

## Environmental and Labor Issues

This is a category III project according to the IIC's environmental and labor review procedure because it could produce certain effects that may be avoided or mitigated by following generally recognized performance standards, guidelines, or design criteria. The main environmental and labor considerations related to the project are: obtaining permits and environmental management; occupational safety and health; solid waste management; air emissions and noise; liquid effluent management; sustainable water and energy use; labor practices; and social issues.

**Obtaining permits and environmental management:** The GM4 project includes the construction and operation of a building that will house four rooms for permanent exhibits, rooms for temporary exhibits, offices, a cafeteria, a parking facility, walkways, a childcare center, foyer, movie theater, and snack bar. The Project is located in an urban area of Mérida, Yucatán, on a site that has served as the parking lot for the city's Siglo XXI Convention Center; thus, the project zone already has municipal services for the construction and operation of the museum (access roads, street lighting, and electricity, drinking water, and other utilities). The Project has the land use permit, building permit, and an environmental impact statement (EIS) approved by the Secretariat for Urban Development and Environment (SEDUMA), pursuant to a resolution issued in December 2010. The EIS includes the impact prevention and mitigation measures identified for the project and was available for public consultation, pursuant to the Yucatán State Environmental Protection Law. SEDUMA is the authority responsible for ensuring the safety of this type of project in Yucatán State and compliance with the terms of the respective permits. Once the construction stage is complete, the Borrower must submit a final report to SEDUMA verifying compliance with all measures in the EIS. For the museum's operation, the Borrower must submit all the respective permits and authorizations at the appropriate time, including those from the Fire Department, Civil Defense, and other relevant authorities. An engineer at the project site oversees environmental management, quality, and occupational safety and health, keeping the construction company's quality, safety, and environmental managers informed. The construction company has a system for managing quality, the environment, and occupational safety and health that is certified under the following international standards: ISO 9001, ISO 14001, and OHSAS 18001.

**Occupational safety and health:** The project has an occupational safety and health plan and regulations with applicable measures agreed to by the Borrower and construction company. All construction personnel and subcontractors, suppliers, and visitors to the project site must comply with the stipulations of the plan and the safety and health regulations. During the hiring process or when subcontractors or visitors are admitted to the project site, they are provided with the necessary training in occupational safety and health through mandatory induction talks. The manager in charge of quality, occupational safety and health, and environment serves as the coordinator of a committee comprised of construction foremen and workers that is responsible for ensuring that the established safety and health measures are adhered to. This is a shared responsibility of all project personnel. Workers are provided with the necessary personal protective equipment (PPE). Nevertheless, in response to the IIC's request, the Borrower will ensure that construction workers use PPE, intensifying the monitoring of occupational safety and health at the project site.

The building will be equipped with emergency exits, access for mobility-impaired or disabled persons, signage for evacuation routes, and alarm systems. Fire prevention, firefighting, and health protection measures will be in place, as determined by the Secretariat of Public Safety with the respective authorization, and the good international practices outlined in the standards of the National Fire Protection Association will be observed.

The architectural design of the building has taken all the necessary safety factors into account, given

the project's geographical location. For example, the building will have hurricane-resistant windows. Notwithstanding, a number of challenges have arisen during the construction stage, owing to the complexity of a steel structure designed to look like a ceiba tree. However, the construction company, which has been consulting noted structural engineers, has already taken the necessary steps to ensure that the structure, as well as all project facilities, will be built to the quality standards required by the Mexican building code. Project construction is being supervised by several firms, one of them that of an independent consultant, which meet weekly with the Borrower and the construction company to ensure that the objectives are being met and corrective action is taken as needed.

The IIC requires the independent consultant to submit periodic progress reports and verify compliance with: a) the environmental impact mitigation measures in the EIS resolution; and b) occupational safety and health measures as per the national standards and good international practices contained in the International Finance Corporation's (IFC) Environmental, Health, and Safety Guidelines. Once the construction phase is complete, the project will be taken over by a firm with a proven international track record in the operation of buildings, museums, hospitals, and other types of facilities.

