

GOVERNMENT OF WEST BENGAL
DEPARTMENT OF ENVIRONMENT
Block- 'G', 2nd Floor, Writers' Buildings
Kolkata – 700 001

No. EN/ 393 /T-II-1/167/2007

Date: 22 /02/2008

From : Chief Environment Officer

To
M/s. Shapoorji Pallonji & Co. Ltd
CJ-224, Sector - II
Bidhannagar (Salt Lake City)
Kolkata – 700 091

Subject : Environmental Clearance for proposed Mass Housing Project "SP City" at Action Area – III, New Town, Rajarhat, 24 Parganas (N) – By M/s. Shapoorji Pallonji & Co. Ltd..

This has a reference to your application no. nil dt. 27th March, 2006 and subsequent communications in this regard, praying for Environmental Clearance for the proposed Mass Housing Project "SP City" at Action Area – III, New Town, Rajarhat, 24 Parganas (N) – By M/s. Shapoorji Pallonji & Co. Ltd.. The proposal has been examined and processed in accordance with EIA Notification, 2006

It is noted that the salient features of the project, for which Environmental Clearance has been considered are as follows :-

1. It is proposed to construct a Mass Housing Complex having 20000 dwelling units (consisting of 12000 flats in 200 nos. G+4 storied buildings & 8000 flats in 36 nos. G+14 storied buildings) with necessary support services such as primary schools, shopping complexes, health centre, community centre etc.
2. Salient features of the proposed project are –
 - Land Area : 150 acres (607023.7 sqm.)
 - Expected Population : 88000 persons
 - Total Water requirement : 400 KLD (Construction stage)
 - Total Water requirement : 12510 KLD (Operation stage, WBHIDCO supply)
 - Wastewater generated : 10000 KLD (to be discharged to WBHIDCO sewer line)
 - Solid Waste disposal : 40 tonne per day (to be disposed off by WBHIDCO)
 - Floor Area for sanction : 1019800 sqm.
 - Ground Coverage : 165505 sqm. (27.3% of land area)
 - Water Body : 3310 sqm. (0.55% of land area)
 - No. of Parking spaces proposed : 12300
 - Power requirement : 36 MVA
 - Backup Power : 2 nos. DG Sets each 1.5 MVA

The State Level Environment Impact Assessment Authority (SEIAA) examined the proposal and also perused the recommendations of the State Level Expert Appraisal Committee (SEAC).

After due consideration of the project proposal, and after considering the recommendations of the State Level Expert Appraisal Committee (SEAC), the State Level Environment Impact Assessment Authority (SEIAA) accords environmental clearance to the project as per the provisions



of Environmental Impact Assessment Notification no. S.O.1533 dt. 14th September, 2006 of Ministry of Environment & Forests, GOI subject to strict compliance of the terms and conditions mentioned below :

Part A – SPECIFIC CONDITIONS

I. Construction Phase

Facility of labourers during construction: -

- i. Provision of drinking water, wastewater disposal and solid waste management should be ensured for labour camps.
- ii. Water usage during construction should be optimised to avoid any wastage.
- iii. Proper sanitation facilities should be provided for construction workers to ensure environmental sanitation. Sewage generated from the areas occupied by the construction labourers have to be directed into the existing sewage drain of the area. In case of non availability of the sewer system, an onsite treatment system has to be provided.
- iv. Health and safety of the workers should be ensured during construction. Personnel protective equipment like helmets, earmuffs, earplugs etc. should be provided to the workers. For vibration control damped tools must be used and the number of hours that a worker uses them must be limited.

