CONCEPTUAL PLAN

INTRODUCTION

Chadha Infratech Limited has been incorporated under the Companies act, 1956 on 6th day of November 2007 having its registered office at D-851, IInd floor New Friends Colony, New Delhi-110065. Chadha Infratech Limited real estate sector's developing group has come forward as a developer for the development of Integrated Township at Moradabad. Moradabad Development Authority (MDA) has issued license no 1713/ MDA dated 25.01.2016 for development of Integrated Township under the purview of aforesaid Integrated Township Policy. The present project of the company aims to provide world class infrastructure to the surrounding. The Unique philosophy of integrating space with the outdoor and creating natural environment that is in perfect harmony with its surroundings defines the township project, beautifully designed and surrounded by greenery.

TYPE OF PROJECT

The project is a Construction project & falls under Category 8(b) of Building and Construction Project (As per EIA notification dated 14th September 2006 and amended to the date) and involves environmental clearance on the basis of Form 1 and Conceptual plan. **This project is independent and does not link with other projects which attract directly or indirectly any provisions of schedule of EIA notification 2006 amended to date.**

LOCATION & LINKAGES

"Integrated Township Moradabad "is on a land measuring 62.59 ha (625909.02 sq. m.) with 931931.3 sq. m. total built-up area Development of greenbelt has been planned over an area of 44865.41 sq. m, located at Village-Mangupura and Mehlakpur Mafi, near NH-24, Bypass More Moradabad, U.P. The site coordinates are shown in **Table 1**.

Table 1: Co-ordinates of the project site

Points	Latitude	Longitude
Block A (NE Side of National Highway-24)		
1	28°49'24.01"N	78°41'49.77"E
2	28°49'20.28"N	78°41'52.92"E
3	28°49'16.72"N	78°41'54.36"E
4	28°49'12.31"N	78°42'00.84"E
5	28°49'07.86"N	78°41'56.12"E

Points	Latitude	Longitude
6	28°49'19.53"N	78°41'41.08"E
7	28°49'23.35"N	78°41'44.34"E
Block B (SW Side of National Highway-24)		
A	28°49'22.48"N	78°41'18.93"E
B	28°49'21.33"N	78°41'31.63"E
C	28°49'19.08"N	78°41'28.74"E
D	28°49'14.99"N	78°41'35.15"E
E	28°49'16.54"N	78°41'41.61"E
F	28°49'10.46"N	78°41'49.89"E
G	28°49'03.47"N	78°41'42.54"E
H	28°48'55.55"N	78°41'51.67"E
I	28°48'55.17"N	78°41'47.79"E
J	28°48'54.24"N	78°41'49.44"E
K	28°48'52.27"N	78°41'43.61"E
L	28°48'47.95"N	78°41'43.15"E
M	28°48'44.38"N	78°41'38.07"E
N	28°48'50.14"N	78°41'30.38"E
O	28°48'55.74"N	78°41'35.12"E
P	28°49'05.20"N	78°41'21.52"E
Q	28°49'12.21"N	78°41'26.47"E
R	28°49'15.08"N	78°41'21.60"E
S	28°49'18.23"N	78°41'23.80"E
T	28°49'21.17"N	78°41'18.28"E

Source: Google and SOI Toposheet

The co-ordinate map is attached as **Annex I**. However, Google image of 500m radius is attached as **Annex II**, location map is attached as **Annex III**, study area map of 10 km attached as **Annex IV,** environment sensitivity map is as **Annex V**. The site is strategic for establishing an Integrated Township to have overall development in its vicinity which will provide excellent and economical housing stock to fulfill the growing demand and help in decongesting the core areas of Moradabad. It is utmost try to build it as self-contained in terms of living and recreation. The Township development of strategic priority covers rapid and time bound urban infrastructure construction, improvement and maintenance of ecological environment. The Integrated Township is a step towards fulfillment of the basic housing needs of core Moradabad city. The location of the project is 6.67 km towards NE direction from Moradabad Railway Station and 130.53 km from Hindon Airport, Ghaziabad. The detailed surrounding features of the project site are presented in **Table 2**.

