[Vide Notification dated 14th September, 2006]

FORM – I

FOR

CHANDIGARH HOUSING BOARD

Proposed Housing Scheme at Maloya - 1, Chandigarh, India.

Prepared By

M/s. Mitcon Consultancy & Engineering Services Ltd.

MUMBAI

1402/1403, 14 th Floor,
Dalamal Tower, Free Press
Journal Marg, 211, Narriman
Point, Mumbai-400021
Tel.: (022) 22828200,
Tele Fax: (022) 22024553

REGD. OFFICE AND R & D CENTRE

1st, Floor, '**Kubera Chambers**',
Shivajinagar , Pune 411005
Tel.: (020) 25533309/25534322
Tele Fax: (020) 25533206

E-mail: mitconmail@gmail.com or mitcon.mumbai@gmail.com **Website**: www.mitconindia.com

M/s. Chandigarh Housing Board

(FORM 1, MOLOYA -1)

FORM 1

Basic Information

Serial Number	Item	Details
1.	Name of the project/s	Construction of Two room tenements village Maloya-1, Chandigarh.
2.	S. No. in the Schedule	The Project falls under Category "B" of project activity no. 8(b) of construction projects in category (> 50 Ha and buildup area) >1,50.000 sq.mts ++
3	Proposed capacity /area/length /tonnage to be handled/command area/lease are/number of wells to be drilled	To provide 8896 D.U (Two rooms tenements) village Maloya-1, Chandigarh.
4.	New/Expansion/Modernization	New
5.	Existing capacity/Area etc.	163.12 Acres
6.	Category of Project i.e. "A" or "B"	B category
7.	Does it attract the general condition? If yes, please specify.	No
8	Does it attract the specific condition? If yes, please specify	No
9	Location	Village Molaya, Chandigarh
	Plot /Survey/Khasra No.	Plot Area 163.18 Acres, village Maloya-1, Chandigarh.
	Village	Village , Molaya
	Tehsil	-
	District	U.T.
	State	Chandigarh.
10	Nearest railway station/airport along the distance in Kms.	Chandigarh Railway Station @ 24 Km and Chandigarh Airport @ 21 Km

11	Nearest Town, city, District Head quarters along with distance in kms.	Chandigarh U.T.
12	Village Panchyat, Zila Parishad, Municipal Corporation, Local body (complete postal address with telephone nos. to be given).	-
13	Name of the applicant.	Chandigarh Housing Scheme
14	Registered Address	Er Ajay Grover Executive Engineer-I, Chandigarh Housing Board, 8 Jan Marg, Sector 9, Chandigarh..
15	Name	Er Ajay Grover
	Designation	Executive Engineer-1 ,
	Address	Chandigarh Housing Board, 8 Jan Marg, Sector 9, Chandigarh.
	Pin Code	160017
	E-mail	chdhousingboard@nic.in
	Telephone No.	0172-4601713
	Fax No.	0172-4601701
16	Details of alternative sites examined, if any Location of these site should be shown on a topo sheet	No alternate site examined as project is planned to benefit the commercial hub.
17	Interlinked Projects	There is no Interlinked Projects
18	Whether separate application of interlinked project has been submitted.	N.A.
19	If yes, date of submission.	N.A.
20	If no, reason	N.A.
21	Whether the proposal involves approval /clearance under: if yes, details of the same and their status to be given. a) The Forest (Conservation) Act. 1980? b) The wildlife (Protection) Act, 1972? c) The C.R.Z. Notification, 1991?	Out of total plot area 163.18 Acres proposal involves some clearance are as fallows:- a) No forest land. b) The wild life protection Act, 1972 clearance is yet to be obtained.

		c) The C.R.Z. Notification, 1991 is not applicable to project.
22	Whether there is any Government Order/Policy relevant /relating to the site?	Conceptual plan Approved by the Chief Architect. U.T. Chandigarh (Annexure)
23	Forest land involved (hectares)	No forest land involved
24	Whether there is any litigation pending against the project and /or land in which the project is proposed to be set up? a) Name of the Court b) Case No. c) Orders/directions of the Court, if any and its relevance with the proposed project.	No litigation pending against the project proponent or land in which the project is proposed.

The Following documents /drawings are enclosed as in annexure:-

1. Authorized signatory letter.
2. Approval of the ownership of the proposed project land from the competent authority.
3. Approved estimate from the competent authority.
4. Detail of the trees and request for cutting of trees from the competent authority.
5. Geotechnical Investigation report.
6. Approval of proposal from Municipal Corporation 5MGD STP is to be installed at Maloya along with site plan.
7. Approval of the Conceptual Plans from Chief Architect, U.T, Chandigarh.

8. Approval of the Proposed Road levels, Plinth level, Tress/Shrub plantation and Green area Plans from Chief Architect, U.T, Chandigarh.

b) **The following shall be in inserted at the end, namely** : -

"I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost.

Date:

Place:- Chandigarh ( )

Er. Ajay Grover,
Executive Engineer-I,
Chandigarh Housing Board,
8 Jan Marg, Sector 9, Chandigarh.

NOTE:

1. The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with application a C.R.Z map duly demarcated by one of the authorized agencies, showing the project activities w.r.t. CRZ (at the stage of TOR) and the recommendations of the State Coastal Zone Management Authority (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the CRZ Notification, 1991 for the activities to be located in the CRZ.

2. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC)."

3. All correspondence with the Ministry of Environment and Forests including submission of application for TOR/Environment clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory should also submit a document in support of his claim of being an unauthorized signatory for the specific project. "

M/s. Chandigarh Housing Board

(FORM 1, MOLOYA -1)

(I)	**BASIC INFORMATION**		
	Name of the project	**:**	Chandigarh Housing Scheme
	Location / Site alternatives under consideration	**:**	Village Maloya , Chandigarh
	Size of the Project *	**:**	Plot area : 654887.03m^2 (163.18 acre)
	Expected cost of the project	**:**	Rs. 473.12 crores
	Contact Information	**:**	Er. Ajay Grover, Executive Engineer-I, Chandigarh Housing Board, 8 Jan Marg, Sector 9, Chandigarh. Ph. No. – 0172-4601713 Email ID – chdhousingboard@nic.in
	Screening Category	**:**	The Project falls under category "B" of project activity no. 8(b) of Township and Area Development projects .

