

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY (SEIAA), BIHAR  
2<sup>nd</sup> Floor, Beltron Bhawan, Shastrinagar, Patna-800 023

Ref. No. **281**

Patna, dt : 09.01.2014

From,

S.K. Karn,  
Member-Secretary,  
(SEIAA)Bihar.

To,


Sri Satish Kumar Bairoliya,  
Director,  
Indraprastha Realtors Pvt Ltd  
Road No. 1 E,  
97, New Patliputra Colony,  
Patna - 800013.

Sub: **Environmental Clearance for building project.**

Sir,

With reference to your letter, No. SEIAA/EC/13-14, dated 23<sup>rd</sup> July, 2013 and subsequent clarification dated 16<sup>th</sup> Aug. 2013 and an undertaking of the Resolution of the Board of Directors to the effect that "Violation of Environment (Protection) Act will not be repeated, the proposal has been examined by SEAC and processed in accordance with the EIA Notification, 2006 and its amendment thereof. It is noted that the salient features of the project for which Environmental Clearance has been accorded by SEIAA are as follows:

Name of the Project	"River Side" Developer: Indraprastha Realtors Pvt. Ltd.
Project Proponent	Mr. Satish Kumar Bairoliya.
Type of Project	Building & Construction Project

  
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Category of the Project	8 (a)- B2
Project Location	The proposed residential project will be established on own acquired land & land available under Development Agreement in residential area at Rajapur, Tauzi No.5202, Thana No.03, Kata No. 06,22,23 Survey Plot No.121,122 & 123(Part) . Rajapur, Patna Sadar, Patna, Bihar.
Existing structure & Vegetation	Land with small bushes & shrubs.
Geo-coordinates of the Site	Latitude: 25 <sup>o</sup> 37' 34.21"N & Longitude: 85 <sup>o</sup> 7' 27.60"E
Nearest Railway Station	Patna Railway Station- 5 km
Nearest Airport	J. P. Narain Airport- 8 km
Nearest River	River Ganga- 2.3 km
Total Plot Area	9080.15 sq. m.
Total Built-up Area	31.086.13 sq. m.
Green Belt Area	3021.93 Sq.M
Height of the building	38.89 meters
Total Nos. of Residential Blocks	3Nos.
Total Nos. of Flats	204 Nos.
Proposed Ground coverage	2660.53 Sq. M
Total water requirement	186 KL/day.
Source of Water	Primary source: Patna Municipal Corporation/Bore wells (ground water source) . Secondary source: Water recovered through STP
Waste water generated	Approx. 320 M <sup>3</sup> /day waste water to be generated
Waste water treatment	All waste water generated will be treated in STP and reused for landscape irrigation in nearby areas.
Capacity of STP	150 KLD day based on Moving Bed Bio Reactor (MBBR) process:
Rain water harvesting	Rain water from the roof of the building to be collected & discharged into the surface rain water channels network at the ground level filtered and finally discharged into ground water recharging wells. Rain water storage not proposed.
Solid waste/other waste generation	Excavation waste, construction wastes Approx, 900-1000 kg/day of Municipal waste to be generated from the proposed residential building project. Approx. 01 ton/ Annum waste lube oil to be

	generated from D.G. sets.
Disposal of waste	Excess excavated earth to be used for filling & landscape development. Domestic waste will be disposed through Patna Municipal Corporation for collection & disposal of municipal solid wastes. Waste paints, empty paint cans , empty drums of solvents, thinners & other materials used for interior decoration & furniture etc. and waste lube oil generated from D.G. sets to be disposed off as per guidelines of Environment (Protection)Act,1986 through CPCB/BSPCB authorized vendors.
Emissions	(i)Exhaust emission from D.G. sets (ii) Dust emission from construction activities (applicable only to construction phase) & due to movement of trucks, tractors & other construction machineries.
Noise	Noise up to 65 db (A) will be generated during construction activities, no other source for noise & vibration. Present noise level (monitoring done at the project site): Day time- 52 dB(A); Night time- 40 dB(A)
Energy requirement	Total Power requirement- 2031 KW through BSEB.
Energy source	Primary source: BSEB supply Alternative source (Power back up system); D.G. Sets- 3 Nos. (1 Nos. 285 KVA D.G. sets+2 nos. 250 KVA DG sets)
Energy conservation	(i)Solar heating system & solar energy for street lighting & emergency lighting (to be considered) (ii) Low thermal transmission co-efficient for building envelope (iii) Compact Fluorescent lamps with high frequency ballast for corridors. (iv) LED lamp fitting (v) Dimmers for public area lighting
Parking facilities	(i)Basement: 4 wheelers-204 nos. & 2- wheelers-100 nos.
Green-belt development	3021.93 sq. m. of the total area proposed for green belt and landscape development; Good green landscape to be developed & maintained within the premises. Decorative trees and hedges to be provided along pedestrian pathways;

