

ESTIMATE FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR PROPOSED PLAN OF AFFORDABLE GROUP HOUSING SCHEME

PROJECT BRIEF

M/s Suncity Projects have got the License to build an Affordable Group Housing on a 10 Acre land at Sector 76, Gurugram. The project is going to be certified for IGBC Gold Rated Building. 24 mtr Sector roads divide the Site into 3 pockets – POCKET 'A', 'B' & 'C'. Common Services are being planned for these and the crossings at the Sector Road will be specially addressed.

The project entails the following:

- 1464 Apartments all of which are 2 BHK having a Carpet area of 54~59 Smt each approx.
- A Commercial Arcade at the Ground Floor of the Towers and a couple of independent Blocks
- A Community Centre & Creche of 2000 sft each.

Each of these Systems have been described in detail in the following pages.

WATER SUPPLY

- The Source of water supply shall be HUDA Water Supply connection. It has been proposed to construct underground water tank as per the capacity attached in water load chart for Domestic and Other Purpose. A common Underground Storage of Fire, Raw & Treated water of adequate capacity with suitable size of pumps shall be provided in the Pump Room in Pocket 'B'. The Fire pipes shall be provided with an additional redundant loop connection at each Sector road crossing.
- **Water Supply Distribution System** – Domestic & flushing water shall be lifted to the overhead terrace tanks from where the water shall be supplied by gravity. As per NBC 2016 a Combined Distribution System is to be provided. In this system a combination of gravity and pressurized distribution is adopted. A few upper floor (14/13/12) are provided with a pressure booster pumping system to achieve the desired residual pressure. The lower floors are to be provided with the water balance pressure reducing valve to restrain pressure to upper limit. The OH Tanks for Commercials to be provided on their respective terraces as per Municipal Sanction.
- As/ NBC minimum recommended capacities, the underground storage tank capacity (Raw + Domestic) shall be 0.67 times of one day water requirement for Housing Towers & Commercial. The underground storage tank capacity (Recycled water placed near STP) shall also be 0.67 times of one day water requirement for Housing Towers & Commercial. The overhead storage tank capacity (for domestic) shall be 33% of one day water requirement & for flushing water over head tank capacity will also be 33% of one day requirement.

SEWERAGE SYSTEM

We have Design / Provide internal sewer and its connection to the proposed STP. A common STP of 940 KLD shall be provided in Pocket 'B' with Underground storage Tank for Treated Water. Treated water from STP i.e. Non-Potable water shall be used in Road washing, Landscaping or Garden Hydrant, Flushing etc. or other designated areas. **Since the STP Treated water is proposed to be used for Flushing by adopting Dual Plumbing as per norms, it is recommended to additionally provide Ultra Filtration or ozonizer to take care of the colour and odour of the treated water** and Anoxic Tank for treating Ammonia Nitrate as per new CPCB / NGT norms.

This system have been designed taking into consideration that 75% of water supply will reach the sewer multiplied by factor 3 to give the peak rate of flow.

Pipe running sewer are designed for running ½ full.

Minimum size of the sewer should be 200mm.

Minimum Velocities designed to ensure non silting velocity

Upto 400 mm Dia - 1m/sec.

Above 400mm Dia. - 0.80m/sec.



A design calculation chart is as per ANNEX

STORM WATER DRAINAGE

In general, the rain water from terraces and other open areas and decks shall be collected through Rain water Down take pipes and connected to catch basins. The Rain water from hard courts and landscaped area shall be collected by network open saucer drains/Pipe System and connected to the storm water manholes/channels in the complex. Provision shall be made for Rain Water Harvesting as required by the CGWA guidelines and EIA Norms .Overflow connection shall also be provided to connect excess storm water runoff in case of sudden high down pour by laying a storm water line from the proposed site and will be connected to main drain line on HUDA sector road.

Rainfall intensity for residential sectors is 1/4"hour.

Minimum Velocity

Upto 400mm Dia 0.8m/sec.

Above 400mm Dia 0.6m/sec.

Maximum velocity in case of RCC hume pipes should be 2.50m/s.

SPECIFICATION

The Work will be carried out in accordance with the standards specification of P.H as laid down by Haryana Govt./HUDA

ROADS

Cost of road has been the estimates

STREET LIGHTING

Provision for lighting on the surrounding area has been made.

HORTICULTURE

Estimates and details of plantation, Landscaping, signages etc has been included.

RATES

The estimate has been based on the present market rates.

COST

The cost of the scheme, including cost of all the services works out to be Rs.-_____.

Including 3% contingencies and 49% departmental charges. Price escalation, unforeseen, Admin Charges.