Table 2: Surrounding Features of the Project Site

S. No.	Connectivity	Name	Aerial Distance and Direction from the project site
1.	Nearest Highway	NH-24	0.00 Km towards N from the project site.
2.	Nearest Railway Station	Moradabad Railway Station	6.67 km towards NE direction from the project site.
3.	Nearest Airport	Hindon Airport Ghaziabad	130.53 km towards West direction.
4.	Nearest State Boundary	U.P. Delhi Border	42.72 km, NE from the project site.
5	Nearest School	Primary School Mangupura	300 m, N from the project site.
6	Nearest College	Krishna Bal Vidya Mandir Inter College	Adjacent to the project site.
7	Nearest University	Teerthankar Mahaveer University	0.50 km, SW from the site.
8	Nearest Hospital	Bright Star Hospital	Approx. 1.20 km N from the project site.

Source: (I) Site Visit by Team; (II) Satellite Imagery of Project Area, Google earth Inc., USA

SITE SELECTION & ALTERNATIVES

The Project is a Township "Integrated Township Moradabad" for which the allotment letter was obtained on 25.01.2016 and attached as **Annex VI**.

The project is planned to be well equipped with the basic amenities such as sanitation, adequate water supply, Adequate Parking Facility, wide road to easy movement of vehicles, as well as fire safety vehicles, and power to the Group Housing Projects. The site is well connected NH-24 and Rampur Bypass Road.

PROJECT MAGNITUDE

The Project has plot area of 62.59 ha (625909.02 sq. m.) with ***931931.3*** sq. m. total built-up area. Development of greenbelt has been planned over an area of 44865.41 sq. m.

PROJECT COST

The cost of the project is Rs 369 Crores.

AREA STATEMENT

The total plot area of the project site is 625909.02 m^2. The detailed area statement including ground coverage, FAR, services and Non-FAR is elaborated in **Table 3**

Table 3: Area Statement

S.no	Description	Area in		%	FAR	FAR Area	Non FAR	Total Built-UP Area
		m2	Acres					
a	Plotted	205897.25	50.88	82.62	1.75	360320.19	144128.08	504448.26
b	Group Housing	32375.93	8.00	12.99	2.50	80939.83	32375.93	113315.76
c	EWS/LIG area	10938.55	2.70	4.39	2.00	21877.10	8750.84	30627.94
1	**Residential Area**	**249211.7**	**61.58**	**42.89**		**463137.1**	**185254.8**	**648392.0**
2	Mixed Landuse	17678.16	4.37	3.04	3.00	53034.48	21213.79	74248.27
3	Public & Semi Public	58152.69	14.37	10.01	1.50	87229.04	34891.61	122120.65
4	Commercial /Office	31132.28	7.69	5.36	2.00	62264.56	24905.82	87170.38
5	Green/ Open Space	87184.92	21.54	15.01				
6	Road	137683.8	34.02	23.7				
Net Area for Development		**581043.6**	**143.57**	**100.0**		**665665.2**	**266266.1**	**931931.3**
Area under 30 m Green Belt and Mazar		**44865.41**	**11.09**					
Gross Area for Township		**625909**	**232.29**					

Source: Project Report for "Integrated Township, Moradabad"

POPULATION DENSITY

The detailed population breakup including Staff members & visitors is given in the **Table 4**.

Table 4: Population Break-up

Plot Size A. Plotted Development	Plot Area in m²	No of Units	No. of Plots	Population
7*12	84	2	223	2230
9*18	162	4	209	4180
9.5*18	171	4	21	420
10*20	200	4	354	7080
12*24	288	4	16	320
12.5*20	250	4	84	1680
15*30	450	5	15	375
20*40	800	9	42	1890
25*50	1250	13	3	195

Sub Total			**967**	**18370**
B. Group Housing	**FAR**	**Units/ha**	**Number**	**Population**
On 18m road	1.59	250	398	1988
Mixed Group Housing	3.42	330	1127	5635
EWS LIG Units			498	2490
Sub Total			2022	10112
Total			**2989**	**28482**
Floating Population				**4272**
Commercial				**4175**
Public Semi-Public: International Higher School; Primary School				**7263**
Total				**44193**

Source: Project Report for "Integrated Township, Moradabad"