	landscaped gardens proposed on the terrace of the building, mostly native species to be planted.
Fire safety Management	<p>(i) <u>Fire Detection &amp; Alarm System</u></p> <ul style="list-style-type: none"> <li>* Fire detectors to be installed at strategic points</li> <li>* Hooters (sounders) &amp; manual call points units to be provided at the exit areas and /or at every 30 m</li> <li>* Control modules to be provided to shut-off AC units in the event of fire detection &amp; isolation modules to reduce the faults to minimum in case of wiring /detector fault</li> </ul> <p>(ii) <u>Fire fighting System</u></p> <ul style="list-style-type: none"> <li>* Water storage for the hydrant &amp; sprinkler system proposed</li> <li>* External hydrant units to be provided along the periphery at an interval of not exceeding 50m to cover the entire building.</li> <li>* Standby pump of hydrant to act as standby pump for sprinkler system</li> <li>* Provision of portable 5 kg fire extinguisher to be placed at all internal hydrant location and other strategic points.</li> </ul>
Evacuation Plan in case of disaster	See. <u>Annexure 1</u> . Emergency pathways and assembly point in case of any disaster marked: Evacuation plan to be displayed at Entrance lobby. Guard room, each floor & at other strategic points. Emergency alarm in case of evacuation situation. (Letter to SEIAA, Ref. No. SEIAA/EC/13-14 dated 14.05.2013)
Environmental Management Plan	Cost of Environmental Protection Measures: (i) One time cost: 1.85 Crores (Installation of STP+ Green Belt Development) (ii) Recurring cost/Annum: 0.31 Crore ((Environmental monitoring +Running cost of Pollution Control Equipments +Green Belt Maintenance)
Statutory Compliances	(i) Plan approval by Patna Municipal Corporation ( PMC ) certified Architect. (ii) Other approvals from Agencies such as Airport Authority of India. State Fire Officer, Bihar etc. attached with the project proposals
Total cost of the project	54 Crores.

## **PART – A SPECIFIC CONDITIONS**

1. That the grant of this EC is issued from the environmental angle only ,and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

### **I. Construction Phase.**

#### **Facility of Labourers during Construction:**

- i) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking, mobile toilet, mobile STP, safe drinking water, medical health care etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- ii) Provision of drinking water, wastewater disposal, solid wastes management and primary health facilities shall be ensured for labour camps. Proper sanitation facilities shall be provided at the construction site to prevent health related problem. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.
- iii) Adequate safety measures shall be adopted to the construction workers.
- iv) All the laborers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.

#### **Environmental Management during Construction:**

- i) All the top soil excavated during construction activities shall be stored for use in horticulture/landscape development within the project site. Proper erosion control and sediment control measures shall be adopted.
- ii) Earth material generated from excavation shall be reused to the maximum possible extent as filling material during site development. The construction debris and surplus excavated material shall be

- disposed off by mechanical transport through the authorized agency of Patna Municipal Corporation.
- iii) Disposal of muck including excavated material during construction phase shall not create any adverse effects on the neighboring communities and disposed off taking the necessary precautions for general safety and health aspects.
  - iv) Low sulphur diesel type diesel generator sets should be used during construction phase. Diesel generator sets during construction phase shall have acoustic enclosures and shall conform to Environment (Protection) Rules,1986 prescribed for air and noise emission standards.
  - v) All vehicles/ equipments deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peaking hours. Public way should not be used as parking of vehicle.
  - vi) Ambient noise levels shall conform to residential standards both day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/BSPCB. The protective equipments such as earplugs etc. shall be provided to construction personnel exposed to high noise levels.
  - vii) Construction activities carried out shall be scheduled to day time only. Only limited necessary construction shall be done during night time. No unloading of construction material shall be done at night. Use of pressure horns shall be strictly prohibited. Appropriate noise barriers shall be provided.
  - viii) Construction spoils, including bituminous material and other hazardous material including oil from construction equipments must not be allowed to contaminate soil/ground water. The dump sites for such material must be secured so that they shall not leach into the ground water.
  - ix) Proper and prior planning, sequencing and scheduling of all major construction activities shall be done. Construction material shall be stored in covered shades. Truck carrying soil, sand and other construction materials shall be dully covered to prevent spilling and dust emission. Adequate dust suppression measures shall be

