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SFG2835

TKGM BURSA MODEL OFFICE

ENVIRONMENTAL MANAGEMENT PLAN OF THE CONTRACTOR

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Content of Construction Activities

The construction project consists of Land Registry and Cadastre Bursa Regional Directorate Building having approximately 21.000 m2 closed area (2 basement, Ground floor and 5 normal floor, total 8 floor) and it covers all civil works, mechanical works, electrical works and landscape works of the building.

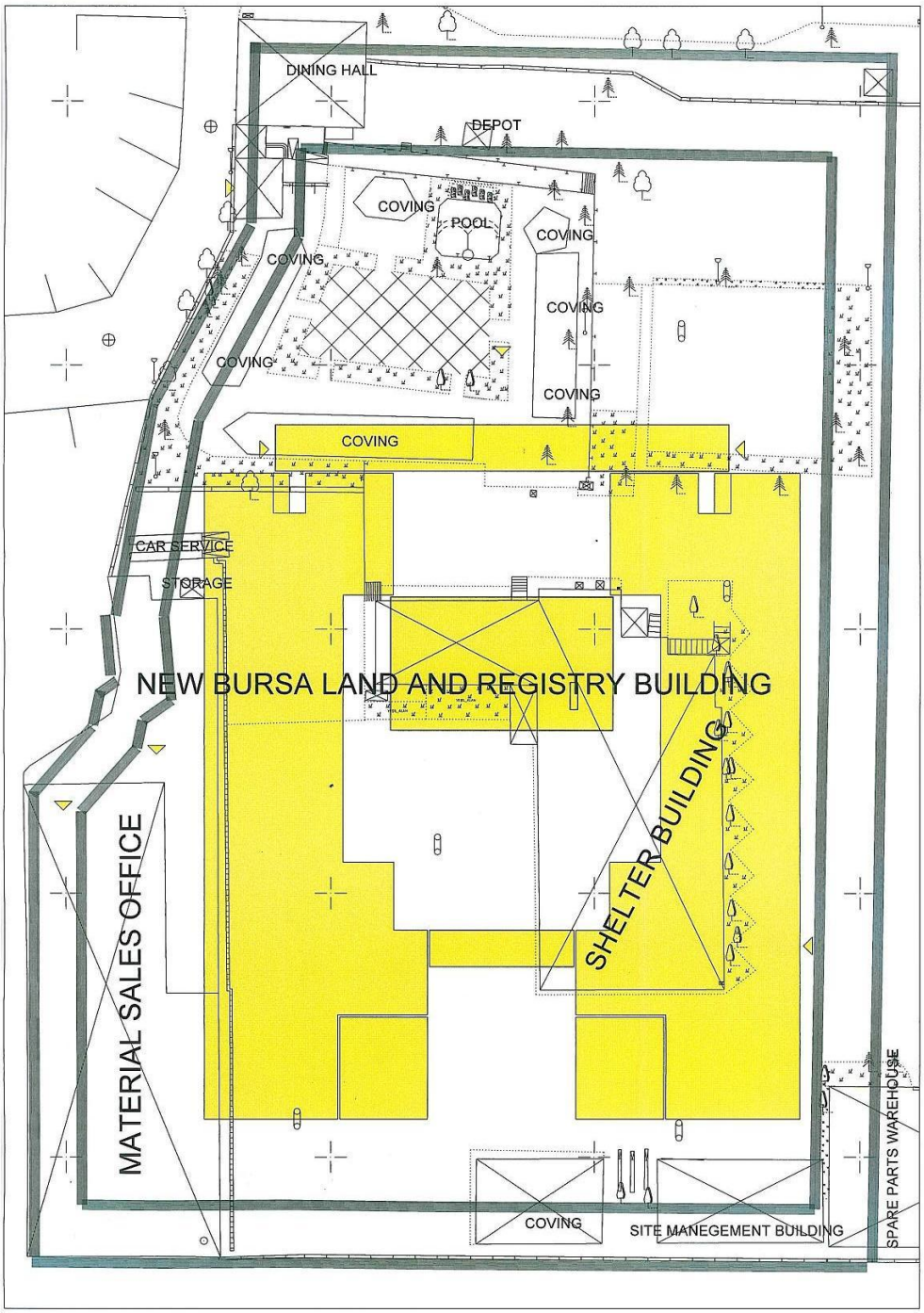

Figure. Site Plan of Existing Buildings and New Bursa Regional Directorate Building

The main existing buildings and structures to be demolished by the Contractor on the construction site are given below:

- Shelter Building
- Spare Parts Warehouse
- Site Management Building
- Material Sales Office
- Coving

Photo. Existing Shelter Building on the Construction Site

Photo. Existing Material Sales Office Building on the Construction Site

Photo. Existing Coving Structure on the Construction Site

Photo. Existing Site Management Building on the Construction Site

Photo. Existing Spare Parts Warehouse on the Construction Site

Photo. Existing Penthouse and Pool Structures between the entrance and the shelter building

Environmental Management Services:

Construction activities shall be performed in a way which ensures the effects to the physical and biological environment and nearby residence areas are kept to a minimum. During such activities, the Contractor shall abide by the environmental laws and regulations.

