

**The Director,**  
I.A. Division – III,  
Ministry of Environment, Forests & Climate Change,  
Indira Paryavaran Bhavan,  
Jor Bagh Road, New Delhi – 110 003.

Dt. 05-12-2018

**Ref. :- 1. Proposal No. IA/HR/MIS/78059/2017 and File No. 21-219/2017-IA-III**  
**2. 34<sup>th</sup> Meeting of EAC (Infra-2) held on 24<sup>th</sup> - 26<sup>th</sup> September, 2018**

**Sub.:-Environment Clearance – Proposed Expansion of Existing Residential Project at Village Ghata, Sector-62, Gurgaon, Haryana – Clarifications – Reg.**

Respected Sir,

With reference to the above mentioned subject, mentioned below is the point wise reply to the queries raised in the minutes of the 34<sup>th</sup> Meeting of EAC (Infra-2) held on 24<sup>th</sup> - 26<sup>th</sup> September, 2018.

**Q.i. Provide comparative project detail (area, building no., height, parking space etc.) along with environmental statement showing existing, proposed and total details of the project.**

**Ans.** The comparative chart showing project details for existing & proposed is given at **Annexure No.1.**

**Q.ii. Submit Action taken report submitted to Regional Office, MoEFCC, Chandigarh on non compliance of EC Conditions along with response of Regional Office on the submission.**

**Ans.** We have submitted the compliance report on 20-09-2018 incorporating the compliance to the issues of non-compliance raised by the Regional Office, Chandigarh and the copy of the same is enclosed at **Annexure No. 2.**  
We have requested to the Regional Office for their confirmation on our reply and copy of the said letter is enclosed at **Annexure No. 3.**

**Q.iii. Submit revised water balance for the project along with the quantitative commitment of fresh water supply from HUDA.**

**Ans.** The revised water balance for the project is enclosed at **Annexure No. 4.**  
The HUDA is already laid water supply line on our request dt. 30-10-2017 and water connection fees for an amount of Rs. 7,00,000/- for the project based on the approved service estimation plan. The copy of the approved service estimation plan is attached at **Annexure No. 5A & 5B.** Also enclosed herewith is the approved site plan showing the water supply system at **Annexure No. 6.**

Also, the project has already obtained water supply assurance letter for the project vide Memo no. 1758 dt. 23-01-2018 from Executive Engineer, HUDA, Gurugram. The copy of the water supply assurance letter is attached at **Annexure No. 7.**

**Q.iv. Submit details of solid waste generated and plan for management of solid waste.**

**Ans. The details are give below :-**

- ✓ The Solid Waste Management Rules, 2016 will be followed in the solid waste disposal.
- ✓ It is expected to be generated of municipal solid waste about 1294 kg/day from the residential complex.
- ✓ Collection & segregation within the site (bio-degradable waste (green bins), non-biodegradable waste (blue bins) and domestic hazardous waste (yellow bins).
- ✓ Disposal of biodegradable Municipal Solid Waste by outsourced to approved agency (MoU). The copy of the MoU with the agency is enclosed at **Annexure No. 8**.
- ✓ Disposal of non biodegradable recyclable waste to vendors.
- ✓ The recyclable waste like packaging material, paper etc. would be sold through vendors and the area earmarked for the storage of the same is about 150 sq.m. (which is equivalent to the storage of 7 days non-biodegradable waste).

**Q.v. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project shall be obtained and submitted.**

**Ans.** The project has already accorded with the approval for sanction of ultimate load 7,064 kW along with its electrification scheme from Dakshin Haryana Bijli Vitran Nigam vide Memo no. 9/SE/C/SOL-421 dt. 22-08-2017. The copy of the said approval letter dt. 22-08-2017 is enclosed at **Annexure No. 9**.

**Q.vi. The Air Quality Index shall be calculated for base level air quality.**

**Ans.** The air quality index is calculated for base level air quality and is attached at **Annexure No. 10**.

**Q.vii. A detailed report on compliance to ECBC-2017 norms.**

**Ans.** The detailed report on compliance to ECBC is enclosed at **Annexure No. 11**.

**Q.viii. Submit detailed traffic impact study duly endorsed by the concerned authority.**

**Ans.** The project site is located in Village Ghata, which is in Sector-62 Gurugram District, Haryana and the traffic assessment was carried out and the traffic study details is enclosed at **Annexure No. 12**.

The main access road to the project site is from CRPF road (60 m. wide sector road) (E) which is connected to Golf Course Road at 500m (N). Another access to the project site is from sector road on North side of project site connected with Golf Course Road & CRPF Road.

The Govt. of Haryana published a draft Development Plan 2013 AD for the controlled area of Gurgaon-Manesar Urban Complex. To provide the better infrastructure in the area, a land reservation for major transport corridors are identified by the Town and Country Planning Department, Govt. of Haryana vide its Notification dt. 04-09-2012 which is covered the width and alignment of other roads as per sector plans in the area.

**Q.ix. Submit revised requirement of manpower during operation phase.**

**Ans.** The manpower requirement during operation phase is about 400 persons which involves maintenance, house-keeping & security & other staff

**Q.x. Details of tree cutting, if any and submit green belt development plan.**

**Ans.** There is no tree cutting involved in the project site. The green belt development plan is attached at **Annexure No. 13.**

**Q.xi. Submit revised Plan for Corporate Environment Responsibility (CER) as specified under Ministry's Office Memorandum vide F.No. 22-65/2017-IA.III dated 1<sup>st</sup> May 2018 shall be prepared and submitted.**

**Ans.** The revised CER is provided at **Annexure No. 14.**

In view of the above submission of clarifications, we humbly request you to accord Environmental Clearance to our project at the earliest.

Thanking you,

Yours respectfully,

**For M/s Pioneer Urban Land & Infrastructure Ltd.**

For Pioneer Urban Land & Infrastructure Ltd.



Authorised Signatory

Encl. :- As above

**COMPARATIVE CHART SHOWING PROJECT DETAILS  
FOR EXISTING & PROPOSED**

Sr. No.	Description	Details as per E.C. obtained in 2008	Details as per expansion proposal	Remark
1.	Plot area	9.9605 ha.	9.9605 ha.	No change
2.	Built-up area	2,97,320.95 sq.m.	3,04,562 sq.m.	additional B U A 7,241.05 sq.m.
3.	Facilities in the project	Multi-storied Group Housing project which involves 482 Residential Units including 94 servant rooms, 88 EWS units, community centre, convenient shops, primary & nursery school with supporting infrastructure facilities	Multi-storied Group Housing project which involves 482 Residential Units including 94 servant rooms, 88 EWS units, community centre, convenient shops, primary & nursery school with supporting infrastructure facilities	No change
4.	No. of building blocks	9 Residential Blocks + 1 EWS Block + Community Centre + Convenient shops + Primary & Nursery School	9 Residential Blocks + 1 EWS Block + Community Centre + Convenient shops + Primary & Nursery School	No change
5.	Max. height	116.95 m.	116.95 m.	No change
6.	Parking	3,739 cars	1,596 cars	As per norms
7.	Total water req.	1,137 KLD	321 KLD (fresh 198 KLD + recycled 123 KLD)	As per norms
8.	Waste water generation	1,023 KLD	217 KLD	As per norms
9.	Municipal solid waste generation	3,370 kg/day	1,294 kg/day	As per norms
10.	Project cost	Rs. 281.36 Crores	Rs. 1,193 Crores	Increase of Rs. 911.64 Crores



PIONEER FACILITY MANAGEMENT LIMITED  
 CIN : U74999DL2015PLC279075  
 SERVICE TAX CODE: AACPD791JSD001  
 CORPORATE OFFICE : PARAS DOWNTOWN CENTRE,  
 FLOOR - 7, GOLF COURSE ROAD, SECTOR 53,  
 GURGAON 122002, T. +91 124 4322300,  
 F: +91 124 4322400, E: pfm@pioneerurban.in  
 www.pioneerurban.in

PULIL/MoEF-242/2018/198

September 17, 2018

The Additional Director (S)  
 Ministry of Environment & Forest  
 Government of India  
 Northern Regional Office  
 Bays No.24-25, Sector - 31-A  
 Dakshin Marg, Chandigarh - 160030.

**Sub: Construction of Group Housing Colony at Village Ghata, Sector-62, Gurgaon Haryana - Compliance of conditions of Environmental Clearance - Submission of six monthly progress report - reg.**

**Ref :** (a) MoEF's clearance letter no. 21-1055/2007-LA.III dated 04.06.2008.  
 (b) F. No. 4-536/2008-RO(NZ).  
 (c) MoEF's Letter No.4-536/2008-RO(NZ)/407 dated 21.09.2017

Dear Sir,

Please refer to your above mentioned clearance letter and do find enclosed herewith the 6 monthly compliance report as per the guidelines given in environmental clearance letter issued vide MoEF's clearance letter No.21-1055/2007-LA.III dated 04.06.2008 alongwith soft copy for the months upto June 2018, to be developed by Pioneer Urban Land & Infrastructure Ltd.

Referring MoEF's letter No.4-536/2008-RO(NZ)/407 dated 21.09.2017, we have incorporated all the points raised therein.

Hope you will find the information given in order and will meet your expectations to assess the implementation status of environmental safeguard measures for the project.

Thanking you,

Yours faithfully,  
 For Pioneer Urban Land & Infrastructure Ltd.,

(Authorised Signatory)  
 Anil Kumar  
 GM-Liaison  
 Mob.9911539849  
 e-mail:anilk@pioneerurban.in

*Handwritten signature and date 20.09.18*  
 20.09.18  
 The Project Manager  
 Pioneer Urban Land & Infrastructure Ltd.  
 Gurgaon, Haryana

Encl.: as above



PIONEER FACILITY MANAGEMENT LIMITED  
 CIN : U74999DL2015PLC279075  
 SERVICE TAX CODE: AAICP0791JSD001  
 CORPORATE OFFICE : PARAS DOWNTOWN CENTRE,  
 FLOOR - 7, GOLF COURSE ROAD, SECTOR 53,  
 GURGAON 122002, T: +91 124 4322300,  
 F: +91 124 4322400, E: pfm@pioneerurban.in  
 www.pioneerurban.in

PULIL/MoEF-242/2018/214

Date ; October 25, 2018

The Additional Director (S)  
 Ministry of Environment & Forest  
 Government of India  
 Northern Regional Office  
 Bays No.24-25, Sector - 31-A  
 Dakshin Marg, Chandigarh - 160030.

*Accepted*  
*26/10/18*

**Sub: Expansion of Residential Group Housing Colony on an area 24.606 Acres at Village Ghata, Sector-62, Gurgaon Haryana- reg.**

**Ref :** (a) MoEF's clearance letter no. 21-1055/2007-IA.III dated 04.06.2008.  
 (b) F. No. 4-536/2008-RO(NZ).  
 (c) MoEF's Letter No.4-536/2008-RO(NZ)/407 dated 21.09.2017  
 (d) Our letter No. PULIL/MoEF-242/2018/198 dated September 17, 2018

Dear Sir,

With reference to subject cited above, we wish to submit as under : -

1. This is in reference to the expansion of our Group Housing project at Sector 62, Village Ghata, Gurugram, District, Haryana. We have submitted our application for obtaining Environment Clearance at MoEF&CC at New Delhi vide Proposal No. 1A/HR/NCP/64695/2017 (The built-up area of the project is 3,04,562 sq.m and as per MoEF&CC Notification vide S.O. 3999(E) dt. 09.12.2016, the project is falling under Category 'A' project).
2. We had applied for issuance of compliance certificate for aforesaid group housing colony vide our office letter no. PULIL/COMP/RESI-SCT-62/2017/093 Dated 03 July 2017. (copy enclosed)
3. We have been issued compliance certificate vide memo no. 4-536/2008-RO(NZ)/407 Dated 21-09-2017 with observations that the majority of specific conditions of construction phase have been complied but a few are yet to be complied.
4. In this connection, we wish to mention here that we have complied all the conditions as mentioned in the compliance certificate and report have been submitted vide our letter dated 17 September 2018. (copy enclosed).

Contd....2/-

- 2 -

5. After consideration of proposal in EAC meeting, Member Secretary asked company to submit action taken report submitted to Regional Office, MoEFCC, Chandigarh on non-compliance of EC conditions along with response of Regional Office on the submission.

In view of the above submission, we humbly request you to issue us the response as mentioned in point no. 5, so as to enable us to submit the same at MoEF&CC.

Thanking you,

Yours faithfully,  
For Pioneer Urban Land & Infrastructure Ltd.,

  
(Authorised Signatory)  
Manjit Jaju  
President (Operations & Corporate Affairs)  
Mob.9811202287  
e-mail:[mjaju@pioneerurban.in](mailto:mjaju@pioneerurban.in)

Encl.: as above

# DAILY WATER CONSUMPTION BALANCE CHART (ZERO LIQUID DISCHARGE)

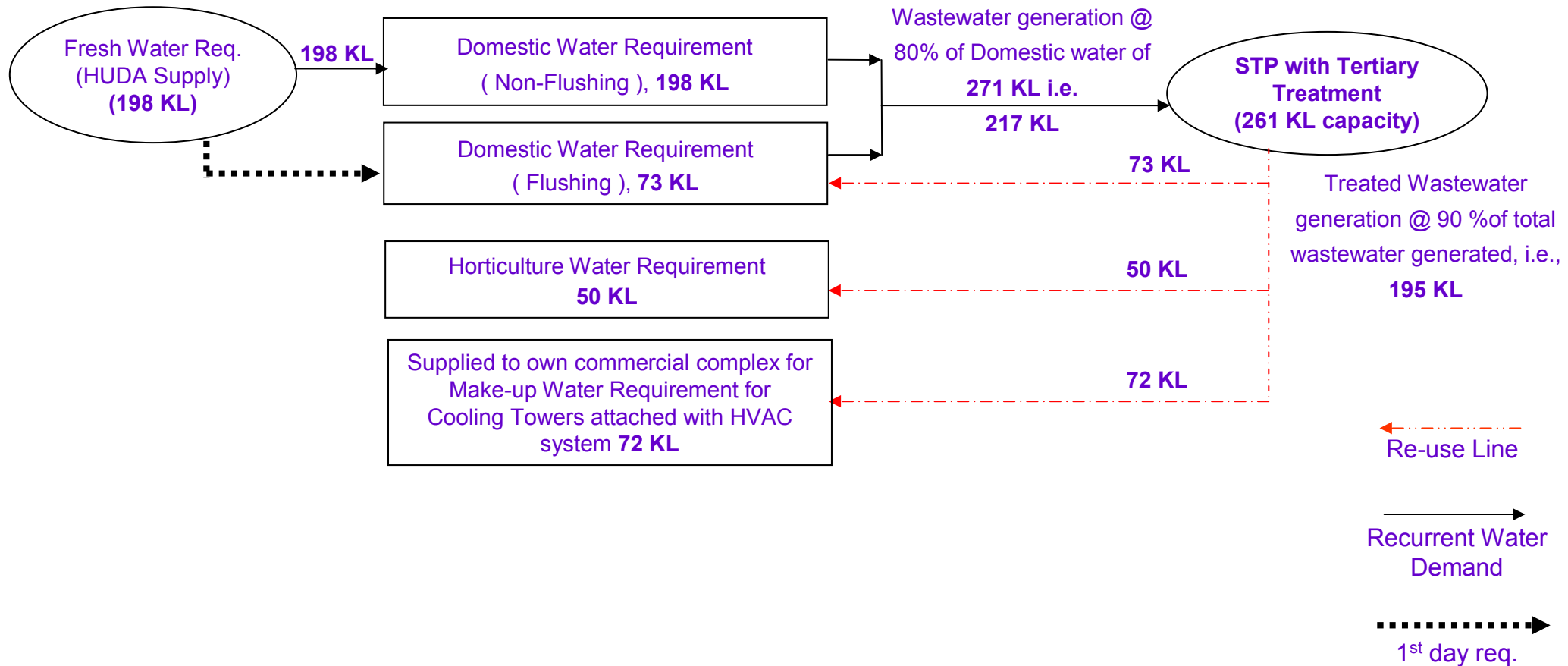
Annexure No. 4

Total daily water consumption = 321 KL (fresh 198 KL + 123 recycled)

Total daily sewage generation = 217 KL (80% of 271 KL)

Total daily treated sewage available = 195 KL (90% of 217 KL)

Total daily water saving = 123 KL (61%)





# **PIONEER PARK "ARAYA" GROUP HOUSING AT SECTOR 62, GURGAON**

## **SUBMISSION REPORT ON SERVICES PLAN / ESTIMATE**

For Pioneer Park and 2 Infrastructure Limited

  
Authorised Signatory

  
M.K. Gupta  
RMC No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

  
ANURAAG CHOWFLA  
CA Registration No. 79/5

### **ARCHITECTS**

**M/s Manichowla Architects  
56/3, Friends Colony,  
New Delhi - 65**

### **PLUMBING CONSULTANTS**

**M/s MKG CONSULTANTS  
A -8, Paryavaran Complex  
IGNOU Road,  
New Delhi - 110030.  
Tel. : 011 - 29532720**

**PROJECTS**  
**PIONEER PARK "ARAYA" GROUP HOUSING**  
**AT SECTOR 62, GURGAON**

**SUBJECTS**  
**ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE AND STORM WATER**  
**DRAINAGE FOR PIONEER PARK "ARAYA" GROUP HOUSING ,GURGAON**

Gurgaon town is an important town of Haryana State situated on Delhi-Jaipur National Highway No. 8 at a distance of 35 kms from Delhi. Being in the national capital region, the town has fast developing tendency and potential. Further it has also started sharing the growing industrial load of Delhi & Faridabad. In order of relieve the growing pressure of population in Delhi, it has been decided by the Haryana Govt. to establish various residential sectors along with infrastructure facilities in Gurgaon. Keeping in view the colony for residential development scheme has been planned. *in Ist. Ph. 10.30 acre area has already been approved and we have to apply for balance area of land 14.306 Acres*  
Water Supply

**1. Source**

The source of water supply in this area is tube well as underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth, the average yield of Tube wells, with approximate 60 ' to 80; strainer will be about 15 KL per hour. 2 Nos. Tube wells are required to cope with the daily requirement of water for the initial period of 5 years by which time canal water is expected.

**2. Tube wells**

The proposed tube wells shall be 510 mm bore drilled with reverse rotary rig and installed with 80 mm i/d housing pipe and 50 mm i/d slotted tube as strainer. The provision taken in the estimate under the sub-head tube well includes the cost of pea gravel packing. The lift of tube well is limited due to incrustation and rusting of strainer. Therefore, out of these tube wells the drilling of tube wells will be done for 6 Nos. tube wells and further tube wells will be drilled as the demand develops till the scheme is handed over the department or till the canal filtration scheme starts supplying water, whichever is earlier.

**3. Pump Chambers and Pumping Machinery**

It is proposed to equip each tube well with an electricity driven pumping set-Ejecto type or submersible pump capable of delivering about 15,000 Ltrs per hour. It is also proposed to equip 2 Nos. pumping sets with stand by diesel gen set engines for operation during failure of electricity at four locations.

**4. Ground Storage**

Underground storage tank for One day of total daily demand of water supply have been proposed at two locations in the scheme. The same shall be fed by 6 Nos. of tube wells at present and shall be later augmented through HUDA mains canal supply at later date.

**6. Distribution System**

The distribution system for this development are has been designed for 172.5 Liters per person per day @3.0 times the average rate of flow on "Hazen Williams" formula with C-100. Necessary provision for laying C.I./D.I. pipes only conforming to relevant IS standards along with valves and specials has been made in this Estimate.

7. **Rising Main**

Rising mains from HUDA water main on sector road to water works have also been designed and provision for C.I. (class LA)/DI KA pipe line has been made in this estimate

8. **Sewerage**

This colony has a terrain which is mainly flat with a gentle slopes with one side dropped by avg. 2 meter. Sewerage network has been proposed to slope towards the South providing for self cleaning velocities without any deep excavation. It would thus be possible to connect the internal sewers in the plans with HUDA main sewer proposed on the development plan road in close proximity of the last manhole without any pumping being involved. At Gurgaon normally it is possible to get 2.0 ft. / sec velocity.

The internal sewer lines have also been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 75 % of the domestic water supply shall find its way into the proposed sewer. All the SW / RCC pipes, sewer has been designed to run half/full/three fourth full.

Necessary design statement for entire internal sewerage system has been prepared and attached with estimate.

Necessary provision for laying SW/RCC pipes sewer lines and manholes etc. has been made in this estimate.

9. **Storm water drainage**

It has been proposed to lay underground RCC pipe drains on the road widths 40 ft. and above where it is possible to lay underground drains. The intensity of rain fall has been taken as ¼ the inch per hour. The internal storm water drains will be jointed into external storm water drainage to be laid by HUDA on sector dividing roads. Necessary provision for kerbs and channels has been made in the estimate. The estimate for these closed drains has been included as sub work No. III A minimum size of 400 mm RCC storm water line will be provided.

10. **Specifications**

The work will be carried out in accordance with the standard specifications of P.H. as laid down by the Haryana Government.

11. **Rates**

The estimate has been based on the present market rates and probable escalation in prices.

12. **Cost**

The total cost of the Scheme including cost of all services works out to Rs. ~~690.46~~ Lakhs including 3% contingencies and 14% departmental charges. *Price, 49% escalation unforeseen, Admin. Charges*

*704.27*  
*911.09*  
*884.75*

:-

PIONEER PARK GROUP HOUSING "ARAYA" AT SECTOR - 62, GURGAON

I. DESIGN CALCULATION :

S. N.	Daily requirement	Units in Tower	Height of the building	Population	Service Population	Water Requirement Per Person	Total Water requirement ( in Ltr)	
<b>A. DOMESTIC WATER REQUIREMENT</b>								
					48 X 2		73485	
1	TOWER F	66	116.95	330	96	172.5	69885	
2	TOWER G	66	116.95	330		172.5	56925	
3	TOWER H	66	116.95	330		172.5	56925	
4	TOWER J	56	100.60	280		172.5	48300	
5	COMMUNITY SHOPPING CENTRE						10000	
	EWS	88			440	135.0	59400	
6	CLUB Community Center						50000	25000
							295635	
	TOTAL						292035	LPD 330035
	GRAND TOTAL						292035	LPD
	SAY (CUM/DAY)						300	CUM/DAY
							330 KLD	
<b>B. HORTICULTURE WATER REQUIREMENT</b>								
	10.00 Acres @ 25000 l/acre						250	KL
	3.00						75	

$$330 + 75 = 405 \text{ KLD}$$

I. TOTAL WATER DEMAND IN M<sup>3</sup> / DAY

- (a) For Domestic Purpose - Part 1  
Say

900 m<sup>3</sup> /day  
300 m<sup>3</sup> /day

II. TUBEWELLS

- (a) Yield  
(b) Working Hours per Day

20 15 KL/hr  
12 Hours per Day

- (c) Total water demand  
(d) Number of Tubewells reqd.  
( =Water Demand/Discharge/Hours working per day)  
(e) Add 10% as standby

405 300 m<sup>3</sup> /day

1.26 1.67

0.12 0.17

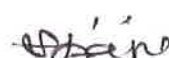
1.38 4.83

Nos.  
Nos.