WATER CONSUMPTION

Operation Phase: It is estimated that the total water demand during the operation phase will be **5295.75 KLD,** treated water will be used for the landscaping, Flushing through Dual Plumbing Pipelines. Water Supply will be provided by the ground water. The water requirement for the project is given below in **Table 5.**

Table 5: Water Requirement during Operation Phase

S.No.	Usage Type	Measure / Unit	Water Requirement (in l/day)	Population/Area	Water Requirement in KLD	Wastewater in KLD
1	Residential	per person	135	28482	3845.10	3076.08
2	Floating Population	per person	15	4272	64.09	51.27
3	Commercial	10 m2/ person	45	4175	187.88	150.30
4	Public Semi-Public: International Higher School; Primary Schools	8 m2/ person	45	7263	326.84	261.47
5	Parks (Gardens, Green Area)	per m^2	10	87184.92	871.85	697.48
TOTAL DEMAND IN KLD					**5295.75**	**4236.60**
TOTAL DEMAND IN MLD					**5.30**	**4.24**
Wastewater Generated during Peak hour (in MLD)						**10.72**

Source: (i) Manual on norms and standards for environment clearance of large construction projects, Ministry of Environment and Forests, Government of India (iii) National Building Code of India, 2005, Bureau of Indian Standards, New Delhi. (iv)Project Report for "Integrated Township, Moradabad"

WASTEWATER TREATMENT & DISPOSAL

Operation Phase: 4236.60 KLD of wastewater will be generated during the operation phase of the project which will be treated in the Sewage Treatment Plant of approximately **5000 KL.** The detailed calculation of STP design shall be worked out in the EIA and quantity shall be rationalized.

SEWAGE TREATMENT PLANT

MBBR TECHNOLOGY

It is proposed that the treatment plant will be constructed using MBBR Technology as this technology is efficient in treatment and easy in installing. An external sewage network shall collect the sewage from all units, and flow by gravity to the proposed sewage treatment plant.

Following are the benefits of providing the Sewage Treatment Plant in the present circumstances:

- Reduced net daily water requirements, source for Horticultural purposes by utilization of the treated waste water. This shall consequently lead to a lower withdrawal from the underground aquifer water sources.
- Reduced dependence on the public utilities for water supply and sewerage systems.
- Sludge generated from the Sewage Treatment Plant shall be rich in organic content and an excellent fertilizer for horticultural purposes.

Desired treated waste water characteristics for BOD and suspended solids levels shall be as per CPCB norms. The characteristics of treated water shall depend on the quality of raw water of the system. The details for the daily load of the proposed treatment plant in project are given below in Table 6.

Table 6: Details for the Daily Load of the Proposed STP Plant

Parameters	Amount
Daily load	4236.60 KLD
Daily Average Load	176.53 KLD
Daily Average Peak Load **(2/3rd of total / 4hours)**	706.1 KLD
Duration of flow	24 hours
Temperature Maximum	46°C

Source: (i) Project Report for "Integrated Township, Moradabad"

