Federal Government Employees Housing Foundation (FGEHF)

Environmental Impact Assessment of Lifestyle Residency Sector G-13 Islamabad Project

Final Report

July 2013

Project Procurement International (PPI)
4 Second Floor, Lord Trade Centre, F-11 Markaz, Islamabad
Telephone: 051-211 0904; Fax: 051-210 5604
E-mail: projectpi@gmail.com; Web: www.projectpi.pk

Executive Summary

Introduction

Federal Government Employees Housing Foundation (FGEHF) intends to launch Lifestyle Residency Project consisting of 2,820 apartments with all basic facilities in Sector G 13 of Islamabad.

The FGEHF was set up in March 1990, and registered as a company limited by guarantee under the Companies Ordinance, 1984. It was entrusted with the task of implementing the self-financing housing schemes on ownership basis for Federal Government employees.

The project management of Lifestyle Residency has been entrusted to EHFPRO Private Limited. The EHFPRO Private Limited is a Joint Venture Company of Federal Government Employees Housing Foundation and its formation is specific to the development of Lifestyle Residency only.

The main objective of Lifestyle Residency Project is to provide apartments to Federal Government Employees at an affordable price.

Policy, Legal and Administrative Framework

The Project has been reviewed against the environmental legislations applicable in Pakistan, however the laws and acts particular for the proposed project includes:

- Pakistan Environmental Protection (Review of IEE and EIA) Regulations, 2000
- National Environmental Quality Standards (NEQS), 2000
- Antiquity Act, 1975

The FGEHF, being the proponent of the project, will ensure that the construction and operational phases of the Project are in accordance with the recommendations of the EIA report and the Environmental Management Plan will be implemented.

The Environmental Management Plan will be made a part of the agreement to be signed between FGEHF, EHFPRO and the Contractor for construction of Lifestyle Residency Sector G 13 Islamabad Project.

Need for the Project

Apartment blocks have technical and economic advantages in areas of high population density, and have become a distinctive feature of housing accommodation in virtually all densely populated urban areas around the world. In contrast with low-rise and single-family houses, apartment blocks accommodate more inhabitants per unit area of land and decrease the cost of municipal infrastructure.

The project will address the housing problems directly and its linkage with the construction industry will contribute to the economy of Pakistan. Additionally, the project will reduce the pressure on already overcrowded housing situation in Pakistan particularly in Rawalpindi and Islamabad.

Analysis of the Alternatives

No Project Option: If we consider no project option then we will lose all positive impacts that will be caused due to the project; like providing affordable apartments for the Federal Government employees in a developed sector of Islamabad and to solve the housing problems with all basic facilities for 2,820 households. Therefore, the "No Project Option" does not appear reasonable.

Build-As-Proposed-Option: The Project is in accordance with the Master Plan of Sector G 13 and its location is in the designated as residential area of G-13/1 and G 13/4. The area where this Project would be constructed does provide basic utility services. However, the negative impacts due to the project during construction and operational phases can be minimized, controlled or eliminated if the proposed mitigation measures as suggested in the EIA report are affectively implemented.

Project Description

The Project site having an area of 6,696,000 Sq. ft. is located in two sub-sectors of G-13 Islamabad. There is a 10 acres plot having an area of 4, 400,00 sq. ft. in G 13/1 and 5 acres plot having an area of 2,296,00 sq. ft. in G 13/4.

The Lifestyle Residency will have 2,820 residential apartments with all basic facilities. The apartment blocks have eighteen floors (three basements for parking, one ground floor and fourteen floors). It will have five type of apartements A to E with parking of 4,232 vehicles.

The total estimated cost of the project is Rs 10.6 Billion rupees and will be completed in four years.

