of consultants) to October 2008 (award of work). In particular, between August 2006 and March 2008, there was practically no progress, except the approval of a block estimate in December 2007. However, there were two rounds of tendering, with only a single qualified bidder (VA Tech Wabag).

- **Injudicious evaluation of bidders -**

In the second round of bidding, DJB took an unduly harsh stand in disqualifying one bidder (Triveni Engineering and Industries) and an unduly lenient stand in holding VA Tech Wabag eligible. Triveni submitted experience of three project; all three projects were rejected - one was rejected for not being commissioned in the last seven years, the second was rejected for not submitting certificate in support of experience of successfully commissioning a EPC/DB/DBO contract, and the third was rejected as the

capacity of the plant was 3.24 MLD (which fell short of the required 4.5 MLD). VA Tech Wabag submitted experience of only one project - an IOCL project commissioned in October 2006. Going by the same strict standards, this plant did not meet the NIT criterion of being in operation for at least one year after the Defect Liability Period (DLP) as on 30 May 2008. DJB's records failed to contain any details of the DLP (which would normally be 1 year) [7]; consequently, such experience would be invalid.

In its reply GNCTD stated that M/s VA Tech Wabag Ltd. had submitted performance guarantee test run after it commissioned IOCL project in October 2006 as per the relevant contract. Thereafter the firm performed O&M of the plant commissioned on 19th December 2006. The reply also refered to the High Court Decision on the eligibility of M/s VA Tech Wabag Ltd. and ineligibility of M/s Triveni Engineering in the case.

The fact is that Audit did not contradict High Court's decision in any manner. It was pointed out that DJB did show leniency towards M/s VA Tech Wabag Ltd. as far as the firm having experience of 1 year O&M after DLP in strict sense of NIT is concerned.

- **Increase in estimate just before bid receipt-**

The estimate for the WTP was increased from ₹ 9.36 crore (as per the December 2007 block estimate) to ₹ 29.42 crore on 26 August 2008, just three days before opening of the single financial bid of VA Tech Wabag on 29 August 2008. VA Tech Wabag's bid was for ₹ 45.42 crore. DJB arrived at a suggestive (justified) cost of ₹ 32.59 crore, and the price was negotiated down to ₹ 35.20 crore (which was within 10 *per cent* of the justified cost).

GNCTD stated that a block estimate was first approved for ₹ 9.36 crore without a specific choice of technology. Later it was intended that state of art technology should be chosen for treatment of water from Ranney Well and tubewells in the bed of river Yamuna. At the time of tenders the precise cost estimates were not prepared. It was however claimed that a rough cost of ₹ 18 crore was assumed, though not specifically recorded, for the financial eligibility criteria. The suggestive cost was worked out at ₹ 29.42 crore before opening of bids that was subsequently reworked out to ₹ 32.59 crore at the instance of Sub Technical Committee due to some omissions in the suggestive cost as worked out by the consultant. The contention of the GNCTD does not contradict the Audit observation pointing out that the suggestive cost was amended after opening the bid which was for ₹ 45.42 crore.

[7] In the exit conference, DJB attempted to re-interpret the clause to mean operation and maintenance for one year, after completion of a Peak Guarantee Test (and not DLP); this is not borne out by the wording of the NIT.

The WTP was "substantially completed" in June 2010, although no completion certificate was on record. DJB failed to levy liquidated damages (LD) of ₹ 2.82 crore on the contractor.

GNCTD stated that there were hindrances like tree cutting, shifting of plot, confirmation of plot layout by DDA, modifications in the raw water pipe line routing, access to working front and coordination with different agencies working simultaneously at the site. It was further informed that EOT upto 19 September 2010 to the firm had been allowed without levy of compensation.

The reply is not acceptable as the work should have been awarded after ensuring free site. Moreover, the hindrance registers (civil and electrical) for the project did not have any record of such hindrances at the time of audit.

The WTP was run only during the Games period, and is currently running at 50 *per cent* of its capacity for want of demand. DDA's estimated requirement of water for the Games Village was just 0.27 MGD (out of the total of 1 MGD). The balance requirement was for hotels and other facilities (which have not come up) and the Akshardam Temple (which is still not connected to the WTP). Further, there was an additional connection from the distribution line of the Sonia Vihar WTP as a standby arrangement, which would have met the needs of the Games Village.

In its reply GNCTD stated that during Games the plant normally treated 0.50 MGD of water with peak treatment of 0.70 MGD and that plant remained idle from 11 November 2010 to 16 March 2011 as there was no demand of water from DDA. DJB started running the plant by treating 0.50 MGD water w.e.f. 17 March 2011 and utilizing the water in DJB network.

The reply is in effect acceptance of audit observations made in the preceding paragraphs that there was no specific need of a separate WTP for the Common Wealth Games Village.

In short, the 1 MGD Water Treatment Plant awarded at a cost of ₹ 35.20 crore was over-designed and overpriced, with a flawed bid evaluation process. The requirement for this plant on a legacy basis is questionable, and the plant is currently underutilised. Further, DJB has a liability of fixed O&M costs, totaling ₹ 7 crore, till 2013. DDA has not raised any infrastructure charges on Emaar MGF for its share of the cost of the WTP, although Emaar MGF indicates in its advertising brochure that the residential complex has a dedicated WTP.

In its reply GNCTD intimated that DJB had already raised the demand to DDA for payment of cost of WTP. The facts remains that DDA has not paid or made any commitment to pay the cost as of yet.

9.4.2 Construction of a 1 MGD Sewage Treatment Plant by DJB

DJB awarded a contract for setting up a 1 MGD Sewage Treatment Plant (STP), with Membrane Bio-Reactor (MBR) technology, to UEM India Ltd. in October 2008 at a cost of ₹ 24.75 crore, with an additional ₹ 7.20 crore for operation and maintenance of 10 years. The STP was scheduled for completion by November 2009.

As in the case of the WTP, there was an undue delay in the case of STP also till March 2008, when block estimates of ₹ 23.42 crore were prepared. The STP commenced its operation w.e.f. August 2010 without the issue of completion certificate. DJB failed to levy liquidated damages (LD) of ₹ 0.92 crore on the contractor.

In its reply GNCTD stated that the project was delayed mainly as DDA provided land in June 2007 and could confirm the capacity of plant only in February 2008. Approval of estimates, tendering etc. could be initiated in March 2008. However, the case for EOT was under consideration and as a precaution ₹ 2.47 crore had been withheld from the bills of the contractor.

The reply is unconvincing as the delay in completion of project was after the award of work in October 2008 i.e. after getting the land and proposed capacity from DDA. The reply does not specifically explain the reasons for non-completion of the project by scheduled date i.e. November 2009.

The STP was to receive sewage from the Games Village and hotels (0.53 MGD), the Akshardham Temple complex and others (0.25 MGD). After the CWG, the STP was getting sewage only from the Akshardham Temple complex. Audit observed that the STP was utilised upto 44 to 70 *per cent* of its capacity between August and October 2010. After 31 October 2010, for a short period of time, utilization was nil due to non evacuation of the effluent from the plant by the DDA (a pre-condition for operating the STP). Consequently, the sewage from Akshardham was diverted to Mandawali pumping station (which was already operating at its full capacity of 45 MGD), leading to discharge of untreated sewage into the Yamuna.

Thereafter, the STP remains grossly under-utilised (less than 17 *per cent* of its capacity). Without adequate utilisation, the required quantity of Mixed Liquor Suspended Solid (MLSS) bacteria (needed for proper treatment of sewage) was not sufficiently maintained, defeating the purpose of installing a MBR STP. During the exit conference, DJB indicated that they were bringing sewage from elsewhere and injecting into the STP for this purpose.

In its reply GNCTD admitted that the plant was under utilized after the Games as there had been no habitation in the Games Village. Only the sewage from Akshardham temple was being received and treated.

DJB raised a demand of ₹ 32.70 crore[8] on DDA which included ₹ 10.58 crore in respect of the residential complex of the Games Village. However, DDA paid ₹ 24.75 crore to DJB between February 2008 and March 2010, and raised a demand for ₹ 10.58 crore on Emaar MGF only in July 2010, which is yet to be recovered.

GNCTD, in its reply confirmed the facts about non-receipt of the outstanding amount from DDA and informed that the demand had been raised.

9.4.3 Award of security contract for WTP and STP to IL&FS

In April 2010, DJB awarded a contract for security arrangements at the WTP and STP at the Games Village to IL&FS at a cost of ₹ 0.42 crore, which was increased to ₹ 0.75 crore in August 2010 through an additional work order.

The work was awarded on nomination basis without inviting tenders and without recorded justification of the exceptional circumstances for such award.

In its reply, DJB stated that as the decision for security of WTP and STP was taken by the government at a very late stage, there was no time for tendering. It further added that it did not have IT experts for preparing estimates and detailed specifications. While accepting that approval for awarding the work on nomination basis was not sought on file, DJB stated that the work was awarded to M/s IL&FS after due diligence and consideration of all relevant issues as the matter was urgent. DJB's contention of urgency is untenable, since GNCTD had decided in February 2008 itself to provide security at these sites.

9.5 Creation of Park and Ride facility at Safdarjung Airport by NDMC

In August 2009, NDMC proposed the creation of a Park and Ride and holding facility at Safdarjung Airport with a parking area of 170000 sqm, as per the approved traffic plan for CWG-2010. The facility was to cater to the traffic during CWG-2010 events at JLN stadium and thereafter be dismantled to restore the Safdarjung Airport area to its original position. In October 2009, while approving the proposal for ₹ 31.25 crore, EFC observed and advised that the dismantling of assets should be kept at minimum.

- Audit observed that out of the expenditure of ₹ 38.37 crore incurred on creating the temporary park & ride facility, ₹ 20.48 crore was on assets some of which have been dismantled and others to be eventually dismantled; This is not in line with EFC approval as more than 53 *per cent* of expenditure was without creation of any asset.

[8] ₹ 4.75 crore in September 2007 and ₹ 27.95 crore in November 2009

NDMC replied that the airport area was to be restored to its original state after the Games therefore concrete pavers were used so that the same could be reused after removal. The reply is not acceptable as Audit has already taken into account the utilization of concrete paver blocks, jersey barriers, signages, public utility structure etc valuing ₹ 17.89 crore.

- In addition, out of 48 lakh paver blocks costing ₹ 12.13 crore laid in parking facility, 35 lakh paver blocks valuing ₹ 8.45 crore were to be dismantled and reused by DTC and remaining were stated to be retained for use by AAI/NDMC. The dismantling was to be completed within three months from completion of the Games, however, till November 2011 only 4.10 lakh (12 *per cent*) paver blocks out of 35 lakh paver blocks have been lifted by DTC.

NDMC replied DTC has been repeatedly requested to take away the interlocking paver blocks urgently. Now DTC has asked NDMC to shift pavers at different locations in DTC depot for which the cost will be borne by DTC. The fact remains that the area has not been brought to its original condition as required and Airports Authority of India has also warned NDMC that it would levy demurrage charges against NDMC as construction material lying in airfield is a safety hazard for aircraft operations.

- The work of laying roads and interlocking paver blocks is normally executed by NDMC, however, ₹ 0.13 crore was paid to CRRI and Design Action Group for consultancy services for park and ride facility.

NDMC replied that there was need to have a specialist consultant to give design and specifications for huge parking lot of 170000 sqm catering to 3000 cars, 6000 two wheelers and 450 buses. The reply is not acceptable as GNCTD has also objected to the inclusion of payment of consultancy charges in the revised proposal.

- No Liquidated Damages (LD) for delay on the part of contractor (M/s K. R. Anand) was levied against contractor on the plea of delay due to VVIP movements/security instruction from MHA. Audit observed that, out of total delay of 70 days, delay of 24 days was attributable to VVIP movements/ security instructions by MHA and remaining 46 days delay was on contractor's part for which LD of ₹ 0.71 crore should have been levied. The major reasons recorded in hindrance register were rains /bad weather, that do not hold good since the works were initially to be completed in mid July before the onset of monsoons.

NDMC replied that no compensation was levied against contractor since delay was not on the part of the contractor. Majority of work was completed before 16 July 2010 but as per security instructions issued by MHA certain activities

like installation of fencing jersy barriers and signages were to commence three weeks before commencement of the Games. The reply is not acceptable as progress of work was slow and NDMC issued a show cause notice to the contractor on 16 July 2010 for wrongful delay/slow progress of work. Further while calculating the LD of ₹ 0.71 crore Audit has already considered the hindrances due to VVIP movements/security instructions.

- An amount of ₹ 30.33 crore against total contractual value of ₹ 31.60 crore (including additional work of ₹ 0.98 crore) has been paid to M/s K.R. Anand till September 2011 despite the fact that the second phase of work i.e. restoring area to its original form by dismantling paver blocks, GSB and WMM laid underneath the pavers is yet to be completed.

NDMC replied that final payment to M/s K.R. Anand will be made after completion of work. Sufficient amount has been withheld as part payment and other heads. The payment will be made to contractor after completing all codal formalities. The second phase of work is held up due to non lifting of paver blocks by DTC. The reply is not acceptable as more than 95 *per cent* payment has already been made to the contractor despite non completion of the work.

- The contractor (M/s Fiber Fill) engaged for constructing public utility services was technically ineligible at the time of opening of financial bids. The required experience certificate was received post opening of financial bids; and the other bidder (KR Anand) who was otherwise eligible, was declared ineligible.

