

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. Streetscaping programmes are an important component of efforts to redevelop urban areas and can include changes to the road cross section, traffic management, sidewalk conditions, landscaping, street furniture, building fronts, improving signages etc.

In 2004, GNCTD decided to implement streetscaping and beautification of roads for “aesthetics” before CWG-2010. However, in our view, the street-scaping and beautification project was ill-conceived and ill-planned, without a broad overarching vision and perspective of how this would impact urban design and development. The project was not part of Delhi's City Development Plan under the GoI's flagship JNNURM programme for urban development and renewal. 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, GNCTD did not deem it necessary to obtain clearance from DUAC for implementation of the streetscaping/ beautification project. Also, considering that traffic management is a key component of streetscaping projects, we also did not find 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. Streetscaping and beautification at exorbitant average awarded costs of Rs. 4.8 crore/ km (compared to NHAI's estimated cost of Rs. 9.5 crore / km for constructing a four-lane national highway or Indian Railways' estimated cost of about Rs. 4.1 crore/km for constructing railway track) awarded and executed in an ad hoc and arbitrary manner confirm waste of public funds totalling Rs. 101.02 crore.

The project was largely a consultant-driven project, with the selection of consultants being arbitrary and non-transparent and at an exorbitant average cost of Rs. 12.5 lakh/km. Further, GNCTD did not provide any common design guidelines, with corresponding target budgetary estimates per km of work. The consultants were given free hand to draw up designs and estimates for the packages allotted to them. This resulted in adoption of richer specifications in an arbitrary and inconsistent manner in different packages (with an avoidable cost of Rs. 51.33 crore), with the cost of surfacing the pavement for pedestrian walking ranging from Rs. 717 to Rs. 2679 per sq. meter. We also found adoption of higher rates/ short recovery totalling Rs. 8.27 crore, and other deficiencies in contract management with an avoidable cost of Rs. 8.14 crore.

Third Party Quality Control through the Heads of the Civil Engineering Departments of the Delhi College of Engineering and IIT Roorkee failed to provide adequate assurance on the specifications and materials used in the works, despite expenditure of Rs. 1.47 crore.

21.1 What is Streetscaping?¹

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 realm (public spaces where people interact), which help define a community's aesthetic quality, identity, economic activity, health, social cohesion and opportunity, not just its mobility.

Streetscaping programmes are an important component of efforts to redevelop urban areas and can 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.

Streetscaping can help create more diverse transportation systems and more accessible communities by improving non-motorised travel conditions, creating more urban environments and integrating special design features such as pedestrian improvements, cycling improvements, traffic calming, High Occupancy Vehicles (buses etc.) priority strategies and road space re-allocation.

21.2 Planning for streetscaping/ beautification in Delhi

21.2.1 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

¹ Adopted from Victoria Transport Policy Institute's Online TDM Encyclopedia "Streetscape Improvements – Enhancing Urban Roadway Design" – 18 January 2011.

CWG-2010. The project remained more or less in a dormant stage till May 2008, when GNCTD initiated the process of selection of consultants.

Gol's flagship programme for upgradation of civic infrastructure – the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched in 2005, under which each mission city was to submit a City Development Plan (CDP) with a long term horizon of 20-25 years to facilitate identification of projects. Delhi's City Development Plan for JNNURM, which was approved in October 2006, did not indicate "streetscaping and beautification" as an identified project. Further, we did not find any projects for streetscaping/ beautification approved under JNNURM in respect of other cities. The only JNNURM projects remotely linked to this aspect were focused on restoration and redevelopment of heritage areas.

We did not find 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 deem it necessary to obtain clearance from DUAC for implementation of the streetscaping/ beautification project. Also, considering that traffic management is a key component of streetscaping projects, we also did not find 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.

In our view, the street-scaping and beautification project was ill-conceived and ill-planned, without a broad overarching vision and perspective of how this would impact urban design and development. The project's implementation at exorbitant average awarded costs of Rs. 4.8 crore/ km in an ad hoc and arbitrary manner, as discussed subsequently, confirm the waste of public funds.

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 packages². 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, thus, creating a situation of urgency in execution of the works.

In our opinion, the project was a consultant-driven project. The department did not provide any common design guidelines, with corresponding target budgetary estimates per km of work. The consultants were given a free hand 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) though this was clearly an unachievable target. As expected, the works were not fully completed before CWG-2010.

21.3 Selection of Consultant

21.3.1 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 in Table No. 21.1.

² There were 9 packages for the consultants. However, these were re-grouped into 16 packages for award of work.