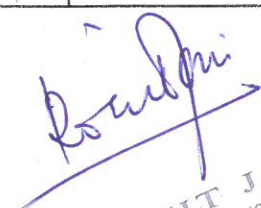
For. SUNCITY PROJECTS PVT. LTD.

Authorized Signatory

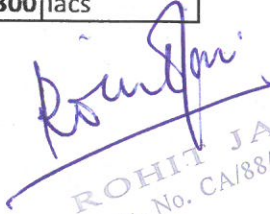



ESTIMATE FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR PROPOSED PLAN OF AFFORDABLE GROUP
HOUSING SCHEME

			AMOUNT IN LAKHS	
	SUB WORK NO. I	WATER SUPPLY	300	
	SUB WORK NO. II	SEWERAGE SCHEME	270	
	SUB WORK NO. III	STORM WATER DRAINAGE	100	
	SUB WORK NO. IV	ROAD NETWORK	340	
	SUB WORK NO. V	STREET LIGHTING	19	
	SUB WORK NO. VI	HORTICULTRE	6	
	SUB WORK NO. VII	MAINTENANCE OF SERVICES FOR 10 YEARS INCLUDING REPAIRING OF ROAD FOR 1ST 5 YEARS (AS PER HUDA NORMS)	450	
		TOTAL	1,485	
	AUTHORISED SIGNATORY			


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ESTIMATE FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR PROPOSED PLAN OF AFFORDABLE GROUP HOUSING SCHEME			
	SUB WORK NO -01 (ABSTRACT OF COST)		
	WATER SUPPLY		
			AMOUNT (RS.)
1	SUB HEAD NO. 01	HEAD WORKS	56,14,000
2	SUB HEAD NO. 02	PUMPING MACHINERY	89,50,000
	SUB HEAD NO. 03	RISING MAIN (DOMESTIC+FLUSHIN WATER SUPPLY)	28,12,000
	SUB HEAD NO. 04	FIRE RING MAIN	18,75,000
	SUB HEAD NO. 05	IRRIGATION	5,80,000
		TOTAL	1,98,31,000
	SUB WORK NO. VII	ADD 3% CONTIGENCIES & PH CHARGES	5,94,930
		TOTAL	2,04,25,930
		ADD 49% DEPARTMENTAL CHARGES, PRICE ESCALATION, UNFORESSEN, ADMIN	1,00,08,706
		TOTAL	3,04,34,636
		SAY	300 lacs

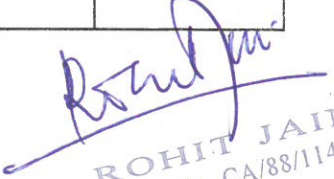

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	SUB WORK NO -01 SUB HEAD NO -01		HEAD WORKS	
S.NO	DESCRIPTION	QUANTITY	RATE "RS"	AMOUNT "RS"
6	Construction of UG Tank 1604 KL (fire 2No-75KI + 2no Raw 123KI+153KI +2No Domestic 123KI+153KI + Flushing 350KL)	1604	3500	5,614,000
	ADD 49% DEPARTMENTAL CHARGES, PRICE ESCALATION, UNFORESSEEN, ADMIN			
		TOTAL		5,614,000
		SAY		56 lac

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	SUB WORK NO -01 SUB HEAD NO -02		PUMPING MACHINERY WATER SUPPLY & FIRE FIGHTING	
S.NO	DESCRIPTION	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing and installing electricity driven pumping set capable of delivering 500lpm against a total head 70M complete with motor and its accessories. For Domestic	3	275000	825,000
2	Providing and installing electricity driven pumping set capable of delivering 500lpm against a total head 70M complete with motor and its accessories. For Flushing	2	250000	500,000
3	Provision and installing 160KVA DG set each for common area, lifts, External light etc	2	1500000	3,000,000
4	Providing and installing pumping set of following capacities for fire protection			
	180 LPM	2	75000	150,000
	2280 LPM at 125M head DG pump	2	850000	1,700,000
	2280 LPM at 125M head Hydrant pump	2	700000	1,400,000
5	Provision for foundation and erection of pumping machinery (LS)		125000	125,000
6	Provision for pipes, valves and special inside boosting chamber (LS)		350000	350,000
7	Provision of electrical panel connection for pumps (fire + Water) (LS)		750000	750,000
8	Provision for carriage of material and other unforeseen items etc (LS)		150000	150,000
			TOTAL "RS"	8,950,000
	Carry Over to Final Abstract of Cost			8,950,000


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**ESTIMATE FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR PROPOSED PLAN OF AFFORDABLE GROUP
HOUSING SCHEME**