** Capacity corresponding to sectorial activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.,)*

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	The proposed project shall be in accordance with the approved Development Plan of Chandigarh. There will be no significant changes in existing land use pattern by proposed project. The construction work shall start only after the permission of Necessary Clearance.
1.2	Clearance of existing land, vegetation and buildings?	No	The proposed site is a vacant land. The existing open land shall be leveled and there will not be any clearing of vegetation or buildings.
1.3	Creation of new land uses?	No	No creation of new land uses is envisaged since the existing land use of site is residential. There will be no significant changes in existing land use pattern by proposed project.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Analysis of bore well water and soil samples of site, soil testing and geo - technical investigations has already been carried out. Analysis report of the same is attached in Annexure
1.5	Construction works?	No	At present, no construction activity is going on at the site.
1.6	Demolition works?	No	The site is almost vacant and open land. The project does not involve any demolition work.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.7	Temporary sites used for construction works or housing of construction workers?	No	Majority of construction labourers will be floating and few labourers will be allowed to stay at site for them temporary shelters and sanitation facilities will be provided at the site.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	The maximum height of the building is 40 ft.(Approx.) Residential Building: Gr + 3 Excavation & filling will be done by minimal use of machinery. Excavated material will be used on site itself to level the ground and fill the low lying area.
1.9	Underground works including mining or tunneling?	No	No underground works including mining or tunneling involved. Only lay down of pipes and electric cables. Under ground water storage tank will be provided for boosting water pressure.
1.10	Reclamation works?	No	Not Applicable
1.11	Dredging?	No	No Dredging shall be required as no offshore area is involved.
1.12	Offshore structures?	No	No Offshore structures involved as no offshore area is involved.
1.13	Production and manufacturing processes?	No	No production / manufacturing involved since project is a residential project.
1.14	Facilities for storage of goods or materials?	Yes	Raw materials required for construction shall be stored at the campus sites during construction phase in temporary sheds.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	Total wastewater generation from the project during operation phase will be 7556.01 m^3/day. The proponent will lay down sewer lines and Sewage will be discharged to the municipal sewer line, it will be finally treated to the Proposed STP (5 MGD) at Maloya as per CPCB norms Chandigarh.. The solid waste generated both during construction and operational phase shall be segregated to biodegradable and non-biodegradable, Biodegradable waste will be composted & Non biodegradable waste will be disposed off at approved landfill site of Municipal Corporation Chandigarh
1.16	Facilities for long term housing of operational workers?	Yes	The project shall consist of housing facilities for all categories of employees of Chandigarh Administration, Union Territory, and Chandigarh.
1.17	New road, rail or sea traffic during construction or operation?	Yes	A temporary increase in traffic may result during construction phase due to transport of personnel/ materials/ equipment. During operation, based on occupancy road traffic will be additional.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	It is intended to make maximum use of existing road network for mobilization of man and materials, and then augment/ strengthen existing roads.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	There will not be any closure or diversion of existing transportation routes.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.20	New or diverted transmission lines or pipelines?	Yes	New transmission as well as pipelines shall be required for facilitating various infrastructure utilities for the project.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	N	No changes in the hydrology of watercourses / aquifers are envisaged.
1.22	Stream crossings?	No	The study area does not involve any stream crossings.
1.23	Abstraction or transfers of water from ground or surface waters?	No	Both during construction & operation phase, there will not be abstraction or transfers of water from ground or surface waters as the source of water during construction phase shall be municipal corporation both for construction activity & for potable water for workers. Also during operation phase, the water source shall be Municipal Water. Municipal Corporation of Chandigarh provides water from Bhakra Canal. However, Tankers shall be used in case of deficit. The total water requirements for the proposed project is 9445.01 m^3/day
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	The site shall be restored back to normal after construction and run off from site shall be channelized through storm water drains and utilized for ground water recharge hence no change in drainage pattern is envisaged.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	The existing road near by the site will be utilized for the transportation of material and personal.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.26	Long-term dismantling or decommissioning or restoration works?	No	Proposed project does not involve any long-term dismantling or decommissioning or restoration works.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	No major impact on environment since project does not involve any decommissioning.
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Influx of the people will be temporary during the construction phase and permanent during the operation phase.
1.29	Introduction of alien species?	No	The green belt as per the requirements of MoEF/CPCB/Chandigarh Administration norms will be developed. Only native species will be planted so no introduction of alien species is anticipated.
1.30	Loss of native species or genetic diversity?	No	No Deforestation is involved and only site clearance shall be taken up and care shall be taken to avoid loss of any native species or genetic diversity.
1.31	Any other actions?	No	No other actions/activities envisaged

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

Sr. No.	Information / checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	The proposed plot is a non- agricultural land. The existing land use pattern is residential. There shall be no change in land-use pattern due to proposed project.

Sr. No.	Information / checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
2.2	Water (expected source & competing users) unit: KLD	Yes	**Construction Phase:** Source: Municipal Water Supply Total Water Requirement: 240 m^3/day Domestic use: 10m^3/day Construction activity: 230 m^3/day **Operational Phase:** Source: Municipal Water Supply **Water requirement:** Total Water Requirement during operation phase shall be = 9445.01m^3/day Domestic Water Requirement = 6998 m^3/day Flushing Water Requirement = 2447 m^3/day Landscaping requirement = By Tankers
2.3	Minerals (MT)	No	Not applicable
2.4	Construction material: stone, aggregates, sand/soil (expected source - MT)	Yes	The raw materials required during construction phase shall be Cement, sand, bricks, steel, glass etc which will be purchase from local market.
2.5	Forests and timber (source - MT)	No	Not applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	**Construction Phase**: The power requirement for construction phase shall be around 1120 KVA (7 Nos DG Set will be provided 160 KVA). **Operational Phase**: Total Power Requirement = 7 MW Source: Electricity Department, Union Territory Chandigarh
2.7	Any other natural resources (use appropriate standard units)	No	Not applicable

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and Water supplies)	Yes	The expected hazardous wastes shall be lubricating oil & grease, required to prevent friction in mechanical parts and spent oils, drums etc. The quantities used shall be very low and these chemicals / materials shall be handled as per Hazardous waste handling (2003) rules.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not Applicable
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	The living condition and welfare of the people will be improved.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not Applicable
3.5	Any other causes	No	Not Applicable

4. Production of solid wastes during construction or operation or decommissioning (MT / Month)

Sr. No.	Information / Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not Applicable
4.2	Municipal waste (domestic and or commercial wastes)	Yes	**Construction phase:** The construction debris will be used within the site for leveling purposes and base course preparation of internal approach roads. The domestic waste during construction phase, will be segregated to bio-degradable

Sr. No.	Information / Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
			and non-biodegradable and handled over to vendors for disposal. **Operation phase** Total Solid Waste generation from Entire Project is 5.16 TPD The solid waste generated during operation phase shall be segregated to biodegradable & non biodegradable waste. The Bio degradable waste (3.10 TPD) will be composting by organic waste composting system and non-biodegradable waste (2.15 TPD) will disposed off at approved landfill site of Municipal Corporation Chandigarh .
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	Not Applicable because proposed project is a Housing scheme project. However very small quantity of hazardous waste including spent oil or grease from pumps and other machineries shall be generated which will be handled as per Hazardous Wastes (Management and Handling) Rules.
4.4	Other industrial process wastes	No	Not Applicable
4.5	Surplus product	No	Not Applicable
4.6	Sewage sludge or other sludge from effluent treatment	No	Not Applicable
4.7	Construction or demolition wastes	Yes	Construction debris shall be generated during construction phase, which shall be used within the site for leveling purposes and base course preparation of internal approach roads.
4.8	Redundant machinery or equipment	No	No redundant machinery as the construction and other equipments involved shall be transported out of the project area once the construction work is over.
4.9	Contaminated soils or other materials	No	Not Applicable

Sr. No.	Information / Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
4.10	Agricultural wastes	No	Not Applicable.
4.11	Other Solid Wastes	Yes	Top soil will be stacked separately and will be used for greenbelt development.