Table 21.1 — Chronology of events leading to selection of streetscaping consultants

Date	Events / Activities
02 May 2008	<p>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 Oasis Designs.</p> <p>Bids cancelled since only Oasis Designs attended the meeting with EIC.</p>
31 May 2008	<p>EoI again floated, 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.</p>
07 October 2008	<p>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 consultants³, stipulating allotment of maximum two packages to one consultant.</p> <p>Four consultants (Parekh Associates, Oasis Designs, Pradeep Sachdeva Design Associates and Sikka Associates) participated in the bid. No bid 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 Rs. 8.26 lakh and Rs. 15.00 lakh per km.</p>
12 November 2008 – 11 December 2008	<p>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.</p> <p>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.</p>
	<p>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.</p> <ul style="list-style-type: none"> ■ 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.

³ Now including Parekh Associates

In all, Pradeep Associates and Sikka Associates received four and three packages respectively, while Parekh Associates and Oasis Designs received one package each⁴. We found 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 Rs. 10.39 lakh and Rs. 12.50 lakh per km. In all, the consultants were engaged for the streetscaping works at a cost of Rs. 9.20 crore (averaging Rs. 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 inexplicably delayed up to December 2008, creating a situation of urgency in execution of the works. On the ground of urgency, consultants were selected on direct negotiation. The extra cost on engagement of consultants at variable rates, excess payment on account of less execution of work and non-levy of LD was Rs. 1.65 crore.

In our view, the consultant selection 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.

⁴ There were 9 packages for the consultants. However, these were re-grouped into 16 packages for award of work.

21.4 Cost estimation for works

Out of the total estimated cost of Rs. 209.14 crore for the eight packages (PWD portion), 49 per cent (Rs. 101.71 crore) of the cost was on items with costs based on the Delhi Schedule of Rates (DSR) and remaining 51 per cent (Rs. 107.43 crore) on items with costs on Market Rates (MR)/Analysis of Rates. We 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 guideline 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.

In our view, it was the prime responsibility of the departmental engineers to assess the actual rates and specifications required for the items so as to ensure economy, efficiency and effectiveness in execution. Further, since all the zones were under the technical control of EIC, comparison across the zones should have been administratively ensured.

The retired Directors of CPWD appointed as Advisor to the PWD observed that the

consultants had not gone into the engineering details and suggested various designs. They suggested dispensing with various unnecessary/unwarranted works during implementation of the Projects. These were not accepted, and the projects were implemented as suggested by the Consultants.

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

The streetscaping works were finally awarded at per km costs ranging from Rs. 3.63 crore to Rs. 9.75 crore with an average cost of Rs. 5.32 crore. By contrast, NHAI adopts an estimated cost of Rs. 9.50 crore/ km for construction of a four-lane highway, and Indian Railways' estimated cost of construction of a railway track is around Rs. 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 Rs. 717 for paving with normal paver blocks, Rs. 1450 with vitrified tiles and Rs. 2679 with polished granite.

21.4.1 Adoption of Richer Specifications/ Higher Rates/ Short Recovery



We found 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. The result of the above mismanagement was loss of Rs. 59.60 crore to the Government as summarised below:

Table 21.2 – Adoption of Richer Specifications

S.No.	Item of work	Audit Finding	Financial Impact (Rs. in Crore)
1.	Use of granite and vitrified tiles for footpath	 <p style="text-align: center;">Granite Paving</p>	27.37

S.No.	Item of work	Audit Finding	Financial Impact (Rs. in Crore)
		<p>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. We ascertained that the basic cost of granite in the market was around Rs. 1022/ square metre, against which the estimates adopted Rs. 1500/ Rs. 1765 per square metre. We also noticed that against 5 per cent wastage admissible as per DSR for all granite work, the consultants considered the wastage at 15 per cent.</p>  <p style="text-align: center;">Vitrified paving tiles</p> <p>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. We also noticed that the finished rate of Pavit brand tile (16 mm) taking into account the market cost, wastage, overheads and other factors was Rs. 965.24 per square metre, whereas he estimates adopted Rs. 1854.16 per square metre.</p>	

S.No.	Item of work	Audit Finding	Financial Impact (Rs. in Crore)
2.	Cement Concrete paver block	 <p style="text-align: center;">Cement concrete paver</p> <p>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. We noticed that the consultants proposed for fixing factory made CC paver blocks of richer specifications and excess thickness.</p>	12.34
3	Kerb stone	<p>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 nine⁵ packages.</p> <p>We noticed that the estimates provided for fixing the CC kerb stones of richer specifications deviated from the specifications as per MoRTH.</p>	4.36
4	Non Motorised Vehicle lane	 <p style="text-align: center;">NMV lane with obstruction</p>	1.76

⁵ YSC, Africa Avenue etc, Dr Karni Singh, CWG Village, Mall Road, Kisan Ghat etc, Bhairon Marg and two packages of MCD.