NDMC replied that as per CPWD Memorandum, the value of executed works can be brought to the current level by enhancing the actual value of work at the simple rate of 7 *per cent* per annum calculated from the date of completion to last date of receipt of tenders for works executed. M/s K.R. Anand did not submit mutual agreement with M/s Pooja Enterprises. The reply is not acceptable as enhancing to current level is to be applied for completed works. The completion certificate proving the eligibility of M/s Fiber fill was received by NDMC on 16 February 2010 i.e. after opening of technical and financial bids. MOU submitted by M/s K.R. Anand was on stamp paper duly signed by M/s Pooja Enterprises confirming its association for execution of electrical work.

- DCE was engaged TPIQA on offer basis for a fee of ₹ 0.38 crore, but no agreement determining its scope of work and terms of payments linked to milestones achieved by the contractors was signed. DCE was contracted to be paid ₹ 3.58 lakh in excess of 1 *per cent* of tendered cost as sanctioned by EFC.

NDMC replied that Delhi Government sanctioned additional amount of ₹ 8.75 crore and the payment to TPIQA was within 1 *per cent* of total sanction of

₹40 crore. The obligatory service tax over the fee was paid to TPIQA. The reply is not acceptable as TPIQA was engaged for main civil work and Public utility structure work and TPIQA fee @ 1 *per cent* on tendered cost of ₹ 34.80 crore works out to ₹ 34.80 lakh against which ₹ 38.38 lakh was to be paid. Further as evident in the TPIQA contract for Talkatora & Shivaji Stadium consultancy fee is inclusive of taxes in NDMC contracts.

- Integrated Security System was provided at temporary parking facility at a cost of ₹ 2.45 crore, out of this the non legacy equipments worth ₹ 2.08 crore were to be removed for utilization by NDMC.

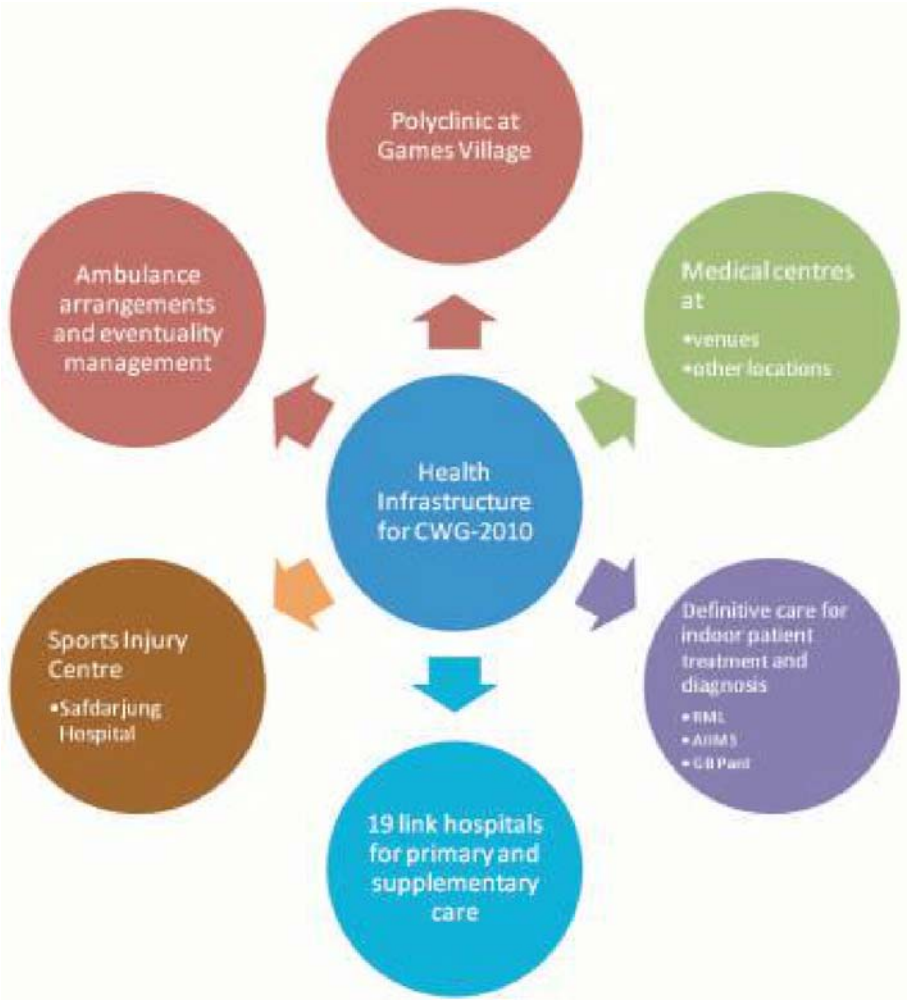
NDMC replied that non legacy equipment have been handed over to security branch of NDMC for their proper use in due course and NDMC is in process of utilising the same. The fact remains that equipment have not been utilized so far.

Chapter 10: Health Services for CWG-2010

10.1 Introduction

The health infrastructure for CWG-2010 is summarised below:

Figure 10.1



10.1.1 Preparatory Activities

10.1.1.1 Planning

There was ambiguity in identification of the nodal agency responsible for overseeing health services for the Games. This was clarified only in November 2008, when it was indicated that the Directorate of Health Services (DHS), GNCTD would be the nodal agency for health services.

Planning for health services was protracted for over four years, crystallising only in October 2009 with the formulation of the Health Action Plan (HAP) by the Department of Health and Family Welfare, GNCTD (DoHFW). There were subsequent amendments on account of changes in the venues for marathon, cycling, and archery finals as well as changes in manpower at various venues in 2010.

The HAP prepared by DHS was quite comprehensive and in line with the different levels of health care responsibility indicated by the OC (complete health care responsibility for athletes, team officials, Games Family etc. and appropriate level of health care for other categories of persons). It indicated the organisational structure for the medical arrangements for the Games, the detailed requirements of manpower, medical equipment, furniture, consumables and medicines at different locations, and the corresponding delivery timelines.

10.1.1.2 Budgeting

Although line items for CWG health services were provided in the budget of the DHS, GNCTD from 2006-07 onwards, the expenditure incurred till 2008-09 was insignificant, primarily due to delayed planning and preparatory activities; most of the expenditure was incurred in 2010-11.

Against the revised budget of ₹ 41.53 crore from 2006-07 to 2010-11, a total expenditure of ₹ 15.45 crore has been incurred as of November 2010. This does not include expenditure incurred directly by hospitals, which was met out of their own budgets.

10.2 Procurement activities

Due to delay in finalization of the HAP, compounded by further delays during tendering/ award, stipulated procurement procedures meant for ensuring transparency and competition (open tendering, adequate time for bidding etc.) were circumvented on grounds of urgency.

10.2.1 Procurement process

DHS did not go in for tendering for direct procurement of medical equipment, as per the requirements assessed in the HAP. Instead, they floated tenders for concluding one year Rate Contracts (RCs), which could be operated by DHS

and the hospitals. Also, the hospitals retained an option to make purchases from their own existing RCs or from the RCs of other hospitals.

Normally, RCs are concluded for use over an extended period of time (typically by multiple agencies) when requirements are likely to arise at different points of time. When the procurement requirements for CWG-2010 were known well in advance, DHS chose to go in for one year RCs rather than direct procurement through appropriate tendering procedures.

Further, against the HAP timeline of initiating procurement by November 2009 and completing procurement/ installation by June 2010, the procurement continued even upto October 2010 during the Games.

For finalising RCs for 34 items of major medical equipment, DHS followed a complicated process with several irregularities:

RC tenders (on item rate basis) were floated on 26 February 2010, but cancelled in April- May 2010 on the orders of the Secretary, DoHFW on account of a complaint regarding non-compliance with procedures in respect of Small Scale Industry (SSI) vendors. However, despite the Secretary's instructions for not opening the financial bids, DHS went ahead and opened the financial bids in April 2010, which was highly irregular. GNCTD informed that the oversight was unintentional and had happened as the Secretary's orders did not get conveyed in the DHS. The tenders were subsequently cancelled after instructions were conveyed on 22 April 2010.

RC tenders were refloated on 17 May 2010 (with less time of only 16 days for responses). Out of responses from 16 vendors, 7 vendors were qualified. DHS concluded 1-year RCs in June 2010 with all seven bidders (for items[1] where they were L-1).

DHS placed supply orders in respect of all 34 items of equipment. However, two contracted firms - Lord Krishna Company and Mangalam Medicaments – failed to supply 15 items of equipment, and were consequently blacklisted by the DHS.

Out of the 15 items (for which Lord Krishna Company and Mangalam Medicaments had been contracted), DHS ordered 8 items by operating RCs of other hospitals and 2 items by collecting "spot quotations" from the open market by a nominated committee. The remaining 5 items (with an estimated cost of ₹ 5.89 crore) were not ordered at all

Further, DHS chose to keep 14 items of medical equipment (listed in the HAP) out of the RC process for 34 items of equipment (on the ground that "*only major common items*" were included under the RCs). For these items, instead of following a tendering procedure, DHS purchased ₹ 2.32 crore of

[1] Out of 34 items, RCs were concluded on single bids in respect of 3 items (foldable wheel chair, AED, and military anti-shock trousers).

equipment from 10 suppliers on 30 August 2010, by collecting "spot" quotations from the "open market" through a committee.

In addition, DHS purchased five items of medical equipment costing ₹ 1.10 crore, although these items were not included in the HAP. These were either procured from the "open market" through "spot quotations, or on the basis of RCs of other hospitals, and were received between 31 August 2010 and 8 October 2010. In fact, one ECG Machine (costing ₹ 0.68 lakh) and 6 ICU Beds (costing ₹ 11.12 lakh) were received only on 8 October 2010.

DHS followed multiple procurement processes for three sets of purchases, despite requirements having been identified well in advance in the HAP.

In addition to these equipment purchases by DHS, individual hospitals procured equipment for the Games out of their own budget. The procurement of furniture items was also irregular:

DHS purchased furniture items worth ₹ 1.25 crore; these were procured through open tender (e-tender) with just one day's notice period after publishing the NIT in the newspaper on 22.8.2010. GNCTD stated that as the e-tender was uploaded on 19 August 2010, the notice period was 4 days. The fact remains that extremely short time was given to respond to the tender.

The GNCTD stated that the rate contracts mode is routinely used by hospitals and DHS for procurement of various equipment/ consumables to meet their requirement. The requirements for CWG were calculated on normative basis in the HAP (based upon type of centre). It was expected that there may be a change in number/location of first aid posts/ field of play posts for various venues. Any change in policy of OC/security/disaster management agencies would have also required flexibility in managing/procuring the supplies. Also the procurement process was started in December 2009 and would have been completed by June 2010 had the first tender not been cancelled.

On non-purchase of 5 items, it was clarified that IRR lamps, ophthalmotoscope and golf cart stretchers were taken from the available resources with hospitals after their tenders had failed. In case of trolley beds also no valid bid was received hence item was procured on valid rate contract of DDU hospital as ICU beds. The item of shifting trolleys was substituted with Hydraulic Transfer trolley with X-ray compatible table top and procured from the open market as no valid rate contract was available and the tender had failed.

While the urgency of the situation is understood the fact remains that any well thought out plan always accommodates for contingencies. As the total numbers of items to be procured were available, the DHS could have gone in for open tenders with sufficient time to attract adequate interest to ensure economy without leaving any scope for sub-optimal solutions. Had timelines been drawn giving due thought to the tendering process the bunching of

purchases and related short-circuiting of procedures like short tendering and open-market purchases could have been avoided.

10.2.2 Exorbitant rates

Audit observed that the rates for many of the items purchased through contracts by DHS/ individual GNCTD hospitals were exorbitant, causing financial loss to the GNCTD.

A few instances of widely varying rates for the same item are given below; a detailed listing alongwith financial implication is given in **Annexures 10.1 and 10.2.**

Table 10.1: Widely varying rates for the same item

Equipment	Minimum rate (per unit in ₹)	Maximum rate (per unit in ₹)
Scoop Stretcher	13650	86100
Spine Board	6300	20475
Superior Massage Table with Mattress with pillow	21525	57749
Ultrasound Therapy (1& 3MHz)	50925	367499
IRR Lamp	68250	141750
Physiotherapy Laser	194250	409500
X-ray View Box	11393	35700
Automatic External Defibrillator (AED)	140175	519751
Pulse Oxymeter	21525	151200
Cardiac Arrest resuscitation drug and equipment trolley crash cart	19792	81900
Ophthalmo-otoscope	25725	50400
B-type Oxygen Cylinder with flowmeter	6405	110250
Suction Machine Foot Operated	2887	13440
Ambu Bag (Bag Value Mask) Adult	2048	5145
Ambu Bag (Bag Value Mask) Paediatric	2048	5145
B.P. Apparatus	2625	6825

In response, GNCTD stated that audit's comparison of rates of equipment across hospitals was done based upon nomenclature, without going into the

technical details of the equipment. The reply is not tenable for the following reasons:

The equipments were purchased by various hospitals (after due approval by purchase committees of doctors) for the same purpose viz. CWG-2010;

Secretary, H&FW had issued directions stating that the hospitals were free to use their own RCs or the RCs of DHS, clearly evidencing interchangeability.

10.2.3 Purchase of ice-making machines

DHS purchased 68 ice-making machines at a cost of ₹0.78 crore as part of the "open market" purchases of 30 August 2010. All these ice-making machines were purchased from Dolche India (who was only a dealer and not a manufacturer). Audit observed that these rates were, in many cases, even higher than the Maximum Retail Prices (where ascertainable).

In response, GNCTD stated that two e-tenders were floated on 27 July and 10 August 2010, but were unsuccessful on account of technical rejections and lack of response respectively. Further, manufacturers/ distributors expressed their inability to provide machines of the same capacity within the available short span of time. Consequently, negotiations were conducted with vendors for all available sizes and makes, which included the voltage stabiliser, site inspection and installation pre and post Games, besides 6-year additional warranty and service. The market retail price and the package price paid by DHS cannot be compared due to provision of additional services in DHS price. It was also stated that the requirement of machines was decided by the OC and the DHS was not to question the need of the machines.