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr):

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	During Construction phase emissions of fossil fuels shall be from use of Construction machineries and vehicles. During Operation phase emissions will be from use of vehicles for transportation.
5.2	Emissions from production processes	No	There is no production as the proposed project is residential project.
5.3	Emissions from materials handling including storage or transport	Yes	Dusting may occur during loading and unloading of cement bags, sand etc during construction phase. However suitable mitigation measures like sprinkling of water may be carried out to control dusting.
5.4	Emissions from construction activities including plant and equipment	Yes	During Construction phase emissions of fossil fuels shall be from use of Construction machineries and vehicles.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Dusting will occur during transportation and handling of construction materials However suitable mitigation measures like sprinkling of water etc may be carried out to control dusting. No odour problem will occur from solid waste since proper segregation and mode of disposal is proposed for the project.

Sr. No.	Information/Checklist Confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.6	Emissions from incineration of waste	No	Not applicable as incineration will not be involved.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not Applicable.
5.8	Emissions from any other sources	No	Not envisaged.

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

Sr. No.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise expected during operation of pumps, compressors or lifts shall be around 65 dB(A) The machineries shall be enclosed in acoustic enclosures which shall be as per approved designs of Central Pollution Control Board (CPCB)
6.2	From industrial or similar processes	No	Not Applicable.
6.3	From construction or demolition	Yes	There will be marginal increase in noise during construction work and it shall be localized to work site. The activities will be restricted to the daytime. Personal protective equipment will be provided and their proper usage will be ensured for hearing protection of the workers.
6.4	From blasting or piling	No	Not Applicable.
6.5	From construction or operational traffic	Yes	There will be marginal noise generation from vehicle movement. However, the noise levels will be less than 75 dB(A) Further suitable mitigation measures shall

Sr. No.	Information/Checklist confirmation	Yes /No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
			be proposed to reduce the noise generated as a result of construction or operation traffic.
6.6	From lighting or cooling systems	No	Not Applicable
6.7	From any other sources	No	Not Applicable

7. Risks of Contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

Sr. No.	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	The collection, treatment and disposal of hazardous waste will be as per Hazardous Waste (Management & Handling) amendment Rule, 2003 and hence no adverse impact on land environment is envisaged.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	NO	The quantity of domestic waste water generated during construction phase shall be treated via septic tank connected to soak pit. Total wastewater generation from the project during operation phase will be 7556.01 m^3/day. The proponent will lay down sewer lines and Sewage will be discharged to the municipal sewer line, it will be finally treated to the Proposed STP (5 MGD) at Moloya , Chandigarh.

Sr. No.	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
7.3	By deposition of pollutants emitted to Air into the land or into water	No	No Flue gas emissions are envisaged. The sewage shall be treated and reused, by the municipal corporation, Chandigarh; hence no impact on land or water bodies is anticipated. The solid waste shall be segregated and handled as per rules of Chandigarh Municipal Corporation. Hence, no deposition of pollutants in air, water or land is anticipated.
7.4	From any other sources	No	Not applicable
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	No air emissions either flue or process are envisaged from the proposed project. The sewage shall be treated and reused by the municipal corporation, Chandigarh, hence no impact on land or water bodies is anticipated. The solid waste shall be segregated and handled as per rules of Chandigarh Municipal Corporation. Hence, no risk of long term build up of pollutants in the environment from these sources is anticipated.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances	No	Not Applicable
8.2	From any other causes	No	Not applicable

Sr. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	Since the project falls under seismic zone – IV, the building will be designed as per seismic zone – IV norms. Further it is not flood prone or landslide prone area. Hence, no risk due to natural hazards is envisaged.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste-water treatment, etc.) • housing development • extractive industries • supply industries • other	Yes	The project shall set precedents for further development of transport, communication, infra-structure and other developments in the area.
9.2	Lead to after-use of the site, which could have an impact on the environment.	No	The proposed project will have marginal & negligible impact on the environment.
9.3	Set a precedent for later developments	Yes	The project shall set precedents for further development of transport, communication, infra-structure and other developments in the area.
9.4	Have cumulative effects due to proximity to other existing or planned	No	Not envisaged.

Sr. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
	projects with similar effects		

(III) Environmental Sensitivity

Sr. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	No	Not Applicable
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.	No	Not Applicable
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration.	No	Not Applicable
4	Inland, coastal, marine or underground waters.	Yes	Sukhna Lake at 16 km on SW of project site
5	State, National boundaries.	No	Not Applicable
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.	Yes	• Police Station at 2.5 km on NE of project site • Chandigarh airport at 12 km on SEE of project site • Railway station at 14.0 km on S of project site
7	Defense installations.	No	Not Applicable
8	Densely populated or built-up area.	No	Not Applicable
9	Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community facilities)*	Yes	Schools, hospitals and small temples are observed in 10 kms radius.

Sr. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
10	Areas containing important, high quality or scarce resources *(ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)*	No	Not Applicable
11	Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)*	No	This is not a critically polluted area. The baseline environmental condition is within the permissible limits.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems. (*earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions*)	No	The project falls under seismic zone IV. No risk due to natural hazards in envisaged.

[Vide Notification dated 14th September 2006]

FORM - IA

FOR

CHANDIGARH HOUSING BOARD

Proposed Housing Scheme at Maloya - 1, Chandigarh , India.

Prepared By

M/s. Mitcon Consultancy & Engineering Services Ltd

MUMBAI

1402/1403, 14 th Floor,
Dalamal Tower, Free Press
Journal Marg, 211, Narriman
Point, Mumbai-400021
Tel.: (022) 22828200,
Tele Fax: (022) 22024553

REGD. OFFICE AND R & D CENTRE

1st, Floor, '**Kubera Chambers**',
Shivajinagar , Pune 411005
Tel.: (020) 25533309/25534322
Tele Fax: (020) 25533206

E-mail: mitconmail@gmail.com or mitcon.mumbai@gmail.com **Website**: www.mitconindia.com

M/s. Chandigarh Housing Board

(FORM 1-A, MOLOYA -1)

FORM - I A

(ONLY FOR CONSTRUCTION PROJECTS LISTED UNDER ITEM 8 OF THE SCHEDULE)

Check List of Environmental Impacts

(Project proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit along with proposed Environmental Management Plan & Monitoring Programme)

1 LAND ENVIRONMENT

1.1 Will the existing land use get significantly altered from the project that is not consistent with the surroundings? (Proposed land use must conform to the approved Master Plan / Development Plan of the area. Change of land use if any and the statutory approval from the competent authority to be submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 500 meters) and (iii) the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.