- undertaken to fugitive dust emission. Regular water sprinkling for dust suppression shall be ensured.
- x) Accumulation/stagnation of water shall be avoided ensuring vector control.
  - xi) Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminations.
  - xii) Regular supervision of the above and other measures shall be in place all through the construction phase so as to avoid disturbance to the surroundings.

**Selection of Materials for Better Energy Efficiency:**

- i) Use of energy efficient construction materials shall be ensured to achieve the desired thermal comfort.
- ii) Use of fly ash based bricks/blocks/tiles/products shall be explored to the maximum extent possible.
- iii) Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standard and specification of all construction works from concerned authority.
- iv) Reduce the use of glazed surface as per National Building Code, 2005. Use of glass in various building of the project may be reduced upto 40% to reduce the electricity consumption and load on air-conditioning. Roof of the various building of the Project should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfill requirement.
- v) Use of energy efficient construction materials to achieve the desired thermal comfort shall be incorporated. The desired level of roof assembling 'U' factor and insulation 'R' value must be achieved. Roof assembling 'U' factor for the top roof shall not exceed 0.4 Watt/sq.m/degree centigrade with appropriate modifications of specifications and building technologies. The provisions of National Building Code, 2005 shall be strictly followed.
- vi) Modern electrical power transmission & distribution system shall be installed. Power supply for up to 33 KV shall be supplied through underground distribution system. Power supply at 132 KV or above shall be supplied through overhead system.

- vii) Street/corridor lighting shall be energy efficient. The High Pressure Sodium Vapour (HPSV) Lamps & Compact Fluorescent Lamps (CFL) along Project Building premises shall be provided. High intensity, high mast lights to be installed at few strategic points. Solar energy may be used for outdoor lighting.
- viii) Adequate cellular phones and landlines shall be provided. Adequate vertical and horizontal separation between telephone and electric cable shall be maintained.
- ix) Reduce hard paving onsite (open area surrounding buildings) and/or provided shade on hard paved surfaces to minimize heat island effect and imperviousness of the site.

**Water Body Conservation:-**

- i) Water body falling within premises of the project site (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any shall be kept in natural conditions without disturbing the ecological habitat.
- ii) Improvement or rehabilitation of existing nallah (if any shall be carried- out without disturbing the ecological habitat.

**Water Supply:-**

- i) The water treatment plant shall be provided to treatment of water. The treatment shall include screening, Sedimentation, filtration and disinfections. Appropriate arrangement shall be made treatment and reuse of backwash water of filtration plant.
- ii) Project proponent shall provide adequate measuring arrangement at the inlet point of water uptake and at the discharge point for the measurement of water utilized in different categories to monitor the daily water consumption.
- iii) Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators of pressure reducing devices or sensor based control.
- iv) Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- v) Water budget should be adopted as per the plan submitted in the supplementary EMP.



### **Greening Programme:-**

- i) The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised in the construction phase so as to provide protection against particulates and noise.
- ii) The plantation shall consist of mixture of available indigenous, fast growing and sturdy species of trees, shrubs and herbs. Preferential plantation of flowering trees with less timber and fruit value shall be carried out.

### **Sewage Management:-**

- i) Treated water recovered from STP would be used for flushing the toilet, gardening purpose, make up water in air conditioning systems etc. As proposed ,FBR(Aerobic fluidized Bed reactor) type sewage treatment plant should be installed. The Sewage Treatment plant shall be ensured before the completion of Residential Building Project.

### **Rain water Harvesting Scheme:-**

- i) Rain water harvesting for roof –off and surface run–off, as plan submitted should be implemented. Before recharging the surface run off, Pre-treatment must be done to remove suspended matter, oil and grease. The bore well for rainwater recharging should be kept at least 5m above the highest ground water table.
- ii) Every block of the Building Project shall have independent rainwater harvesting facilities.
- iii) The storm water flowing in roadside drains shall also be recycled and reused to maintain the vegetation and discharged into ground water recharging wells.