During construction activities, the below mentioned effect reducing measures shall be implemented in important matters related the environment management. The below mentioned measures can be changed only in accordance with amendments to be made to the related laws and regulations.

During construction activities, the Contractor shall make an examination before the commencement of the construction for environmental health and safety management planning. Examinations to be made before the commencement of the construction shall be performed by the Quality Control or Environmental Health and Safety Expert and shall determine the below mentioned subjects. These subjects are;

- Hazardous materials (e.g. Asbestos containing materials – ACM, lead, mercury, etc.),
- Recyclable materials,
- Areas which have special risks (e.g. Fire risk, toxic material risk, etc.).

Preferably, a Quality Control or Environmental Health and Safety Expert experienced in the inspection of environment and health, safety systems shall be responsible for the inspection of the site before and during construction. The Quality Control or Environmental Health and Safety Expert should have a bachelor's degree in either civil or environmental engineering and should be specialized in industrial safety and hygiene and has an experience of at least 2 years in the applications of environmental health and safety management systems.

The structural and nonstructural items to be affected by the construction activities and which have the below mentioned characteristics shall be determined by the examinations performed before the construction;

- Asbestos Containing Materials (ACM) (can be found in ventilation systems – HVAC, electricity systems, insulating materials, boilers, kilns, fire doors, walls, roofs, plumbing, etc.),
- Lead (can be found in items plumbing, lead based paints, etc.),
- Mercury (although it is especially important in hospitals, clinics, laboratories and odontotheraphy departments, it can be found in devices which are used to determine the pressure, temperature, power, such as sphygmomanometers, x-ray machines, fluorescent lighting, thermostat, thermometer, etc.),
- CFC, Halon and other coolers (can be found in cooling, air conditioners, fire prevention equipments, etc.),
- PCB (can be found in items such as old capacitors, transformers and transistors, etc.)

Related planning linked to the works and field of study in the framework of the activities, including risk analysis and special environment management plans for the construction site (in accordance with Occupational Health and Safety Regulations) shall be performed. The results of the examination of the worksite before the construction shall be presented to the Engineer for approval.

The Contractor is responsible for obtaining all permissions and licences necessary for carrying out the activities, transport of the excavation waste, etc.

The Quality Control of Environmental Health and Safety (EHS) Expert of the Contractor shall be responsible for the Health, Safety and Environment Management in the site and during these activities he/she shall work by taking account of the protection of environment and the socio-economic characteristics of the nearby residence areas and the socio-economic value of the public property. The Quality Control of Environmental Health and Safety Expert shall be responsible for the monitoring, inspection and planning of the construction activities in respect to environment, health and safety and he/she shall report the applications of EHS (Environment, Health, Safety) to the Engineer monthly. The Quality Control of Environmental Health and Safety Expert shall also be responsible for the applications and monitoring of the processes and coordination of the licences and permissions related to the local environment, health and safety laws and regulations. These applications and processes commenced by the Contractor shall be under the governance of the Engineer. As a result, the construction activities should be monitored in order to check its compliance with the Environment Management Plans (EMP) prepared.

The construction site shall be inspected regularly to ensure the hygiene and order in the field, conformity to the environmental standards and prevention of the exposure to negative effects in environmental habitats and nearby socio-economic conditions by the Engineer.

The Contractor is responsible for the environmental health and safety training of the workers in accordance with the occupational health and safety regulations.

As it is presumed that the effect reducing measures which are to be taken by the Contractor are included in the general expenses, there shall be no extra payment for such expenses. Moreover, the Contractor is responsible for all costs related to the collection, treatment, transport and disposal or discharge of the solid waste and waste water and the costs related to the restoration of the field as well as the expenses regarding the compensation of any effect on the environmental, public and occupational health.

Environmental Management Approach

For low-risk topologies, such as public buildings rehabilitation activities (similar to this project), the Environmental Management Framework includes a checklist-type format that provides “pragmatic good practice” in a user friendly format that is compatible with safeguard requirements. The checklist prepared for this construction project is attached as Annex.