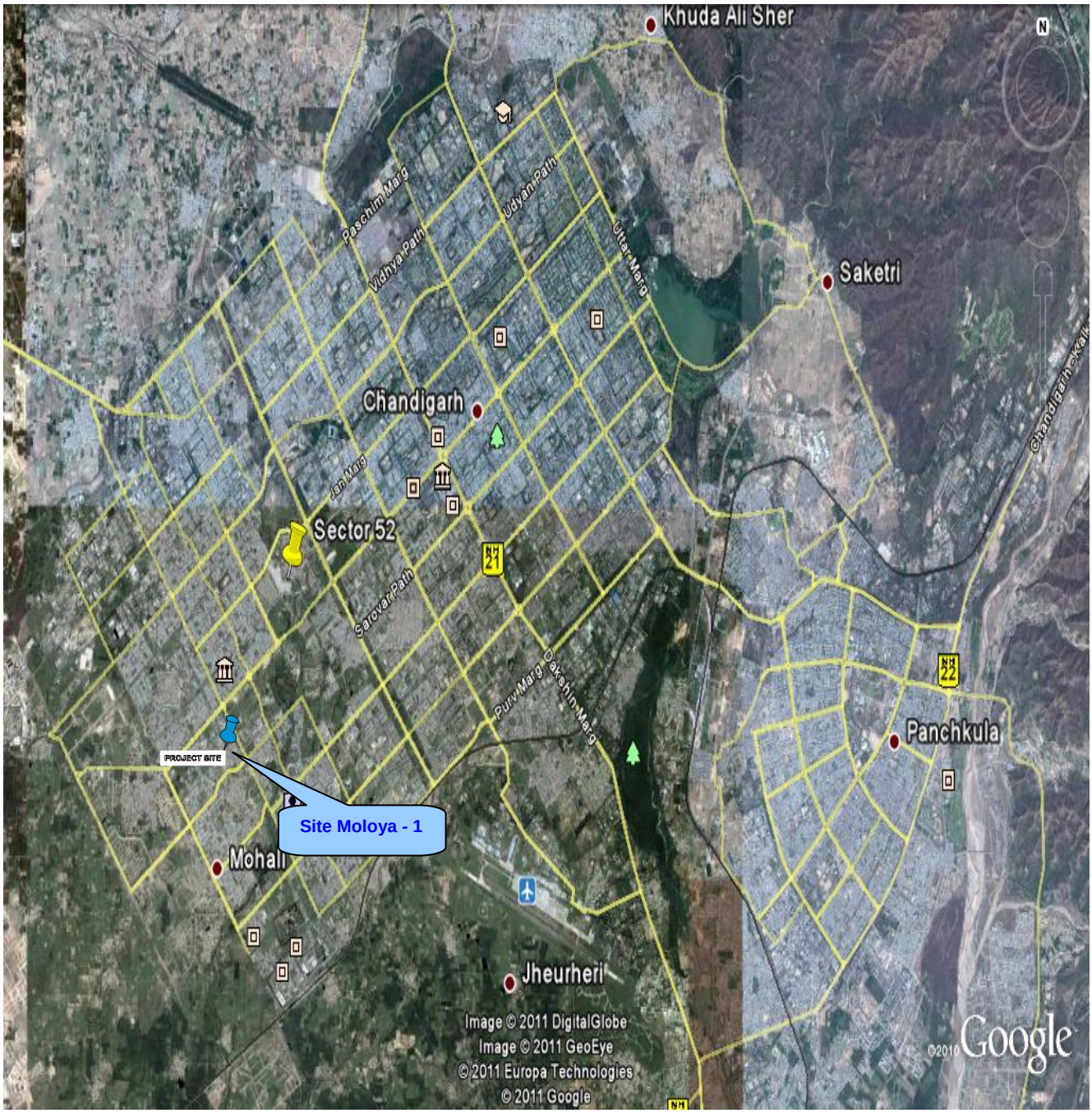
Ans. No, there will not be any change in the existing land use pattern by proposed Housing Scheme at site area. The project site is situated in Residential zone and the proposed project is in accordance with approved Development Plan of Chandigarh. Google aerial image and location map are shown below for clear understanding of project location.

Master Layout is enclosed as Annexure I

M/s. Chandigarh Housing Board

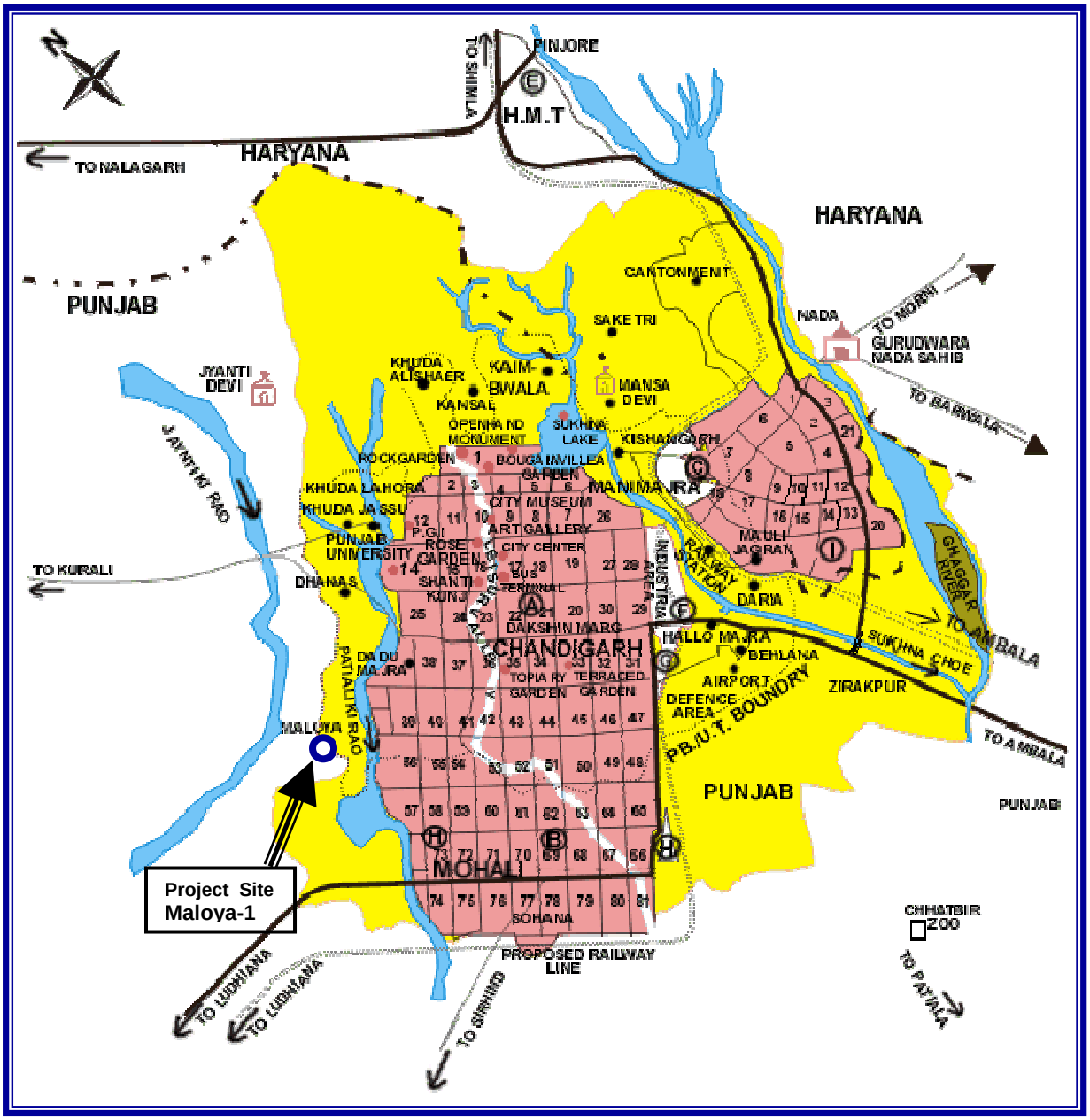
(FORM 1-A, MOLOYA -1)