**Solid waste management, air emissions, and noise:** At different stages, the project will produce solid waste that must be separated into organic, inorganic, and hazardous waste. Recyclables such as paper, cardboard, lumber, glass, and metal must be taken to a duly authorized collection center. Municipal solid waste and hazardous waste must be separated and temporarily stored in specific covered areas until they are collected and removed by authorized companies for final disposal, as per the applicable regulations. Once project operations begin, the Borrower must submit a municipal solid waste management plan to SEDUMA. Construction debris (for example, excess fill dirt from the calibration and excavation activities, gravel, scrap metal, etc.) will be handled according to the applicable regulation and disposed of at sites duly authorized by the municipality.

The project site is located in an urban area near Mérida's convention center. It is therefore not expected to produce dust and noise in the construction phase that would directly affect residential areas. However, in order to keep dust levels under control during the construction work, the site will be hosed down periodically. The Project must also comply with the air emissions and noise mitigation measures outlined in the EIS, the construction permit, and federal standard NOM-080-SEMARNAT-1994, which regulates noise levels.

**Liquid effluent management:** The project site has portable toilets for the workers' use during the construction phase. The liquid waste is collected by an authorized company for final disposal. During the operations phase, the building will have separate plumbing and storm drains. Domestic wastewater will be captured through plumbing and channeled to a wastewater treatment plant with a capacity of 20 m<sup>3</sup> per day, to be built in the project's installations. As of this writing, the project has the design for the wastewater treatment plant and the respective environmental impact assessment, which will be submitted to the Secretariat of the Environment and Natural Resources (SEMARNAT) to obtain the building permit for the plant. The plant will employ biotechnology to treat the wastewater, using activated sludge and disinfection. The design will ensure that the treated liquid effluent is compliant with standard NOM-003-SEMARNAT-1997 and can be reused to water the green areas that will be created, selecting only native species from the project area. Rainwater will be collected, filtered, and channeled to infiltration wells in the subsoil to recharge the aquifer, as per the applicable Mexican environmental regulation.

**Sustainable water and energy use:** The project design includes measures for the sustainable use of resources such as water and energy. For example, sinks at the facility will have electronic water-saving devices, and waterless urinals and low-flush toilets will be installed. In order to make efficient

use of the energy in the ventilation and air conditioning systems, the building will have temperature insulating materials in walls and windows to reduce temperature transfer in exhibit rooms, offices, and climate-controlled areas. The project also includes the installation of energy-saving light bulbs, notwithstanding that the project's geographical location and the building's orientation will make it possible in the summer to take full advantage of the natural light in all general and open areas.

**Labor practices and social issues:** The project will comply with the labor practices stipulated in Mexico's labor law and the basic labor principles of the International Labour Organization on workers' rights. Workers enjoy the benefits provided by law such as health insurance, retirement fund, Christmas bonus, vacations, and paid holidays. According to the occupational safety and health plan and regulations, only people of legal age who are duly registered with the Mexican Social Security Institute may be hired.

It is estimated that during the construction stage the project will create some 500 to 800 direct jobs for construction workers. The Borrower and the municipality have agreed to hire personnel from the area and obtain materials and services locally to benefit the local population and industry. It is estimated that to date, over 60% of project contracts have met this social and economic commitment. The project operation stage is expected to create 120 direct jobs and provide employment for temporary workers, which could result in some 300 jobs. The provenance of the archeological collections to be housed by the museum will be other museums in Mérida and future archeological finds. The Borrower will ensure that the archeological pieces are handled according to the procedures established by the relevant authority, which is the National Institute of Anthropology and History.

**Monitoring and reporting:** The Borrower will finish implementing the impact prevention and mitigation measures identified in the project's EIS and take corrective action as necessary. To this end, the Borrower will prepare an Environmental and Social Action Plan (ESAP) jointly with IIC to address the issues mentioned herein. The ESAP will primarily include: a) the environmental and occupational safety and health measures that will be implemented and, once completed, guarantee compliance with IIC environmental requirements, national regulations, and the international best practice established in the IFC's Environmental, Health, and Safety Guidelines and its Performance Standards on Environmental and Social Sustainability; b) an implementation schedule; and c) a form for periodic reporting to the IIC on the implementation of the ESAP.