

*** IN THE HIGH COURT OF DELHI AT NEW DELHI**

% Judgment delivered on: 06th March, 2018

+ O.M.P. (COMM.) 307/2017

DELHI METRO RAIL CORPORATION LIMITED Petitioner

Versus

DELHI AIRPORT METRO EXPRESS
PRIVATE LIMITED Respondents

AND

+ O.M.P. (I) (COMM.) 200/2017

DELHI AIRPORT METRO EXPRESS
PRIVATE LIMITED Petitioner

Versus

DELHI METRO RAIL CORPORATION LIMITED Respondent

Advocates who appeared in this case:

For Delhi Metro Rail Corporation
Limited:

Mr. P Narasimha, ASG, Mr. Prag
Tripathi and Mr. Ajit Kumar Sinha,
Senior Advocates with Mr. Tarun
Johri, Mr. S. Sinha, Mr. Ankur Gupta,
Mr. Ankit Saini and Mr. Giri Bhalla,
Advocates

For Delhi Airport Metro Express
Private Limited:

Mr. P. Chidambaram, and Mr. J.J.
Bhatt, Senior Advocates with Mr.
Mahesh Aggarwal, Ms. Anjali
Chandurkar, Ms. Megha Mehta and
Mr. Anuj Malhotra, Advocates

**CORAM:-
HON'BLE MR. JUSTICE SANJEEV SACHDEVA**

JUDGMENT

SANJEEV SACHDEVA, J.

1. OMP (COMM) 307 is a petition filed under Section 34 of the Arbitration and Conciliation Act, 1996 (hereinafter referred to as the *Act*) by Delhi Metro Rail Corporation Limited (hereinafter referred to as *Delhi Metro* for short) *inter alia* seeking setting aside of the Arbitration Award dated 11.05.2017 (hereinafter referred to as *the Arbitral Award*) and other consequential reliefs.

2. OMP (COMM) (I) 200/2017 is a petition filed under Section 9 of the Act by Delhi Airport Metro Express Private Limited (hereinafter referred to as the *Concessionaire*) seeking a direction to the *Delhi Metro* to deposit with the Court an amount of Rs. 3502.62 Crores being 75% of the amount awarded under the *Arbitral Award* and a further direction for release of the deposited amount to the Project Lenders and Promoters, who had financed the project.

3. *Delhi Metro* was entrusted with the work of preparing a Detailed Project Report (DPR) for implementing High Speed Airport Express Line Project (*Project*, for short) from New Delhi to the newly built airport terminal of Indira Gandhi International Airport (IGI Airport). *Delhi Metro* prepared the DPR, which received final approval by the Ministry of Urban Development (MoUD), Govt. of

India in April, 2007.

4. The *Project* was to be implemented as a Public Private Partnership (PPP) Model in which the land was to be acquired by *Delhi Metro* and all basic civil structures like tunnels, viaduct and station buildings, except depot buildings, were to be constructed by the *Delhi Metro*, while the balance systems i.e. track, signalling, electrification, rolling stock etc. were to be implemented by the chosen bidder, who was to be the private partner with the *Delhi Metro*.

5. *Delhi Metro* invited bids for construction, operation and maintenance of Airport Metro Express Line (hereinafter referred to as the *Line*) on a Built Operate and Transfer basis. Said *Line* is in the nature of a Public Private Partnership.

6. The Project is a High Speed Metro Rail Line intended to operate between New Delhi to Dwarka Sector 21 via IGI Airport Terminal 3. It runs over a stretch of approximately 23 Kms. between New Delhi and Dwarka, the train is intended to stop at four stations and was originally intended to cover the entire distance at a maximum speed of 120 kmph. The train runs partly through underground tunnels (approximately 16 kms) and partly on overhead viaducts (approximately 7 kms). The issues in the subject Arbitration related to the viaduct portion.

7. In the subject Project, all the civil works as well as appointment

of consultants, land acquisition and all other clearances from the Government and other authorities was the responsibility of the *Delhi Metro*; whereas the design, supply, installation, testing and commissioning of various systems; like rolling stock, power supply, overhead equipment, signalling, track system, platform, screen doors, ventilation, architectural finishing etc. were to be provided by the chosen bidder. *Delhi Metro* had appointed Airport Line Consultants (ALC) for overseeing the implementation of the said Project.

8. *Delhi Metro* initiated the process of international competitive bidding. After following the process of bidding and going through various stages thereof, a consortium consisting of Reliance Energy-CAF JV was selected as the preferred bidder. Letter of Intent was issued on 19.12.2007 and Letter of Acceptance was issued on 21.01.2008. On 25.08.2008, the Preferred Bidder and *Delhi Metro* entered into the *Concession Agreement*. The JV of Reliance Energy-CAF formed a Special Purpose Vehicle (SPV) namely the Delhi Airport Metro Express Private Limited (the *Concessionaire*) for the purposes of implementation of the project as per the terms and conditions of the *Concession Agreement*.

9. Under Article 29 of the *Concession Agreement*, upon termination, *Delhi Metro* is liable to deposit into an escrow account certain 'Termination Payment' as defined in the *Concession Agreement*. The quantum of Termination Payment is different under different situations. (i) Upon termination by the *Concessionaire*, on an

event of default of *Delhi Metro*, *Delhi Metro* is liable to pay 100% of the Debt Due (as defined in the *Concession Agreement*) plus 130% of Adjusted Equity (as defined in the *Concession Agreement*) as Termination Payment, in accordance with the *Concession Agreement* and (ii) upon termination by *Delhi Metro* on an event of default of the *Concessionaire*, *Delhi Metro* is liable to pay 80% of the Debt Due as Termination Payment, in accordance with the *Concession Agreement*.

10. After certain extensions of time, to complete the work, were granted by *Delhi Metro* to the *Concessionaire*, safety clearance was obtained from the Commissioner of Metro Rail Safety (hereinafter referred to as the CMRS) on 11.01.2011 with large number of conditions and with reduced speed of 105 kmph as against 120 kmph. Date of Commercial Operation (COD) was achieved on 23.02.2011, with the commissioning of the Delhi Airport Metro Express line.

11. As per the *Concessionaire*, it completed the Project with an investment of Rs. 2802 crores, which was funded by the Lenders through loans to the extent of approximately Rs. 2117 crores. In addition, thereto, the Promoters of the *Concessionaire* are alleged to have contributed an amount of Rs. 685 crores for construction of the Project. The entire investment into the Project was made by the *Concessionaire* either from its own sources/its Promoters or from the funds obtained from the Lenders.

12. On 22.03.2012, the *Concessionaire* requested *Delhi Metro* to

arrange a joint inspection of viaduct and its bearings before expiry of the Defect Liability Period (DLP) of the civil contractors as, according to the *Concessionaire*, no formal inspection had taken place. Further, the *Concessionaire* vide letter dated 23.05.2012 pointed out that there were serious design and quality issues with the installation of viaduct bearings and that there were signs of girder having sunk at some locations, as a result of deformation/cracks.

13. *Delhi Metro* by letter dated 02.06.2012, stated that detailed inspections under Article 19 of the *Concession Agreement* and all preventive maintenance are within the scope of the *Concessionaire*. *Delhi Metro* asked the *Concessionaire* to give detailed inspection reports to *Delhi Metro* to review and give comments. Further, *Delhi Metro* inspected some of the locations identified by the *Concessionaire* and noticed that bearings were not damaged but the grouting material filled above/below the bearings was damaged/loosened for which *Delhi Metro* had already taken action to repair them on priority. *Delhi Metro* also advised the *Concessionaire* to impose speed restrictions as deemed necessary in the interest of safety.

14. Accordingly, the speed of the train was reduced because of various defects. Ministry of Urban Development intervened in the matter and convened the meeting of all the stakeholders on 02.07.2012. Parties put forward their view on the issue of the defects. A Joint Inspection Committee (JIC) was set up; which submitted its

interim report after inspection on 04th and 05th July 2012. The *Concessionaire* informed that it was unsafe to operate the line and accordingly stopped its operation w.e.f. 08.07.2012.

15. As per the *Concessionaire* during the course of operation of the Project, the *Concessionaire* noticed various defects in the works performed by the *Delhi Metro*. It is contended that the defects severely impaired the performance of the obligations of the *Concessionaire* under the *Concession Agreement* and the *Concessionaire* had to stop the operations of the Project in the interest of safety of the passengers.

16. The *Concessionaire*, thereafter, by its notice dated 09.07.2012, after setting out 'a non-exhaustive list of defects' which, according to the *Concessionaire*, created unsafe conditions for the performance of the *Concessionaire's* obligations under the *Concession Agreement*, requested *Delhi Metro* to take all such actions and measures as may be necessary to completely cure the defects in the *Delhi Metro* works and breach of its obligation, which had *Material Adverse Effect* under the *Concession Agreement* within a period of 90 days of the notice failing which the same shall be treated as Material Breach and *Delhi Metro's* Event of Default under the *Concession Agreement* and the *Concessionaire* shall be entitled to take actions as per the terms of the *Concession Agreement* including to issue the Termination Notice.

17. Thereafter, several meetings took place between the concerned

parties. SYSTRA, the original design consultant for the viaduct section for the metro line, were also involved and consulted. Officials of the MoUD and Railway Ministry also participated in various meetings. Agencies were engaged by *Delhi Metro* for carrying out repairs. Other agencies were also engaged to check the quality of the repair work.

18. The *Concessionaire*, claiming that though a period of 90 days had expired from 09.07.2012 (the date of the cure notice), *Delhi Metro* had not cured any of the defects nor were effective steps taken to cure the defects and, therefore, an Event of Default had taken place, which, entitled it to terminate the *Concession Agreement*, terminated the *Concession Agreement* by its letter dated 08.10.2012 under Article 29.5.1 and, *inter alia*, called upon *Delhi Metro* to make payment of the Termination Amount.

19. The aforesaid action led *Delhi Metro* to attempt conciliation for amicable settlement of disputes as per Article 36.1 of the *Concession Agreement*. As conciliation process did not fructify, *Delhi Metro* invoked arbitration under Article 36.2 vide its letter dated 23.10.2012 pursuant to which the *Arbitral Tribunal* was constituted on 08.08.2013.

20. After certification by CMRS on 18.01.2013, the line was restarted on 22.01.2013 with reduced speed. The *Concessionaire*, after reiterating its stand as regards the failure of *Delhi Metro* to cure

the defects, agreed to operate the line, (as contended by the *Concessionaire*) only as an agent and on instructions of *Delhi Metro* and in public interest.

21. The *Concessionaire* subsequently stopped operations on close of working hours of 30.06.2013 and claims to have handed over the line to *Delhi Metro* on 01.07.2013.

22. The basic question that arose before the *Arbitral Tribunal* was whether the *Termination Notice* dated 08.10.2012 is illegal, against the provisions of the *Concession Agreement* and law and *void ab initio*, as claimed by *Delhi Metro*. In order to consider the said basic question, it was required to consider as to whether the *Termination Notice* complied with the relevant ingredients of Article 29.5.1 of the *Concession Agreement*.

23. It is the case of the *Concessionaire* that as per Clause 3 of the tripartite Escrow Agreement dated 24.03.2009 (executed between the Lenders, *Delhi Metro* and the *Concessionaire*) and post handing over of the Project to *Delhi Metro* in July 2013, it was the obligation of *Delhi Metro* to deposit into the Escrow Account the *Termination Payments* as well as all revenues derived from the Project operations collected by it in accordance with the *Concession Agreement*.

24. *Delhi Metro inter alia* challenged the termination of the *Concession Agreement* by the *Concessionaire* before the *Arbitral Tribunal*.

25. As per the *Concessionaire* as a consequence of termination of the *Concession Agreement*, *Delhi Metro* took over the possession and control of the Airport Metro Express Line/Project from 01.07.2013 and there after the Line is being operated by the *Delhi Metro* and post taking over and running the Project, it was the obligation of *Delhi Metro* to deposit all revenues earned from the operation and the running of the Project into the Escrow Account and utilize the same to service the debt of the Lenders in accordance with Clause 3 of the Escrow Agreement. However, *Delhi Metro* began collecting the revenues thereof and depositing them into a separate account other than the Project Escrow Account.

26. The *Arbitral Tribunal* passed the impugned award dated 11.05.2017 holding that the *Termination Notice* dated 08.10.2012 given by the *Concessionaire* to *Delhi Metro* is valid and the termination is effective from 07.01.2013 (i.e. 90 days from the date of the *Termination Notice*).

27. The summary of the Award is as under:

(a) Claims of *Delhi Metro*

S.No.	Principal Amount Claimed	Interest Claimed	Award	Interest
1.	To quash the termination notice of Concessionaire	-	Termination Notice dt. 08.10.2012 of Concessionaire	-

			is valid	
2.	Rs. 3173 Crores	18% per annum from the date of award	NIL	NIL
3.	Rs. 4.92 crores per month	18% per annum from 01.07.2013	NIL	NIL
4.	Rs. 1000 crores	18% per annum from 01.07.2013	NIL	NIL
5.	Cost of Arbitration Proceedings		NIL	NIL
6.	Any other or relief(s) as the Tribunal may deem fit.	-	Rs. 46.94 Cr.	Interest @ 11 percent per annum will accrue from the date requisite stamp duty is paid by Delhi Metro

(b) Claims of *Concessionaire*

S.No.	Principal Amount Claimed	Interest Claimed	Award	Interest
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1.	Rs. 3470 cr.	SBI PLR +2% from 07.08.2013	Rs.2782.33 cr.	As per Article 29.8 of Concession Agreement from 07.08.2013. Mode of payment as per Article 29.9 of CA
2.	Rs. 166.32 cr.	18% per annum	Rs. 147.52 cr.	Interest @ 11 percent per annum will accrue from the date requisite stamp duty is paid by Concessionaire
3.	Rs. 105.74 cr.	18% per annum	NIL	NIL
4.	Rs. 66.93 cr.	18% per annum	Rs.62.07 cr.	Interest @ 11 percent per annum will accrue from the date requisite stamp duty is paid by Concessionaire
5.	Rs. 56.80 Lakh	18% per annum	Rs.56.80 lakh	Interest @ 11 percent per annum will accrue from the date requisite stamp duty is paid by

				Concessionaire
6.	Rs. 2382.82	18% per annum	NIL	NIL
7.	Rs. 452.17 Cr.	18% per annum	NIL	NIL
8.	Rs. 1250 cr	18% per annum	NIL	NIL
9.	Alternative Claim	18% per annum	NIL	NIL
10.	Alternative Claim Rs. 725.78 cr.	SBI PLR + 2%	NIL	NIL

28. *Delhi Metro* has impugned the award. It is contended that the *Arbitral Award* passed by the *Arbitral Tribunal* is against the terms and conditions of the *Concession Agreement* dated 25.08.2008. It is submitted that the *Arbitral Tribunal* has disregarded Article 29.5.1 (i) of the *Concession Agreement* by holding that the use of words “*non-exhaustive list of defects*” mentioned by the *Concessionaire* in its notice dated 09.07.2012 was in accordance with Article 29.5.1(i) and that it was not bound to give access to an exhaustive list of defects for curing as mandated by the Article.