	SUB WORK NO -01 SUB HEAD NO -03			WATER SUPPLY RISING MAIN DOMESTIC & FLUSHING	
S.NO	DESCRIPTION	UNIT	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing laying, joiting and testing pipeline complete in all respect.				
i	100MM dia GI pipe	Mtr.	1300	950	1,235,000
ii	65MM dia GI pipe	Mtr.	325	600	195,000
2	Providing, laying and testing pipe lines including cost of complete in all respect. (From HUDA supply) 100MM dia.	Mtr.	200	1050	210,000
3	Providing and fixing indicating plates for sluice valve and air valves.	No.	6	15000	90,000
4	Provision of sluice valve inluding cost of surface bos and masonary chamber etc. complee in all respect. 100mm dia.				
	100 mm Dia	No	10	15000	150,000
	65 mm Dia	No	24	8000	192,000
5	Providing and fixing of air release valve and scour valve	No.	1	15000	15,000
6	Provisio of carriage material and other unforeseen items (L/S)			200000	200,000
7	Provision of road cutting and making good to orignal condition (LS)			150000	150,000
8	Making watr supply connection on master road. (L.S)			250000	250,000
9	Provision of water meter			125000	125,000
				TOTAL "RS"	2,812,000
	Carry Over to Final Abstract of Cost				2,812,000

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SCHEME

	SUB WORK NO -01 SUB HEAD NO -04			FIRE RING MAIN	
S.NO	DESCRIPTION	UNIT	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing laying, joiting and testing MS pipe lines for fire rising main				
i	150mm Dia	Mtr.	750	1700	1,275,000
ii	80mm Dia	Mtr.	20	750	15,000
2	Providing and fixing of valve 150mm Dia	Mtr.	2	15000	30,000
3	Providing and fixing fire Brigade and draw off point.	No.	6	15000	90,000
4	Providing for carriage of material as other unforeseen items (LS)			250000	250,000
5	Providing for indicating plates	No.	10	1500	15,000
6	Provision for road cutting and making good to its original condition (LS)			200000	200,000
				TOTAL "RS"	1,875,000
	Carry Over to Final Abstract of Cost				1,875,000

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ESTIMATE FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR PROPOSED PLAN OF AFFORDABLE GROUP HOUSING SCHEME					
	SUB WORK NO -01 SUB HEAD NO -06			IRRIGATION	
S.NO	DESCRIPTION	UNIT	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing laying, joiting and testing UPVC pipe line confirming to is 4985 including cost of Excavation etc. complete in all respect.				
i	32mm Dia	Mtr.	100	200	20,000
ii	50mm Dia	Mtr.	100	400	40,000
iii	65mm Dia	Mtr.	100	500	50,000
iv	100mm Dia	Mtr.	400	550	220,000
2	Providing and fixing 32 mm dia Irrigation hydrant valve complete in all respect.	No	20	5500	110,000
3	Provision for carriage of Materials and other as Unforseen items. L.S			50000	50,000
4	Provision for cutting of roads making goods to its in original condition. LS			75000	75,000
5	Providing and fixing of air release valve and scour valve L.S			15000	15,000
				TOTAL "RS"	580,000
	Carry Over to Final Abstract of Cost		SAY	Rs	580,000

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SUB WORK II - SEWERAGE SCHEME

S.NO	DESCRIPTION	UNIT	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing , jointing , cutting and testing and lowering into including cost of Excavation ,bed concrete, cost of manholes etc.				
a)	S.W pipes 300 mm i/d avg. Depth 2-6 M	Mtr.	1000	2300	2,300,000
2	Provision for carriage for carriage of materials and other unforeseen items (LS)				200,000
3	Provision for vent pipe as per PH standards (LS)				150,000
4	Provision for lighting and watching.				50,000
5	Provision for making HUDA /connection with ecisting sewer on master road (LS)				200,000
6	Cost of 940 KL STP (LS) 0.94 MLD upto territory level (LS)				14,100,000
7	Provision for S.W pipe 150mm dia from STP to outfall 150 mm dia @ rs 2200/- , 150 meters length	Mtr.			330,000
8	Provision of road cutting and making good to orignal condition (LS)				250,000
				TOTAL	17,580,000
				ADD: 3% contingencies & PH Charges	527,400
				TOTAL	18,107,400
				ADD: 49% Departmental charges , price escalation unforeseen admin	8,872,626
				TOTAL	26,980,026
				SAY	270 lacs

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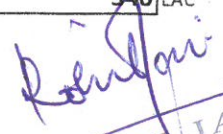
SUB WORK III - STORM WATER SCHEME