Figure 1: STP Process Flow Diagram

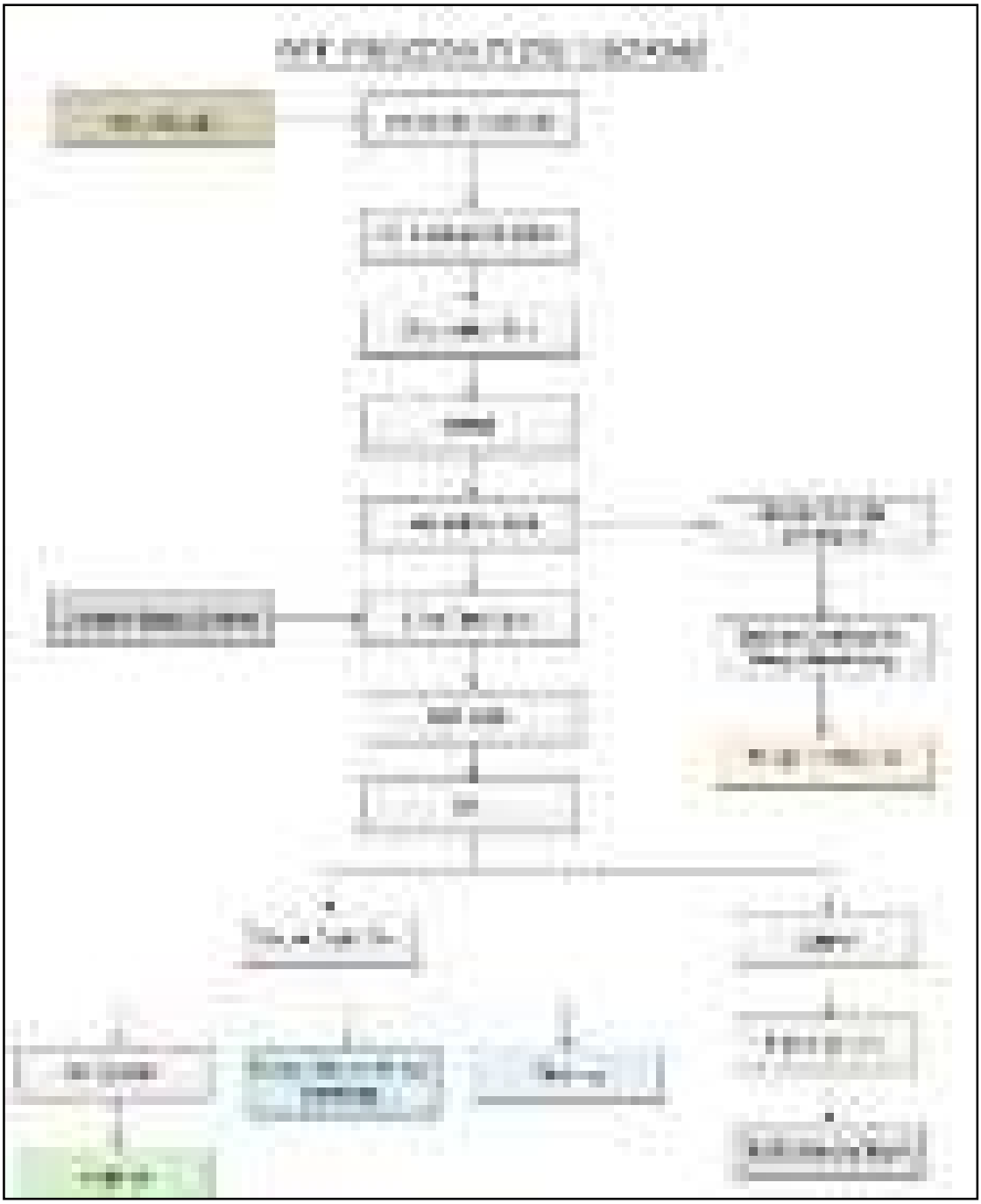
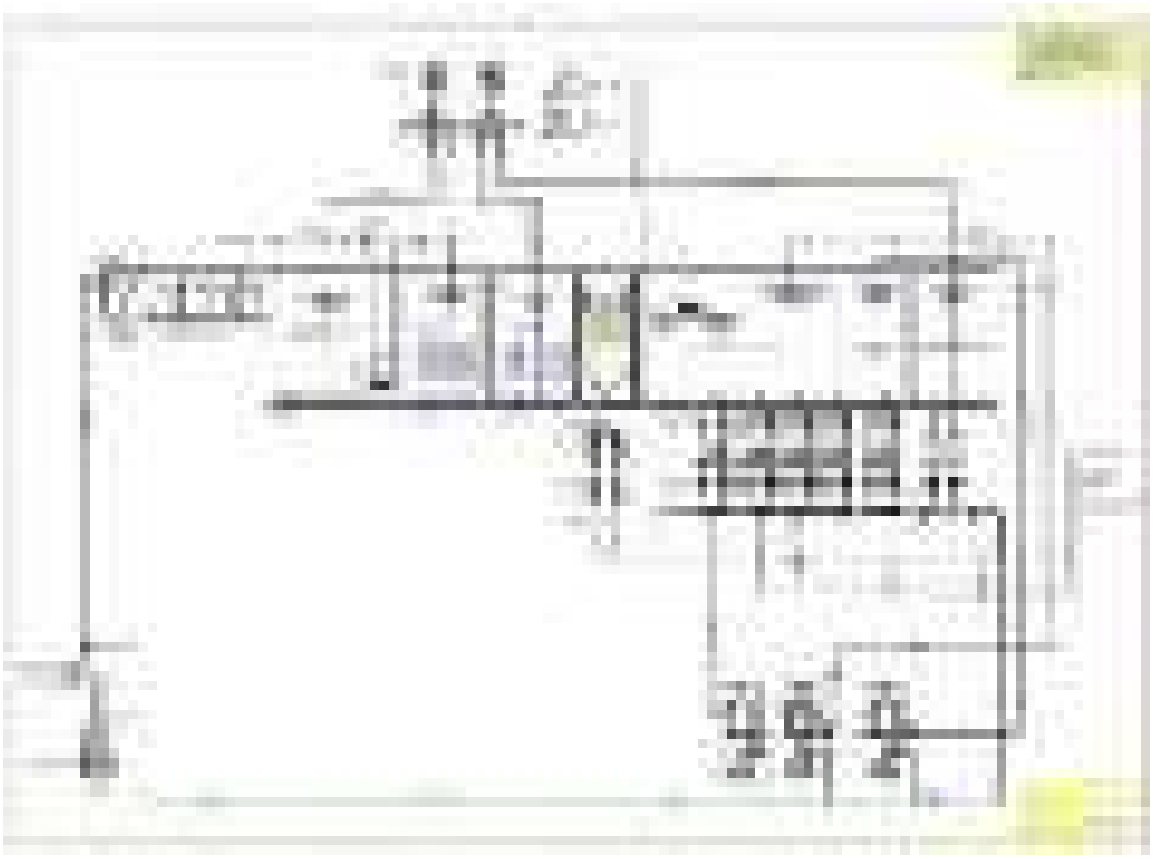