29. It is further contended that the 90 days legal notice to cure the defects was on the face of it in violation of the aforesaid Article. It was a requirement of the *Concession Agreement* and contractual law that the curing notice should have been categorical and should have

called upon *Delhi Metro* to rectify categorically the defects. It was not open for the *Arbitral Tribunal* to assume that the curing notice subsumes all/sundry allegations, improvements and additions that the *Concessionaire* would have wanted to make a part of curing notice. It is submitted that as per Clause 29.5.1 (i) the cause of termination of the *Concession Agreement* would have legally accrued only on non-curing of the defects/ not taking effective steps to cure by the *Delhi Metro*. It is submitted that none of the defects on which the findings have been returned by *Arbitral Tribunal* against *Delhi Metro* were defects on which the *Delhi Metro* had been put to 90 days notice for curing the same by the *Concessionaire* by its letter dated 09.07.2012. Time for curing the defects on which findings have been returned by *Arbitral Tribunal* never commenced and thus was not exhausted.

30. It is further submitted that the impugned award is in violation of the terms & conditions of Article 36.2.6.1 according to which, “Where arbitral award is for payment of money no interest shall be payable on the whole or any part or the money for any period till the date on which the award is made”. The *Arbitral Tribunal* has awarded *Termination Payment* under the *Concession Agreement* in favour of the *Concessionaire*, which includes 130% of the adjusted equity invested by the *Concessionaire*. The *Arbitral Tribunal* is alleged to have erred in its award and acted against the fundamental policy of Indian law in disregarding the balance sheet of respondent for the year 2012-13, in which year the *Concession Agreement* was terminated,

wherein the equity invested in the project is shown only as Rs. 1 lakh. The arbitral tribunal considered an amount of Rs. 611.95 crores as equity invested by the *Concessionaire* in the project. The said amount of Rs. 611.95 crores was share application money as per the accounts of the *Concessionaire*, which, was treated by the *Arbitral Tribunal* as a Subordinate Debt and then as equity.

31. It is submitted that after serving cure notice dated 09.07.2012, the *Concessionaire* along with *Delhi Metro* continued to jointly monitor and approve the Repair Methodology adopted for rectification of the defects. Even after terminating the *Concession Agreement* on 08.10.2012, the *Concessionaire* continued to participate in the execution of repairs and was involved in carrying out the trial runs. Representatives of the *Concessionaire* jointly tendered the documents certifying completeness of repairs and that the line met safety parameters as prescribed by Commissioner of Metro Rail Safety. It is submitted that the continued action of the *Concessionaire* even after its termination letter dated 08.10.2012 and without giving, any new notice of objections or renewal thereafter amounted to waiver of its right to object under Section 4 of the Act.

32. It is contended that the *Concessionaire* themselves abandoned the termination of the *Concession Agreement* by participation in the curing of the defects; participation in the trial runs and thereafter operating the *Airport Metro Express Line* successfully for over 5 months. The *Concessionaire* was *estopped* by their conduct from

terminating the *Concession Agreement*.

33. Per contra, it is contended on behalf of the Concessionaire that the cure notice dated 09.07.2012 gave a non-exhaustive list of defects. The Cure Notice *inter alia* annexed two documents, namely, Internal Enquiry Report dated 07.07.2012 of the Respondent as well as the Preliminary Report of M/s Shirish Patel and Associates Consultants Private Limited who were the structural consultants. Various defects were also enumerated in the said two documents. The defects, which were claimed to have been cured by Delhi Metro, were noticed and discussed between the parties in the correspondence exchanged between them and in the meetings held from time to time. The *Arbitral Tribunal*, after considering the material including the documents and evidence, held that the notice dated 09.07.2012 was not confined only to the defects relating to the bearings. It gave a “non-exhaustive” list of various defects and referred to various “latent/inherent” defects as well.

34. It is submitted that *Delhi Metro* not only admitted but also led evidence, before the *Arbitral Tribunal* to show that defects, apart from those relating to bearing assembly, such as cracks at the soffit of the girders, were, according to them, addressed and repaired. It is contended that if *Delhi Metro* was concerned only with the defects in the bearing assembly and understood the complaint of *the Concessionaire* as relating only to the bearing assembly, then they would not have addressed various other defects such as cracks at the

soffit of the girders, gaps between the girders and girder and the shear key and twist in girders, etc.; the defects which were pointed out by the *Concessionaire* and found to exist, which *Delhi Metro* claimed to have remedied, but were not cured. Neither the complaint of the *Concessionaire* nor the activity of purported repairs were confined to defects in bearing assembly only. That there were defects in the civil structure is the admitted position.

35. It is contended that the disputes between the parties was; whether the defects in the civil structure had been cured or effective steps had been taken to cure such defects within the period of 90 days from 09.07.2012. It is submitted that the contentions of *Delhi Metro* regarding the scope of the Cure Notice has been duly and appropriately considered by the *Arbitral Tribunal* at four places in the Arbitral award and the *Arbitral Tribunal* has given cogent reasons for rejecting the said contention.

36. It is denied that the *Arbitral Tribunal* has disregarded Article 29.5.1 (i) of the *Concession Agreement* by holding that the use of words “non-exhaustive list of defects”, mentioned by the *Concessionaire* in its Cure Notice, was in accordance with Article 29.5.1 (i) of the *Concession Agreement*. It is submitted that the list given in the Cure Notice covered all the defects on which the *Arbitral Tribunal* has returned a finding in favour of the *Concessionaire*. It is submitted that it was sufficient for the *Concessionaire* to merely state that there were defects in the civil structure which, ought to be cured

and there was no need to give an exhaustive list.

37. It is further submitted that the defects were categorically found in the inspection undertaken and discussed in detail in the meetings convened by the Ministry of Urban Development, Government of India. The demand was not vague but was clear to *Delhi Metro*. It is submitted that the mention of “*damaged girders*” clearly took within its scope all types of damage to the girders, namely, cracks in the girders, twist in the girders, gaps between the girders and between girders and shear keys.

38. It is submitted that the *Arbitral Tribunal* concluded that there were far reaching defects in the civil structure, which were not cured and/or no effective steps were taken to cure the said defects within the cure period and the *Concessionaire* was entitled to terminate the *Concession Agreement* on that ground.

39. It is contended that the *Arbitral Tribunal* has duly considered and given its reasons that it was not called upon to go into the question of financial viability of the project and, having found that the termination was valid, there was no question of dealing with the issue of financial viability.

40. It is further submitted that the *Arbitral Tribunal* has found that the civil structures were not properly handed over by *Delhi Metro* to the *Concessionaire* because the *as-built drawings* were not furnished by *Delhi Metro* to the *Concessionaire*, and the Defect Liability

Certificate was issued for civil structures by *Delhi Metro* with retrospective effect without involving the *Concessionaire*. The *Arbitral Tribunal* further found that the defects were such as could not have been detected during routine inspection. It is further contended that the *Concessionaire* had no role to play in the construction of the civil structure.

41. Learned Senior Counsel for the *Concessionaire* denies that any action of the *Concessionaire* between 09.07.2012 and 08.10.2012 amounted to a waiver of any objection or right of the *Concessionaire*. Specific contention of waiver, *estoppel* or abandonment was not raised by *Delhi Metro* in its Statement of Claim. It is submitted that the scope of involvement of the *Concessionaire*, in the repairs being undertaken by *Delhi Metro*, was very limited. The *Concessionaire* was not involved in evolving alleged methodology of alleged repairs or of alleged actual carrying out of the repairs.

42. It is contended that the *Arbitral Tribunal* has rightly held that there were breaches of the *Concession Agreement* by *Delhi Metro* entitling the *Concessionaire* to terminate the *Concession Agreement*. The *Arbitral Tribunal* has given elaborate reasons why specific performance of the contract could not be granted in spite of holding that there was a breach of the *Concession Agreement* by *Delhi Metro*. It is submitted that once a breach of the *Concession Agreement* is upheld, which had a material adverse effect on the right of the *Concessionaire* to perform its obligations under the *Concession*

Agreement, termination was the only consequence and, once termination was found to be valid, there was no question of granting specific performance. It is submitted that an order/decreed for specific performance of operating a metro line would involve continuous supervision to see whether the contract was being specifically performed during the entire tenure of the contract and thus the *Concession Agreement* was clearly a contract, which was not specifically enforceable.

43. It is submitted that CMRS restricted the speed with specific reference to the defects in the civil structure. Further, post termination on 08.10.2012, the *Airport Metro Express Line* was not being operated by the *Concessionaire* until 21.01.2013 and thereafter at the request of *Delhi Metro* and in public interest, until *Delhi Metro* took over the operation, the *Concessionaire* operated the *Airport Metro Express Line* as a deemed agent of the *Delhi Metro* between 22.01.2013 to 30.06.2013. The line was being run without prejudice to the rights and contentions and specifically without prejudice to the pending arbitration, at a restricted speed. It is further submitted that the line was not being run in terms of the *Concession Agreement* at the stipulated speed. Even for the last 4 ½ years *Delhi Metro* is running the line at a much lesser speed.

44. It is submitted that the *Arbitral Tribunal* rightly considered an amount of Rs. 611.95 crores as equity invested by the *Concessionaire* in the project. The *Concession Agreement* specifically defines

“*Termination Payment*” and the various constituents and ingredients thereof. The terms “Debt”, “Equity” and “Adjusted Equity” are also defined and the “Subordinated Debt” is clearly a part of the said definitions as contained in the *Concession Agreement*. It is submitted that there is no scope for confining the definition of the term “Termination Payment” only to equity share capital as stated in the balance sheet. The *Arbitral Tribunal* has considered all submissions and given a well-reasoned award on the said issue.

45. It is submitted that the *Arbitral Tribunal* followed the provisions of Article 36.2.6.1 of the *Concession Agreement*. The Termination Payment has been awarded in terms of Article 29.

46. It may be at this juncture observed that the *Arbitral Tribunal* noticed that the main issues that arise for consideration in the arbitration were as to (i) whether there were there any defects in the civil structure of the airport metro line?; (ii) If there were defects, did such defects had a material adverse effect on the performance of the obligation of the *Concessionaire* under the *Concession Agreement*? and (iii) If there were defects in the civil structure, which had a material adverse effect on the performance of the obligations under the *Concession Agreement* by the *Concessionaire*, had such defects been cured by *Delhi Metro* and / or had any effective steps been taken within a period of 90 days from the date of notice by the *Concessionaire* to cure the defects by *Delhi Metro* and thus was *Delhi Metro* in breach of the *Concession Agreement* as per clause 29.5.1(i)?

47. Clause 29.5.1 relating to termination payment reads as under:

“29.5.1 The Concessionaire may after giving 90 (ninety) days notice in writing to Delhi Metro terminate this Agreement upon the occurrence and continuation of any of the following events (each a “Delhi Metro Event of Default”), unless any such Delhi Metro Event of Default has occurred as a result of Concessionaire Event of Default or due to a Force Majeure Event.

- (i) Delhi Metro is in breach of this Agreement and such breach has a Material Adverse Effect on the Concessionaire and Delhi Metro has failed to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from the Concessionaire;*
- (ii) Delhi Metro repudiates this Agreement or otherwise evidences an irrevocable – intention not to be bound by this Agreement;*
- (iii) GoI or GNCTD or any Governmental Agency have by an act of commission or omission created circumstances that have a Material Adverse Effect on the performance of its obligations by the Concessionaire and have failed to cure the same within 90 (ninety) days of receipt of notice by Delhi Metro in this behalf from the Concessionaire;*
- (iv) Delhi Metro has delayed any payment that has fallen due under this Agreement if such delay exceeds 90 (ninety) days.”*

48. Article 29.5.1 confers upon *the Concessionaire* the right to terminate the *Concession Agreement* on the occurrence of certain

events, which are described therein as the “Delhi Metro Event of Default”.

49. The *Arbitral Tribunal* held, and rightly so, that if it is found that *Delhi Metro* was in breach of the *Concession Agreement* and such breach had Material Adverse Effect on the obligations of the *Concessionaire* and further that *Delhi Metro* failed to cure such breach or take effective steps for curing such breach within 90 days reckoned from 09.07.2012, *Delhi Metro*’s claim would fail and *the Concessionaire*’s counter claim would succeed. If on the other hand, it is found that the ingredients of Article 29.5.1 are not satisfied, the claim of *Delhi Metro* to the extent that it prays for declaration of the Termination Notice as invalid would succeed and the *Concessionaire*’s counter claim would fail. However, in such event, a further consideration of the question whether *Delhi Metro* is entitled to specific performance of the *Concession Agreement* directing the *Concessionaire* to operate the line and further monetary claims prayed for by *Delhi Metro* may or may not be granted to *Delhi Metro*, would be required to be gone into.

50. The *Concessionaire* issued the Cure Notice to *Delhi Metro* on 09.07.2012. The termination notice was issued on 08.10.2012.

51. Since the entire issue revolves around the Termination Notice, it would be expedient to extract the entire notice. The Cure Notice dated 09.07.2012 reads as under:

“Ref No.: DAME/DMRC/2012/4728

Date : 9th July, 2012

To,

***Managing Director
Delhi Metro Rail Corporation (‘DMRC’)
Metro Bhawan, Fire Brigade Lane,
Barakhamba Road,
New Delhi – 110001***

Project : Airport Metro Express Line (“Project”)

***Subject : Design, installation, commissioning,
operation and maintenance of Airport, Metro
Express Line – New Delhi – Indira Gandhi
International Airport – Dwarka Sec 21 (“Project”)
– Defects in the Delhi Metro Works – Notice of
Material Breach and Delhi Metro Event of
Default.***

References :

***Notification No.K-14011/1/2002-MRTS dated May 17,
2007 (“Notification”);***

***Concession Agreement dated August 25, 2008
 (“Concession Agreement”) between Delhi Airport Metro
Express Private Limited (the Concessionaire) and Delhi
Metro Rail Corporation (DMRC);***

***Technical report of Shirish Patel & Associates
Consultants Private Limited (“SPA”);***

Copy of the Concessionaire Investigation Report

***Office Memorandum containing the Minutes of Meeting
with Secretary (UD) on July 2, 2012 at 03:00 PM
 (“MOM”);***

Correspondences between the Parties concerning the subject matter.

Dear Sir,

1. With respect to the subject matter, we wish to draw your kind attention to the terms of the Notification, the Concession Agreement, correspondences exchanged between us in relation to the subject matter, various meetings with Delhi Metro in relation to the subject matter, the technical report of SPA and MOM and notify you as hereunder.