SAY 100 lac

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PROJECT	PLAN OF AFFORDABLE GROUP HOUSING SCHEME MEASURING OF 10.0 ACRES (LIESENCE NO.34 OF 2018 OF DATED 31.05.2018) IN SECTOR-76 GURGAON MANESER URBEN COMPLEX BEING DEVELOPED BY SUNCITY PROJECTS PVT. LTD					
Sub Work IV- ROAD WATER NETWORK						
NO.	DESCRIPTION	QUANTITY	UNIT	RATE (RS/UNIT)		AMOUNT
1	Provision for levelling and earth filling as Per site condition	10.	ACRE	150000	Rs.	1,500,000
2	Cost of Road Lay:					
(i)	260 mm thick GSB					
(ii)	250 mm thick WMM					
(iii)	50 mm thick BM					
(iv)	42 mm, thick BC					
	AS PER REVISED NORMS OF HUDA					
	Road area + Pavement area + Parking area	16158.9	SQM	1200	Rs.	19,390,680
3	Provision for kerb and channels of CC (1:1.5:3)	1180	MTRS	600	Rs.	708,000
4	Provision for making approach to each block and Pavement LS				Rs.	300,000
5	Provision for guide map and other unforeseen items (LS)				Rs.	50,000
6	Provision for traffic light				Rs.	100,000
7	Provision for carriage of Material (LS)				Rs.	100,000
				TOTAL	Rs.	22,148,680
	ADD 3% CONTIGENCIES & PE CHARGES				Rs.	664,460
				TOTAL	Rs.	22,813,140
	ADD 49% OF Departmental charges , price excalation unforeseen , Admin.				Rs.	11,178,439
				TOTAL	Rs.	33,991,579
SAY						340


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SUB WORK V - STREET LIGHTING

S.NO	DESCRIPTION	UNIT	QUANTITY	RATE "RS"	AMOUNT "RS"
1	Providing for street lighting with underground cabling on road as per standard specification of HBVN 10.0 acres @ 125000/-				1,250,000
				TOTAL	1,250,000
				ADD: 3% contingencies & PH Charges	37,500
				TOTAL	1,287,500
				ADD: 49% Departmental charges , price escalation unforeseen admin	630,875
				TOTAL	1,918,375
				SAY	19 lac

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PROJECT	PLAN OF AFFORDABLE GROUP HOUSING SCHEME MEASURING OF 10.0 ACRES (LIESENCE NO.34 OF 2018 OF DATED 31.05.2018) IN SECTOR-76 GURGAON MANESER URBEN COMPLEX BEING DEVELOPED BY SUNCITY PROJECTS PVT. LTD				
SUB WORK VI - HOTICULTURE					
NO.	DESCRIPTION	QUANTITY		RATE	AMOUNT
1	Development of lawn aera (organized green of 6380.17 sqm OR 1.6 ACRE)				
a)	Trenching the ordinary soil up to dept of 60 cm including removal and stacking serviceable material and disposing of by spreading and levelling within a lead of 50 mm and making up the trenches area to proper leads by filling wtith earth mixed with manure before and after flooding trench with water including cost of imported earth manure				
b)	Rough dressing of turfed aera				
c)	Grassing with " DOOB GRASS " including watering and maintenance of laws for 30 days till the grass from A thick lawn , free from weeds and fit for moving in rows 7.5 M Apart in either direction (Acres)	1.6 ACRE		150000	Rs. 240,000
2	Provision of trees , guards and planting trees along road at 12 M intervals				
	TOTAL ROAD LENGTH	1180			
	NO. OF TREES 1180/12	98.33			
		100	SAY		
	Additional	25			
		125	SAY		
	Excavation			60	Rs.
	Manure			90	Rs.
	Tree plant			150	Rs.
	Tree Guard			1000	Rs.
	TOTAL			1300	Rs.
	125 Nos @ 1300/-				Rs. 162,500
				TOTAL	Rs. 402,500
	ADD 3% contingencies P.H. charges				Rs. 12,075
		TOTAL		TOTAL	Rs. 414,575
	Add 49 % Deptt. Charges, Price escalation Unforseen, Admn.				Rs. 203,142
		TOTAL			
				TOTAL	Rs. 617,717
				SAY	6

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PROJECT	PLAN OF AFFORDABLE GROUP HOUSING SCHEME MEASURING OF 10.0 ACRES (LIESENCE NO.34 OF 2018 OF DATED 31.05.2018) IN SECTOR-76 GURGAON MANESER URBEN COMPLEX BEING DEVELOPED BY SUNCITY PROJECTS PVT. LTD	
Sub Work VII- M/C CHARGES FOR SERVICES & RESURFACING OF ROADS		
S. No.	Description	Amount (lacs Rs.)
1	Providing of M/C charges for water supply, Storm water drainage, sewerage, Roads, Street lighting, Horticulture etc. complete in all aspect, including Operational and establishment charges as per HUDA norms for 10 years completion 10.0 acres @7.5 lakhs per acre	75.00
2	Providing of resurfacing of roads after 5 years 32 mm thick BC 16158.9 sqm @ Rs.600/sqm	96.95
3	Providing of resurfacing of roads after 10 years with 40 mm DBM & 32 mm thick BC. 16158.9 sqm @ Rs.750/sqm	121.19
	Total	293.14
	Add 3 % contingencies & P E Charges	8.79
	Total	301.93
	Add 49 % Deptt. Charges, Price escalation Unforseen, Admn.	147.95
	Total	449.88
	SAY Rs. (LACS)	450 LACS