### **Transport Management:**

- i) Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized as paid or unpaid parking for residents and visitors.
- ii) Dedicated pedestrian paths shall be provided within the Project Building Complex. Appropriate access shall be provided for physically challenged people in the pedestrian paths.

- iii) Permeable (porous) paving in the parking areas, and walkways should be used to control surface water runoff by allowing storm water to infiltrate the soil and return to ground water.
- iv) All intersections shall be designed and developed as roundabouts.
- v) All utility lines (electricity, telephone, cable, water supply, sewage, drainage, etc.) shall be laid below ground level. Ducts shall be provided along and across the roads to lay the utility lines. Major trunk (water/sewerage ) lines are to be laid along the utility corridor.
- vi) The road drainage shall be designed to enable quick runoff of surface water and prevent water logging.
- vii) Adequate provision shall be made to cater the parking needs. Parking spaces as given in 'Manual on norms and standards for Environmental Clearance of large Construction projects' issued by Ministry of Environment & Forests, Government of India shall be adapted.

**Others:-**

- i) All mandatory approvals and permissions as required from Airport Authority, Director of explosives and Fire Department etc. shall be obtained.
- ii) Unskilled construction laborers shall be recruited from the local areas. Construction materials shall be procured locally as far as possible.
- iii) Provisions shall made for the integration of solar water heating system.
- iv) Provision of vermin-composting for the biodegradable solid wastes generated from the Residential Building Complex as well as the large amount of biomass threat shall be available from the tree plantation shall be made.

- v) Periodical monitoring of ground water table and quality shall be carried out. Construction of the tube wells, bore wells shall be strictly regulated. Suitable number of peizometer shall be installed to monitor the changes in ground water level and the data of ground level shall be maintained properly. The ground water shall not be abstracted without prior permission from the competent authority.
- vi) The storm water management plan shall be designed in such a manner that the storm water is discharged through an existing dedicated storm water outfall only.
- vii) The height of the stack of the DG sets should be as per norms of CPCB.
- viii) The various blocks of the building complex should have adequate distance between them to allow movement of fresh air and passage of natural light , air and ventilation.
- ix) Erection of façade (screen) along the boundary wall.
- x) No mobile towers should be installed within the premises either on the ground or on the roof.
- xi) Height of the building needs to be specified.

## **II. Operation phase**

### **Sewage treatment plant:-**

- i) Project proponent shall operate and maintain the sewage collection/conveyance system, Sewage pumping system and sewage treatment system regularly to ensure the treated water quality within the standards prescribed by ministry of Environment and Forests, Government of India.
- ii) Properly treated and disinfected (ultra violet) sewage shall be utilized in flushing the toilets, gardening purpose, make up water in air conditioning systems etc.
- iii) Non-mixing of fecal matter with the municipal solid wastes shall be strictly ensured.

- iv) Non-mixing of sewage/sludge with rainwater shall be strictly ensured.
- v) Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.

**Emission of diesel Generator set:-**

- i) Noise barriers shall be provided at appropriate locations so as to ensure that the noise levels do not exceed the prescribed standards. DG sets shall be provided with necessary acoustic enclosures as per Central pollution Control board norms.

**Ensure Energy Efficiency:-**

- i) Back up supply shall be based on cleaner fuel subject to their availability.
- ii) The project proponent shall resort to solar energy at least for street lighting and water heating for Residential Building Complex, gardens/park areas.
- iii) During maintenance, energy efficient electric light fittings & lamps-low power ballasts, low consumption high power luminaries, lux level limiters & timers for street lighting shall be provided. Used CFLs and TFLs should be properly collected and disposed off/ sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination
- iv) A report on the energy conservation measures confirming to energy conservation norms finalized by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, 'R 'value & 'U' factors etc. and should be submitted to SEIAA/BSPCB.

**Municipal Solid Waste/Other Wastes:**

- i) Municipal solid wastes generated in the residential Building Complex area shall be managed and handled in accordance with the compliance criteria and procedure laid down in Schedule-II of the Municipal Wastes (Management and Handling) Rules, 2000 (As amended).
- ii) Two-chambered container or two separate containers (one for recyclable wastes and other for all organic and compostable wastes)

shall be placed at appropriate distance on the roadside and inside the building covered dustbins/garbage collector in convenient places to collect the municipal solid wastes shall be provided.