2. As per the Concession Agreement, the scope of responsibilities and obligations of DMRC, in so far as they relate to defects in DMRC Works, includes:

- (a) Undertaking and completion of the civil works (being included in the definition of the term Delhi Metro Works) of the Project as per the DPR and the revised profile of the Project at its own cost.*
- (b) Performance and execution of all design, engineering, financing, procurement, construction and testing of Delhi Metro Works, as more particularly described in Schedule B of the Concession Agreement.*
- (c) Responsibility for the quality and standards of Delhi Metro Works (which includes civil works and other works as more particularly described in Schedule B of the Concession Agreement) as provided under the applicable laws and as per good industry practice, so as to enable the Concessionaire to operate the Project at least for the Concession Period.*

(d) *Enable access and provide license of the Site (which term includes Delhi Metro Works) in the form and manner, which permits the peaceful use thereof by the Concessionaire under and in accordance with the terms of the Concession Agreement.*

(e) *Undertake, comply with and perform all its obligations as set out or arising under the Concession Agreement at its own cost.*

3. *The Site (which term includes Delhi Metro Works) was handed over to the Concessionaire on an 'as is where is' basis, enabling the Concessionaire to perform its functions in accordance with the terms of the Concession Agreement.*

A. *Defects in Delhi Metro Works*

4. *the Concessionaire has noticed certain defects in the Delhi Metro Works, which are affecting the performance obligations of the Concessionaire under the Concession Agreement. A non-exhaustive list of the defects ("Defects") which have created unsafe conditions for the performance of the Concessionaire's obligations under the Concession Agreement are:*

(a) *Damaged bearing pads;*

(b) *Dangerous movement of the girders;*

(c) *Extensive cracks in the bearing pedestals;*

(d) *Large chunks of fillings, at the top and bottom of bearings, crushed and several pieces having already fallen;*

(e) *Displaced and tilted bearings;*

- (f) *Pot bearing movement restricted by steel strips bolted to top and bottom of the bearings;*
- (g) *Damaged girders;*
- (h) *Severe damages to pier caps.*

5. *Upon becoming aware of the Defects, further inspections were carried out (without having the original, 'as-built' and other relevant designs and drawings which DMRC, despite being demanded, has not provided) and a preliminary investigation report was accordingly prepared by our internal expert team. The preliminary investigation report indicates that the Defects, being latent/inherent defects in the Delhi Metro Works, have arisen solely due to poor workmanship, faulty construction methodology and deficiency in the design of the Delhi Metro Works.*

6. *As obligated under the Concession Agreement, the Concessionaire has immediately notified Delhi Metro on May 17, 2012 regarding the occurrence and existence of the Defects which have resulted in the unsafe conditions for 'the operation' of the Project A copy of the said investigation report is enclosed herewith and marked Annexure A. Copies of the correspondence exchanged between the Concessionaire and Delhi Metro till date in this regard are also annexed herewith and marked as Annexure B.*

7. *The Defects in Delhi Metro Works:*

- (a) *were not apparent at the time of handing over of the Site (including the handing over in parts/sections) to the Concessionaire;*
- (b) *were not capable of being noticed/ identified at the time of takeover due to their latent/ inherent*

nature; and

(c) *affects the operation of the entire Project.*

8. *Further, since the:*

(a) *Delhi Metro Works were handed over to the Concessionaire on an “as is where is” basis; and*

(b) *Defects in the Delhi Metro Works are latent/ inherent defects and have arisen solely due to poor workmanship, faulty construction methodology and deficiency in the design in the Delhi Metro Works, it was not possible for the Concessionaire to notice/ identify the Defects (despite undertaking the inspections) nor could the Defects have been noticed at the time of taking over the possession of the Delhi Metro Works.*

9. *At this juncture, it is important to highlight an observation of Shri A. K. Gupta, Additional Member (Works), Railway Board, which he has made in the meeting held at the Ministry of Urban Development on July 2, 2012 (and also noted in the MOM and annexed herewith as Annexure C), which observes as below:*

“... in the railway systems, visual inspection of bearing are carried out once in a year, while detailed inspection once in five years and life of bearings is around 15 years” (emphasis applied)

In view of the above observations by one of the most acknowledged domain experts, it is clearly evidenced that, in standard practice, the quality of the bearings (which is also one of the part of the Defects in the Delhi Metro Works) is at least of such standard that it needs an inspection only once in 5 years. Since the Project has been commissioned early last year only, there was no

reason to conduct the detailed inspection of the bearings and other Delhi Metro Works either at the time of taking over the possession or otherwise, except as provided in the Concession Agreement. We have been represented and were under a bonafide impression that the Delhi Metro Works will be of such quality and standards that they shall be capable of allowing the Concessionaire to perform its obligations at least for the Concession Period in accordance with the terms of the Concession Agreement.

10. *It is further pertinent to point out here that the Concessionaire did not have any control or say of any nature whatsoever inter-alia in the design, engineering, construction and testing of the Delhi Metro Works, and thus, the sole responsibility for Delhi Metro Works rests with DMRC.*

11. *It is pertinent to note that these Defects in Delhi Metro Works have been acknowledged and accepted by DMRC, including in its letter nos. DMRC/20/11/AP/2011/P1/33/3654 dated June 2, 2012, DMRC/20/11/AP/2012/P1/33/3657 dated June 6, 2012 and DMRC/20/11/AP/2012/P1/33/3666 dated June 12, 2012. These letters are annexed herewith as Annexure D.*

B. PRELIMINARY REPORT BY SPA

12. *Pursuant to the above, Delhi Metro called upon the Concessionaire to appoint SPA, as a structural consultant of repute, to look into the safety concerns that could arise due to the Defects.*

13. *Accordingly, in the interest of the Project, SPA was appointed to investigate the Defects in the Delhi Metro Works. SPA has submitted its preliminary report on June 22, 2012. A copy of the preliminary report submitted by SPA is enclosed herewith and marked*

Annexure E. The relevant portion of the said report is reproduced as under:

“Damage to structure: There seems to be localized structural distress that could be seen from the photographs at some locations. In absence of the relevant drawings, it is not possible to comment on the reasons for such distress. At Pier P62 we could see a chunk of concrete resting on the pier cap. Looking at the color concrete this appears to be of very recent origin. This can be easily verified by using phenolphthalein solution. We could clearly see sunlight at this location suggesting that a small chunk of slab of the U girder (beyond the bearing) has got dislodged. This is a cause of concern and should be examined without further loss of time. Timber packaging should be provided so that undue deformations of the track are prevented. We need to look at the relevant detailed drawings before any conclusions can be drawn.”

“Safety of operation: The main concern will be that of possible derailment, especially if unacceptable deviations in the track alignment are noticed. The fact of the matter is that trains have been plying even with bearings deformed and / or with the track misalignments as they exist today. We can infer that the margin in the factor of safety has been encroached upon. “

14. As is clear from SPA's report, a full-fledged investigation cannot be undertaken and no effective remedial measures can be suggested in the absence of relevant documents, designs and drawings. In any event, it is abundantly clear from SPA's report that, due to the occurrence and the existence of the Defects in the Delhi Metro Works, the Project is not safe for operations.

15. The Defects in the Delhi Metro Works, for which Delhi Metro is entirely responsible, has directly resulted

in the inability of the Concessionaire to operate the Project in accordance with its obligations as per the Concession Agreement.

16. *Further, the Defects have rendered the operation of the Project highly unsafe and such unsafe operations have the potential to cause loss to life and property.*

17. *The Defects in the Delhi Metro Works have prevented the Concessionaire from discharging its obligations under the Concession Agreement including its obligation to operate, manage and maintain the Project as a commercial enterprise for providing the members of the public with a safe, comfortable, reliable and high-speed connectivity to the Indira Gandhi International Airport.*

C. Stoppage of Operations of the Trains in the Project

18. *Since the operation of the Project is unsafe, which view has been supported by the stakeholders of the Project including Ministry of Urban Development, Railway Board and Government of National Capital Territory of Delhi (as also reflected in the MOM) and SPA's independent report, the Concessionaire has been constrained to stop the operations of the train from July 8th, 2012 in accordance with the provisions of the Concession Agreement.*

19. *In this regard, the observations of certain stakeholders are notable (as also noted in the MOM) as below:*

Shri P. K. Tripathi, Chief Secretary. Government of National Capital Territory of Delhi

“... safety of passengers was paramount... Efforts should be made to maintain the high image of the

metro... GNCTD would accept whatever decision was taken in public interest.”

Since the operation of the Project in the existence of the Defects resulting into the unsafe conditions is not in public interest, the operation of the trains was required to be stopped.

*Shri A. K. Gupta. Additional Member (Works),
Railway Board*

*“... In the given scenario, Indian Railways would have stopped the operations immediately”
(emphasis applied)*

As no train is safe to be operated in the existence of the Defects, the Concessionaire could not have continued with the risk of operating the trains under severe speed restrictions in the existence of the Defects, and had to stop the trains in the best interest of the life and property of public at large.

20. *Being the agency responsible for the operation of the Project, the Concessionaire has informed the public at large about the stoppage of the trains vide a public notification dated July 7th 2012. A copy of the public notification is annexed herewith and marked as Annexure F.*

21. *It may be mentioned here that, from the date of becoming aware of the Defects until the aforesaid date of the stoppage of trains, the Concessionaire was operating the trains only at the insistence of DMRC. However, since the Defects are getting aggravated and recognizing that the safety of the public is paramount, so as to not to take any chances whatsoever, and to ensure that no risk whatsoever is put to life and property, the Concessionaire had to stop the operation of the trains.*

22. *In any event, the Concessionaire is undertaking all such steps as are necessary to protect the Project and shall continue to act as such under the provisions of the Concession Agreement.*

23. *Also, Delhi Metro is hereby notified that, since the trains are stopped due to Defects in the Delhi Metro Works, Delhi Metro will only be solely liable for all the operational and revenue losses that the Concessionaire has suffered and will suffer due to such closure. Delhi Metro is hereby accordingly notified to indemnify the Concessionaire as per the relevant provisions of the Concession Agreement including Article 34.1 (b) thereof, for all the revenue and other operational losses, damages and expenses of whatsoever nature that the Concessionaire has suffered and is continuing to suffer due to DMRC's failure to discharge its function in accordance with the terms of the Concession Agreement.*

D. Material Adverse Effect on the Performance of the Concessionaire's Obligations

24. *In view thereof, the Defects in the Delhi Metro Works have directly resulted in a situation where:*

(a) *the continued operation of the Project is highly unsafe (as circumstances have been created which have the potential to cause, or may result in, loss of life and property); and*

(b) *they have severely impaired the technical capabilities of the Concessionaire to operate and maintain the Project as per the provisions of the Concession Agreement.*

25. *Thus, the Defects in the Delhi Metro Works have caused a Material Adverse Effect on the performance of obligations of the Concessionaire under the Concession*

Agreement inter alia to operate, manage and maintain the Project.

26. *In view of the aforesaid, and more particularly in view of the preliminary report submitted by SPA, it is clear beyond doubt that:*

- (a) *the Defects in Delhi Metro Works have rendered the Concessionaire technically impaired to operate the Project as per the design as envisaged under the terms of the Concession Agreement; and*
- (b) *the Project is unsafe to operate with the Defects in the Delhi Metro Works.*

27. *In view of the aforesaid, the Concessionaire states that:*

- (a) *In light of the Defects in the Delhi Metro Works, the operation of the trains (which have now been stopped) had become unsafe and consequently posed a serious risk to life and property.*
- (b) *The Defects have technically impaired the safe environment for operation of the Project.*
- (c) *The Site is not in a condition, due to Defects in the Delhi Metro Works, to permit the Concessionaire to perform its obligations under the Concession Agreement including the safe operation and maintenance of the Project in accordance with the terms thereof (which is a breach of DMRC's obligations under the Concession Agreement).*
- (d) *Prior to the stoppage of the trains, the speed of the trains has been severely restricted to such an extent that the Project has completely lost its relevance of being a "High Speed Airport Metro Express Line".*

- (e) *The trains can now only be restarted once the defects are cured to the satisfaction of all stakeholders, so that the Delhi Metro Works are safe for the operations of the Project in accordance with the terms of the Concession Agreement, including for the operations of the high speed trains, at least during the Concession period.*
- (f) *The Defects in the Delhi Metro Works have a direct fall out on the capability of the Concessionaire to perform its obligations under the Concession Agreement, and has a fatal repercussion on the Project viability. In this respect, the Concessionaire hereby reserves its right to be compensated as per the applicable provisions of the Concession Agreement, applicable laws and equity.*
- (g) *the Concessionaire should be indemnified for all the revenue and other operational losses, damages and expenses of whatsoever nature that the Concessionaire has suffered, and is continuing to suffer, due to DMRC's failure to discharge its functions in accordance with the terms of the Concession Agreement, evidenced by the existence of Defects in the Delhi Metro Works, as per the relevant provisions of the Concession Agreement including Article 34.1(b) thereof.*

28. *As a further consequence of the Concessionaire not being able to perform its obligations under the Concession Agreement, solely because of technical impairment and unsafe conditions arising due to Defects in the Delhi Metro Works, which has a Material Adverse Effect on the ability of the Concessionaire to perform its obligations, rights have also accrued to the Senior*

Lenders to take such actions as they may deem fit under the terms of the Financing Documents, and the Concessionaire has been put in a situation that the Concessionaire will be considered to be in default of its obligations under the Financing Documents.

E. Notice to Cure the Defects

29. Accordingly, Delhi Metro is hereby requested to take all such actions and measures as may be necessary to completely cure the Defects in the Delhi Metro Works and the breach of its obligations (including for not being able to provide the Site permitting the Concessionaire to perform its obligations under the Concession Agreement), which has Material Adverse Effect under the Concession Agreement, within 90 (ninety) days of notice, failing which the same shall be treated as:

- (a) a Material Breach; and*
- (b) Delhi Metro Event of Default;*

under the Concession Agreement and the Concessionaire shall be entitled to take all actions as per the terms of the Concession Agreement, applicable laws and equity, including to issue the Termination Notice.

30. If the Concession Agreement is terminated due to aforesaid Delhi Metro Event of Default, Delhi Metro will be liable for all consequences provided under the Concession Agreement including but not limited to the Termination Payments and other payments as per the terms of the Concession Agreement.

31. Unless otherwise defined herein, the capitalized terms shall be deemed to have the same meaning as ascribed to such terms under the Concession Agreement.

32. This notice is issued by the Concessionaire without

prejudice to any of the rights or remedies available to it under the Concession Agreement, law or in equity.

Thanking you,

Yours sincerely,

For: Delhi Airport Metro Express Pvt. Ltd

Satish Mishra
(Director)

Enclosures :

Annexure A - Copy of the Concessionaire Investigation Report

Annexure B - Copies of other correspondence exchanged between the Concessionaire and Delhi Metro till date related to subject matter

Annexure C - Minutes of Meeting held at Ministry of Urban Development on July 2, 2012

Annexure D - Letters by Delhi Metro to the Concessionaire

Annexure E - Preliminary report of SPA dated June 21st 2012

Annexure F - Public Notice issued dated July 7th, 2012”

52. The termination notice dated 08.10.2012 issued by the Concessionaire, on the ground that *Delhi Metro* failed to cure the defects pointed out and even failed to take effective steps within the cure period to remove the defects, reads as under:

“Ref: DAME/DMRC/2012/5107

Dated: 8th October, 2012

By Hand / Email

*To,
Managing Director
Delhi Metro Rail Corporation.
Metro Bhawall.
Fire Brigade Lane.
Barakhamba Road New Delhi.*

Project: Airport Metro Express line Contract AMEL-P1

Subject: Termination Notice under the Concession Agreement for High Speed Airport Metro Express Line between New Delhi - Indira Gandhi International Airport - Dwarka sector 2.1 (“Project”) consequent of upon DMRC’s Event of Default

Ref: a) Concession Agreement dated August 25, 2008 (“Concession Agreement”)

b) Our letter no. DAME/DMRC/2012/4728 dated July 9, 2012 (‘Notice to cure Delhi Metro Events Of Default”)

c) DMRC’s letter no DMRC/20/II/AP/P1 dated August 3, 2012 (DMRC’s Reply”)

d) Our letter no DAME/DMRC/2012/5101 dated October 5, 2012

Dear Sir,

1.0 The Concessionaire writes in respect of the captioned subject and the letters under reference hereinabove

2.0 Notwithstanding anything that is alleged in DMRC's Reply the Concessionaire hereby repeats and reiterates that it has duly complied with all its Obligations under the Concession Agreement and maintenance manuals including In respect of the conduct of regular inspections and undertaking of repairs of the works which were its responsibility

3.0 The Concessionaire submits that it was due 10 its efforts and periodic inspections only that the Defects could be detected The Defects being latent/inherent in Delhi Metro Works were not capable of identification at any point of time, including at the time of providing access of the Site to the Concessionaire for carrying out the Concessionaire's Works.