The fact remains that lack of planning had led to a situation where purchases were made of machines of any size to cater to the requirement of OC to the extent that some machines could not even be utilized due to space constraints etc.

10.2.4 Items procured but not available during the Games

Audit observed numerous instances of procured items not being available for the Games:

Medical equipment worth ₹ 0.43 crore and furniture worth ₹ 0.46 crore was not issued for the Games, reportedly because of curtailment of medical venues by the OC.

₹ 1.49 crore of equipment procured for the Games directly by the hospitals viz. 64 electrical nursing beds worth ₹ 0.86 crore received by GB Pant in August 2010 could not be installed before the completion of construction of the Emergency Block. Further, items amounting to ₹ 0.13 crore were received Lok Nayak Hospital only after the Games during October- December 2010.

Government replied that as non-utilisation of equipment/furniture was due to curtailment of venues, it was not its fault. Even otherwise when the hospitals procured certain equipment, the same also had a legacy value. Further, the Lok Nayak hospital had categorically denied that any item procured by it had been received after the Games. This is however not based on documents available with Audit wherein the Department of Burns and Plastic surgery of the Lok Nayak hospital had ordered certain consumables and equipment in September 2010 of which items worth ₹ 13 lakh were received after the Games in October, November and December.

In respect of the 64 electrical beds it was clarified that even though the new EDP block was not complete and ready for installation of the beds, a revised plan was adopted wherein the beds were installed in five private rooms and utilised during the CWG. This position is however not evident in the stock register entries available with Audit that indicate that the beds were installed in various wards in November and December with 18 beds lying in store as of December 2010.

10.3 Contract Management Issues

Several deficiencies in contract management, both by DHS and individual hospitals were observed:

- AC bills[2] for ₹ 2.21 crore in respect of GB Pant hospital and ₹ 0.39 crore in respect of DHS were outstanding as of December 2011. In case of GB Pant hospital the bills pertained to four equipments where the installation and commissioning of the equipment was pending. In case of the DHS the bills pending pertained to purchase of 64 computers of ₹ 18.69 lakh and advances of ₹ 20 lakh drawn for meeting incidental expenditure.
- DHS is still to recover liquidated damages amounting to ₹ 0.42 crore and GB Pant hospital is still to recover ₹ 0.25 crore from vendors on account of delayed supplies.
- The receipt by GB Pant Hospital of additional equipment worth ₹ 0.30 crore to be supplied free by a vendor could not be assured. In reply it was stated that all the equipment were received and utilised during CWG and stock entries had now been updated. However, receipt of free equipment cannot be accepted in audit without proof of despatch, Custom Duty receipts or firm's procurement documents.

[2] AC Bills are Abstract Contingent bills utilized for drawing advances; accounts of advances should be rendered within one month.

10.4 Facilities development for hospitals

10.4.1 Turnkey project for establishment of emergency block in EDP building of GB Pant hospital

GB Pant hospital (along with AIIMS and RML hospitals) was designated for definitive care of accredited personnel during the Games. For this purpose,

- a separate casualty area (with 6 observational beds) was to be designated for the Games on the ground floor of the newly constructed EDP Block, with provision of all routine radiological and pathological services; and
- a dedicated ICU with a minimum of 10 beds with all state of the art facilities and nursing care was to be made functional during the period of the Games.

In November 2008, GNCTD while designating GB Pant as hospital for definitive care said that all necessary procurement and installation should be done by May 2010 and functionality ensured by June 2010. However, GB Pant Hospital awarded the turnkey contract (covering both construction and supply of equipment) for establishing an emergency block in the EDP building at ₹ 5 crore only in May 2010 to Adison Equipment Company for completion within 90 days (by 25 August 2010). While completion certificate dated 19 November 2010, showed the project as completed on 6 September 2010, Audit, however, observed that:

- Seven items of Indian-make equipment were recorded as issued only on 11 November 2010, while the installation certificate of all equipment was issued on 1 November 2010;
- Six items of imported equipment were not recorded in the stock register; as per customs duty payment records, some of these items were received only after 27 October 2010.

The GNCTD stated that for the equipment received after 27 October 2010 the levying of liquidated damages was under process. All seven Indian items and six imported items were duly issued on the original challan to the firm by the store keeper before 31 August 2010 and final indent was made on 11 November 2010. The fact remains that the equipment of Indian make was installed on 1 November 2010. This supports the audit contention that the certificate recorded was premature.

10.5 Ambulance services

10.5.1 Background

DoHFW had been planning to upgrade its "102" ambulance services under the Centralised Accidental and Trauma Services (CATS) since 2006. The HAP took into consideration DoHFW's plan for deployment of 150 ambulances in

PPP mode through the selected vendor (Fortis Healthcare) by July 2010 for CWG-2010. These ambulances would be of two types:

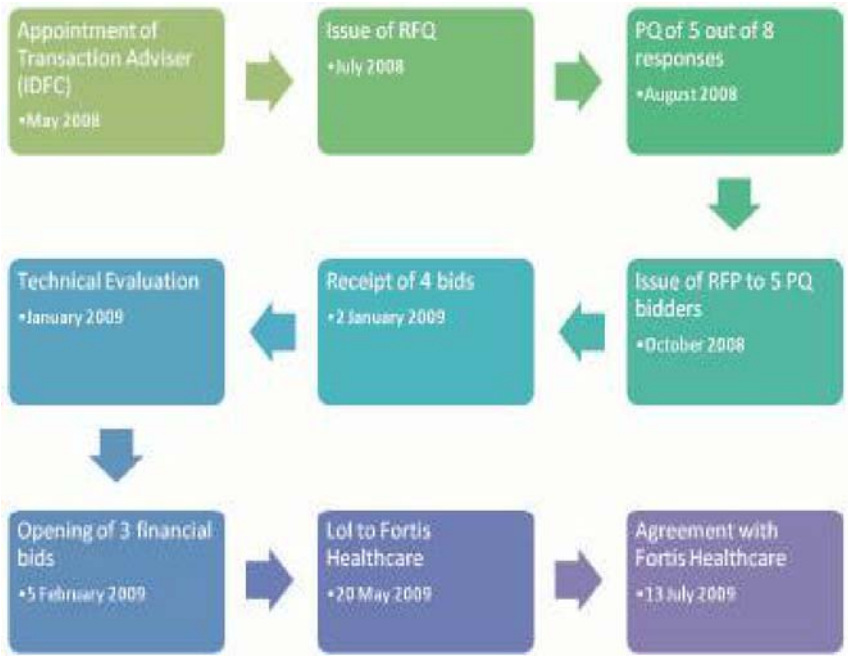
- Nine Advance Life Support (ALS) ambulances for covering high risk sports with potential for serious life-threatening injury; and
- 141 Basic Life Support (BLS) ambulances for other cases.

Since the overall requirement of ALS ambulances during the Games would be around 20, these 9 ALS ambulances would be supplemented from ALS ambulances from various government hospitals and, if required, private hospitals.

10.5.2 Tendering and award of concession for 150 ambulances

A 15-month long process was undertaken for tendering and award of the concession for 150 ambulances in PPP mode, as summarised below. The contract was finally awarded to Fortis Healthcare Ltd. at a one-time capital cost of ₹ 25 crore and monthly annuity payments of ₹ 1.23 crore (which made Fortis the L-1 bidder on NPV basis).

Figure 10.2 – Tendering and award of concession for ambulances



As can be seen about 3 ½ months between the opening of the financial bids and the issue of the LOI was spent in obtaining Cabinet approval. The scope of work involved:

- Procurement of ambulance vehicles and fabrication, and procurement and installation of equipment;
- Procurement of hardware/software and setting up of a control room (Emergency Response Centre), and recruitment and training of manpower;
- Operation of the ambulance fleet over a six year period.

Audit observed that the Request for Proposal (RFP) did not specify a requirement for "factory-built" ambulances, allowing the concessionaire to fabricate ambulances from any vehicle chassis; however, details of the medical equipment were fully specified. The successful concessionaire was required to submit a registered prototype ambulance for inspection by DoHFW. Further, each ambulance was to be inspected by DoHFW before deployment.

The financial model for the Public Private Partnership (PPP) involved payment of one-time capital cost and monthly annuity payments to cover cost of categories of persons (accident victims, economically weaker sections, obstetric emergencies etc.) exempted from payment of user fees. The concessionaire could collect user charges from other users.

10.5.3 Failed execution of contract

DoHFW terminated the contract with Fortis Healthcare in February 2010, due to its failure to procure and register 50 *per cent* of the ambulances by the stipulated deadline of 8 January 2010[3]. Subsequently, DoHFW had to procure 31 factory-built Force Traveller ambulances (10 BLS and 21 ALS ambulances) in July- 2010 at a cost of ₹ 2.24 crore for vehicles at Director General of Supplies and Disposals (DGS&D) rates from Force Traveller Ltd., and awarded the work of fabrication and equipment at ₹ 6.88 crore in August 2010 to MGM Associates.

The chronology of events leading to the termination of the Fortis contract is given in table 10.2 :

[3] The remaining 50 *per cent* were to be operationalised by July 2010.

Table 10.2: Chronology of events leading to termination of Fortis contract

Timeline	Event
October 2009	Fortis produced a bus chassis-based ambulance[4] as the prototype ambulance. Despite multiple meetings/ inspections, the special committee constituted by DoHFW did not find the vehicles satisfactory on several parameters – workmanship, aerodynamics/ ergonomics, fittings, and certification of actual performance on suspension damping However, DoHFW agreed on 22 October 2009 to Fortis' request to go ahead with placing the order for ambulances on the manufacturer, subject to vehicles complying with the stipulated specifications. It was seen that even before this approval, Fortis had already placed orders on 21 September 2009 for 74 bus chassises.
December 2009	Fortis submitted another prototype ambulance for inspection and ambulance registration; this was approved by the Committee for Registration of Ambulances (CRA) for registration by the Transport Department
January 2010	Transport Department agreed to DoHFW's proposal for registration of 150 ambulance vehicles, subject to certification (in Form 22 (A) Part II) by DoHFW that each fabricated vehicle complied with the Motor Vehicle Act and Rules. One ambulance was registered on 16 January 2010, even without DoHFW certification. A new "core group" constituted by DoHFW found the ambulances to be deficient and non-compliant, especially on the quality of ride, noise pollution, poor quality stretcher and general workmanship.
February 2010	DoHFW terminated the contract with Fortis.
April/ May 2010	Mediation efforts between DoHFW and Fortis failed.

Thus, DoHFW's failure to specify the exact nature of the ambulance vehicle well in advance led to termination of the contract. DoHFW did not specify "factory-built ambulances" and the range of acceptable makes/ models thereof. The Committee of Doctors associated with the second round of procurement had recommended factory-built over chassis-built vehicles. Though chassis-built vehicles were found to be a cheaper option, DoHFW did not specify the range of acceptable chassis makes/models.

[4] Mahindra RTD BS III (bus-chassis without windshield)

The GNCTD replied that the IDFC prepared the bidding document and concession agreement for the project which also included minimum specifications of ambulances without specifying the requirement of chassis built vehicle or factory built vehicle. Further, none of the short-listed applicants, in the pre-bid meeting, had raised any question regarding the non-availability of ambulance vehicle of required specifications. Also, even after issue of LOI when Fortis had asked for relaxing the condition of patient compartment width, the IDFC had advised that adequate number of vendors for ambulance vehicles were available to provide ambulances as per the specifications prescribed in the tender document.

The above only goes to underscore the audit point that by indicating the range of acceptable makes available the department would have exercised better control and guided the procurement process more efficiently specially when the specifications were so important.

Further, there was a marked difference in rates between the quotes of Fortis Healthcare (for chassis-built ambulances) and the factory built ambulances purchased later which is indicated below:

Table 10.3 – Comparison of quotes of Fortis and ready-built ambulances

(₹ in lakh)

Supplier	Vehicle Cost	Fabrication and Equipment Cost		Total Cost of BLS Ambulance	Total Cost of ALS Ambulance
		BLS	ALS		
Factory built ambulances (Force Traveller/ MGM Associates)	7.23	13.43	26.36	20.66	33.59
Fortis (as per business plan)[5]	8.00	6.50	11.50	14.50	19.50

The factory built ambulances (with fabrication and equipment) were far costlier than Fortis' quoted cost, although the inner width of the patient compartment of these factory-built ambulances was only 1650 mm, as against the contracted specification of 2000 mm +/- 10 *per cent*.[6]

[5] The invoice documents supporting the registered prototype BLS ambulance supplied by Fortis revealed a cost of just ₹ 9.50 lakh.

[6] In June 2009, Fortis Healthcare requested for a reduction in the inner width of the patient compartment from 2000 mm +/- 10 *per cent* to 1650 mm (which is a more common specification); this was not accepted by DoHFW and the contract retained the original specifications.

The GNCTD replied that the Committee of experts in its report detailing specifications of the ambulance had recommended for procurement of mono-coque (factory built) vehicle from DGS&D. It did not specify/ consider the width of the vehicle while recommending the vehicle to be purchased from DGS&D.

The fact remains that the specifications of the original RFP were not considered in the later RFP wherein the attempt was to exercise greater control over the purchases by making the specifications exact.

It was seen in audit that the price difference was mainly on account of differing specifications of equipment. The equipment specifications for the factory-built ambulances (drawn up by a Committee of doctors appointed in March 2010 by the Minister of Health and Family Welfare) were substantially higher than that indicated in the RFP prepared by IDFC, the Transaction Advisor. These specifications drew references to the Medical Device Directives specified by the European Union and also stipulated manufacture of the devices in an ISO-certified facility[7].

