# STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

Pranisampad Bhavan, LB-2, 5th Floor, Sector III, Salt Lake, Kolkata - 700 106

Web Portal: www.environmentwb.gov.in

No.

823 / EN / T - II - 1/022 / 2019

Date: 29

29th

April, 2019

To M/s Merlin Projects Limited, 'Merlin Oxford', 2<sup>nd</sup> floor, 22, P.A. Shah Road, Kolkata – 700 033.

Sub: Stipulated Conditions for getting Environmental Clearance for the proposed residential Project at Mouza-Mahisbathan, J.L. No. 18, L.R. Dag No. 462, 504, 505, P.S. (New)- Electronic Complex, P.S. (Old) – Rajarhat, Dist.-24 Parganas (N), Kolkata – 700 102,

Sir.

This has a reference to your application for Environmental Clearance (EC) submitted on 01.03.2018 for the proposed residential complex at Mouza-Mahisbathan, J.L. No. 18, L.R. Dag No. 462, 504, 505, P.S. (New)- Electronic Complex, P.S. (Old) – Rajarhat, Dist.-24 Parganas (N), Kolkata – 700 102, West Bengal and presentation made by you before SEAC on 26.03.2019.

Based on your application for environmental clearance and presentation made by you, SEAC in its meeting dated 17.04.2019 has recommended a list of stipulated conditions for the project proposal.

SEIAA in its meeting dated 25.04.2019 approved the stipulated conditions for Environmental Clearance recommended by the SEAC (copy of which is enclosed herewith). Validity of the stipulated conditions for getting EC is for 3(three) years.

You are requested to prepare the construction plan incorporating the stipulated conditions before submission of the same for building plan approval. The sanctioned building plan, along with a comparative statement of salient features between those in stipulated conditions and sanctioned plan may kindly be submitted in the secretariat of SEAC at Paribesh Bhavan, Salt Lake. The SEIAA shall consider the case only when it is ensured that the conditions listed in the enclosure have been properly addressed in the building plan.

Yours sincerely,

(Niraj Singhal, IFS) Member Seeretary, SEIAA

No.

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April, 2019

Copy forwarded for information to the Secretary, State Level Expert Appraisal Committee.

Sd/-(Niraj Singhal, IFS) Member Secretary, SEIAA



## Name of Environmental Consultant - M/s. JB Enviro Consultants Pvt. Ltd.

This has reference to the application for environmental clearance dated 01/03/2019 along with other related documents on the above referred project.

- This is a proposal for residential project having the following configuration 2 nos. block 2B+G+27 storied building. Total Built up area will be 39867.506 sqm., land area is 7812.02 sqm.
- The above proposal has been considered in the 170th & 171th SEAC meeting held on 26/03/2019 and 17/04/2019 respectively.
- 3. Salient features of the proposed project are as follows -

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| Salient features of the proposed proje | ect are as follows –  |
|--|---|
| Total Land Area                        | 7812.02 sq.m.   |
| Building Profile                       | 2 nos. block - 2B+G+27 storied building                                 |
| Latitude & Longitude                   | 22°34'09.20" N & 88°26'44.62" E   |
| Expected Population                    | 1160 persons (Permanent - 976, temporary - 184)                         |
| Total Water requirement                | 174 KLD   |
| Fresh Water requirement                | 103 KLD (Bidhannagar Municipal Corporation / Ground Water supply)       |
| Wastewater generated                   | 120 KLD (to be treated in STP)  |
| Treated Wastewater reused              | 71 KLD (to be used in flushing, landscaping & car washing)              |
| Treated Wastewater discharged          | 49 KLD (to Corporation drain)   |
| Solid waste disposal                   | 516 kg/day  |
| Total Built-up Area                    | 39867.506 sq.m.   |
| Ground Coverage                        | 1696.28 sq.m. (21.71%)  |
| Service Area                           | 274.28 sq.m. (3.51%)  |
| Exclusive Tree Plantation Area         | 948.57 sq.m. (12.14% of the total land area and 20.58% of net land area |
| Water body area                        | 3201.75 sq.m. (40.98%)  |
| Road / Payed Ares                      | 130.19 sq.m. (1.67%)  |
| Total green area                       | 984.88 sq.an. (12.61%)  |
| Total Paved Area                       | 166.50 sq.m. (2.13%)  |
| Planuation proposed                    | 110 nos.  |
| No, of Parking Speces proposed         | 295 pos.  |
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Stage Loft