4.0 DMRC, despite receiving notifications and all necessary and reasonable support from the Concessionaire, has failed to cure the breach of its obligations under the Concession Agreement including for the cure of the Defects. Which have resulted into the Delhi Metro Events of Default.

5.0 A period of 90 (ninety) days has expired since the issue of Notice to cure Delhi Metro Events of Default, and none of the Delhi Metro Events of Default have been cured.

6.0 In view of the above, the Concessionaire hereby terminates the Concession Agreement under Article 29.5.1 of the Concession Agreement.

7.0 The exercise of its rights by the Concessionaire concerning termination of the Concession Agreement under Article 29.5.1 of the Concession Agreement is without prejudice to its rights and remedies available to it under the Concession Agreement, law or in equity.

8.0 *As the Concession Agreement is terminated due to the Delhi Metro Event of Default, the Concessionaire is hereby immediately released from all its obligations under the Concession Agreement or any document forming part thereto.*

9.0 *In view of the termination of the Concession Agreement and pursuant to the provisions of Clause 29.5.2 of the Concession Agreement, the Concessionaire hereby calls upon Delhi Metro to pay, by way of Termination Payment, an amount equal to:*

- (a) *Debt Due. which is Rs. 2.940 Crores (Rupees Two Thousand Nine Hundred and Forty Crores Only); and*
- (b) *130% or the Adjusted Equity, which is Rs. 130,000 (Rupees One Lakh and Thirty Thousands Only)*

within 7 (seven) days hereof.

10.0 *In view of DMRC's failure to discharge its functions and obligations in accordance with the terms of the Concession Agreement and the Delhi Metro Events of Default, the Concessionaire has suffered the revenue and other operational losses, damages and expenses, and accordingly, the Concessionaire hereby reserves its right to call upon Delhi Metro to indemnify the Concessionaire for all such revenue and other operational losses, damages and expenses of whatsoever nature as per the relevant provisions of the Concession Agreement including Article 34.1(b) thereof, upon its quantification.*

11.0 *The Concessionaire hereby also calls upon Delhi Metro to appoint its nominee and instruct him to be present at a mutually convenient time to take-over the possession of the Project Assets and the inventory thereof. If Delhi Metro fails to appoint its nominee or*

agree upon a mutually convenient time within 7 days hereof, then the Project will be vacated at the sole risk and liability of DMRC, and the Concessionaire will not be responsible for any form of risk or liability whatsoever in relation to the Project Assets or any inventory forming part thereof.

12.0 In the event Delhi Metro fails, neglects or delays to do the acts and things stated above, the Concessionaire reserves right to initiate appropriate legal actions at DMRC's risk as to costs and consequences.

13.0 Nothing contained in this Termination Notice shall be seen as a waiver of any of the Concessionaire's rights or the obligations of DMRC, under the Concession Agreement, of any nature. The Concessionaire hereby reserves all its rights and remedies against DMRC.

14.0 Unless otherwise defined herein, the capitalized terms shall mean to have the same meaning as ascribed to such term under the Concession Agreement or under the Notice to cure Delhi Metro Events of Default.

Thanking you.

Yours sincerely,

For: Delhi Airport Metro Express Pvt. Ltd

*Satish Mishra
Director"*

53. On the termination of the *Concession Agreement*, efforts were made to conciliate, however without result. *Delhi Metro* thereafter invoked Arbitration by its letter dated 23.10.2012. The *Arbitral Tribunal* was constituted on 08.08.2013.

54. After certification by CMRS on 18.01.2013, the line was restarted on 22.01.2013 with reduced speed. The *Concessionaire*, after reiterating its stand as regards the failure of *Delhi Metro* to cure the defects, agreed to operate the line, it is contended by the *Concessionaire*, only as an agent and on instructions of *Delhi Metro* and in public interest and without prejudice. The *Concessionaire* stopped operations on close of working hours of 30.06. 2013 and claims to have handed over the line to *Delhi Metro* on 01.07.2013.

55. As noticed above, the *Arbitral Tribunal* noticed that the main issues that arose for consideration were (i) whether there were there any defects in the civil structure of the airport metro line?; (ii) If there were defects, did such defects have a material adverse effect on the performance of the obligation of the *Concessionaire* under *Concession Agreement*? and (iii) If there were defects in the civil structure, which had a material adverse effect on the performance of the obligations under the *Concession Agreement* by the *Concessionaire*, have such defects been cured by the *Delhi Metro* and / or have any effective steps been taken within a period of 90 days from the date of notice by the *Concessionaire* to cure the defects by *Delhi Metro* and thus was *Delhi Metro* in breach of the *Concession Agreement* as per clause 29.5.1(i)?

56. To answer the above referred issues, perusal of the Award shows that the *Arbitral Tribunal* firstly considered each of the defects alleged by the *Concessionaire* in the civil structure,

defects/deficiencies in the Viaduct structure and the repair/rectification work carried out, Codal provisions regarding the repair works, the respective submissions of the parties, opinion and reports of the experts, evidence led by the parties including of expert witnesses, and thereafter analysed the submissions in detail and gave its conclusions.

57. The *Arbitral Tribunal*, with regard to “*CRACKS AT THE BOTTOM OF THE GIRDERS*”, and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in accordance with the *Concession Agreement, inter alia* held as under:

“30. *Were the cracks at the bottom of the U Girder such defects as would have had Material Adverse Effect on the Concessionaire’s ability to operate the line in accordance with the CA? If so, were such cracks repaired and/or effective steps taken to repair the said cracks during the period 9th July, 2012 to 08th October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?*”

32.12 .

From the above analysis, the following emerge:

1. *There were too many cracks (1551 numbers in 367 girders). 72% of the total girders were affected.*
2. *The cause of the cracks was not conclusively ascertained and was based mostly on conjectures and assumptions.*

3. *As per Systra, the accuracy of depth measurement was doubtful in the absence of information regarding calibration of the measuring device. However, the crack depth as measured by AIML is up to 180mm and the mean value of crack depth at the centre of the bottom slab of the girder is approximately 100mm.*
4. *The repair methodology was based on the width of the crack and there is no mention how the depth of the crack is to be dealt with.*
5. *The Inspection of TUV does not inspire confidence, in view of large number of Proforma of checklist not being properly filled up.*
6. *The repair methodology was finally approved by the Railway Board quite hesitatingly much after the repairs were completed.*
7. *Neither DBR nor the Indian Railway Bridge Code permit cracks in the pre-stressed concrete structure elements.*

33. Discussions and Conclusions:

33.1. It is an admitted position that there were as many as 1551 cracks in 367 girders i.e. 72% of the girders were affected by such cracks. Delhi Metro has produced records of the inspection carried out by AIMIL, the agency appointed by Delhi Metro for the said purpose. The reports of such inspection produced by Delhi Metro at CD 65 at Annexure XVIII giving mapping data shows that such cracks were spread in large number of the girders. The cause of the cracks has not been established. There are different versions on behalf of Delhi Metro on the possible cause of the cracks.

- (a) *In the MoUD meeting dated 2.7.4012, MD, Delhi Metro has stated that the cracks have occurred “during lowering and not during operations” (CD 3, Pg. 12 of SOC).*
- (b) *Systra in its assessment / diagnosis of cracks dated 4.09.2012 has stated (RC-3, para 3.3.1 @ pg. 198-199) as under:*

“The cause of these cracks is not a design issue, so it might be linked to the construction cycle that could be different for some girders.

When, on casting yard, the post-tensioned bars of stressing beam(active end) are released, the pre-stressing force is applied to the concrete horizontally in the section located at approximately 1.18 metre from the end of the girder. If you assume this force is transmitted on a concrete and at an early age and if you add that during the release of pre stressing some concrete girders will adhere to the casting yard bottom form work, slight cracks can develop, particularly if the concrete does not have sufficient resistance at the time of application of the pre stressing force.”

Systra concluded that a very likely explanation to the origin of these cracks is the transmission of a horizontal force to an early age concrete with insufficient resistance, combined with adherence of concrete locally on the formwork.

- (c) *In his evidence, Mr. Muls of Systra stated as below: (RC3,Pg 439-440)*

“Q.146 : Systra has said that the cracks at the bottom of the girder had occurred as a result of transmitting of the pre stressing force on a

concrete at an early age. In the present case, could you approximate when the cracks would have occurred?

Ans : Systra has said that the cracks had probably occurred as a result of transmitting of the pre stressing force at the early age of concrete. I was not supervising the site and therefore, I cannot say for sure when the cracks would have occurred. However, if the cracks occurred for the reasons mentioned above, they would probably have occurred a short time after applying the pre stressing force.

Q. 147: Does the existence of the transverse cracks at the soffit of the girder under service condition have any relation to maintaining compression in the direction of the pre stressing force?

Does it mean that compression was not maintained in the direction of the pre stressing force as envisaged in the design in this case?

Ans: The transverse cracks which you are referring to are located before the pre stressed area and therefore have no relation to maintaining compression in the U Girder in the pre stressed area.

Q 148: Was the existence of any cracks in the girders in the casting yard ever reported to you, i.e., Systra by ALC or contractor in this case?

Ans: I do not have any such report in my mind. “

(d) *Mr. Rajan Kataria of DMRC, during his cross examination, has stated as under: (RC 3, Pg 445-449)*

“Q.10: According to you at what stage did the cracks appear in the viaduct girders of the Airport Metro Line?”

Ans: These cracks perhaps appeared at the casting bed in the casting yard itself

Q. 11: You cannot be sure though that the cracks did appear at the casting bed in the casting yard.

Ans: I am sure that the cracks did appear at the casting yard because, after launching of the girders, nobody ever pointed out that the cracks have developed now.

Q. 12: Did anybody point out to you or to Delhi Metro that cracks had developed in the casting yard at the time that the girders were still in the casting yard or at any time prior to their launching?

Ans.: Nobody pointed out to me or to DMRC regarding the development of cracks at the casting yard, however, my reply at Q. 11 is based on the engineering judgment.

Q. 13: Are you aware approximately how many cracks were discovered and the number of girders in which they were found?

Ans: I am not able to recall. “ .

(e) *In the written submissions of Delhi Metro dated 14th Nov, 2016, DMRC, not subscribing to the views ‘earlier expressed during the meeting of 2.7.2012 in*

MoUD, states that cracks have not occurred while lowering girders on the bearings, but have happened at the casting bed, when the pre stressing force was transferred. Delhi Metro further stated that the site records of construction (check-list) were prepared by the contractor and ALC but they did not report any cracks.

33.2. From the aforesaid, it is clear that Delhi Metro itself nor, its experts, Systra are sure of the cause of the cracks.

Further, it is noticed that the issue of depth of the crack has not been adequately addressed. Though, the depth of the cracks was measured, the initial diagnosis of Systra expressed doubts on the accuracy of measurement of the depth of cracks. The report of Systra was given on 04.09.2012 (Pg 4 of Systra Report dated 04.09.2012). Even after the said date, as the record of AIMIL produced by Delhi Metro (at CD-65 Annexure XVIII Pg 186-187)) relating to the measurement of cracks would show, the measurement of the depth of crack continued till 25.10.2012, i.e even after the expression of doubt on the accuracy of measurement of depth of crack by Systra. The issue of depth was raised in several meetings in MoUD and Systra was asked to own responsibility and liability for repair design. However, the repair methodology given by Systra was based on the width of the crack and there is no mention how the depth of the crack is to be dealt with. During cross-examination on July 21/25, 2014 Sh. R.K. Gupta of Bridgecon, one of the agency who carried out the repairs of the cracks, stated that "Any crack which is of a width of more than 0.2 mm and of a significant depth is considered to be crack of significance. "Moreover, mode of payment to the Bridgecon was on the basis of length of the crack irrespective of its depth which shows that the issue of depth was not given the importance it deserved.

33.3. *The inspection by the inspecting agency viz. TUV SOWiLL is also unsatisfactory. As disclosed by the record (RC - 3 Pages 237 to 298 and Annexure XVIII of CD 65), a large number of check-lists of girder crack repair produced by Delhi Metro show that they are either unsigned or signed by someone other than whose name is mentioned in the checklist as having inspected the stated repairs and, in some, signature and name of inspecting officer is left blank. The said documents show that the manner of inspection was not serious. This is further evident from the cross examination of Shri Vinod Nair, the representative of TUV SOWiLL, by the Concessionaire. Mr. Nair has not been able to satisfactorily explain the discrepancies in the inspection reports.*

33.4. *It transpires from the minutes of meeting in MoUD on 12.10.2012(RC 3, Pg 310) that Systra finally submitted the methodology for repair of cracks on 11th October, 2012. By this time, the repairs had commenced and TUV SOWiLL is stated to have started inspecting the repairs (RC3, Page 237 read with Page 300 and Annexure XVIII of CD 65). Thus, the repairs that were stated to have commenced prior to 11.10.2012 were based on some methodology which was not approved by Systra.*

33.5. *For the repair of cracks, Systra finally submitted its methodology on 11.10.2012, which was then submitted to Railways for approval. Railways by its letter dated 16.10.2012, (RC-3, page 319) did not accept Systra methodology and stated as under:*

“Here it is worth mentioning that as yet no report has been sent to this Ministry advising the extent of cracks, their nature and probable reasons including their effect on the structure. The repairs have started without even

ascertaining the cause and effect on the structure. In view of above, the repair methodology may be revised accordingly and the revised document may be submitted to Ministry of Railways for clearance”.

33.6. Systra’s methodology was approved by Railways on 4-01-2013 after certain suggestions of Railways were incorporated in the said methodology much after the repairs were complete.

33.7. The occurrence of cracks in the pre-tensioned U-girders was contrary to the DBR and the Indian Railway Bridge Code. The DBR (RC-3, Page 450-451) clearly states in Table 4.1.1.1 that no tension is allowed in the full U- shaped spans manufactured at casting yard. The Indian Concrete Bridge Code (RC-3, page 457) in Clause 10.2.1 (b), clearly states that no tensile stresses are permitted and, therefore, no cracks are allowed in pre stressed concrete structure.

34. In view of the above, Arbitral Tribunal concludes that occurrence of such large numbers of cracks in the base slab of the pre-stressed concrete girders in about a year of train operation, tentative assessment of the cause of cracks, unreliable measurement of crack depth which in many cases extend to more than half of the depth of the bottom slab of the U Girder and non-serious inspection of the repairs by an agency appointed by Delhi Metro impact adversely on the integrity of the structure. This leads to the conclusion that Delhi Metro is in breach of the Concession Agreement as effective steps were not taken within the cure period of 90 days to cure this defect which has caused Material Adverse Effect on the Concessionaire (the Concessionaire).”

58. The *Arbitral Tribunal* with regard to the defect pertaining to “*TWIST IN THE GIRDERS*” and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in accordance with the *Concession Agreement, inter alia* held as under:

“35. Was there twist in the Girders to such an extent as would have had Material Adverse Effect on the Concessionaire’s ability to operate the line in accordance with the CA? If so, were such twists repaired and/or effective steps taken to repair the said twists during the period 9th July, 2012 to oath October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?”