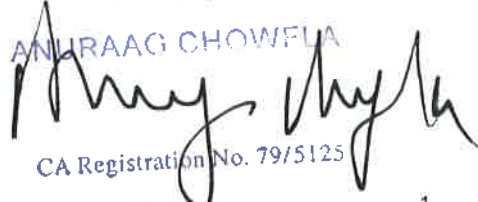
Total  
Say

Water to the proposed development is to be supplied by HUDA and it is proposed to install the tube-wells for augmentation/standby purposes.

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

M. K. Choudhary  
M/E No. 005730/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

ANURAAG CHOWFLA  
  
CA Registration No. 79/5125

PIONEER PARK GROUP HOUSING "ARAYA" AT SECTOR - 62, GURGAON

It is proposed to provide 2 Nos. of pumps (2 working + 1 standby) of 12.50 HP Each

S. No.	Parameters	Location in pump room				Location at Terrace & Service Area
		Main	Sprinkler	Diesel	Jockey	Fire Pump
a)	Discharge in lpm	2850 lpm	2850 lpm	2850 lpm	180 lpm	180 lpm
b)	Head in meters	180	180	180	180	35
c)	HP	110	110	110	15	12
d)	Quantity in Nos.	1	1	1	2	10

VI. GENERATING SETS:

HP of Tubewell pump 2x12.5<sup>0</sup>  
 HP of Domestic Pump 2x20  
 HP of Jockey Pump 2x12.5<sup>0</sup>  
 HP of Terrace Fire Pump  
 Total  
 in KVA  
 Say

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

M.K. Gupta  
 M/E No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

20.00 → 25.00  
 25.00 → 40  
 30.00 → 25  
 120.00  
 195.00 → HP  
 141.30 → KVA 268.56  
 150 → KVA  
 275 KVA

CA Registration No. 79/5125

# **FINAL ABSTRACT OF COST**

		Amount in Rs. Lacs
SUB WORK NO. I	WATER SUPPLY SCHEME	203.28 <i>247.20</i> <i>254.53</i>
SUB WORK NO. II	SEWERAGE SCHEME	103.63 <i>117.34</i> <i>185.00</i> <i>124.54</i>
SUB WORK NO. III	STORM WATER DRAINAGE	60.31 <i>68.70</i> <i>72.44</i>
SUB WORK NO. IV	ROADS & FOOT PATHS	110.97 <i>207.10</i> <i>168.45</i>
SUB WORK NO. V	STREET LIGHTING	46.04 ✓ <i>21.46 Lacs</i>
SUB WORK NO. VI	HORTICULTURE	14.66 <i>26.60</i> <i>25.70 Lacs</i>
SUB WORK NO.	MTC CHARGES INCL RESURFACING OF ROADS AFTER 1st 5 YEARS AND 2nd YEAR	151.67 <i>190.40</i> <i>217.04 Lacs</i>
	<b>TOTAL</b>	<i>911.04</i> 690.46 <i>704.27</i> <i>884.71 Lacs</i> <i>Say Rs. 884.71</i>

(Rupees Six Hundred Ninety Lacs And Fourty Six Thousand Only)/-

(Rupees Seven Zero four Lacs And Twenty Seven Thousand Only)

For Pioneer Urban Land & Infrastructure Limited

*B. Aline Hundred Eleven Lacs and Four Hundred only*

M. K. Gupta  
105/105780/3  
Consultants  
A-8, Paryavaran Complex  
105/105 Road  
New Delhi-110 030

*Cost of Work = 911.04 - 63.18 Lacs = 847.86 Lacs*  
*14.42*  
*884.71*  
*14.306*  
*61.84 Lacs*  
*884.71*

Authorised Signatory

AUTHORISED SIGNATORY  
in for  
Dt. 21/5/14  
with the estimate

Executive Engineer,  
HDA Division No. 1,  
GURGAON.

ANURAAG CHOWLA  
CA Registration No. 79/5125

Executive Engineer (W)  
for Chief Engineer  
HUDA Faridkot

Director General  
Town & Country Planning,  
Haryana, Chandigarh

Superintending Engineer  
HUDA Circle, Gurgaon



## SUB WORK No. 1 (Abstract of Cost)

## Water Supply &amp; Fire Fighting

(Rs. in Lacs)

1	Sub Head No. 01	Head Works	36,79,000/-	Rs. 3,679,000	63,00,000/-
			37.29		
2	Sub Head No. 02	Pumping Machinery	63,00,000/-	Rs. 4,600,000	15,38,000/-
			74.25		
3	Sub Head No. 03	Rising Main	15,38,000/-	Rs. 1,088,000	15,42,750/-
			5.49		
4	Sub Head No. 04	Distribution System	18,42,750/-	1,530,750	18,26,500/-
		(Dom and Flushing)	27.56		
5	Sub Head No. 05	External Fire Hydrant	18,26,500/-	1,626,500	18,107,500/-
			13.74		
6	Sub Head No. 06	Irrigation	92,12,500/-	721,250.00	4,88,225/-
			7.32		
		TOTAL	165.95	Rs. 13,245,500	161,07,500/-
		Add 3% contingencies & PH Charges	4.98	Rs. 397,365.00	4,83,225/-
		TOTAL	170.83	Rs. 13,642,865	165,90,725/-
		Add 49% Departmental charges + Price escalation	83.70	Rs. 6,685,003.85	8,129,455/-
			2,54.53 Lacs		
		TOTAL		Rs. 20,327,869	247,20,180/-
		Say in lacs		203.28	247.20

For Pioneer Urban Land &amp; Infrastructure Limited

*[Signature]*  
 Authorised Signatory

M. K. Gupta  
 MEE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

ANURAAG CHOWFLA  
*[Signature]*  
 CA Registration No. 79/0145

Sub Work No. 1  
Sub Head No. 01

Water Supply & Fire Fighting  
Head Works

Amount in Rs.

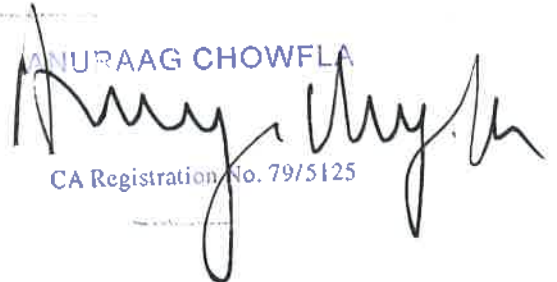
1. Boring and installing tubewell with reverse rotary rig  
Complete with pipe and strainer to a depth of about 120 metre in all respect  
2 Nos. @ Rs. ~~500,000/-~~ <sup>7.00</sup> each. 14.00 Lacs  
Rs. 1,000,000 ✓
  2. Provision for rising mains, connecting tubewells with water main  
and Bye-pass arrangements.  
a) 100 mm dia - 95m @ Rs. 1200/- Rs. 114,000 ✓  
b) 150 mm dia - 110m @ Rs. 1500/- Rs. 165,000 ✓
  3. Providing Tubewell Submersible Pumps :  
Capacity ~~15000~~ <sup>12.50 HP</sup> lph at 98 M head , 2 Nos. @ Rs. ~~200,000/-~~ <sup>1.25</sup> each 2.50 Lacs  
Rs. 400,000 ✓
  4. Construction of UG Tanks 500 KL @Rs. 3000/KL  
(300 Domestic + 200 Fire) Rs. 1,500,000 ✓
  5. Provision of Construction of Tubewell Chambers of  
Size 1.5x1.5x1.5 m for Housing tubewell - 2Nos @ Rs. ~~125000/-~~ <sup>1.00</sup> 2.00 Lacs  
Rs. 250,000 ✓
  6. Provision for unforeseen items/carriage of material 1.00 Lacs  
Rs. 250,000 ✓
- TOTAL**  
(C/O To Abstract of Cost for Subwork No.1)  
**Rs. 3,679,000** 37.29 Lacs

For Pioneer Urban Land & Infrastructure Limited



Authorised Signatory

M. K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

ANURAAG CHOWFLA  
  
CA Registration No. 79/5125



Sub Work No. 1  
Sub Head No. 02

Water Supply & Fire Fighting  
Pumping Machinery

Amount in Rs.

1. Providing and installing electricity driven pumping Set capable of delivering about 250 LPM of water against a total Head of 145 M complete with motor and other accessories (12.50 HP)

1 Set ( 2w+1 sby) 3 Nos. @ 10.00 Lacs each 20

Dom Plug. (2+1sby) 3 No. @ Rs. 2.00 Lacs

2. Provision for diesel engine genset each for standby arrangements For Pumps complete with gear head arrangements of following capacities.

2 No. 80 KVA @ Rs.150,000/- Each (L-3.)

(150) x 2 = 300,000/-

3. Provision for making foundations and erection of Pumping Machinery:

- Lump Sum

4. Provision for pipes, valves and specials inside boosting chamber.

- Lump Sum

5. Provision for electric service connection including electrical Fittings for tube-well and boosting chamber etc. including cost of transformer (L-5)

- Lump Sum

6. Provision for carriage of material and other unforeseen Items etc. L/S

30,00,000/-  
Rs. 3,000,000 6.00  
3.75

Rs. 300,000 30.00 Lacs  
16,00,000/-

Rs. 300,000 2.00 Lacs  
5,00,000/-

Rs. 300,000 2.00 Lacs  
5,00,000/-

Rs. 500,000 2.50 Lacs

Rs. 200,000 1.00 Lacs

Rs. 4,600,000-  
63,00,000/-

TOTAL

(C/O To Abstract of Cost for Subwork No.1)

For Pioneer Urban Land & Infrastructure Limited



Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGROU Road  
New Delhi-110 030

Providing and installing pumping Set of following capacity for fire protection 180 LPM (110) m Head 2 No. Jockey Pump

@ 1.50 Lacs

3.00 Lacs CA Registration No. 79/512

HP 2850 LPM 2 (main + Sprinkler) 180 m Head

@ 7.50 Lacs

15.00 Lacs

10HP 2850 LPM on auto. diesel at 18 mtrs.

Head @ 9.00 Lacs

9.00 Lacs

74.25 Lacs

Sub-Work No. 1  
Sub Head No. 03

**Water Supply & Fire Fighting**

Rising Main from HUDA *Connecting line.*

*from existing In Ph. I to UGT. in Ph. II*

Amount in Rs.

1. Providing , laying , jointing and testing pipe lines including Cost of excavation etc. complete in all respects.  
50 mm dia. G.I. pipe 330m @ Rs. ~~2000/Mtr-~~ *1200/-*
2. Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respects.  
50 mm i/d 1 No. @ Rs. ~~17000/-~~ *12000/-*
3. Providing and fixing indicating plates for sluice valve and air Valves. - 1 No. @ Rs. 1000/- each
4. Providing and fixing air release valve and scour valve 1 Nos. @ Rs. 10000/- each
5. Provision for carriage for materials and other unforeseen items( Lump Sum)
6. ~~Making Water Supply Connection~~
7. Provision for cutting of roads and making good to its original Conditions.

*3.96 Lacs*  
Rs. ~~660,000~~

*12000 Lacs*  
Rs. ~~17,000~~

Rs. 1,000

Rs. 10,000

Rs. 50,000

Rs. ~~250,000~~ *5,00,000/-*

Rs. ~~100,000~~ *3,00,000/-*  
*1.00*

**TOTAL**  
Rs. ~~1,088,000~~ *15,38,000/-*  
*5.69 Lacs*

(C/O To Abstract of Cost for Subwork No.1)

Total Water requirement	300.000	cum/day
hours of Pumping	16.000	hours
Q- Flow	18.750	m3/Hr
	0.005	m3/sec
L- Length of Pipe	330.000	m
Dia of Pipe	50.000	mm
	0.050	m
A	0.002	m2
V	1.250	m/s
f (constant)	0.040	
Friction Losses (Hf)	21.024	m
Fittings, Bends & Other Losses @ 25%	5.256	m
Total	26.000	m
Say	26.000	m

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110030

*ANURAG CHOWHAN*  
CA Registration No. 79/5125

Sub Work No. 1  
Sub-Head No. 04

Water Supply & Fire Fighting  
Distribution System + Flushing

Amount in Rs.

1. Providing, Laying, jointing and testing G.I pipe line including Fittings, valves, cost of excavation etc. complete in all respect.

G.I Pipe 32 mm, 300 M @ Rs.400/- per meter

Rs.120,000/-

G.I Pipe 40 mm, 275 M @ Rs.600/- per meter

Rs.165,000/-

G.I Pipe 50 mm, 555 M @ Rs.750/- per meter

Rs.416,250/-

G.I Pipe 65 mm, 275 M @ Rs.900/- per meter

Rs.247,500/-

G.I Pipe 80 mm, 180 M @ Rs.1200/- per meter

Rs.216,000/-

G.I Pipe 100 mm, 25 M @ Rs.1400/- per meter

Rs.35,000/-

510 @ 800/- per meter

1280 @ 1200/- per meter

2. Provision for carriage of materials and other unforeseen items (Lump Sum)

Rs.200,000/-

3. Providing and fixing valves including chamber:-

- 80 mm dia 2 No. @ Rs. 9500/- each

Rs.19,000/-

- 100 mm dia 2 No. @ Rs. 12000/- each

Rs.24,000/-

3. Provision for air valve(LS)

Rs.100,000/-

**Total**

Rs.1,530,750/-

(C/O To Abstract of Cost for Subwork No.1)

Rs. 3,00,000/-

Prov for Road Cutting & making its original Condition (L.S)

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

M. K. Gupta  
MCC No. 045780/3  
MKG Consultants  
A-6, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

2.00 Lacs  
1.20 Lacs  
1.92  
18,42,750/-  
27.56 Lacs

CA Registration No. 79/5125

## FIRE FIGHTING


Sub Work No. 1  
Sub-Head No. 05

External Fire Hydrant

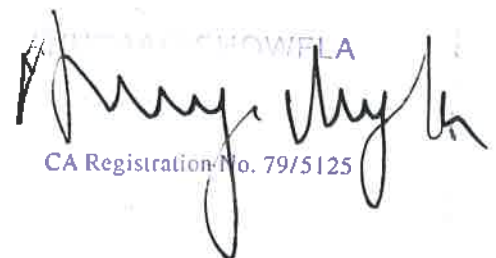
Amount in Rs.

1. Providing , Laying , jointing and testing M.S. pipes lines for fire rising main including cost of fittings, valves, connection etc. complete in all respect .	
(i) 150mm i/d 590 m @ Rs. 1500/ m	Rs.885,000
(ii) 80mm i/d 250 m @ Rs. <sup>1000</sup> 950/ m	Rs.237,500 <sup>250000/-</sup>
2. Providing and fixing fire Hydrant 14 Nos. '@ Rs. 10000/- <i>Complete in all respect</i>	Rs.140,000
3. Providing and fixing of Valve of 150mm Internal Dia. <i>Complete in all respect (L.S.)</i>	Rs.250,000 <sup>50000</sup>
4. Providing for carriage of material (L.S.)	Rs.100,000 <sup>10000</sup>
5. Providing for indication Plates 14Nos. '@ Rs. 1000/- <i>Prov. for Road Cutting and making its original Condition (L.S.)</i>	Rs.14,000
<b>Total</b>	<b>Rs.1,626,500</b> <sup>250000</sup>
(C/O To Abstract of Cost for Subwork No.1)	<b>18,26,500/-</b> <b>13.74 Lacs</b>

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

  
CA Registration No. 79/5125

Sub-work No. I  
Sub-Head No. 06

Water Supply & Fire Fighting  
Irrigation

*Irrigation*

Amount in Rs.

*HDPE*

1. Providing , Laying, Jointing and testing pipe line Confirming to IS 4985 (uPVC) including cost of excavation etc. complete in all respect.

a) 25 mm dia 100 metre @ Rs. 250/- M	Rs.25,000
b) 32 mm dia 180 metre @ Rs. 350/- M	Rs.63,000
c) 40 mm dia 250 metre @ Rs. 450/- M	Rs.112,500
d) 50 mm dia 155 metre @ Rs. 550/ M	Rs.85,250
e) 65 mm dia 180 metre @ Rs. 750/ M	Rs.135,000
e) 80 mm dia 110 metre @ Rs. <del>900</del> M	Rs. <del>99,000</del>

*1000*

*110000*

2. Providing and fixing 25 mm dia. irrigation hydrant Valve complete in all respect. 29 Nos. @ Rs. 3500/ each

Rs.101,500

3. Provision for carriage of Material and other as foreseen items

Rs.100,000

*for. for Road Cutting and making its original Condition (L.S)*

*50000/-*  
*Rs. 2,00,000/-*  
*50000/-*

TOTAL Rs.721,250

*8,21,250/-*

*7.32 Lacs*

(C/O To Abstract of Cost for Subwork No.1)

For Pioneer Urban Land & Infrastructure Limited

*[Signature]*

Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

*[Signature]*  
ANURAG CHOWLA  
CA Registration No. 79/5125



## Sub-Work No. II

## SEWERAGE SCHEME

Amount in Rs.

1. Providing , jointing , cutting and testing SW pipe class "A" and lowering into trenches including cost of Excavation, bed concrete, cost of manholes etc. complete

1412 1200 a) SW pipe 200 mm i/d avg. depth 0-2 M 900 M @ Rs. 1500/M 1250	17.63 18,00,000/-	Rs. 450,000 1350000
b) SW pipe 250 mm i/d avg. depth 0-2 M 80 M @ Rs. 1800/M 2.3		Rs. 144,000 ✓
c) SW pipe 300 mm i/d avg. depth 0-2 M 120 M @ Rs. 2100/M 2.3 2150		Rs. 252,000 2.58 Lacs 3,00,000/-
2. Provision for cartage of material		Rs. 200,000 ✓
3. Provision for lighting and watching		Rs. 200,000 ✓
4. Provision for making HUDA Connection on master Road		Rs. 500,000 500000/-
5. Provision for Temp Disposal + STP		Rs. 5,000,000 ✓
6. Provision for vent Pipe 450 KLD or 0.45 M LD as per R.H. at suitable place		5.00 Lacs
Add 3% contingencies & PH charges	81,44,000/- 2,44,320/- 81.13 2.43	Total Rs. 6,746,000 7,046,000 Rs. 262,380 2,29,380
Add 49% Price Escalation, Departmental charges Admin. Charges	83,88,320/- 41,10,277/- 83.58 40.96 124,98,597/- 124.54	Total Rs. 6,948,980 7,875,380 Rs. 3,404,706 3,859,936
	Say Rs. 125.00 Lacs	TOTAL Rs. 10,353,086 11,734,316
	Say in lacs	103.53 117.34

(Cost to Final abstract of cost)

For Pioneer Urban Land &amp; Infrastructure Limited

*[Signature]*  
Authorised Signatory

M. S. Gupta  
MCA No. 045780/3  
M.S. Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi - 110 030

*[Signature]*  
ANURAAG CHOWFLA  
CA Registration No. 7975125

Sub-Work No. III

STORM WATER SCHEME

Amount in Rs.

1. Providing and laying R.C.C. pipe drain class NP-2  
With cement joint, manholes excavation etc complete  
in all respect.

1070 mtrs.

- a) 400 mm dia 760m @ Rs. 1750/m

1240 + 170

2. Provision for Road gullies L.S. with 300 mm dia pipes Connection.

3. Providing Rain Harvesting arrangements

5 Nos @ Rs 150,000 14.306 Lac (L.S.)

4. Provision for Shoring & Timbering (L.S.)

5. Provision for Lighting, Watching & Temp. Drain Arrangements (L.S.)

6. Provision for Carriage of Material (L.S.)

7. Provision for Connection with HUDA line on master road

Add 3% for contingencies and PH charges

Add 49% Departmental charges price escalation  
unforeseen Admin. charges

(Cost to Final abstract of cost)

44,72,587/-  
1,34,175/-  
46,06,762/-  
22,57,271/-  
68,63,946/-

Total	Rs.3,930,000
	Rs.117,900
Total	Rs.4,047,900
	Rs.1,983,471
TOTAL	Rs.6,031,371
Say in lacs	60.31

Say Rs. 68.70 Lacs

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

AG CHOWFLA  
CA Registration No. 79/5125

21.70 Lacs  
18,72,587/-

Rs.1,330,000

Rs.1,000,000

14.00 Lacs  
Rs.750,000

2.00 Lacs  
Rs.250,000

Rs.250,000

1.00 Lacs  
Rs.250,000

Rs.100,000

47.20 Lacs  
1.72

48.62  
23.82

72.44

## Sub-Work No. IV


## Road Work

ROAD AREA As Per Drawing Attached			
ROAD NO.	LENGTH	BREADTH	AREA
A	256.00	9.00	2304.00
B	30.8	9.00	277.20
C	21.92	9.00	197.30
D	30.80	9.00	277.20
E	72.30	4.50	325.35
F	31.40	6.00	188.40
G	2.81	8.00	22.50
H	122.13	9.00	1099.20
I	22.12	6.00	132.70
J	46.44	7.00	325.10
	636.73		
TOTAL AREA (SQM)			5149
PARKING (SQM)			
P13	11.00	5.00	55.00
P14	11.00	5.00	55.00
TOTAL PARKING AREA (SQM)			110
TOTAL ROAD LENGTH(M)			636.73

For Pioneer Urban Land &amp; Infrastructure Limited



Authorised Signatory

  
 M. K. Gupta  
 Reg. No. 045780/3  
 Civil Consultants  
 I.I.U. Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

Area for Emergency (Fire Tenders) 1805.00 Sqm

Total Area = 5149 + 110 + 1805 = 7064.00 Sqm

Add 10% for Curves & Junction = 706.40 Sqm

Say = 7770.40 Sqm

  
 RAJ RAAG CHOWFLA

CA Registration No. 79/5125



**NOTE: Rates as per HUDA norms**

Amount in Rs.