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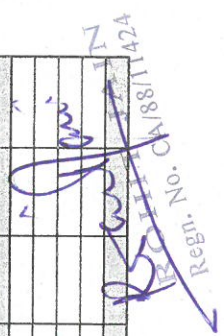
Affordable Housing at Sector 76 for M/s Suncity Projects Ltd.										
WATER REQUIREMENT CALCULATION (AS PER HUDA NORMS)										
S.NO.	USAGE	Area	Total No. of Units	Population @ Per Person Per Unit As per NBC	Total Population	Total Water Demand (LPD) per person	Gross Water Requirements (KLD)	Domestic Water Requirement (KLD)	Flushing Water Requirement (KLD)	Waste Water @ 70% (Dom) & 100% (Flu.)
	Residents (LPCD)						A	B=70% OF A	C=30% OF A	
	Creche/Community Hall/ Commercial (LPCD)						155.25	108.68	46.58	70%
							45	31.50	13.50	70%
A APARTMENTS										
1	RESIDENTS		1464	5	7320	155.25	1136.43	795.50	340.93	897.78
	TOTAL FOR APARTMENTS				7,320		1,136.43	795.50	340.93	897.78
B CRECHE & COMMUNITY										
1	CRECHE	189.75		1P/3 Sq.Mtr	63	45	2.84	1.98	0.85	2.24
2	COMMUNITY	189.75		1P/3 Sq.Mtr	63	45	2.84	1.98	0.85	2.24
	TOTAL FOR CRECHE & COMMUNITY				126		5.67	3.96	1.70	4.47
C COMMERCIAL										
Pocket A										
1	COMMERICAL (GF)	666.26		1P/3 Sq.Mtr	222	45	9.99	6.99	3.00	7.89
2	COMMERICAL (FF)	253.78		1P/6 Sq.Mtr	42	45	1.89	1.32	0.57	1.49
Pocket B										
1	COMMERICAL (GF)	1525.83		1P/3 Sq.Mtr	509	45	22.91	16.03	6.87	18.09
2	COMMERICAL (FF)	0.00		1P/6 Sq.Mtr	0	45	0.00	0.00	0.00	0.00
Pocket C										
1	COMMERICAL (GF)	580.85		1P/3 Sq.Mtr	194	45	8.73	6.11	2.62	6.90
2	COMMERICAL (FF)	0		1P/6 Sq.Mtr	0	45	0.00	0.00	0.00	0.00
	TOTAL FOR COMMERCIAL	3026.72			967		43.52	30.45	13.06	34.38
	TOTAL OF THE COMPLEX				8,413		1,185.62	829.91	355.69	936.63
	TOTAL DOMESTIC WATER REQUIREMENT PER DAY (NON-RECYCLED WATER)						KLD	829.91		
						SAY	KLD	830.00		
	TOTAL FLUSHING WATER REQUIREMENT PER DAY (RECYCLED WATER)						KLD		355.69	
						SAY	KLD		360.00	
	CAPACITY OF SEWERAGE TREATMENT PLANT @ 100% OF WASTE WATER GENERATED AS PER HUDA NORMS									936.63
						SAY	KLD			940.00
	RECYCLED WATER AVAILABLE FROM STP @ 80% OF WASTE WATER GENERATED						KLD		752.00	
	WATER REQUIREMENT FOR HORTICULTURE - 6380.17Smt @ 3.1 LTR/Sq.Mtr (During Summer)						KLD		19.78	
	MAKE-UP WATER REQUIREMENTS FOR COOLING TOWERS								Nil	

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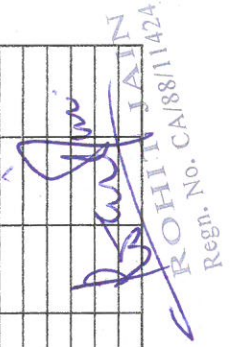
Affordable Housing at Sector 76 for M/s Suncity Projects Ltd.