36. The superstructure of the Viaduct comprises of two U-shaped precast pretensioned girders which are simply supported on the precast pier caps. Each U girder rests on four elastomeric bearings which are placed on the pedestals cast on the pier caps. Bearings are required to be placed very accurately so that all the four bearings on which girder is supported are in the same plane. Centre to centre distance between the bearings along length of the girder is 23 meters. If all the four bearings supporting a girder are not in the same plane, there will be twist in the girder. Delhi Metro has contended that the twist in the girders has been corrected.

40. Analysis of the Submissions of the Parties:

40.1. There is no mention of permissible twist in the placement of girders either in DBR or in the IRS Concrete Bridge Code. Typical method statement of the girder installation requires that bearings be installed to their “TRUE” level, meaning thereby that there should be no twist in the girders during installation.

40.2. During the inspection of the JIC on 04.07.12 & 05.07.12, it was observed that a number of bearings had cracked / worked out grout material leading to vertical settlement of the bearings and consequent introduction of twist in the girders.

40.3. Necessity of correction of the bearing level and proper seating of the bearings was advised by JIC in Para 8 of their preliminary report. This was reiterated in Para 5 in their Final Report dated 14.07.2012, relevant portion of which is re-produced below:

“Twist in the girder: The damaged top / bottom grout has been reported to have caused difference in cross levels in the track in pier nos. 17 and 60 to the extent of 11 mm. This level difference in girder has been apprehended to have caused permanent damage to the girders. The JIC is of the view that it is difficult to state anything in this respect at this juncture. However, as no cracks have been reported on this account so far and since the trains have run on the section for very less time till now and the trains too were comparatively lesser loaded compared to the design load and the fact that the difference in cross levels have not been reported from many locations in track (6 nos reported by the Concessionaire). The girder twist has been measured in spans 16 DN (39mm), 16 UP (9 mm), 17 DN (6mm), 17 UP (13 mm), 23 DN (12 mm), 23 UP (11 mm), DN (3 mm), 60 UP (12 mm), 59 UP (53 mm), 59 DN (6 mm), 141 DN (21 mm), 141 UP (2 mm), 143 DN (25 mm), 143 UP (0 mm), 147 DN (7 mm), 147 UP (8 mm), 148 DN (10 mm) and 148 UP (21 mm). The problem of damage to the girders has been referred to designer for effect on the permanent damage in the girder. In any case, the defects are likely to propagate slowly giving ample warning, which can be detected easily during routine inspections of the girders.”

40.8. *From the above, the following emerge:*

i. *Twist in the girder was not permitted either in the OBR or in the Indian Railway Concrete Bridge Code.*

ii. *Twist resulted due to non-uniform support at the four bearings due to cracked / worked out grout under / above the bearings.*

iii. *Systra calculated that under Serviceability Limit State (SLS) combinations, stresses in the reinforcement will not be exceeded if one bearing was lowered by up to 32 mm i.e. if there was a twist of 32 mm,*

iv. *Girders having twist up to 20mm have been left as such.*

v. *There are 4 girders where the twist was in the excess of 32 mm, details are as under: -*

41 . Discussions and Conclusions

41.1. *As stated above, the super structure of the viaduct comprises of two U shaped pre-cast pre-tensioned girders simply supported on a pre-cast pier cap. Each U girder rests on four elastomeric bearings which rest upon pedestals that are cast on pier caps. These elastomeric bearings are required to be placed very accurately so that all the four bearings of the girder are in the same plane and the height of the bearings has to be adjusted accordingly to the desired level. The centre to centre distance between the bearings along the length of the girder is 23 meters. If all the four bearings supporting the girders are not in the same plane, there will be a twist in the girder.*

41.2. *It is an admitted position that at a large number of locations, the grout material placed below the bearings had given way resulting in displacement of bearings. This is particularly highlighted in the report of JIC dated 04th July, 2012 read with the report dated 14th July, 2012. In fact, JIC report dated 14th July, 2012 (RC 4. Pg 16) clearly records: “This level difference in girder has been apprehended to have caused permanent damage to the girders”*

41.3. *In the meeting held in the MoUD on 16th July, 2012, the minutes record at Para 2(CD6 of SOC Pg 31-32) that “twist in the girders was also a serious matter and needed to be studied”. The said minutes further record in para 6, the contention of Systra that “twist of girder up to 32 mm would indicate that there are no excessive stresses in the structure. However, the twist should be corrected during the repair operations”. Systra further stated “that the construction was not done as per design, especially at the defective locations. The repairs already undertaken were also not done well and would need to be dismantled and redone, properly.”*

41.4. *As an initial step to address the issue of twist in the girders, a methodology was required to be evolved to assess and measure the extent of twist in the girders. The survey methodology was envisaged by Delhi Metro in its letter dated 26 July, 2012 (Pg 347 of Annexure XVI of CD-65). the Concessionaire by its letter dated 27th July, 2012 expressed doubts about the accuracy of the methodology suggested by Delhi Metro to arrive at the twist in the girders (RC 4, Pg.55/56 and Pg-209, CD-18-SOC). Delhi Metro vide its letter dated 09.08.2012 (CD-65, Annexure XVI Pg 346) revised the methodology.*

41.5. *Delhi Metro by its acceptance letter dated 13th August, 2012 (RC 4, Pg 69 and CD-14, Pg 148 of SOC)*

appointed Systra to carry out certain works whereby, amongst other things, Systra was also entrusted with the following:

“3b) Assessment of the girder stresses for the settlement of the girder support assuming one bearing (out of 4 numbers) has settled by about 32 mm. However, the assessment of the girder stresses shall also be made for the maximum value of settlement as advised by the inspection team.”

It may be noted that the assignment given to Systra pre-supposed that the stresses in the girders were to be assessed assuming that the twist was about 32 mm.

41.6. Systra provided a methodology on 27th August, 2012(CD-13, Pg 78 of SOC), inter alia, for correction in the twist in the girders. In the said methodology, Systra postulated that if a twist above 20 mm existed in the girder, it should be corrected by modifying the level of at least one bearing. However, Systra emphasised that the correction of the twist will have impact on actual situation of the track and the final choice of the altitude of the bearing should be done considering the desired final track level.

41.7. In the weekly meeting dated 29th August, 2012 (RC 4, Pg 85 - Pg 86 and CD-17 Pg 162 of SOC) the Concessionaire made the observation that changing of the level of one or two bearings would result in changing of the track parameters. In the weekly meeting dated 05th September, 2012 (RC 4, Pg. 88 and CD-20, Pg 226 of SOC) the Concessionaire was informed about Systra's agreement for a permissible limit of twist up to 20 mm. However, in the letter dated 07th September, 2012, (RC4 Pg. 90) the Concessionaire requested for elaboration of the limit of 20 mm of twist suggested by Systra.

41.8. Thereafter, Systra by its email dated 18th September, 2012(RC-4.Pg 110-113, CD-65, Annexure XVI Page 59 & 56), inter alia, stated “it could be advisable to target a twist of lower value, so that the 20mm value is not exceeded even when considering construction tolerances. “

41.9. Thereafter, a methodology of correcting twists in 11 girders where the twist was more than 20mm was evolved and the said methodology was followed to reduce the twists in the girders to 20 mm. The difference in the track level as a result of the twist was addressed by putting shim plates under the rails.

41.10. From the aforesaid, it is clear that the question of permanent damages being caused to the girders as a result of high twists was not investigated; but what was done was to adjust the height of the bearing in such a manner as the twist would be reduced to < 20mm. As aforesaid, there were a large number of girders which had twists.

41.11. Mr. Rajan Kataria stated in paragraph 10 of Affidavit in Chief dated 11th May 2015 that “Assessment of girder stresses due to twist of 20mm has been considered by the designer MIS Systra for which the increase in stresses in the U girder in the transverse direction are within the permissible limits. It is further stated the value of twist although not stipulated in the codes has been considered by the DOC based on their engineering judgment.”

41.12. Delhi Metro led the evidence of Mr. Mathieu Muls in rebuttal. Mr. Muls stated in para 10 of the Affidavit in Chief dated June 26,2015 that a lowering by 32 mm of one bearing (out of 4 of bearings) would lead to concrete stresses remaining below maximum allowable value, as per applicable codes. During cross-examination, Mr.

Muls clarified that the girder would be able to take the additional stress due to lowering of one bearing by 32 mm whereas the other bearings remain in one plane. Further, Delhi Metro contends that the data of the twisted girders shows that no cracks were visible in many spans with twists.

41.13. Further, Mr. Muls stated in Para 10 of his Affidavit in Chief in rebuttal dated 26.6.2015 that “the design drawings show that all 4 bearings shall be placed in one plane. The design recommended that there should be no twist. However, at construction stage the twist had occurred and therefore the recommendation for rectification was made by Systra-India”. Further during his cross examination, Mr. Mathieu Muls has stated as under:

“Q. 116 In the present case does the DBR recommended or factor in any twists?”

Ans. As far as I know, a twist is not considered in the imposed deformations or loads mentioned in the DBR of Delhi Airport Metro Line.”

41.14. From the aforesaid, it is clear from the evidence of various witnesses that no twist in the girders is permitted, either in the DBR or in the Indian Railway Concrete Bridge Code. In the present case, there are 80 girders as shown in the table above having twist varying between 10 to 20 mm which has remained unattended and the twist has been allowed to remain. 11 girders where the twist was more than 20 mm are stated to have been attended and twist in them brought down to 20 mm. Thus, there are 91 girders which have a twist between 10 to 20 mm while there are 58 girders with twists varying between 0 to 10 mm.

41.15. There are 4 girders where the twist was in the excess of 32 mm, details are as under:

<i>SPAN</i>	<i>Line Type</i>	<i>Net Twist (mm)</i>
<i>P-14-P-15</i>	<i>UP</i>	<i>39.50</i>
<i>P-16 - P-17</i>	<i>DN</i>	<i>63.27</i>
<i>P-63 - P-64</i>	<i>DN</i>	<i>36.43</i>
<i>P-152 - P-153</i>	<i>UP</i>	<i>33.36</i>

From the above analysis it emerges that there are four girders in which there is possibility of permanent damage caused due to exceedance of stresses. One girder (P-16 - P-17 DN line) had a twist of 63.27mm i.e. nearly double of the permissible value of 32mm stated by Systra. No efforts were made to assess the permanent damage to the girder. Whereas DBR and Codes do not permit any twist, 138 girders having twist below 20 mm have been left in service as such without any correction.

In view of the above, Arbitral Tribunal concludes that effective steps were not taken to cure this defect in all the girders (twist up to 20 mm was left unattended) and girders of suspect integrity were allowed to remain in the network. This constitutes a Delhi Metro Event of Default. Delhi Metro is in breach of the Concession Agreement and this breach has Material Adverse Effect on the Concessionaire.”

59. With regard to the “GAPS BETWEEN GIRDERS AND BETWEEN GIRDERS AND SHEAR KEY” and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in

accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“42. Were there gaps between the Girders as well as between the girders and the shear key such as would have had Material Adverse Effect on DAMEPL’s ability to operate the line in accordance with the CA? If so, was the defect repaired and/or effective steps taken to repair the said defects during the period 9th July, 2012 to 08th October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?

42.1. Para 2.5.1 of the Design Basis Report (DBR) for Airport Metro Express Line is re-produced below:

*“2.5. 1 **Bearing System** - Elastomeric bearings are placed underneath U-girder for transfer of vertical forces. Concrete shear keys are provided at top of pier cap which restrain the movement of deck in transverse direction and acts as a stopper in longitudinal direction. However, in longitudinal direction, gap is maintained between deck and shear key (25 mm each side of the deck) to allow for thermal expansion of the deck.*

Therefore:

Vertical reactions and longitudinal forces due to creep / shrinkage / temperature effects and braking / acceleration effects will be taken by elastomeric bearings.

Transverse and longitudinal forces due to earthquake are taken by concrete shear keys.”

42.2. Concrete Shear Key is provided on the top of the pier cap to restrain the movement of girders in the transverse direction and to act as a stopper in the

longitudinal direction. The shear key along with bearing forms the transition between the sub structure and the super structure.

45. Analysis of the Submissions of the Parties:

45.1. Para 2.5.1 of the Design Basis Report (DBR) is reproduced below:

“2.5.1 Bearing System - Elastomeric bearings are placed underneath U-girder for transfer of vertical forces. Concrete shear keys are provided at top of pier cap which restrain the movement of deck in transverse direction and acts as a stopper in longitudinal direction. However, in longitudinal direction, gap is maintained between deck and shear key (25 mm each side of the deck) to allow for thermal expansion of the deck.

Therefore:

Vertical reactions and longitudinal forces due to creep/shrinkage/temperature effects and braking/acceleration effects will be taken by elastomeric bearings.

Transverse and longitudinal forces due to earthquake are taken by concrete shear keys. “

45.2. DAMEPL’s letter no. DAME/DMRC/2012/4728 dtd. 09th July, 2012, which is a notice to cure the defects, did not specifically mention this defect (incorrect gap between girders and between girders & shear key). However, in Para 4 (b) “Dangerous movements of the girders” is mentioned. Moreover, it is mentioned in Para 4 that the list is “Non exhaustive list of defects.” This

issue was brought to the notice of DMRC by DAMEPL's letter no. DAME/DMRC/2012/4901 dtd. 08.08.2012.

45.3. Gap Survey was carried out by DMRC between 10.10.2012 to 19.10.2012 and the result of the survey was submitted to Systra. As per the Gap Survey, 13 girders had a gap > 100 mm, 400 girders had a gap between 50 & 100 mm, 529 girders had a gap between 25 & 50 mm and 142 girders had a gap < 25 mm.

45.4. Systra carried out detailed calculation and worked out that minimum gap required was 10 mm. Systra also mentioned that gap can be obtained by grinding of the shear key in such a manner that the minimum concrete cover is not less than 40 mm.

45.5. Methodology for this repair was prepared by DMRC on 20.11.2012. 26 locations had gap lower than 10 mm and the maximum deficiency in gap was 6.2 mm. The work of rectification of the gap was completed by 03.12.2012.

45.6. From the above the following emerges:

- i. The DBR prescribes a gap of 25mm each side of the deck without any tolerance. Systra carried out calculation to arrive at the minimum required gap but did not prescribe maximum permissible gap.*
- ii Systra did not prescribe any methodology for rectification of gaps higher than 25 mm.*
- iii. Higher gap was left as they were and no rectification was carried out.*
- iv. No action was taken by DMRC during the cure period i.e. 09.07.2012 to 08.10.2012.*

45.7. As per the design philosophy enunciated in the DBR, elastomeric bearings are designed to take the vertical loads and longitudinal loads, creep, shrinkage, temperature effect and tractive / braking force. Longitudinal forces arising out of earthquake are to be taken by the shear key. To realize the above arrangement, a gap of 25 mm was prescribed between the girder and the shear key. However, at a large number of locations, the actual gap between the girder and the shear key was found to be in excess of 50 mm. In such a situation, during an earthquake the girder and the bearing will undergo large longitudinal movement before the shear key is activated. Thus, in all cases where the gap between girder and shear key is more, the elastomeric bearings will have to undergo large shear strain before the shear key is activated. This can lead to failure of the bearings in locations where the gap is more than the capability of the elastomeric bearings to undergo shear strain resulting in serious consequences.