The checklist has three sections:

- **Part 1** constitutes a descriptive part that describes the project specifics in terms of physical location, the institutional and legislative aspects, the project description, inclusive of the need for a capacity building program and description of the public consultation process.
- **Part 2** includes the environmental and social screening in a simple Yes/No format followed by mitigation measures for any given activity.
- **Part 3** is a monitoring plan for activities during project construction and implementation.

Dust and Exhaust Gas Emissions

To prevent the dust emission arising from the construction site and transportation ways of the building, the roads shall be irrigated in the dry (arid) periods.

Material handling lorries shall be covered with plastic tarpaulin or materials which have particle size more than 10 mm in accordance with the Regulation on Air Quality Assessment and Management. To prevent the dust emission of the excavated soil, sand, construction materials, etc. the stacks shall be covered with plastic tarpaulin or irrigated.

To minimize the exhaust gas emission (PM, CO, NOx, SOx, H2S, VOC, etc.) arising from the construction activities and equipment, the construction equipments and tools shall be controlled and taken to maintenance regularly and provisions of the Circular of Exhaust Gases of Motor vehicles shall be complied with.

In addition, the limit values indicated in the Industrial Sourced Air Pollution Control Regulation (Annex 2) shall be observed and necessary measures should be taken.

Noise and Vibration

The noise limit values for construction sites stated in the Assessment and Management of Environmental Noise Regulation (Article 26) shall be observed and expect for the necessary permissions obtained from the municipalities about the working hours, the hours stated in the above mentioned regulation shall be applicable.

Construction equipments and tools must be chosen in accordance with the noise limits stated in the above mentioned regulation and must be controlled regularly. 70 dBA limit set for building construction activities in Annex VII of the Assessment and Management of Environmental Noise Regulation should not be exceeded.

During activities the vibration values of indoors and environment shall not exceed the limit values stated in the Assessment and Management of Environmental Noise Regulation, Noise Regulation and Vibration Regulation.

Workers shall be provided with Personal Protective Equipment in accordance with related regulations.

Waste Water Management and Protection of Water Sources

If the existing sewage cannot be used in the construction site, cesspools with enough capacity shall be built to collect the waste water arising from residential use. Cesspools shall be built in accordance with the provisions of “Regulation on Sewage Conduit and Cesspools to Be Built Where Construction Is Not Possible”. Cesspools shall be disposed regularly by the Municipality by discharging the waste water to a licenced treatment facility in accordance with the approval of the Engineer or if necessary it shall be discharged to the sewage system after having been treated in accordance with the Water Pollution Control Regulation. The cesspools in the site shall be disassembled after the completion of the construction and the site shall be restored.

Waste water arising from the concrete manufacturing or cement (grout, plaster, gypsum, cement, cement sludge) has alkaline and high pH values as well as heavy metals such as Aluminium, Barium, Chromium, Hexavalent Chromium (Chromium 6), Copper, Iron, Magnesium, Mangenese, Nickel, Potassium, Selenium, Sodium, Vanadium and Zinc. Such waste waters can also include small portions of oil products, construction chemicals and similar materials. Therefore these waste waters arising from the construction activities, cleansing of the containers, tanks and equipment shall be collected and discharged after being neutralized and treated in accordance with the Water Pollution Control Regulation. Running surface waters arising from the cementing sites and containing (rain sourced) cement shall be collected and discharged and if necessary treated in accordance with the above mentioned regulation. Contamination of the underground and surface waters with the cement wash waters shall be avoided at all costs.

The Contractor shall provide suitable structures for the washing of the tyres of the vehicles and lorries leaving the construction site.

In addition, all kinds of measures shall be taken to prevent the contamination of the surface waters in the area (creek, river, etc.) by the waste waters arising from the activities. The Contractor shall prevent the discharge of the contaminants such as cement, cement lime, chemicals, fuel, etc. to the water sources.

Water intake to the construction site may be observed because of the high water tables. In case of such an event, the water intake to the construction site shall be prevented, contact between the water and construction materials, cement and additive chemicals shall be avoided and the water shall be canalized to another area.

Solid Wastes

Enough garbage cans shall be provided for the collection of the residential solid waste. Collected solid waste shall be disposed in a landfill licenced by the related municipality.