Steps to avoid disturbance during construction:-

- i. All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.
- ii. Adequate erosion and sediment control measures to be adopted before ensuing construction activities.
- iii. 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.
- iv. Diesel generator sets during construction phase should have acoustic enclosures and should conform to E(P) Rules prescribed for air and noise emission standards.
- v. 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. Only limited necessary construction should be done during nighttime. Fortnightly monitoring of ambient air quality (SPM, SO₂ and NO_x) 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.
- ix. The proponent must ensure that no driven piles shall be proposed for this project.
- x. 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.
- xi. Loading and unloading operations should not be carried out in open areas.
- 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:-

- i. Use of energy efficient construction materials should be ensured to achieve the desired thermal comfort.
- ii. Design layout should ensure adequate solar access and ventilation. Proper planning and window design for daylight integration should be considered.
- iii. Use of ash based bricks should be explored to the maximum extent possible. Blended cement with fly ash will be used. The provisions of MoEF Notifications on "Fly Ash Utilization" must be complied with.
- iv. 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.
- v. 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.
- vi. 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.
- vii. Street lighting should be energy efficient. Use of High Pressure Sodium Vapour (HPSV) Lamps, Compact Fluorescent Lamps (CFL) and LED should be promoted. Solar energy may be used for outdoor lighting.
- viii. Passive solar cooling to be incorporated in building design. Buildings should be oriented for ensuring natural ventilation and daylighting.
- ix. 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.
- x. Use of high albedo or reflective pavements to keep parking lots, pavements and inside roads cool should be incorporated.
- xi. Guidelines to the occupants should include usage efficiency measures such as energy efficient lighting and water efficient system.
- xii. 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.
- xiii. Adequate open space, greenery and water bodies to be provided as per rules.
- xiv. 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.
- xv. Restrict the use of glazed surface as per National Building Code 2005.

Water Body Conservation:-

- i. No water body should be lined and no embankments should be cemented. The water bodies are to be kept in natural conditions without disturbing the ecological habitat. The water bodies within the project area shall be maintained in conformity with the conditions stipulated in the Environmental Clearance and the NOC accorded to the Department of Housing, Government of West Bengal for the proposed New Town Project at Rajarhat.



Plantation Proposal:-

- i. The unit should strictly abide by The West Bengal Trees (Protection and Conservation in Non-Forest Areas) Rules, 2007. The proponent should undertake plantation of trees over atleast 20% of the total area in accordance with the plantation plan approved by the competent authority as per the said rules.
- ii. The proponent should plant atleast 20000 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.

Water supply :-

- i. 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 Option :-

- i. As per the proposal submitted by the proponent wastewater shall be discharged to WBHIDCO sewer line.

Stormwater Management & Mitigation of Heat Island Effect :-

- i. Imperviousness of the site shall not exceed the NBC (National Building Code 2005) 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.
- iv. Adequate stormwater drainage network to be designed for the project without disturbing the surrounding settlements. Storm water management plan should be implemented to prevent large volumes of storm water to be conveyed to the receiving waters by the municipality, which reduces the load on municipality drainage system, and receiving waters are not impacted.
- v. Disruption to the natural hydrology of the site should be minimised by reducing impervious cover, increasing on site infiltration and managing storm water run off.
- 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.
- vii. Use of smaller building footprint, pervious paving, underground parking, green roofs, bioswales / vegetated filter strips etc. may be considered. Clustering the development together to reduce the paved surface required for roads and sidewalks, is required to minimise impervious surfaces.

Rain Water Harvesting Scheme:-

- i. It is proposed to collect rainwater form open spaces and reused for landscaping and other purposes. The proponent should not attempt for recharging of aquifer without prior permission from the competent authority. Water bodies may be used for storing rain water.
- ii. Adequate retention time and storage provisions should be provided for harvesting rainwater. The proponent must follow the rainwater harvesting guidelines, which will be circulated by SEAC shortly.
- iii. Adequate firefighting storage should be provided as per norms.



Municipal Solid Waste Management :-

- i. Adequate provision shall be made for storage of solid waste and adequate means of access shall be provided. Space should be kept reserved for waste storage, collection etc. in site planning and architectural designs.