Discussions and Conclusions:

46.1. In the cure notice dated 09th July, 2012 DAMEPL had given a non exhaustive list of defects. During the period 09th July, 2012 to 8th October, 2012, DAMEPL pointed out at least on three occasions namely on 16th July, 2012 by forwarding its internal inquiry report (RC5, at Pg 7), letter dated 8th August 2012 addressed to DMRC and letter dated 27th August, 2012 addressed to ALC on behalf of DMRC that the gap between the girders and shear key at several places was too less or was incorrect. For instance in the letter dated 8th August 2012 (RC 5, Pg 10 and CDIS of SOC) DAMEPL stated “It may however be noted that the viaduct civil structure (shear key and girder) have not been constructed as designed and the girder have also not been placed correctly. This has led to incorrect gaps between the

girders as well as girder and shear key. At some places the gap is so small as to prevent any cleaning.”

46.2. During the entire cure period from 09th July 2012 to 08th October 2012, the issue of incorrect or inadequate gaps between the girders and girders and shear key was not addressed by DMRC and no documentary or oral evidence is led by DMRC to show that such issue is addressed or any effective steps were taken to address the issue of incorrect gaps.

46.3. As aforesaid, the maintenance of prescribed gaps between the girders and the girder and shear key is of utmost importance. The life of the structure is envisaged to be considerably long and the concession period is of 30 years. The DBR (RC 5, pg 121) of Systra clearly provides for maintenance of a gap of 25mm on each side of the girder for taking care of vertical reactions, transverse and longitudinal forces due to braking, acceleration and due to earthquake.

46.4. The records produced before the Tribunal show as aforesaid that there were a large number of locations where gaps were more than 25 mm. This is clear from the document of measurement of gaps produced by DMRC and annexed along with its letter No. DMRC/20/11/AP/2012/Pi(3S)/3998 dated 20th October, 2012 (CD-61 of Additional Documents submitted by DMRC on 14 April,2014. Pg 715-737). The said document apart from showing that even the measurement itself was undertaken after the notice of termination of Concession Agreement by DAMEPL, also shows a major defect in the placement of the girders.

46.5. In early November 2012, once again DAMEPL by its letter dated 06th November 2012 (RC 5, Pg 56) pointed out the issue of the gap in the girders.

46.6. For the first time on 08th November, 2012, Systra produced an analysis of gaps measured at the end of the girders. By the said analysis, Systra merely addressed the issue of gaps lesser than 10 mm and stipulated that the gap could be created by grinding the shear key to the extent of 10 mm. The issue of larger gaps was not addressed at all. DAMEPL once again raised the said issue by its letter dated 05th December, 2012 (RC 5, Pg 103).

46.7. However, the evidence on record shows that the issue of larger gaps has not been addressed and there is no evidence to show that any agency was appointed by DMRC for correcting the gaps which were inadequate or excessive.

46.9. From the aforesaid, it is clear that the design philosophy enunciated in the DBR postulated a gap of 25 mm. At many locations, the gap was far less or far more. While no steps were taken to address the gaps of more than 25 mm, gaps between 10 mm to 25 mm were left unattended and only gaps below 10 mm were addressed by some sort of a grinding, detailed methodology of which has not been brought out in the evidence by DMRC.

47. As no action to cure this defect was taken by DMRC during the cure period (09.07.2012 to 08.10.2012) and also because gaps higher than 25 mm were not rectified, the Arbitral Tribunal concludes that this defect was neither cured nor were effective steps taken by DMRC to cure this defect. This constitutes a Material Breach on the part of DMRC and shall have Material Adverse Effect on the Concessionaire.

60. With regard to the *SUPER IMPOSED DEAD LOAD (SIDL)* and as to whether it had any impact on the *Concessionaire's* ability to operate the line in accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“48. Was there a design deficiency regarding Super Imposed Dead Load (SIDL) such as would have had Material Adverse Effect on DAMEPL's ability to operate the line in accordance with the CA? If so, was the design deficiency repaired and/or effective steps taken to repair the said defects during the period 9th July, 2012 to 08th October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?

48.1. Super Imposed Dead Loads (SIDL) are the items placed on top of a U girder which are more or less permanent in nature and normally don't undergo any changes. These are track plinth, rail assembly including fastenings, electrical and signaling systems, cables, sidewalks, vibration and noise dampening systems etc.

51. Analysis of the Submissions of the Parties:

Looking to the various documents and the oral evidence, there is no likelihood in actual scenario of any change in the track plinth concrete, rails, sleepers, tracks fastening, OHE mast, signaling arrangements which can be considered as fixed components of SIDL for which the load factor of safety of 1.0 should suffice. Due to reduction in the load imposed by the rolling stock, the required load factor of 1.20 as prescribed in the DBR is duly achieved in the overall

scenario. Thus, there is no design deficiency in respect of SIDL in the said structure.

52. Discussions and Conclusions:

52.1. The documentary and oral evidence led by the parties clearly brings out the fact that the actual SIDL is within the limits prescribed by DBR.

52.9. Therefore, the Arbitral Tribunal considers that the design of the structure has not been compromised with regard to SIDL.”

61. With regard to the *COEFFICIENT OF DYNAMIC AUGMENT (CDA)* and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“53. Was there a design deficiency in respect of the Coefficient of Dynamic Augment (CDA) such as would have had Material Adverse Effect on DAMEPL’s ability to operate the line in accordance with the CA? If so, was the design deficiency repaired and/or effective steps taken to repair the said defects during the period 9th July, 2012 to 08th October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?

57. Analysis of the Submissions of the Parties:

On the basis of the evidence of Mr. Mathieu Muls coupled with the provision of the DBR, it is clear to the Tribunal that there is no default on the part of DMRC in respect of the adoption of CDA and there is no

compromise with the safety of the structure on the said count and thus there is no breach on the part of OMRC in respect of the adoption of CDA of 0.20.

58. Discussions and Conclusions:

In view of the above, the Arbitral Tribunal is of the view that adoption of CDA of 0.2 did not compromise with the safety of the structure.”

62. With regard to the *CRACKS AT THE TOP OF THE GIRDER* and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“59. Were there cracks at the top of the Girder such as would have had Material Adverse Effect on DAMEPL’s ability to operate the line in accordance with the CA? If so, was the defect repaired and/or effective steps taken to repair the said defects during the period 9th July, 2012 to 08th October, 2012 so as to comply with the provisions of Article 29.5.1 of the CA?

60. It appears that certain cracks were observed on the top surface of the U girder. DAMEPL contends that such cracks on the top of the girder have impact on the integrity of the girders.

63. Analysis of the Submissions of the Parties:

63.1 The Joint Inspection Committee (JIG) comprising of officers of DMRC /DAMEPL / Systra & Indian Railways submitted its Final Report dated 14th July,

2012. Para 4 (f) of the report dealing with cracks at girder top is re-produced below: -

“Cracks in girder top: DAMEPL/DMRC have inspected and reported diagonal cracks in the top of the girder at the edge of the vertical leg of the U girder. Some of these cracks were seen by JIG at site on 13.07. 2012. These cracks have been reported at similar locations in continuous stretches of girders. (Some sketches and photographs attached).”

63.2 DAMEPL's letter no. DAME/DMRC/2012/4728 dtd. 09th July, 2012, which is a notice to cure the defects, does not specifically mention this defect (crack at top of the girders). However, in Para 4 (g) “damage girder” is mentioned. Moreover, it is mentioned in Para 4 that the list given is “Non-exhaustive list of defects”.

63.3 DMRC carried out mapping of cracks in 6 spans on 02.11.2012. The spans mapped were between piers 90-97, 101-102, 106-107, 118-119, 119-120 and 120-121. All these spans were of the Down Line. DMRC found that the maximum crack length was 0.33 m, the maximum width was 0.25 mm and the depth was NIL. Based on the crack mapping data, it was concluded by DMRC that the cracks were superficial and non-structural and did not require any repairs. Systra had opined that such crack often happened during curing of the girders.

63.4 It does not come out clearly in any of the documents submitted before the Arbitral Tribunal as to how many girders had cracks at the top. In order to have better appreciation of the problem / defects, it would have been better if measurement of cracks at more number of girders was taken by DMRC. Moreover, DAMEPL have alleged that the girders on which measurement cracks was done had twist less than or

equal to 13 mm and cracks were not mapped for the girders having higher twist.

64. Analysis and Conclusion:

Mr. Muls in his evidence has categorically stated that he has examined the cracks of the top fibre of the slab of the girder which were superficial cracks. There is no evidence led by DAMEPL to counter the aforesaid statement nor has Mr. Muls been cross examined on the said issue. No documents have been produced or relied upon to counter, contradict or disprove the above statement.

Based on the above, the Arbitral Tribunal concludes that this defect was not detrimental to the life of the pre-stressed concrete U-girders.”

63. With regard to the *INACCESSIBLE BEARINGS* and as to whether it had any impact on the *Concessionaire*'s ability to operate the line in accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“65. Were some of the bearings rendered inaccessible on jacketing of cantilever and portal piers resulting in permanent constraint during inspection, repair and replacement of bearings causing Material Adverse Effect on the ability of DAMEPL to perform its obligations under the CA? Were these defects cured or effective steps were taken to cure these defects within the cure period?”

70. Analysis of the Submissions of the Parties:

70.1. 21 Nos. cantilever piers and 10 Nos. portal piers involving 168 bearings were strengthened by Jacketing.

This jacketing made the accessibility of the bearings location difficult for carrying out regular inspection and repairs of bearings.

71. Discussions and Conclusions:

71.1. From the above it is quite clear that easy accessibility for the purpose of replacement and inspection of bearings was an essential requirement. The DBR did not provide for any strengthening of cantilevered piers but, at some stage, DMRC undertook a review of the design of the existing cantilevered piers of the Airport Metro Line.

71.2. By a letter dated 12th June, 2012 addressed by DAMEPL to DMRC (RC-9, Pg.5), DAMEPL had clearly brought out the fact that there were certain portals where bearings were inaccessible. In subsequent correspondence in June and July 2012, DAMEPL had again pointed out the inaccessibility of bearings on the jacketed cantilevered piers. The JIC inspection on 4th and 5th July also recorded the fact that the cantilevered pier and jacketing was not allowing access to the bearings and that might hinder the repair work. The said report further states that the jacketed cantilevered piers did not have adequate space for carrying out repairs and the scheme for part dismantling of the jacketing should be provided to secure access to the bearing (RC-9, Pg. 11 @ Pg 14).

71.3. Pursuant to the decision taken in the meeting in MoUD held on 02nd July 2012, DAMEPL undertook an internal enquiry by Shirish Patel and Associates and forwarded the enquiry report with all annexures to DMRC, Systra, MoUD, Delhi Govt and the Railways. The said report also brought out “Complete

inaccessibility of some locations due to jacketing repairs carried out by DMRC.” (RC-9, Pg 18 - Pg22).

71.4. The issue of inaccessibility of bearings on jacketed cantilevered piers was discussed from time to time. In the meeting held in MoUD on 19th September 2012, DMRC stated that it was Systra’s view that bearing on such girders could be replaced by lifting the girders up to 500mm, that being the best solution and “there is no other alternative”(RC-9. Pg 36 @ Pg 37and CD-23,Pg 240 of SOC)

71.5. Systra then produced on 21st September 2012, a “methodology for repairs of elastomeric bearings-Addendum A” to provide a suitable methodology for repairs of bearings arrangement of cantilevered pier caps and portal piers, wherever accessibility is found to be insufficient for application of typical methodology (RC - 9, Pg. 40 to 56 and CD-65 Annex XVI, Pg. 96). Thus, a special methodology for repairing of the bearings on such piers was required to be evolved. A perusal of such methodology would show that it was extremely cumbersome and difficult. The methodology, inter alia, provided that the girder at the bearing location was to be lifted by 500 mm to create sufficient working space. For jacking up to 500 mm, the adjacent girder is also to be jacked so that the slope between two adjacent spans is 1 % Le. Second girder should also be lifted by 250mm.

71.6. Director (Works) DMRC in the meeting of 19.09.2012 in MoUD stated as under:

“The girder will have to be lifted 500mm. This is the best solution and there is no alternative. “

Inspection of the bearings is to be done annually and inaccessibility of bearings would cause difficulty in inspection making it more time consuming and

inaccurate. Replacement of bearing will be very time consuming, causing slowing down of the train operations for few days in the stretch where the repairs are carried out.

The Tribunal is of the view that the inaccessibility of the bearings is a violation of the DBR and is a permanent constraint in the system which was neither cured by DMRC nor were effective steps taken by them to cure the defect in the cure period and that it would cause Material Adverse Effect on the Concessionaire.”

64. With regard to the *LOCATION OF BEARINGS AND EXTENSION OF BEARING PEDESTALS* and as to whether it had any impact on the *Concessionaire’s* ability to operate the line in accordance with the *Concession Agreement*, the *Arbitral Tribunal inter alia* held as under:

“72. Was there defect in location of the bearings such as would have Material Adverse Effect on DAMEPL’s ability to operate the line in accordance with the CA? Were the bearing pedestals extended in violation of the approved methodology? Were the defects in bearing locations cured and/or effective steps taken to rectify the defects relating to bearing location during the period 9th July, 2012 to 8th October, 2012 so as to comply with the provision of Article 29.5.1 of the CA?

72.1. For the girders to be safe, it is inter alia necessary that the bearings on which the girders are supported are installed in the correct manner at the right location. DAMEPL complained that the bearings were located at wrong locations and in the attempt to relocate the bearings during repairs, the pedestals, on which the bearings were placed, were haphazardly extended in a

manner contrary to the provisions of various codes. Even the inspection of the repairs carried out was perfunctory.

76 Discussions and Conclusions:

76.1. By a letter dated 02nd June, 2012 DAMEPL had pointed out that from inspection of the bearings carried out by them till then ,it was found that most of the bearings inspected were not functional as required and the installation of the bearings was not in accordance with the design. (RC 10 - Pg.1). This was repeated by DAMEPL in the subsequent correspondence. DMRC acknowledged the fact of the bearings being required to be relocated and the girders to be re-adjusted to their original level. However, by its letter dated 04th July 2012 to DAMEPL (RC-10, Pg 11), DMRC, inter alia, stated “You are asking DMRC to do a precise work where the bearings are also to be relocated and girders re-adjusted to the original level which require lot of time and if we would have started taking action as advised by you, then under no circumstances such a large number of locations could be attended in time.”

76.2. In the JIC report dated 14th July, 2012 in para 4 (a) (RC 10 - Pg.16) it is stated” a. Bearings provided at improper locations: Approx. 91% of the bearings have been found to be at improper location (some were out up to 150 mm approx. w.r.t drawings). DMRC has raised the issue of proper measurements being not easily possible at site due to the complicated geometry of the skew and curved spans without detailed survey. However, JIG is of the opinion that the inspection team results are by and large indicating pattern of the problem.”

76.3. Systra, thereafter, prescribed a methodology dated 22nd August, 2012 for repair of pedestals and

replacement of elastomeric bearings (RC 10, Pg.36 and CD-12, Pg 78 of SOC). The said methodology envisaged two types of repairs namely, Type 1 repairs which were to be carried out at locations where the concrete bottom pedestals showed disorders in addition to filler material and also where bearing and bottom pedestals were installed at wrong location (beyond tolerance) with respect to the girders and Type 2 repairs which were to be carried out at locations where concrete bottom pedestals were intact and free from defects and filler material shows disorder. For the location of bearings, the tolerance limit provided by Systra was 80 mm towards each direction along longitudinal axis of the girder. In respect of the pedestal where the pedestal showed disorders including being installed at wrong locations beyond tolerances with respect to the girder, the bottom pedestal was to be dismantled up to the level described in the drawing and a new concrete bottom pedestal was to be built up to the required level allowing installation of bearing at an appropriate location. (RC-10, Pg.39 and CD-13 of SOC, Pg 81)

76.4 The Concrete Bridge Code of Indian Railways permits a tolerance limit in respect of the bearing to the extent of ± 5 mm.

