HALF YEARLY

ENVIRONMENTAL CLEARANCE COMPLIANCE REPORT

(OCTOBER 2019 – MARCH 2020)

FOR

MULTI-SPECIALTY HOSPITAL

OF

M/s APOLLO HOSPITALS

SAINIK SCHOOL ROAD, BHUBANESWAR

EC Letter No. 2710/SEIAA, Dt. 17.03.2017

SIX MONTHLY ENVIRONMRNTAL CLEARANCE COMPLIANCES REPORT FOR MULTI-SPECIALTY HOSPITAL SITUATED AT SAINIK SCHOOL ROAD, SAMATHAPURI, BHUBANESWAR FROM October 2019 TO March 2020.

GENERAL CONDITIONS

Sl. No.	Conditions	Compliance
i)	The applicant (Project proponents) will take necessary measures for prevention, control and mitigation of Air Pollution, Water Pollution, Noise Pollution and Land Pollution including solid waste management and bio-medical waste management as mentioned by them in Form-1, Form-1A and Environment Management Plan (EMP) in compliance with the prescribed statutory norms and standards.	As mentioned in the Form – 1, Form – 1A and EMP report for prevention, mitigation and control of air pollution, noise pollution and land pollution including solid waste management and bio-medical waste management have been properly implemented.
ii)	The applicant will take statutory clearance /approval /permissions from the concerned authorities in respect of the project as and when required.	All necessary clearance /approval /permissions will be taken from concerned authorities whenever required.
iii)	The applicant will submit half-yearly compliance report for post-environmental monitoring in respect of the stipulated terms and conditions in the Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1st June and 1st December of each calendar year.	Half - yearly compliance report on post - environmental monitoring is being submitted to SEIAA, Odisha as per schedule.
iv)	The project proponent shall approve the building plan from concerned authority and comply all the conditions stipulated in the approval letter.	BDA has approved the building plan vide letter no. 584/BP, dated 25.01.2008 and all the condition stipulated in the approval letter has been complied.
v)	The project shall be designed taking into account the National Building Code guidelines. The project proponent shall provide adequate wide open space all around the building blocks for movement of fire engine as per provisions of National Building Code (NBC) - 2005.	Building has been designed as per National Building Code guidelines.
vi)	The project proponent shall comply to all the	Fire Prevention Officer, Odisha has been

	conditions stipulated by the Fire Prevention Officer, Orissa.	complied to all the conditions associated with the project as shown in **Annexure – 1 A & Annexure – 1 B .**
vii)	The applicant will adopt the prescribed norms, specifications and standards provided in the National Building Code of India, 2005, specially relating to: a) Fire protection and life safety of occupants of the buildings. b) Safety of personnel during construction, operation and demolition of buildings. c) Day lighting and natural ventilation of buildings. d) Safety from electrical fire, shock and lighting of the buildings. e) Air conditioning, heating and mechanical ventilation of the buildings. f) Acoustics and noise control of the buildings. g) Maintenance and functioning with emissions from generators supplying power to common space /residential area in case of power failure along with fuel handling /storage. h) Installation of lifts and escalators in the buildings. i) Water supply, drainage and sanitation including solid waste management. j) Landscaping of surrounding areas of the buildings.	The norms & standards provided in the National Building Code of India, 2005 relating to fire protection, safety of personnel, lighting, water supply, drainage, noise etc has been adopted during construction phase.
viii)	Considering the peak water consumption the design of the water supply system and the sewage disposal system of the project should be based on the provisions of water consumption.	This has been complied during construction phase.
ix)	The quarry materials required for construction of the project shall be brought from approved quarries.	Construction work outer work complete plaster and painting work complete and inside and outer side window and door we fixed so that we remove