1. Provision for levelling & earth filling as per site conditions.  
As per cut & fill plan ~~14.42 Hc @ Rs. 10.00 Lac~~ <sup>14.306</sup> ~~5259CU.M.~~ <sup>14,42,000/-</sup> ~~1052000.00~~ <sup>14,306</sup>
2. i. ~~Selling coat 100 mm thick (63-45) mm~~ <sup>Granular sub base 300 mm thick</sup> ~~5259SQ. M.~~ <sup>5259SQ. M.</sup> ~~736400.00~~ <sup>736400.00</sup>  
to 75 mm thick WBM conforming to MOT specification  
(Table 400-6, Grading No. 2)  
ii. ~~Wearing coat (Top coat) 100mm thick~~ <sup>wet mix macadam 250 mm thick</sup> ~~5259SQ. M.~~ <sup>5259SQ. M.</sup> ~~736400.00~~ <sup>736400.00</sup>  
gauge compacted to 75mm thick conforming to MOT  
specifications (Table 400-6, Grading No. 3)  
iii) ~~25 mm thick pre-mix carpet with seal c~~ <sup>50 mm thick BOP And 20 mm mss</sup> ~~5149SQ. M.~~ <sup>5149SQ. M.</sup> ~~1029788.19~~ <sup>8,58,500/-</sup> <sup>66.05 Hec</sup>  
~~type-A 7770 Sqm @ 1050/-~~ <sup>850/-</sup> ~~8,16,000.00~~ <sup>8.40 Lac</sup>
3. Provision for kerbs & channels of CC 1:1½:3  
~~1180 m @ 500/-/m~~ <sup>1400 600</sup> ~~590,000.00~~ <sup>954000.00</sup>  
(Both Side)
4. Provision for making approach and pavement to building (L.S.)  
~~3200000~~ <sup>2000 lower</sup>
5. Provision for parking arrangement  
- Lump sum ~~22000~~
6. Provision for carriage of material (L.S.) ~~100000~~

**TOTAL**

Add 3% contingency & P.E. charges ~~price escalation~~ <sup>134,90,500/-</sup> ~~4,04,715/- <sup>109.76 Lac</sup> ~~Rs. 7,230,588~~ <sup>Rs. 216,917.65</sup>  
TOTAL ~~on unforeseen Admin charges~~ <sup>3.29</sup> ~~Rs. 7,447,505.84~~~~

Add 49% deptt. Charges ~~price escalation, unforeseen~~ <sup>138,95,215/-</sup> <sup>113.05 Lac</sup> ~~Rs. 3,649,277.86~~ <sup>68,08,655/-</sup> <sup>55.40 Lac</sup>  
~~Admin. charges.~~

Say (Rs. In Lacs)

(Cost to Final abstract of cost)

Say in lacs

For Pioneer Urban Land & Infrastructure Limited

*Signature*

Authorised Signatory

M.K. Gupta  
M/E No. 045780/3  
M&G Consultants  
I.B. Paryavaran Complex  
IGROU Road  
New Delhi-110 030

ANURAAG CHOWLA

CA Registration No. 79/5125

# Sub Work No. V

## Street Lighting

Prov. Street Lighting for an area: 14.42 Acres  
14.306 @ 1.00 Lac.

Amount in Rs.

- 1) Providing lighting at surrounding Area as per standard specifications of  
Total light poles = 120 @ Rs. 25000- ~~MVPNL with CFL~~

Rs. 3,000,000 ✓

Add 3% contingencies & P.E. charges

Rs. 90,000 ✓

TOTAL

Rs. 3,090,000

Add 49% Departmental charges price, escalation, unforeseen

Rs. 1,514,100

TOTAL

Rs. 4,604,100

Say (Rs. In Lacs)

46.04

(Cost to Final abstract of cost)

# Sub Work No. VI

## Plantation & Road Side trees

1. Development of Lawn Areas:

14.306  
14.42 Acres @ 1.00 lac/acre

Amount in Rs.

- a) Trenching of ordinary soil upto depth of 60 cm i/c removal & stacking of  
b) Rough dressing of turfed area.  
c) Grassing with "DOOB GRASS" i/c watering and maintenance of lawns for 30 days

14,42,000/-

14.31 Lacs.

Green area=10000

500000.00

2. Providing and planting trees along boundary @ 12 m interval

Total Road length 636.73

No. of trees

(along road)

60

No. of trees

(along

boundary and

others)

265

Total No. of Trees

325

CA Registration No. 79/5125

Cost Details:

Excavation

75

30

Manure

75

80 60

Tree Plant

500

80 60

Tree Guard

750

600

TOTAL

1400

880 750/-

CA Registration No. 79/5125

2,43,750  
289,250/-

325 Trees @ Rs. 1400

880  
750/-

TOTAL

Add 3% contingencies & P.E. charges

TOTAL

Rs. 455,000

Rs. 955,000

Rs. 28,650

Rs. 983,650

For Pioneer Urban Land & Infrastructure Limited

17,31,250/-

51,938/-

17,83,188/-

Add 49% department price escalation unforeseen  
Admin. charges

Authorised Signatory

C.O to final abstract of Cost

Add 49% Departmental charges

**TOTAL**

**Say (Rs. In Lacs)**

(Cost to Final abstract of cost)

~~Rs. 17,83,108/-~~  
~~8,73,762/-~~  
Rs. 481,989  
~~26,56,950/-~~  
Rs. 1,405,639  
~~14.66~~ ~~26.60 lacs~~

**SUB WORK - VII - SERVICES & RESURFACING OF ROADS**

**1. Provision of MTC charges for W/s, SWD**

(a) Complete in all aspect, including operational and establishment charges as per

2. Provision of resurfacing of roads after 5 years of MTC one layer of 100 mm thick

(a) Resurfacing of road after 5 years of MTC

(b) Resurfacing of road after 10 years of MTC

**TOTAL**

Add 3% contingencies & P.E. charges

**TOTAL**

Add 49% Departmental charges

**TOTAL**

**Say (Rs. In Lacs)**

(Cost to Final abstract of cost)

Amount in Rs.

~~54,07,500/-~~ 71.53 Lacs  
3,078,750

~~46,62,000/-~~ 23.31 Lacs

Rs. 4,536,000

Rs. 2,268,000

Rs. 9,882,750

Rs. 296,483

Rs. 10,179,233

Rs. 4,987,824

15,167,056

151.67

190.31047/-

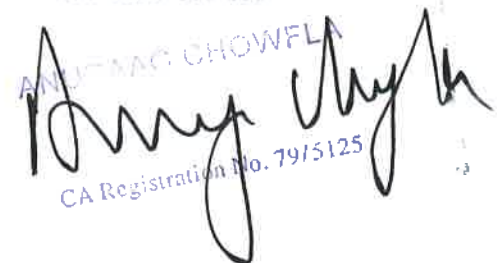
~~151.67~~

~~Say 190.40 lacs~~

For Pioneer Urban Land & Infrastructure Limited

  
- Authorised Signatory

M. K. Gupta  
MIS No. 545780/3  
MRG Consultants  
R-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

  
ANURAG CHOWLA  
CA Registration No. 7915125



S.No	SEWER LINE	Tower No.	Total Population	Total Water Requirement	Sewage Discharge (LPD)			Average Sewage Discharge		Size of Pipe	Velocity	Design Discharge	Length of Line	Slope	Fall in Metres		Ground level		Invert Level		Depth of Pipe at		Average depth of pipe
					Self	Branch	Total	LPS	Cusec						As per gradient	As per pipe slope	Start	End	Start	End	Start	End	
1	I - 2	Tower H	464	80040	64 032		64 032	0.7411111	2.22	200	2.42	0.41	60	200	0.000	0.300	243.00	243.00	242.00	241.70	1.00	1.30	1.15
2	2 - 3	Tower G	464	80040	64 032	64 032	1 28 064	1.4822222	4.45	200	2.42	0.41	40	200	0.000	0.200	243.00	243.00	241.70	241.50	1.30	1.50	1.40
3	3 - 7			0		1 28 064	1 28 064	1.4822222	4.45	200	2.42	0.41	70	200	0.000	0.350	243.00	243.00	241.50	241.15	1.50	1.85	1.68
4	7 - 8	Tower F	232	40020	32 016	1 28 064	1 60 080	1.8527778	5.56	250	2.51	0.66	60	250	0.000	0.240	243.00	243.00	241.25	240.95	2.00	2.35	2.17
5	4 - 5	C.S & Shop		70000	56 000		56 000	0.6481481	1.94	200	2.42	0.41	10	200	0.000	0.050	243.00	243.00	242.00	241.95	1.00	1.05	1.03
6	5 - 6	Tower J	384	66240	52 992	56 000	1 08 992	1.2614815	3.78	200	2.42	0.41	120	200	0.000	0.600	243.00	243.00	241.95	241.35	1.05	1.65	1.35
7	6 - 8	Tower F	232	40020	32 016	1 08 992	1 41 008	1.632037	4.90	250	2.51	0.66	20	250	0.000	0.080	243.00	243.00	241.35	241.27	1.65	2.35	1.69
8	8 - 9			0		3 01 088	3 01 088	3.4848148	10.45	300	2.59	0.99	100	300	0.000	0.333	243.00	243.00	240.92	240.99	2.49	2.42	2.49
9	9 - STP			0		3 01 088	3 01 088	3.4848148	10.45	300	2.59	0.99	20	300	0.000	0.067	243.00	243.00	240.92	240.99	2.47	2.48	2.49

For Pioneer Urban Land &amp; Infrastructure Limited

M. K. Gupta  
 MIE No. 045780/3  
 MKG Consultants  
 A-2, Paryavaran Complex  
 110010, New Delhi-110 030

*[Signature]*  
 Authorised Signatory

*[Signature]*  
 ANURAAG CH  
 CA Registration No. 79/5125

## Material Statement -Sewerage System

S.No	SEWER LINE	Size of Pipe mm	Length of Line Meters
1	1 - 2	200	60
2	2 - 3	200	40
3	3 - 7	200	70
5	4 - 5	200	10
6	5 - 6	200	120
Total for 200 mm Dia			300
4	7 - 8	250	60
7	6 - 8	250	20
Total for 250 mm Dia			80
8	8 - 9	300	100
9	9 - STP	300	20
Total for 300 mm Dia			120
10	Branch pipe	200	600

For P/O

Pioneer Limited

Signatory

M. K. Gupta  
 PVT No. 042780/3  
 Consultants  
 A-3, Paryavaran Complex,  
 IONOU Road,  
 New Delhi-110 030

For Pioneer Urban Land &amp; Infrastructure Limited

Authorised Signatory

Elevs. —

210 M

Tower F — 110 + 70 = 180 M

G — 110 + 70 = 180 M

H — = 80 M

I — 18 + 30 = 210 M

Steps and C.S. = 250

Step and C.S.

1110 M

Total 200 mm — 300 + 1110 = 1410 M

250 mm

= 80 M

300 mm

= 120 M

ANURAAG CHOWLA  
 CA Registration No. 79/5125

S.No	Line No.	Self Area (m2)	Self Area (Acre)	Branch Area (Acre)	Total Area (Acre)	Total Area (Hec)	Rain Fall mm/hr	Discharge @17.36 lps/Hec	Length In mtr.	Pipe dia in mm	Slope in 1 in	Velocity m/sec.	Cap of pipe in lps.	Fall in line mtr.	Ground Level		Invert Level		Depth	
															Start	End	Start	End	Start	Average
1	1-RW3	6410	1.60	0.00	1.603	0.65	6.25	11.26	120	400	400	0.72	90.28	0.30	243.00	243.00	242.40	242.10	0.60	0.75
2	RW3-RW2	7470	1.87	1.60	3.470	1.40	6.25	24.37	65	400	400	0.72	90.28	0.16	243.00	243.00	242.10	241.94	0.90	0.98
3	3-RW2	4730	1.18	0.00	1.183	0.48	6.25	8.31	210	400	400	0.72	90.28	0.53	243.00	243.00	242.40	241.88	0.60	0.86
4	RW2-RW1	6500	1.63	4.65	6.278	2.54	6.25	44.09	80	400	400	0.72	90.28	0.20	243.00	243.00	241.88	241.68	1.13	1.22
5	RW1-DISPOSAL	1000	0.25	7.46	7.710	3.12	6.25	54.15	20	400	400	0.72	90.28	0.05	243.00	243.00	241.68	241.63	1.32	1.35
6	2-RW4	6160	1.54	0.00	1.540	0.62	6.25	10.82	80	400	400	0.72	90.28	0.20	243.00	243.00	242.40	242.20	0.60	0.70
7	RW4-RW5	4900	1.23	1.54	2.765	1.12	6.25	19.42	110	400	400	0.72	90.28	0.28	243.00	243.00	242.20	241.93	0.80	0.94
8	RW5-4	2500	0.63	2.77	3.390	1.37	6.25	23.81	55	400	400	0.72	90.28	10.14	243.00	243.00	241.93	241.79	1.07	1.14
9	4-DISPOSAL	1000	0.25	3.39	3.640	1.47	6.25	25.57	20	400	400	0.72	90.28	0.05	243.00	243.00	241.79	241.74	1.21	1.24

M.K. Gupta  
 MIE No. 045780/3  
 MKG Consultants  
 A-3, Paryavaram Complex  
 ICGPU Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

*[Signature]*

Authorised Signatory

*[Signature]*  
 CA Registration No. 79/5125

**Material Statement -Drainage System**

S.No	Line No.	Length in mtr.	Pipe dia in mm
1	1-RW3	120	400
2	RW3-RW2	65	400
3	3-RW2	210	400
4	RW2-RW1	80	400
5	RW1-DISPOSAL	<del>20</del> 120	400
6	2-RW4	80	400
7	RW4-RW5	110	400
8	RW5-4	55	400
9	4-DISPOSAL	<del>20</del> 30	400
<b>Total for 400 mm dia</b>		870 <del>760</del> 1070	400
Access Pipes		200	

M.K. Gupta  
 MIE No. 046780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

ANURAAG CHOWLA

CA Registration No. 79/5125

Tower H - 50m  
 J - 150m  
 200m

S.No.	Line Designation	Water Requirements (in LPD)	Water Requirements (in KLD)	Self Water requirement (in KLD)	Branch Water requirement (in KLD)	Add 10% Misc..	Total Water Requirements (in KLD)	Discharge per Hour considering 8 Hours	Size of Pipe Provided	Velocity in ft/sec.	Velocity in m/sec.	Head Loss per 1000m	Loss of head as per pipe length	Length of pipe (in metres)	Ground level	Hydraulic Level	Terminal Head
							Total	mm							Start in m	End in m	In m
1	PHASE-1																
2	UGT-1		0	0	366	37	366	45.795	100	5.33	1.62	48	1.189	25	243.00	433.000	431.811
3	1-2		0	0	126		126	15.780	65	4.34	1.32	54	2.160	40	243.00	431.811	429.651
4	2-TOWER J	66240	66	66	0		66	8.280	50	3.85	1.17	59	1.175	20	243.00	429.651	428.476
5	2-3		0	0	60		60	7.500	50	3.49	1.06	49	6.362	130	243.00	429.651	423.289
6	3-C-S	50000	50	50	0		50	6.250	40	4.54	1.39	104	2.071	20	243.00	423.289	421.219
7	3-4		10	10	0		10	1.250	32	1.42	0.43	16	0.313	110	243.00	423.289	421.570
8	4-SHOPS	10000	10	10	0		10	1.250	32	1.42	0.43	16	0.313	20	243.00	423.289	421.570
9	1-5		0	0	240		240	30.015	80	5.45	1.66	65	5.485	85	243.00	431.811	426.326
10	5-TOWER H	80040	80	80	0		80	10.005	50	4.65	1.42	83	1.668	20	243.00	426.326	424.658
11	5-6		0	0	160		160	20.010	80	3.64	1.11	30	2.896	95	243.00	426.326	423.430
12	6-TOWER G	80040	80	80	0		80	10.005	50	4.65	1.42	83	1.668	20	243.00	423.430	421.762
13	6-7		0	0	80		80	10.005	50	4.65	1.42	83	9.174	110	243.00	423.430	414.256
14	7-TOWER F	80040	80	80	0		80	10.005	50	4.65	1.42	83	1.668	20	243.00	414.256	412.588
15																	169.59

M. N. Gupta  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

For Pioneer Urban Land &amp; Infrastructure Limited

*[Signature]*  
 Authorised Signatory

ANURAG CHOWFLA  
*[Signature]*  
 CA Registration No. 795125



## Material Statement- Water Supply

S.No.	Line Designation	Size of Pipe Provided mm	Length of pipe(in metres)
<b>DOMESTIC WATER SUPPLY</b>			
1	3-4	<del>32</del> 100	110
2	4-SHOPS	<del>32</del> 65	20
	Total for 32 mm dia		130
3	3-C.S	<del>40</del> 65	<del>50</del> 20
	Total for 40 mm dia		<del>50</del> 20
4	5-TOWER H	50 65	20
5	6-TOWER G	50 65	20
6	6-7	50 100	110
7	7- TOWER F	50 65	20
8	2-TOWER J	50 65	40
9	2-3	50 100	130
	Total for 50 mm dia		340
10	1-2	65 100	40
	Total for 65 mm dia		40
11	1-5	80 100	85
12	5-6	80 100	95
	Total for 80 mm dia		180
13	UGT-1	100	25
	Total for 100 mm dia		25
	G - EWS	65	100
<b>FLUSHING WATER SUPPLY</b>			
1	5 - 6	32 100	110
2	5 - C.S	32 65	40
3	6 - SHOPS	32 65	20
	Total for 32 mm dia		170
4	1 - TOWER F	40 65	20
5	3 - TOWER H	40 65	20
6	4 - 5	40 100	125
7	4 - TOWER J	40 100	50
8	2 - TOWER G	40 65	20

For Pioneer Urban Land &amp; Infrastructure Limited

*[Signature]*  
Authorised Signatory

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

ANURAAG CHOWFLA  
*[Signature]*  
CA Registration No. 79/5125

## Material for Garden Hydrant

S.no	Node NO		Dia of Pipe	Length
1	STP 1	1	80	110
2	1	2	40	130
3	2	3	25	40
4	2	4	32	85
6	1	5	65	180
7	5	6	50	155
8	6	7	40	120
9	7	8	32	95
10	8	9	25	60
LL	LO	EW5	40	20
	Total			975

for Pioneer Urban Land Infrastructure Limited

M. K. Gupta  
 MID No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

Authorised Signatory

25mm dia =  $40 + 60 = 100m$   
 32mm dia =  $85 + 95 = 180m$   
 40mm dia =  $130 + 120 = 250m$   
 50mm dia =  $155m = 155m$   
 65mm dia =  $180m = 180m$   
 80mm dia =  $110m = 110m$

ANURAAG CHOWFLA  
 CA Registration No. 79/5125

C.E. No. 5782

Dated 31/5/12

Annexure-A

**SUB: - Approval of service plan / Estimate of the Group Housing Scheme measuring 14.306 acres out of 24.606 acres (Licence No. 268 of 2007 dated 3.12.2007) in Sec-62, Village Ghatta, Gurgaon Manesar Urban Complex being developed by M/S. Pioneer Urban Land & Infrastructure Ltd. (PH- II).**

Technical note and comments:-

1. All detailed working drawings would have to be prepared by the Colonizer for integrating the internal services proposals with the master proposals of town.
2. The correctness of the levels will be the sole responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.
3. The material to be used shall be the same specifications as are being adopted by HUDA and further shall also confirm to such directions, as issued by Chief Engineer, HUDA from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HUDA. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HUDA from time to time.
5. The colonizer will be fully responsible to meet the demand of water supply and allied services till such time these are made available by State Government/ HUDA. All link connections with the State Government/ HUDA system and services will be done by the colonizer. If necessary extra tube-wells shall also be installed to meet extra demand of water beyond the provision according to EDC deposited.
6. Structural design & drawings of all the structures, such as pump chamber, boosting chamber, RCC OHSR underground tanks quarters, manholes chamber, sections of RCC pipes sewer and SW pipes, sewer, ventilating shafts for sewerage and Masonry Ventilation

C.E. No. 5782  
Dated 7/5/11

Chamber for storm water drainage, temporary disposal/ arrangement etc. will be as per relevant I.S codes and PWD specifications; colonizer himself will be responsible for structural stability of all structures.

7. Potability of water will be checked and confirmed and the tube-wells will be put into operation after getting chemical analysis of water tested.
8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/HDPE pipe for irrigation purposes.
9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.
10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health or HUDA.
11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications.
12. The specifications for various roads will be followed as per IRC/MORTH specifications.
13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.
14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

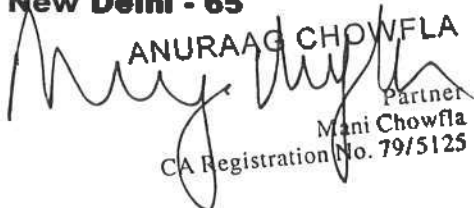
Executive Engineer (W),  
For Chief Administrator, HUDA,  
Panchkula

# **PIONEER PARK "PRESIDIA" GROUP HOUSING AT SECTOR 62, GURGAON**

## **SUBMISSION REPORT ON SERVICES PLAN / ESTIMATE**

### **ARCHITECTS**

**M/s Manichowla Architects**  
**56/3, Friends Colony,**  
**New Delhi - 65**

  
**ANURAAG CHOWLA**  
Partner  
Mani Chowla  
CA Registration No. 79/5125

### **PLUMBING CONSULTANTS**

**M/s MKG CONSULTANTS**  
**A -8, Paryavaran Complex**  
**IGNOU Road,**  
**New Delhi - 110030.**  
**Tel. : 011 - 29532720**

  
**M.K. Gupta**  
**MIE No. 045780/3**  
**MKG Consultants**  
**A-8, Paryavaran Complex**  
**IGNOU Road**  
**New Delhi-110 030**

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

**PROJECTS**  
**PIONEER PARK "PRESIDIA" GROUP HOUSING**  
**AT SECTOR 62, GURGAON**

**SUBJECTS**  
**ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE AND STORM WATER**  
**DRAINAGE FOR PIONEER PARK "PRESIDIA" GROUP HOUSING, GURGAON**

Gurgaon town is an important town of Haryana State situated on Delhi-Jaipur National Highway No. 8 at a distance of 35 kms from Delhi. Being in the national capital region, the town has fast developing tendency and potential. Further it has also started sharing the growing industrial load of Delhi & Faridabad. In order of relieve the growing pressure of population in Delhi, it has been decided by the Haryana Govt. to establish various residential sectors along with infrastructure facilities in Gurgaon. Keeping in view the colony for residential development scheme has been planned. *Service Plan Estimate of Group Water Supply Housing Colony measuring 10.30 Acres out of 27.64 Acres in Sec. 62 Village Ghatu, Gurgaon has been framed vide DGTCP*

1. **Source** *DGTCP Memo No. 1675 dt. 09/02/11.*

The source of water supply in this area is tubewell as underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth, the average yield of Tubewells, with approximate 60' to 80; strainer will be about 20 KL per hour. 6 Nos. Tubewells are required to cope with the daily requirement of water for the initial period of 5 years by which time canal water is expected.

