

Vienna International Center (VIC)

A Case Study in the Context of Buildings Management

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1. Background

The Buildings Management Services (BMS) of the VIC is a common service for the 4 organizations located in the VIC. Among other functions, it is responsible for providing buildings operations and ground maintenance services for the VIC and its technical installations as well as all other repairs, adaptations, alterations and new buildings etc.

These services are provided through the management of nine (9) professional officers with the associated engineering and administrative services and, three technical units, with a total of currently 116 GS staff. The annual BMS budget is approximately Euro 30 millions, and includes:

- Common Buildings Management
- Joint Buildings Management
- Major Repairs and Replacement Fund
- Individual Organizations' Projects Funds

With a new management in the Facilities Services in the VIC, for the first time as of 1999, it was recognized that in such a large office complex considerable ecological and economical savings could be made through reduction of energy and utilities usage (such as electricity, water, heating, cooling) as well as through more efficient operation.

At the same time it was recognized that the office complex had not adapted to the new requirements of a modern office building, but also that after 20 years of operation, urgent repair and replacement measures were necessary for all the buildings and installation parts.

Furthermore, during the construction of the VIC, it was common during that period to use asbestos materials for the purpose of fire protection. On the basis of new laws and standards that asbestos had possible negative effects on the health of employees, it was high time to find a solution to that problem, in order to eliminate the health risks for the occupants.

In order to make use of the opportunity, we elaborated numerous innovative renewal programs, which would help to reach the aims of environmental protection and energy savings.

2. Adaptation of Administrative and Budgetary System

In view of the above, the Buildings Management felt obligated to find the best possible solution to the aforementioned problems. A strategic plan was developed and a multitude of solutions were worked out in connection with technical aspects and feasibilities, combined with the economic and ecological cost-benefit calculations, operational maintenance, logistical arrangements and the financial situation.

As a next step, it was necessary to earmark funds and their correct allocation, and above all to secure financial availability beyond the normal budget cycle. In order to ensure this, painstaking detail work and numerous consultations were carried out; the administration of the four VIC organizations and then the member states had to be persuaded of the purpose of a special fund. This fund, which is generally unparalleled in the whole UN system and, we believe, in public budget areas, makes it possible to budget exactly for the real requirements and above all, to carry funds over from a particular budget cycle which were not used due to different reasons, without the funds being reimbursed or causing future budget reductions.

Below you will find a list of the most important projects particularly those dealing with environmental protection and energy savings, which were recently completed and/or are being currently carried out:

3. Measures to Reduce Energy Consumption

3.1 Replacement of façade window glasses:

Replacing the entire window glazing of the buildings with state-of-the-art thermal insulating glasses in order to meet the today's modern office building standards, and most importantly, to reduce the consumption of energy for heating and cooling. The new window double-pane glasses are designed not only to achieve energy efficiency for heating and cooling, but also to enhance safety of the occupants. The inner pane is a special shatter resistance glass (laminated glass) and the outside pane is toughened glass. There are 30,000 m² façade glasses in the VIC, of which 90% have already been renewed.

- Heating energy savings: over 27%
- Cooling energy savings: nearly 17 %
- Total annual savings: Euro 300,000 – 450,000
- Payback period: 7-10 years

3.2 Replacing the lighting systems:

Replacing the lighting systems with modern ones in the offices (4,500 offices) in order to reduce the consumption of electricity as well as to meet the today's modern office workplace lighting requirements. The number of lights so far renewed is about 43,000.

- Tremendous improvement of the lighting characteristics and the working environment
- Electricity consumption savings: 50% for lighting in the offices
- Total annual savings: Euro 250,000
- Payback period: 15 Years

3.3 Improvement of the function of the air conditioning units:

The condensation pipes of some 15,000 air-conditioning units have been renewed resulting in considerable improvement of the cooling capacity of the units, at less energy use.