Solid waste of different characteristics (residential solid waste, inert solid waste, hazardous waste) shall be collected and disposed separately. In the framework of the solid waste management, the recycling of metals, glass, etc. shall be ensured as much as possible. The Contractor shall provide different containers with enough capacity to ensure the collection of solid waste of different characteristics. Waste collection areas in the field shall be controlled regularly to ensure that there is no leakage to the soil or water sources. Packaging wastes shall be disposed in accordance with the Regulation on Packaging and Packaging Waste Control. The packaging wastes should be collected separately and they should be returned to the manufacturing company.

Suitable excavation materials shall be used in filling works; excavation excess shall be disposed in a landfill authorized by the municipality. The disposal of the solid waste shall be performed in accordance with the Regulation on Solid Waste Control. The disposal of excavation waste and debris shall be performed in accordance with the Regulation on Excavation Soil, Construction and Debris Waste Control.

The collection and disposal of the hazardous waste arising from the area shall be performed in accordance with the related regulations (Regulation on Hazardous Waste Control, Regulation on Waste Oil Control, Regulation on Waste Batteries and Accumulators Control, Regulation

on the Reducing of Ozone-Depleting Sustances) and by the licenced persons, in licenced facilities. The packaging wastes of the hazardous chemicals and construction materials shall be accepted as hazardous waste and disposed accordingly. Hazardous waste containers and landfills shall be marked by suitable signs and warnings and covered with secondary containment.

Running waters arising from these sites shall be collected and discharged in accordance with the Regulation on Water Pollution Control.

In case of nonrecyclable materials such as oil based paints and chemical additive materials, thinner, turpentine, disposal shall be performed according to the Regulation on Hazardous Waste Control.

Asbestos containing materials (ACM) may arise from demolition activities. Any ACM arise during demolition activities should be recorded in an inventory and ACM should be treated as hazardous waste. ACM should be collected separately and sent to a licensed hazardous waste disposal facility for the final disposal.

In the event of the disassembly of the mercury containing materials (fluorescent lamps, etc.), the substances shall be disassembled without breaking and shall be stored in closed boxes which prevent any kind of leakage until the disposal process. The boxes containing mercury and other types of residential or industrial hazardous waste shall be marked accordingly. Hazardous waste and chemicals shall be stored away from the dining and camping areas. These storage spaces and containers shall be observed regularly to make sure that there is no leakage.

Mobile equipment and construction equipment shall be controlled and Maintained regularly to make sure that there is no fuel or oil leakage. Moreover, in the repair and maintenance of all types of machines which use hydrocarbon as fuel and lubrication material, drainage structures installed properly shall be used to ensure that any leakage or spill dissemination situation is avoided.

The Disruption of Traffic

In the roads affected by the construction, special care shall be taken to ensure that the disruption in traffic and damages to the pedestrians using the road are avoided. Service roads shall be used to avoid the traffic increase in existing roads and “Warning”, “No Entry” signs shall be placed if necessary. Unnecesarry traffic shall be avoided and only specified roads shall be used for the traffic related to the construction activities.

Protection of Habitats

Since the Project is based on construction activities in urban areas, the environmental management of the direct effects to the important and vulnerable habitats is not expected to be an important topic. With the correct applications of the waste water, solid waste management and protection of natural sources, the possible indirect effects to the habitats are not expected, either. However special measures must be taken if the construction site is placed near a vulnerable area (rivers, wetlands, coastal areas, etc.) to ensure that such areas and related habitats are not affected.

During construction activities, special care shall be taken to protect the habitats and the destruction of the vegetation cover and cutting of the trees shall be kept to a minimum. All habitats affected by the construction activities and traffic shall be restored.

The Protection of Soil

The excavation soil arising from the excavations to be performed outside the buildings shall be stored in appropriate places and be used to restore the area affected by the excavation. The topsoil arising from the excavation shall be stored away from the contamination and effects of traffic and separately from subsoil. The storage procedure shall be performed in a level area to avoid the prevention of drainage. Wind and water erosion shall be prevented by appropriate methods (usage of plastic tarpaulins, appropriate drainage, placement of barriers around the stacks, etc.).

The prevention of erosion in the construction site shall be ensured by the protection of the vegetation cover and the provision of appropriate drainage.

Cultural and Historical Assets

In areas with cultural and historical asset value, the Contractor shall carry out his/her activities according to the related laws and regulations (Code of Protection of Cultural and Natural Assets and related regulations). Protection and effect reducing measures to be applied in buildings with cultural and historical asset value or in buildings situated near such properties shall be determined by the Contractor based on the field studies performed before the construction in the framework of environment management plan. The items which have vulnerable cultural and historical asset value shall be determined in the pre-construction field study by the Contractor and shall be reported to the Engineer for approval.