2. **Tubewells**

The proposed tubewells shall be 510 mm bore drilled with reverse rotary rig and installed with 80 mm i/d housing pipe and 50 mm i/d slotted tube as strainer. The provision taken in the estimate under the sub-head tubewell includes the cost of peagravel packing. The lift of tubewell is limited due to incrustation and rusting of strainer. Therefore, out of these tube wells the drilling of tubewells will be done for 2-6 Nos. tube wells and further tubewells will be drilled as the demand develops till the scheme is handed over the department or till the canal filtration scheme starts supplying water, whichever is earlier.

3. **Pump Chambers and Pumping Machinery**

It is proposed to equip each tubewell with an electricity driven pumping set-Ejecto type or submersible pump capable of delivering about 20,000 Ltrs per hour. It is also proposed to equip 2 Nos. pumping sets with stand by diesel gen set engines for operation during failure of electricity at four locations.

4. **Ground Storage**

Underground storage tank for One day of total daily demand of water supply have been proposed at two locations in the scheme. The same shall be fed by 6 Nos. of tube wells at present and shall be later augmented through HUDA mains canal supply at later date.

6. **Distribution System**

The distribution system for this development are has been designed for 172.5 Liters per person per day @3.0 times the average rate of flow on "Hazen

ANURAAG CHOWLA  
  
Partner  
Mani Chowla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

Williams' formula with C-100. Necessary provision for laying C.I./D.I. pipes only conforming to relevant IS standards along with valves and specials has been made in this Estimate.

7. **Rising Main**

Rising mains from HUDA water main on sector road to water works have also been designed and provision for C.I. (class LA)/DI KA pipe line has been made in this estimate

8. **Sewerage**

This colony has a terrain which is mainly flat with a gentle slopes with one side dropped by avg. 2 meter. Sewerage network has been proposed to slope towards the South providing for self cleaning velocities without any deep excavation. It would thus be possible to connect the internal sewers in the plans with HUDA main sewer proposed on the development plan road in close proximity of the last manhole without any pumping being involved. At Gurgaon normally it is possible to get 2.0 ft. / sec velocity.

The internal sewer lines have also been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 75 % of the domestic water supply shall find its way into the proposed sewer. All the SW / RCC pipes, sewer has been designed to run half/full/three fourth full.

Necessary design statement for entire internal sewerage system has been prepared and attached with estimate.

Necessary provision for laying SW/~~RCC~~ pipes sewer lines and manholes etc. has been made in this estimate.

9. **Storm water drainage**

It has been proposed to lay underground RCC pipe drains on the road widths 40 ft. and above where it is possible to lay underground drains. The intensity of rain fall has been taken as  $\frac{1}{4}$  the inch per hour. The internal storm water drains will be jointed into external storm water drainage to be laid by HUDA on sector dividing roads. Necessary provision for kerbs and channels has been made in the estimate. The estimate for these closed drains has been included as sub work No. III A minimum size of 400 mm RCC storm water line will be provided.

10. **Specifications**

The work will be carried out in accordance with the standard specifications of P.H. as laid down by the Haryana Government.

11. **Rates**

The estimate has been based on the present market rates and probable escalation in prices.

12. **Cost**

The total cost of the Scheme including cost of all services works out to Rs. ~~572.22~~ <sup>821.32</sup> Lakhs including 3% contingencies and 14% departmental charges, price, escalation unfrozen. Admin. Charges.

ANURAAG CHOWFLA

Partner  
Mani Chowfla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

# I. DESIGN CALCULATION :

S. N.	Daily requirement	Area in Sqmtr <i>Total nos. of units.</i>	Height of the building	Population	Service Population	Water Requirement Per Person	Total Water requirement (in Ltr)	
					46x2			
1	TOWER A	54	91.7	270	92	172.5	58995	
2	TOWER B	42	72.5	210		172.5	36225	
3	TOWER C	40	84.5	200		172.5	34500	
4	TOWER D	40	72.5	200		172.5	34500	
5	TOWER E	52	91.7	260		172.5	44850	
<del>6</del>	<del>EMS</del>			<del>420</del>		<del>172.5</del>	<del>46200</del>	
		NS.					16,600	
	TOTAL	PS					225270	LPD 50000 Ltrs.
	ADD 10% MISG.	shops				25,000	250270	LPD 27000 Ltrs
	GRAND TOTAL				1000		247797	LPD
	SAY (GUM/DAY)	Total			211270		250	270
	Add 10%						26127	LPD
	Grand Total						287327	DPA say = 300 KL
							300	
	Horticulture Water Requirement							
	2.44 Acres @ 15000 l/acre						150000	KL
	6.00 25,000							

met with treated effluent

## I. Total Water Demand in m<sup>3</sup>/day

- (a) For Domestic Purpose - Part 1  
Say

300 250 m<sup>3</sup>/day  
300 250 m<sup>3</sup>/day  
105 KL

$$\text{fire demand} = 100 \times \sqrt{P} \quad 100 \times \sqrt{1.11}$$

## II. TUBEWELLS

- (a) Yield  
(b) Working Hours per Day  
(c) Total water demand  
(d) Number of Tubewells reqd.  
(=Water Demand/Discharge/Hours working per day)  
(e) Add 10% as standby

Total  
Say

20-15 KL/hr  
12 Hours per Day

420 300 m<sup>3</sup>/day (excluding fire)  
300 250

1.75 1.67 1.55  
0.17 0.14 0.11  
1.92 1.87 1.55  
2.00 Nos.

Water to the proposed development is to be supplied by HUDA and it is proposed to install the tube-wells for augmentation/standby purposes.

## III. PUMPING MACHINERY FOR TUBEWELLS

- (a) Gross Working Head  
(b) Average fall in S.L.  
(c) Depression Head  
(d) Friction loss in main

Total

80 50 Meters  
2 Meters  
6 Meters  
10 Meters  
98 50 Meters

Member Urban Land & Infrastructure Limited

Authorised Signatory

Partner  
Mani Chowla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030



(e) Discharge 12.0988 20000 LPH  
 (e) Horse Power 8.9931 HP  
 $HP = (22,000 \times 68 \times 1) / (60 \times 60 \times 75 \times 0.6)$   
 $20000 \times 98$   
 Say 12.09 10.00 HP

#### IV. UNDER GROUND & OVERHEAD WATER TANKS

- (a) Total water demand (Daily for Domestic purposes) 420X70% 294 m<sup>3</sup>/day  
 (b) Proposed underground tanks for domestic use. (One day Storage) 294 m<sup>3</sup>  
 (c) Proposed OverHead tanks for domestic use. (Half day Storage) 150 125 m<sup>3</sup>  
 (d) Minimum Separate Static Storage for fire fighting purpose provided. 200 m<sup>3</sup>  
 But it is proposed to Construct an U-G-T of 300KL for raw water  
 300 KL for domestic use or 200KL for fire fighting purposes i.e. Total = 500KL  
 V. BOOSTING MACHINERY (Water Supply Pumps)

- (a) Daily Domestic Water Demand 420X70% 294 m<sup>3</sup>/day  
 (b) Discharge per hour @ 12 hr. pumping / day 294 20.83 m<sup>3</sup>/Hour  
 Say 4.08 947.2 LPM  
 (c) No. of Working pump 4.08 1.0 LPM  
 (d) Proposed Pump discharge (Working) 4.08 400.90 LPM (Each Pump)  
 Gross Working Head  
 (d) Suction lift - positive suction 0 Meters  
 (e) Frictional Loss in Mains & Specials 25 Meters  
 (f) Max Clear Head required 125 100 Meters  
 Total 150 125 Meters  
 (g) H.P. of each pump required 21.03 17.00 HP  
 $(400 \times 175) / (60 \times 75 \times 0.65)$   
 410X150 Say 40.00 HP

It is proposed to provide 2 Nos. of pumps (1 working + 1 standby) of 15 HP Each

(\*) for Flushing Pump Pl. see Opposite. 25

#### VII. GENERATING SETS: 2X12.50 1X25

HP of Tubewell pump  
 HP of Domestic Pump 30  
 HP of Flushing Pump 25  
 HP of Flushing Pump 10  
 in KVA  
 Add for lighting

25 30.00  
 25 54.00  
 30 84  
 10 60.00  
 90 HP  
 100X0.746X1.50X111.90  
 Say 120 KL

ANURAAG CHOWFLA  
 Partner  
 Mani Chowfla  
 CA Registration No. 79/5125

M.K. Gupta  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

for Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

# FINAL ABSTRACT OF COST

		Amount in Rs. Lacs
SUB WORK NO. I	WATER SUPPLY SCHEME	<del>435.40</del>
SUB WORK NO. II	SEWERAGE SCHEME	<del>64.07</del>
SUB WORK NO. III	STORM WATER DRAINAGE	<del>47.98</del>
SUB WORK NO. IV	ROADS & FOOT PATHS	<del>453.62</del>
SUB WORK NO. V	STREET LIGHTING	<del>9.45</del>
SUB WORK NO. VI	HORTICULTURE	<del>9.07</del>
SUB WORK NO. VII	MTC CHARGES INCL RESURFACING OF ROADS AFTER 1st 5 YEARS AND 2nd YEAR	<del>151.67</del>
	<b>TOTAL</b>	<b>572.22</b>

~~148.30~~ 148.85 lacs

~~144.10~~ 60.05 lacs

~~75.20~~ 77.18 lacs

~~196.50~~ 199.70 210.25 lacs

~~72.60~~ 15.81

~~14.30~~ 17.60

~~208.60~~ 220.61  
247.54 lacs

~~799.56~~ 821.32 / lac  
777.28 lacs

(Rupees Five Hundred Seventy Two Lacs and Twenty Two Thousand Only)

(~~Seven Hundred Ninety nine lacs and sixty thousand only~~  
~~Eight Hundred Twenty one lacs and thirty two thousand only~~  
only  
UDCT Limited and Infrastructure Limited

~~777.30~~ lacs 75.46 lacs  
~~821.32~~ 79.34  
799.60 = 84.39 lacs  
8.21 Per Acres.  
10.30

AUTHORISED SIGNATORY

*[Signature]*  
Authorised Signatory

*[Signature]*  
Executive Engineer  
HUDA Division No. 1  
Gurgaon

Checked subject to comments  
in forwarding letter No. 9338  
Dt. 24.11.11 and notes attached  
with the estimate

*[Signature]*  
Superintending Engineer  
HUDA Circle-II, Gurgaon

*[Signature]*  
Director General  
Town & Country Planning,  
Haryana, Chandigarh

*[Signature]*  
Executive Engineer (W)  
for Chief Engineer  
HUDA Panchkula

*[Signature]*  
M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

## SUB WORK No. 1 (Abstract of Cost)

## Water Supply &amp; Fire Fighting

			32.84 lacs	
1	Sub Head No. 01	Head Works	RS. 2,004,500	36,94,000/-
			23.00 lacs	
2	Sub Head No. 02	Pumping Machinery	RS. 2,670,000	29,50,000/-
			6.05 lacs	
3	Sub Head No. 03	Rising Main	RS. 4,411,000	14,18,000/-
			14.49 lacs	
4	Sub Head No. 04	Distribution System	864,000	2,71,000/-
			16.57 lacs	
5	Sub Head No. 05	External Fire Hydrant	400,000	20,75,000/-
			5.05 lacs	
6	Sub Head No. 06	Irrigation	491,620.00	6,07,500/-
			97.00 lacs	
		<b>TOTAL</b>	<b>RS. 8,828,120</b>	116,15,500/-
		Add 3% contingencies & PH Charges	RS. 264,843.00	3,48,465/-
			2.91 lacs	
		<b>TOTAL</b>	<b>RS. 9,092,964</b>	119,63,965/-
		Add 49% Departmental charges + Price escalation	RS. 4,455,552.16	58,62,343/-
			99.90 lacs	
			148.95 lacs	
		<b>TOTAL</b>	<b>RS. 13,548,516</b>	178,26,308/-
		<b>Say in lacs</b>	<b>135.49</b>	Say Rs. 178.30 lacs.

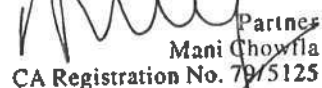
Rs. 148.85 lacs.

For Pioneer Urban Land &amp; Infrastructure Limited



Authorised Signatory

ANURAAG CHOWFLA



Partner  
Mani Chowfla  
CA Registration No. 7915125



M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

Sub Work No. 1  
Sub Head No. 01

Water Supply & Fire Fighting  
Head Works

Amount in Rs.

1. Boring and installing tubewell with reverse rotary rig  
Complete with pipe and strainer to a depth of about 120 metre in all respect  
2 Nos. @ Rs. 500,000/- each. RS.1,000,000
2. Provision for rising mains, connecting tubewells with water main and Bye-pass arrangements.
  - a) 100 mm dia - 120m @ Rs. 950/- 1200/- RS.144,000 1,44,000/-
  - b) 150 mm dia - 100m @ Rs. 1350/- 1500/- RS.135,000 1,50,000/-
3. Providing Tubewell Submersible Pumps : ~~2,00,000/-~~ 2,40,000/-  
Capacity 20000 lph at 33 M head, 2 Nos. @ Rs. 120,000/- each RS.240,000 4,00,000/-
4. Provision for carriage for materials and other foreseen items L.S. RS.100,000 3.00
5. Construction of U.G. tanks 325' KL @ Rs. 2500/KL RS.812,500 15,00,000/-  
(125 Domestic + 200 Fire) 24.00 lacs  
(300 + 300 Sale + 200 Fire)
6. Provision for construction of Tubewell chambers of  
Size 1.5x1.5x1.5 m for Housing tubewell - 2Nos @ Rs. 125000/- RS.250,000 1.50 lacs
7. Provision for unforeseen items/carriage of material RS.250,000 0.50
- TOTAL RS.2,991,500 36,94,000/-
- (C/O To Abstract of Cost for Subwork No.1) 32.84 lacs

Sub Work No. 1  
Sub Head No. 02

Water Supply & Fire Fighting  
Pumping Machinery

Amount in Rs.

1. Providing and installing electricity driven pumping  
Set capable of delivering about 400 LPM of water against a total Head of 125 M complete with motor and other accessories (25 HP)  
1 Set (1w+1 sby) (For domestic water) RS.1,500,000 4.00 lacs
  2. Provision for diesel engine genset each for standby arrangements  
For Pumps complete with gear head arrangements of following capacities.  
1 No. 68 KVA @ Rs.120,000/- Each (L.S.) RS.120,000 12.00  
2 nos e Rs. 2.00 lacs each 1,50,000/-
  3. Provision for making foundations and erection of Pumping Machinery:  
- Lump Sum RS.300,000 1.00
  - 3 (a) Providing and installing Elect. driven pumping  
set capable of delivering about 175 lpm abt  
water against a total head abt 150m complete in  
all respect (10HP)  
(1w+1 standby)  
2 nos. e Rs. 1.00 lacs each 2.00 lacs
- ANURAAG CHOWFLA  
Partner  
Mani Chowfla  
CA Registration No. 79/5125
- M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030
- Authorised Signatory

4. Provision for pipes, valves and specials inside boosting chamber.

- Lump Sum

1.00  
RS.300,000 ✓

5. Provision for electric service connection including electrical fittings for tube-well and boosting chamber etc. including cost

- Lump Sum of transformer

RS.300,000 5,00,000/-  
1.50

6. Provision for carriage of material and other unforeseen items etc. L/S

RS.150,000 2,00,000/-  
0.50

**TOTAL**

(C/O To Abstract of Cost for Subwork No.1)

RS.2,670,000 29,50,000/-  
22.00

**Sub-Work No. 1**  
**Sub Head No. 03**

**Water Supply & Fire Fighting**  
**Rising Main from HUDA**

**Amount in Rs.**

1. Providing, laying, jointing and testing pipe lines including Cost of excavation etc. complete in all respects.

100 80 mm dia. G.I. pipe 320m @ Rs. 2500/Mtr ✓ 1400/-  
150 50 mm dia. G.I. pipe 60m @ Rs. 2000/Mtr ✓ Part length future connection.  
40 mm dia. G.I. pipe 40m @ Rs. 1800/Mtr ✓ RS.800,000/-  
RS.120,000/-  
RS.72,000/-

2. Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respects.

150 40mm i/d 1 No. @ Rs. 6000/- 15000/- 14000/-  
RS.6,000 14,000/-  
+5,000/-

3. Providing and fixing indicating plates for sluice valve and air Valves. - 1 No. @ Rs. 8000/- each

RS.8,000 1,000/-

4. Providing and fixing air release valve and scour valve 1 Nos. @ Rs. 5000/- each

RS.5,000 7500/-  
+10,000/-

5. Provision for carriage for materials and other unforeseen items (Lump)

RS.50,000 25,000/-

6. Making Water Supply Connection

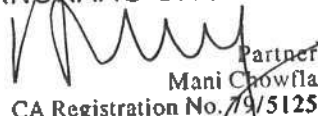
RS.250,000 2,50,000/-  
50,000/-

C.O. 54550/- Contd...

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

**ANURAAG CHOWFLA**

  
Partner  
Mani Chowfla  
CA Registration No. 79/5125

  
M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

7. Provision for cutting of roads and making good to its original Conditions.

Rs. 554500  
50000  
RS. 100,000/-

### TOTAL

RS. 1,411,000

604500/-  
14,18,000/-

(C/O To Abstract of Cost for Subwork No.1)

Total Water requirement	250.000 600.00	cum/day
hours of Pumping	16.000 ✓	hours
Q- Flow	15.625 39.500	m3/Hr
	0.004 0.010	m3/sec
L- Length of Pipe	365.000 320.00	m
Dia of Pipe	40.000 100.00	mm
	0.040 0.100	m
A	0.001 0.008	m2
V	3.454 1.250	m/s
f (constant)	0.040	
Friction Losses (Hf)	224.827 10.200	m
Fittings, Bends & Other Losses @ 25%	66.402 2.550	m
Total, Say	279.000 12.750	m

Sub Work No. 1  
Sub-Head No. 04

Say - 15.000 Water Supply & Fire Fighting  
Distribution System for dam and Housing

Amount in Rs.

1. Providing, Laying, jointing and testing G.I pipe line including Fittings, valves, cost of excavation etc. complete in all respect.

G.I Pipe 25 mm, 95 M @ Rs.300/- per meter ✓  
G.I Pipe 32 mm, 125 M @ Rs.400/- per meter ✓  
G.I Pipe 40 mm, 110 M @ Rs.600/- per meter ✓  
G.I Pipe 50 mm, 240 M @ Rs.750/- per meter ✓  
G.I Pipe 65 mm, 160 M @ Rs.900/- per meter ✓  
G.I Pipe 80 mm, 45 M @ Rs.1200/- per meter ✓  
G.I Pipe 100 mm, 20 M @ Rs.1400/- per meter ✓

RS.28,500 ✓  
RS.50,000 ✓  
RS.66,000 ✓  
RS.157,500 ✓  
RS.144,000 ✓  
RS.54,000 ✓  
RS.28,000 ✓

13.05 lacs

2. Provision for carriage of materials and other unforeseen items (Lump RS.200,000/-)

50000/-

3. Providing and fixing valves including chamber:-

- 80 mm dia 2 No. @ Rs. 8000/- each 4500/- 10000/-  
- 100 mm dia 2 No. @ Rs. 10000/- each 12000/-

RS.16,000 10,000/- 20,000  
RS.20,000 20,000/-

4. Provision for air valve (LS)

RS.100,000 ✓  
RS.364,000

8,71,000/-  
50000/-

Total

(C/O To Abstract of Cost for Subwork No.1)

5. Provision for cutting of road and making good to its original Conditions. (L.S.)  
For Pioneer Urban Land & Infrastructure Limited

14.49

Authorised Signatory

ANURAAG CHOWFLA

Partner  
Mani Chowfla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030



## Fire Fighting

**Sub Work No. 1**  
**Sub-Head No. 05**

### External Fire Hydrant

Amount in Rs.

1. Providing , Laying , jointing and testing M.S. pipes lines for fire rising main including cost of fittings, valves, connection etc. complete in all respect .

(i) 150mm i/d 925 m @ Rs. 1500/ m ✓

RS.1,387,500 ✓

(ii) 80mm i/d 250 m @ Rs. 300/ m <sup>450/-</sup>  
<sub>600/-</sub>

RS.75,000 <sup>2,37,500/-</sup>  
<sub>150,000/-</sub>

2. Providing and fixing fire Hydrant 25 Nos. ' @ Rs. 8000/- 10,000/- Each <sup>5 Nos. @ 15000/-</sup>  
<sub>14000/-</sub>

70,000/-

3. ~~1/2 of Valve - 150mm i/d~~

RS.200,000 <sup>2,50,000/-</sup>

3. Providing for carriage of material (L.S.)

RS.100,000 ✓  
25,000/-

4. Providing for indication Plates 25Nos. ' @ Rs. 1000/-

RS.25,000 ✓

**Total**  
(C/O To Abstract of Cost for Subwork No.1)

RS.400,000 <sup>20,75,000/-</sup>  
16.57 Lacs

**Sub-work No. I**  
**Sub-Head No. 06**

### Water Supply & Fire-Fighting- Irrigation

Amount in Rs.

1. Providing , Laying, Jointing and testing pipe line Confirming to IS 4985 (uPVC) including cost of excavation etc. complete in all respect.