The Lifestyle Residency will be built on highest quality comparable to International standards, it is imperative that energy conservation and environment sensitivity will be given paramount importance. The amenities and leisure which will be available at Lifestyle Residency are;

- Security System
- Maintenance Services
- High Speed Elevators
- Back Up Generators
- Day Care Centre
- Mini Super Market
- Community Club
- Movie Theater

- Fitness Club
- Parlor/ Saloon
- Garbage Disposal
- Green/ Park Areas

Environmental Baseline Conditions

In order to work out the impacts and related mitigation measures, the base line environmental conditions of physical, ecological and the socio-economic environment of the project area were studied as follows:

Physical Environment

Topography: Islamabad is located on the Northern edge of the track known as Potohar Plateau. The Potohar Plateau has an uneven land and is gradually rising in elevation from 500 to 600 meters above the sea level and the highest point is 1,600 meters above mean sea level. The land gradually slopes towards the South. The land is composed either of alluvium (clay or silt) or of gravel caps. A large part of the area is undulating and at various places it is badly dissected by gullies and ravines. The Kurang stream has been dammed at a place named Rawal to form the Rawal Lake. Another dam has been built on the Soan River to form the Simbly Lake.

Geology and Soil: The Potohar region has a complex geological history of mountain formation, alluvial-loessic depositions, and erosion cycles. Limestone is the characteristic rock of Margalla range. In age, it ranges from the Jurassic to Triassic. It is usually reddish or bluish white in color mixed or alternating with it beds of red or bluish clay or shades or sandstones. The deposits contain small sized rounded pebbles of sandstone, quartzite or granite and sand mixed or alternating with clayey deposits. They have been described as alluvial deposits, but it is equally probable that they have a glacial origin.

The soil in Potohar region are shallow clayey of low productivity. Mostly, on the Southern and Western aspects of the Potohar plateau, the soil is thin and infertile. Streams and ravines cut the loose plain, affected by gully erosion and steep slopes. Such land is unsuitable for cultivation. However, large patches of deep fertile soil are found in the depressions and sheltered localities supporting quality small forests (Rakh) and rain fed agriculture. The soil formed by the disintegration of shells, clay and sandstone occurs in scattered places.

Land use: The project site is undulated non-agricultural land. The land is mostly covered by construction debris consisting of soil mixed with gravels, cobbles and boulders.

Surface Water: There is no significant surface water in the project area. There were springs, which are dry now.

Ground Water: Ground Water quality of the project site is good and it is used for drinking purposes. The residential areas have water supply from CDA. The ground water level ranges from 80-100 ft. in the project area.

Climate: Islamabad has distinct seasons marked by wide variation in temperature. Rainfall in April and May is occasional but the heaviest rain befalls in July and August. The temperature ranges between -1 ^{0}C to 46 ^{0}C. The coldest month is January when the mean maximum temperature is 18.3 ^{0}C and mean minimum 3.8 ^{0}C. The highest temperature is reached in May when the mean maximum temperature remains 39.1 ^{0}C. The average daily wind speed is 3.78 Km/h while average relative humidity remains 60.5%. Islamabad receives 114.57 mm rain on average monthly basis.

Air Quality: There are no major anthropogenic sources of air pollution in the project area. The project site is mostly surrounded by the residential area. Furthermore, there is no industry near the project area. The project area is covered with shrubs, herbs and sparse located trees along the road side.

Noise and Vibration: There is low to moderate traffic in the project area. The noise levels at the project site were found to be within acceptable limits except noise levels when a train passing through the project site. Furthermore, there is vibration due to passing of train along the railway track. .

Ecological Environment

Flora: The Project area, consists of uneven land composed of alluvium (clay/silt) formed of alluvial deposits laid by the past and present river system in varying thickness. The vegetation is a representative of Dry Subtropical Scrub Forest which is dominated by *Acacia modesta* (Phulai), *Ziziphus mauritiana* (Ber); etc. Other associates existing in varying proportions include Prosopis cineraria (Jand), *Melia azadirachta* (Dharek); *Morus alba* (Mulberry-Shahtoot); *Dalbergia sissoo* (Tahli-Shisham); *Acacia nilotica* (Kiker). In the undergrowth *Cannabis sativa* (Bhang), *Calotropis procera* (Desi Ak) and *Parthenium hysterophorous* (Gandi Booti) are predominant. There will be no tree cutting at project site.