During pre-construction field studies, the Contractor shall coordinate with the Engineer and shall determine the below mentioned topics with the Engineer;

- The history and protection state of the buildings and nearby buildings
- The cultural and historical value and sensitivity of the area in which building is situated (the possibility of archeological and historical remains, special cultural and religious value, etc.)
- The sensitivity of the items in the field, considering the planned demolishment and construction activities (excavations, alterations on sides, etc.)

The cultural and historical sensitivity state of the area shall be determined by the decisions of the preservation board and related authorities. In the culturally and historically sensitive areas (especially in first degree protection properties) the Contractor shall coordinate with the Environmental Health and Safety Expert and the Engineer during the construction planning. The Contractor shall determine the registration conditions, preservation areas and building protection status before the construction and obtain necessary permits.

The contractor shall include the information about the cultural and historical elements, materials, structure status in the pre-construction report by using tools such as coloured

photographs, illustrations, etc. The Contractor shall inform the Engineer about the conditions of these elements before and after the construction by using photographs. The Engineer shall inspect the activities of the Contractor and ensure that the historical and cultural elements are preserved, the design controlled by the Engineer of the Management is observed and there is no harm done to the historical and cultural buildings nearby, if any. The photographs belonging to the historical and cultural elements presented to the Engineer must be of archiveable quality.

Provincial directorate of Ministry of Culture and Tourism will be notified and construction works will be stopped in case any cultural and natural heritage is encountered during construction.
In case of possible safety risks to the cultural and historical properties, additional measures shall be taken to ensure the security of the construction site and unauthorized entry to the preserved areas and the effects arising from the traffic shall be avoided.

Alterations and additions made to the sides of the building shall be in harmony with the cultural, historical and social texture.

Special care shall be taken to ensure that chemical leakage and spills and dust emission which may harm the historical buildings during construction are avoided. In addition, the storage of the hazardous materials (especially materials of flammable, explosive, corrosive, etc. quality) shall be away from the historical and cultural properties to reduce the fire risks and accident risks. In the event that activities with fire risk are necessary to be carried out near the fire risk vulnerable historical and cultural properties, special attention shall be shown and enough equipment and employees shall be ready on site to take necessary measures.

During construction in historical and cultural properties (especially in activities performed nearby the sensitive historical structures) the Contractor shall choose the best application methods to keep the vibration level to a minimum. The construction site sourced drainage piping shall be built in such a way that ensures the prevention of water inflow and dampness to the historical elements. The contact of the cement mixture and leaching water with the historical elements shall be avoided at all costs.

Public Consultation and Disclosure

Public Consultation is an important element for the proper implementation of the construction activities. Public consultation is necessary to ascertain the public's views. Providing for people's participation in the construction activities is a way to improve environmental governance by providing a mechanism to influence decisions of the Contractor about the construction activities.

Before starting the construction activities, the Contractor shall make a public consultation meeting for the people living near the construction site. The aim of the meeting is to inform the people about the construction activities, obtain their demands and claims before the construction activities and give the name and contact information of the contractor's and the Engineer's responsible staffs for the complaints and demands of the public about the activities of the contractor during the construction stage.

The contractor shall place an informational sign to provide general information about the construction activity including the project, the contractor, the client name, etc.

Other Topics

During construction, the Contractor shall observe the Radiation Safety Regulation provision in some parts of the buildings and he/she shall ensure that related health, safety and environmental measures are taken during activities.

The chemicals used for construction purposes shall be stored in appropriate containers and boxes and necessary warning signs shall be placed accordingly. These storage areas shall have waterproof floors and prevent the leakage, spill and dust emission to the environment.

Clean-up kits and absorbent materials shall be ready in construction site to clean up the spillages and be placed in strategic points where the access and usage of these materials can be easy and quick. Similarly, first aid kits and fire extinguishers shall be ready in site for the purpose of emergency response.

The workers shall be provided with Personal Protective Equipment (PPE) (e.g. wearing glows when working with materials such as wet cement, grout which can cause skin eruption and serious chemical burns on skin and eyes) to ensure safe working conditions. During the activities in construction site, PPE usage and safe working conditions shall be provided in accordance with the Personal Protective Equipment Regulation and Regulation on the Usage of Personal Protective Equipment in Workplaces.

Environmentally less sensitive areas (such as areas far from surface water resources, far from vegetated lands, etc.) approved by the Engineer shall be chosen for the cement mixing process (including storage areas for cement, sand and aggregate). The cement mixing procedure shall not be performed directly on soil.