- a) 25 mm dia 100 metre @ Rs. 250/- M  
b) 32 mm dia 205 metre @ Rs. 300/- M <sup>350/-</sup>  
c) 40 mm dia 275 metre @ Rs. 400/- M <sup>450/-</sup>  
d) 50 mm dia 180 metre @ Rs. 500/- M <sup>550/-</sup>  
e) 80 mm dia 80 metre @ Rs. 900/- M <sup>600/-</sup>  
f) 100 mm dia 15 metre @ Rs. 1200/- M <sup>950/-</sup>

RS.25,000 ✓  
RS.64,500 <sup>71,750/-</sup>  
RS.140,000 <sup>1,23,750/-</sup>  
RS.90,000 <sup>99,000/-</sup>  
RS.72,000 ✓ <sup>48,600/-</sup>  
RS.10,000 ✓  
142,500

2. Providing and fixing 25 mm dia. irrigation hydrant Valve complete in all respect. ~~25 Nos. @ Rs. 3500/- Each~~

*28 Nos. @ Rs. 3500/- Each*

RS.10,125 <sup>98,000/-</sup>

3. Provision for carriage of Material and other as foreseen items

RS.100,000 <sup>25,000/-</sup>

**TOTAL**  
(C/O To Abstract of Cost for Subwork No.1)

RS.404,020 <sup>504,750/-</sup>  
6,04,500/-  
For Pioneer Urban Land & Infrastructure Limited  
Authorised Signatory

**ANURAAG CHOWFLA**  
*(Signature)*  
Partner  
Mani Chowfla  
CA Registration No. 79/5125

**M.K. Gupta**  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

Sub-Work No. II

# SEWERAGE SCHEME

Amount in Rs.

1. Providing , jointing , cutting and testing SW pipe class "A" and lowering into trenches including cost of Excavation, bed concrete, cost of manholes etc. complete

a) SW pipe 200 mm i/d avg. depth 0-2 M  
1020 M @ Rs. 1250/M *1500/- P/mtr.*  
*890 1250/-*

2. Provision for cartage of material (L.S.)

3. Provision for lighting and watching (L.S.)

4. Provision for making HUDA Connection (L.S.)

5. Provision for Temp Disposal *STP 240KLD for 0-24 MLD*

Total *Pro for effluent & roads and making gurd*  
Add 3% contingencies & PH charges *as per in original conditions*  
Total

Add 49% Price Escalation, Departmental charges, unforeseen Admin Charges.

**TOTAL**

Say in lacs

(Cost to Final abstract of cost)

RS. 4,275,000	<i>1112.500/-</i>	<i>15,30,000/-</i>
RS. 200,000	<i>50000/-</i>	
RS. 200,000	<i>1.00</i>	
RS. 500,000	<i>1.00</i>	
RS. 2,000,000	<i>2500000/-</i>	
RS. 4,175,000	<i>50000/-</i>	
RS. 425,250	<i>44,30,000/-</i>	<i>39.13 Lacs</i>
RS. 4,300,250	<i>2,22,000/-</i>	<i>1.17 Lacs</i>
RS. 2,107,123	<i>76,52,900/-</i>	<i>40.30 Lacs</i>
RS. 6,407,373	<i>37,49,921/-</i>	<i>19.75 Lacs</i>
	<i>114,02,821</i>	<i>60.05 Lacs</i>
	<i>64.07</i>	

*Say Rs. 114.02 Lacs*

For Pioneer Urban Land & Infrastructure Limited

*[Signature]*

Authorised Signatory

ANURAAG CHOWFLA

CA Registration No. 795125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

## Sub-Work No. III

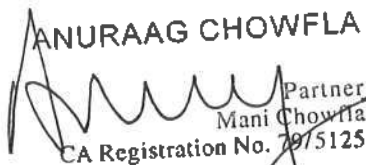
## STORM WATER SCHEME

Amount in Rs.

1. Providing and laying R.C.C. pipe drain class NP-3 With cement joint, manholes excavation etc complete in all respect.			
a) 400 mm dia. <sup>560</sup> 1140m @ Rs. 1250/m 1750/-m.	RS. 4,425,000	980000/- 19,95,000/-	
2. Provision for Road gullies L.S	RS. 250,000	10,00,000/- 250000/-	
3. Providing Rain Harvesting arrangements 7 Nos @ Rs 100,000 1,50,000/-	RS. 700,000	10,50,000/- 7.50 lay	
4. Provision for Shoring & Timbering (L.S.)	RS. 250,000	1.00	
5. Provision for Lighting, Watching & Temp. Drain Arrangements (L.S.)	RS. 250,000	1.00	
6. Provision for Carriage of Material (L.S.)	RS. 250,000	1,00,000/- 25.00 lay	
7. Prov. for Connection with Huda line	RS. 3,125,000	48,99,000/- 50.30 lay	
8. Prov. for temporary arrangement - HUDA	RS. 93,750	1,40,850/- 1.50 lay	
Add 3% for contingencies and PH charges	RS. 3,218,750	50,41,850/-	
Total	RS. 1,577,188	24,70,904/- 51.80 lay	
Add 49% Departmental charges	RS. 4,795,938	75,12,357 25.28 lay	
<b>TOTAL</b> (Cost to Final abstract of cost)		77.18 lay	
Say in lacs	47.95	Say Rs. 75.80 lacs	

For Pioneer Urban Land &amp; Infrastructure Limited

  
 Authorized Signatory

  
 ANURAAG CHOWFLA  
 Partner  
 Mani Chowfla  
 CA Registration No. 79/5125

  
 M.K. Gupta  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

## Sub-Work No. IV

## Road Work

ROAD AREA As Per Drawing Attached

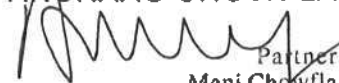
ROAD NO.	LENGTH	BREADTH	AREA
ROAD AREA			
AREA CALCULATIONS FOR ROADS			
	A (M)	B (M)	Nos.
			AREA (SqM) = Z = A X B
A	67.500	6.000	1.000
B	$1/2(3.75+7.5) \times 3.75$		1.000
C	63.750	6.000	1.000
D	30.000	6.000	1.000
E	11.250	6.000	1.000
F	$1/2 \times 4.5 \times 4.5$		1.000
G	11.250	6.000	1.000
H	37.500	6.000	1.000
I	51.120	6.000	1.000
J	38.350	6.000	1.000
K	$1/2(7.5+13.125) \times 13.5$		1.000
L	11.250	6.000	1.000
M	3.750	6.000	1.000
N		$1/2(9.375+6) \times 4.5$	1.000
O	9.375	6.000	1.000
P		$1/2(13.125+7.5) \times 6$	1.000
Q	38.734	6.000	1.000
R	$1/2(11.25+16.875) \times 4.5$		1.000
S	$1/2(7.5+15) \times 3.75$		1.000
T	7.500	6.000	1.000
U		$1/2(7.5+3.75) \times 6$	1.000
V	$1/2(9.375+5.625) \times 6$		1.000
W	11.250	6.000	1.000
X	$1/2(11.25+5.625) \times 6$		1.000
Y		$1/2(9.375+6) \times 6$	1.000
Z	60.000	6.000	1.000
A'	$1/2(9.375+3.75) \times 5.25$		1.000
B'	$2 \times 1/2 \times 11.25 \times 6$		2.000
C'	18.750	6.000	1.000
D'	$1/2(13.5+9.375) \times 3$		1.000
E'	$1/2(15+9.375) \times 5.625$		1.000
F'	30.000	6.000	1.000
G'	39.375	6.000	1.000
H'	15.000	9.375	1.000
I'	28.125	6.000	1.000
J'	39.375	6.000	1.000
K'	$1/2(9.375+4.5) \times 6$		1.000
L'	5.625	6.000	1.000
M'	51.811	6.000	1.000
N'	13.500	7.500	1.000
O'	35.625	6.000	1.000
P'	$1/2(7.5+5.625) \times 3.75$		1.000
Q'	15.000	6.000	1.000

For Pioneer Urban Land &amp; Infrastructure Limited



Authorized Signatory

ANURAAG CHOWFLA


Partner  
Mani Chowfla

CA Registration No. 79/5125



M.R. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

R'	1/2(7.5+3.75)X6	1.000	33.750
S'	37.500 6.000	1.000	225.000
T'	1/2(11.25+13.5)X3.75	1.000	46.400
U'	1/2(15+7.5)X5.25	1.000	59.060
V'	225 - 130.00 X 6.00 (2.75 wide service road)		445.000
V''	15.50		
TOTAL			6496.860
SUBTRACTION			
1.000	0.000	0.000	0.000
TOTAL			0.000
TOTAL ROAD AREA Add fire tender path 6.00mm wide 470x6.00			6496.860
TOTAL AREA (SQM)			6496.860
PARKING AREA			
A (M)	B (M)	Nos.	AREA (SqM) =
Z = A X B			
ADDITION			
1	11.250	5.625	47 19
TOTAL			1075.781

TOTAL PARKING AREA			1075.781
TOTAL PARKING AREA (SQM)			1080.00
TOTAL AREA (SQM)			7276.86
ADD 10% FOR CURVES AND JUNCTIONS (SQM)			727.006
SAY (SQM)			8004.35

Amount in Rs.

NOTE: Rates as per HUDA norms

- Provision for levelling & earth filling as per site conditions.

As per cut & fill plan

10.22 Acre @ Rs 1.00 Lacs per Acre)

- Soling coat 100 mm thick (63-45) mm gauge compacted to 75 mm thick WBM conforming to MOT specification (Table 400-6, Grading No. 2).
  - Wearing coat (Top coat) 100mm thick (53-22.4)mm gauge compacted to 75mm thick conforming to MOT specifications (Table 400-6, Grading No. 3) over 50 mm thick B.M. and 20 mm thick M.S.S. Type A

2550 Sq. m. @ Rs. 850/- per Sq. m.

- Provision for kerbs & channels of CC 1:2 @ Rs. 500/- per Meter

- Provision for making approach and pavement to building (L.S.)

- Provision for parking arrangement - Lump sum

For Pioneer Urban Land & Infrastructure Limited

Authorised Signatory

ANURAAG CHOWFLA  
Partner  
Mani Chawla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

6. Provision for carriage of material (L.S)

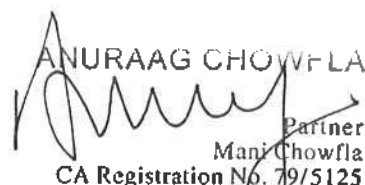
**TOTAL**  
Add 3% contingency & P.E. charges  
**TOTAL**

Add 49% depts. Charges, price escalation  
unforeseen, Admin. charges.  
Say (Rs. in Lacs)  
(Cost to Final abstract of cost)

Rs. 137.00 Lacs		100000 ✓
4.11 Lacs	<del>130,08,000/-</del> <del>3,90,240/-</del>	Rs. 10,009,500
Rs. 141.11 Lacs	<del>133,98,240/-</del>	Rs. 300,285.00
Rs. 69.14 Lacs	<del>65,65,138/-</del>	Rs. 10,309,785.00
Rs. 210.25 Lacs	<del>199,63,278/-</del>	Rs. 5,051,794.65
Say in lacs	<del>199.70</del>	Rs. 45,361,580
		453.62

for Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

  
ANURAAG CHOWLA  
Partner  
Mani Chowla  
CA Registration No. 79/5125

  
M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030



# Sub Work No. V

# Street Lighting

Amount in Rs.

1) Providing lighting at surrounding Area as per standard specifications of

Total light poles = 8.21 @ Rs. 75000/- per Acre

10.30 Ac 1,00,000/-

Add 3% contingencies & P.E. charges

TOTAL

Add 49% Departmental charges, price escalation

unforeseen, Admin. charges

TOTAL

Say (Rs. In Lacs)

(Cost to Final abstract of cost)

10,30,000/-

30,900/-

10,60,900/-

5,19,841/-

15,80,741/-

Say 15.81 lac

Rs. 615,750

Rs. 18,473

Rs. 634,223

Rs. 318,769

Rs. 944,992

Rs. 9.45-

Say Rs. 9.45 lac

# Sub Work No. VI

# Plantation & Road Side trees

Amount in Rs.

1. Development of Lawn Areas:

a) Trenching of ordinary soil upto depth of 60 cm i/c removal & stacking of

b) Rough dressing of turfed area.

c) Grassing with "DOOB GRASS" i/c watering and maintenance of lawns for 30 days till

8.21 Acre @ Rs. 75000/- Acre

10.30 Ac

1,00,000/-

10,30,000/-

615750.00

Contd. Page - II

For Pioneer Urban Land & Infrastructure Limited



Authorised Signatory

ANURAAG CHOWFLA

CA Registration No. 791125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

2. Providing and planting trees along boundary @ 12 m interval  
Total Road length 900 M x 2 = 1800 M.  
25' 150

75

**Cost Details:**

Excavation	25	30
Manure	25	30 60
Tree Plant	50	30 60
Tree Guard	350	600
<b>TOTAL</b>	<b>450</b>	<b>740 750</b>

75 Nos. @ Rs. 450 740 750  
150

**TOTAL**  
Add 3% contingencies & P.E. charges  
**TOTAL**

Add 49% Departmental charges

**TOTAL**  
Say (Rs. In Lacs)  
(Cost to Final abstract of cost)

11,41,000/-  
Rs. 11.43 lacs 34,230/-  
Rs. 0.34 lacs 11,75,230/-  
Rs. 11.77 lacs 5,75,863/-  
Rs. 5.76 lacs 17,51,093/-  
Rs. 17.53 lacs say Rs. 17.60 lacs  
Say Rs. 17.60 lacs

Rs. 23,750 1,11,000/-

Rs. 649,500 9,32,000/-  
Rs. 10,485 27,960/-  
Rs. 668,985 9,59,960/-  
Rs. 327,803 4,70,381/-  
Rs. 996,788 14,20,340/-  
Rs. 9.97 say Rs. 14.30 lacs

**SUB WORK - VII - SERVICES & RESURFACING OF ROADS**

**1. Provision of MTC charges for W/s, SWD**

(a) Complete in all aspect, including operational and establishment charges as per HUDA  
10.30 Acres @ Rs. 3.75 lacs per Acre.

2. Provision of resurfacing of roads after 5 years of MTC one layer of 100 mm thick WBM  
(a) Resurfacing of road after 10 years of MTC 11680 Sqm @ 600/- P/Sqm.

Add 3% contingencies & P.E. charges

Add 49% Departmental charges

**TOTAL**  
Say (Rs. In Lacs)  
(Cost to Final abstract of cost)

11680 Sqm @ 300/- P/Sqm  
12200 TOTAL  
143,74,500/-  
4,31,235/-  
Rs. 161.30 lacs  
4.84 lacs  
148,05,735/-  
72,54,810/-  
Rs. 166.14 lacs  
81.40 lacs  
220,60,545/-  
Say Rs. 220.61 lacs

Amount in Rs.

38,62,500/- 51.50  
3,078,750 73.20  
Rs. 4,536,000 70,08,000/-  
Rs. 2,268,000 35,04,000/-  
Rs. 9,882,750 1,35,10,154/-  
Rs. 296,483 0,07,123/-  
Rs. 10,179,233 1,39,88,473/-  
Rs. 4,987,824 68,59,232/-  
Rs. 16,167,056 2,08,57,724/-  
151.67  
Say Rs. 208.60 lacs

For Pioneer Urban Land & Infrastructure Limited


Authorised Signatory

**ANURAAG CHOWFLA**  
Partner  
Mani Chowfla  
CA Registration No. 79/5125

M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

## ANNEXURE-1


S.No	SEWER LINE	Tower No.	Total Population	Total Water Requirement	Sewage Discharge (LPD)			Average Sewage Discharge		Size of Pipe	Velocity	Design Discharge	Length of Line	Slope	Fall in Metres		Ground level		Invert Level		Depth of Pipe at		Average depth of pipe
					Self	Branch	Total	LPS	Cusec						As per gradient	As per pipe slope	Start	End	Start	End	Start	End	
				LPD						mm	feet/sec	cusec	Meters		In mtrs.	In mtrs.	In mtrs.	In mtrs.	In mtrs.	In mtrs.	In mtrs.	In mtrs.	In mtrs.
1	1-2	B	210	36225	28 980		28 980	0.335417	1.006	0.035	200	2.42	45	200	0.000	0.225	243.00	243.00	242.00	241.78	1.00	1.22	1.11
2	2-3	D	200	34500	27 600	28 980	56 580	0.654861	1.965	0.069	200	2.42	84	200	0.000	0.420	243.00	243.00	241.78	241.56	1.22	1.64	1.43
3	3-6			0		56 580	56 580	0.554861	1.965	0.069	200	2.42	40	200	0.000	0.200	243.00	243.00	241.56	241.16	1.64	1.84	1.74
4	4-5	EWS	120	20700	16 560		16 560	0.191667	0.575	0.02	200	2.42	130	200	0.000	0.650	243.00	243.00	242.00	241.35	1.00	1.85	1.33
5	5-6			0		16 560	16 560	0.191667	0.575	0.02	200	2.42	90	200	0.000	0.450	243.00	243.00	241.35	240.90	1.65	2.10	1.88
6	6-7	E	260	44850	35 880	1 09 020	1 44 900	1.677083	5.031	0.176	200	2.42	90	200	0.000	0.450	243.00	243.00	240.90	240.45	2.10	2.55	2.32
7	7-11			0		1 44 900	1 44 900	1.677083	5.031	0.176	200	2.42	13	200	0.000	0.065	243.00	243.00	240.45	240.39	2.55	2.61	2.58
8	8-9	A	316	54510	43 608		43 608	0.504722	1.514	0.053	200	2.42	64	200	0.000	0.320	243.00	243.00	242.00	241.68	1.00	1.32	1.16
9	9-10	C	200	34500	27 600	71 208	98 808	1.143611	3.431	0.12	200	2.42	94	200	0.000	0.470	243.00	243.00	241.68	241.21	1.32	1.79	1.55
10	10-11			0		98 808	98 808	1.143611	3.431	0.12	200	2.42	48	200	0.000	0.240	243.00	243.00	241.21	240.97	1.79	2.09	1.91
11	11-STP			0		2 43 708	2 43 708	2.820694	8.462	0.296	200	2.42	15	200	0.000	0.075	243.00	243.00	240.39	240.31	2.61	2.69	2.65
12	STP-12												20										
13	12-13												90										
14	13-14												140										
15	14-TO HUDA												50										

  
**M.K. Gupta**  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

  
**Anuraag Chowfla**  
 Authorised Signatory

**ANURAAG CHOWFLA**

  
**Anuraag Chowfla**  
 Partner  
 CA Registration No. 79/5125

## Material Statement -Sewerage System

## Annexure 2

S.No	SEWER LINE	Size of Pipe	Length of Line
		mm	Meters
1	1-2	200	45
2	2-3	200	85
3	3-6	200	40
<del>4</del>	<del>4-5</del>	<del>200</del>	<del>130</del> EWS line. —
5	5-6	200	90
6	6-7	200	90
7	7-11	200	15
8	8-9	200	65
9	9-10	200	95
10	10-11	200	50
11	11-STP	200	15
12	STP-12	200	20
13	12-13	200	90
14	13-14	200	140
15	14-TO HUDA	200	50
Total for 200 mm Dia			1020 870 mtrs.

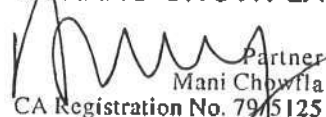
For Pioneer Urban Land &amp; Infrastructure Limited



Authorised Signatory

  
 M.K. Gupta  
 MIE No. 945780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

ANURAAG CHOWFLA

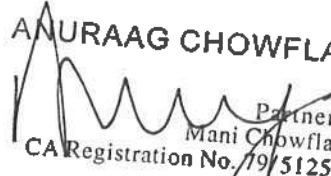
  
 Partner  
 Mani Chowfla  
 CA Registration No. 795125

S.No	Line No.	Self Area (m <sup>2</sup> )	Self Area (Acre)	Branch Area (Acre)	Total Area (Acre)	Total Area (Hec)	Rain Fall mm/hr	Discharge @17.38 lps/Hec	Length in mtr.	Pipe dia in mm	Slope 1 in	Velocity m/sec.	Cap of pipe in lps.	Fall in line mtr.	Ground Level		Invert Level		Depth	
															Start	End	Start	End	Start	Average
1	1-RW1	5600	1.40	0.00	1.400	0.57	6.25	9.83	75	400	600	0.59	73.71	0.13	243.00	243.00	242.40	242.28	0.60	0.66
2	RW1-RW6	3800	0.95	1.40	2.350	0.95	6.25	16.51	100	400	600	0.58	73.71	0.17	243.00	243.00	242.28	242.11	0.72	0.81
3	RW6-RW5	4100	1.03	2.35	3.375	1.37	6.25	23.71	140	400	600	0.58	73.71	0.23	243.00	243.00	242.11	241.88	0.89	1.01
4	RW5-FINAL	0	0.00	3.38	3.375				25	400	600				243.00	243.00	241.88	241.83		
5	2-RW3	1100	0.28	0.00	0.275	0.11	6.25	1.93	20	400	600	0.59	73.71	0.03	243.00	243.00	242.40	242.37	0.60	0.63
6	RW3-RW4	2500	0.63	0.28	0.900	0.36	6.25	6.32	70	400	600	0.59	73.71	0.12	243.00	243.00	242.37	242.25	0.63	0.68
7	RW4-RW5	4200	1.05	0.90	1.950	0.79	6.25	13.70	130	400	600	0.59	73.71	0.22	243.00	243.00	242.25	242.03	0.75	0.86
8	3-RW2	1350	0.34	0.00	0.338	0.14	6.25	2.37	55	400	600	0.59	73.71	0.08	243.00	243.00	242.40	242.31	0.60	0.65
9	4-RW2	3000	0.75	0.00	0.750	0.30	6.25	5.27	35	400	600	0.59	73.71	0.06	243.00	243.00	242.40	242.34	0.50	0.63
10	RW2-RW7	3300	0.83	1.09	1.913	0.77	6.25	13.43	140	400	600	0.59	73.71	0.23	243.00	243.00	242.31	242.08	0.89	0.92
11	RW7-5	0	0.00	1.91	1.913	0.77	6.25	13.43	300	400	600	0.58	73.71	0.50	243.00	243.00	242.08	241.88	0.92	1.17
12	5-FINAL	0	0.00	1.91	1.913	0.77	6.25	13.43	50	400	600	0.59	73.71	0.08	243.00	243.00	241.88	241.49	1.42	1.47

  
**M.K. Gupta**  
 MIE No. 045780/3  
 M/RG Consultants  
 Paryavaran Complex  
 100 Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