Google Map of Project Site



Prepared By :- **Mitcon Consultancy & Engineering Services Ltd.**

Location Map of Project Site



Prepared By :- Mitcon Consultancy & Engineering Services Ltd.

Sr. No.	Major Emergency Services	Name	Distance	Direction
1	Hospital	Dispensary P.G.I. Hospital	8 Km	NW
2	Police Station	Maloya-I colony Police station	Opposite to the site	W
3	Schools/colleges	Sivalic Public School	5 Km	N
4	Airport	Chandigarh Airport	21 Km	SE
5	Railway station	Chandigarh Railway station	24 Km	S
6	Bus stop	Maloya-I bus stop	0.5 Km	S
7	Bank	State bank of India	0.5 Km	S
8	Post office	Maloya-II Post office	0.5 Km	S
9	Fire station	Sector - 17	8.5 Km	E

1.2 **List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.**

Ans. Major requirements of the project are listed below as:

Sr. No.	Particular	Demand
A	**LAND AREA**	
1	Total Plot Area	654887.03 m^2 163.18(Acres)
2	Ground Coverage	270438.40 m^2
3	Permissible FAR	No Permissible F.A.R
4	Total built up area (FAR Achieved)	0.46
5	Number of parking required	1353 ECS
6	Number of parking provided	2186 ECS
7	Built up area	117841.53 m^2
8	Total units at General Housing Scheme	8896 nos.

9	Area under roads, open spaces & Parking	341530.15 m^2 (85.10 Acre)
10	Area provided for school, shops, community center, Dispensary , Aganwaris	74727.27m^2 (18.62 Acre)
11	Area for Landscape	149133.48 m^2 (37.16 Acre)
B	**PARKING PROVISION**	
1	Total Parking required in numbers	1353 ECS
2	Total Parking provided in numbers	2186 ECS
C	**WATER**	
I	**During Construction Phase**	
1	Domestic purposes	10 m^3/day
2	Construction purposes	230 m^3/day
	Total Requirement	240 m^3/day
II	**During Operation Phase**	
1	Total Water Requirement for General Housing Scheme	9445 m^3/day
2	Domestic water requirement	6998 m^3/day
3	Flushing water requirement	2447 m^3/day
4	Landscaping Requirements	By Tankers
D	**POWER**	
1	During Construction Phase	160 KVA x 7 (D.G Sets)
2	During Operation Phase	7 MW

1.3 What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing land use, disturbance to the local ecology).

Ans.: There is no significant adverse impact on existing facilities adjacent to the project site by the proposed project since adequate measures are proposed to mitigate the impacts. Further the proposed project is in accordance with the City Development Plan of Chandigarh and thereby no alteration in land use pattern of the area shall be there. The proposed site is a vacant land and is not utilized for any purpose.

1.4 Will there any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given).

Ans.: No land disturbance resulting in the erosion, subsidence or instability shall occur due to proposed project owing to proper construction practices, storm water management and

adequate soil management techniques.

The project site is a flat terrain land. To control soil erosion by rain water, ground water recharging and adequate plantation is proposed at site. The project site comes under Seismic Zone–IV and the building structure will be designed in accordance with the norms.

1.5 Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)

Ans:

No, the proposed project will not alter the existing natural drainage system. Effective storm water drainage is available around the site and suitable rain and storm water management practices shall be followed to maintain the exiting drainage pattern. Ground water recharging is proposed to further reduce the natural runoff at site.

1.6 What are the quantities of earthwork involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc?)

Ans.: The excavated earthwork shall be used for refilling of foundation trenches and balance earthwork shall be used for leveling of low lying areas and base course preparation of internal approach roads. Top soil of the site will be collected at site and reused for landscaping. Thus entire earthwork from excavation shall be used within project premises only.

1.7 Give details regarding water supply, waste handling etc during the construction period.

Ans.: Details of water supply and waste management during construction phase are given below:

WATER

Source	: Municipal Corporation
Total water requirement	: 240 m^3/day
Domestic requirement	: 10 m^3/day
Construction activity requirement	: 230 m^3/day

WASTE WATER TREATMENT & DISPOSAL

There will be no waste water generation from the construction activities. The only source of wastewater during construction phase is from laborers use. Generated sewage will be disposed off through septic tank connected to soak pit.

SOLID WASTE

Source: Domestic solid waste will generated from labours and small amount of construction debris from construction activity.

Disposal: The domestic solid waste from laborers will be collected and stored in collection bins and finally disposed off in a scientific manner at approved landfill site which is

maintained by Chandigarh Municipal Corporation. The entire construction waste will be used within the site for leveling purposes and base course preparation of internal approach roads and surplus will be handed over to authorized dealer..

1.8 Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)

Ans.: No, there will be no alteration of low lying area and wetlands by the proposed project.

1.9 Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)

Ans.: No, there will be no health hazard from the construction debris and solid waste since adequate precautionary measures are proposed to safeguard human health.

However, project authorities have proposed to provide face masks, gloves and other personal protective equipments to prevent health hazard during construction activities.

During the construction phase, approx. 450 workers per day will be working. Proper septic tank and soak pit will be provided for disposal of waste water generated from the labours.

The source of solid waste & their disposal measures are given below:

SOURCE:

Construction debris: Only Small quantity of construction waste will be generated from the entire project. It includes waste concrete, excavated soil, broken bricks, waste plaster, metallic scrap etc.

Domestic Solid Waste: Approximately 125 Kg/day from labour use. It includes food waste, rubbish & other biodegradable waste.

DISPOSAL:

Construction Debris: It will be used for leveling the site.

Domestic solid waste: It will be collected and stored in collection bins and finally disposed off in scientific manner at approved landfill site which is maintained by Chandigarh Municipal Corporation.