The higher specifications (and higher cost) of the subsequent purchase of factory-built ambulances were also acknowledged by DoHFW (in its response to Audit), stating that the detailed specifications for fabrication and equipment were suggested by experts; further, almost all the equipment were imported, of reputed brands and met all international standards for safety and quality.

While there is no doubt that higher specifications were adopted for the ambulances, yet the fact remains that these specifications were not adopted in the first instance at the RFP stage.

The GNCTD in its reply also acknowledged the higher specifications of international level being the main reason for the price difference. It was however, stated that as the ambulance PPP project was meant for accident and trauma services in Delhi (not specifically for CWG), so commonly used specifications were prescribed in the RFP. These specifications though not international were even higher than the specifications prescribed in the guidelines prescribed by the Committee for Registration of ambulances (CRA) for registration of any ambulance in Delhi. The subsequent purchase of 31 ambulances was primarily for meeting the CWG requirement which was a prestigious international event due to which higher international specifications were prescribed.

---

specification); this was not accepted by DoHFW and the contract retained the original specifications.

[7] They did not specify equipment brands.

10.5.4 Non-fulfilment of Requirement of BLS Ambulances

Originally, DoHFW envisaged purchase of 141 BLS ambulances and only 9 ALS ambulances. This was to be supplemented through extra ALS ambulances from Government and private hospitals to meet the (short term) requirement of around 20 ALS ambulances for the Games.

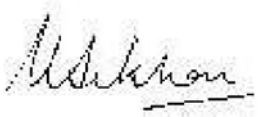
However, DoHFW actually ended up buying 21 ALS and only 10 BLS ambulances. It is pertinent to note that the ALS ambulances require services of trained doctors and are, therefore, not suitable for deployment through CATS. Consequently, these ALS ambulances have been allotted to various hospitals/ institutes.

The need for a **general ambulance services** under the aegis of CATS (102 ambulance service) for immediate pre-hospital emergency response, is met primarily through BLS ambulances. Such ambulances are cheaper than ALS ambulances (which are linked to individual hospitals) and, could be procured in greater numbers than ALS ambulances to meet the requirements of the Games.

The GNCTD while accepting the audit observation explained that while making the bid documents for PPP project considering that a BLS ambulance can be upgraded to the level of an ALS ambulance, provision for only 9 ALS ambulances was made by IDFC. As per the HAP for the CWG, a total of 40 BLS and 24 ambulances were required. The ambulance requirements were to be met by the PPP partner. However as the PPP arrangement failed, the Government in its hospitals had only 3 ALS ambulances. After considering the availability of ambulances from Government hospitals, CATS, AIIMS and private institutions, tender for procurement of 21 ALS and 10 BLS ambulances was floated and purchased. These ambulances were used in CWG and after completion of CWG, ALS ambulances have been deployed at Delhi Government hospitals/ institutions where they are being used for patient shifting. The CATS is using the 10 BLS ambulances for its city operation.

Conclusion

Deficient planning put pressure on timelines and created a sense of urgency. As works were not spread out evenly over the years preceding the Games, there was unprecedented bunching of activities in the final years before the Games. The expected result of the high demand for labour and material were the high tendered costs paid. Government gave up decision making to the vast number of consultants employed as it tried to grapple with its technological and managerial limitations. With an immoveable deadline of the Games there was considerable relaxation of rules and procedures in making purchases and awarding contracts for works at higher costs. Transparency in following procedure was also not ensured. GNCTD had not settled its bills in respect of atleast 40 completed projects even after one year of the Games.



Dated: 3 January, 2012
New Delhi

(NAMITA SEKHON)
Principal Accountant General (Audit), Delhi

Countersigned



Dated: 3 January, 2012
New Delhi

(VINOD RAI)
Comptroller and Auditor General of India

Annexure to Chapter 2

Annexure 2.1 – Category-wise profile of approvals/ sanctions by GNCTD

Category/ Activity	Amount (in ₹ crore)
Flyovers, Roads & Bridges	**3,670**
Power Projects	**1,100**
DTC Augmentation	**1,071**
Stadiums	**747**
CP Restoration	**615**
Bus Parking	458
StreetScaping	**455**
Road Improvement	**394**
Street Lighting	**347**
RUB/ROB	**216**
IGIA Terminal 3	**206**
Signages	**94**
Construction of Depots	**82**
Water Supply	**63**
Health	**46**
Communication & IT	**28**
Greening of Venues	**28**
Cultural Events	**28**
Bus Q Shelter	**20**
Fire Station	**3**
Grand Total	**9,672***

**This includes funding from GoI – (a) components of JNNURM: ₹761 crore and (b) Additional Central Assistance for CWG-related projects: ₹2800 Crore.*

Annexure 2.2 – Details of projects where final payments have not been made **(in ₹ crore)**

S. No.	Project	Agency	Tendered Cost	Paid up to October 2011	Status of work
Chapter- 3 Venues constructed by "NDMC and PWD"					
1.	C/o Thayagaraj Sports Complex at Thayagraj Nagar, New Delhi. (,II and other works) **Package-II**	PWD	108.80	112.29	Completed
	C/o Thayagaraj Sports Complex at Thayagraj Nagar, New Delhi. (,II and other works) **Solar Plant**	PWD	14.10	12.18	Completed
	C/o Thayagaraj Sports Complex at Thayagraj Nagar, New Delhi. (,II and other works) **Gas turbine**	PWD	19.58	24.73	Completed
2	Addition/Alteration of Talkatora Indoor Stadium	NDMC	74.74	69.59	Completed
3	Improvement upgradation of Shivaji Stadium and SITC of Integrated Security System by ECIL at Shivaji Stadium	NDMC	162.47	75.05	Project yet to be completed
4	Architect Consultant for Talkatora Stadium and Shivaji Stadium	NDMC	5.25	4.26	Shivaji Stadium Project yet to be completed
5	TPIQA for Talkatora Stadium and Shivaji Stadium	NDMC	1.06	1.09	Shivaji Stadium yet to be completed.
		Total	383.00		
Chapter- 4 Streetscaping and beatification of Roads around venue'					
6	Streetscraping and beatification of roads around CWG Venue	PWD	242.01	187.88	Completed
7	Streetscraping and beatification of roads around CWG Venue	MCD	65.14	55.28	Completed
8	Streetscraping and beatification of roads around CWG Venue	NDMC	25.30	20.89	Completed
9	Road Signages	PWD	53.13	40.52	Completed
		Total	381.58		
Chapter- 5 Street lighting					
10	Street Lighting	PWD M1	51.18	42.42	Completed
11	Street Lighting	PWD M2	48.61	43.66	Completed
12	Street Lighting	PWD M3	55.15	47.43	Completed
13	Street Lighting	NDMC	34.40	34.32	Completed
14	Street Lighting	MCD Ph-I	34.53		Completed
15	Street Lighting	MCD Ph-II	61.98		Completed

		Total	280.85		
Chapter- 7 City Infrastructure Development : Road and Flyovers					
16	R R Kohli Marg Flyover		214.57	258.26	Completed
17	Ghazipur Flyover		199.79	175.79	Under Progress
18	Barapulla Elevated Road		433.71	451.35	Completed
19	UP Link Road		265.04	209.00	Completed
20	Road No. 56-Anand Vihar ISBT		140.53	193.76	Completed
21	Ring Road Bybass		409.45	157.64 127.49	Completed
		Total	1656.09		
Chapter- 8					
22	Restoration of Connaught Place C Block No.33/43/EE/CP dated 31-08-2007	NDMC	1.99	1.63	Completed
23	Restoration of facade of inner circle block	NDMC	15.64	10.44	Not Completed (66.75%)
24	Restoration of Facade (M).	NDMC	13.52	10.22	Not Completed (75.59%)
25	Restoration of facade G,H,K of CP	NDMC	12.20	7.99	Not Completed (65.49%)
26	Civil, structural & finishing works including electrical, fire fighting, fire detection, CCTV, works for service corridor in middle circle of Connaught Place.	NDMC	236.70	112.05	Not Completed (47.33%)
27	Civil structural, finishing & electrical works for new and existing subways in outer circle CP	NDMC	56.05	12.38	Not Completed (22.08%)
28	Area Development Works for inner and outer circle of CP	NDMC	35.93	14.81	Not Completed (41.22%)
29	Facade lighting works in C Block of CP for redevelopment of Connaught Place	NDMC	0.31	00.00	Not Completed (0.00%)
30	Civil structural & finishing works of toilets, Kiosk including electrical works for redevelopment of Connaught Place	NDMC	30.40	5.39	Not Completed (17.73%)
31	Supply, installation, testing & commissioning of escalators in new and existing subways in Connaught Place.	NDMC	34.08	3.10	Not Completed (9.09%)
32	Facade lighting works of CP	NDMC	4.28	1.19	Not Completed (27.80%)
33	Horticulture works & Drip irrigation for redevelopment of Connaught Place.	NDMC	00.87	0.59	Not Completed (67.81%)

34	Road signage works for redevelopment of CP.	NDMC	1.83	0.50	Not Completed (27.32%)
35	Payment of consultancy charges to M/s EIL	NDMC	48.08	16.27	-
		Total	483.88		
Chapter- 9 Other Infrastructure Development Activities					
36	220 KVA sub station at Ridge valley	DTL	90.05	117.18 (provisional)	Completed
37	220 KVA sub station at DIAL	DTL	99.00	99.73	Completed
38	Construction of 1 MGD WTP	DJB	35.20	26.80	Completed
39	Construction of 1 MGD STP	DJB	24.75	21.45	Completed
40	Park and Ride Facility at Safdarjung Airport New Delhi	NDMC	38.82	35.38	Second phase of dismantling of parking facility yet to be completed.
		Total	278.82		
		Grand Total	**3464.22**		

Annexes to Chapter 3

Annexure -3.1

Irregular framing of rate analysis

(₹ in lakh)

Type	Total no. of items cropped	No. of items test checked	Extra cost ₹ in lakh	
			Excess paid	Extra liability
Sports Facility Block				
Extra items	23	5	0	10.33
Substituted items	05	2	28.17	**0**
Deviated items	20	7	00	**5.41**
Additions/alterations work				
Extra items	20	5	87.88	**69.49**
Deviated items	17	2	0.99	**1.23**
TOTAL	**85**	**21**	**117.04**	**86.46**

Annexure 3.2

Statement showing where provisional EOT has been granted

(₹ in crore)

Sl. No.	Venue	Name of work	Name of contractor/consultant	Tendered amount (In crore)	Stipulated date of completion	Reported date of completion	Delay in completion (in months/days)	Provisional EOT granted upto	Short withholding amount for penalty (₹ in crore)	What we observed
1.	Talkatora stadium	Addition / alteration of stadium	M/s Simplex Projects Ltd.	19.19	26.04.09	19.04.10	355 days	31.1.10	1.85	Though there were no noticeable hindrances, the work continued to be executed beyond the stipulated date without provisional extension. As per clause 2 of contract, penalty @ 1.5 *per cent* per month subject to a maximum of 10 *per cent* (₹ 1.92 crore) of the tendered cost was leviable but only ` 6.85 lakhs was withheld and no action for levy of penalty for delayed completion of work was taken. In reply NDMC stated that the case for levy of penalty or other wise would be dealt with on merit basis once the works are completed and sufficient amount is available in the form of security deposit, part rate of work. Reply is not acceptable as withheld amount was insufficient against penalty due to be recovered. There is no justification in waiting for completion of work for levy of penalty.
2.	Talkatora Indoor Stadium	Construction of new sports facility block	M/s Simplex Projects Ltd.	52.98	13.06.09	16.06.2010	367 days	31.5.10	3.60	As per clause 2 of contract, penalty @ 1.5 *per cent* per month subject to a maximum of 10 *per cent* (₹ 5.29 crore) of the tendered cost was leviable but only ₹ 1.69 crore was withheld

3.	Shivaji Outdoor Stadium	Improvement / upgradation of the Stadium	M/s China Railway Shisiju Group Corporation	160.27	28.11.09	Work yet to complete.	22 months	30.09.2010	13.08	Even after counting completion period of 18 months from March 2009 (complete handing over site) to August 2010, we observed that uptill now (September 2011) works (civil & electrical) costing ₹95.93 crore only, were executed and paid . Hence, there was a delay of one year from September 2010 to September 2011 which is going to further increase as the venue is still not complete. The NDMC had however not levied any penalty on CRSGC for the delay in completion of work. Thus under clause 2 of the contract, a maximum penalty of ₹ 16.03 crore @10% of tender cost was required to be levied on the contractor for a delay over time limit whereas only ₹ 2.95 crore uptill now (September 2011) were withheld from RA bills of these works (civil & electrical). In reply it was stated that the case of levy of penalty would be processed on merit once the work was complete and that sufficient amount of security deposit / performance guarantee was available with NDMC. Reply was not acceptable as withheld deposit insufficient as against penalty due to be levied and recovered.
4.	Shivaji Outdoor Stadium	SITC of Integrated Security system	Electronic corporation of India	2.20	30.6.10	Work yet to complete	15 months	EOT not yet granted	0.22	Though the stadium is nearing completion but still the security system has not been installed .
								TOTAL	**18.75**	

Delay calculated as of 27.9.2011

Annexure 3.3: Items specified by Brand name/ Brand Name or Equivalent (Thyagaraj Stadium)