SPECIAL CONDITIONS

CONSTRUCTION PHASE

Sl. No.	Conditions	Compliance
1)	Construction site should be adequately barricaded before the construction begins.	Strong barricade form construction side. **Annexure - 2**
2)	Installation of dual pipe plumbing for supplying fresh water for drinking & bathing etc.	Dual Pipe has been supplied with fresh water for drinking and bathing purpose.
3)	As proposed 21 nos of rain water harvesting pits for artificial ground water recharge shall be installed as per CGWB guidelines.	Rain water pit has been installed below ground. Total No of pits:21
4)	Water demand during construction should be reduced by use of pre-mixed concrete curing agents and other best practices referred.	The maximum possible pre-mixed concrete is being used in construction which reduces water demand.
5)	Any hazardous waste generated during construction phase, should be disposal as per applicable rules and norms with necessary approvals of the State Pollution Control Board.	Agreement has been signed with SANI CLEANING to who is to receive the hazardous waste generated during construction as per Govt. norms.
6)	No ground water shall be extracted for the project work at any stage during construction phase. If ground water will be used during construction phase, they obtain permission from the water Resource Department.	Ground water has not been extracted for any purposes. For drinking purpose supply water has been used and for construction & PHD department has been obtained.
7)	Considering the peak water consumption of the occupants the design of the water supply system and the sewage disposal system of the project should be based on the provisions of water consumption.	Design and plan already approved from Govt. authorities
8)	Provision shall be made for the housing of construction labourers with in the site with all necessary infrastructure and facilitie such as fuel for cooking, mobile toilets, mobile STP,safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Mostly local labors are employed during the construction phase and they do not any accommodation .Temporary housing facilities have been provided for few outside laborers. However safe drinking water & First aid facility are provided to all during working hours.
9)	A First-Aid room will be provided in the	A first aid room has been set up inside

	project site both during construction and operation of the project.	the site during the construction phase.
10)	All the top soil excavated during construction activities should be stored separately for use in land filling , horticulture/landscape development within the project site.	The excavated top soil generated during construction activities is stored in a safe place to avoid erosion and will be utilized in horticulture / Landscape development within the project side.
11)	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and will be disposed off taking the necessary precautions for general safety and health aspects of people only in approved site with the apporoval of competent authority.	Safe disposal with necessary precautions has been taken.
12)	Construction spoils, including bituminous material and other hazardous material should not be allowed to contaminate watercourses,ground water and dump sites by following safe dumping / disposal practice as per statutory rules and norms with necessary approval of the Odisha State Pollution Control Board.	Construction spoils has been temporarily stored within the project site which will be disposed later on as per the provision of OSPCB. There is no river / nalla within the project area. Construction work is not intersecting the ground water table, so there is no chance of contamination of surface and ground water of the region.
13)	The fuel for diesel generator sets to be used during construction phase shall use low sulfur diesel fuel and should conform to Environment (protection) Rules 1986 prescribed for air emission and noise standards.	The diesel generator used during construction phase confirms to the Environment (Protection) Rules 1986.
14)	The Diesel required for operating DG sets shall be stored in underground tanks and, if required, clearance from the Chife Controller of Explosives shall be taken.	We have underground storage for diesel and currently running DG sets are using the same storages for diesel.
15)	Vechicles used for bringing construction materials to the site should be in good condition and should have a pollution check certificate, covered and conform to statutory air and noise emission standards and should be operated only during non- peak hours of the day.	Vehicles having pollution checked certificates are engaged for the construction work and are operated only during non-peak hours.
16)	Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise duality should be	The monitoring report of ambient air quality and noise level is indicating the quality to be as per the standards stipulated by CPCB. The test report is

	closely monitored during construction phase. Adequate measures should be taken to reduce ambient air and noise level during construction phase. So as to conform to the stipulated standards by CPCB / OPCB.	given in (Ambient Air Quality) and **Annexure - 3** (Ambient Noise Level)

17)	Fly ash bricks should be used as building material in the construction as per provisions of Fly Ash Notification of September, 1999 and as amended thereafter.	Fly ash bricks produced by few local. Ash brick plants are used.
18)	Ready mixed concrete would be used in building construction.	Already in use.
19)	Storm water control and its re-use should be as per CGWB and BIS standards for these applications.	The provisions for stom water control and its reuse are being implemented during the construction phase which to meet the standards of CGWB and BIS.
20)	Fixtures for showers, toilet flushing and drinking water should be of low flow type and restricted to requirements by use of aerators, avoiding wastage pressure reducing devices or sensor based controls.	Aerators for showers, toilets flushing will be used at the time of fittings to reduce water consumption.
21)	Use of glass may be maximum up to 40% of total outer wall area to reduce the energy consumption and load on air-conditioning. If necessary ,High quality double glass with special reflective coating may be used in the windows.	Energy efficient multiple glazed windows is being used to reduce electricity consumption.
22)	Roof should meet the prescribed requirement as per Energy Conservation Building Code by using appropriate thermal insulation material.	The roofs and opaque walls being constructed with the maximum assembly of U-factor and minimum insulation of R-values.
23)	Opaque wall should meet prescriptive requirements as per Energy Conservation Building Code.	The opaque walls of maximum U-factor (i.e . U-0.352 W/m² ° C) and minimum R –Value of insulation (i.e. R-2.35 m² ° C/W) being adopted for all air conditioned spaces.
24)	The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of firefighting equipments etc. As per National	Structural safety of the building as per National Building Code of India, 2005 is being given prime importance.