Transport Management: -

- i. Both internal and external traffic planning and management should be adequate to ensure uninterrupted traffic movement in the area during construction as well as operation phase.
- ii. The design of service road and the entry and exit from the project area should conform to the norms & standards of competent authority for traffic management. Proper traffic management plan should be adopted in consultation with Traffic authorities.

Others:-

- i. All mandatory approvals and permission as required from Director of Explosives, Fire Department etc. should be obtained.
- ii. Provision of Effective Controls such as Automatic Fire Alarm and Fire Detection and Suppression System etc. must be ensured.
- iii. Automatic lighting control, occupancy sensors, heat exchanger, high efficiency chillers etc. should be provided for energy conservation in Commercial buildings etc.
- iv. Efficient management of indoor air quality must be ensured for health and safety of the users.
- v. 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.
- vi. Rest room facilities should be provided for service population.
- vii. Provisions should be kept for the integration of solar water heating system.
- viii. Adequate access to fire tenders should be provided.
- ix. CO monitoring facility with automatic alarm should be provided at basement car parking, if any.

II. Operation Phase**Water supply :-**

- i. Water requirement during operation phase shall be met from WBHIDCO 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.
- iii. Use of water efficient devices / fixtures and appliances should be promoted.

Sewage Treatment Option :-

- i. As per the proposal submitted by the proponent wastewater shall be discharged to WBHIDCO sewer line.

Emission from Diesel Generator Set: -

- i. 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.
- ii. 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 should be strictly followed.
- ii. The lighting design and the heating, ventilation and air conditioning systems in Commercial buildings should conform to the recommendations of the Draft Energy Conservation Building Code 2006 drafted by the Bureau of Energy Efficiency, GoI.
- iii. Back up power supply should be based on cleaner fuel.
- iv. Use of energy efficient electrical systems should be promoted. 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.
- v. Energy efficient Motors and properly rated Transformers should be installed. Manufacturer's certificate to this effect shall be obtained and kept on record.
- vi. The proponent shall install permanent electrical metering to record demand (kVA), energy (kWh), and total power factor. The metering shall also display current (in each phase and the neutral), voltage (between phases and between each phase and neutral), and total harmonic distortion (THD) as a percentage of total current.
- vii. The project proponent should resort to solar energy at least for street lighting and water heating.

Transport Management: -

- i. Use of public mode of transportation should be promoted. Use of the least polluting type of transportation should be promoted.
- ii. The road system should clearly identify the vehicular and pedestrian circulation from Motorized vehicular lane (MV lanes). Pedestrian and bicycle facilities should be constructed with appropriate amenities to encourage and support the use of bicycles. Bicycle tracks should be covered or shadowed by tree canopy.
- iii. Transport system should be such that traffic will be calm in neighbourhoods. Traffic in residential areas should be restricted by regulation.
- iv. Adequate vertical and horizontal clearances of overhead electric power and telecommunication lines should be provided. Guard cradle or screen should be provided for electrical power lines carrying voltage exceeding 110 volts while crossing the road. The cradle should extend desirably over the full right-of-way.
- v. Adequate parking space should be provided as per norms.

Solid Waste Management:-

- i. The proponent should abide by the Municipal Solid Wastes (Management and Handling) Rules, 2000. The proponent must develop the Solid Waste Management and Disposal Scheme ensuring storage and segregation of biodegradable and non-biodegradable wastes. The solid waste is to be disposed off in consultation with municipal authority.
- 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, leathers, paper etc. Separate compartments shall be provided for each type of recyclables.



- iii. The proponent should abide by the Hazardous Wastes (Management and Handling) Amendment Rules, 2003. 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 Wastes (Handling & Management) Amendment Rules, 2003.
- iv. Spent oil from DG Sets should be stored in HDPE drums in isolated covered facility and disposed off as per the Hazardous Wastes (Handling & Management) Amendment Rules, 2003. Spent oil from DG Sets should be disposed off through registered recyclers only.
- v. Biomedical waste generated from the Health Care unit should be segregated and disposed off as per the Biomedical Waste (Management and Handling) Rules, 1998.
- vi. Various types of electrical and electronic wastes generated in the Commercial buildings, which includes PC, Xerox machine components etc. should be collected separately for transportation to the authorized recyclers approved by the State / Central Pollution Control Boards. There should also be provision for storage of these wastes in the building before transportation. The e-waste collected should be processed in authorized recycling unit.