S. No	Package	Item No.	Nature of Item	Make/ brand approved	Rate per unit as per DE	Unit	Expenditure involved	Quantity Executed	Agreement Rate	Total expenditure involved	Country of Origin
1	Pkg-1	7.3	Construction Joints	Sika or equivalent	389	Rmt.	10,61,560	2917.89	389	1135059.21	Australia
2	Pkg-1	7.6	Joints seal(Expansion Joints)	Sika Flex Construction of Sika or equivalent make	1,833	Rmt.	15,59,007	1109.68	1833	2034043.44	Australia
3	Pkg-1	8.3.2	Fixer/Fixing of insert plates	Hilti HVU or equivalent	3,800	each	7,60,000	200	3800	760000	Indian
4	Pkg-1	8.3.1	Fixing of insert plates	Hilti HVU or equivalent	2,230	each	4,46,000	200	2230	446000	Indian
5	Pkg-1	9.1	Roofing	KALZIP AF 65/537 or equivalent	5,628	Sqm	8,10,39,600	10928.07	5628	61503177.96	Germany
6	Pkg-1	9.3	Roofing	Titan Primalite polycarbonate sheet	3,483	Sqm.	1,65,51,216	8737.75	3483	30433583.25	China
7	Pkg-2	3.4	Carpet Tiles	Milliken or Trans-Asia or equivalent	5,464	Sqm.	82,01,914	1496.99	6393.23	9570601.378	USA
8	Pkg-2	3.5 sch B (II)	Floor tiles	Deutsche Steinzeug (USA) or equivalent	1,962	Sqm	27,39,022	1015.41	2295.59	2330965.042	USA
9	**Pkg-2**	**4.1**	**Cladding 4mm thick Aluminium composite panels**	**ALUCOBOND A2 or equivalent***	**4,635**	**sqm**	**2,06,27,753**	**3713.27**	**5423.47**	**20138808.45**	**China**
10	Pkg-2	5.32	Toilet Partition	Merino 'Titan Series'	62,369	Each	1,17,25,363	180	72971.67	13134900.6	Hong Kong (China)
11	**Pkg-2**	**9.1**	**Aluminium Composite Panel**	**ALUCOBOND A2 or equivalent***	**12,648**	**Sqm.**	**1,04,34,518**	**438.77**	**14798.04**	**6492936.011**	**China**
12	Pkg-2	9.15	Wooden blinds	MAC/Vista premium or equivalent	6,244	Sqm.	1,03,02,270	1178.46	7305.24	8608933.13	Australia
13	**Pkg-2**	**9.9**	**Suspended ceiling comprises of 4 mm thick Aluminium composite panel**	**ALUCOBOND A2 or equivalent***	**4,109**	**Sqm.**	**81,55,968**	**1745.89**	**4807.29**	**8392999.538**	**china**
14	Pkg-2	9.11(a)	9mm thick acoustical	Sonapanel make or equivalent	4,495	sqm	3,02,04,384	5160.67	5258.79	27138879.79	Australia

S. No	Package	Item No.	Nature of Item	Make/ brand approved	Rate per unit as per DE	Unit	Expenditure involved	Quantity Executed	Agreement Rate	Total expenditure involved	Country of Origin
			perforated Timber Sheet- Acoustical perforated Timber sheet- False ceiling								
15	Pkg-2	9.11(b)	9mm thick acoustical perforated Timber sheet -Acoustical perforated Timber sheet -Wall panelling	Sona panel make or equivalent	4,437	Sqm	40,81,672	678.7	5290.82	3590879.534	Australia
16	Pkg-2	1.01 (Sch-D)(a)	-Hall model wall hung WC -concealed Dual flush cistern -actuator plate (high line)	-Roca - Duravit	44,432	Each	4,88,752	11	50652.48	557177.28	Roca-Spain, Duravit-Germany
17	Pkg-2	1.01(b)	-DAMA SENSO wall hung WC -Concealed Dual flush cistern - Actuator plate (high line)	-Roca - Duravit -Geberit	34,890	Each	24,42,321	64	39774.94	2545596.16	Roca-Spain, Geberit-USA , Duravit-Germany
18	Pkg-2	1.01©	-GIRALDA wall hung W.C. -Concealed Dual flush cistern -Actuator plate (high line)	-Roca -Geberit -hindware / perryware	29,605	Each	16,28,300	58	33750.21	1957512.18	Roca-Spain, Geberit-USA
19	Pkg-2	1.03	Urinal basin with PVC 6 lts. auto flushing cistern	-Roca - Duravit	30,284	Each	14.53,678	47	34524.84	1622667.48	Roca-Spain , Duravit-

S. No	Package	Item No.	Nature of Item	Make/ brand approved	Rate per unit as per DE	Unit	Expenditure involved	Quantity Executed	Agreement Rate	Total expenditure involved	Country of Origin
											Germany
20	Pkg-2	1.13	Blower/ hand drayer	GEM or equivalent	21,365	Each	4,91,413	14	24357.01	340998.14	
21	Pkg-2	1.15 (Sch.-D)	Paper towel dispenser , Hand dryer, Waste paper bin	D-line	2,12,117	Each	55,15,042	24	241813.38	5803521.12	Denmark
22	Pkg-2	1.17	paper towel dispenser	D-line or equivalent	29,680	Each	5,63,938	14	33836.28	473707.92	Denmark
23	Pkg-2	1.18	Paper waste bin	D-line or equivalent	26,760	Each	6,14,246	14	30445.23	426233.22	Denmark
24	Pkg-2	1.04(b)	Wash basin -Mounting - Sensor	-Roca -Geberit -Jaguar	24,158	Each	2,17,429	9	26629.43	239664.87	Roca-Spain, Geberit-USA ,
25	Pkg-2	1.02	-Urinal basin -Sensor	-Roca - Jaguar	37,587	Each	75,175	2	40797.52	81595.04	Roca-Spain
26	Pkg-2	4.8	Light points	Aco drain	23,363	Each	28.03,596	72	26,634	1917659.52	USA
				Total (`)			22,41,84,137			21,16,78,100.30	
				Total (` Crores)			**22.42**			**21.17**	

Items not executed

S. No.	Package #	Item No.	Nature of Item	Make/ brand approved	Rate per unit as per DE	Unit	Expenditure involved	Quantity Executed	Agreement Rate	Total expenditure involved	Country of Origin
27	Pkg-1	7.5	fixing clips(Expansion Joints)	Sika or equivalent	1,111	Rmt.	9,65,459	Not Executed	0	0	Australia
28	Pkg-2	3.2 of Sch B(II)	Vinyl flooring	ALTRO or equivalent	7,627	sqm	62,92,275	Not executed	0	0	UK
29	Pkg-2	3.13	Water repellent anti fungal coating	Sika or equivalent	407	sqm	44,95,223	Not executed	0	0	Australia
30	Pkg-2	4.2	Terracotta Tiles on wall with horizontal aluminium rails fasten to walls	Terreal make or equivalent	5,657	sqm.	26,58,555	Not executed	0	0	N.A
31	Pkg-2	10.4	Anti damp coating	Nano	119	Sqm	41,80,000	Not executed	0	0	N.A.
	Grand Total						**24,27,75,649**				

***Executed as equivalent brand.**

Annexure 3.4

Statement showing extra/deviated/substituted item in the work

Sl. No	Venue	Name of work	Name of contractor/ consultant	Tendered amount (₹ in crore)	Extra items (₹ in crores)	Substituted items (₹ in crores)	Deviated items (₹ in crores)	Reasons given to audit	What we observed
				PWD					
1	Thayagraj Sports complex	Package-I (Basic Structure)	M/s JMC Project(I) Ltd.	103.96	0.22		30.19 (+ & - both)	Change in column design from steel to RCC and as per site requirement	No comment
2	Thayagraj Sports complex	Package-II	M/s JMC Project(I) Ltd.	108.80	5.31	-		As per site requirement	No comment
3	Chhatrasal Stadium	Development of Athletic training venue (athletic track 400 mt. x 8 lane)for Commonwealth Games-2010	M/s Era Infra Engineering Ltd.	60.26	0.87	-	-	As per site requirement	No comment
4	Ludalow Castle	C/o wrestling Training Venue at Ludalow castle School No. 1 Delhi.	M/s Arora Constructio n Co. (P) Ltd.	11.25	0.30	-	-	As per site requirement	No comment
				NDMC					
5	Talkatora stadium	Additions/alteration of Indoor stadium	M/s Simplex Projects Ltd	19.19	5.80	1.91	0.53	As per site requirement	• Lack of foresight in planning,execution,time management,co-ordination with different agencies • Excess payment of ₹ 0.82 crore on substituted item of stadium chairs has been commented in para 5.2.3.3 • Excess payment due to incorrect framing of rate analysis and payment at higher rates to contactor before sanction of rates has been commented in para 5.2.3.4 & 5.2.3.5

Sl. No	Venue	Name of work	Name of contractor/ consultant	Tendered amount (₹ in crore)	Extra items (₹ in crores)	Substituted items (₹ in crores)	Deviated items (₹ in crores)	Reasons given to audit	What we observed
6	Talkatora stadium	Construction of new Sports Facility Block with basement parking	M/s Simplex Projects Limited	52.98	2.63	6.43	3.38	As per site requirement	• Lack of foresight in planning, execution time management, co-ordination with different agencies • The substituted items include glazed curtain wall system/space frame glazing system provided at a extra avoidable cost of ₹ 2.73 crore which was not in accordance with green building certification norms. Further excess payment of ₹ 0.59 crore was also made due to incorrect framing of rate analysis as commented in para 5.2.3.4. • Avoidable expenditure of ₹ 1.55 crore on lean concrete has been commented in para 5.2.3.6
7	Shivaji stadium	Improvement/up-gradation of the stadium as a composite work	M/s China Railway shisiju group corporation	160.27	-	-	9.62	As per site requirement	Deviations (additional quantity beyond deviation limit of 20% of agreement quanitity) occurred due to inadequate survey and improper planning/ time management.
Total				**516.71**	**15.13**	**8.34**	**43.72**		

Annexure 3.5

REBUTTAL ON CROPPING UP OF EXTRA ITEM DUE TO INCORRECT PREPARATIONOF ESTIMATES BY ARCHITECT CONSULTANT

(₹ in crore)

Type of item	Item description	Quantity	Rate	Cost	Reason put forth by NDMC	Audit Rebuttal
Talkatora Indoor stadium addition/alteration work						
Extra item	No.6 ACP for HVAC	860.32	14500	1.25	Item in the estimate was covering HVAC duct with gypsum board which was not structurally safe	How it was not safe not clarified. Further if it was so the same why it was inserted in the estimate.
Extra item	No.10 ACP for column	1180.48	10000	1.18	The item was suggested to increase lobby space	The suggestion should have been given in estimate so as to prevent payment at market rate later.
Extra item	N0.10 Alu.truss	1	5785812	0.58	Motorised frame of Alu.truss was given as per internation practice	Other stadia constructed under CWG 2010 do not have such structure.The idea was very expensive and inconvenient as Alu truss is hanging on Space frame which is suspended with angle of old space frame for which cat walk was also closed.
	Talkatora new sports facility block					
Substituted	Str.glazed curtainwall system item No.92	2762.57	18135.54	5.01	It was adopted as per green building norms,heat reflective,prevents injury if broken	Earlier glass was also heat reflective, as no event were to be held in Facility block, probability of breaking glass was remote. It did not fulfill green building criteria No.13 of CPWD OM dated 16.3.09
	Str.glazed curtainwall system item No.95	707.28	15000	1.06	do	Do
Extra item	No.8 lean concrete	3975.9	2000	0.80	It was proposed to provide solid base which was not possible by Mech.means	The lean concrete could also have been laid in situ instead of ready mix which was costlier items
Extra item	No.10 for cement mortar	3630	250	0.09	It was required to be proposed as per manufactures of tiles specification	Chequerrd tile is a routine item of DAR item No.11.20.1 to 11.20.4 which prescribes 20mm mortar for fixing it, hence reason is not convincing
			TOTAL	**9.97**		

Annexes to Chapter 4

Annexure 4.1: Irregular Justification of the Quoted rates

(₹ in crore)

Name of the package	Estimated cost put to tender	Value of the tender	% of above/less quoted by L1	Justified cost computed by dept	% over the dept justified cost	Justified cost worked out by Audit *	% over actual justified cost
Roads around Yamuna Sports Complex	35.38	40.64	14.87	40.90	(-) 0.64	37.57	8.17
Roads around commonwealth Games Village	31.16	34.63	11.11	36.44	(-) 5	35.30	-1.9
Roads around IGI Stadium (Kishan Ghat)	16.38	19.94	21.77	**19.46**	(+) 3	16.99	17.36
Roads around IGI Stadium (Ashram to Bhairon Marg)	35.55	41.95	18	**41.82**	0	37.71	11.24
Roads around IGI Stadium (Bhairon Marg ITO)	28.45	31.01	9	34.92	(-) 11	30.44	1.87
Mall road from Delhi University to Chhatrasal Staddium	20.44	24.15	18.18	26.60	(-) 9	21.78	10.88
Dr Karni Singh shooting range	19.98	24.42	22.25	28.92	(-) 16	21.94	11.30
Roads around various games venues (Africa Avenue)	21.80	25.27	15.91	25.80	(-) 2	22.86	10.54
Total	**209.14**	**242.01**		**254.86**		**224.59**	

Annexure 4.2: Different rates for Horticulture Items

(₹ in crore)