	Building Code of India, 2005 including protection measures from lightning etc.	
25)	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase to avoid disturbances and pollution to be surroundings.	Regular supervision by the company management at the project site is carried out to avoid disturbances and pollution to the surroundings.
26)	Consent to Establish shall be obtained from Odisha State Pollution Control Board before start of any construction work at the sute.	Attached is the consent certificate from OSPCB, Govt. of Odisha. **Annexure-4.**

SPECIAL CONDITIONS

OPERATION PHASE

Sl. No.	Conditions	Compliance
i)	The proponent has to install STP based on (FAB Technology) of capacity 270 KLD capacity as proposed. Treated effluent from STP shall be recycled/reused to the maximum extent possible after scientific treatment. Discharge of unused treated effluent shall conform to the norms and standards of the Odisha State Pollution Control Board. Necessary measures should be taken to mitigate the odour problem from STP.	Necessary steps have been taken as per the requirements. The waste water was tested by SPCB Odisha basing on which necessary licenses have been issued by SPCB Odisha in favor of the hospital. The waste water testing report attached in **Annexure-5**.
ii)	The STP must be technically sound to treat all kinds of pollutants present in it and its capacity should take into account the entire load of sewage generated by the inhabitants.	The STP load is in accordance with the existing bed strength of the hospital and it is technically sound to treat all kind of pollutants present in it and also we have started to generate cake form STP sludge. Total 233 kg STP sludge generated from October -2019 to March-2020 and it is been used in our existing garden and green belt area. **Annexure-6.**
iii)	The project proponent will ensure that under no circumstances, the environment is polluted due to non-functioning / under performance of sewerage disposal system of the project.	The STP is working continuously and all precautionary measures have been taken to avoid Environmental Pollution.
iv)	The Hospital needs to operate the STP continuously and take steps to utilize the treated water fully. Further, the sludge to be generated in the treatment process need to be stabilized before use as manure.	The STP is working continuously and all precautionary measures have been taken to avoid Environmental Pollution.
v)	The solid waste generated should be properly collected and segregated. Wet garbage along with STP sludge should be composted and dry/inert solid waste should be disposed through a certified agency for safe disposal. For such disposal Necessary approval/ permission may be obtained from	The solid waste generated is properly collected and segregated. The wet garbage and the STP sludge are being composed and after going through the filter process the same was pressed and are used in green belt area of our hospital.

	the concerned authorities. In no case waste should be left in the premises untreated. The certified agency shall also ensure disposal of solid waste in an approved disposal site.	
vi)	Diesel power generating sets proposed as source of backup power for lifts, escalators and common area illumination during operation phase should be of enclosed type and conform to Environmental Protection (EP) Rules, 1986. For this case capacity of DG sets are capacity 1x750 KVA and 2x1010 KVA, with 30m. The height of the stack of DG sets should be 30m. Low sulfur diesel should be used. The location of the DG sets may be decided in consultation with Odisha State Pollution Control Board. Care may be taken to avoid disposal of smoke / pollutants from DG sets in the residential area.	The Diesel Power Generators used in our hospital are of appropriate capacity and those are functioning in accordance with the rules of Environment Protection (EP Rules 1986). For the said Generators we have also been issued licenses from the appropriate authorities. DG Stack monitoring test report attached in **Annexure-7**.
vii)	Noise should be controlled to ensure that it does not exceed the prescribed standard. During night time the noise level measures at the boundary of the sites shall be restricted to the permissible levels to comply with the prevalent regulation.	We are monitoring the noise level of DG Sets in every six months and at no point of time it exceeds the prescribed standards. Noise monitoring report attached in **Annexure-8**.
viii)	Green-belt & avenue plantation of trees over at least 20% of the site area shall be done using native tree species/ plants improving greenery and keeping in view aesthetic consideration in the whole campus. Professional landscape architects should be engaged to design the green layout to provide for multi tire plantation and green fencing all around mitigating various environmental parameters like dust, noise, emission etc and pathway for joggers.	The green belt area of our hospital is 6115 sqm at present (which is as per EC); we have increased the same also. We have taken responsibility to maintain green belt area in front of the hospital campus and on the side of institute of Physics. The list of some plant species have shown in the **Annexure- 9.**
ix)	Rain water harvesting for roof run-off and surface run-off should be implemented as per submitted plan. Before recharging the run-off, pre-treatment must be done to remove suspended matter, oil, grease and other soluble components as per norms. Rainwater recharge should be through specified recharge pits of required number.	Actions have been taken for roof top run-off and surface run-off as per the plan. Before it infiltrate into the ground, pre-treatment is done as per the norms. There are 21 nos.