Fauna: The project area in its original form constitutes the habitat of wild fauna consisting of a host of animals and birds. Species found in Islamabad include Jackal, Wild hare, Hedgehog, Rat, Wild boar, Porcupine, Shikra, Grey partridge, Black partridge, Quail, House Sparrow, House Crow, Koel, Common myna, Spintailed lizard, Krait etc.

Margalla Hills National Park: Margalla Hills National Park is rich in biodiversity and many plants and animals are remnants of community from the great Himalayan ecosystem comprising Subtropical Chir Pine Forest type and Dry-Subtropical Semi-evergreen Scrub Forest type.

The park is located in the North of the project site at a distance of about 16 Km, and is the only protected area, in the vicinity.

Socio-Economic and Cultural Environment

The Lifestyle Residency is located in Sector G-13 (G-13/1 and G-13/4). The localities around Sector G-13/1 and G-13/4 may get direct positive or negative impacts from the Project.

Population: Islamabad had an estimated population of 1.152 million in 2011. The present population of the Sector G-13/1 and G-13/4 is about 2,000 inhabitants. Most of the houses are well constructed. The average household size is 6.0.

Agriculture: The land in rural areas of Islamabad is rain-fed and the agricultural production is high. Crops include wheat, maize, millet, and oats. Several vegetables are also cultivated in the area. Orchards are not common.

Education: There are three private schools both for boys and girls in sector G-13/1 and G-13/4.

Public Health: Islamabad has both public and private medical centre. The largest hospital in Islamabad is Pakistan Institute of Medical Sciences (PIMS) hospital. PIMS hospital is 13 Km from project site.

Drinking water Supply: The G-13 Sector is facilitated by CDA water supply system. Moreover there are bore wells at the houses for drinking purposes. Water depth ranges from 100-120 ft.

Employment: More than 80% of the population in project area is engaged with business and employments. Mostly people are either serving in Government departments/private sector or having their own businesses.

Religious and Archaeological Sites: The major population of the Islamabad is Muslim. There are three mosques in Sector G-13.

Public Consultation

During this process, a number of personals and the inhabitants of the project area were met. The project activities and their positive and negative impacts on the physical, biological, and socio-economic environment were highlighted.

Generally, the people of the project area are in favor of the project and stated that this project will provide affordable apartments as more than half of earnings are utilized in renting houses. The project will create employment opportunities for the local people during its construction as well as operational phase.

In addition to the local community, institutions such as WWF Islamabad, IUCN, Capital Development Authority, Disaster and Risk Management Directorate, NUST University located in Islamabad were visited and their concerns/suggestions regarding the project were solicited. Main concerns of these organizations were regarding traffic congestion, pressure on water supply and sewerage system during construction and operational phases of the project.

Impacts and Mitigation Measures

Physical Environment

Impact: Soil related issues include soil erosion, slope stability, and soil contamination. Land clearing, leveling and grading, excavation and filling, construction activities and maintenance of equipment/vehicles may cause these

issues. Soil may be contaminated because of fuel/oils/chemical spillage and leakage, and inappropriate waste (solid as well as liquid) disposal.

Construction machinery and project vehicles will release exhaust emissions, containing Carbon Monoxide (CO), Oxides of Sulfur (SOx), Oxides of Nitrogen (NOx) and Particulate Matter (PM). Furthermore, the construction activities will cause air pollution. These emissions can deteriorate the ambient air quality in the immediate vicinity of the project site. Furthermore, construction activities such as excavation, land leveling, filling and vehicular movement on unpaved tracks may also cause fugitive dust emissions.

Noise and vibration will be generated by construction machinery and vehicles.

The ground water resources of the project area can be contaminated by solid waste disposal, sewerage disposal, and equipment/vehicles maintenance, spillage/leakage of fuels, oils and chemicals, and campsite sanitation facilities.

Mitigations: Soil erosion can be minimized during land clearing, leveling and grading. Excavated slopes will not be left untreated/unattended for long durations. Appropriate slope stabilization measures will be taken per the design (i.e. stone pitching).

Temporary measures, such as construction of temporary walls reinforced with brick lining bordering the construction areas to contain debris and spoil, will also be undertaken to avoid soil erosion and water contamination. The stone and gravel will not be extracted from the areas around nullahs in Islamabad.

