
Tawlet AMMIQ - ECO-RESTAURANT for the Biosphere

Climate change due to human activities, declining resources and increasing pollution levels in the atmosphere require that we take drastic measures to reduce energy and resources consumptions as well as switch to cleaner energy. Switzerland considers these objectives as a challenge but also as an opportunity to promote sustainable land management and sustainable development related to ecotourism, both in Switzerland and in Lebanon.



« Ammiq Eco-Restaurant » is funded by the Swiss Agency for Development and Cooperation (SDC) and has been constructed in collaboration with Al Chouf Cedar Society and A Rocha. It is located in the largest Nature Reserve in Lebanon, in the West Bekaa, in Ammiq village. Its high environmental performance features and architecture contribute to the conservation of natural resources and to the biodiversity of the region. Ammiq Eco-Restaurant will officially open its doors on May 13th, 2012 and will be operated by “Tawlet Ammiq”.

Site selection

This project in the west Bekaa was chosen with the aim of revitalizing the old Ammiq village, destroyed during an earthquake (1956). The construction of a high environmental performance building there contributes to the future rehabilitation of houses destroyed in the fifties. It has also brought about the creation of a real eco-tourism center in Ammiq. The reserve has a visitors' center with an information desk

(information boards, local produce for sale, bed and breakfast, etc). Beside its function as an eco restaurant, the building offers a meeting room for workshops and conferences on sustainable development. We hope through this initiative to increase the awareness of visitors to the environment, natural resources conservation and biological diversity in the region.

Environmental Performance features

The building is characterized by the use of ecological construction techniques adapted to the climate of the area and the usage profile of the facility:

Canadian Wells

The Canadian wells consist of passing fresh filtered air through underground pipes with the purpose of cooling it before it enters the main dining room. This technique takes advantage of the lower temperatures below the ground surface.

Solar Chimneys

By replacing mechanically driven fans these will increase the natural ventilation of buildings by using convection of air heated by passive solar energy.

The combination of Canadian wells and solar chimneys

Is designed to reduce to the minimum the use of electricity to cool the building in summer. Thus, up to 75% of the energy that would be needed for standard air conditioning can be saved.

The thermal envelope of the Building

Its performance exceeds by more than 30% the requirements of the thermal standards for buildings in Lebanon. "Ammiq Eco Restaurant" is probably

the building with the highest thermal insulation level in this country. The building will barely require any heating except in January and February where relatively small wood stoves will be used for heating.

Large glazed bays

"Ammiq Eco Restaurant" large glazed bays allow ample day lighting and a superb view of the Bekaa plain without sacrificing the thermal integrity of the building thanks to the low e glazing. Increased daylighting will reduce the electricity consumption for artificial lighting.

Grape vines in front of the dining room bays will prevent the summer sun from overheating the space.

Low e glazing

It consists of double glazing with a special metal oxide coating that gives the glass its slightly greenish appearance while keeping its excellent visibility characteristics to maximize day lighting. It is designed to prevent heat loss during winter while allowing the winter sun to enter to warm up the space thus reducing energy requirements.

Photovoltaic cells

Part of the facility electricity requirements will be met by photovoltaic solar panels. These will

feed electricity into the EDL grid when the generated electricity will not be used by the facility (net metering).

Solar hot water heating

Used to produce domestic hot water: It is estimated that 80% of the domestic hot water requirements of the facility will be covered by the solar system thus drastically saving on electricity and diesel.

Gas boiler

Will back up the solar hot water heating system during periods of low insolation. Gas is a cleaner fuel compared to diesel, thus contributing to lower atmospheric pollution and green house gases emissions.

Reducing the use of electricity

Very low consumption lighting fixtures and presence detectors are used together with skylights to minimize artificial lighting, thus reducing the electricity consumption and the emission of greenhouse gases. For the same reason the kitchen ovens will be operated solely on gas.

Evaporative cooling system

The evaporative cooling system in the kitchen will reduce by 85% the electricity needed for the air conditioning.

Green Roof

It is used as a terrace and includes an irrigation system. Furthermore, the

grapevines on the walls will shield the building from the summer sunrays.

Saving water

Water saving fixtures is used like double flush toilets and flow limiting lavatory mixers.

Energy & Water Consumption monitoring

The building is equipped with energy and water meters to monitor with accuracy its energy & water consumption. Monitoring and control of energy & water consumption are important, to check if the building concepts have been fulfilled. This point is often not adequately taken into consideration in Lebanon.

Indoor air quality

Floor drains in toilets are not installed, these emit noxious gases, also toilets have wall mounted WC to facilitate cleaning.

Wall paints are made of low volatile organic compounds

Waste reduction

Sorting bins for solid waste are installed to facilitate recycling

The septic tank is a three compartment type with a leeching field especially designed to prevent groundwater contamination.

Oil from kitchen waste is recovered in an oil tank for recycling.

In conclusion, this project:

- Supports the protection of natural sites in Lebanon ;
- Reduces the pollution of groundwater ;
- Reduces energy consumption by about 80% compared to similar buildings;
- Reduces greenhouse gas emissions by about 85% ;
- Gives a sense of comfort to its occupants;
- Recycles over 60% of solid waste (sorting out of waste);
- Provides work opportunities (especially for women) and promotes tourism in the area.



The green roof