Figure 2: STP Treatment Scheme



RAINWATER HARVESTING

The rainwater harvesting will help in raising the ground water table. As such, the Ground water extraction is not envisaged for this project.

Water Harvesting: The roof top rainwater harvesting through recharge pit process will be used for the recharge of the water at the project site. The quantity of annual harvested rainfall at the project site at present is **2978.2 cum**. **31 recharge pits of diameter 3.5 m and depth 5 m** are proposed. Mesh will be provided at the roof so that leaves or any other solid waste/debris will be prevented from entering the pit. Rainwater from roofs will be taken to collection/desilting chambers located on ground. These collection chambers are interconnected to the filter pit through pipes. The filter pit will be circular in shape and will be back-filled with graded material, boulder at the bottom, gravel in the middle and sand at the top. The final disposal of storm / rain water shall be in multiple recharge / rain harvesting pits as per MOEF guidelines to recharge the ground water. The water

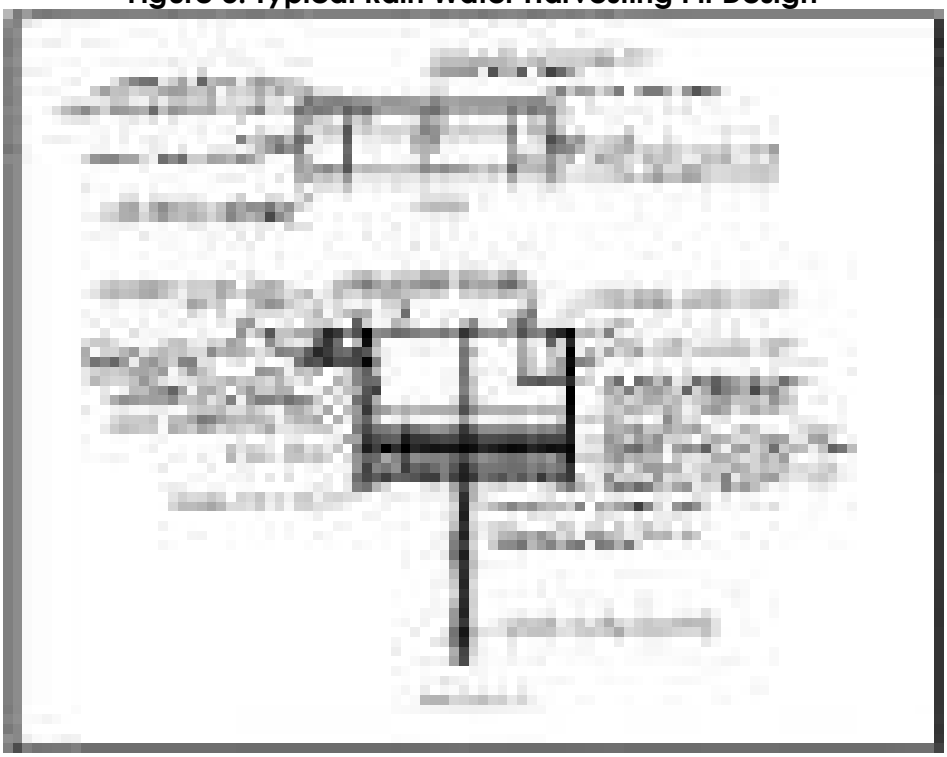
collected will be used for replenishing the ground water aquifers and creating surface storages for utilization in non-rainy season (**Table 8**). Only rooftop water will be taken in the Rainwater Harvesting Pit.