S.No.	Item of work	Audit Finding	Financial Impact (Rs. in Crore)
		The Non Motorised Vehicle (NMV) lanes were executed at a total cost of Rs. 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. We also noticed that while four ⁶ 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.	
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 ⁷ other estimates provided it for 40 mm thickness over the carriageway. We also noticed that such work was executed on Mall Road as an extra item at higher rates.	3.40
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 ⁸ 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

⁶ Dr Karni Singh Shooting Range/ Bhairon Marg to ITO Fly Over/ Ashram Crossing to Bhairon Marg/roads around various games venues

⁷ K. Ghat, B. Marg Ashram Crossing, Mall Road and Dr Karni Singh Shooting Range

⁸ CWG Village/Mall road/IG Stadium/Dr Karni Singh Shooting Range

In response to our observations, PWD stated that each package had a separate consultant with his own vision of streetscaping, and hence specifications were different across the packages. 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. We disagree with this, since GNCTD had decided (July 2008) to use coloured paver blocks on footpaths of the streetscaping works and EIC had also directed the CEs to avoid extravagant provisions in the streetscaping works. Hence the CEs should not have allowed surfacing the footpath

with granite stone adopting higher rate leading to escalation in project cost.

As regards discrepancies in specification of cement concrete paver blocks, PWD stated 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. We, however, 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.

Table 21.3 — Adoption of Higher Rates/ Short Recovery

S.No.	Item of work	Audit Observation	Financial Impact (Rs. 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 ⁹ projects adopted higher rates.	0.25
2.	Granular Sub Base and Wet Mix Macadam	In five ¹⁰ packages, we 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	We found that the rates for the tack coat on bituminous surface/sub base were provided at higher rates in six ¹¹ estimates compared to the lower rate adopted in Mall Road.	0.54
4.	Reinforced Cement Concrete Hume Pipes	We noticed that the rates of hume pipes were higher in three ¹² estimates compared to the rates adopted in the estimate in Mall Road.	0.93

⁹ Ashram to Bhairon Marg, Bhairon Marg to ITO, Mall Road, CWG Village and Dr Karni Singh Shooting Range

¹⁰ IG Stadium-3 packages, M B Road and Africa Avenue.

¹¹ IG Stadium-3 packages, Yamuna Sports Complex (YSC), CWG Village and MB road

¹² IG Stadium, Dr Karni Singh Shooting Range and Yamuna Sports Complex

S.No.	Item of work	Audit Observation	Financial Impact (Rs. in Crore)
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	We found that the analysis was incorrectly derived in six ¹³ estimates and fixed at higher rates due to calculation error.	0.54
8.	Short recovery for retrieved materials	The cost of the useful materials retrieved out of the dismantlement works was to be deducted from the dues of the contractors. This was either not done, or done at a lower rate in five ¹⁴ estimates.	3.19
9.	Geo textile fabric	Three ¹⁵ 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 that the inaccuracies in the estimated rates cannot affect the rates quoted by the contractors. As such, no loss can be attributed. We disagree with this assertion of the department since in a percentage rate tender, the bidder can quote only a single figure (% 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. We are of the view that any discrepancy in the base rate of an item in a percentage rate tender cannot be easily

¹³ IG Stadium (three packages), M B Road, various games venues and YSC

¹⁴ CWG Village, YSC, Mall Road, Dr Karni Singh Shooting range and Africa Avenue

¹⁵ Mall road, CWG Village and MB Road

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 CEs to follow common rates across all the packages for identical items, especially since multiple external consultants had been engaged for providing the design.

21.5 Tendering process

21.5.1 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.

Of the estimates for Rs. 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 rates. Despite the above position, which did not favour the call of percentage rate tenders, the CEs chose to adopt percentage rate tenders.

21.5.2 Irregularity in award and evaluation of tender

We found 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 Rs. 1.19 crore compared to the initial valid offer of Swadeshi Construction.

PWD stated that Swadeshi Construction had quoted three different rates for civil, electrical and horticulture components. Considering these rates, he was not L1 and

hence his tender was rejected. This was factually not correct since, as per the NIT clauses, the lowest of the three different quoted rates was binding for all the components. The EE, SE and CE accordingly, considered him the L1 bidder and conducted negotiations. Therefore, subsequent rejection of the bid by the WAB was unjustified.