	The surface runoff water should store suitably treated and reused for landscaping. The bore-well for rainwater recharging should be kept at least 5m above the highest ground table. The technology may preferably be adopted from a commercial firm with performance guarantee. Weep holes in the compound walls shall be provided to ensure natural drainage of excessive rain water in the project area during the monsoon period after the harvesting operations. Care must be taken so that there is no water logging in the territory and drainage is 100%.	
x)	The ground water level and its quality should be monitored regularly in consultation with central / state government authority.	Regular monitoring of ground water level & its quality is being done and detailed report is given in the **Annexure- 10 A & Annexure- 10 B .**
xi)	Traffic congestion near the entry and exit points from the roads adjourning the proposed project site must be avoided. Traffic congestion shall be avoided inside the project site. The area ear marked for parking shall not be used for any other purpose. Alternate entry and exit must be provided to handle excess traffic and emergency situations.	Adequate parking area has been provided as per the norms. Alternate entry and exit has been provided to handle excess traffic and emergency situations.
xii)	A report on the energy conservation measures conforming to energy conservation norms finalize by the Bureau of Energy Efficiency should be prepared incorporating details about building materials and technology, R & U factors. Etc and submitted to the SEIAA, Orissa in three months time before operation/ habitation.	All necessary and appropriate steps have been taken to confirm the energy conservation norms as finalized by Bureau of Energy Efficiency. LED street light is also installed in the month of January 2016 (46 Nos.). Some area new modify October2019 to March 2020 20 watt 115 no's, 15 watt 65 no's & 18 watt 45 no's LED light install to saving power. Also we have won the Odisha State Energy Conservation Award 2015, 2016, 2017, 2018 & 2019 (OSECA), establish by the Govt. of Odisha. OSECA, We have install water aerator in all water tap so saving water. Certificate attached in **Annexure-11 A & Annexure-11 B.**
xiii)	Provision of solar hot water storage/ supplies at the roof top may be made as	It has been provided as per statutory norms of CPCB/ MOEFCC/ SPCB,

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<tr><td></td><td>per statutory norms of CPCB/MoEF/ SPCB, Orissa.</td><td>Odisha.</td></tr>
<tr><td>xiv)</td><td>Energy conservation measures like installation of CFLs/TFLs for lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Used of 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 toxic contamination. Use of solar panels may be adapted to the maximum extent possible, especially for street sights.</td><td>Installations of CFLs, TFLs and solar panel have been installed for energy conservation. For disposal of electrical/E-waste we have handover the same to licensed vendor of SPCB, Odisha.
Annexure-12 A & Annexure-12 B .</td></tr>
<tr><td>xv)</td><td>The building blocks should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.</td><td>Proper setback areas have been given as per BDA norms for fresh air and passage of natural light, air and ventilation.</td></tr>
<tr><td>xvi)</td><td>The funds earmarked for the environment protection measures shall be judiciously utilized; Under no circumstances this funds shall be diverted for other purposes like Annual allocation and maintenance/ monitoring etc. and expenditure for this fund should be reported to the SEIAA, Orissa.</td><td>Funds have been budgeted every year for maintenance of green belt area and environment protection measures.
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<tr><td>Activities</td><td>Budgeted Fy 2019-2020</td></tr>
<tr><td>Garden Plantation</td><td>Rs 5 lakhs</td></tr>
<tr><td>Garden maintenance</td><td>Rs 3 lakhs</td></tr>
<tr><td>Biomedical Waste lifting</td><td>Rs 8 lakhs</td></tr>
<tr><td>STP Maintenance</td><td>Rs 1 lakhs</td></tr>
<tr><td>General Waste lifting</td><td>Rs 5 lakhs</td></tr>
<tr><td>Air ,Noise, water monitoring</td><td>Rs 2 lakhs</td></tr>
<tr><td>Total</td><td>Rs 24 lakhs</td></tr>
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