## STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

Poura Bhavan, Block 'FD'-415A, 4th Floor, Sector - III,

Salt Lake, Kolkata – 700 106 Telefax No. 033 2337 0268

Website: www.environmentwb.gov.in

No. 2808 /EN/T-II-1/032/2013

Date: 17/11/2014

M/s. Concast Infrastructure Pvt. Ltd. 21, Hemant Basu Sarani Suit Nos. 511 & 512, 5<sup>th</sup> Floor Kolkata – 700 001.

Subject: Environmental Clearance for the Proposed Residential Complex 'Eternia' by M/s. Concast Infrastructure Pvt. Ltd. at premises no. 991, E.M Bypass, JL No. 07, Ward no. 58 under KMC, Borough – VII, P.S-Tiljala, Kolkata – 700 046, West Bengal.

Sir,

This has a reference to your application dated 14/05/2013 and subsequent communications for Environmental Clearance for the proposed Residential Complex 'Eternia' by M/s. Concast Infrastructure Pvt. Ltd. at premises no. 991, E.M Bypass, JL No. 07, Ward no. 58 under KMC, Borough – VII, P.S-Tiljala, Kolkata – 700 046, West Bengal.

The proposal has been examined and processed in accordance with EIA Notification, of 2006. It is noted that the proposed proposal is for construction of a residential complex having 110 flats (1 block of B+G+31 storied.

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

Land Area	: 8,105.85 sq.m (2.003 acre)	
Expected Population	: 1,005 (Permanent- 660, temporary-345)	
Total Water requirement	: 156 KLD (KMC supply)	
Fresh Water requirement	: 102 KLD (KMC supply)	
Wastewater generated	: 106 KLD	
Treated Wastewater	: 106 KLD (to be treated in STP)	
Treated wastewater recycled	: 54 KLD (to be used in flushing, landscaping, car washing etc.)	
Treated wastewater discharged	: 52 KLD (to be discharged to KMC drain)	
Solid waste disposal	: 0.52 TPD	
Total Built-up Area	: 29,829.22 sq.m	
Ground Coverage (basement area)	: 2,906.24 sq.m (35.85% of land area)	
Total Paved Area (beyond	: 1,970.44 sq.m (24.31% of land area)	



Exclusive Tree Plantation Area	: 1,627.31 sq.m (20.08% of land area)	
Total Green area	: 2,614.87 sq.m (32.26% of land area)	
Service area	: 614.31 sq.m (7.58% of land area)	
No. of solar street lights proposed	; 31 nos.	
Total No. of plantation proposed	: 114 nos.	
No. of Parking spaces proposed	: 220 nos.(Open-103, Covered at ground floor-18, Basement-99	
Total Power requirement	: 1,099 KVA (At least 1% of the power requirement should be met from solar power.)	
Backup Power	: 2x500 KVA	

State Level Environment Impact Assessment Authority (SEIAA), examined the proposal and also perused 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 accords Environmental Clearance to the project as per provisions of the EIA notification no. S.O. 1533 (E) dt. 14<sup>th</sup> September, 2006 of Ministry of Environment & Forests, GOI, subject to strict compliance of terms and conditions as 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. Water usage during construction should be optimized to avoid any wastage.
- ii. 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.
- iii. The scaffolds, stairs and platforms for construction works and the workers must be secured as far as possible to prevent any accident.
- iv. Health and safety of the workers should be ensured during construction. Personnel protective equipment like shoes, 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. The Management must ensure that the workers put them while doing work that needs such protection, if any.
- v. Rest and convenience shelter for workers with crèche facility, if required, particularly women, must be provided with proper toilet facilities.

## Steps to avoid disturbance during construction:-

i. 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.
- 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-peak hours.
- vi. Ambient noise levels should conform to residential standards both during day and night. Fortnightly monitoring of ambient air quality (SPM, SO2 and NOx) 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.
- 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:-

- 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. Fly Ash is to be used for construction as per Notification No. S.O. 763(E) dated 14.09.1999 amended vide Notification No. S.O. 979(E) dated 27.8.2003 and S.O. 2804(E) dated 03.11.2009 of the Ministry of Environment & Forests, Govt. of India.

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- 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. 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 if required.
- x. Passive solar cooling to be incorporated in building design. Buildings should be oriented for ensuring natural ventilation and daylighting.
- xi. 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 albedo or reflective pavements to keep parking lots, pavements and inside roads cool should be incorporated.
- 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. Chillers should be CFC & HCFC free.

xvii. Restrict the use of glazed surface as per National Building Code 2005.

## Water Body Conservation:-

i. Water body, if any, should not be lined and their embankments should not be cemented. The water bodies are to be kept in natural conditions without disturbing the ecological habitat.

### 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.
- ii. 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 220 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. Minimum 20% of the roof area to be used as roof top gardening as per the submission.

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## Water supply:-

i. Water requirement during construction phase shall be met from KMC 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:-

i. As per the proposal submitted by the proponent waste water shall be treated in septic tank to soak pit.