Sl. No	Description of item	Minimum rate/ DSR rate	Unit	Rate adopted in the estimates	Diff	Percentage of excess	Quantity	Extra cost	Name of Packages where higher rates adopted
1	Supplying & stacking good earth	144.05 (Ashram to Bharon Marg)	Cum	234.84	90.79	63	50169	0.46	IGI stadium/ Yamuna Sports Complex
2	Removal of malba	61.19(DSR)	Cum	84.54	23.35	38	27396	0.06	IGI stadium/YSC
3	Maintenance. of shrub	56.15 (Ashram to Bharon Marg)	each/ year	98	41.85	75	50610	0.21	Delhi university to Chatrasal Stadium
4	Maintenance of shrub	56.15 (Ashram to Bharon Marg)	each/ year	63	6.85	12	145324	0.10	YSC/CWG village
5	Maintenance of ground cover/lawn	23.16 (Bhairon to ITO)	sqm/ year	36	12.84	55	19600	0.03	Delhi university to Chhatrasal Stadium/CWG
6	Providing/ planting Washingtonia palm	600 (Bhairon to ITO)	Each	2000	1400	233	600	0.08	CWG village
7	Providing/ planting Chloredendrum enermi	6 (Ashram to Bharon Marg)	Each	30	24	400	27230	0.07	Delhi university to Chhatrasal Stadium/CWG
9	Providing/ planting Ficus Panda	60 (Ashram to Bharon Marg)	Each	125	65	108	5439	0.04	IG Stadium
10	Providing/planting Ficus Panda	60 (Ashram to Bharon Marg)	Each	70	10	17	6824	0.01	CWG village/YSC
11	Providing/ planting Bougainvillea	22.05(DSR)	Each	60	37.95	172	7500	0.03	CWG village
	Total							**1.08**	

Annexure 4.3: Examples of high cost electrical items

Sl. No.	Work/Contractor	Specification/No of units	Unit cost as per Invoice	Unit Cost including all ancillary items	Estimated Unit rate (₹) put to Tender	Difference (₹)	Total extra cost with tender premium (₹)
1	Roads around IGI Stadium (Kisan Ghat) MBL	18 watt CFL with 1 metre steel body bollard/140	19352	22,537	27950	5413	9,22,797
2	Roads around IGI Stadium (Kisan Ghat) MBL	Trapez Pole of 9 metre height with four 140 watt cosmopolis lamp/6	2,81,343	3,25,270	4,53,910	1,28,640	9,39,870
3	Roads around IGI Stadium (Kisan Ghat)/MBL	Nemo Torch 150 watt metal halide lamp/20	1,92,435	2,24,020	4,29,978	2,05,958	50,15,901
4	Roads around IGI Stadium (Bharion Marg to ITO and Ashram to Bhairon Marg)/Sharma/ SAM India	T5 Light fixture ATL make with 2x28 watt with aluminium dia cast body/570	5100	6321	8371	2050	13,78,830
	Total						**82,57,398**

Annexes to Chapter 5

Annexure-5.1 : Excess expenditure on dual carriageway roads in Phase-I

(Amount in ₹)

Sll. No.	Name of Road	Carriage way	Road Width (m)	RD. length (km.)	Poles as per MB		Fittings as per MB		Act. cost of poles i/c foundation & cable	Poles required as per tech. spcn.	Cost	Difference
					12M	10M	400W	250W		12M		
1	DDU Marg	Dual	11.5 to 8.5	2.05	0	69	0	140	7135052	53	5,580,317	1,554,735
2	Jawahar Lal Marg - 2 **(150 W)**	Dual	28 to 9.5	1.82	29	48	52	48	6293765	47	4,948,583	1,345,182
3	Subhash Marg Footover Bridge to SPM Marg	Dual	24 to 8.5	2.29	47	42	66	97	8760919	59	6,212,051	2,548,868
4	Lodhi Road	Dual	19.94 to 9.8	1.96	0	72	0	135	7101576	50	5,264,450	1,837,126
5	Raja Dhir Sen Marg	Dual	9.4	1.9	0	61	0	122	3471388	49	2,924,761	546,627
6	BPM to Fourth Avenue	Dual	8 to 7.23	0.3	0	11	0	22	625988	9	537,201	88,787
7	Tamil Sangam Marg	Dual	10.7 to 9.3	2.25	0	77	0	157	4406516	58	3,461,962	944,554
8	Vivekanand Marg	Dual	15.3 to 8.2	1.77	0	66	0	128	3723128	46	2,745,694	977,434
9	Harshukh Marg	Dual	11.4 to 5.6	3.08	0	102	0	204	5804616	78	4,655,742	1,148,874
10	Major Som Nath Marg	Dual	11.7 to 9.4	1.5	0	52	0	108	2992016	39	2,327,871	664,145
11	Asaf Ali Road	Dual	14 to 6	1.5	0	51	0	97	2861308	39	2,327,871	533,437
12	Ranjit Singh Road Turkan Gate	Dual	11.1 to 7.02	0.59	0	20	0	40	1138160	16	955,024	183,136
13	Azad Pur to Najafgarh Road **(Hexagonal poles)**	Dual	17.2 to 6.6	3.09	0	96	0	190	5446768	79	4,715,431	731,337
14	Gurmandi Najafgarh Drain to Clock	Dual	13 to 8	1.03	0	35	0	70	1991780	27	1,611,603	380,177

	Tower											
15	Inderchander Shastri Marg and Satyawati Marg	Dual	10.48 to 9.07	1.6	0	57	0	106	3178156	41	2,447,249	730,907
16	D.B. Gupta Road (Faiz Road to Flyover)	Dual	13.5 to 7.7	1.6	0	57	112	0	3339356	41	2,447,249	892,107
17	Mangal Pandey Road	Dual	9 to 8	1.55	0	54	0	106	3056632	40	2,387,560	669,072
18	Goswami Tulsidass Marg	Dual	9.5	1.56	0	55	0	107	3105340	40	2,387,560	717,780
19	Rama Nagar I	Dual	13.3 to 8.4	1.45	0	44	0	86	2487552	38	2,268,182	219,370
20	Road No.34 from Moti Nagar to Ring Road	Dual	11.41 to 10.3	1.03	0	55	0	84	2916740	27	1,611,603	1,305,137
21	Major Rajeev Lal Marg	Dual	8	0.86	0	30	0	59	1699040	23	1,372,847	326,193
22	Vishal Cinema Road	Dual	10.4 to 8.8	0.63	0	44	0	88	2503952	17	1,014,713	1,489,239
23	Dr. Krishanan Marg	Dual	13 to 11	0.9	0	40	0	70	2194320	24	1,432,536	761,784
24	Pusa Road	Dual	14 to 12.8	2.66	0	137	0	137	6672996	68	4,058,852	2,614,144
25	New Rohtak Road	Dual	19.2 to11.6	3.2	0	108	0	218	6162464	81	4,834,809	1,327,655
26	Faiz Road to Anand Prabhat (D.B. Gupta Road)	Dual	13.55 to 9.32	1.97	0	64	0	128	3642112	51	3,044,139	597,973
27	Jail Road	Dual	19.9 to 6	2.57	0	105	0	184	5762140	66	3,939,474	1,822,666
28	JKP Road Jail Road to Pankha Road	Dual	15.2 to 9.4	2.53	0	86	0	173	4902288	65	3,879,785	1,022,503
29	Jaipur Golden	Dual	6.5	1	0	29	0	58	1650332	26	1,551,914	98,418
30	GT Road from Y Point to Flyover	Dual	14.67 to 8.5	4.2	43	65	216	0	6395647	106	6,327,034	68,613
31	Rama Road-II	Dual	9	1.72	0	65	0	119	3608820	44	2,626,316	982,504
	Total			**56.2**	**119**	**1897**	**446**	**3281**	**125,030,867**	**1447**	**95,900,383**	**29,130,484**
	Additional cost Allowance of 10 *per cent* for extra poles requirement for curves, crossings, circulas etc										**9,590,038**	

Excess Expenditure = 19,540,446 (95,900,383 + 9,590,038 – 125,030,867)

Annexure-5.2 : Excess expenditure on dual carriageway roads in Phase-II

(Amount in ₹)

Sl. No.	Name of road	Carriage way	Road witdth	Road length (km)	No. of poles		Fittings		Actual cost	No. of poles as per tech. spec.	Cost	Difference
					12M	10M	400W	250W				
1	Baba Gagan Nath Road	Dual	12.3	1.95	30	58	157	0	7,735,500	50	4,830,000	2,905,500
2	Hansraj Gupta Road Marg	Dual	12 to 16	2.2	90	21	90	42	5,783,250	56	3,393,600	2,389,650
3	Maharaja Aggarsen Marg	Dual	6.8 to 6.2	1.5	0	81	0	154	4,330,250	39	2,363,400	1,966,850
4	Patpar Gang (Khichri Pur) Road	Dual	8.5 to 8	1.5	0	78	0	160	4,263,500	39	2,363,400	1,900,100
5	Ch. Balbir Singh & Club Road	Dual	10.2 to 9.4	1.5	0	78	0	156	4,231,500	39	2,363,400	1,868,100
6	Muni Maya Ram Jain Marg	Dual	6.8 to 6.3	1.2	0	57	0	91	2,908,250	31	1,878,600	1,029,650
7	Nandi Vidhi Marg	Dual	9.5	0.5	0	27	0	42	1,368,750	14	848,400	520,350
8	E.P.D.P. Road	Dual	8.1 to 7.1	1.8	0	62	0	117	3,307,500	46	2,787,600	519,900
9	Vashist Kumar Gullar Marg	Dual	8.6 to 8.7	1.2	0	43	0	86	2,332,750	31	1,878,600	454,150
10	Pandit Lekh Ram Sharma & Madhav Marg	Dual	8.4 to 8.9	1.5	0	51	0	102	2,766,750	39	2,363,400	403,350
11	Gyan Shakti Marg	Dual	9.7 to 8.8	1.2	0	42	0	84	2,278,500	31	1,878,600	399,900
12	Ch. Joginder Singh Marg	Dual	8.5 to 8	1.2	0	41	0	81	2,216,250	31	1,878,600	337,650
13	Guru Govind Singh College Road (Rohini)	Dual	6.4 to 6.4	2	0	65	0	117	3,422,250	51	3,090,600	331,650
14	Ch. Jhandu Singh Marg	Dual	9.8 to 9.4	1	0	35	0	70	1,898,750	26	1,575,600	323,150
15	Stadium Road (Chattrsal Stadium)	Dual	8.7 to 7.8	0.65	0	23	0	46	2,052,750	18	1,738,800	313,950
16	Shaheed Udham Singh Marg	Dual	10.5	1.48	0	48	0	96	2,604,000	38	2,302,800	301,200
17	Sadar Thana Road	Dual	10.2 to 11.5	1.7	0	54	0	110	2,945,500	44	2,666,400	279,100
18	Ram lal Kapoor Marg	Dual	10 to 8.3	1	0	34	0	68	1,844,500	26	1,575,600	268,900

19	T. Sohan Lal Marg	Dual	9.5 to 10	0.7	0	26	0	52	1,410,500	19	1,151,400	259,100
20	Shanker Road	Dual	15.5	1.65	11	42	11	84	2,846,100	43	2,605,800	240,300
21	Faiz Road	Dual	7.7 to 8	0.5	0	20	0	39	1,077,000	14	848,400	228,600
22	Mall Road (C Block to JP Road)	Dual	8.2 to 8	0.6	0	22	0	44	1,193,500	16	969,600	223,900
23	H-Block Vikaspuri	Dual	8.7 to 9	1	0	33	0	67	1,798,250	26	1,575,600	222,650
24	Pardeshwar Mandir Marg	Dual	10.7 to 9.8	1	0	33	0	66	1,790,250	26	1,575,600	214,650
25	Lala Anchit Ram Road	Dual	9.3 to 9.6	1	0	33	0	66	1,790,250	26	1,575,600	214,650
26	S. Manohar Singh Marg	Dual	9 to 9	1	0	33	0	66	1,790,250	26	1,575,600	214,650
27	Ram Nath Vij Marg (Link Road)	Dual	7.5 to 7.6	1.8	0	58	0	96	2,986,500	46	2,787,600	198,900
28	Kalka Devi & Spring Road	Dual	8.5 to 10.5	1.7	0	53	0	104	2,859,250	44	2,666,400	192,850
29	Gulab Singh Marg and Satyawati Colg.	Dual	10.2 to 10.6	3	0	88	0	176	4,774,000	76	4,605,600	168,400
30	Major Deepak Tyagi Marg	Dual	7.5 to 8.5	1	0	32	0	64	1,736,000	26	1,575,600	160,400
31	Rly Road, Vivek vihar	Dual	8.5 to 8	2	0	56	0	115	5,074,500	51	4,926,600	147,900
32	Maharishi Dynand Marg	Dual	9.7 to 7.8	0.4	0	15	0	30	813,750	11	666,600	147,150
33	Ram Mandir Marg	Dual	7.5 to 7	0.9	0	29	0	60	1,589,250	24	1,454,400	134,850
34	Dharam Marg (B-1 Road)	Dual	9.5 to 9.5	1.5	0	46	0	92	2,495,500	39	2,363,400	132,100
35	Guru Virjanand Marg	Dual	9 to 9	1.5	0	45	0	95	2,481,250	39	2,363,400	117,850
36	C-5,C-Block Road Janak Puri (Lal Singh Marg to Pankha Road	Dual	8.1 to 7.5	1.7	0	51	0	104	2,782,750	44	2,666,400	116,350
37	Geetanjali Road	Dual	8.6 to 8.6	2	0	59	0	118	3,200,750	51	3,090,600	110,150
38	Jhulle Lal Marg	Dual	6.5 to 6.3	1.3	0	40	0	80	2,170,000	34	2,060,400	109,600
39	Ch. Mangey Ram Marg (Lawrence Road)	Dual	10 to 12	0.3	0	12	0	24	651,000	9	545,400	105,600
40	Shiv Mandir marg (Punjabi.Bagh)	Dual	7.5 to 8	0.7	0	23	0	46	1,247,750	19	1,151,400	96,350
41	Chitra Gupta Road	Dual	9.8 to 9.5	0.7	0	23	0	46	1,247,750	19	1,151,400	96,350