21.5.3 Modification in codified 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 those were technically sanctioned by the CE. The EEs did not follow electronic-tendering despite specific instructions by government.

21.5.4 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 Rs. 41.82 crore and Rs. 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 (Annexe-21.1).

We found that the justified costs were not supported with evidence of the correctness of the rates. Therefore, we 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 five¹⁶ 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 by them. In our opinion, the tenders were accepted at high cost.

PWD stated that the justified rates were arrived at based on market rates, as per the provisions of CPWD Manual.

We disagree, as we did not find documentation in support of the market rates/analysis of rates. For this reason, as mentioned above, we 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.

21.6 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 Rs. 332.45 crore (Shown in Table 21.4) for completion by September 2010.

¹⁶ Kisan Ghat, Ashram to Bhairon Marg, Mall Road, Dr Karni Singh Shooting range and Africa Avenue

Table 21.4 — Award of Streetscaping Work

S.No.	Name of the Contractor	Packages awarded	Awarded Cost (Rs. in Crore)
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

Payment of Rs. 208.02 crore had been made to the contractors for the various packages till date. The department had reported (December 2010) to have completed all the streetscaping works. We noticed 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.





In financial terms, the payments so far made to the contractors were between 34 and 97 per cent (averaging 63 per cent) of the agreement values. In none of the streetscaping works were the final measurements/payments recorded, although the works were reportedly physically complete.


We found that despite non execution of the works as per the milestones and non completion of the works by the stipulated date, LD of upto Rs. 25.96 crore was not realised.

21.7 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 Rs. 8.14 crore beyond the cost of the projects as discussed in Table 21.5.

Table 21.5 — Instances of Poor Contract Management

S.No.	Brief of the audit Observation	Financial Impact (Rs. in Crore)
1.	<p>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.</p> <p>We noticed that in eight packages, an item was included in the BOQ for barricading (traffic safety), resulting in extra payment to contractors.</p>	1.79
2.	<div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Red Sand Stone Bollard Precast Cement Concrete Bollard</p> <p>In most of the landscaping works, precast CC cylindrical bollards were used in NMV lane. However, in Mall Road, precast CC bollard was replaced during execution with more expensive red sand stone readymade bollards.</p>	0.18
3.	<div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Granite Stone Block Haryana Quartzite</p> <p>We found that during execution of footpath of Mall Road, Haryana Quartzite stone was replaced with granite stone/slab.</p>	1.45
4.	<p>The scope of the work of Mall Road did not provide for execution of DBM in the entire stretch of the road. The contractor, Satya Prakash & Brothers Private Limited, however, executed DBM in the entire stretch.</p> <p>We 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.</p>	1.23

S.No.	Brief of the audit Observation	Financial Impact (Rs. in Crore)
5.	<p>As per conditions of the contracts, the contractors were to remove the malba at their cost and risk.</p> <p>We found that despite the above specific provisions, the agreements provided an item in the BoQ for removal of malba, enabling extra payment to the contractors.</p> <p>We also noticed 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 Rs. 280.32 per MT of malba against Rs. 73.42 per MT as per the agreement rate for Satya Prakash & Brothers.</p>	3.49
6.	 <p style="text-align: center;">Scarified Mehrauli Badarpur Road</p> <p>Mehrauli Badarpur Road, a State Highway, was scraped for construction of a footpath, reducing the width of the road. This had reduced the traffic carrying capacity of the road.</p>	
Total		8.14

21.8 Unwarranted engaging of 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 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.

We found 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 only 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 us to conclude 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 Rs. 1.47 crore (Dr. S S Jain: Rs. 0.48 crore and Dr. S K Singh: Rs.0.99 crore) on TPQC wasteful.

21.9 Horticulture Works

21.9.1 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. We 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 percent. The adoption of variable rates for same items without considering the minimum possible rate/DSR rate led to extra cost of Rs. 1.08 crore as shown in the table in Annexe 21.2.

Further, the retired Director (Horticulture) acting as Consultant to EIC for horticulture works mentioned that the consultants had suggested landscaping planting with expensive plants like *Cycus revolute*, *Ficus panda* and *Furcaria* without considering climatic conditions, and their adaptability and suitability for Delhi roads/ venues. Also Phoenix (Khajoor), a desert plant, and Palm, a coastal plant, had been suggested for Delhi roads. His suggestions for dispensing with these plants were, however, ignored. The overall estimated financial impact of these plants was Rs. 1.10 crore in seven packages covered in audit.