Table 7: Annual Recharge Potential (After Construction)

S.No	Description	Area Considered in m2	Runoff Coefficient	Rainfall intensity (mm/hr)	Total vol. of water available for RWH (m3/hr)	Total vol. of water available for RWH (m3/30 min)
1	Roof Top Water	153550.00	0.9	25	3454.9	1727.5
2	Road Area	137683.84	0.6	25	2065.3	1032.7
3	Green Areas	87184.92	0.2	25	435.9	218.0
Total		378418.76			5956.1	2978.2

Source: (i) Manual on norms and standards for environment clearance of large construction projects, Ministry of Environment and Forests, Government of India (iii) National Building Code of India, 2005, Bureau of Indian Standards, New Delhi. (iv)Project Report for "Integrated Township, Moradabad"

Figure 3: Typical Rain Water Harvesting Pit Design



STORM WATER DRAINAGE

A detailed "Storm Water Management" has been developed. This will incorporate best management practices which will include following:

- Regular inspection and cleaning of storm drains.
- Clarifiers or oil/water separators shall be installed in all the parking areas.
- Cover waste storage areas.
- Avoid application of pesticides and herbicides before wet season.
- Secondary containment and dykes in fuel/oil storage facilities
- Conducting routine inspections to ensure cleanliness
- Preparation of spill response plans, particularly for fuel and oil storage areas.
- Provision of slit traps in storm water drains
- Good management in the above areas.

POWER REQUIREMENT

The power supply shall be supplied by Uttar Pradesh Power Corporation Limited (UPPCL). The connected load for the Integrated Township Project will be approx. 2x10 MVA which shall be supplied by various transformers of 1000 kVA ,630 kVA, 400 kVA, 11/0.433 kV capacities which will be installed as per the load requirement.

Details of D.G Sets

There is provision of 3 DG sets of 400 kVA (2x125 kVA+ 1x150 kVA) capacities for power back up. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion. The power supply shall be supplied by Uttar Pradesh Power Corporation Limited, Moradabad (UPPCL). The maximum demand of power requirement for the project is 40 MVA.

Table 8: Power Requirement for Operation Phase

S.No.	Description	Load Demand in MW
1	Residential	15
2	Commercial	17
3	Public/Semi Public	3
4	Open/ Roads	1
Total		**36**
Load in MVA		**40**

Source: (i) Project Report for "Integrated Township, Moradabad"

PARKING NEEDS

Adequate provision will be made for car/vehicle parking at the project site. There shall also be adequate parking provisions for visitors so as not to disturb the traffic and allow smooth movement at the site. There will be the sufficient parking space for the vehicles.