## Storm water 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 storm water drainage network to be designed for the project without disturbing the surrounding settlements. 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.
- 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. White roofs should be provided in the buildings.

### Rain Water Harvesting Scheme:-

- i. The proponent must follow the Rainwater Harvesting Guidelines of the State Expert Appraisal Committee (SEAC) available in the website (http://www.wbpcb.gov.in).
- ii. 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. Rainwater harvesting structures including sub-surface recharge proposal as submitted before SEAC should be done.
- iv. Adequate water storage for firefighting should be provided as per norms.

## Municipal Solid Waste Management :-

i. Adequate provision shall be made for storage and segregation of solid waste and adequate means of access shall be provided.

## 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. Bell mouth type arrangement should be made at the entry & exit. Proper traffic management plan should be adopted in consultation with Traffic authorities.
- iii. Clarified Wastewater will be used for sprinkling water on the unpaved internal roads on a regular basis

# Others:-

i. All mandatory approvals and permission as required from Director of Explosives, Fire Department etc. should be obtained.

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- ii. Provision of Effective Controls and Building Management Systems such as Automatic Fire Alarm and Fire Detection and Suppression System etc. must be ensured.
- iii. Use of Energy efficient lighting systems should be promoted for energy conservation.
- 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 KMC 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:-**

- i. As per the proposal submitted by the proponent, waste water shall be treated in STP. Treated waste water shall be partly reused for flushing, landscaping; internal road and pavement cleaning etc. and rest will be discharged to KMC sewer line. Discharge of treated sewage should conform to E(P) Rules. STP should be monitored on a regular basis.
- ii. Reuse of treated wastewater should be carried out as proposed.

#### 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. Use of energy efficient electrical systems should be promoted. High efficiency lamps with electronic ballasts should be used.
- iii. Energy efficient Motors and properly rated Transformers should be installed. Manufacturer's certificate to this effect shall be obtained and kept on record. Back up 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. The project proponent should use solar energy at least for street lighting.
- vi. At least 1% of the power requirement should be met from solar power

## Transport Management: -

- i. 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.
- ii. 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 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 KMC.
- 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, Handling and Transboundary Movement) Rules, 2008. 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 (Management, Handling and Transboundary Movement) Rules, 2008.
- iv. Spent oil from DG Sets should be stored in HDPE drums in isolated covered facility and disposed off as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008. Spent oil from DG Sets should be disposed off through registered recyclers only.

### Others :-

- i. The implementation of Environmental Management Plan should be carried out, as proposed. Regular monitoring 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. In-house environmental awareness campaigns should be carried out at regular intervals to ensure environmental protection.
- iii. Fire fighting systems should be designed in compliance with the WBFS and NBC norms. Preventive measures should be adopted for Risk & Disaster Management as per the provisions of the National Building Code 2005.
- iv. The Corporate Social Responsibility Plan with specific financial commitment should be implemented for the proposed project. At least 2% of the total project cost should be utilized for Corporate Social Responsibility programmes.
- v. 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.
- vi. Environmental Management Information System shall be maintained properly.

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vii. The proponent should restrict the use of glazed surface as per National Building Code, 2005.

viii. The Project should be registered and certified with IGBC for Green Building certification as per the submission.

#### Part-B GENERAL CONDITIONS

- i. The environmental clearance accorded shall be valid for a period of 5 years for the proposed project.
- ii. Prior Consent-to-Establish (NOC) for the proposed project must be obtained from WBPCB by the proponent. All other statutory clearances should be obtained by project proponent from the competent authorities.
- iii. The proponent should maintain a display board at the site, providing detailed information on the salient features of the proposed project.
- iv. The environmental safeguards contained in the EMP report should be implemented in letter and spirit.
- v. 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.
- vi. Provision should be made for the supply of kerosene or cooking gas to the labourers during construction phase. All the labourers to be engaged for construction works should be screened for health and adequately treated before issue of work permits.
- vii. The project proponent should make financial provision in the total budget of the project for implementation of the suggested safeguard measures.
- viii. 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 Level Environment Impact Assessment Authority, West Bengal.
- ix. In case of any violation of the conditions laid down in this Environmental Clearance, 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 SEIAA, West Bengal.
- x. The State Level Environment Impact Assessment Authority, West Bengal 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.
- xi. The Project Proponent should inform the public that the proposed project has been accorded environmental clearance by the SEIAA, West Bengal 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, West Bengal (http://environmentwb.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.
- 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. 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.
- xiv. 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, Handling and

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Transboundary Movement) Rules, 2008, the Public Liability Insurance Act, 1991, the Environment Impact Assessment Notification 2006 and their amendments.

xv. The contact details of the proponent and the name of the consultant are given below -

Name of the Contact person with Designation	Mr. K.V Patodia, Director M/s. Concast Infrastructure Pvt. Ltd.		
Address	21, Hemanta Basu Sarani, Suite no. 511 & 512, 5 <sup>th</sup> floor, Kolkata-700001.		
Email	kumar@unimarkgroup.com		
Telephone Number, Fax Number	Ph No. 033 22130481-87 Fax No. 033 2213 0488		
Name of the Consultant	M/s. Envirotech East Pvt. Ltd.		

