

**State Environment Impact Assessment Authority (SEIAA), Bihar**  
BELTRON Bhawan, 2<sup>nd</sup> Floor, Shastri Nagar, Bailey Road,  
Patna – 800 023

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Ref : No. **299**

Patna, date : 16/01/14

From,

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

To,

The Director,  
Sai Kripa Real Estate Pvt Ltd,  
Mitra Compound,  
East Boring Canal Road,  
P.S-Budlha Colony,  
Patna.


Sub:- **Environmental Clearance of Sai Kussum Infinity. Residential building project.**

Sir,

With reference to your letter no. SEIAA/EC/13-14 dated 10/09/2013 and subsequent letters no.-SEIAA/EC/13 dated 16.10.2013 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 Environment Clearance is accorded by SEIAA are as follows:

**Salient features of the proposed project:**

Name of the Project	SAI KUSSUM INFINITY Residential –cum- Commercial Building Project
Project Proponent	M/s Sai Kripa Real Estate Pvt. Ltd.
Category	8(a) – B2
Location of the Project	Village – Sadkipur Yogi; Thana No.– 09; Tehsil – Patna Sadar, District – Patna, Bihar Geo –coordinates: 25° 36' 5.02"N & 85° 9' 56.87"E

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

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Type of Project	Building & Construction Project
Total Plot Area	7,011.33 m
Proposed Total built up area	21, 139.22 m <sup>2</sup> (Commercial: 3555.97 m <sup>2</sup> + Residential: 13, 238.14 m <sup>2</sup> )
Total Parking Area	4345.11 m <sup>2</sup>
Green Belt & Landscape Area	2314 m <sup>2</sup> (33% of total plot area)
Project cost	30 Crores
No. of Structures/Buildings	02 Nos. : 1 (Basement + Ground + 2 Floors) + 1 (Ground + 12 Floors)
Total No. of residential Flats	109
Height of building	54 m
Source of Water	Primary source: Govt. (Municipal) Water Supply Standby source: Bore wells with an yield of 15000 l/h
Water Requirement	Total Water requirement: 108 KLD (Freshwater requirement: 88 KLD + STP treated water: 20 KLD)
Rain water harvesting	Rain water harvesting with filtration system & recharge wells to be provided for recharging of ground water
Waste water generated	Approx. 72 KLD (Domestic waste water: 46 KLD + Flushing waste water: 26 KLD)
Capacity of STP	100 KLD
Solid waste generation	i) Construction waste – Left over cement & mortars, concrete blocks, aggregate, sand & other inorganic materials ii) Excavated earth quantity – 36,200 m <sup>3</sup> Approx. iii) Operation Phase – Domestic waste: 340 kg/day (200kg/day- dry garbage+ 140 kg/day wet waste) iv) E-wastes
Emissions	PM, NO <sub>x</sub> , SO <sub>2</sub> & CO from DG sets, Air emissions from vehicles operating within the premises & Fugitive emissions due to handling, transport & unloading of construction materials.
Noise & vibrations	From DG sets, compressors & pumps, vehicles movement, construction activities. Observed

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	Noise level: Project site: 67.4 dB (A) during Day time & 38.4 dB(A) during Night time. Expected Noise levels due to construction: activities: 60 – 70 dB (A) & due to movement of vehicles: 50 – 55 dB (A).
Power Requirement	Total Power Requirement: 1970 KW through Bihar State Electricity Board Supply. Power backup: DG Set – 02 Nos. (01 DG set - 750 KVA + 01 – 500 KVA capacity).
Parking Facilities	Total parking proposed: i) For Commercial Building: 4-wheelers – 20 Nos. + 2-wheelers – 55 Nos. ii) For Residential Building: 4-wheelers – 109 Nos. & For visitors: 4-wheelers – 20 Nos.
Green Belt Development	Total Green Area proposed: 2314 sq. m. (33% of the total plot area) to be under plantation within residential plots & along the roads.
Environmental Management Plan	EMP for Water, Air, Land & Noise Environment, Ecological Environment & Socio-economic Environment during construction and operation Phase provided. <ul style="list-style-type: none"> <li>• Environmental Budget of Rs.2, 46, 200/-per Annum committed.</li> </ul>

The proposal has been examined and processed in accordance with EIA Notification 2006 and its Amendment thereof. This project is covered in serial no. '8(a) Building and Construction Projects of EIA Notification, 2006. The PP has explained on the queries made by SEAC in its meeting of 28.09.2013 & 26.10.2013 and the explanations were found satisfactory by the SEAC members. In view of the explanations made by the PP and appraisal of the project, the Committee decided to recommend the proposal for accord of Environmental Clearance to SEIAA. However, the committee has recorded that the project proponent has made violation of the EIA Notification, 2006 by constructing some permanent structure (base of the parking area). The committee decided to apprise SEIAA of this fact for recommendation to the competent authority for suitable action.

**SPECIFIC CONDITIONS**

**I. Construction Phase**

**i) 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 toilets, 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.

**ii) 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 neighbouring 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-peak hours. Public way should not be used as parking of vehicle.