Table 9: Parking Area Statement

S.no	Description	FAR Area	MOEF&CC Standard (ECS/ 100m2)	Parking Requirement	State Standard (ECS /80m2)	Parking Requirement
1	*Residential Area*	463137	1	4631	1	5789
2	*Mixed Landuse*	53034.5	2	1061	1	663
3	*Public & Semi Public*	87229	2	1745	1	1090
4	*Commercial /Office*	62264.6	2	1245	1	778
Comparative Parking Requirement				**8682**	-	**8321**

Source: (i) Manual on norms and standards for environment clearance of large construction projects, Ministry of Environment and Forests, Government of India (iii) National Building Code of India, 2005, Bureau of Indian Standards, New Delhi. (iv)Project Report for "Integrated Township, Moradabad"

SOLID WASTE MANAGEMENT

Small Paved areas with spill collection pits will be constructed for the interception of oils and grease. Separate areas will be designated for fresh and used oils. The used oils will be sold to SPCB/ MoEF Authorized recyclers.

During the operation phase: As per the manual on municipal solid waste prescribed by the Central Public Health and Environmental Engineering Organization (CPHEEO), the quantity of solid waste will be 20.30 TPD. The solid waste will comprise biodegradable waste e.g. domestic waste, horticultural waste etc. and recyclable waste, like plastic, paper etc. **(Table 10).** For estimating the quantum of waste following assumptions are taken into consideration.

Table 10: Solid waste generated from Operation Phase

Residential(0.550kg/capita/ day)	**Biodegradables @ 45.51%**	**Paper @ 12.63%**	**Plastic/ Rubber @ 14.11%**	**Metal @ 0.63 %**	**Glass @ 0.96 %**	**Rags @ 4.69%**
18.02	8.2	2.3	2.5	0.1	0.2	0.8
Commercial(0.200kg/capita/ day)	**Paper & Cardboard @ 15.5%**	**Plastic @ 17.5%**	**Rubber @ 0.1%**	**Food waste @ 49.0 %**	**Grass & wood @ 2.8%**	**Textile @ 2.9 %**
0.84	0.13	0.15	0.00	0.41	0.02	0.02
Public -Semipublic (0.200kg/capita/day)	**Paper &Cardboard @ 15.5%**	**Plastic @ 17.5%**	**Rubber @ 0.1%**	**Food waste @ 49.0 %**	**Grass & wood @ 2.8%**	**Textile @ 2.9 %**
1.45	0.22	0.25	0.00	0.71	0.04	0.04

Source: For Waste Collection, Chapter 3, Table 3.6, Page no. 49, Central Public Health & Environment Engineering Organization, Ministry of Urban Development, (Government of India, May 2000) (ii) Project Report for "Integrated Township, Moradabad"

- Twin bin waste collection system will be used within the complex – green bins for biodegradable wastes and blue bins for non-biodegradable wastes will be provided.
- Litter bin will also be provided in open areas like Greenbelt Area etc.
- Personnel engaged in the collection, segregation and composting will be trained and demonstrated to make them proactive and efficient in the solid waste management practices.
- The waste shall be handled according to Municipal Solid Waste (Management and Handling) Rules 2000.
- Bio-medical wastes to be generated from the First Aid center, shall be handled as per the Biomedical wastes (management and Handling) Rules, 2003. These wastes will not be stored or disposed with other municipal wastes and stored at the facility for no more than 24 hours.
- Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 will be strictly followed.

- Horticultural waste which will be collected at the secured location such that it will not hinder daily activity schedule or washed away by the surface run off causing choking of drains, etc. and will be separately disposed off along with biodegradable waste.

FIRE SAFETY

Adequate firefighting arrangements have been provided in the Complex. The firefighting arrangements provided in the complex are given below:

- Provision of Automatic water sprinklers.
- Provision of separate fire hydrant pipe.
- Provision of Overhead water storage tank.
- There is provision of firefighting pumps.
- The heat insulating material has been used in construction of blocks.

GREENBELT DEVELOPMENT

Construction Phase. During the construction period, it has been ensured that there will be no exploitation of trees in and around the project especially for obtaining fuel wood by the workers.

Operational Phase: An area of 44865.41 sq. m. has been identified for greenbelt development which is 30.00% of the plot area.

Greenbelt Development: The following plants species are suggested for plantation is as given in **Table 11 & 12** however only 5-6 species suitable to the climate zone will be selected.