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| Total Power requirement  | 1155 KVA, WBSEDCL (At least 1% of total power requirement shall<br>be met from solar power |
|--------------------------|--|
| Solar Operated Led Light | 11 Nos.  |
| Backup Power             | 2X750 KVA DG set   |
| Project Cost             | Rs. 12136 Lakhs  |
| CER                      | 1.5% of Rs. 12136 Lakhs = Rs. 183 Lakhs  |

4. The State Level Expert Appraisal Committee, West Bengal, hereby, proposes the stipulated conditions for environmental clearance as per the provision of Environmental Impact Assessment Notification 2006 and the subsequent amendments, on the basis of above mentioned features along with other details submitted to SEIAA, subject to strict compliance of the terms and conditions (whichever applicable at building sanction stage) mentioned below.

#### Part A - SPECIFIC CONDITIONS

#### I. Construction Phase

### Steps to avoid disturbance during construction: -

- i. The proponent should abide by the Construction and Demolition Waste Management Rules, 2016. All the topsoil excavated during construction activities should be under cover/stored by retaining walls for use in horticulture / landscape development within the project site. Adequate erosion and sediment control measures to be adopted before ensuing construction activities.
- ii. Prior permission should be obtained from the competent authority for demolition of the existing structure, if any. Waste recycling plans should be developed for prior to beginning of demolition and construction activity. The plans should identify wastes to be generated and designate handling, recycling and disposal method to be followed.
- Disposal of muck including excavated material during construction phase should not create any adverse effects on the neighbouring communities and disposed off taking the necessary precautions for general safety and health aspects.
- Diesel generator sets during construction phase should have acoustic enclosures and should conform to E(P) Rules prescribed for air and noise emission standards.
- Vehicles / equipment deployed during construction phase should be in good condition and should conform to applicable air and noise emission standards and should be operated only during non-peaking hours.
- vi. Ambient noise levels should conform to residential standards both during day and night. Fortnightly monitoring of ambient air quality (SPM, SO<sub>2</sub> and NO<sub>8</sub>) and equivalent noise levels should be ensured during construction phase.
- vii. Construction spoils including bituminous material and other hazardous materials including oil from construction equipments must not be allowed to contaminate watercourses and the dumpsites for such material must be secured so that they should not leach into the ground water. If necessary, oil trap should be installed where there is deployment of heavy machineries.
- viii. Regular supervision of the above and other measures should be in place all through the construction phase so as to avoid disturbance to the surroundings. Discomfort in the neighbourhood due to the proposed project activity should be minimized as far as practicable.

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- ix. Loading and unloading operations should not be carried out in open areas and should be preferably done during day time, if there is any major settlement in the surrounding areas. The construction activities including piling work, Operation of Ready Mix Plant and Vibrator etc. should not be carried out during the night time (10 P.M. to 6 A.M.). Only essential operations, if any, may be carried out for a limited period during nighttime.
- x. The proponent must ensure that no driven piles shall be proposed for this project, if there is any major settlement in the surrounding areas.
- xi. 15m-screen and adequate sprinkler arrangement shall be provided. Care should be taken to keep all material storages adequately covered and contained so that they are not exposed to winds.
- xii. Use of Ready-Mix concrete is recommended for this project.
- xiii. Adequate measures to be adopted to avoid wastage of water for curing of concrete structures.
- xiv. Adequate mitigative measures should be adopted to control dust emissions, noise and vibrations from construction activities. Vehicles and construction machineries should be properly maintained. Vehicles should conform to Pollution under control (PUC) norms.
- xv. Locally available materials with less transportation cost should be used preferably.
- xvi. Promotion of use of cleaner fuel and fuel quality improvement should be done. Excessive energy consumption and fuel usage should be avoided.
- xvii. Accumulation / stagnation of water should be avoided to ensure vector control.