  
 Authorised Signatory

**ANURAAG CHOWFLA**  
  
 Partner  
 CA Registration No. 79/5125

**Material Statement - Drainage System****Annexure 4**

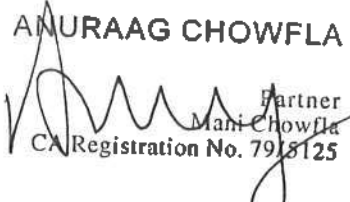
S.No	Line No.	Length in mtr.	Pipe dia in mm
1	1-RW1	75	400
2	RW1-RW6	100	400
3	RW6-RW5	140	400
4	RW5- FINAL DISPOSAL	25	<del>400</del> 500 dia
5	2-RW3	20	400
6	RW3-RW4	70	400
7	RW4-RW5	130	400
8	3-RW2	55	400
9	4-RW2	35	400
10	RW2-RW7	140	400
11	RW7-5	300	400
12	5-FINAL DISPOSAL	50	400
<b>Total for 400 mm dia</b>		<del>1140</del> 560	

  
**M.K. Gupta**  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

  
 Authorised Signatory

**ANURAAG CHOWFLA**

  
 Partner  
 Anuraag Chowfla  
 CA Registration No. 7918125



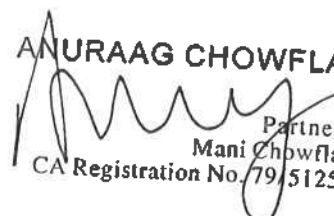
ANNEXTURE-5 Design of Water Supply System - CWS RING TO BUILDING SHAFTS

S.No.	Line Designation	Water Requirements (in LPD)	Water Requirements (in KLD)	Self Water requirement (in KLD)	Branch Water requirement (in KLD)	Add 10% Misc.	Total Water Requirements (in KLD)	Discharge per Hour considering 8 Hours Pumping klt/hr	Size of Pipe Provided mm	Velocity in ft/sec.	Velocity in m/sec.	Head Loss per 1000m	Loss of head as per pipe length	Length of pipe (in metres)	Ground level		Hydraulic Level		Terminal Head
															Start In m	End In m	Start In m	End In m	
1	PHASE-1																		
2	UGT-1		0	0	217	22	238	29769	100	3.46	1.06	21	0.365	17	243.00	243.00	433.000	432.635	189.64
3	1-2		0	0	71		71	8.841	50	4.11	1.25	66	5.838	88	243.00	243.00	432.635	426.797	183.80
4	2-TOWER D	34500	36	36	0		36	4313	40	3.14	0.96	52	0.521	10	243.00	243.00	426.276	426.276	183.28
5	2-3		0	0	36		36	4328	40	3.29	1.00	57	3.878	68	243.00	243.00	426.276	422.398	179.40
6	3-TOWER B	36225	36	36	0		36	4328	40	3.29	1.00	57	0.570	10	243.00	243.00	422.398	421.827	178.53
7	1-7		0	0	146		146	18241	80	3.32	1.01	26	1.166	45	243.00	243.00	432.635	431.479	189.48
8	4-TOWER E	44850	45	45	0		45	15741	65	4.33	1.32	54	2.687	50	243.00	243.00	431.479	428.792	185.79
9	4-5		0	0	128		128	5.606	40	4.08	1.24	85	0.847	10	243.00	243.00	428.792	427.945	184.95
10	5-TOWER C	34500	35	35	0		35	10134	65	2.79	0.85	24	2.666	112	243.00	243.00	429.969	429.448	186.45
11	5-6		0	0	47		47	4.313	40	3.14	0.96	52	0.521	10	243.00	243.00	427.945	424.576	181.58
12	6-TOWER A	48575	47	47	0		47	5.822	50	2.71	0.83	31	3.369	110	243.00	243.00	424.576	421.270	181.27
13	7-8		0	0	20		20	2.500	32	2.84	0.87	56	7.043	125	243.00	243.00	431.479	424.436	181.44
14	8-EWS	10000	10	10	0		10	1.250	25	2.33	0.71	52	0.520	10	243.00	243.00	424.436	423.916	180.92
15	8-9		0	0	10		10	1.250	25	2.33	0.71	52	3.797	73	243.00	243.00	424.436	420.640	177.64
16	9-EWS	10000	10	10	0		10	1.250	25	2.33	0.71	52	0.520	10	243.00	243.00	420.640	420.120	177.12

  
**M.K. Gupta**  
 MIE No. 045780/3  
 MKG Consultants  
 A-8, Paryavaran Complex  
 IGNOU Road  
 New Delhi-110 030

For Pioneer Urban Land & Infrastructure Limited

  
**Authorised Signatory**

  
**ANURAAG CHOWFLA**  
 Partner  
 Mani Chowfla  
 CA Registration No. 79/5125

## Material Statement- Water Supply

## Annexure 6

S.No.	Line Designation	Size of Pipe Provided	Length of pipe(in metres)
		mm	
1	8-EWS	25 100	10
2	8-9	25 100	75
3	9-EWS	25 100	10
	<b>Total for 25 mm dia</b>		<b>95</b>
4	7-8	32 100	125
	<b>Total for 32 mm dia</b>		<b>125</b>
5	2-TOWER D	40 100	10
6	2-3	40 100	70
7	3-TOWER B	40 100	10
8	4-TOWER E	40 100	10
9	5-TOWER C	40 100	10
	<b>Total for 40 mm dia</b>		<b>110</b>
10	1-2	50 100	90
11	5-6	50 100	110
12	6- TOWER A	50 100	10
	<b>Total for 50 mm dia</b>		<b>210</b>
13	7-4	65 100	50
14	4-5	65 100	110
	<b>Total for 65 mm dia</b>		<b>160</b>
15	1-7	80 100	45
	<b>Total for 80 mm dia</b>		<b>45</b>
16	UGT-1	100	20
	<b>Total for 100 mm dia</b>		<b>20</b>
17	<b>TUBE WELL 1 - TUBEWELL 2</b>	100	<b>120</b>
18	<b>TUBE WELL 2 - PUMP ROOM</b>	150	<b>100</b>
	<b>MUNICIPAL LINE</b>		
1	1-2	80	<b>320</b>
2	2-FUTURE CONNECTION	50	<b>60</b>
3	2-PUMP ROOM	40	<b>40</b>

M.K. Gupta  
MIE No. 045780/3  
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A-8, Paryavaran Complex  
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ANURAAG CHOWFLA  
Partner  
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CA Registration No. 79/5125

For Pioneer Urban Land &amp; Infrastructure Limited

Authorised Signatory

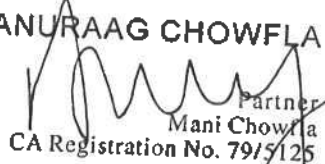
**MATERIAL OF FIRE FIGHTING      ANNEXTURE-7**

S.no	Node NO		Dia of Pipe	Length
<b>PHASE 1</b>				
	Pump Room 1			
1	1	1	150	35
2	1	2	150	70
3	2	3	150	90
4	3	4	150	145
5	1	5	150	90
6	5	6	150	130
7	6	7	150	55
8	2	8	150	90
9	8	9	150	45
10	9	10	150	50
11	10	11	150	85
12	7	11	150	40
<b>TOTAL</b>				<b>925</b>

For Pioneer Urban Land & Infrastructure Limited

  
Authorised Signatory

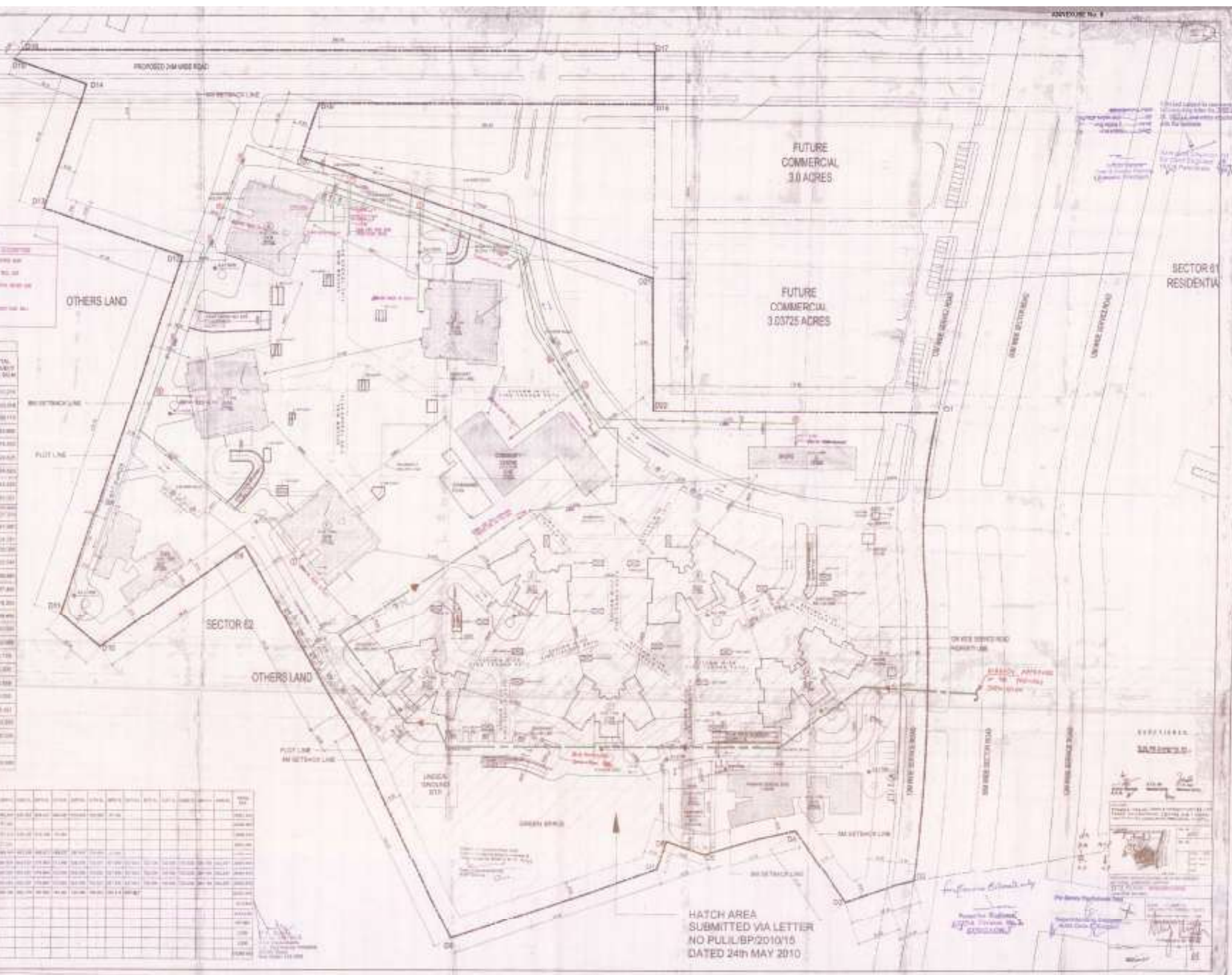
  
M.K. Gupta  
MIE No. 045780/3  
MKG Consultants  
A-8, Paryavaran Complex  
IGNOU Road  
New Delhi-110 030

  
ANURAAG CHOWFLA  
Partner  
Mani Chowfla  
CA Registration No. 7915125



FORM 990 (2015)		TOTAL ASSETS: \$100,000				TOTAL LIABILITIES: \$0		TOTAL NET ASSETS: \$100,000		TOTAL INCOME: \$0	
PART I: ORGANIZATION INFORMATION		NAME OF THE ORGANIZATION		EIN		STATE OF INCORPORATION		DATE OF INCORPORATION		FEDERAL TAX STATUS	
1. Name of the organization		ABC DEF GHI JKL MNO PQR		12-3456789		CA		01/01/2010		501(c)(3)	
2. Mailing address		12345 Main St		City, CA 90001							
3. Principal office address		12345 Main St		City, CA 90001							
4. DBO/CEO name and title		John Doe, President									
5. DBO/CEO compensation		\$0									
6. Other DBO/CEO compensation		\$0									
7. Other DBO/CEO compensation		\$0									
8. Other DBO/CEO compensation		\$0									
9. Other DBO/CEO compensation		\$0									
10. Other DBO/CEO compensation		\$0									
11. Other DBO/CEO compensation		\$0									
12. Other DBO/CEO compensation		\$0									
13. Other DBO/CEO compensation		\$0									
14. Other DBO/CEO compensation		\$0									
15. Other DBO/CEO compensation		\$0									
16. Other DBO/CEO compensation		\$0									
17. Other DBO/CEO compensation		\$0									
18. Other DBO/CEO compensation		\$0									
19. Other DBO/CEO compensation		\$0									
20. Other DBO/CEO compensation		\$0									
21. Other DBO/CEO compensation		\$0									
22. Other DBO/CEO compensation		\$0									
23. Other DBO/CEO compensation		\$0									
24. Other DBO/CEO compensation		\$0									
25. Other DBO/CEO compensation		\$0</									

TYPE: SITE AREA (HAZ)	-	14.00000000
TYPE: NET AREA	-	0.00000000
	-	0.00000000
GROUND COVER RATIO AND AREA (HAZ)		
TYPE: GROUND COVER RATIO	-	0.00000000
TYPE: GROUND COVER AREA	-	0.00000000
TYPE: GROUND COVER RATIO	-	0.00000000
TYPE: GROUND COVER AREA	-	0.00000000
TYPE: GROUND COVER RATIO	-	0.00000000
TYPE: GROUND COVER AREA	-	0.00000000
TYPE: GROUND COVER RATIO	-	0.00000000
TYPE: GROUND COVER AREA	-	0.00000000

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OFFICE OF THE EXECUTIVE ENGINEER, HUDA, DIV NO. III, GURUGRAM

To

M/s Pioneer Urban Land & Infrastructure Limited  
Paras Down Town Centre, Floor-7, Golf Course Road,  
Sector-53, Gurugram.

Memo No. 1758

Dated: 23/1/18

Sub:-

Application for water connection for water supply from the HUDA mains for Group Housing Colony an area land measuring 24.606 Acres (License No.268 of 2017 dt 03.12.2017) vill. Ghata Sec-62, Gurugram.

Ref:-

Your application No. PULIL/GH-Sec-62/2017/130 dated 30.10.2017.

In this context, as per your application for water connection to above premises to connect your intake system of boosting /water works through 100mm i/d pipe line at one point mentioned in approved plan is hereby sanctioned subject to the following conditions:-

1. The connection will be given only from HUDA existing water supply line subject to availability of water in pipe line further intake and boosting arrangement will be made by the colonizer at their own expenses.
2. The connection is hereby authorized for supply of bulk water supply in UGT only and further arrangement for water supply to individual unit will be made by the colonizer at their own cost as per approved system.
3. The water bill will be raised by Sub Divisional Engineer, HUDA, Sub Div No. IX, Gurugram and firm will be whole responsible for the full payment regularly within stipulated period.
4. Installation of self recording electronic water meter and it's good performance will be the colonizer's responsibility. Total Rs 7,00,000/- (Rs 5,00,000/- as water connection security + Rs 2,00,000/- as water connection fees has been deposited vide demand draft No. 058231 & 058232 dated 23.01.2018 from HDFC Bank.
5. Road cut fees will be deposited in future if required as per HUDA Bye laws.
6. The connection will be made by the colonizer at their own expenses without disturbing Master W/S system in presence of representative of HUDA Deptt. During making connection if any damage to HUDA service is occurred, the colonizer will be the whole responsible for repair of the same in good condition. If, the colonizer is failed to repair, repair shall be carried by the Deptt. and expenditure involved on this account shall be paid by the colonizer otherwise the connection shall be cancelled and disconnected.
7. Water connection should not be already made at site before issuing the permission failing which will have to pay the penalty imposed and previous bills. Otherwise, the connection will disconnected without serving any Notice.

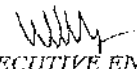
AP-E  
Vijay  
DE

8. The electronic water meter of reputed make shall be purchased by the colonizer at their own level and got tested from approved lab/ Institution under intimation to this Department after OK testing, the electronic water meter and it's report shall have to be submitted to the S.D.E-IX, HUDA, Gurugram for obtaining it's clearance to install at site duly sealed by the Department in the presence of representative of HUDA Deptt.
9. Installation of water meter should in direct approach and be liable to the official deputied for taking / recording reading shown by the water meter.
10. Information regarding the installation of water meter shall be given to the SDE-IX, HUDA, Gurugram in writing and installation of water meter shall be considered from the date of receipt of written information by HUDA.
11. All the amount on account of released water connection shall have to be deposited within 30 days if has not been deposited with submission of connection file failing which the sanction will be considered as cancelled.
12. The land cost, Development charges/ Mtc. charges for such colonies shall be liable as per HUDA policy as fixed and decided by HUDA time to time shall be bound for payment of the same well in time.
13. The Mtc. of intake pipes and special repair shall be the colonizer's responsibility and his own cost.
14. The water shall be given at the ground level and HUDA will not be responsible the low pressure.
15. The water connection will be utilized and limited for facilities to the land/ area in possession only.
16. For any dispute in the connection with the release of water connection, Mtc and disconnection with the said water connection, the matter shall be referred by any of the two parties to the concerned Superintending Engineer, HUDA, Circle of the area where the land/ colony is situated and his decision in the matter shall be final and legally binding on both the parties.
17. Colonizer will inform about increase / decrease of discharge if any in advance.
18. SDE will verify discharge monthly or as deemed fit for verification and water bill shall raised monthly and monthly payment shall be made by the colonizer.
19. In absence of installation of water meter, checking of actual assessment of discharge and verification of the consumption of water shall be made jointly by the representative of Deptt and colonizer based on discharge of pipes and working hours of plants as per entries recorded in log book and water bills so prepared shall be binding upon the colonizer for payment and in case of going water meter out of order, the assessment of discharge and consumption of water shall be made on the basis of average reading of water meter given during previous two months till the replacement of water meter in good performance. If, the defective water meter is not replaced within two months, the connection shall be disconnected without serving any Notice.
20. No Booster/ Suction will be installed directly on the line carrying from HUDA mains and no other connection will be made from the connection main to water storage tank and in case it is ever found, the water connection shall be disconnected without serving any Notice by SDE/ Executive Engineer concerned.

S.F. V.K. 11/11/11




21. HUDA will at the liberty to revise the rates of water charges and colonizer will be liable to pay the revised charges as and when decided by HUDA.
22. You may also ensure that follow the guide lines of N.G.T. as per Hon'ble Supreme Court.
23. Condition subject to availability of water and adequate pressure in line will be available after commissioning of Boosting Station, Sector-72, Gurugram for which land is to be acquired.

  
EXECUTIVE ENGINEER,  
HUDA, DIV. NO. III,  
GURUGRAM

Endst No.

Dated

A copy of the above is forwarded to Sub Divisional Engineer, HUDA, Sub Div No. IX, Gurugram with his office memo no. 1002 dated 31.07.2017 for information.

  
EXECUTIVE ENGINEER,  
HUDA, DIV. NO. III,  
GURUGRAM



**ECOGREEN ENERGY GURGAON FARIDABAD Pvt. Ltd.**  
 Corporate Address:- 603- 607, ILD Trade Centre, Sector -47, Sohna Road, Gurugram 122001  
 Registered Address:- 160, Tatvam Villas, Sector-48, Sohna Road, Gurgaon, Haryana-122001  
 Email: info@ecogreenenergy.co.in | CIN: U40106HR2017PTC057739  
 Phone: 0124-4410700 | Website: www.ecogreenenergy.co.in

## MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MOU) is mutually agreed and signed at Gurgaon on this 1 day of Nov, 2018 as per rights conferred upon by Municipal Corporation of Gurgaon (MCG) to Ecogreen Energy Gurgaon Faridabad Private Limited (EEGFPL) as per Concessionaire Agreement dated 14.08.2017 as per details below:

S. NO	CLAUSE	DETAILS
1.	Name & Address of the Concessionaire	Ecogreen Energy Gurgaon Faridabad Private Limited 603-607, ILD Trade Centre, Sector-47, Sohna Road, Gurgaon, Haryana-122002
2.	Name and Address of Waste Generator	Pioneer Urban Land & Infrastructure Ltd Sector-62, residential project Pioneer Presidia and Pioneer Araya Haryana 122002
3.	Service Offered by Concessionaire	Door to door collection of MSW, Transportation, Processing and Scientific disposal
4.	Responsibilities of Waste Generator	The waste generator will provide segregated waste – both dry & wet MSW separately at Single point. (Details in Annexure 1 – Data Sheet for more information)
5.	User Charges Payable <sup>[1]</sup>	Total Applicable User Charges : 40 INR rupees per flat plus taxes. (Details in Annexure 1 – Data Sheet) Discount rate for flats at rate of 40 rupees per month plus taxes. EWS Flats: at rate of 5INR: /- plus taxes  Total Flats: 484. Net Payable Amount <sup>[2]</sup> 40 rupees per flat/- plus taxes Rates will change after 1 year. Also the rates will vary with occupancy.
6.	Billing Details	Billing Cycle shall be on monthly basis and should be paid within Due Date i.e. 15 days from the date of bill. A Late Payment Surcharge would be applicable at 18% per annum on number of days for which payment is delayed.
6.	Mode of Payment	Cheque / RTGS / NEFT / PayTm / Cash / Demand Draft / PayU Money (Details in Annexure 2 – ECOGREEN PAYMENT DETAILS)
7.	Confidentiality	Each party shall maintain the confidentiality regarding this MOU. The parties agree not to disclose or part away with any information without the prior knowledge and consent of the other party at any time unless mandated by applicable laws.
8.	Validity	Validity of this MOU is till 31 <sup>st</sup> Oct'2019 until extended further mutually.

It is hereby understood that EEGFPL is the designated authority for Collection, Transportation, Processing and Scientific disposal of Solid Waste in Gurgaon by MCG and dumping waste in unspecified areas or giving waste to any other agency is illegal & leads to littering which is in direct violation of Solid Waste Management Rules, 2016 and Orders of National Green Tribunal.

- [1] User charges shall be payable as per UCC Notification by MCG dated 05.09.17 as amended from time to time.  
[2] GST extra as applicable.