BREAK UP OF WATER REQUIREMENT CALCULATION (AS PER HUDA NORMS)

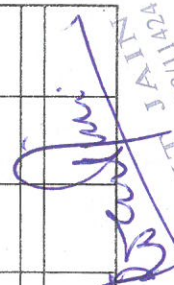
TOWER	S.NO. USAGE	Area	Total No. of Units	Population @ Per Person Per Unit As per NBC	Total Population	Total Water Demand (LPD) per person	Gross Water Requirements (KLD)	Domestic Water Requirement (KLD)	Flushing Water Requirement (KLD)	Waste Water @ 70% (Dom) & 100% (Flu.)	Fire OHT (KL)	Domestic OHT (KL) @ 33% of 1 day requirement	Flushing OHT (KL) @ 33% of 1 day requirement	Fire UGT (KL)	Raw Water UGT (KL) @ 33% of 1 day requirement	Domestic UGT (KL) @ 33% of 1 day requirement	Flushing UGT (KL) @ 67% of 1 day requirement
		Residents (LPD) Creche/Community Hall/ Commercial (LPD)					A	B=70% OF A	C=30% OF A							33.3%	67%
							155.25	108.68	46.58	70%						33.3%	
							45	31.50	13.50	70%							
Pocket A																	
Tower A1	APARTMENTS																
	1 RESIDENTS		112	5	560	155.25	86.94	60.86	26.08	68.68							
	TOTAL FOR APARTMENTS				560		86.94	60.86	26.08	68.68							
	COMMERCIAL																
	1 COMMERCIAL (GF)	309.81		1P/3 Sq.Mtr	103	45.00	4.64	3.24	1.39	3.66							
	2 COMMERCIAL (FF)	253.78		1P/6 Sq.Mtr	42	45.00	1.89	1.32	0.57	1.49							
	TOTAL FOR COMMERCIAL	563.59			145		6.53	4.56	1.96	5.15							
	CRECHE & COMMUNITY																
	1 CRECHE	189.75		1P/3 Sq.Mtr	63	45.00	2.84	1.98	0.85	2.24							
	2 COMMUNITY	189.75		1P/3 Sq.Mtr	63	45.00	2.84	1.98	0.85	2.24							
	TOTAL FOR CRECHE & COMMUNITY				126		5.67	3.96	1.70	4.47							
	TOTAL FOR TOWER A1				831		99.14	69.38	29.74	78.31	5	23	10				
Tower A2	APARTMENTS																
	1 RESIDENTS		115	5	575	155.25	89.27	62.49	26.78	70.52							
	TOTAL FOR APARTMENTS				575		89.27	62.49	26.78	70.52							
	COMMERCIAL																
	1 COMMERCIAL (GF)	356.45		1P/3 Sq.Mtr	119	45.00	5.36	3.75	1.61	4.24							
	2 COMMERCIAL (FF)			1P/6 Sq.Mtr	0	45.00	0.00	0.00	0.00	0.00							
	TOTAL FOR COMMERCIAL	356.45			119		5.36	3.75	1.61	4.24							
	TOTAL FOR TOWER A2				694		94.63	66.24	28.39	74.76	5	22	9				
	TOTAL FOR POCKET A				1525		193.76	135.62	58.13	153.06							
Pocket B																	
Tower B1	APARTMENTS																
	1 RESIDENTS		131	5	655	155.25	101.69	71.18	30.51	80.34							
	TOTAL FOR APARTMENTS				655		101.69	71.18	30.51	80.34							
	TOTAL FOR TOWER B1				655		102	71	31	80	5	23	10				
Tower B2	APARTMENTS																
	1 RESIDENTS		131	5	655	155.25	101.69	71.18	30.51	80.34							
	TOTAL FOR APARTMENTS				655		101.69	71.18	30.51	80.34							
	TOTAL FOR TOWER B2				655		102	71	31	80	5	23	10				