## Selection of materials for better energy efficiency:-

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- 1. Use of energy efficient construction materials should be ensured to achieve the desired thermal comfort.
- Design layout should ensure adequate solar access and ventilation. Proper planning and window design for daylight integration should be considered.
- Fly Ash is to be used for construction as per Notification No. S.O. 763(E) dated 14.09.1999 amended vide 14otification No. S.O. 979(E) dated 27.8.2003, S.O. 2804(E) dated 03.11.2009 and S.O.254(E) dated 25.01.2016 of the Ministry of Environment & Forests, Gevt. of India.
- Construction should conform to the requirements of local seismic regulations. The project proponent should obtain permission for the plans and designs including structural design, standard and specifications from concerned authority.
- Construction technologies that require less material and possess high strength should be adopted. Materials
  with low embodied energy and high strength should be used preferably.
- The building will be constructed and provisioned to use natural sunlight to the maximum during the day time, during use.
- vii. Use of alternate building materials and alternate construction techniques should be considered apart from the conventional materials and methods. Use of hollow unit masonry should be considered.
- viii, Use of energy efficient lighting systems e.g. High Pressure Sodium Vapour (HPSV) Lamps, LED etc. should be promoted. Solar energy should be used for outdoor lighting. Adequate no. of solar lights should be installed for external lighting as per norms, All common area lighting will be LED system.
- ix. Solar water heating arrangement will be done for water heating in canteen area as proposed.
- Passive solar cooling to be incorporated in building design. Buildings should be oriented for ensuring natural
  ventilation and day lighting.
- Proper insulation of roof should be provided to achieve desired thermal comfort. Use of light coloured, reflective roofs having an SRI (solar reflectance index) of 50% or more should be incorporated.
- xii Use of high albede or reflective pavements to keep parking lots, pavements and inside roads cool should be incorporated.

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- xiii, Guidelines to the occupants should include usage efficiency measures such as energy efficient lighting and water efficient system.
- xiv. Reduce hard paving-onsite (open area surrounding building premises) and/or provide shade on hard paved surfaces to minimize heat island effect and imperviousness of the site.
- xv. Adequate open space, greenery and water bodies to be provided as per rules.
- xvi. Any proposed building with air-conditioning facility should follow the norms proposed in the ECBC regulations framed by the Bureau of Energy Efficiency. Use of chillers will be CFC & HCFC free.
- xvii. Restrict the use of glazed surface as per National Building Code 2005 and as amended thereafter.

### Water Body Conservation: -

 Water body of 3201.75 sq.m. (40.98% of land area) should not be lined and their embankments should not be cemented. The water body is to be kept in natural conditions without disturbing the ecological habitat. The area and location of the water body should be incorporated in the sanctioned building plan of the concerned authority.

### Land Character: -

 No construction activity is permitted under any circumstances on any designated water body or any plot of land characterized as wetland.

## Plantation Proposal: -

- The unit should strictly abide by The West Bengal Trees (Protection and Conservation in Non-Forest Areas)
  Act, 2006 and subsequent rules. The proponent should undertake plantation of trees over at least 20% of the
  total area.
- No tree can be felled without prior permission from the Tree Cutting Authority constituted as per the West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006 and subsequent rules.
- iii. The proponent should plant at least 110 trees as proposed. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iv. Provision for Roof Top Gardening is mandatory.

## Water supply: -

 Water requirement during construction phase shall be met from Bidhannagar Municipal Corporation / Ground Water supply. Ground water should not be abstracted without prior permission of the Competent Authority as per the West Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005.

### Sewage Treatment Plant: -

 As per the proposal during construction phase construction water must be treated and reused. Domestic waste water generated during construction phase must be treated in a septic tank followed by soak pit.

### Storm water Management & Mitigation of Heat Island Effect: -

- Imperviousness of the site shall not exceed the NBC (National Building Code 2005 and as amended thereafter) standards for imperviousness factor applicable to different types of area.
- ii. Total paved area of site under parking, roads, paths or any other use should not exceed 25% of the site area.
- iii. Minimum 50% of paved area on site should have pervious paving or shaded under vegetation or topped with finish having solar reflectance of 0.5 or higher.

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- iv. Adequate storm water drainage network to be designed for the project without disturbing the surrounding settléments. Storm water management plan should be implemented so as to prevent sudden discharge of excessive volumes of storm water to the receiving waters thus reducing the shock load on the drainage system and impact on receiving water body.
- Disruption to the natural hydrology of the site should be minimised by reducing impervious cover, increasing
  on site infiltration and managing storm water runoff.
- vi. Heat island effect should be minimized by use of shading or reflective surfaces, mainly the surfaces that contribute to the heat island effect i.e. streets, sidewalks, parking lots and buildings. White roofs should be provided in the buildings.