**ENCLOSED:**

- I. Annexure 1 – DATA SHEET
- II. Annexure 2 – ECOGREEN PAYMENT DETAILS

For and on Behalf of  
Pioneer Urban Land & Infrastructure Ltd  
Pioneer Presidia and Pioneer Araya  
Haryana 122002  
Gurugram

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For and on behalf of  
Ecogreen Energy Gurgaon Faridabad

Private Limited

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DHBVN

DAKSHIN HARYANA BIJLI VITRAN NIGAM  
(A Power Distribution & Retail Supply Utility, Govt. of Haryana)  
An ISO 9001: 2008 Compliant Utility, CIN: U99999HR-1999SG034165  
Chief Engineer/Commercial, DHBVN, Hissar,  
Regd. Office: Vidyut Sadan, Vidyut Nagar, Hissar-125005 (Haryana)  
Phone No. 01662-223093, Fax No. 01662223153  
Website: [dhbvn.org.in](http://dhbvn.org.in) E-Mail: [cecommercialdhbvn1@gmail.com](mailto:cecommercialdhbvn1@gmail.com)

DHBV

To

SE/OP,  
DHBVN, Gurugram-II.

Memo No. :- 9/SG/C/SOL-421 Dated:- 22-8-17

Sub:

Approval for sanction of ultimate load 7064 KW or 7849 KVA along with its electrification scheme to M/s Pioneer Urban Land Infrastructure Sec-62, Gurugram applied vide A&A No. 40060 HT/BS dated 29.06.2017 under OP S/Division, Badshahpur.

Please refer to SDO/OP, S/Divn. Badshahpur office Memo No. Ch-371 dated 30.06.2017 vide which a case file has been received in this office for approval of sanction of load 7064 KW or 7849 KVA to M/s Pioneer Urban Land Infrastructure Sec-62, Gurugram applied vide A&A No. 40060 HT/BS dated 29.06.2017 under OP S/Division, Badshahpur. Applicant has also requested for release of partial load of 1000 KVA on 11 KV level.

Approval of sanction of ultimate load 7064 KW or 7849 KVA, along with its electrification scheme under single point connection & sanction of partial load of 900KW/1000KVA to M/s Pioneer Urban Land Infrastructure Sec-62, Gurugram applied vide A&A No. 40060 HT/BS/DS dated 29.06.2017 under OP S/Division, Badshahpur under HT/BS/DS tariff category is hereby accorded subject to compliance of the terms and conditions given as under:-

1. The ultimate load 7064 KW or 7849 KVA will be fed on 33KV level from proposed 33 KV switching station to be fed from 220/33 S/Stn. Sector-65 (under construction) through proposed 33 KV Independent underground feeder with double run XLPE 3Cx300mm<sup>2</sup> U/G cable at the cost of the applicant
2. The developer shall create 33/11 KV substation with installed capacity 10 MVA. Power T/F. The developer shall install 2x1500+3x2000+1x1000=10000 KVA (total capacity), 11/4 KVA T/F distribution transforms(dry type) to cater the ultimate load.
3. From safety aspect an NOC in this regard may be obtained from Chief Electrical Inspector, besides ensuring compliance of all safety measures by SE/Op, Gurugram-II.
4. The Partial load of 900KW or 1000 KVA shall be released on 11 KV level through 11 KV existing Pioneer urban Independent Feeder from 66 KV S/Stn. Sector-56.

Gurugram subject to augmentation of capacity of 66/11 KV Power T/F at the Sub Station or shifting of load to other nearby 66 KV Sub Stations.

5. The applicant shall switch over his connection from 11 KV to 33 KV as per Nigam Sales Circular No. D- 19/2015. On switch over from 11 KV to 33 KV, the dismantled 11 KV system shall become the property of DHBVN.
6. Share cost if required, to be deposited as per Nigam instructions from the applicant.
7. Protection scheme to be provided on feeder at the applicant's end and for obtaining supply at 33KV level be got approved from the M&P wing of both DHBVN & HVPN.
8. Complaint centers shall be constructed by the applicant as per Nigam instructions No. P&D 9/2011.
9. An undertaking be obtained from the consumer that the technical feasibility shall be examined afresh every time the consumer applies for extension of load.
10. The applicant either deposit ACD corresponding to ultimate load in cash in one go or ACD corresponding to partial load in cash and ACD for balance of ultimate load in the shape of BG.
11. SE/OP, DHBVN Gurugram-II should personally ensure that the BG of independent feeder and electrical infrastructure is deposited by the applicant as per Nigam instructions and commensurate with the ultimate load, prior to release of applied load.
12. Guidelines given in Sales Instruction No. 21/2015 should be strictly complied with.
13. CEA guidelines and IE rules regarding Safety precaution should be adhered to for connecting the electrical system.
14. The applicant will enter into tripartite agreement with HVPN and DHBVN.
15. No applicant, senior to the instant applicant/ consumer is waiting for sanction of load / extension of load.
16. Processing charges, Consumption security & other applicable charges be recovered from the applicant as per Nigam instruction.
17. Documentary proof in support of the identification of the authorized signatory i.e. copy of ration card, driving license etc. shall be obtained from the applicant / consumer.
18. The applicant will submit documentary proof in support of ownership of land.
19. Non-judicial stamp worth Rs. 3/- on the left corner of A&A be got affixed by the SDO before taking further action.
20. The consumer will not raise any claims against the department for un-notified unscheduled power cuts, which are beyond the control of the department and an undertaking will be obtained from him.
21. The applicant shall comply with the instructions of the Nigam issued by this office time to time.



22. The HT brochure may contain old instructions, as such an additional affidavit be obtained from the consumer to abide by the provision of the Electricity Act 2003 and complying of all the instructions of SMI & Sales Circular issued as well as amended by the Nigam from time to time before release.
23. Necessary clearance from various Govt. Department i.e. CEI, Pollution Control Board etc. shall be taken.
24. The tariff to be charged from the residents should in accordance with tariff schedule approved by HERC.
25. For the creation of S/Stn. / transmission lines & before erection of major items, inspection will be got carried out from DHBVN / HVPN Authorities. The inspection charges @ 1.5% of the estimated cost of work shall be paid by the applicant to DHBVN / HVPN as the case may be.
26. The applicant shall erect underground HT lines & other Infrastructure as per specification and design of the Nigam.
27. All other formalities as required as per instruction issued/adopted by Nigam time to time shall be completed at consumers end.
28. Metering equipments including CTs of matching capacity as per specifications / design of Nigam shall be provided at feeding S/Stn. as per Nigam instructions.
29. The applicant shall comply with the provision of Haryana renewable Energy department regarding instantiation of Solar Photovoltaic Power Plant applicable time to time.

This Issues with the approval of Director/Projects, DHBVN, Hisar at NP-4 of file No. SOL-421

SE/Commercial  
For CE/Commercial  
DHBVN, Hisar

CC to:-

1. PS to Director/Projects, DHBVN, Hisar for kind information of Director, please.
2. CE/PD&C, DHBVN, Hisar.
3. CE/Op, DHBVN, Delhi.
4. CE/Planning, HVPNL, Panchkula
5. CE/TS, HVPN, Hisar
6. SE/TS, HVPN, Gurugram
7. SE/NCR, Planning, Gurugram.
8. XEN (OP), Division, DHBVN, Sonha.
9. SDO (OP), S/Divn. Badshahpur
10. M/s Pioneer Urban Land Infrastructure Sec-62, Gurugram.

**AIR QUALITY INDEX**

<b>POLLUTANT</b>	<b>VALUE (24 HRS AVG. CONCENTRATION)</b>	<b>AIR QUALITY INDEX (AQI)*</b>
Particulate Matter (PM <sup>10</sup> )	105.87 µg/m <sup>3</sup>	MODERATE
Particulate Matter (PM <sup>2.5</sup> )	59.38 µg/m <sup>3</sup>	SATISFACTORY
Sulphur Dioxide	8.995 µg/m <sup>3</sup>	GOOD
Nitrogen Dioxide	17.415 µg/m <sup>3</sup>	GOOD

**\*AIR QUALITY INDEX**

Good	= 0 - 50
Satisfactory	= 51 - 100
Moderate	= 101 - 200
Poor	= 201 - 300
Very Poor	= 300 - 400
Severe	= 401 - 500



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# PIONEER GROUP HOUSING PROJECT AT SECTOR 62, GURUGRAM, HARYANA

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## ECBC COMPLIANCE REPORT

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Prepared for:

Pioneer Urban Land & Infrastructure Ltd.  
Paras Downtown Centre, 5th and 7th Floor  
Sector 53, Gurugram

Prepared by:

Ankur Tulsyan,  
Dream Space,  
C 226, Sushant Shopping Arcade  
Sushant Lok 1, Gurugram

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1. Project Brief
2. ECBC Compliance Process
3. Proposed Energy Efficiency Measures for Club House Building
4. Energy Efficiency Measures Taken for Residential Towers
5. Credentials of Consultant

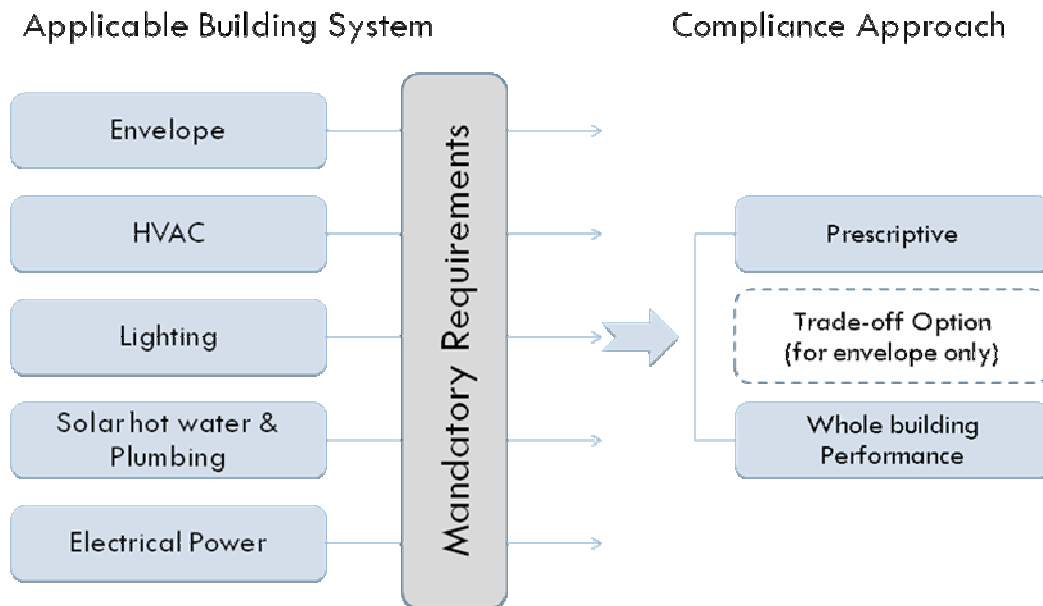
## 1. Project Brief

Present Project is a group housing at village Ghata, Sector 62, Gurugram, Haryana. The project will comprise construction of 9 residential blocks, 1 EWS Block, 1 Club House and small convenient shops and primary and nursery school. Total plot area is 9.9605 ha. The total built up area is 2,97,320.95 sqm. After the proposed expansion, the cumulative built-up area will be 3,04,562 sq. m. (E.C. obtained built-up area 2,97,320.95 sq.m. + additional built-up area 7,241.05 sq.m.). Connected load of the building is 7064.41 kW. The project is located in Composite Climate zone as per ECBC 2017.

Project has 482 Residential Units including 94 servant rooms, 88 EWS units, community centre, convenient shops, primary & nursery school with supporting infrastructure facilities

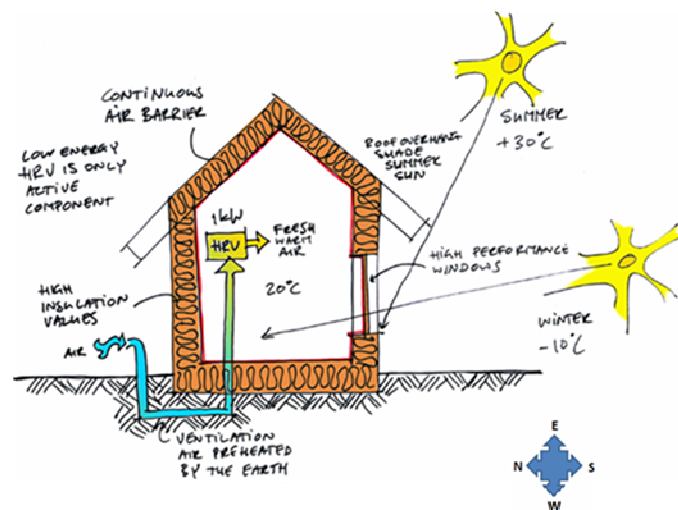
Construction of the residential portion of the project is complete. The project has taken several measures to reduce its energy consumption of its residential portion in order to make it an ECBC compliant building. These measures have been described in detail in this report. Also for the proposed construction of the club house area several energy conservation measures have been planned which are described here. These measures will make the new construction of the club house building an ECBC compliant building.

## 2. ECBC Compliance Process



### Building Envelope Design Consideration

- Building envelope component design
  - Area, building orientation are major envelope components
  - Roof design, choice of shading devices, fenestration size, placement of windows, construction specification etc.



Source <http://ecocentndesign.ca/passive-house-in-a-nutshell/>

- Building Material Specification
  - Insulation properties (u-values, SHGC) emissivity and colour texture



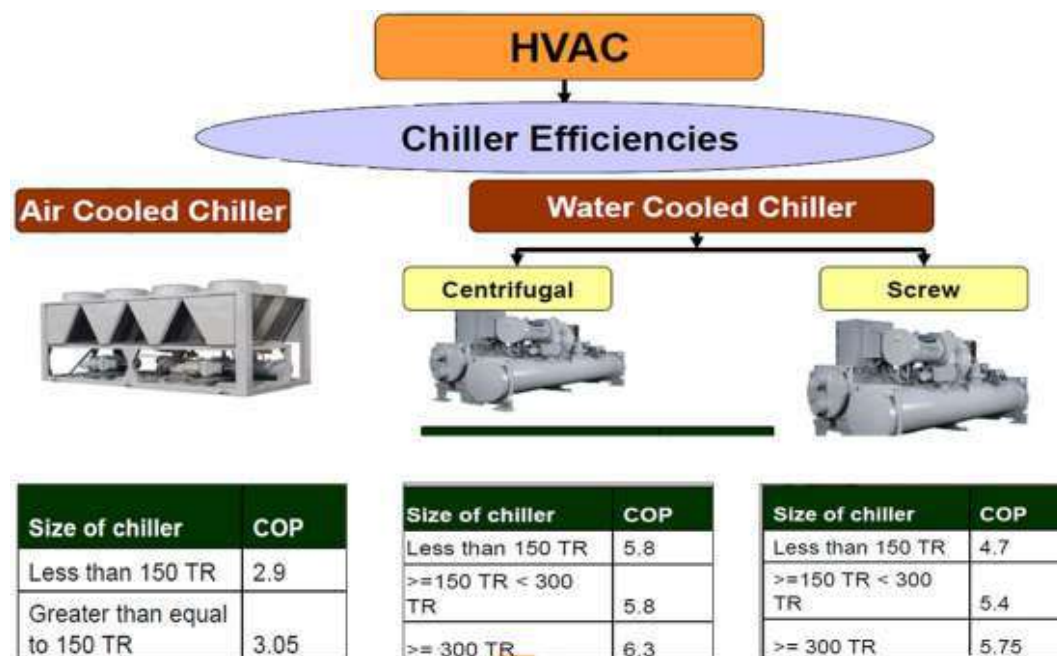
## ECBC Requirements: Mandatory

- The ECBC addresses energy losses through fenestration by specifying the following requirements: U Factor maximum and SHGC for Window to wall ratio (WWR)
  - WWR up to 40% and
  - WWR in the range of more than 40% and up to 60%

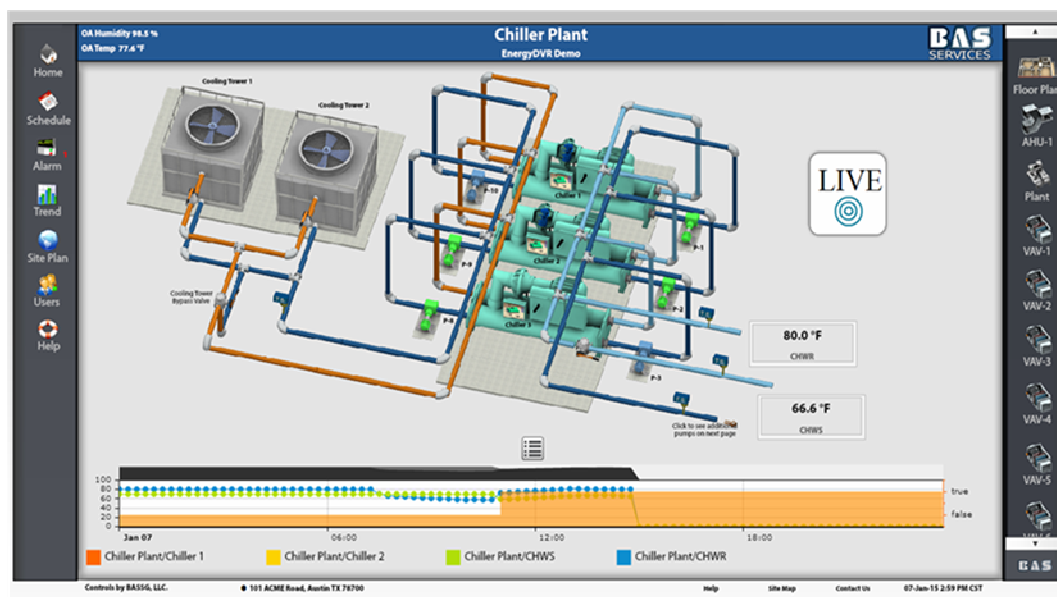
		WWR ≤ 40%	40% < WWR ≤ 60%
Climate	Maximum U-factor	Maximum SHGC	Maximum SHGC
Composite	3.30	0.25	0.20
Hot and Dry	3.30	0.25	0.20
Warm and Humid	3.30	0.25	0.20
Moderate	6.90	0.40	0.30
Cold	3.30	0.51	0.51

## Heating Ventilation and Air Conditioning

- Natural Ventilation
- Minimum equipment efficiencies
- Controls
- Piping and duct work
- System balancing
- Condenser



## Controls: Building Management System

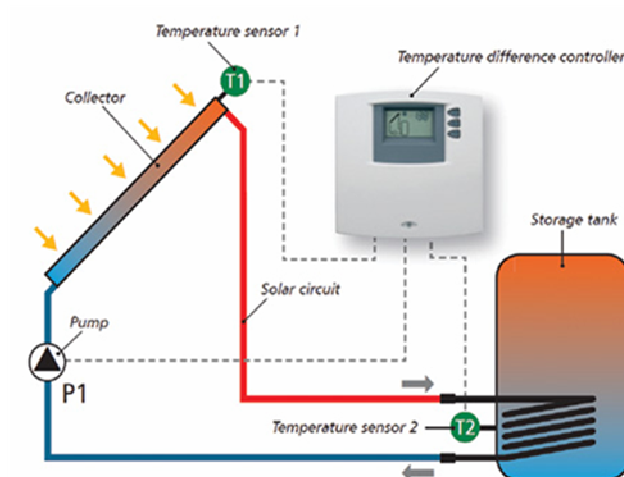


Source <http://basig.com/solutions/services/visualize/nigara-px.html>



## Service Hot Water and Pumping

- Equipment Efficiency
- Supplementary Water heating
- Solar Water Heating
- Piping insulation



Source: <http://www.solarstoc.co.uk/steca-tr-0301sc-solar-controller.html>

## Interior and Exterior Lighting

- Lighting Control
  - Day-lighting control
  - Space control (maximum up to 1000m<sup>2</sup> and minimum up to 250m<sup>2</sup>)
  - Automatic lighting control
- Exterior building ground lighting
- Exit signs
- Exterior lighting power
- Building area method and Space by Space

## Day Light Control



Luminaires in day lit area > 25m<sup>2</sup> shall be equipped with either a manual or automatic control device.

Control device shall control only the luminaires entirely within day lighted area. Shall reduce the light output by 50%.

## Space Lighting Control



Each space shall have one control device controlled manually or automatically. Each control device shall control a maximum of 250 m<sup>2</sup> for a space less than or equal to 1000 m<sup>2</sup> and a maximum of 1000 m<sup>2</sup> for spaces having greater area

## Automatic Lighting Shutoff



Programmable timer with independent program schedule for areas < 2500 m<sup>2</sup> and not more than one floor or Occupancy sensor with manual override

## Electrical Power and Motors

- Transformer
- Energy Efficient Motors
- Power Distribution System Losses
- Power Factor Correction
- Check-Metering and Monitoring

## Transformer Losses



Max. allowable losses for dry type/Oil filled at highest voltage and at 50% & 100% load shall not be more than whatever is specified in ECBC

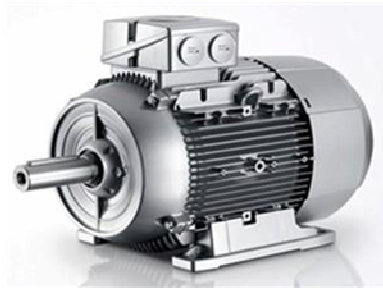


Transformer type	Rating (kVA)	Max. Losses at 50% loading (kW)	Max. Losses at 100% loading (kW)
Dry type	1000	0.90	1.20
Oil filled	1000	0.70	0.98

Rating KVA	Max. Losses at 50% loading <sup>1</sup> [kW]	Max. Losses at 100% loading <sup>1</sup> [kW]	Total losses at 50% loading <sup>1</sup> [kW]	Total losses at rated load <sup>1</sup> [kW]
Up to 22 kV class			33 kV class	
100	0.94	2.4	1.12	2.4
160	1.29	3.3	1.42	3.3
200	1.5	3.8	1.75	4
250	1.7	4.32	1.97	4.6
315	2	5.04	2.4	5.4
400	2.38	6.04	2.9	6.8
500	2.8	7.25	3.3	7.8
630	3.34	8.82	3.95	9.2
800	3.88	10.24	4.65	11.4
1000	4.5	12	5.3	12.8
1250	5.19	13.87	6.25	14.5
1600	6.32	16.8	7.5	18
2000	7.5	20	8.88	21.4
2500	9.25	24.75	10.75	26.5

<sup>1</sup>Total loss values given in above table are applicable for thermal classes E, B & F and have component of load loss at reference temperature according to clause 17 of IS 2026: Part 11. i.e., average winding temperature rise as given in column 2 of Table 8.2 plus 30°C. An increase of 7% on total for thermal class H is allowed.