42	Mota Singh Marg	Dual	7.5 to 7.5	1.1	0	34	0	68	1,844,500	29	1,757,400	87,100
43	Pritampura Road	Dual	9.2 to 6.5	1.1	0	34	0	68	1,844,500	29	1,757,400	87,100
44	Ayyapa Road	Dual	9.6 to 9.1	0.8	0	25	0	50	1,356,250	21	1,272,600	83,650
45	Jahanara Road (Parsad Road)	Dual	7.1 to 7.9	0.9	0	28	0	56	1,519,000	24	1,454,400	64,600
46	CV Raman Marg	Dual	8.1	2.3	0	67	0	133	3,626,750	59	3,575,400	51,350
47	Distt center to check post	Dual	9.5	0.65	0	21	0	42	1,139,250	18	1,090,800	48,450
48	Shaheed Capt Anuj Nayyar Marg	Dual	8.2 to 8.9	0.7	0	22	0	44	1,193,500	19	1,151,400	42,100
49	Sir Ganga Ram Hospital Marg	Dual	7.5 to 7.6	1.2	0	37	0	62	1,911,250	31	1,878,600	32,650
50	Swami Dayanand Marg (Lawrance Road)	Dual	9.2 to 8	0.8	0	24	0	48	1,302,000	21	1,272,600	29,400
51	Sudhir Bose Marg	Dual	8.6 to 6.5	0.6	0	19	0	34	998,750	16	969,600	29,150
52	Amar Shahid lala Lajpat Marg	Dual	7.7 to 8.3	0.25	0	9	0	18	488,250	8	484,800	3,450
53	Saraswati Marg	Dual	6.2 to 6.3	0.4	0	12	0	24	651,000	11	666,600	-15,600
54	Archna Cinema road GK-1	Dual	17 to 20	0.4	0	12	0	24	651,000	11	666,600	-15,600
55	Ranjeet Singh Marg (Expended)	Dual	8.5 to 8.3	0.1	0	4	0	8	217,000	4	242,400	-25,400
56	Govind Lal Sikka Marg	Dual	7.7 to 6.5	0.5	0	15	0	30	813,750	14	848,400	-34,650
57	Varun Marg	Dual	8.5 to 9.3	0.2	0	6	0	12	325,500	6	363,600	-38,100
58	Ravi Dass Marg	Dual	10.6 to 10.4	0.5	0	15	0	29	805,750	14	848,400	-42,650
59	St Kirpal Sgh & Polo Marg	Dual	9.5 to 9.5	1	0	28	0	56	1,519,000	26	1,575,600	-56,600
60	Udyog Nagar (Piragadhi Road)	Dual	6.5 to 6.6	0.12	0	3	0	6	162,750	4	242,400	-79,650
61	Shaheed Majar P. Shri Kumar Marg (JKP)	Dual	8.9 to 8	1	0	27	0	56	1,480,750	26	1,575,600	-94,850
62	Bhagwan Mahavir Marg	Dual	9.5 to 8.5	0.7	0	19	0	38	1,030,750	19	1,151,400	-120,650
63	Bhama Shah & Pameri Marg	Dual	9 to 9	1.5	0	40	0	80	2,170,000	39	2,363,400	-193,400

64	Keshav Pur CRPF Road (Vikas Puri)	Dual	8.5 to 7.2	0.7	0	16	0	33	876,000	19	1,151,400	-275,400
65	2nd & 5th Avenue Road	Dual	9.5 to 11	1.1	0	29	0	55	2,511,750	29	2,801,400	-289,650
66	N.D. Kapoor Marg	Dual	6.3	1.25	0	32	0	64	2,856,000	33	3,187,800	-331,800
67	Swami Sardhnanand Marg	Dual	10.2 to 9.3	1.5	0	37	0	74	2,007,250	39	2,363,400	-356,150
68	Kingsway Camp Road (up to drain)	Dual	7.6 to 8.1	1.3	0	31	0	63	1,689,750	34	2,060,400	-370,650
	Total				**131**	**2416**	**258**	**4631**	**145,088,600**	**1980**	**126,504,000**	**18,584,600**
	Additional cost Allowance of 10 *per cent* for extra poles requirement for curves, crossings, circulars etc										**12,650,400**	

Excess Expenditure = 5,934,200 [145,088,600 – (126,504,000 + 12,650,400)]

Annexure 5.3 - Suspected alteration of bids in MCD

Apparent post tender alterations of M/s Sweka Power Tech Engineers Pvt. Ltd. in Phase-I

Item No., particulars	Quantity	Rate before correction	Rate after correction	Increase in quoted amount
1. SITC[1] of 12m PU poles	60	32,149	42,149	6,00,000
2. SITC of 12m galvanised poles	1813	28,358	38,358	0 *
3. SITC of 10m poles	910	23,974	28,974	45,50,000
21. Supplying & Laying (DWC) HDPE pipe (90mm dia)	115000	215	315	1,15,00,000
22 (a),S &L XLPE, Alu armoured cable	165000	185	285	1,65,00,000
1 % discount on 31,22,22,858			----	31,22,229

** The amended rate of 38358 was not accepted by MCD, as there was difference in the figure in digits and in words*

Annexure 5.4 - Apparent post tender alterations of M/s Sweka Power Tech Engineers Pvt. Ltd. In Phase-II

Item No. particulars	Quantity	Rate before correction	Rate after correction	Difference in Amount	Remarks
22, Supplying & Laying HDPE pipe	212382	200	260	1,27,42,920	All three corrections are on one page of SoQ. Certificate at the bottom of page reads-"no cutting and one overwriting attested" whereas correction at item no 23(a) only is attested but not encircled by the tender opening officer. Other two corrections at item no 22 and 24 are neither encircled nor attested.
23(a), XLPE conductor 4cX 25 Sq.mm	246525	141	141	-	
24, Supplying & Laying HDPE by trenchless technique	20680	638	1638	2,06,80,000	

Annexes to Chapter 8

Annexure 8.1: Statement showing contract cost of components and total contract cost of the project

(₹ in crore)

Sl. No.	Particulars	Contractor	Date of work order	Contract Value	Stipulated period for completion	Expenditure till January 2011	Percentage of expenditure to tendered cost	Expenditure till August 2011
1	Restoration of Connaught Place C Block No.33/43/EE/CP dated 31-08-2007	M/s Devi Construction	31/08/2007	1.99	28-02-2008 Work actually complete on 10-08-2008	1.63	Work completed	1.63
2	Restoration of facade of inner circle block	M/s Rajwant Singh Contract	06/04/2009	15.64	05/04/2010	9.87	66.75	10.44
3	Restoration of Facade (M).	M/s Himcon Engineering	13/07/2009	13.52	Do	9.93	75.59	10.22
4	Restoration of facade G,H,K of CP	Contractor M/s Sharma Construction (M/s Raus Infras Ltd.	26/07/2009	12.20	20/05/2010	6.97	65.49	7.99
5	Civil, structural & finishing works including electrical, fire fighting, fire detection, CCTV, works for service corridor in middle circle of Connaught Place.	M/s Afcons sterling and Wilson consortium	04/11/2009	236.70	03/05/2011	88.68	47.33	112.05
6	Civil structural, finishing & electrical works for new and existing subways in outer circle CP	M/s ERA Infra Engineering Ltd.	05/11/2009	56.05	04/03/2011	12.38	22.08	12.38
7	Area Development Works for inner and outer circle of CP	SCG Contracts India Pvt. Ltd.	22/01/2010	35.93	21/10/2010	11.72	41.22	14.81
8	Facade lighting works in C Block of CP for redevelopment of Connaught Place	M/s Reiz Electro controls Pvt. Ltd.	25/02/2010	0.31	17/05/2010	0.00	0.00	00.00
9	Civil structural & finishing works of toilets, Kiosk including electrical works for redevelopment of Connaught Place	M/s Himcon Engineers India Pvt. Ltd.	11/03/2010	30.40	10/10/2010	4.87	17.73	5.39
10	Supply, installation, testing & commissioning of escalators in new and existing subways in Connaught Place.	M/s Johnson Lifts Pvt. Ltd.	22/04/2010	34.08	21/04/2011	0.00	9.09	3.10
11	Facade lighting works of CP	M/s Bajaj Electrical	16/06/2010	4.28	29/08/2010	0.00	27.80	1.19

		Limited						
12	Horticulture works & Drip irrigation for redevelopment of Connaught Place.	M/s RIC Project Pvt. Ltd.	27/07/2010	00.87	17/09/2010	0.18	67.81	0.59
13	Road signage works for redevelopment of CP.	M/s CBM Industries Limited	26/07/2010	1.83	25/10/2010	0.50	27.32	.50
14	Payment of consultancy charges to M/s EIL		21/05/2008		20/11/2010	16.27		16.27
	Total			**443.8**		**163.00**	**40.62**	**196.54**

Annexure 8.2

STATEMENT SHOWING UPDATED COST OF CONSTRUCTION MATERIALS

Sl. No.	Details	Unit	EIL rates	CPWD DSR 2007 rates	Average of price indices from 4/07 to 10/07	Price index for 1/2010	*Per cent* increase	Updated cost	Differ-ence	*Per cent* inflation
1	Cement	MT	4960	4500	215.33	207.1	-3.82	4328	632	14.04
2	Coarse Aggregates	cum	1059	700	213.4	250.5	17.39	822	237	33.90
3	Coarse sand	cum	1059	600	213.4	250.5	17.39	704	355	59.11
4	Bricks	1000 nos	2600	1900	213.4	250.5	17.39	2230	370	19.46

Annexure 8.3

STATEMENT SHOWING EXTRA COST DUE TO INFLATED MATERIAL RATES IN ESTIMATED COST

Sl. No.	Item no. of BOQ	Item in brief	Unit	Quantity	Reference DAR VOL-I	Mortar co-efficient	Cofficient	Effective co-efficient	Estimated consumption (MT)	Extra cost @ ₹ 632/MT
		CEMENT								
1	2.1	Providing and laying PCC 1 : 4 : 8	cum	5037	4.1.8	1	0.17	0.17	856.29	541175
2	2.2	Providing and laying PCC 1 : 2 : 4	cum	1353	4.2.3	1	0.32	0.32	432.96	273631
3	2.3	Providing and laying ready mixed concrete manufactured M - 30 grade	cum	2505	5.34.1	1	0.42	0.42	1052.1	664927
4	3.1	Providing and laying brick work	cum	118.6	6.3.1,3.11	0.25	0.25	0.0625	7.4125	4685
5	4.3	Providing and laying 100 mm cement concrete 1:2:4 TREMIX (7312sqm x0.100 m)	cum	731.2	4.2.3	1	0.32	0.32	233.984	147878
6	4.4	Providing and laying approved shade sand blast granite slabsin floors, risers, claddings (basic rate ` 2220, including cartage and VAT)	sqm.	32134.6	3.8	0.144	0.51	0.07344	2359.963555	1491497
7	4.5	Providing and laying apprroved shade granie slabs in floors, risers, claddings (Basic rate ` 1800/- including cartage and VAT)	sqm.	1875	3.8	0.144	0.51	0.07344	137.7	87026
8	4.6	Providing and laying round cobble stone to the required grade camber and shape (10 cm	sqm.	1769	3.8		0.51			

		dia and 10 cm high granite cobble stone)								
9	4.9	Providing and fixing 50 mm thick gang saw cut rubbed sand stone 20 mm 1:5 Cement	sqm.	8959	3.1, 12.23.1.1	0.017	0.31	0.00527	47.21393	29839
		TOTAL (A)								3240658
		SAND					Cofficient	Effective co-efficient	Estimated consumption(cum)	Extra cost @ ₹355/cum
10	2.1	Providing and laying PCC 1 : 4 : 8	cum	5037	4.1.8	1	0.47	0.47	2367.39	840423
11	2.2	Providing and laying PCC 1 : 2 : 4	cum	1353	4.2.3	1	0.445	0.445	602.085	213740
12	2.3	Providing and laying ready mixed concrete manufactured M - 30 grade	cum	2505	5.34.1	1	0.425	0.425	1064.625	377942
13	3.1	Providing and laying brick work	cum	118.6	6.3.1,3.11	0.25	1.07	0.2675	31.7255	11263
14	4.3	Providing and laying 100 mm cement concrete 1:2:4 TREMIX(7312sqm x0.100 m)	cum	731.2	4.2.3	1	0.445	0.445	325.384	115511
15	4.4	Providing and laying approved shade sand blast granite slabsin floors, risers, claddings (basic rate ` 2220, including cartage and VAT)	sqm.	32134.6	3.8	0.144	1.07	0.15408	4951.296086	1757710
16	4.5	Providing and laying apprroved shade granie slabs in floors, risers, claddings (Basic rate ₹1800/- including cartage and VAT)	sqm.	1875	3.8	0.144	1.07	0.15408	288.9	102560
17	4.6	Providing and laying round cobble stone to the required grade camber and shape (10 cm dia and 10 cm high granite cobble stone)	sqm.	1769	3.8		1.07	0	0	0

18	4.9	Providing and fixing 50 mm thick gang saw cut rubbed sand stone 20 mm 1:5 Cement	sqm.	8959	3.1, 12.23.1.1	0.017	1.07	0.01819	162.96421	57852
		TOTAL (B)								**3477001**
		COARSE AGGREGATES					Cofficient	Effective co-efficient	Estimated consumption(cum)	Extra cost @ ₹ 237/cum
19	2.1	Providing and laying PCC 1 : 4 : 8	cum	5037	4.1.8	1	0.89	0.89	4482.93	1062454
20	2.2	Providing and laying PCC 1 : 2 : 4	cum	1353	4.2.3	1	0.89	0.89	1204.17	285388
21	2.3	Providing and laying ready mixed concrete manufactured M - 30 grade	cum	2505	5.34.1	1	0.85	0.85	2129.25	504632
22	4.3	Providing and laying 100 mm cement concrete 1:2:4 TREMIX(7312sqm x0.100 m)	cum	731.2	4.2.3	1	0.89	0.89	650.768	154232
		TOTAL (C)								2006707
23		BRICKS					Cofficient	Effective co-efficient	Estimated consumption(cum)	Extra cost @ ₹ 0.37 each
24	3.1	Providing and laying brick work (TOTAL D)	cum	118.6	6.3.1,3.11	0.25	494	123.5	14647.1	**5419**
		GRAND TOTAL (A+B+C+D)								**8729786**