76.5 However, it transpires that at many locations, the pedestals were not recast as prescribed by Systra even after the tolerance limit for location of bearing was relaxed by Systra to as much as 80 mm as against the permissible limit of 5 mm aforesaid. Instead of recasting the pedestals, what DMRC did was to extend pedestals at some places. This was admitted by Sh. Rajan Kataria of DMRC during his cross examination on July 24, 2014. The relevant portion of the cross-examination is reproduced below:

“Q. Mr. Kataria are you aware that at some places the pedestals had to be extended for repairs to the pedestals?”

Ans. Yes.

Q. Was there a methodology prescribed by anyone for the extension of the pedestals?”

Ans. Yes.

Q. Who prescribed the methodology and where can it be found?”

Ans. It was prescribed by M/s Systra. We will furnish a copy by Wednesday 30-07-2014.”

Witness scrutinized Annexure XVI in CD 65 but could not immediately find any such prescribed methodology for extension of pedestals therein. “

76.6. The said methodology of extension of pedestals prescribed by Systra was not furnished by DMRC as recorded in the minutes of the Tribunal dated April 10,2015 (26th Sitting) when the DMRC stated that they are searching for the same and, if found, furnish the same. This document does not appear in the list of documents furnished by DMRC to the Tribunal vide their letter No. DMRC/20/11/AP/2013/Termination/Ar/6680 dated 14-03-2017. Therefore, it appears that extension of pedestals was carried out without a methodology approved by Systra.

76.7. DMRC had appointed TUV SOWiLL to inspect the repairs. From the record of the said inspection it is noticed that there are more than 50 locations where the repairs have been shown as Type 1 repairs (requiring pedestals to be recast), the pedestals have not been recast. Moreover, there are more than 1200 locations where the date of inspection by TUV representative has

not been mentioned. This shows that the inspection of repair work by TUV was not thorough. (RC10- Pg 52 onwards).

76.8. From the aforesaid, it is apparent that bearings were incorrectly placed at many locations. Moreover, Systra substantially relaxed the tolerance limits for location of elastomeric bearings. This brought down the requirement to carry out Type 1 repairs i.e of breaking the pedestals and recasting the same. At several other locations DMRC, without a methodology approved by Systra, unilaterally extended the pedestals. The quality of rectification was not up to the mark.

From the aforesaid, it is concluded that the defect of incorrect location of bearings has not been cured nor have effective steps been taken by DMRC within the cure period to cure these defects. This constitutes DMRC Event of Default. DMRC is in breach of the Concession Agreement and this breach has caused Material Adverse Effect on the Concessionaire.”

65. After extensively examining the material *inter alia*, the documents, the codal requirements, evidence of expert witnesses, on the issue of defects the *Arbitral Tribunal* summarised its views as under:

“The views of the Arbitral Tribunal on defects / design deficiencies / constraints in the civil structures of Delhi Metro Airport Line are summarized herein below:-

<i>Sl. No.</i>	<i>Defect/Deficiency in Design/Constraints</i>	<i>Views of the Arbitral Tribunal</i>
<i>1.</i>	<i>Cracks at the bottom of</i>	<i>Occurrence of such large</i>

	<i>the girders</i>	<i>numbers of cracks in the base slab of the pre-stressed concrete girders within just one year of train operation, tentative assessment of the cause of cracks, unreliable measurement of crack depth which in many cases extend to more than half of the depth of bottom slab of U girders and non-serious inspection of the repairs by an agency appointed by DMRC impact adversely on the integrity of the structure. This leads to the conclusion that DMRC is in the breach of the Concession Agreement as effective steps were not taken within the cure period of 90 days to cure this defect and this has caused Material Adverse Effect on the Concessionaire (DAMEPL).</i>
2.	<i>Twist in the Girders</i>	<i>Effective steps were not taken to cure twist in all the girders (twist up to 20 mm was left unattended) and girders of suspect integrity were allowed to remain in the network. This constitutes a DMRC Event of Default. DMRC is in breach and this breach has Material Adverse Effect on the Concessionaire (DAMEPL).</i>
3.	<i>Gaps between girders and between girders and shear key</i>	<i>No action to cure this defect was taken by the claimant (DMRC) during the cure period (09-07-</i>

		2012 to 08-10-2012). Gaps higher than 25mm were not rectified. As such, this defect was neither cured nor effective steps were
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66. The *Arbitral Tribunal* thereafter concluded that there were defects in the civil structure of the Airport Metro Line. The defects would have Material Adverse Effect on the performance of the obligations under the *Concession Agreement* by the *Concessionaire* and said defects have not been cured within the cure period of 90 days from the date of the cure notice nor have effective steps been taken to cure such defects. The *Arbitral Tribunal* has thus concluded that *Delhi Metro* is in breach of the *Concession Agreement* as it has failed to cure the breach or take effective steps for curing the breach within 90 days of the notice dated 09.07.2012 from the *Concessionaire*. Such breach has Material Adverse Effect on the performance of the obligations on the *Concessionaire*. As such, the ingredients of Article 29.5.1 (i) of the *Concession Agreement* were satisfied and, therefore, the Termination Notice given by the *Concessionaire* on 08.10.2012 is valid.

67. The *Arbitral Tribunal* after examining and analysing in great detail the entire material, the codal requirements, report of experts, correspondence exchanged, testimony of witnesses including expert witnesses, has specifically returned a finding the there were defects in the civil structure of the Airport Metro Line and the defects were such

as had a material adverse effect on the performance on the obligations by the *Concessionaire* of its obligations and the said defects had not been cured within the cure period and effective steps had not been taken to cure the same within the cure period. *Delhi Metro* has clearly been found to be in breach of its obligations under the *Concession Agreement*. The *Termination Notice* has been found to be valid and the termination, by the *Concessionaire*, of the *Concession Agreement* has been found to be justified. Nothing has been brought on record to show that the view taken is not plausible.

68. It may also be observed that in the Cure Notice dated 09.07.2012, the Concessionaire had *inter alia* pointed out that there were defects in Delhi Metro Works. The following non-exhaustive list was mentioned:

- (a) *Damaged bearing pads;*
- (b) *Dangerous movement of the girders;*
- (c) *Extensive cracks in the bearing pedestals;*
- (d) *Large chunks of fillings, at the top and bottom of bearings, crushed and several pieces having already fallen;*
- (e) *Displaced and tilted bearings;*
- (f) *Pot bearing movement restricted by steel strips bolted to top and bottom of the bearings;*
- (g) *Damaged girders;*

(h) *Severe damages to pier caps.*

69. The Arbitral Tribunal has considered the defects under the following heads:

- (a) *cracks at the bottom of the U Girder*
- (b) *twist in the girders*
- (c) *gaps between girders and between girders and shear key*
- (d) *super imposed dead load (SIDL)*
- (e) *coefficient of dynamic augment (CDA)*
- (f) *cracks at the top of the girder*
- (g) *inaccessible bearings*
- (h) *location of bearings and extension of bearing pedestals*

70. The *Arbitral Tribunal* has concluded that defects (d), (e) and (f) above have not had an adverse impact on the obligations of the *Concessionaire*. Defects (a) to (c) and (g) and (h) clearly are subsumed in the defects specifically pointed out. *Concessionaire* has specifically pointed out to damaged girders and defective bearings. It can thus not be said that the specific defects were not pointed out by the *Concessionaire*. The *Arbitral Tribunal* has specifically held that there were defects in the Civil Works which were not cured and effective steps not taken during the cure period.

71. With regard to the Issue as to whether the *Concession Agreement* was specifically enforceable and should specific performance of such an agreement be as a rule directed or are damages an adequate remedy for the breach of the *Concession Agreement*, the *Arbitral Tribunal* has ruled that as the ingredients of Article 29.5.1 had been duly satisfied, *Delhi Metro* was not entitled to specific performance of the *Concession Agreement*.

72. Without going into the question as to whether in the facts and circumstances of the case such a contract could be directed to be specifically performed, it is observed that, once the *Arbitral Tribunal* has held that there was breach of the *Concession Agreement* on the part of *Delhi Metro*, which had a material adverse effect on the performance of obligations, under the *Concession Agreement*, on the *Concessionaire*, there was no question of granting specific performance. Specific Performance, if at all, could only have been directed, if the *Concessionaire* was held to be at fault and the *Termination Notice* was held to be bad in law. When the *Arbitral Tribunal* has held that the *Termination Notice* is justified and valid, it could not have directed specific performance of the *Concession Agreement* and rightly did not.

73. With regard to the issue raised by *Delhi Metro* that “*the Concessionaire had abandoned or “disowned” or “negated” or “nullified” the termination notice by continuously participating in the defect rectification process prior to and after the termination notice*”

and by its conduct of operating the line subsequent to the termination notice”, the Arbitral Tribunal concluded as under:

“87. Findings and Conclusion:

87.1 The Tribunal has analysed the correspondence and the chronology of events. It is, no doubt, true that DAMEPL participated in the discussions relating to the curing of the defects during the period 09.07.2012 to 08.10.2012. This period was “cure period” and the Concession Agreement was very much in existence. The various minutes of the meeting show that the representatives of DAMEPL were present in the said meeting and made suggestions and observations in the process of repairs. However, it is equally true that during the cure period DAMEPL was required to give all assistance in the process and since it had made substantial investment in the infrastructure of the metro line, it was obviously interested in the process being undertaken. No sooner was the termination notice given on 08.10.2012 (CD-28, Pg. 284), DAMEPL repeatedly asserted that whatever it was doing was “without prejudice” to its rights and contentions and, additionally, the parties immediately invoked the conciliation process under article 36.1 of Concession Agreement followed immediately by invoking the arbitration by DMRC by its letter dated 23.10.2012 (Miscellaneous Application dated 30.10.2013, Pg.14-15). The subsequent actions of DAMEPL were without prejudice to its rights and contentions as well as without prejudice to the pendency of the arbitral proceedings. Thus, far from “negating” or “nullifying” the termination notice, DAMEPL was insisting upon the same.

87.2. In the present case, there is nothing to show in the documents or in the conduct of DAMEPL that it has

relinquished, abandoned, waived or negated or nullified the termination notice. On the contrary, the correspondence on record clearly shows that DAMEPL has throughout asserted the termination.

87.3. In view of the above, it is concluded that DAMEPL has not disowned, negated, or nullified the termination notice.”

74. With regard to the issue raised by the *Delhi Metro* that the *Concessionaire* could have discovered the defects in the Civil Structure, the *Arbitral tribunal* held as under:

“E. Issue: Did DAMEPL fail to carry out the required inspections resulting in the alleged defects not being discovered during the defect liability period of the civil contractors? Or, as contended by DAMEPL, was only limited access permitted to DAMEPL by DMRC without actually handing over the structures as required under the CA?”

98. Findings and Conclusion:

After considering the rival submissions set out above, we conclude as under :

During the construction period, DAMEPL was responsible for maintaining only such sections of the site as had been handed over to it and not of that section for which merely access was granted. If any defect in any part of DMRC works became apparent within 12 months of handing over that section, DAMEPL was to advise the same to the Consultant and afford access to the concerned Contractor of DMRC for correction of the

defect. This situation had not arisen as DMRC had not formally handed over the site to DAMEPL and only access was provided for construction coordination purpose.

ALC/DMRC issued Completion Certificate to the Civil Contractors as effective from 30.09.2010 after Joint Inspection on 17.02.2011. This was not in the knowledge of DAMEPL This was for the first time disclosed by DMRC's letter dated 26.082014 during the present arbitration proceedings. DMRC has not been able to show that either the said certificate was disclosed to DAMEPL earlier or that DAMEPL was aware of the same prior to its being disclosed in the present arbitration proceedings.

It is further clear that most of the "as built" drawings were not provided to DAMEPL till much after the cure notice dated 09th July, 2012. There are no documents to show that there was any formal handing over by DMRC or formal taking over by DAMEPL of the site at the relevant time and no documents are produced. What appears is that DAMEPL was given access to carry out its systems construction simultaneously with the execution of civil works by DMRC which was only an access and not a formal handing over.

During discussions in the Arbitral proceedings and the documents on record, it is evident that:

- i) The civil structures were not properly handed over to DAMEPL*
- ii) 'As built' drawings were not furnished to DAMEPL by DMRC till as late as July, 2012.*
- iii) Defect Liability Certificate (DLC) was issued to Civil Contractors by DMRC on 9.11.2011*

retrospectively effective from 29.09.2011 without involving DAMEPL.

It is a fact accepted by both the parties that large scale defects of various nature were noticed in the civil structures soon after one year of COD. Not all of these defects namely, twist in the girder, improper gaps between the girders, improperly placed bearings etc. could have been detected during routine inspections.”

75. Further contention on behalf of *Delhi Metro* that the perceived financial unviability and not the defects in the structure, was the real reason of the termination of the *Concession Agreement* by the *Concessionaire*, is also without any merit.

76. The *Arbitral Tribunal* has come to the conclusion that there continued to be uncured defects/constraints of a far reaching nature which adversely affect the ability of *Concessionaire* to perform its obligations under the *Concession Agreement*. In view of the finding that the *Delhi Metro* was at fault and failed to cure the defects within the cure period and failed to take effective steps towards curing of the defects during the cure period, the contention that it was financial viability which was the main reason and not defects in the structure is not sustainable.

77. On the other hand, the finding that the defects were of such a nature as to have a material effect on the obligations of the *Concessionaire* shows that the financial viability was the direct consequence of the defects. Since financial viability is a direct

consequence of the defects the real reason cannot be held to be financial viability but the defects and the failure to cure the defects and to take effective steps to cure the defects during the cure period.

78. With regard to the contention on behalf of *Delhi Metro* that certificate was issued by CMRS granting sanction and certifying that repairs had been carried out showed that the defects had been cured and thus the termination was illegal, the *Arbitral Tribunal* held as under:

“107. Findings and Conclusion:

For the purposes of considering the aforesaid submissions the relevant extract of the CMRS sanction dated 18.01.2013 (RC- 14, Page 165 to 169) are reproduced below : -

- “(xi) The repairs to all the bearings used in U girders have been carried out by DMRC in the entire stretch of the line. Such type of repairs have been done for the first time on the Metro Network and needs to be monitored.*
- (xii) Cracks in soffit of some of the ‘U’ girders have also been repaired by DMRC. These cracks are required to be monitored during operation also to make sure that the situation remains stable. The monitoring of cracks for any propagation should be carried out as per Railway Board’s letter no. 2012/Proj I AME/116 dated 04.01.2013 addressed to CPM/AP/DMRC.*
- (xiii) Apart from routine inspection, operation and maintenance by the Concessionaire, DMRC should also carry out periodical inspection to ensure that*

the condition of track structure, viaducts etc is commensurate with the speed in operation.

3.0 *Further increase of speed in this section beyond 50 (fifty) kmph up to the proposed speed of 80 (eighty) kmph may be authorized by Dir/W/DMRC, who accompanied the inspection, in steps of 10 kmph at a time on satisfactory train operation in the section for a reasonable period of time and after his personal inspection, satisfaction, certification and after due consideration of items mentioned in para 2 (ix) to (xii) above. Before any increase in the speed, he should satisfy himself about the adequacy and any necessary attention as required with reference to the safety of public carriage of passengers.*

For increasing the speed beyond 80 kmph, the DMRC shall approach the Commission for sanction with adequate justification in regard to the improvements brought out”.