## Energy Efficient Motors



**Motors of 0.375 kW to 50 kW rating expected to operate more than 1500 hrs/year and**

**Motors of 50 kW rating and above expected to operate more than 500 hrs/year**

**shall have minimal acceptable nominal full load efficiency as mentioned in IS-12615 (EEF-1)**

### 3. Proposed Energy Efficiency Measures for Club House Building

#### Section 4 - Building Envelope

Sr. No.	Building Envelope Component	ECBC Prescriptive Compliance	Proposed
1	Roof	U = 0.33 W/sqm K (max) ;	Reflective paint + 20 mm external plaster + 75 mm XPS insulation + Waterproofing+ 150 mm RCC + putty finish  U = 0.31 W/sqm K;
2	External Wall	U = 0.40 W/sqm K (max)	25 mm plaster + 200 mm AAC Block + 50 mm XPS + 20 mm internal plaster + putty + paint  U = 0.36 W/sqm K
3	Fenestration	U : 3.0 W/sqm K (max)  Max SHGC North for lat $\geq 15^{\circ}\text{N}$ : 0.5  Max SHGC Non-North: 0.27  VLT = 0.27 (min)  Max WWR is 40% if no tradeoff	Double glazed glass to be used in project  U = 2.1 W/sqm K  SHGC = 0.21  VLT = 0.33

## Section 5 – Comfort Systems and Controls

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
1	Ventilation	Mechanical Ventilation	<p>VRV based Individual ACs are provided which are more efficient than ECBC 2017 base case.</p> <p>Mechanical Ventilation as per NBC 2016</p> <p>Controls not applicable as area is less than 20,000 sqm</p> <p>All piping as per ECBC 2017 – 5.2.4</p> <p>Hydronic systems balanced</p> <p>Pump impeller trimmed</p>
2	Service Water Heating	Solar water heating	There is no requirement of Hot Water in the Club House Building. Therefore no solar hot water systems will be installed
3	Pumps	Min Efficiency 70%	Efficiency 78%
4	Cooling Towers	<p>Open circuit cooling tower Fans 0.017 kW/kWr</p> <p>0.31 kW/ L/s</p>	Proposed will comply with ECBC
5	Economizers	NA as area is less than 20,000 sqm	
6	Controls	NA as it not a ECBC + or Super ECBC Building	
7	Energy Recovery	NA as capacity less than 2,100 liters per second	



## Section 6 – Lighting and Controls

Sr. No.	Lighting	ECBC Prescriptive Compliance	Proposed
1	Lighting Controls	Scheduled based lighting controls or Occupancy based lighting controls to be provided	These are residential buildings so they are 24 hour use building. Hence lighting controls are not required. However common area and outdoors lights will be switched off in the morning and on in the evening to ensure there is no wastage of electricity.
2	Interior Lighting Power	LPD to be less than 9.5 W/sqm for Hotels by Building Area Method mentioned in ECBC 2017`	LED lights installed will reduce the LPD to 8.7. They have a Light Output Ratio more than 7.5
3	Exterior Lighting Power	<p>Building entrance (with canopy): 10 W/sqm of canopy area</p> <p>Building exit: 60 W/linear m of door width</p> <p>Building façade: 5.0 W/m<sup>2</sup> of vertical façade area</p> <p>Pedestrian walkways: 2.0 W/m<sup>2</sup></p> <p>Stairways: 10.0 W/m<sup>2</sup></p> <p>Landscaping: 0.5 W/m<sup>2</sup></p>	<p>Building entrance (with canopy): 9 W/sqm of canopy area</p> <p>Building exit: 50 W/linear m of door width</p> <p>Building façade: 4.5.0 W/m<sup>2</sup> of vertical façade area</p> <p>Pedestrian walkways: 1.8 W/m<sup>2</sup></p> <p>Stairways: 8 W/m<sup>2</sup></p> <p>Landscaping: 0.44 W/m<sup>2</sup></p>

## Section 7 – Electrical and Renewable Energy Systems

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
1	Transformers	Maximum Allowable losses as per ECBC	All transformers used in the project are energy efficient and comply with ECBC norms.
2	Energy Efficient Motors	Minimum Efficiency as per ECBC	All the motors used by pumps proposed in the project are energy efficient and comply with ECBC norms.
3	Diesel Generator (DG) Sets	BEE star rated DG sets shall be used in all compliant buildings.	We are using BEE 3 Star rated DG sets
4	Check-Metering and Monitoring	At Building mains, installed meters must be capable of monitoring Energy use (kWh), Energy Demand (kW) and total Power Factor on an hourly basis.	Meter installed at building mains is capable of monitoring Energy use (kWh), Energy Demand (kW) and total Power Factor on an hourly basis.

## Section 7 – Electrical and Renewable Energy Systems

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
5	Power Factor Correction	All 3 phase shall maintain their power factor 0.97	Power Factor 0.97
6	Power Distribution Systems	Distribution losses do not exceed 3% of the total power usage	Less than 2.8% in the building
7	Uninterruptible Power Supply (UPS)	NA	
8	Renewable Energy Systems	All buildings shall have provisions for installation of renewable energy systems in the future on rooftops or the site.	More than 30% of roof area is left for renewable energy generation in future.

#### 4. Energy Efficiency Measures Taken for Residential Towers

##### Section 4 - Building Envelope

Sr. No.	Building Envelope Component	ECBC Prescriptive Compliance	Proposed
1	Roof	$U = 0.33 \text{ W/sqm K (max) ;}$	Reflective paint + 20 mm external plaster + 75 mm XPS insulation + Waterproofing+ 150 mm RCC + putty finish  $U = 0.31 \text{ W/sqm K;}$
2	External Wall	$U = 0.40 \text{ W/sqm K (max)}$	25 mm plaster + 200 mm AAC Block + 20 mm internal plaster + putty + paint  $U = 0.68 \text{ W/sqm K. This value is far better than usual construction practice where U Value is } 2/\text{sqmK}$
3	Fenestration	$U : 3.0 \text{ W/sqm K (max)}$  Max SHGC North for lat $\geq 15^\circ\text{N}$ : 0.5  Max SHGC Non-North: 0.27  VLT = 0.27 (min)  Max WWR is 40% if no tradeoff	Double glazed glass to be used in project  $U = 2.1 \text{ W/sqm K}$  SHGC = 0.21  VLT = 0.33

## Section 5 – Comfort Systems and Controls

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
1	Ventilation	Natural Ventilation	<p>The openings are conducive to the wind availability and the operable area is more than 20 % of the floor area for all habitable spaces.</p> <p>The Liv-Kit-Din design facilitates cross-ventilation required for warm and humid climate.</p> <p>The window positions fulfil the recommended sill levels to ensure air movement at critical height within a space. This shall ensure better perception of thermal comfort and reduce use of fans and AC's</p>
2	Service Water Heating	Solar water heating	As per the latest Notification of Haryana Government, it is not mandatory to put Solar Water Heaters in residential projects. Thus the project is not going for any Solar Water Heating systems on roof top.
3	Pumps	Min Efficiency 70%	Efficiency 78%
4	Cooling Towers	NA	
5	Minimum Equipment Efficiency	The cooling equipment must meet minimum efficiency parameters as prescribed by ECBC and ASHRAE 90.1-2010	Flats: The developer shall not be providing air conditioning equipment, since the project is primarily designed to be naturally ventilated. However, the tenant and occupant guideline shall be provided by the developer specifying energy efficient minimum 3 star rated AC's
6	Economizers	NA	
7	Controls	NA	
8	Energy Recovery	NA	

## Section 6 – Lighting and Controls

Sr. No.	Lighting	ECBC Prescriptive Compliance	Proposed
1	Lighting Controls	Scheduled based lighting controls or Occupancy based lighting controls to be provided	These are residential buildings so they are 24 hour use building. Hence lighting controls are not required. However common area and outdoors lights will be switched off in the morning and on in the evening to ensure there is no wastage of electricity.
2	Interior Lighting Power	Building Area Method mentioned in ECBC 2017'	LED lights installed will reduce the LPD to 7.5. They have a Light Output Ratio more than 7.5
3	Exterior Lighting Power	<p>Building entrance (with canopy): 10 W/sqm of canopy area</p> <p>Building exit: 60 W/linear m of door width</p> <p>Building façade: 5.0 W/m<sup>2</sup> of vertical façade area</p> <p>Pedestrian walkways: 2.0 W/m<sup>2</sup></p> <p>Stairways: 10.0 W/m<sup>2</sup></p> <p>Landscaping: 0.5 W/m<sup>2</sup></p>	<p>Building entrance (with canopy): 9 W/sqm of canopy area</p> <p>Building exit: 50 W/linear m of door width</p> <p>Building façade: 4.5.0 W/m<sup>2</sup> of vertical façade area</p> <p>Pedestrian walkways: 1.8 W/m<sup>2</sup></p> <p>Stairways: 8 W/m<sup>2</sup></p> <p>Landscaping: 0.44 W/m<sup>2</sup></p>

## Section 7 – Electrical and Renewable Energy Systems

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
1	Transformers	Maximum Allowable losses as per ECBC	All transformers used in the project are energy efficient and comply with ECBC norms.
2	Energy Efficient Motors	Minimum Efficiency as per ECBC	All the motors used by pumps proposed in the project are energy efficient and comply with ECBC norms.
3	Diesel Generator (DG) Sets	BEE star rated DG sets shall be used in all compliant buildings.	We are using BEE 3 Star rated DG sets
4	Check-Metering and Monitoring	At Building mains, installed meters must be capable of monitoring Energy use (kWh), Energy Demand (kW) and total Power Factor on an hourly basis.	Meter installed at building mains is capable of monitoring Energy use (kWh), Energy Demand (kW) and total Power Factor on an hourly basis.



## Section 7 – Electrical and Renewable Energy Systems

Sr. No.	Component	ECBC Prescriptive Compliance	Proposed
5	Power Factor Correction	All 3 phase shall maintain their power factor 0.97	Power Factor 0.97
6	Power Distribution Systems	Distribution losses do not exceed 3% of the total power usage	Less than 2.8% in the building
7	Uninterruptible Power Supply (UPS)	NA	
8	Renewable Energy Systems	All buildings shall have provisions for installation of renewable energy systems in the future on rooftops or the site.	More than 30% of roof area is left for renewable energy generation in future.

## 5. Credential of Consultant

Name: Ankur Tulsyan

B. Arch MNIT Jaipur

Master Trainer ECBC

IGBC AP

Lead Auditor - ISO 50001



**ऊर्जा दक्षता ब्यूरो**  
**BUREAU OF ENERGY EFFICIENCY**

विद्युत मंत्रालय, भारत सरकार  
MINISTRY OF POWER, GOVERNMENT OF INDIA

प्रमाणित किया जाता है कि

श्री/श्रीमती अंकुश तुलसेन ने ऊर्जा संरक्षण भवन निर्माण संहिता के लिए 25 नवंबर '16 से 26 नवंबर '16 तक एमएनआईटी / सीईमीसी / आईआईआईटी द्वारा आयोजित मास्टर ट्रेनर सर्टिफिकेट कार्यक्रम को सफलता पूर्वक सम्पन्न कर लिया है।

This is to certify that

Shri/Smt. Ankur Tulayan has successfully completed the Master Trainer Certificate Programme conducted by MNIT / CEPT / IIT from 25 November '16 to 26 November '16 for the Energy Conservation Building Code.

नई दिल्ली, 07 JUL 2017  
New Delhi, \_\_\_\_\_

31/07/2017  
महानिदेशक  
Director General

**TRAFFIC IMPACT ASSESSMENT STUDY  
&  
MANAGEMENT PLAN**

PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

On a Typical Working Day (Monday)

Table 1 Traffic Vehicle Count at Golf Course Road towards Sector 49 (W side) on Monday (12<sup>th</sup> March 2018)

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU/Hr.
8AM-9AM	553	941	125	10	104	16	1749	1611
9AM-10AM	584	1254	90	4	37	20	1989	1737
10AM-11AM	358	719	119	3	50	55	1304	1237
11AM-12PM	344	469	82	3	80	37	1015	994
12PM-1PM	317	483	86	3	71	20	980	932
1PM-2PM	376	458	85	1	109	44	1073	1073
2PM-3PM	232	264	52	3	62	32	645	656
3PM-4PM	303	470	85	3	64	29	954	917
4PM-5PM	271	531	93	5	64	22	986	929
5PM-6PM	309	720	84	5	58	30	1206	1108
6PM-7PM	293	601	77	3	30	34	1038	959
7PM-8PM	258	490	59	15	30	24	876	824
TOTAL	4198	7400	1037	58	759	363	13815	12981

PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

Table 2-Traffic Vehicle Count at Golf Course Rd. towards Gurgaon-Faridabad (E side) on Monday (12<sup>th</sup> March 2018)

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU/Hr.
8AM-9AM	548	414	45	6	66	51	1130	1130
9AM-10AM	542	480	54	7	27	28	1138	1081
10AM-11AM	490	347	69	3	53	65	1027	1056
11AM-12PM	427	225	71	3	41	63	830	883
12PM-1PM	503	265	57	5	59	59	948	993
1PM-2PM	605	295	79	5	38	55	1077	1106
2PM-3PM	528	380	60	6	48	54	1076	1084
3PM-4PM	499	300	62	4	52	44	961	976
4PM-5PM	635	345	73	6	19	42	1120	1113
5PM-6PM	694	505	64	11	39	48	1361	1333
6PM-7PM	815	655	64	4	35	71	1644	1597
7PM-8PM	797	426	53	3	19	51	1349	1325
TOTAL	7083	4637	751	63	496	631	13661	13683

PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

Table 3 Traffic Vehicle Count at Golf Course Road on Monday (combining traffic in both directions)

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU/Hr.
8AM-9AM	1101	1355	170	16	170	67	2879	2741
9AM-10AM	1087	1421	179	11	64	48	2810	2586
10AM-11AM	1039	1288	194	6	103	120	2750	2659
11AM-12PM	961	1166	196	6	121	100	2550	2473
12PM-1PM	1062	1206	182	8	130	79	2667	2558
1PM-2PM	1152	1236	204	6	147	99	2844	2760
2PM-3PM	1072	1321	185	9	110	86	2783	2647
3PM-4PM	1033	1241	187	7	116	73	2657	2526
4PM-5PM	1172	1286	198	11	83	64	2814	2655
5PM-6PM	1238	1446	189	16	97	78	3064	2891
6PM-7PM	1359	1596	189	7	65	105	3321	3120
7PM-8PM	1326	1367	178	18	49	75	3013	2838
TOTAL	13602	15929	2251	121	1255	994	34152	32459



# PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

Table 4 Traffic Vehicle Count at CRPF Road towards Kadarpur (S side) on Sunday (11<sup>th</sup> March 2018)

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU/Hr.
8AM-9AM	387	285	39	17	30	47	805	830
9AM-10AM	442	449	47	2	39	81	1060	1072
10AM-11AM	341	425	40	0	40	31	877	831
11AM-12PM	354	375	45	2	47	26	849	816
12PM-1PM	310	335	53	1	50	26	775	754
1PM-2PM	244	284	47	1	41	22	639	621
2PM-3PM	389	330	59	3	27	21	829	797
3PM-4PM	312	477	65	3	33	19	909	842
4PM-5PM	364	544	59	3	26	15	1011	918
5PM-6PM	370	589	62	3	12	17	1053	946
6PM-7PM	342	475	41	4	23	22	907	836
7PM-8PM	347	450	41	3	19	18	878	806
TOTAL	4202	5018	598	42	387	345	10592	10076

PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

Table 5 Traffic Vehicle Count at CRPF Road towards Housing Board Colony (N side) on Sunday

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU/Hr.
8AM-9AM	557	272	13	3	33	44	922	926
9AM-10AM	455	308	34	2	33	34	866	852
10AM-11AM	473	361	44	2	32	48	960	951
11AM-12PM	514	353	31	4	24	51	977	970
12PM-1PM	472	304	47	3	28	45	899	901
1PM-2PM	498	259	64	3	32	54	910	939
2PM-3PM	543	365	42	4	32	26	1012	977
3PM-4PM	589	325	52	4	32	40	1042	1036
4PM-5PM	689	381	41	4	28	52	1195	1186
5PM-6PM	772	460	50	10	21	34	1347	1303
6PM-7PM	820	385	63	3	19	34	1324	1292
7PM-8PM	919	335	64	3	14	33	1368	1345
TOTAL	7301	4108	545	45	328	495	12822	12683

PRIMARY DATA COLLECTION – EXISTING TRAFFIC ASSESSMENT

Table 6 Traffic Vehicle Count at CRPF Road on Sunday (combining traffic in both directions)

Time/Mode	Cars	Two Wheelers	Auto Rickshaws	Buses	LCV	Trucks	TOTAL	PCU
8AM-9AM	944	557	52	20	63	91	1727	1756
9AM-10AM	897	757	81	4	72	115	1926	1924
10AM-11AM	814	786	84	2	72	79	1837	1783
11AM-12PM	868	728	76	6	71	77	1826	1787
12PM-1PM	782	639	100	4	78	71	1674	1655
1PM-2PM	742	543	111	4	73	76	1549	1560
2PM-3PM	932	695	101	7	59	47	1841	1775
3PM-4PM	901	802	117	7	65	59	1951	1879
4PM-5PM	1053	925	100	7	54	67	2206	2105
5PM-6PM	1142	1049	112	13	33	51	2400	2250
6PM-7PM	1162	860	104	7	42	56	2231	2129
7PM-8PM	1266	785	105	6	33	51	2246	2152
TOTAL	11503	9126	1143	87	715	840	23414	22759

# IMPACT ON ACCESS ROADS AND NEARBY JUNCTIONS

- Traffic likely to be generated by the property in a peak hours is 648 PCU. The effect of traffic increase is maximum in the peak hours – morning and evening.
- It is established that the major access to the property would be from the front gate that opens to CRPF Road and through the Golf Course Road (north side). Very limited traffic is likely to enter CRPF road due to the vacant land / projects under construction stage. It is assumed that 70% of the traffic generated would proceed to Golf Course Road and 30% to CRPF road.
- Golf Course Road (north side) is about 60 m. and CRPF road is also 60 m. (east side).
- Hence capacity for both roads assumed as per the enhanced lane configuration.
- Estimates in Table 18 proves that the access roads would not have any significant reduction in level of service due to the traffic generated by the project.

ESTIMATED INCREASE IN ACCESS ROAD TRAFFIC DUE TO PROPOSED PROJECT

	Present peak traffic volume	Traffic volume in 2022 – 4% growth	Generated traffic due to other developments near by area	Capacity	V/C Ratio without project	Additional traffic due to project	V/C Ratio with project	Remark
	(PCU/hour)							
CRPF Road (E side)	538	655	40	1200	0.58	65	0.63	No major impact on level of services
Golf Course Road (N side)	3120	3796	400	5400	0.78	583	0.88	No major impact to level of services

## SUGGESTED MEASURES TO MINIMISE ADVERSE IMPACTS

Following suggestions are to further reduce the impact of traffic and improve the overall travel circulation for both residents of the property and public living in dwelling neighbouring the property.

- The entry / exit to the project site will be diverted to three or four points so as to reduce the burden on entry / exit points.
- All the roads connected with project site will be wide and bell mouth shape so that the movement of traffic in site and vicinity will be smooth.
- Promotion of bicycle and beautiful / green walk ways within the site so that the residents will use these ways for limited distance jobs.
- Promotion of other mode of transport like metro / Auto / Public buses etc. will reduce the burden of existing / proposed traffic movement.
- Providing of sufficient parking space within the project site will reduce the vehicular parking outside the site and hence ensure the smooth vehicular movement.

# GREENBELT DEVELOPMENT PLAN

- ✓ There was no existing tree at site and no cutting of existing tree from the site.
- ✓ It is proposed to develop landscape / green area in 69,884 sq. m. (about 70%) of total plot area.
- ✓ A minimum of 1 tree for every 80 sq.m. of is the norm of MoEF (i.e. 1091 trees). However, the project proponent would plant at least about 1,200 trees within the site.
- ✓ The plant species identified for greenbelt development will be planted using dug-pit technique. The pit size should be in between 45 cm x 45 cm x 45 cm to 60 cm x 60 cm x 60 cm depending on the soil quality.
- ✓ Soil proposed to be used for filling the pit to be mixed with well decomposed farm yard manure or sewage sludge at the rate of 3.6 kg (on dry weight basis). The filling of soils to be completed at least 5-10 days before the actual plantation. Healthy seedlings of identified species will be planted in each pit.
- ✓ Proper density of plants will be maintained within the greenbelt. The minimum distance between two plantations will be dependent on the choice of species and compatibility of different species to grow together. The distance will be in between 2.5 m. to 5 m. for plantation in greenbelt.

## SELECTION CRITERIA OF PLANT SPECIES FOR GREEN BELT DEVELOPMENT

- ✓ Selection of the plant species will based on their adaptability to the existing geographical conditions and the vegetation composition of the region.
- ✓ More emphasis will be given to native plant species with excellent canopy cover.
- ✓ Bird and insect attracting tree species, trees with high foliage density, leaves with larger leaf area etc. are the other criteria of selection.

## GREENBELT DEVELOPMENT PLAN

### RECOMMENDATIONS :-

- As far as possible, all the plant species identified from the site will be protected as part of the landscaping.
- The landscaping will include fruit bearing trees like Ficus sp, Muntingia calabura, Trema orientalis (Indian charcoal tree) etc. to attract birds. A bird bath will be provided in the garden which in turn helps the birds to get water during summer season.
- For the development of a good diversity of butterflies, a butterfly garden with the suitable host and nectar plants will be made.
- The storm water runoff will be discharged to the public drain only after de-siltation.





**Corporate Environment Responsibility (CER)  
O.M. dt. 01-05-2018**

- The capital investment of the project is Rs. 1,193 Crores.
- In compliance to O.M. F.No. 22-65/2017-IA.III dated 01-05-2018, the project proponent has set apart an amount equivalent Rs. 2.9825 Crores (0.25% of the project cost) for delivering the Corporate Environment Responsibility (CER) activities.
- The CER activities includes :-
  - i. Promotion of Education
  - ii. Health & Medical care
  - iii. Solid waste management facility
  - iv. Rain water harvesting
  - v. Avenue Plantation