The usage of lead based paints shall be limited as much as possible and paints containing low Volatile Organic Carbon (VOC) shall be preferred. Selected paints shall be in accordance with the TSE (Turkish Standards Institution) standards and shall be of eco-friendly quality.

PPE shall be used when dealing with chemical and hazardous waste or high-risked areas and safe working methods shall be observed. In the process of removing lead plates or asbestos containing materials from the x-ray rooms, dust formation and direct contact with the materials shall be avoided.

In the process of using moulding oil, extra care shall be taken to avoid accidents and spills. For the application of moulding oil, appropriate brushes and rollers shall be preferred instead of rags and tatters. Small scale containers shall be used for the utilization of the leaked oil and effects arising from accidents shall be kept to a minimum.

The Contractor shall examine the construction site visually before the commencement of works to take measures against any kind of risk. The construction site shall surrounded and warning signs shall be placed for safety purposes.

EMP Checklist for Construction Activities

PART 1: INSTITUTIONAL & ADMINISTRATIVE				
Country	Turkey			
Project title	Cadastre Modernization Project			
Scope of project and activity	Modernization of TKGM through; (i) cadastre and land registry renovation and updating, *(ii) improved service delivery, integration of renovated cadastral information into the information management systems of TKGM and National Spatial Data Infrastructure of Turkey and establishment of model offices,* (iii) development of strategies on human resources development, business plans and strategic plans and (iv) development of property valuation			
Institutional arrangements (Name and contacts)	WB (……)	Project Management (……)	Local Counterpart and/or Recipient TKGM (……..)	
Implementation arrangements (Name and contacts)	Safeguard Supervision (……)	Local Counterpart Supervision (…….)	Local Inspectorate Supervision (……)	Contractor (……)
SITE DESCRIPTION				
Name of site	Land Registry and Cadastre Bursa Regional Directorate Building			
Describe site location	Yıldırım County Beyazıt District, Bursa		Attachment 1: Site Map [ ]Y [x] N	
Who owns the land?	**The Government of Turkey**			
Geographic description	Section:H22D.07B.2C, Plot no: 3621,Parcel:77			
LEGISLATION				
Identify national & local legislation & permits that apply to project activity				
PUBLIC CONSULTATION				
Identify when / where the public consultation process took place				
INSTITUTIONAL CAPACITY BUILDING				
Will there be any capacity building?	[ ] N or [ ]Y if Yes, Attachment 2 includes the capacity building program			

PART 2: ENVIRONMENTAL /SOCIAL SCREENING			
Will the site activity include/involve any of the following:	**Activity**	**Status**	**Additional references**
	A. Building rehabilitation	[ ] Yes [x] No	See Section **B** below
	B. New construction	[x] Yes [ ] No	See Section **B** below
	C. Individual wastewater treatment system	[ ] Yes [x] No	See Section **C** below
	D. Historic building(s) and districts	[ ] Yes [x] No	See Section **D** below
	E. Acquisition of land[1]	[ ] Yes [x] No	See Section **E** below
	F. Hazardous or toxic materials[2]	[ ] Yes [x] No	See Section **F** below
	G. Impacts on forests and/or protected areas	[ ] Yes [x] No	See Section **G** below
	H. Handling / management of medical waste	[ ] Yes [x] No	See Section **H** below
	I. Traffic and Pedestrian Safety	[x] Yes [ ] No	See Section **I** below

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
A. General Conditions	Notification and Worker Safety	(a) The local construction and environment inspectorates and communities have been notified of upcoming activities (b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) (c) All legally required permits have been acquired for construction. (d) All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. (e) Workers' Personal Protective Equipment (PPE) will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) (f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. (g) An environmental health and safety training will be given to the workers in accordance with the occupational health and safety regulations. (h) The construction site will be surrounded and warning signs will be placed for safety purposes. (i) The contractor will place an informational sign to provide general information about the construction activity.
B. General Rehabilitation and /or Construction Activities	Air Quality	(a) During interior demolition use debris-chutes above the first floor (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site (d) Keep surrounding environment (side walks, roads) free of debris to minimize dust (e) There will be no open burning of construction / waste material at the site (f) There will be no excessive idling of construction vehicles at sites (g) To prevent the dust emission arising from the construction site and transportation ways of the building, the roads will be irrigated in the dry (arid) periods. (h) To minimize the exhaust gas emission arising from the construction activities and equipment, the construction equipments and tools will be controlled and taken to maintenance regularly.