2. WATER ENVIRONMENT

2.1 Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement met? State the sources & quantities and furnish a water balance statement.

Ans.: DURING CONSTRUCTION PHASE:

SOURCE:

Supply source : Municipal Water Supply / Tanker water

USAGE:

Total water requirement : 240 m^3/day

Domestic water : 10 m^3/day

Construction activity : 230 m^3/day

DURING OPERATION PHASE:

SOURCE:

Supply Source : Municipal Water Supply/Tanker water .

USAGE:

Total water requirement : 9445 m^3/day

Domestic water requirement : 6998 m^3/day

Flushing water requirement : 2447 m^3/day

Landscaping Requirement : Tanker water

2.2 What is the capacity (dependable flow or yield) of the proposed source of water?

Ans.: The prime source of water during construction and operation will be Municipal Water supply System existing in the Sectorial planning. There will be no withdrawal of ground water during construction and operational phases as Municipal Corporation of Chandigarh provides water from Bhakra Canal. Tanker water may be used in case to meet the balance demand of project if required.

2.3 What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)

Ans.: Municipal corporation of Chandigarh will provides water for construction and operation phases.

Tanker water is proposed to be used during operation phase in case of short supply or emergency.

2.4 How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)

Ans.: The waste-water generated is directly disposed to the municipal sewer line, as the M.C is to be installed 5 MGD STP as per CPCB norms. Therefore, no recycling of treated waste-water is proposed.

2.5 Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)

Ans.: No diversion of water from existing users is expected by the proposed project. The prime source of water supply during operation will be Municipal water supply system existing in the sectorial planning. In case of short supply or emergency to meet balance water requirement, Tanker water will be used. There will be no withdrawal of ground water during construction and operational phases as Municipal corporation of Chandigarh provides water. There will be no significant impact on ground water since ground water recharging is proposed to control runoff.

2.6 What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)

Ans.: Total wastewater generation from the project during operation phase will be 7556.01 m3/day.The proponent will lay down sewer lines and connect the same to the municipal sewer line; it will be finally treated to the STP.

2.7 Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

Ans.: Rain-water harvesting is proposed to conserve rain water and thereby reduce surface run off from project site.

Further, the run-off from terrace area shall be utilized for ground water recharge through recharge pits. Whereas due to higher silt content the run-off landscaping, paved and other unpaved areas is diverted through storm water drains and finally discharged to municipal storm water drain.

2.8 What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?

Ans.: No, adverse impact is envisaged due to change in land use by the project since ground water recharging is proposed to control surface run off. Effective storm water drainage system is available around the proposed site. The run off will be chanalised properly through storm water drain and will be diverted to recharging pits. The overflow of these pits will be diverted to municipal storm water drain.

2.9 What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity and approvals obtained from competent authority, if any)

Ans.: There will be no significant adverse impact on ground water since ground water recharging is proposed to control surface runoff and conserve rain water. The prime source of water supply during operation will be Municipal water supply system existing in the planning. There will be no withdrawal of ground water during construction and operational phases as Municipal corporation of Chandigarh primarily provides water from Bhakra Canal. The average depth of ground water table at site is more than 12 meters from ground surface at the time of investigation.

2.10 What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)

Ans.: Following measures are proposed in project to control run off from construction site:

- Proper storm water drainage system comprising of lined drains is proposed.
- Boundary wall will be constructed around the site.
- Soak pits are proposed for safe disposal of domestic waste water during construction phase.
- Prevent the mixing of storm water runoff and sewage from labour camps.
- Use of leak proof containers for storage of oil to avoid contamination of runoff.

2.11 How is the storm water from within the site managed?(State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)

Ans.: Effective storm water drainage system has been proposed within the site. Ground water recharging through percolation pits is proposed to control surface run off at site. The rain water from terrace area shall be channelized to finally join ground water recharge pits and the Excess rain water from other paved and unpaved areas is channelized using internal storm water drains and finally lead to External municipal storm water drains.

2.12 Will the deployment of construction labours particularly in the peak period lead to unsanitary conditions around the project site ?(Justify with proper explanation)

Ans.: No, there will be no unsanitary conditions arise since proper sanitation facilities i.e. toilets will be provided for labors. There will be no labour camp. Local labours will be employed during construction. Temporary Toilets will be provided which will be connected to septic Tank. Sewage generated from labour toilets will be disposed off through septic tank / soak pit and overflow of septic tank will be discharged into Municipal sewer line.

2.13 What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)

Ans.: Total wastewater generation from the project during operation phase will be 7556.01 m^3/day. The proponent will lay down sewer lines and connect the same to the city sewer network that will carry the sewage & will be finally treated to the proposed STP in Moloya.

2.14. Give details of dual plumbing system if treated waste water is used for flushing of toilets or any other use.

Ans.: No, there will not be any dual plumbing system as sewer lines are laid down and connect the same to the sewer network that will carry the sewage to sewage treatment plant.

3. VEGETATION

3.1. Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with its unique features, if any)

Ans.: No, there is no threat to the biodiversity due to the proposed project since no endangered/rare species are found near project site. Further adequate plantation of endemic species is proposed so as to retain diversity.

3.2. Will the construction involve extensive clearing or modification of vegetation?(Provide a detailed account of the trees & vegetation affected by the project)

Ans.: Cutting of trees is involved (permission is applied to concerned authority) and the construction activity will not involve any clearing of vegetation. Further Project Proponent proposes tree plantation as per CPCB/ MoEF norms/guidelines.

3.3. What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc along with a layout plan to an appropriate scale)

Ans.: Approximately 600 nos. of trees are proposed to be planted. Further about approx. 16.09 % of the plot area shall be covered under landscaping. Local and fast growing species shall be planted and Green Belt will be developed for control of pollution and aesthetic view of the project site.

4. FAUNA

4.1. Is there likely to be any displacement of fauna-both terrestrial and aquatic or creation of barriers for their movement? Provide the details.

Ans.: No, there will be no displacement of aquatic animals by the proposed project. There will be insignificant displacement of burrowing organisms from the project site to near by areas. To mitigate the adverse impact, adequate number of trees will be planted at site and green cover shall be provided for shelter of fauna.

4.2. Any direct or indirect impacts on the avifauna of the area? Provide details.

Ans.: No direct or indirect impact on avifauna is envisaged since very few cutting of trees are involved; further plantation of additional trees of 600 nos.(approx.) shall serve as abode for the avifauna.

4.3. Prescribe measures such as corridors, fish ladders etc. to mitigate adverse impacts on fauna

Ans.: Prescribed measures such as corridors, fish ladders etc. are not applicable for this project.

5. AIR ENVIRONMENT

5.1. Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)

Ans.: This project will not result in any kind of heat islands due to vehicular emissions. To reduce the gaseous emission from vehicle, proper entry/exit are proposed in the project with adequate wide internal road. The ambient air quality at and around the site is monitored and is shown in table below. Since the baseline ambient air quality is well within the permissible limits, the resultant increment in gases concentration will also be within the limits.