Yours faithfully,

Date: 17/11/2014

( Jose T. Mathew )
Chief Environment Officer &
Member Secretary, SEIAA

No. 2808 /EN/T-II-1/032/2013/1(4)

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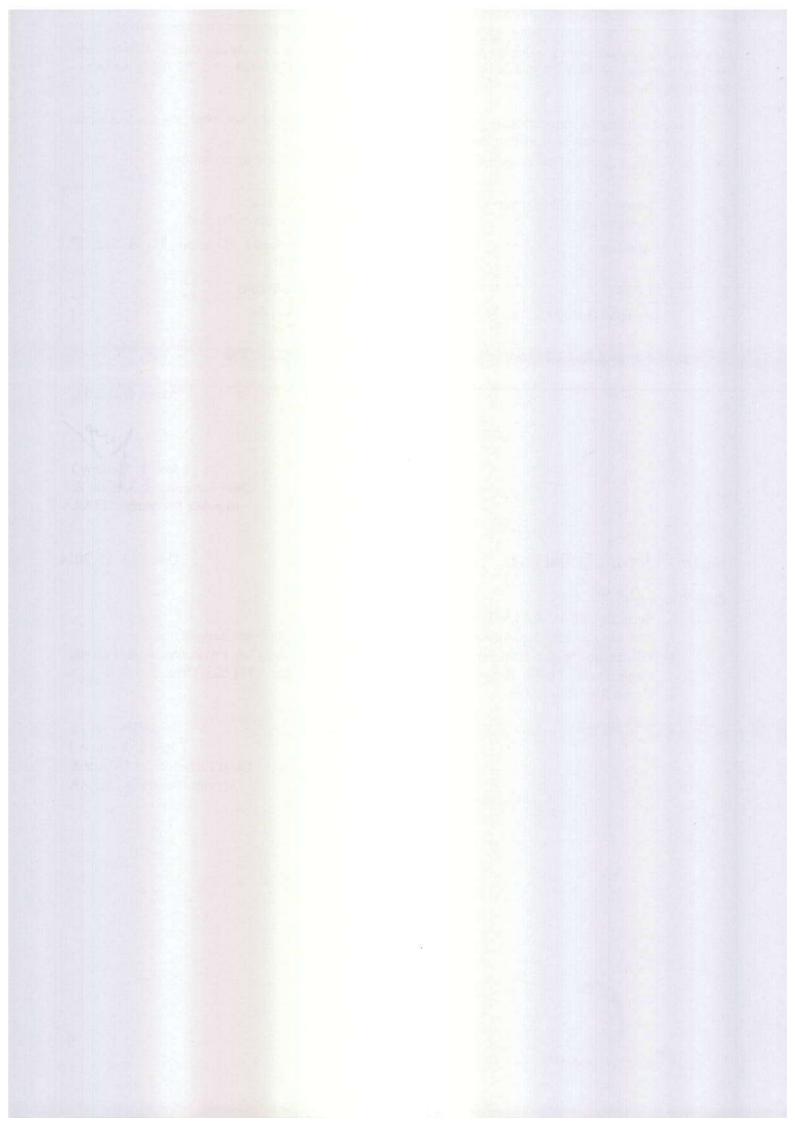
1. Secretary, SEAC & M.S. WBPCB

2. Monitoring Cell, Department of Environment, Government of West Bengal.

3. Officer-in-Charge, Regional Office (Eastern Zone), Ministry of Environment & Forests, Government of India, A-3, Chandrashekharpur, Bhubaneswar – 751 023, Orissa.

4. Guard file / Record file.

Sd/( Jose T. Mathew )
Chief Environment Officer &
Member Secretary, SEIAA



Annexure - I

# LIST OF TREES PROPOSED FOR PLANTATION

SI. No.	BOTANICAL NAME	COMMON NAME	QUANTITIY
1.	Trema orientalis	Pigeon Wood	5
2.	Peltophorum pterocarpum	Radhachura	10
3.	Spathodea campanulata	African Tulip Tree	10
4.	Tabebuia rosea	Rosy Trumpet tree	10
5.	Acacia auriculiformis	Akashmoni	8
6.	Azadirachta indica	Neem	10
7.	Cassia fistula	Amaltash	10
8.	Delonix regia	Gulmohar	14
9.	Lagerstroemia speciosa	Jarul	7
10.	Artocarpus heterophyllus	Kanthal	5
11.	Schleichera oleosa	Kusum	7
12.	Mangifera indica	Mango	8
13.	Ficus benjamina	Banyan	2
14. Syzygium cumini	Syzygium cumini	Jamun	8
		Total	114