Annexure 8.4

Rate Analysis for Item No.11.27	As per EIL estimate				As per Audit calculation			
Details	**Quantity**	**Unit**	**Rate/unit**	**Amount**	**Quantity**	**Unit**	**Rate/unit**	**Amount**
Material								
Granite- 18 mm thick	11.5	sqm	1816.43	20888.95	11.5	Sqm	1800	20700
150/sqft + 12.5 % VAT								
Granite = 10.00 sqm								
Wastage 15% = 1.50 sqm.								
11.50 sqm.								
Cartage - 2 % and L&UL - 2 %		LS		83.56		LS	0	0
20 mm thick cement mortar 1:4								
(1C:4 CS) - 3.9	0.224	cum	3205.11	717.94	0.224	Cum	3205.11	717.94
Cement Slurry @ 4.4 Kg/sqm.	0.05	mt	4960	248	0.05	Mt	4960	248
Carriage of Granite	26.91	LS	1.13	30.41	26.91	LS	1.13	30.41
Pigment @ 3.5 Kg/50 Kg of cement								
Used in Slurry for joints	0.53	kg	60	31.92	0.53	Kg	60	31.92
c/o pigment	0.91	time	1.13	1.03	0.91	Time	1.13	1.03
using white cement	0.01	MT	6000	45.6	0.01	MT	6000	45.6
instead of grey cement slurry								
stainless steel clamps	10	Nos	45	450	10	Nos	45	450
Labour								
Mason-I	14	Day	270	3780	3	Day	270	810
Beldar	6.5	Day	172	1118	3	Day	172	516
Coolie	6.5	Day	172	1118	1	Day	172	172
Sundries	81.25	LS	1.13	91.81	81.25	LS	1.13	91.81
Moulding and edge polishing	195	LS	1.13	220.35	195	LS	1.13	220.35
				28825.57				24035.06
Add 1 % Water charges				288.26				240.35
				29113.82				24275.41
Add 15 % Contractors profit and overhead				4367.07				3641.31
Cost per 10 sqm.				33480.9				27916.72

Cost per sqm.				3348.09				2791.67
Add : Labour cess	1%				1%			
Add Service tax	3.43%				3.43%			
Add : Works contract tax	2%				2%			
Add Traffic management	2%				0%*			
Total percentage added	8.43%			282.244	6.43%			179.50
TOTAL		Final estimate rate		**3630.33**		Rate as per audit		**2971.17**

** Not considered by audit.*

Difference in rate =3630.33-2971.17 659.160

Extra cost = 659.16 x 5500 sqm 3625380

Annexes to Chapter 9

Annexure 9.1 - Signal problems of DP with TETRA in non-venue/ venue areas of Delhi

Sl. No.	Place	Reporting Dates	Comments about performance
		Non-venues	
1	DCP office complex at Pushpanjali Enclave, Residence in Central distt. DCP office complex Darya Ganj	3-10-2010 and 4-10-2010	Round the clock signal problems, inadequate signal network
2	Area of South District	4-10-2010,7-10-2010, 8-10-2010	Unclear signal in buildings premises and also call dropping while travelling
3	Vikas Puri premises of Police Station	4-10-2010	No communication from the premises of PS Vikas Puri
4	P.S. Premises, Ring road, ISBT Sarai Kale Khan, H.N.din Bridge, Millennium Park Bus depot	4-10-2010, 7-10-2010	No communication, intermittent
5	Inside PHQ buildings in and around D-1/119 Satya Marg and in moving car , Niti Marg, Akbar road	27-09-2010 to 04-10-2010	No network coverage, transmission not completed.
6	MHA North block near gate no. 7, Firoz Shah road, W point ITO, A-point ITO, PHQ ground floor, PT street hotel Shangrila (Ashok road)	4-10-2010, 6-10-2010, 8-10-2010	No communication PC call unable, dead zone
7	No. 11 Murti Marg, Mother Teresa Crescent, R. K. Ashram marg, Sikandra road, Firoz Shah road, Talkatora road and onward PHQ office	30-09-2010	No signal, signal cut
8	Jai Singh road, Vasant Kunj,	03-10-2010 to 11-10-2010	Signal leaves regularly, no signals in various times
9	Bhopal Ground, R.K.Puram, Dwarka	04-10-2010, 7-10-2010 to 9-10-2010	No signal, intermittent
10	Food court, MPC and various halls, IBC	05-10-2010 t0 11-10-2010	Service denied
11	Parliament street Andrews Ganj, Rohtak road Sakur	06-10-2010 t0 07-10-2010	No service

Sl. No.	Place	Reporting Dates	Comments about performance
	basti, Motilal Nehru Marg, Ashok Vihar, Akbar road		
12	Airport Delhi in Terminal -III	03-10-2010	No connectivity
13	Todar Mal road, JLN Marg near Delhi Gate, DCP/ Central office complex, Outer Circle Connaught Place, Police station Pahar Ganj East	03-10-2010	Weak signals, no communication, red light blinking, no communication message on the screen "PTT denied"
14	Inside Airport	03-10-2010	Discharging of batteries
15	Vasant Kunj, Mandir Marg Kalibari Road	08-10-2010	Poor signals
Venues			
1.	Ash Pond	10.10.2010	No service, no signal, network busy
2.	K.S.S.R	11.10.2010	Signal poor
3.	Yamuna Sports Complex	11.10.2010	No communication
4.	Jawahar Lal Nehru Sports Complex	11.10.2010	No transmission
5.	Siri Fort Sports Complex	11.10.2010	No signal
6.	M.D.C National Stadium	11.10.2010	Signal cutting, no clarity
7.	Siri Fort Sports Complex	13.10.2010	Connectivity poor and unreliable, not available after some time, call dropping is very frequently, voice does not carry
8.	Logistic screening centre	13.10.2010 14.10.2010	Service not available, no communication
9.	M.D.C National Stadium	3.10.2010	No communication, no service, PTT denied, signal cutting
10.	Jawahar Lal Nehru Sports Complex	7.10.2010	Intermittent, no transmission, high fluctuation in transmission, signal breaking, weak signal
11.	Yamuna Sports Complex	09.10.2010	No signal, intermittent, no communication, no response
12	Bhopal Ground J.M.I	09.10.2010	Receiving signal very weak
13	Talkatora Indoor Stadium	08.10.2010	Signal remained very poor for a very long time, signal nil.
14.	I.G. Sports Complex	08.10.2010	Intermittent, no communication
15	Jawahar Lal Nehru Sports Complex	09.10.2010	Persistent problem of fluctuating transmission, No

Sl. No.	Place	Reporting Dates	Comments about performance
			transmission
16.	K.S.S.R	09.10.2010	Signals not clear, voice in the set is not clear, poor connectivity, poor audio quality, communication get delink, poor network
17.	Yamuna Sports Complex	10.10.2010	No communication
18.	K.S.S.R	10.10.2010	Voice is shaking, voice not clear, transmission of signals is not proper and creates echo on communication, signals are weak and voice clarity is not upto the mark, poor network, poor sound.

Annexes to Chapter 10

Annexure 10.1 Available rates for 34 major medical equipments

Sl No.	Name of Equipment	No.	Cancelled NIT-1 (DHS)	NIT-2 RC (DHS)	Actual Rates on which items procured		Other rates available
1.	Patient Stools	110	1522	1260	1260	DHS-RC	
2.	Examination couch with mattress	50	19897	12070	12070	DHS-RC	18900-LNJP
3.	Three Fold Partition screen	350	3096	2762	2762	DHS-RC	
4.	Trolley Bed	-	166688	288749	----	---	
5.	Foldable wheel chair	55	12600	103320	103320	DHS-RC	18900-LNJP
6.	Shifting Trolley	-	46725	75600	---		
7.	Scoop Stretcher	135	62475	86100	13650	RC-GTBH	13650-LNJP
8.	Spine Board	130	15750	6300	6300	DHS-RC	20475-LNJP
9.	Head Immobiliser	130	9975	6825	6825	DHS-RC	6825-LNJP
10.	Physiotherapy Table	06	146842	430500	430500	DHS-RC	157500-LNJP
11.	Superior Massage Table with Mattress with pillow	220	21525	57749	38535	Open market by quotation approval	
12.	Ultrasound Therapy (1& 3MHz)	09	146843	367499	94500	Pt MMMH-RC	50925-LNJP
13.	IRR Lamp	-	141750	488250	----	---	68250-LNJP
14.	Shortwave Diathermy	04	502950	518700	446250	Pt MMMH-RC	
15.	Physiotherapy Laser	06	258930	409500	409500	DHS-RC	194250-LNJP
16.	TENS-IFT Combo	08	262395	414749	273673	Safdarjung Hosp.-RC	
17.	X-ray View Box	17	20790	35700	11393	GTBH-RC	
18.	Golf Cart Stretcher	-	470924	518699	----	--	
19.	Automatic External Defibrillator (AED)15	93	509250	519751	203742	DMSCH	140175-GGSH/Hedgewar

Sl No.	Name of Equipment	No.	Cancelled NIT-1 (DHS)	NIT-2 RC (DHS)	Actual Rates on which items procured		Other rates available
20.	Pulse Oxymeter	64	119700	151200	151200	DHS-RC	21525-LNJP
21.	Cardiac Arrest resuscitation drug and equipment trolley crash cart	03	19792	27100	27100	DHS-RC	81900-DMSCH
22.	Examination Light	32	30907	47249	45255	As per stock	
23.	Ophthalmo-otoscope	---	25725	50400	----	---	
24.	B-type Oxygen Cylinder with flowmeter	10	110250	6405	6405	DHS-RC	
25.	Suction Machine Electrical Operated	05	5932	5932	5932	DHS-RC	
26.	Suction Machine Foot Operated Manual	45	2887	6090	13440	GTBH-RC	
27.	Ambu Bag (Bag Value Mask) Adult	80	2048	5145	5145	DHS-RC	
28.	Ambu Bag (Bag Value Mask) Paediatric	80	2048	5145	5145	DHS-RC	
29.	I.V. Stand	110	1670	1523	1523	DHS-RC	
30.	B.P. Apparatus	200	3728	6825	2625	GTBH-RC	3860-LNJP
31.	Clinical Thermometer	120	73	71	71	DHS-RC	
32.	Military Anti-shock Trousers (MAST)	04	37800	35070	35070	DHS-RC	
33.	Transport Ventilators	12	372750	516729	485100	ILBS-RC	
34.	Nebulizer	62	8379	8206	8206	DHS-RC	

RMLH: Ram Manohar Lohia Hospital; LNJP: Lok Nanak JayaPrakash Narayan Hospital; DHS: Directorate of Health Services; MMMH: Pt. Madan Mohan Malviya Hospital; GTBH: Guru Teg Bahadur Hospital; DMSCH: Dadadev Maitri Sishu Chikitsalaya; GGSH: Guru Gobind Singh Govt. Hospital

Annexure 10.2 Details of purchases of equipment on abnormally higher rates

(in ₹)

Name of purchasing agency	Sl. No. of items	Name of equipment	Quantity purchased	Rate inclusive Taxes	Amount Paid inclusive Taxes	FVC bill No. and Date	Lowest available rate	Name of R.C Hospital	Difference in rate (`)	Amount of Extra avoidable expenditure
DHS	1 .	Pulse Oximeter	52+12	151200	9676800	635, dt.10.9.10 859, dt.2.11.10	21525	LNJP	129675	8299200
	2.	Ultrasound Therapy Unit	9	94500	850500	859, dt.2.11.10	50925	-do-	43575	392175
	3.	Physiotherapy laser	3	409500	1228500	635, dt.10.9.10	194250	-do-	215250	645750
	4.	AED (45+7+23+15)	90	203742	18336780	637, 9.10.10 (45)720, 1.10.10 (7) 775, 8.10.10(23) 685, 24.9.10(15)	140175	GGHS	63567	5721030
Lok Nayak Hospital	5.	Examination Coach with mattress	02	18900	37800	906, dt.4.11.10	12070	DHS	6830	13660
	6.	Emergency Crash Card Trolley	02	87750	175500	728, dt.25.9.10	27100	-do-	60650	121300
	7.	Spine Board	07	20475	143325	906, dt.4.11.10	6300	-do-	14175	99225
	8.	A.E.D	15	203742	3056130	729, dt.22.9.10	140175	Hedgewar Arogya sansthan	63567	953505

Name of purchasing agency	Sl. No. of items	Name of equipment	Quantity purchased	Rate inclusive Taxes	Amount Paid inclusive Taxes	FVC bill No. and Date	Lowest available rate	Name of R.C Hospital	Difference in rate (`)	Amount of Extra avoidable expenditure
Guru Teg Bahadur Hospital	9.	Physiotherapy Laser	02	409500	819000	2607 dt 8.11.10	194250	LNJP	215250	430500
	10.	Automatic External Defibrillator (AED)	04	203742	814968	2625, dt.9.11.10	140175	Hedgewar Arogya Sansthan	63567	254268
	Total									**16930613, Say, 1.69 crore**

© Comptroller and Auditor General of India
2011-12



www.cag.gov.in
www.agaudelhi.cag.gov.in