Analysis of Ambient air quality monitoring at site & within 10 Km radius

Sr. No.	Content	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	SO_2 µg/m^3	NO_x µg/m^3	CO µg/m^3
	At Project Site					
1	**Minimum**	81	39	8	11	105
2	**Maximum**	79	33	16	17	122
3	**Average**	84	37	12	14	125
	Within 10 Km Radius from project site					
1	**Minimum**	58	21	10	10	98
2	**Maximum**	66	39	8	14	109
3	**Average**	68	37	7	12	113

5.2. What are the impacts on generation of dust, smoke, odours fumes or other hazardous gases? Give details in relation to all the meteorological parameters.

Ans.: There will be no any adverse impacts of generation of dust, smoke, odours fumes or other hazardous gases. Adequate measures have been taken to keep control dust, smoke and gases concentration.

5.3. Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.

Ans.: Necessary arrangement will be made for smooth entry and exit of vehicles.
Adequate parking space is proposed within the premises at surface level.

5.4. Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.

Ans.: Adequate provisions have been made in the internal roads for smooth vehicles entry and exit and as well as pedestrian movements.

5.5. Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.

Ans.: No, there will not be significant increase in traffic noise & vibrations. Proper entries/exits are proposed in the project with adequate wide internal roads for smooth traffic movement at site. Noise and smoke free DG set will only be used in case of power failure at site.

5.6. What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details

Ans.: IMPACT:

⇒ Gaseous pollutants will be generated, which may cause air pollution.

⇒ Increase in background noise level.

MITIGATION MEASURES:

⇒ Noise and smoke free DG set will only be used during construction .

⇒ Sufficient tree plantation will be done which will act as noise barrier.

⇒ Earmuff / earplug will be provided to workers as a safe guard from noise.

6. AESTHETICS

6.1. Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?

Ans.: The proposed construction activity will not result in the obstruction of a view, scenic amenity or landscapes. But better designed structure and well planed landscape for add up aesthetics of that zone. The project is proposed after consideration of all such components.

6.2. Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?

Ans.: No, there will not be any adverse impact of the proposed construction on existing structures. The project site is a vacant land. The various factors considered while designing the project are as under:

1. Carrying capacity of existing road.
2. Vehicular density.
3. Water availability.
4. Better ambient air quality.

6.3. Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.

Ans.: The project is designed in accordance with Development Control Regulations of the concerned authority and following features are incorporated in project like Building Setback, Building height and open space reservation, etc.

6.4. Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.

Ans.: No, there are no archeological sites available near the project site.

7. SOCIO-ECONOMIC ASPECTS

7.1. Will the proposal result in any changes to the demographic structure of local population? Provide the details.

Ans.: No, there will not be any significant change in demographic structure of local population by the proposed project.

7.2. Give details of the existing social infrastructure around the proposed project.

Ans.: There is no major social infrastructure existing near the proposed site.

7.3. Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?

Ans.: No, there will be no adverse effects on local communities, sacred sites or other cultural values. Adequate safeguard measures have been proposed in EMP.

8. BUILDING MATERIALS

8.1. May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)

Ans.: The basic engineering materials like cement, sand, steel and bricks/blocks will be purchase locally. However finishing materials will be purchased keeping in mind the energy conservation aspects.

8.2. Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?

Ans.: Following steps will be taken to avoid pollution:

⇒ Use of barricading the periphery by corrugated tin sheet.
⇒ Sprinkling of water on road side to avoid dust pollution.
⇒ Proper traffic management plan will be provided.
⇒ Construction activities will be carried out during day time only.

The various steps proposed to mitigate the anticipated impacts are as under:

⇒ To Control dusting –
   a. Sprinkling of water on road side.
   b. Barricade the site periphery by corrugated tin sheet so as to confine dust.
   c. Dust mask will be provided to workers.

⇒ To Control Gaseous emissions –
   a. Vehicle carrying materials to be transported must have PUC certificate.
   b. Provision for entry & exit for smooth vehicle movement.
   c. Heavy vehicle movement will be allowed only during night time.

⇒ To control Noise generation –
   a. Barricade site periphery by corrugated tin sheet so as to confine noise within site.
   b. Ear muff/ear plug will be provided to workers.

8.3. Are recycled materials used in roads and structures? State the extent of savings achieved?

Ans.: The excavated soil will be used for leveling the site and top soil will be conserved for landscaping. Cement shall also be used in this project. Preference shall be given to fly-ash bricks and recycled aluminum in doors and windows.

8.4. Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

Ans.: The wastes shall be segregated on the basis of dry & wet waste as well as biodegradable & non-biodegradable. The biodegradable waste will be composted and non biodegradable waste will be disposed off at approved landfill sites.

9. ENERGY CONSERVATION

9.1. Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?

Ans.: **Power Requirement:**

- Source: Electricity Department U.T. Chandigarh
- During construction phase power requirement will be 1120 KVA
- During operational phase power requirement will be 7 MW

Transformer Details:

- Transformers/LD System shall be provided by Electricity Department U.T. Chandigarh
- Distance between Building and Transformer will be provided by U.T. Electricity Department as per IS Codes.
- No air conditioning has been proposed.

Energy Conservation Measures:

- Minimum light points and power consuming apparatus have been proposed.
- Adequate use of internal light and air has been made by planning the blocks of houses in the sun/wind direction.
- Energy efficient LED street light fixtures have been proposed in the street lighting
- Energy saving shall be made by the use of electronic timers in the automatic off/on operation of the street lighting.

9.2. What type of, and capacity of, power back-up do you plan to provide?

Ans.: No separate power back ups other than the regular electricity supply source is to be provided for Developing Units.

9.3. What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?

Ans.: Glass used for the buildings and residences will be insulated double glazed type with preferred metal oxide coating (Specific U – Value) to improve thermal insulation and control solar radiations.

9.4. What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.

Ans.: Orientation of Buildings and Elevation Features are planned to provide shading effect. The proposed project will permit maximum daylight to interior to minimize overall energy consumption. These features will also minimize the impact of climate both in summer and in winter and as a result, the use of electricity will likely to be reduced.

9.5. Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details.

Ans.: Yes, the building is designed in order to receive maximum solar light. Solar lighting is proposed for landscape area. It is anticipated that approx 50% of the external landscape lights shall be on solar energy.

9.6. Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?

Ans.: Depending upon the site condition & location, efforts will be made by the architects to maximize the shading of walls and the roofs.

9.7. Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.

Ans.: There will be significant use of energy efficient space conditioning, lighting and mechanical systems. Energy efficient space conditioning, lighting and mechanical systems are planned in conformity with Energy Conservation Building by Laws.

Following measures are proposed:

- Energy Efficient CFL LED fittings have been proposed for street lighting a
- Minimum light points and power consuming plug points have been proposed.
- Adequate use of internal light and air has been made by planning the blocks of houses in the sun/wind direction.
- Energy saving shall be made by the use of electronic timers in the automatic off/on operation of the street lighting.