3.4 Improvement of the lighting in the garages:

The Ceiling of the park-decks for 2,500 vehicles have been painted using light reflecting/enhancing paint that has resulted in reduced consumption of electricity for artificial lighting and the creation of a more user friendly environment.

3.5 Improvement of the lighting systems of over 20 staircases:

Improvement of the lighting systems of over 20 staircases to reduce the consumption of energy.

3.6 Renovation and modernization of elevators:

Almost 85% of the entire VIC elevators have been upgraded that has reduced the consumption of energy and improved the function of elevators.

3.7 Upgrading the Building Automation Control System:

Upgrading the Building Automation Control System, the nerves of the technical installations. This highly efficient system monitors and gives

automatic instructions to the entire technical facility operations in the VIC around the clock, such as turning off/on the lighting, heating, cooling, humidifying and ventilation systems. This measure resulted in considerable energy efficiency and optimization in the operation of the VIC buildings.

3.8 Replacing outdated emergency power supply generators:

Replacing outdated emergency power supply generators with new ones, equipped with synchronizing systems and installing new energy meters in various localities. This has resulted in the reduction of the yearly 12 power cuts for test purposes to only one power cut per year.

4. Measures to Reduce Water Consumption

4.1 Use of well water for irrigation purposes:

The sprinkler systems of the green areas as well as manual irrigation water systems have been connected to underground well water to gradually eliminate the consumption of precious city drinking water for irrigation purposes.

4.2 Reduce wastage of water in sanitary areas:

- Installation of two-stage flushing
- Installation of waterless toilets
- Installation of automatic water taps

4.3 Achieving Efficiency in the use of Public Water:

The pipes supplying water to gray areas (e.g. 1,000 toilets) have been connected to underground well water. This measure has resulted in considerable reduction in the use of costly Vienna city's drinking water.

5. Environmental Preservation Measures

5.1 Recycling of waste:

Arrangements have been made to separate and sort out the waste and garbage materials for increased recycling. To that end, special waste bins and/or containers have been installed in the premises of VIC. Furthermore, the entire wastepaper is collected separately and dispatched for 100% recycling.

5.2 Replacement of paper towel dispensers:

In order to reduce the use of paper, in the entire sanitary areas of VIC, all the paper towel dispensers have been replaced with washable cloth towel roll dispensers.

5.3 Promoting the use of environmentally friendly products:

Instructions have been given to all companies and to contractors and arrangements have been made to use exclusively environment-friendly products and detergents.

6. Health and Safety Measures

6.1 Asbestos Removal Project (ARP):

In order to eradicate health hazards associated with the existence of asbestos in the buildings a comprehensive asbestos removal project for the entire VIC has been initiated by BMS. The activities of this extremely complex task started in November 2004 and are still ongoing. Over the past 3 years, 62 office floors (some 3,600 staff) have been moved to containers stayed there for 4 months and returned to their asbestos-free refurbished offices.

6.2 Substitution of Asbestos:

The removed asbestos from all fire barriers are being substituted with modern and non-health hazarding materials in accordance with current building rules, regulation and standards.

6.3 Renewing the floor carpets:

Almost 60% of the office floor coverings have been replaced in the entire VIC. The new floor coverings in the 50% of offices are made out of cork, which is a natural material. Over the past 3 years some 120,000, m2 floors have been covered with cork and/or carpet.

6.4 Renewing the entire IT infrastructure:

Almost 90% of the entire cables in 62 office floors related IT, telecommunication and infrastructure have been renewed to meet today's standards. Additionally, at every window module of the office floors the entire workstation-related outlets have been renewed/installed.

6.5 Improvement of fire safety of the building:

The entire fire alarm and detection systems including their cabling and most sensitive equipment are being renewed by fully extended fire alarm and detection system to meet today's fire-safety and precautionary requirements.

6.6 Up-grading fire-flaps:

In several buildings and office floors the outdated fire-flaps of the air ducts built in 1970s are being replaced with motorized flaps to enhance fire safety and comply with the current fire safety regulations.