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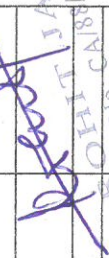
TOWER	S.NO.	USAGE	Area	Total No. of Units	Population @ Per Person Per Unit As per NBC	Total Population	Total Water Demand (LPD) per person	Gross Water Requirements (KLD)	Domestic Water Requirement (KLD)	Flushing Water Requirement (KLD)	Waste Water @ 70% (Dom) & 100% (Flu.)	Fire OHT (KL)	Domestic c OHT (KL) @ 33% of 1 day requirement	Flushing OHT (KL) @ 33% of 1 day requirement	Fire UGT (KL)	Raw Water UGT (KL) @ 33% of 1 day requirement	Domestic c UGT (KL) @ 33% of 1 day requirement	Flushing UGT (KL) @ 67% of 1 day requirement
Tower B3		APARTMENTS																
	1	RESIDENTS		131	5	655	155.25	101.69	71.18	30.51	80.34							
		TOTAL FOR APARTMENTS				655		101.69	71.18	30.51	80.34							
		TOTAL FOR TOWER B3				655		102	71	31	80	5	23	10				
Commercial in Pocket B		COMMERCIAL																
	1	COMMERCIAL (GF)	1525.8		1P/3 Sq.Mtr	509	45.00	22.91	16.03	6.87	18.09							
	2	COMMERCIAL (FF)			1P/6 Sq.Mtr	0	45.00	0.00	0.00	0.00	0.00							
		TOTAL FOR COMMERCIAL	1525.8			509		22.91	16.03	6.87	18.09							
		TOTAL FOR COMM. BETWEEN T3 & T4				509		22.91	16.03	6.87	18.09		5	2				
Tower B4		APARTMENTS																
	1	RESIDENTS		131	5	655	155.25	101.69	71.18	30.51	80.34							
		TOTAL FOR APARTMENTS				655		101.69	71.18	30.51	80.34							
		TOTAL FOR TOWER B4				655		102	71	31	80	5	23	10				
Tower B5		APARTMENTS																
	1	RESIDENTS		131	5	655	155.25	101.69	71.18	30.51	80.34							
		TOTAL FOR APARTMENTS				655		101.69	71.18	30.51	80.34							
		TOTAL FOR TOWER B5				655		102	71	31	80	5	23	10				
Tower B6		APARTMENTS																
	1	RESIDENTS		118	5	590	155.25	91.6	64.12	27.48	72.36							
		TOTAL FOR APARTMENTS				590		91.60	64.12	27.48	72.36							
		TOTAL FOR TOWER B6				590		91.60	64.12	27.48	72.36	5	21	9				
Tower B7		APARTMENTS																
	1	RESIDENTS		133	5	665	155.25	103.24	72.27	30.97	81.56							
		TOTAL FOR APARTMENTS				665		103.24	72.27	30.97	81.56							
		TOTAL FOR TOWER B7				665		103.24	72.27	30.97	81.56	5	24	10				
Tower B8		APARTMENTS																
	1	RESIDENTS		133	5	665	155.25	103.24	72.27	30.97	81.56							
		TOTAL FOR APARTMENTS				665		103.24	72.27	30.97	81.56							
		TOTAL FOR TOWER B8				665		103.24	72.27	30.97	81.56	5	24	10				
		TOTAL FOR POCKET B				5195		806.53	564.56	241.97	637.16							
Pocket C																		
Tower C1		APARTMENTS																
	1	RESIDENTS		99	5	495	155.25	76.85	53.79	23.05	60.70							
		TOTAL FOR APARTMENTS				495		76.85	53.79	23.05	60.70							
		COMMERCIAL																
	1	COMMERCIAL (GF)	219.08		1P/3 Sq.Mtr	73	45.00	3.29	2.30	0.99	2.60							


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TOWER	S.NO.	USAGE	Area	Total No. of Units	Population @ Per Person Per Unit As per NBC	Total Population	Total Water Demand (LPD) per person	Gross Water Requirements (KLD)	Domestic Water Requirement (KLD)	Flushing Water Requirement (KLD)	Waste Water @ 70% (Dom) & 100% (Flu.)	Fire OHT (KL)	Domestic OHT (KL) @ 33% of 1 day requirement	Flushing OHT (KL) @ 33% of 1 day requirement	Fire UGT (KL)	Raw Water UGT (KL) @ 33% of 1 day requirement	Domestic UGT (KL) @ 33% of 1 day requirement	Flushing UGT (KL) @ 67% of 1 day requirement
	2	COMMERCIAL (FF)			1P/6 Sq.Mtr	0	45.00	0.00	0.00	0.00	0.00							
		TOTAL FOR COMMERCIAL	219.08			73		3.29	2.30	0.99	2.60							
		TOTAL FOR TOWER C1				568		80.14	56.09	24.04	63.30	5	19	8				
		APARTMENTS																
	1	RESIDENTS		99	5	495	155.25	76.85	53.79	23.05	60.70							
		TOTAL FOR APARTMENTS				495		76.85	53.79	23.05	60.70							
		COMMERCIAL																
	1	COMMERCIAL (GF)	361.77		1P/3 Sq.Mtr	121	45.00	5.45	3.81	1.63	4.30							
	2	COMMERCIAL (FF)			1P/6 Sq.Mtr	0	45.00	0.00	0.00	0.00	0.00							
		TOTAL FOR COMMERCIAL	361.77			121		5.45	3.81	1.63	4.30							
		TOTAL FOR TOWER C2				616		82.30	57.60	24.68	65.00	5	19	8				
		TOTAL FOR POCKET C				1184		162.43	113.69	48.72	128.30							
		TOTAL OF THE COMPLEX		1464		7,904		1,162.72	813.87	348.82	918.53				150	271	271	234
		TOTAL DOMESTIC WATER REQUIREMENT PER DAY (NON-RECYCLE WATER)						KLD	813.87									
		CAPACITY OF STP @ 100% OF WASTE WATER GENERATED AS PER HUDA NORMS					SAY	KLD	810.00									
		RECYCLE WATER AVAILABLE FROM STP @ 80% OF WASTE WATER GENERATED						KLD		734.82								
		WATER REQUIREMENT FOR HORTICULTURE - 6489.03 Smt@ 3.1 LTR/Sq.Mtr (During Summer)						KLD		20.12								
		MAKE-UP WATER REQUIREMENTS FOR COOLING TOWERS								NIL								