Transformer Details:

- Transformers/LD System shall be provided by Chandigarh Housing Board, Chandigarh.
- Distance between Building and Transformer will be as per Indian Electricity Rules.

9.8. What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?

Ans.: There will be no adverse effect on micro-climate by the building activity. Also it will not have any significant impact on creation of hot island and inversion effects owing to following reasons:

1. Adequate open spacing shall be provided.
2. Selection of proper building materials.
3. Adequate green belt around the structure.

9.9. What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R values of the individual components.

Ans.: Roof will be of high quality concrete and walls will be of brick masonary as per the NBC rules 2005.

9.10. What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.

Ans.: Efficient fire fighting system is proposed as per NBC norms.

During Construction Phase:

Fire fighting measures like sand buckets will be provided.

During Operational phase:

1. Layout of plan is such that the fire tenders can move easily around the blocks for fire safety measures.
2. Fire fighting equipments like sand buckets will be provided.
3. Pressurization of staircases
4. Smoke extraction for basements and assembly areas.

9.11. If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.

Ans.: As the proposed project is a General housing scheme, simple low emissivity glass will be used. It, will have the following specifications:

For Glass – U Value: .88 Btu/hr/ Sqft. /F. for ¼ Gray - reflective Glass.

Glass Shading Coefficient : 0.88 Btu/hr/Sqft./F

9.12. What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.

Ans.: Proper Ventilation will be providing in rooms. Air changes/hour is as per Bureau of Indian Standards (National Building Code, 2005)

9.13. To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.

Ans.: Solar water heating of 200 LPD capacities is proposed D.Us .

10. ENVIRONMENT MANAGEMENT PLAN

The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

Ans.: The Management plan for various environmental components i.e. Land, Water, Air, Traffic and Socio-Economic etc. is given below.

ENVIRONMENT MANAGEMENT PLAN

Sr. No.	Environmental Component	Potential Impacts	Potential source of Impact	Controls though EMP and Design	Impact Evaluation
1.	Water	Water contamination	**Construction Phase** Domestic waste water from workers	Septic tank will be provided and disposed into municipal sewer line.	No adverse impact
			Surface runoff from site.	Silt traps and diversion ditches will be constructed to control surface run off.	No adverse impact
			Operation phase Discharge of domestic wastewater.	Generated sewage will be transferred to sewer lines and connect the same to the sewer network that will carry the sewage to the proposed Sewage Treatment Plant of 5 MGD capacity at Moloya.	No adverse impact
			Surface runoff from site	Rain water harvesting – ground water recharging will be done through percolation pits thereby prevent run off and facilitate water percolation.	Positive impact.
2.	Air Quality	Dust Emission	**Construction Phase** Construction activities	Dust mask will be provided to prevent worker exposure of dust. Barricading the site periphery by tin sheets.	Temporary & insignificant impact.

Sr. No.	Environmental Component	Potential Impacts	Potential source of Impact	Controls though EMP and Design	Impact Evaluation
				Sprinkling of water will be done for dust suppression.	
		Gaseous emissions of pollutants i.e. SPM, SO_2, NO_x and HC	Construction equipments and vehicular movement.	Periodic maintenance of construction equipments will be done. Heavy vehicle must be checked for PUC certificate.	Temporary & insignificant impact.
		Gaseous emissions of SPM, SO_2, NO_x and HC.	**Operation Phase**	The provides electricity will be obtained from Chandigarh Electricity Department .	No significant impact
			Emissions from vehicular traffic.	Adequate wide approach road is proposed for smooth vehicular movement. Road side plantation will further act as sink to gaseous emission.	No significant impact
3.	Noise	Increase in noise level.	**Construction Phase** Operation of construction equipments and vehicular movement.	Use of well-maintained equipment fitted with silencers.	No significant impact.
				Providing noise shields near the heavy construction operations.	
				Noisy operations will be limited to day time only.	

Sr. No.	Environmental Component	Potential Impacts	Potential source of Impact	Controls though EMP and Design	Impact Evaluation
				Ear plug and muffs will be provided to workers.	
			Operation Phase Vehicles movement	Wide road and ample parking space will be provided to reduce vehicular noise	No significant impact
			D.G. sets operations	No DG set will be used during operation phase..	No significant impact
4.	Land	Land contamination by construction debris and solid waste.	**Construction Phase** Disposal of construction debris & solid waste.	Construction debris will be collected and used for leveling the site. Solid waste from labours use will be colleted in collection bins and disposed off to approved municipal landfill site.	No significant impact.
			Excavated soil	Top soil will be used for landscaping	No significant impact.
			Metallic waste	Metallic waste will be sold to vendors for reprocessing	No significant Impact.
			Operation Phase Municipal solid waste like rubbish, paper, plastic garbage etc.	Efficient solid waste collection and storage facility is proposed.	No significant impact
				Solid waste will be collected and stored in collection bins and finally disposed off	No impact. No significant

Sr. No.	Environmental Component	Potential Impacts	Potential source of Impact	Controls though EMP and Design	Impact Evaluation
				in a scientific manner at approved landfill site of M.C which is maintained by Municipal Corporation.	impact. Compost material will be used as manure in landscaping.
5.	**Ecology**	No significant Impact	**Construction Phase** • Site Development during construction	• There is a plain terrain	--
			Operational Phase • Increase of green cover	• Suitable green belt will be developed as per landscaping plan at site.	--
6.	**Traffic Pattern**	Increase of vehicular movements	**Construction Phase** • Heavy Vehicular movement at site	• Heavy Vehicular movement will be restricted to daytime only and adequate parking facility will be provided.	--
			Operational Phase • Vehicular Movement	• Vehicular movement will be regulated inside the site with adequate roads and parking space.	--
7.	**Socio-Economic**	Increase in Job opportunities	**Construction Phase** • Job opportunities for the local residents	• Job opportunity will be increased for local persons.	--

TRAFFIC MANAGEMENT PLAN

During Construction Phase:

Adequately wide entry/ exit; will be provided with approach road. Proper parking will be provided for vehicles which come on site. Heavy vehicles movement will be restricted during night time only.

During Operation Phase:

There will be ample space for movement and parking of the vehicles. Proper Traffic management plan will facilitate easy and smooth movement without any hindrance to the regular flow of traffic on the main road.

SOCIAL MANAGEMENT

The site will be an impetus to the process urbanization. Improvement in earning will result in better education, consumer goods, sanitation, healthy and overall better quality of life. Hence, a net positive impact is expected on life style.

During the construction phase, skilled workers, unskilled workers & semi skilled workers will work. During functional phase, it generates direct and indirect employment like securities services, cleaning, building maintenance, gardening, vendors etc.

These services will be under contract includes:

- Security Services.
- Cleaning & Housekeeping.
- Gardening.
- Transportation.

Thus, indirect growth impetus to the medical, hospital & healthcare sector is likely to be outside the study area.