## Rain Water Harvesting Scheme:-

- i. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. Detailed plan and sections of the storage tank with reference to the building line and levels to be submitted.
- The proponent must collect rainwater from roof-top catchments and reuse for various purposes after necessary cleaning. Adequate retention time and storage provisions should be provided for harvesting rainwater.
- iii. The proponent must ensure proper depth of recharge well for ground water recharging.
- iv. Adequate firefighting storage should be provided as per norms.

### Soild Waste Management :-

- Conform to the guidelines on Environment Management of Construction & Demolition Waste by CPCB, March 2017.
- ii. Adequate provision shall be made for storage and segregation of solid waste and adequate means of access shall be provided.
- iii. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules, 2016.

# Transport Management: -

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- Internal traffic planning and management should be adequate to ensure uninterrupted traffic movement in the area during construction as well as operation phase.
- ii. Clarified Wastewater will be used for sprinkling water on the unpaved internal roads on a regular basis.

#### Others:-

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- i. Notification G.S.P. 94(E.) dated 25.01.2018 issued by MoEF & CC, Government of India should be complied with.
  - Conform to the clause mentioned in the "Manual and standards for EC for large construction projects" published by MoEF & CC, Government of India.
  - iii. Incorporate details of all dimensions and functional, positional arrangement of STP, MSW site including Compost plant, Rainwater harvesting reservoir in the approved plan.
  - iv. Scaled up drawings (both plan and section) of STP and rainwater harvesting tank showing portion of adjacent areas mentioning the levels and entry/exit to the facilities to be submitted.

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- v. Location of the said facilities in the floor plan mentioning the levels should be submitted.
- vi. Final site plan (in conformity with the final approved plan) showing Land use distribution with polyline and corresponding legend mentioning Area and Percentage of each use both in soft (Auto CAD 2010) & hard copy formats to be submitted.
- vii. All mandatory approvals and permission as required from Director of Explosives, Fire Department etc. should be obtained.
- viii. Efficient management of indoor air quality must be ensured for health and safety of the users.
- ix. Adequate measures to be adopted for water conservation during construction and operation stage. Use of efficient irrigation equipment, evaporative cooling unit in air-conditioning system etc should be considered.
- x. Rest room facilities should be provided for service population.
- xi. Adequate access to fire tenders should be provided.

## II. Operation Phase

## Water supply: -

- Water requirement shall be met from Bidhannagar Municipal Corporation / Ground Water supply. Ground water should not be abstracted without prior permission of the competent authority as per the West Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005.
- ii. Use of water meter conforming to ISO standards should be installed at the inlet point of water uptake to monitor the daily water consumption. Use of water efficient devices / fixtures and appliances should be promoted. Installation of dual flushing system should be considered to conserve water.
- iii. The proponent must practice rainwater harvesting on regular basis.

## Sewage Treatment Plant: -

- As per the proposal submitted by the proponent, waste water shall be treated in STP. Treated waste water shall be reused for flushing, landscaping & car washing and rest will be discharged to Corporation drain. Necessary permission from the Competent Authority to be obtained.
- ii. Reuse of treated wastewater should be carried out as proposed.

#### Emission from Diesel Generator Set: -

- Noise barriers will be provided at appropriate locations so as to ensure that the noise levels do not exceed the
  prescribed standards. Diesel generator sets should be provided with integral acoustic enclosure at the
  manufacturing stage itself as per CPCB norms.
- The stack height and emissions from D.G. sets should conform to the norms of Central Pollution Control Board. The certification of space design for DG sets should be done by competent authority.

## Ensure Energy Efficiency: -

- i. Use of energy efficient construction materials to achieve the desired thermal comfort should be incorporated. The desired level of R and U factors must be achieved. U factor for the top roof should not exceed 0.4 Watt/sq.m/degree centigrade with appropriate modifications of specifications and building technologies. The provisions of National Building Code 2005 and as amended thereafter should be strictly followed.
- Use of energy efficient electrical systems should be promoted. High efficiency lamps with electronic ballasts should be used.
- Energy efficient Motors and properly rated Transformers should be installed. Manufacturer's certificate to this effect shall be obtained and kept on record. Backup power supply should be based on cleaner fuel.