[1] Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

[2] Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

	Noise	(a) The noise limit values for construction sites will be observed and expect for the necessary permissions obtained from the municipalities about the working hours. (b) Construction equipments and tools must be chosen in accordance with the noise limits and must be controlled regularly. (c) 70 dBA limit set for building construction activities will not be exceeded. (d) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible
	Water Quality	(a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. (b) Waste water arising from the construction activities, cleansing of the containers, tanks and equipment will be collected and discharged after being neutralized and treated in accordance with the Water Pollution Control Regulation. (c) Running surface waters arising from the cement preparation sites and including cement (rain sourced) will be collected and discharged. Running surface waters will be collected separately and discharged. (d) Water intake to the construction site will be prevented, contact between the water and construction materials, cement and additive chemicals will be avoided and the water will be collected separately and discharged. (e) Mobile equipment and construction equipment will be controlled and maintained regularly to make sure that there is no fuel or oil leakage. (f) Process water originating from cement facility etc. will be reused with proper treatment where available.
	Waste management	(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (c) Enough garbage cans will be provided for the collection of the domestic waste. (d) Construction waste will be collected and disposed properly by licensed collectors (e) The records of waste disposal will be maintained as proof for proper management as designed. (f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos) (g) Waste collection areas in the construction site will be controlled regularly to ensure that there is no leakage to the soil or water sources. (h) Hazardous waste containers and landfills will be marked by suitable signs and warnings and covered with secondary containment.
C. Individual wastewater treatment system	Water Quality	(a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities (b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment (c) Monitoring of new wastewater systems (before/after) will be carried out (d) If the existing sewage cannot be used in the construction site, cesspools with enough capacity will be built to collect the waste water arising from domestic use. (e) Necessary permits and approvals by the Municipality for the discharging of the waste water from the Cesspools will be obtained by the Contractor. (f) Cesspools in the site will be disassembled after the completion of the construction and the site shall be restored.

D. Historic building(s)	Cultural Heritage	(a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation (b) Ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds. (c) In case of possible safety risks to the cultural and historical properties, additional measures will be taken to ensure the security of the construction site and unauthorized entry to the preserved areas and the effects arising from the traffic will be avoided.
E. Acquisition of land	Land Acquisition Plan/Framework	(a) Not Applicable
F. Toxic Materials	Asbestos management	(a) If asbestos is located on the project site, mark clearly as hazardous material (b) When possible the asbestos will be appropriately contained and sealed to minimize exposure (c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust (d) Asbestos will be handled and disposed by skilled & experienced professionals (e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately (f) The removed asbestos will not be reused (g) Asbestos containing materials (ACM) may arise from demolition activities. Any ACM arise during demolition activities will be recorded in an inventory and ACM will be treated as hazardous waste. The contractor will firstly prepare a plan for handling the asbestos containing material if there are any in accordance with the Regulation. Then the Contractor will obtain the approval of MoEF for this plan. Finally the Contactor will execute the construction activities in accordance with the Plan.
	Toxic / hazardous waste management	(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information (b) The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching (c) The wastes are transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used (e) In the event of the disassembly of the mercury containing materials (fluorescent lamps, etc.), the substances will be disassembled without breaking and will be stored in closed boxes which prevent any kind of leakage until the disposal process, and will be disposed properly. (f) Clean-up kits and absorbent materials will be ready in construction site to clean up the spillages and be placed in strategic points where the access and usage of these materials can be easy and quick.
G. Affects forests and/or protected areas	Protection	(a) All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. (b) For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees (c) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.

		(d) The prevention of erosion in the construction site will be ensured by the protection of the vegetation cover and the provision of appropriate drainage.
H. Disposal of medical waste	Infrastructure for medical waste management	(a) In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to: ▪ Special facilities for segregated healthcare waste (including soiled instruments "sharps", and human tissue or fluids) from other waste disposal; and ▪ Appropriate storage facilities for medical waste are in place; and ▪ If the activity includes facility-based treatment, appropriate disposal options are in place and operational
I Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	(b) In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during construction activities, if the buildings stay open for the public.