For the domestic sewage from the contractor's camp, septic tanks with soakage pit will be constructed having adequate capacity. Waste oils will be collected in drums and sold to the recycling contractors. The recyclable waste from the project site (such as cardboard, drums, broken/used parts, etc.) will be sold to recycling contractors, or where appropriate reuse/recycle it. The hazardous waste will be kept separate and handled according to the nature of the waste.

Ecological Environment

Impacts: The site preparation and construction activities may necessitate removal of the natural vegetation from the areas where apartments will be constructed. Damage and/or loss of vegetation and clearing of other indigenous and introduced species, as well as undergrowth species, comprising bushes, grass, etc. Construction crew can also indulge in tree/shrub cutting to obtain fuel wood for the camp. There will be no tree cutting at project site of Lifestyle Residency.

The loss of natural vegetation discussed above, and other project activities will potentially have adverse impacts on the faunal resources and habitats of the area. Smoke, chemicals, dust particles, and noise generated by heavy machinery are a scaring factor for wildlife. Rodents, hedgehogs, porcupines would lose their dwellings. In addition, the wildlife may be disturbed by illumination, and presence of the people.

Mitigations: A plantation plan has been proposed having both indigenous and exotics trees which will be implemented. A record will be maintained for any tree cutting.

The measures to restore natural vegetation loss in the area will benefit the area's fauna as well. The project staff will not be allowed to indulge in any hunting or trapping activities. Night time construction works will not be undertaken. Illumination levels at the site will be minimized, as far as possible.

Appropriate diffusers will be used to restrict the illumination within the project site. Blasting will not be undertaken at the site for excavation purposes. Porcupine population has increased, as it is not palatable because of its quills. Destruction of habitat and consequent check on the population of this pest may prove to be boon to maintain ecological balance.

Developmental activities and colonization of project site would be a positive step to keep down the number of this undesirable species at the desirable level from human point of view.

Socio-Economic Environment

Impacts: The land for the Lifestyle Residency is owned by the FGEHF and has been handed over to EHFPRO for the development. The project being located close to the residential areas may pose some safety hazards to the local population.

Construction workers may be susceptible to eye and respiratory diseases due to their routine exposure to dust and exhaust emissions on the project site. Injuries could happen primarily by occupational-related accidents, animal bites, etc. Activities such as land clearing, tree cutting, earthworks, and construction of facilities present various occupational hazards to the workers on site.

There is no reported site of archeological or historical significance at the land acquired for the project. However, in case any artifact of such significance is found during the construction activities, the Archeology Department, Government of Pakistan will be informed.

Mitigations: Eye and respiratory diseases will be mitigated through routine health screening and training of contractor's employees. Physical injury will be mitigated through the provision of appropriate training and emergency response procedures. Protected fencing will be fixed around the construction site.

Unauthorized access within the construction area will not be allowed. Vehicle speeds of 20 Km/hr. at the project site will be implemented. Appropriate light diffusers and reflectors will be used, if required, to minimize the public nuisance caused by light pollution.

Environmental Management Plan

The purpose of the Environmental Mitigation Plan (EMP) is to minimize the potential environmental impacts due to the project. The EMP reflects the commitment of

FGEHF to safeguard the environment as well as the surrounding population. The EMP provides a delivery mechanism to address the adverse environmental impacts of the proposed project during its execution and operation, to enhance project benefits and to introduce standards of best practices to be adopted for all phases of the project.

The cost estimates for environmental monitoring during construction phase of the project is Rs. 3.2 Million.

Conclusion and Recommendations

On the basis of the overall impact assessment, more specifically, nature and magnitude of the residual environmental impacts identified during present EIA, it is concluded that Lifestyle Residency Sector G 13 Islamabad Project is likely to cause conventional environmental impacts mainly occur during its construction phase. However these impacts can be mitigated provided the proposed activities are carried out as mentioned in the report, and the mitigation measures included in this report are completely and effectively implemented.

There are no remaining issues that warrant further investigation. This EIA is considered as adequate for the environmental and social justification of the project.