21.10 Unwarranted Costly Electrical Furnishing

The consultants suggested design for electrical lighting work by specifying costly electrical furnishing, some of them imported. The quotations for the items were obtained by the consultants. 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.

We observed one instance where electrical fittings costing over Rs. 50 lakh were installed in a small area of 10 metre by 15 metre.







Fittings worth over Rs. 50 lakh installed opposite IG Stadium




A few high cost electrical fixtures are shown below. We are of the view that the government was unnecessarily burdened with this expenditure on overpriced light fittings in the name of aesthetics. 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. We have found from some invoices that the costs of the fixtures were far less than the costs adopted in the estimates. Due to adoption of high cost, undue benefit for Rs. 0.83 crore (Appendix-III) was passed on to the contractors.

Table 21.6 — Instances of high cost electrical items

S.No.	Item	Rate per unit (Rs. in lakh)	Amount (Rs. in crore)	Photograph of the item
1.	Nemo Torch Keselec Schreder (Roads around IG Stadium)	4.30	1.05	

S.No.	Item	Rate per unit (Rs. in lakh)	Amount (Rs. in crore)	Photograph of the item
2.	Trapeze Pole Keselec Schreder (Roads around IG Stadium)	4.54	0.33	
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	

S.No.	Item	Rate per unit (Rs. in lakh)	Amount (Rs. 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	

S.No.	Item	Rate per unit (Rs. in lakh)	Amount (Rs. in crore)	Photograph of the item
8.	Schreder-CFL36 watt (Safdarjang Flyover)	2.91	1.11	

21.11 Greening of Games venues by using potted plants

The Chief Secretary, GNCTD proposed (August 2008) for creation of 30-50 lakh potted plants for deployment around the CWG venues and other areas for providing a pleasing environment. He also sought immediate approval of Chief Minister (CM) since creation of such a large pool of potted plants would require at least two years time. The CM approved the proposal in August 2008. We could not find any venue wise break-up of the plants required or any other yard stick in support of the assessment of the requirement of the plants. The Secretary (E&F), however, decided in a meeting for arranging 60 lakh plants either by local planning or importing from outside the state and assigned the task to DDA, MCD, NDMC, Forest Department (FD), and Delhi Parks & Garden Society (DPGS) for 10 lakh each, and PWD and CPWD at 5 lakh each.

GNCTD sanctioned Rs. 28 crore for this project, of which an amount of Rs. 24 crore had been spent by the agencies (under GNCTD) given the task of arranging the potted plants.

We observed that:

- The target for arrangement of potted plants was set 20 per cent higher than the amount estimated earlier and approved by the CM.
- Most of the potted plants were procured instead of being created in the departmental nurseries as originally envisaged. Commissioner of Police intimated (June/August 2010) to keep the plants away from the venues and the routes on account of security concerns. Of the amount of Rs. 24 crore spent on the procurement of the potted plants, DPGS, FD and PWD spent Rs.10.75 crore on procurement (June-October 2010) of 18.76 lakh plants from private nurseries/ government nurseries outside the state (at average rates ranging between Rs.44

and Rs.65 per plant), even after receipt of the information from the Commissioner of Police.

- The original objective of greening the venues could not be achieved in the light of the advice of Commissioner of Police, rendering the expenditure wasteful.

PWD informed that post Games, of the 3.82 lakh potted plants procured by them, 0.79 lakh perished being seasonal and most of the remaining plants were distributed to various government offices. We visited two of those sites at random, and could not find the potted plants stated to have been issued.

21.12 Street furniture in the vicinity of Games venues

21.12.1 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 in Table 21.7.

Table 21.7 — 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

21.12.2 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

We 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.
- 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).
- Interestingly, all the four bidders who had qualified the technical bids for DTTDC/ PWD, secured one contract each. In our opinion, 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 prices were set. Since nearly all of them (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 21.8 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 21.8 — Wide range of monthly concession rates for street furniture items

(Range of rates in Rs. per sq.m)

Street Furniture Items	PWD/DTTDC		PWD/DTTDC		CPWD	Other benchmarks
	Minimum	Maximum	Minimum	Maximum		
Public toilets	54	714	238	472	270	MCD High End Toilets (IRR statement) - 1291 DIP ¹⁷ - 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 is serious, although it cannot be fully quantified in the absence of reliable and comparable benchmarks.

21.12.3 Status

The delayed planning and award of SF contracts for different clusters meant that most were not ready in time for CWG-2010.

In fact, two bidders – JC Decaux and Adlabs – indicated, even before the award, that completion would take longer, since many of the SF items were imported and delivery would take time.

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.

¹⁷ Department of Information and Publicity