PART 3: MONITORING PLAN							
Phase	**What** (Is the parameter to be monitored?)	**Where** (Is the parameter to be monitored?)	**How** (Is the parameter to be monitored?)	**When** (Define the frequency / or continuous?)	**Why** (Is the parameter being monitored?)	**Cost** (if not included in project budget)	**Who** (Is responsible for monitoring?)
SITE PREPARATION/CONSTRUCTION	**Air Quality/air pollution (particulate matter, CO, NO_2, Pb (random sampling))** *Vehicle Exhaust Emissions* *Dust*	At the Construction Site At the Construction Site	Portable Measurement Devices Portable Measurement Devices	At the Project Start Weekly or on complaint	To assure compliance with the Industrial Air Pollution Control Regulation in order to mitigate any adverse impact. To prevent any possible disturbance and adverse health effects on the residents.	Criteria / specifications to be incorporated into bidding and contract documents. *It is not considered as a separate cost item.*	Contractor is responsible to execute the Mitigation Measure. Engineer is responsible to supervise. Provincial Directorate of MoEF is responsible to monitor and supervise the activity.
	Noise (noise levels (dB); equipment)	Nearby Settlements	Portable Noise Meters	Once a month or on complaint	To assure compliance with the Assessment and Management of Environmental Noise Regulation in order to mitigate any adverse impact. To prevent any possible disturbance and adverse health effects on the residents.	Criteria / specifications to be incorporated into bidding and contract documents. It is not considered as a separate cost item.	Contractor is responsible to execute the Mitigation Measure. Engineer is responsible to supervise. Municipality is responsible to supervise. Provincial Directorate of MoEF is responsible to monitor and supervise the activity.

PART 3: MONITORING PLAN							
Phase	**What** (Is the parameter to be monitored?)	**Where** (Is the parameter to be monitored?)	**How** (Is the parameter to be monitored?)	**When** (Define the frequency / or continuous?)	**Why** (Is the parameter being monitored?)	**Cost** (if not included in project budget)	**Who** (Is responsible for monitoring?)
SITE PREPARATION/CONSTRUCTION	**Collection of Solid Wastes** *Demolition Debris Handling*	At the Construction Site	In accordance with the plan to be prepared. Inspection; observation	In accordance with the plan to be prepared and amount of debris.	To assure compliance with the Excavation Soil, Construction and Debris Control Regulation	Criteria / specifications to be incorporated into bidding and contract documents.	Contractor is responsible to implement the mitigation measure. Engineer is responsible to monitor and supervise the activity. Provincial Directorate of MoEF is responsible to monitor and supervise the activity. *Municipality is responsible to assist the Contractor, approve the plan and supervise the implementation.*
	Hazardous Waste Handling	At the Construction Site	In accordance with the plan to be prepared. Inspection; observation	In accordance with the plan to be prepared.	To assure compliance with the Hazardous Waste Control Regulation in order to mitigate any adverse impact.		Contractor is responsible to implement the mitigation measure. Engineer is responsible to monitor and supervise the activity. *Municipality is responsible to assist the Contractor, approve the Plan and supervise the Implementation.*
	Staff Safety	At the Construction Site	Inspection; observation	Continuous	To assure protection of workers at site	Minimal	Engineer

PART 3: MONITORING PLAN							
Phase	**What** (Is the parameter to be monitored?)	**Where** (Is the parameter to be monitored?)	**How** (Is the parameter to be monitored?)	**When** (Define the frequency / or continuous?)	**Why** (Is the parameter being monitored?)	**Cost** (if not included in project budget)	**Who** (Is responsible for monitoring?)
SITE PREPARATION/CONSTRUCTION	*Handling Asbestos Containing Material*	At the Construction and Disposal Site	In accordance with the plan to be prepared. Inspection; observation	In accordance with the plan to be prepared.	To assure compliance with the directive for Handling of Asbestos Products in Hazardous Waste Control Regulation in order to mitigate any adverse impact.	Criteria / specifications to be incorporated into bidding and contract documents. It is not considered as a separate cost item.	Contractor is responsible to implement the Mitigation Measure. Engineer is responsible to monitor and supervise the activity. *MoEF is responsible to approve the handling plan and supervise its implementation* Municipality is responsible to monitor and supervise the activity
	Traffic disruption during construction activity; Vehicle and pedestrian safety	Nearby Settlements and at the Construction Site	Visual Observation	Daily	To mitigate potential negative effects.	Criteria / specifications to be incorporated into bidding and contract documents. It is not considered as a separate cost item.	Contractor is responsible to implement the Measure Engineer is responsible to monitor and supervise the activity. *Transportation Department of Municipality to assist and supervise the Contractor.*
	Waste Water Handling	Nearby Settlements and at the Construction Site	Observation, unannounced inspection	Continuous	To mitigate potential negative effects. To assure compliance with the Water Pollution Control Regulation in order to mitigate any adverse impact..	Criteria / specifications to be incorporated into bidding and contract documents. It is not considered as a separate cost item.	Contractor is responsible to implement the mitigation measure. Engineer is responsible to monitor and supervise the activity. *Municipal Water and Sewerage Authority to assist and supervise the activity.*