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a	SUPPLY DURATION	20 Hrs			
b	Line of flow	0.38 Cum/min			
c	Proposed line dia	100 mm			
d	Flow Velocity	0.81 Mtr.			
e	Friction Head Loss/1000M	13.47 Mtr			
d	Length of line	200 Mtr			
e	Total Head Loss	2.7 mtr			
1	Pumps for fire protection	Location	Nos.	Discharge (LPM)	Head in Mtr.
a	Hydrant Pump	Pump room	2	2280	120
b	Diesel Engine Driven Pump	Pump room	2	2280	120
c	Jockey pump	Pump room	2	180	120
2	Pumps for domestic water supply				
	Pumping Duration per day		8 Hrs		
	Clear Head required		55 Mtr.		
	Friction Head Loss		15 Mtr.		
	Total Head losses		70 Mtr.		
	Discharge of pump		950 LPM		
	Power required		24.62 HP		
			25 HP say		
	It is proposed to provide domestic water transfer pumps(2W+1S) with capacity of 475 lpm & 70M head				
3	Pumps for flushing water supply				
	Pumping Duration per day		8 Hrs		
	Clear Head required		55 Mtr.		
	Friction Head Loss		15 Mtr.		
	Total Head losses		70 Mtr.		
	Discharge of pump		500 LPM		
	Power required		12.96 HP		
			15 HP say		
	It is proposed to provide domestic water transfer pumps(2W+1S) with capacity of 475 lpm & 70M head				
	Capacity of DG set as per electrical load below	2no 320 KVA			


 ROHIT JAIN
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load chart (Pumps+Common Area Emergency Light+Lifts etc)						
	Description	QTY	Load in kw	Connected load	D.F	Max Demand
	GENERAL LIFT - 12 Nos @ 7KW	12	7	84	0.5	42
	SERVICE LIFT -12 Nos @ 10KW	12	8	96	0.5	48
	STILT LIGHTING	12	2	24	0.5	12
	EXTERNAL LIGHT (2 KW / ACRE)	7.56	2	15.12	0.5	7.56
	SUB STATION AREA	1	5	5	0.5	2.5
	COMMON AREA CORRIDOR, LIFT LOBBY, STAIRCASE	12	1.5	18	0.5	9
	JOCKEY (2 SETS)	2	7	14	0.5	7
	WATER PUMP	1	25	25	0.5	12.5
	STP	1	45	45	0.3	13.5


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MATERIAL STATEMENT (DOMESTIC WATER SUPPLY)				
S.NO	DESCRIPTION	SIZE OF PIPE PROVIDED (MM)	LENGTH OF 100MM DIA. PIPE (M)	LENGTH OF 65MM DIA. PIPE (M)
1	RING LINE TO A1 & A2	100	144	0
2	BLK A1			65
3	BLK A2			65
4	UGT TO RING LINE UPTO BLK A1 & A2 DIVERSION	100	100	
5	RING LINE TO COMMERCIAL GENTS	65		25
5	RING LINE TO COMMERCIAL LADIES	65		25
6	RING LINE UPTO BLK A1 & A2 DIVERSION TO BLK B1	125	100	
7	RING LINE BLOCKB1	65		65
8	RING LINE BLOCKB2	65		65
9	RING LINE BLOCKB3	65		65
10	RING LINE BLOCKB4	65		65
11	RING LINE BLOCKB5	65		65
12	RING LINE BLOCKB6	65		65
13	RING LINE BLOCKB7	65		65
14	RING LINE BLOCKB8	65		65
15	RINGL LINE UPTO DIVERSION TO BLK C & B6,7,8	100	35	
16	RINGL LINE UPTO TO BLK C & B6	100	110	
17	RINGL LINE UPTO TO BLK C & B7	100	40	
18	RINGL LINE UPTO TO BLK C & B8	100	40	
19	RINGL LINE UPTO DIVERSION TO BLK C	100	129	
19	RINGL LINE TO BLK C 1	65		65
20	RINGL LINE TO BLK C 1	65		65
	SUMMARY OF PIPE LENGTH		698	830

Rohit Jain
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 Regn. No. 01/201424