Others :-

- i. The implementation and monitoring of Environmental Management Plan should be carried out, as proposed.
- ii. The project proponent should provide guidelines to the users to ensure conservation of energy and water.
- iii. In-house environmental awareness campaigns should be carried out at regular intervals to ensure environmental protection.
- iv. Environmental Management Information System shall be maintained properly.

Part-B GENERAL CONDITIONS

- i. The environmental safeguards contained in the EIA & EMP Report should be implemented in letter and spirit.
- ii. All the conditions, liabilities and legal provisions contained in the EC 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.
- iii. Provision should be made for the supply of kerosene or cooking gas to the labourers during construction phase.
- iv. All the labourers to be engaged for construction works should be screened for health and adequately treated before issue of work permits.
- v. The project proponent should make financial provision in the total budget of the project for implementation of the suggested safeguard measures.
- vi. Six monthly monitoring reports should be submitted to the West Bengal Pollution Control Board, who would be monitoring the implementation of environmental safeguards and should be given full cooperation, facilities and documents / data by the project proponents during their inspection. A complete set of all the documents should also be forwarded to the State Environmental Impact Assessment Authority.
- vii. In case of any violation of the conditions laid down in this Environmental Clearance by the applicant, Section 16 of The Environment (Protection) Act, 1986, will be applicable.
- viii. In case of any change(s) in the scope of the project, the project would require a fresh appraisal by the SEIAA.
- ix. The State Environmental Impact Assessment Authority reserves the right to 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.

- x The Project Proponent should inform the public that the proposed project has been accorded environmental clearance by the SEIAA and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at website of the SEIAA (<http://enviswb.gov.in>). This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.
- xi The Project Authorities should inform the State Pollution Control Board as well as the SEIAA, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work/project implementation.
- xii 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.
- xiii Prior Consent-to-Establish (NOC) for the proposed project must be obtained from WBPCB. All other statutory clearances should be obtained by the project proponent from the competent authorities.
- xiv The project proponent should strictly abide by the conditions laid down in the Environmental Clearance for the proposed New Town Project at Rajarhat, Kolkata, accorded by the Department of Environment, Government of West Bengal to the Department of Housing, Government of West Bengal vide Memo No. EN/1998/4W-8/99 dated 10th November, 1999 and Memo No. EN/P/90/4W-8/99(Pt.II) dated 30th January, 2003.
- xv The project proponent should also abide by the NOC conditions accorded by the West Bengal Pollution Control Board to the Department of Housing, Government of West Bengal for the proposed New Town Project at Rajarhat, Kolkata, vide Sl. No. 04462 Memo No. 1295-175/WPB-NOC/99-2000 dated 31st August, 1999 and Sl. No. NO10868 Memo No. 7041-175/wpb/NOC/99-2000 dated 9th June, 2004.
- xvi Provision for incorporation of appropriate conditions in the Sale Agreement / Deed, for ensuring sustained Operation and Maintenance (O&M) of the common facilities (Rainwater harvesting system, Solid waste collection system, Solar street lights etc.) even after transfer of ownership of the project, should be made in explicit and transparent manner.
- xvii The above stipulations would be enforced along with those under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Wastes (Management and Handling) Rules, 1989, the Public Liability Insurance Act, 1991, the Bio-Medical Waste (Management and Handling) Rules, 1998, the Environment Impact Assessment Notification 2006 and their amendments.

Yours faithfully,



(S Mukherjee)

Member Secretary, SEIAA
&
Chief Environment Officer