- iii) Proper composting /vermi-composting of municipal solid wastes shall be carried out. All municipal solid wastes shall be segregated, collected, transported, treated and disposed as per provision of the Municipal Solid Wastes (Management and Handling) Rules, 2000 (As amended).
- iv) All hazardous wastes shall be segregated, collected, transported, treated and disposed as per provisions of the Hazardous Wastes (Management and Handling) Rules, 1989 (As amended).
- v) The use of hand gloves, shoes and safety dress for all waste collectors and sorters shall be enforced.
- vi) Recycling of all recyclable wastes such as, newspaper, aluminium cans, glass-bottles, iron scrap and plastic etc. shall be encouraged through private participation. Project proponent shall take appropriate action to ensure minimum utilization of plastic carry bags and plastic small containers etc. with the Residential Building Complex, 100% collection and recycling of plastics used within the Building Complex shall be ensured.

#### **PART- B GENERAL CONDITION**

- (i) The environmental safeguard and mitigation measures contained in the application shall be implemented in letter and spirit.
- (ii) These stipulations would be enforced among others under the provisions of the Water(Prevention and Control of Pollution)Act,1974 and the Air(Prevention and Control of Pollution)Act,1981, the Environment(Protection)Act,1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
- (iii) All the conditions, liabilities and legal provisions contained in the Environmental Clearance shall be equally applicable to the successor management of the project in the event of the project proponent transferring the ownership, maintenance of management of the project to any other entity.

- (iv) The funds earmarked for the environmental protection measures shall not be diverted for other purposes.
- (v) Six monthly monitoring reports shall be submitted to the Ministry of Environment and Forests, Regional Office Bhubaneswar who shall be monitoring the implementation of environmental safeguard and the officials of BSPCB should be given full cooperation, facilities and documents/ data by the project proponents during their inspection. A complete set of all the documents shall be submitted to State Environment Impact Assessment Authority, Bihar.
- (vi) The responsibility of implementation of environmental safeguards rests fully on the project proponent. Project Proponent shall establish an environmental management cell to carry out functions relating to environmental management under the supervision of senior executive, directly reporting to the head of the organization.
- (vii) In the case of change(s) in the scope of the project, the project shall require a fresh appraisal by the SEAC/SEIAA.
- (viii) Risk Assessment study along-with Disaster Management Plan (DMP) shall be prepared. The imitative measures for disaster prevention and control shall be prepared and get approved from competent authority. All other statutory clearances/licenses/permissions from concerned State Government Department, Boards and Corporations shall be obtained for development of Residential Building Complex. Project proponent shall follow direction issued by Central Government/ State Government, Central Pollution Control Board/Bihar State Pollution Control Board from time to time regarding control of Water & Air Pollution and for environmental conservation.
- (ix) The project proponent should advertise in at least two local Newspapers widely circulated in the region one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Bihar State Pollution Control Board and may also be seen on the website of the SEIAA, Bihar. The advertisement should made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of the Ministry at Bhubaneswar.
- (x) Copy of the environmental clearance, status of compliance to the various stipulated environmental conditions and environmental safeguards will be permanently uploaded by the project proponent in its website.

- (xi) The SEAC/SEIAA Bihar will have to right to amend the above conditions and add additional safeguard measures subsequently, If found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
- (xii) Any appeal against this Environmental Clearance shall lie with the National Green Tribunal (NGT), if preferred within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

Sd/-


S.K. Karn,  
Member-Secretary  
SEIAA, Bihar

Memo No. **281**

Patna, Dated 10/01/2013

Copy forwarded to: The Secretary, Environment and Forest Department, Vikas Bhawan, Patna/ Chairman, C.P.C.B., Parivesh Bhawan, East Arjun Nagar, Delhi-23/ Chief Conservator of Forest (c), Ministry of Environment and Forest, Regional Office (E2), A/3, Chandrashekharpur, P.O.- Pail Vihar, Bhubaneswar-23/ The Chairman, B.S.P.C. Board, Beltron Bhawan, 2<sup>nd</sup> Floor, LBS Nagar, Patna-23/ Chairman SEAC/ Advisor (A), Paryavaran Bhawan, Ministry of Environment and Forest, C.G.O. Complex, Lodhi Road, New Delhi-3/ Guard file/Monitoring File.

Yours faithfully,

  
**MEMBER SECRETARY  
STATE ENVIRONMENT IMPACT  
ASSESSMENT AUTHORITY  
(SEIAA) BIHAR**

(S.K. Karn)  
Member Secretary  
SEIAA, Bihar.