Table 11: Trees for Greenbelt Development

S. No.	Botanical name	Common name	Effective in control of
1.	Ficus benjamin	Pukar	Air pollution
2.	Acacia nilotica	Babul	Air pollution
3.	Adina cordifolia	Haldu	Air pollution
4.	Aegle marmelos	Bel	Air pollution
5.	Ailanthus excelsa	Maharuk	Air pollution, Noise pollution
6.	Albizia lebbeck	Siris	Air pollution, Noise Pollution
7.	Alstonia scholaris	Chattiyan	Air pollution, Dust
8.	Azadirachta indica	Neem	Air pollution, Dust, Noise pollution

S. No.	Botanical name	Common name	Effective in control of
9.	Butea monosperma	Dhak	Air pollution, Dust
10.	Dalbergia latifolia	Shisham	Air pollution
11.	Ficus elastic	Rubber tree	Air pollution
12.	Lagerstroemia parviflora	Phurush	Air pollution
13.	Madhuca longifolia	Mahua	Air pollution, Noise pollution
14.	Mangifera indica	Aam	Air pollution, Noise pollution
15.	Moringa oleifera	Sajina	Air pollution
16.	Polyalthia longifolia	Devdaru	Air pollution
17.	Syzygium cumini	Jamun	Air pollution
18.	Terminalia arjuna	Arjun	Air pollution, Dust
19.	Zizyphus mauritiana	Ber	Air pollution

Table 12: Shrubs for Green Belt Development

S. No.	Scientific Name	Common Name	Effective in control of
1.	Jatropha pandurifolia	Jatropha	Soil quality
2.	Tecoma stans	Yellow Tecoma	Noise Pollution
3.	Hamelia patens	Muna	Noise Pollution
4.	Hibiscus	Gurhal	Air & Noise pollution
5.	Ficus reginald	Fig	Air Pollution
6.	Tabernaemontana divaricata	Chandni	Air pollution
7.	Abutilon indicum	Atibalaa/peeli Booti	Air pollution
8.	Acacia catechu	Khair	Air pollution
9.	Acacia leucophloea	Safed babul	Air pollution
10.	Dendrocalamus strictus	Banskaban	Air pollution
11.	Nerium indicum	Kaner	Air pollution
12.	Ricinus communis	Erandi	Air pollution
13.	Murraya paniculata	Marchula	Air pollution
14.	Duranta repens	Golden duranta	Air pollution

S. No.	Scientific Name	Common Name	Effective in control of
Plants For Roof Top			
1.	Juniperous squamata	Blue Star' Juniper	-
2.	Lavandula angustifolia	lavender	-
3.	Hydrangea petiolaris	C. hydrangia	-
4.	Allium Summer Beauty	S. Beauty Allium	-
5.	Sedum album	White Stone Crop	-
6.	Sedum ellacombianum	Stone Crop	-
7.	Duranta repens*	Golden duranta	-

Source: Guidelines for Developing Greenbelts, CPCB, 2000

CONSTRUCTION MATERIAL

Wind Velocity, Seismicity, Rainfall of Region, has been taken in consideration during design. Only IS approved building materials has been used for construction. Construction materials have been selected based on their thermal and combustible characteristic. The additional considerations are as under:

- The major materials required for construction of the project will be Plywood, Tin Shelter, Sand, steel, cement, bricks, metal, stones, electrical fittings, water, etc.
- All the items to be used in the project will be as per the national building code specification. If the building materials with high-embodied energy are locally available, it will be used in construction.

Other Building Material is PVC Sullage lines, Joinery hardware- ISI marked, PVC rain water down take etc.

Heat insulating material has been used in construction. Thermal characteristics of the materials used for building envelop v.i.z, roof, external walls, fenestration has been provided in accordance with energy conservation building Code 2017.

SUMMARY & CONCLUSION

The project is development of Integrated Township Moradabad which is planned to develop as residential center which will provide the well versed residential stock to the residents of Moradabad city and to those who prefer Moradabad to reside, thus, help in accommodating the growing

population, site is earmarked for Group Housing Project development as per Moradabad Development Authority.

The benefits relate to the direct employment associated with the construction of the facility. Additional employment opportunities will lead to a rise in the income and improve their standard of living. The proposed facility would also generate jobs for the women labour during construction phase. This will considerably reduce their travel time in any employment and therefore enable them to attend to their children, their nutritional demands and also household chores.

It will increase Infrastructure of the area & will provide better living style.