108. From the said letter, it is evident that the CMRS sanction clearly recognizes that rigorous monitoring is required to be done during the operation of the line. CMRS imposed a speed restriction of 50 kmph to start with. The prime purpose of the Airport Metro Line is to serve as a high speed connectivity, which is not fulfilled due to the severe speed restriction imposed by CMRS. As such, the CMRS certificate does not support the contention of DMRC. The subsequent operation of the line in the hands of DMRC is not relevant for the purpose of determination of issues before the Tribunal. Thus, the said contention of DMRC is not accepted.”

79. The certificate of CMRS clearly shows that the repairs were not

completely effected. CMRS imposed a speed restriction of 50 kmph to begin with and thereafter the speed was to be increased gradually under strict monitoring.

80. It is apparent that even CMRS was not satisfied that the repairs were complete. It adopted a cautious approach to rigorously monitor the operation. That is why it directed that the cracks were required to be monitored during operation so as to make sure that the situation remains stable. Apart from routine inspection, operation and maintenance by the *Concessionaire, Delhi Metro* was required to carry out periodical inspection to ensure that the condition of track structure, viaducts etc is commensurate with the speed in operation.

81. The increase of speed beyond 50 (fifty) kmph up to the proposed speed of 80 (eighty) kmph was to be authorized by Dir / W/DMRC, in steps of 10 kmph, at a time, on satisfactory train operation for a reasonable period of time and after his personal inspection, satisfaction, certification and after due consideration of items mentioned in the said certificate. It directed that before any increase in the speed, he should satisfy himself about the adequacy and any necessary attention as required with reference to the safety of public carriage of passengers. Further for increasing the speed beyond 80 kmph, *Delhi Metro* was directed to approach the Commission for sanction with adequate justification in regard to the improvements brought out. This clearly shows that the Commission was not certain about the repairs carried out and adopted a cautious approach.

82. One must keep in mind the basic object of the project that was to provide a high speed connectivity to the Airport. Clearly the repairs carried out did not satisfy even CMRS that a high speed connectivity could be established.

83. With regard to the contention on behalf of *Delhi Metro* that the *Arbitral Tribunal*, disregarded the balance sheet, wherein equity invested in the project is shown only as Rs. 1 lakh and considered an amount of Rs. 611.95 crores, shown as share application money in the accounts, as a Subordinate Debt and then as equity, it would be relevant to refer to the findings of the *Arbitral Tribunal*. The *Arbitral Tribunal* held as under:

“121. DMRC has contended that on DAMEPL’s own showing in its Balance Sheet, the equity portion is only 1 lakh, whereas the amount claimed by way of equity by promoters towards the project is Rs.685 crores which is contrary to the well known concept of equity share capital and as expressed in the provisions of the Companies Act. DMRC relies upon the cross examination of Ms. Neena Goel, partner of M/s. T. R. Chadha & Co., Chartered Accountants, herself a qualified Chartered Accountant, to argue that the amount claimed in respect of equity contribution by the Promoters is far higher than what is the well known definition of equity and as stated in The Companies Act. The following question and answers are relied upon by DMRC.

“Q53 In that case, madam, please justify in law the difference between the figure of equity by promoters as reflected in annexure CC-1 to the counter claim and

the audited balance sheet for the year ending 31-03-2013 of DAMEPL?

Ans. The figure of equity, I state once again, in the audited balance sheet for the year ended 31-03-2013 is as per Companies Act, 1956, i.e. value for which shares have been issued. Regarding the definition of equity and debt as per the Concession Agreement there seems to be a case of interpretation of the definition as given in the Concession Agreement. The wording seems to suggest that subordinated debt may be included in "equity". Therefore I have stated earlier also that this is a matter which needs to be decided by the Learned Counsel and the Arbitral Panel.

Q54 Madam, whether as per the Company law, the definition of equity includes subordinate debts?

Ans. No."

122. During the course of the cross examination of Ms. Neena Goel, DMRC had called upon DAMEPL to produce certain documents. This is recorded by the Tribunal in the minutes of the proceedings dated 24.11.2014. DAMEPL had produced the said documents along with a letter no. DJK/HM/1208 dated 01.12.2014 from its Advocates.

123. In the aforesaid background, the real dispute in respect of the Counter Claim pertaining to the one made in prayer (a) in para 110 above is confined to the figure of equity by Promoters towards the project. While on the one hand, the balance sheet and the financial statement of DAMEPL show the equity share capital to be Rs.1 lakh, the claim made in the Statement at Annexure CC 1 to Counter Claim in respect of equity by promoters towards the project is quantified at Rs. 685 crores.

124. In fact, following different figures of Equity/Subordinated debt as promoters contribution/Equity share capital appear in various statements submitted by DAMEPL.

- Equity share capital Rs 1 lakh (appearing in Balance sheet) and also in DAMEPL's claim letter dated 08.07.2013 (CD -17, page 316)
- Equity by Promoters towards project of Rs. 685 crores in Annexure CC - I of the Counter Claim
- Net Subordinated Debt from R-Infra of Rs. 687.90 crores worked out on page 26 of the details submitted by DAMEPL vide letter no.DJK/HM/1208 dtd. 01.12.2014
- Subordinated debt of Rs. 670.77 crores from R-Infra used for the project assets (DAMEPL's claim letter dtd. 08.07.2013)
- Subordinated debt (promoter's contribution) of Rs. 611.95 crores by transfer of Share application dtd. 16.03.2011 (page 55 of the details submitted by DAMEPL vide letter no. DJK/HM/1208 dtd. 01.12.2014.)

125. We have examined the above figures in the light of the provisions in the CA. First question is whether "subordinated debt from the promoters" is covered under the definition of subordinated debt given in the CA.

From the definition of subordinated debt given in the Concession Agreement (reproduced on page 161), it is clear that only such subordinated debts which are advanced or provided by the lenders or the Concessionaire for meeting Concessionaire's Capital Costs and interest thereon as stipulated are to be treated

as Subordinated Debt for the purpose of the CA. The amount contributed by a member of the Consortium or a shareholder of the Concessionaire to meet the Capital Costs of the Concessionaire in any form including any subordinated debt are not to be treated as Subordinated Debt under the definition of CA.

Second question is, can a project of this magnitude be executed with an equity of Rs. 1 lakh? No lender will fund a project of this size if Promoters intends to provide only Rs. 1 lakh as Equity. In the present case, it will tantamount to an irrationally high Debt Equity ratio. It is a common practice by lenders to fund the projects at around 60: 40 to 80 : 20 as Debt: Equity ratio. The lenders do allow promoters (in the instant case R Infra) to bring in their part of contribution, representing equity, either in the form of equity share capital or preference share capital/subordinated debt or a mix thereof. Generally, a condition is imposed by the lenders on the promoters that till the time, the borrower has paid its part of proportionate equity contribution, it will not be entitled to receive loan.

126. At this stage, the definition of the word “equity” in the Concession Agreement may be recapitulated. The said definition specifically covers not only the equity capital of DAMEPL, but includes “the funds advanced by any member of the consortium or by any of its shareholders to the Concessionaire for meeting the equity component of the Concessionaire’s Capital Costs”. Thus, there is a specific definition of the word “equity” in the CA. The said definition of equity gets subsumed in the definition of “adjusted equity” in the Concession Agreement which, in turn, means Equity which, apart from equity share capital of DAMEPL, also includes the funds advanced by any member of the consortium or by its shareholders to DAMEPL. DMRC

has nowhere pleaded or shown that substantial money has not been advanced by the promoters. In view thereof, the argument that it is only equity share capital as understood within the meaning of Companies Act that is liable to be refunded to DAMEPL under Article 29.5.2 (b), in our view, is not correct. Now, a question arises as to how much of the subordinated debt received from Reliance Infra (Promoter) is to be treated as “Equity” for the calculation of “Adjusted Equity”. In the absence of a clear cut documentary proof submitted by DAMEPL, this Tribunal has to go by the documents available with it. On page 55 of the document submitted on 01.12.2014 on behalf of DAMEPL, an amount of Rs. 611.95 crores appears as “Transfer from share application - BOD Resolution 16th March, 2011”. This figure of Rs 611.95 crores also appears at page 35 in the calculations given by DAMEPL vide their letter dated 1.12.2014 quoted above. To support the figure of Rs 73.27 crores (Equity contribution after COD towards project assets), there is no authentic document provided by the Respondent. Therefore, we have decided to consider this amount as equity contribution from the Promoters as this is closest to the COD (23.02.2011). Adjusted equity will be worked out as per the formula given in Concession Agreement taking this amount (Rs. 611.95 crores) as “Equity”.

127. After having decided the equity amount, we proceed to work out the Adjusted equity” in the manner stipulated in the CA.

- *Equity funded till COD = Rs. 611.95 crores*
- *WPI on Appointed date
(August 2008) = 128.90*

Appointed date taken as date of signing of Concession Agreement (25.08.2008) as date of financial close / date of commencement of Concession Period is not available in the documents submitted by the parties.

- *WPI on COD (23.02.2011) = 148.10*

- Variation in WPI = 19.20
- Mean Variation = 9.60
- % of mean variation = 7.45%
- Base adjusted equity till COD = Rs. 611.95 x 1.0745
Rs. 657.54 crores

After COD (February, 2011)

- WPI on COD = 148.10
- WPI on the reference date i.e. the date of Termination (07.01.2013) = 170.3
- Variation in WPI = 22.20
- % variation = 15%
- Adjusted equity = 657.54 x 1.15
= Rs. 756.17 crores
- 130% Adjusted Equity = Rs. 983.02 crores

128. The other component of Termination Payment is “Debt due”. “Debt due” comprises of two elements i.e. Rupee term loan and External commercial borrowing (in foreign currency). For the loan received and repaid, we have relied upon the information submitted by DAMEPL through their advocates vide letter no. DJK/HM/1208 dtd. 01.12.2014. In the absence of definition of “Transfer Date” in the CA, we have taken the date of termination i.e. 07.01.2013 as the reference date for the calculation of the “Debt due.”

128.1 Details of Rupee Term Loan are given in page 28 to 30. On analyzing the said details, the following position emerges:

- Loan received till the date of termination (07.01.2013) = Rs. 1273,05,68,176/-
- Loan repaid till 07.01.2013 = Rs. 12,32,78,012/-
- Net loan as on 07.01.2013 = Rs. 1260,72,90,164/-
Say Rs. 1260.73 crores

128.2 Details of External commercial borrowing is given in page 31 of the document mentioned in para 126 above.

- Loan received till termination date (07.01.2013) = Rs. 541,16,47,984/-

- *Repayment till termination date* = Rs.2,58,14,928/-
- *Net loan on 07.01.2013* = Rs.538,58,33,056/-
Say Rs. 538.58 crores

129. Therefore, the Termination Payment to DAMEPL works out to Rs.983.02 + Rs. 1260.73 +Rs. 538.58 crores = Rs. 2782.33 crores.

As regards rate of interest on the Termination payment, the stipulation of Article 29.8 of Concession Agreement is at an annualized rate of SBI PLR +2%. We have noted from the financial documents of DAMEPL (Pg 299 of CD11-Supplementary reply of DMRC dated 22.2.2014 to the Counter Claim of the Respondent) that the secured loan taken by DAMEPL carries the rate of interest of 12.75% on Rupee Term Loan and is in the range of 4.83% to 5.6% for Foreign Currency Loan. Although the rates of interest on loans taken by DAMEPL are lower than SBI PLR +2%, we are of the opinion that it is beyond the competence of the Tribunal to change or alter or modify the provisions of CA. As such, we decide that the Termination payment will be as per the provisions of Article 29.8 of Concession Agreement and the interest on the Termination payment will accrue from 7.8.2013 (i.e. the date 30 days after the demand of Termination payment by DAMEPL on 08.07.2013). In terms of Article 29.9 of CA, this amount shall be paid by DMRC by way of credit to the Escrow Account, details of which are available in Annexure CC-4 of the Counter Claim. We award accordingly.”

84. The *Arbitral Tribunal* after detailed analysis and examination of the evidence adduced by the parties, the documents and clauses of the *Concession Agreement*, worked out the Adjusted Equity and the

consequent *Termination Payment*. The *Arbitral Tribunal* has taken a plausible interpretation and based thereon returned a finding on the facts of the present case. Nothing has been pointed out, for this court to form an opinion, that the interpretation rendered by the *Arbitral Tribunal* and the calculation done is not a plausible one.

85. There is no gainsaying that the *Arbitral Tribunal* is the master of the factual arena and even it goes wrong while deciding the factual issues, unless there is something manifest from the face of the award that is so grave as to move the conscience of the court that the error would result in a monumental miscarriage of justice, no interference by the court is called for.¹

86. Where the *Arbitral Tribunal* assesses the material and evidence placed before it in detail, the court while considering the objections under Section 34 of the said Act does not sit as a court of appeal and is not expected to re-appreciate the entire evidence and reassess the case of the parties. The jurisdiction under section 34 is not appellate in nature and an award passed by an *Arbitral Tribunal* cannot be set aside on the ground that it was erroneous. It is not open to the court to interfere with the award merely because in the opinion of the court, another view is possible. The duty of the court in these circumstances is to see whether the view taken by the *Arbitral Tribunal* is a plausible view on the facts, pleadings and evidence before it. Even if on the

¹ *Food Corporation of India v. Shanti Cereals Pvt. Ltd.*, 2010 (3) ARB. LR 296 (Del.) (DB)

assessment of material, the court while considering the objections under Section 34 of the Act is of the view that there are two views possible and the *Arbitral Tribunal* has taken one of the possible views, which could have been taken on the material before it, the court would be reluctant to interfere. The court is not to substitute its view with the view of the *Arbitral Tribunal* if the view taken by the *Arbitral Tribunal* is reasonable and plausible.²

87. The *Arbitral Tribunal* has in great detail examined and assessed the material and evidence placed before it and has analysed the relevant clauses of the contract and taken a view, which is plausible. I find no infirmity in the view taken by the *Arbitral Tribunal* so as to interfere with the award, in exercise of powers under Section 34 of the Act.

88. In view of the above, the objections filed by *Delhi Metro*, under section 34 of the Act, are dismissed. O.M.P. (COMM) 307/2017 filed by *Delhi Metro Rail Corporation* is dismissed.

89. Consequently, OMP (COMM) (I) 200/2017 filed under Section 9 of the Act by *Delhi Airport Metro Express Private Limited* (the *Concessionaire*) seeking a direction to the *Delhi Metro* to deposit with the Court an amount of Rs. 3502.62 Crores being 75% of the amount awarded under the *Arbitral Award* and a further direction for release

² *Jhang Cooperative Group Housing Society v. P.T Munshi Ram & Associates Private limited: 202(2013) DLT 218.*

of the deposited amount to the Project Lenders and Promoters who had financed the project, is allowed. However, instead of depositing the said amount in Court, *Delhi Metro* is directed to deposit the said amount alongwith interest, as awarded by the *Arbitral Tribunal*, directly with the Project Lenders. Said Amount be deposited in the Escrow account maintained with the Project Lenders, within a period of four weeks from today. Further, the Bank Guarantees, furnished by the *Concessionaire* to secure on account payments made by *Delhi Metro* under orders of this court, are discharged.

90. The Petitions and the pending applications are disposed of in the above terms.

91. Order *Dasti* under signatures of Court Master.

March 06, 2018
rs/km/HJ

SANJEEV SACHDEVA, J

नित्यमेव जयते