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- iv. The power cabling shall be adequately sized as to maintain the distribution losses not to exceed 1% of the total power usage. Record of transmission losses shall be maintained. The proponent shall install permanent electrical metering to record demand (kVA), energy (kWh) and total power factor.
- v. At least 1% of total demand load to be met from solar power source.

### Transport Management: -

- Use of public mode of transportation should be promoted. Use of the least polluting type of transportation should be promoted. Adequate parking space should be provided as per norms.
- Pathways should be covered or shadowed by tree canopy as far as practicable. Transport system should be such that traffic will be calm in neighbourhoods. Traffic within the project site should be restricted by regulation. Adequate vertical and horizontal clearances of overhead electric power and telecommunication lines should be provided.

## Solid Weste Management: -

- The proponent should abide by the Solid Waste Management Rules, 2016. The proponent must develop the Solid Waste Management and Disposal Scheme ensuring storage and segregation of biodegradable and nonbiodegradable wastes. The solid waste is to be disposed off in consultation with concerned local body.
- ii. The proponent should provide different coloured bins for different categories of waste and ensure complete segregation of biodegradable and non-biodegradable wastes. The solid waste from different collection and storage bins should be finally collected at transfer stations. Further segregation will be done at transfer stations to collect recyclables such as plastic, polythene, glass, metals, textiles, rubbers, leatiners, paper etc. Separate compartments shall be provided for each type of recyclables.
- Separate compartments shall be provided for each type of recyclables.

  iii. The proponent should abide by the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Collection and storage of hazardous wastes during Pre-construction and Post-construction activity should be planned properly. The expected hazardous wastes should be disposed off separately as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
  - iv. Spent oil from DG Sets should be stored in HDPE drums in isolated covered facility and disposed off as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Spent oil from DG Sets should be disposed of through registered recyclers only.

#### Others :-

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- The implementation of Environmental Management Plan should be carried out, as proposed. Regular inomioring should be carried out during construction and operation phases.
- ii. The project proponent should provide guidelines to the users to ensure conservation of energy and water. Inhouse environmental awareness campaigns should be carried out at regular intervals to ensure environmental protection.
- Corporate Environment Responsibility (CER) Program to be formulated based on the results of socioeconomic survey on relevant parameters and need assessment of local people as per MoEF GM no. F.Eto.22-65/2017-IA.III dated: 1st May, 2018.
- The proponent should abide by the Direction issued by the Department of Environment, Government of West Bengal, vide No. EN/3170/T-IV-7/001/2009 dated 10.12.2009.
- v. Environmental Management Information System shall be maintained properly.

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 The proponent should restrict the use of glazed surface as per National Building Code 2005 and as amended thereafter.

### Part-B GENERAL CONDITIONS

- 1. The environmental safeguards contained in the EMP Report should be implemented.
- All the conditions, liabilities and legal provisions contained in the Stipulated conditions for Environmental Clearance (SCEC) 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.
- The project proponent should make financial provision in the total budget of the project for implementation of the suggested safeguard measures.
- In case of any violation of the conditions laid down in this SCEC, Section 16 of The Environment (Protection) Act, 1986, will be applicable. In case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEAC, West Bengal.
- The State Expert Appraisal Committee, West Bengal reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the stipulated conditions for 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.
- All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Civil Aviation Department (if required) etc. shall be obtained by project proponents from the competent authorities.
- 7. Provision for incorporation of appropriate conditions in the Sale Agreement / Deed, for ensuring sustained Operation and Maintenance (O&M) of the common facilities (STP, Rainwater harvesting system, Solid waste management system, Solar street lights etc.) even after transfer of ownership of the project, should be made in explicit and transparent manner.
- These stipulations would be enforced among others under the provisions of the Water (Prevention & 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 including the amendments and clarification circulars.
- 9. The final Environmental Clearance shall be accorded by the State Environmental Impact Assessment Authority, West Bengal after submission of master site plan of the whole project sanctioned by the concerned municipality incorporating all the salient features of the stipulated conditions for environmental clearance and necessary documents and consideration of the same by the State Level Expert Appraisal Committee, West Bengal. The area statement as well as detailed building profile, parking spaces etc., as proposed in the salient features, should be clearly mentioned in the sanctioned Master Plan.

(Niraj Singhal, LF.S.)

Secretary, State Expert Appraisal Committee, West Bengal (Dr. Tapan Kumar Mukherjee)

Chairman, State Expert Appraisal Committee,

West Bengal