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- vi) Ambient noise levels shall conform to residential standards both during 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 daytime only. Only limited necessary construction shall be done during night time. No unloading of construction materials 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 materials 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 sheds. Truck carrying soil, sand and other construction materials shall be duly covered to prevent spilling and dust emission. Adequate dust suppression measures shall be undertaken to control 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 contaminants.
- 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.
- iii) 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 specifications of all construction works from concerned authority.

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- iv) Reduce the use of glazed surface as per National Building Code 2005. Use of glass in various buildings of the Project may be reduced up to 40% to reduce the electricity consumption and load on air-conditioning. Roof of the various buildings 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 provide shade on hard paved surfaces to minimize heat island effect and imperviousness of the site.
- iv) 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..
- v) Water Supply: -**
- i) The water treatment plant shall be provided for treatment of water. The treatment shall include screening, sedimentation, filtration and disinfections. Appropriate arrangement shall be made for treatment and reuse of backwash water of filtration plant.

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- 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 or 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.
- vi) 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 plantations 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.
- vii) Sewage Management: -**
- i) Treated water recovered from STP would be used for flushing the toilets, 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.
- viii) Rain Water Harvesting Scheme: -**
- i) Rain water harvesting for roof run-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 5 m above the highest ground water table.
  - ii) Every block of the Building Project shall have independent rainwater harvesting facilities.

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- 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.

**ix) 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 standards 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 adopted.

**Others: -**

- i) Some permanent construction work has already been initiated on the project location site. No further construction activity should be initiated prior to accord of Environmental Clearance.
- ii) Demolish/Remove the temporary structure existing in the proposed project site before any construction activity is initiated at the project site.
- iii) Ensure double plumbing system in the design



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- iv) All mandatory approvals and permissions as required from Airport Authority, Director of explosives and Fire Department etc. shall be obtained.
- v) Unskilled construction laborers shall be recruited from the local areas. Construction materials shall be procured locally as far as possible.
- vi) Provisions shall be made for the integration of solar water heating system.
- vii) Provision of vermi-composting for the biodegradable solid wastes generated from the Residential Building Complex as well as the large amount of biomass that shall be available from the tree plantation shall be made.
- viii) Periodical monitoring of ground water table and quality shall be carried out. Construction of tube wells, bore wells shall be strictly regulated. Suitable number of Piezometer shall be installed to monitor the changes in ground water level and the data of ground water level shall be maintained properly. The ground water shall not be abstracted without prior permission from the competent authority.
- ix) 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.
- x) The height of the stack of the DG sets should be as per norms of CPCB.
- xi) 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.
- xii) Erection of facade (Screen) along the boundary wall.
- xiii) No mobile towers should be installed within the premises either on the ground or on the roof.

## **II. Operation Phase**

### **i) Sewage Treatment Plant: -**

- ii) 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.
- iii) Properly treated and disinfected (Ultra Violet) sewage shall be utilized in flushing the toilets, gardening purpose, make up water in air conditioning systems etc.
- iv) Non-mixing of fecal matter with the municipal solid wastes shall be strictly ensured.
- v) Non-mixing of sewage/sullage with rainwater shall be strictly ensured.
- vi) Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.

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**ii) 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.

**iii) 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 conforming 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.

**iv) 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 provisions 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 plastics etc. shall be encouraged through

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private participation. Project proponent shall take appropriate action to ensure minimum utilization of plastic carry bags and plastic small containers etc. within the Residential Building Complex. 100% collection and recycling of plastics used within the Building Complex shall be ensured.

**PART B – GENERAL CONDITIONS**

- i) The environmental safeguards 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 Water (Prevention and Control of Pollution) Act, 1974, 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 Bihar State Pollution Control Board (BSPCB) who shall be monitoring the implementation of environmental safeguards 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 Environmental 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 any 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 mitigative measures for disaster prevention and control shall be prepared and get approved from competent authority. All other statutory clearances/ licenses/ permissions from concerned State Govt. Departments, 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


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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 and Ministry of Environment and Forests at <http://www.envfor.nic.in>. The advertisement should be 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 this Ministry at Bhubaneswar.
- x) Copy of 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 the 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 Environmental (Protection) Act. 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
- xii) Any Appeal against this Environment Clearance shall be with National Green Tribunal, if preferred within a period of 30 days as prescribed under 16 of the National Green Tribunal Act, 2010.

Yours faithfully,

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

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

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Memo No. :- 299

Patna, dated: 16/01/14

Copy forwarded to : The Secretary, Environment & Forests Department, Sichaibhawan, Patna/ The Chairman, Bihar State Pollution Control Board, Beltron Bhawan, IInd Floor, LBS Nagar, Jawahar Lal Nehru Marg, Shastrinagar, Patna-800023/Chairman, SEAC, Bihar/Chairman, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-23/ Chief Conservator of Forest (C), Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandrasekharpur, P.O. Rail Vihar, Bhubaneswar - 751023/, Advisor (EIA), Paryavaran Bhawan, Ministry of Environment & Forests, CGO Complex, Lodhi Road, New Delhi- 110003/ Guard File.

Yours faithfully,

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

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