Asbestos Management Plan for the Vienna International Center

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Abstract

The Vienna International Centre (VIC) is together with New York and Geneva one of three worldwide headquarters of the United Nations. It consists of 7 buildings with a gross floor area of approximately. 340,000 m² and there are about 4,000 persons working within this complex. The UN rented the VIC for 99 years from the Republic of Austria, the owner of the buildings.

During the time of erection of the VIC, between 1973 and 1979, asbestos was widely used in construction all over the world. According to Austrian statistical figures in 1971 and 1976 the quantity of manufactured raw asbestos reached an absolute annual peak of approximately 35,000 tons. Nearly 90 % of this quantity went directly or indirectly into the construction sector. In the VIC asbestos was used for fire insulation as a sprayed-on material, panels and ropes.

In 1997 an overview study regarding the asbestos related situation in the VIC was carried out, including risk assessment. Though the actual asbestos risk to the staff was not found to be alarming, the Austrian Government decided to set up a management plan for total asbestos removal in the VIC as, due to the age of the buildings, major renovations could be expected anyway in the near future.

The first draft of the asbestos management plan for the VIC was finished in 2000. The outcome was a comprehensive asbestos register, an in-depth feasibility study of logistical variants for the entire asbestos removal project during which the buildings were to be kept in operation and, finally, a pilot removal project on one of the regular floors.

The detailed exercise to complete the asbestos management plan started in 2001. During the tendering process for the first phase of the asbestos removal work some removal exercises had to be undertaken due to certain facility management needs. The start for the first phase of the main project is planned for the end of 2004. The whole project should be finished by the end of 2009.

1. Introduction

Together with New York and Geneva, Vienna with the Vienna International Center (VIC) is one of the three headquarters of the United Nations. The buildings of the VIC were erected between 1973 and 1979 by the Republic of Austria which is still the owner of the facility. In the year of completion and opening of the complex, sprayed-on asbestos was banned in Austria. However,

sprayed-on asbestos and some other asbestos containing materials had already been used in the construction of the VIC, mainly for fire insulation.

The VIC complex consists of 7 buildings, comprising 4 office towers, 2 blocks for common services and 1 conference building. The gross floor area of the whole complex is about 340,000 m², and the enclosed volume about 1,400,000 m³. Today, 4000 people work in the VIC complex. It is not only the headquarter of the UN in Vienna, but also of the International Atomic Energy Agency (IAEA), of the United Nations Industrial Development Organization (UNIDO) and the Preparatory commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

Due to the existence of various and partly hidden asbestos containing materials in the VIC, the large size of the complex and the very high level of safety and security regulations, it took some years to develop an asbestos management plan and to incorporate it into the ongoing operation and facility management of the buildings.

In any case, the main challenge is that any health risks have to be kept away from VIC staff during the entire project, both in the phase of regular operation before asbestos removal and in the asbestos removal phase itself. This aim can be guaranteed by several investigations and well prepared measures within the asbestos management plan.

The asbestos management plan for the VIC can be seen as a prototype of how to deal with the problem of asbestos containing materials in big, complex and sensitive premises without causing any risks for the users at all.

2. Development of the Asbestos Management Plan for the VIC

Within the structure of the VIC, asbestos containing materials have been used as fire insulation in breakthroughs and fire walls, in fire protection doors, on some air ducts in the service floors, and other applications.

In the mid 1990s the first large-scale modifications of technical facilities had to be undertaken. Due to this fact it became necessary to disturb areas where asbestos containing materials were present. Consequently, the first asbestos removal requirements came up and had to be settled within given time frames and technical requirements. At that time, the International Organizations as well as the Austrian Government became aware of the need to set up a Management Plan for further handling asbestos issues in the buildings of the VIC.

The initial investigation on this issue was undertaken in the period from 1997 to 1998 in order to get an overview of the whole matter. After completion of this investigation – internally designated as the "Status-Report" – the Austrian Government decided to start a program to make the VIC an asbestos free environment, though the results of the Status-Report, which were verified by external consultants, did not indicate any health hazards for the VIC staff.

The next steps were: during 1999-2000 to outline a Draft Masterplan for the asbestos removal process, then to seek a general consultant to produce Final Masterplans based on this by the beginning of 2001 and finally to bring the latter to execution one by one.

Initial small-scale asbestos removal exercises took place in 2003, but the start of operations on the first area of the main project has just commenced (fourth quarter of 2004).

3. Elements of the Asbestos Management Plan for the VIC

The Asbestos Management Plan for the VIC in its present form has grown step by step during the period from 1997 to 2002. It is, of course, a living plan to be continued and, if necessary adapted according to upcoming requirements until the finish of the whole asbestos removal project is reached, presumably by 2010.

The main supports of the Asbestos Management Plan are the Status-Report, the Draft Masterplan and the Final Masterplans for each of the sections of the overall project. The elements of the existing Asbestos Management Plan have been defined, outlined and detailed within these three supports. The structure and content of these elements as well as their chronological sequence is shown in the following descriptions.

3.1 Status-Report

The aim of the Status-Report was to set up a general plan on how to operate the buildings taking into account the existing asbestos issue and how to deal with this issue in the case of disturbing affected areas during building management operations.

The elements of the Status-Report were:

- setting up a general inventory and systematization of asbestos containing materials in the VIC according to asbestos types and products as well as according to typical locations;
- working out a Risk Assessment from the point of view of the staff at large, the building management services and maintenance staff and, last but not least, the staff of external contractors;
- developing instructions for building management services and maintenance staff and for the staff of external contractors when doing work in asbestos affected areas;
- working out asbestos related terms of contract for external contractors including above-mentioned instructions and covering liability and warranty regulations if these instructions should be ignored;
- setting up of legal, technical, logistical and safety related principles for any further measures of asbestos removal or asbestos treatment in the VIC; and
- recommending a minimum standard for an air monitoring program for airborne asbestos fibers in the VIC.

3.2 Draft Masterplan

The aim of the Draft Masterplan was to define, to analyze and to specify all technical, logistical and economical requirements to be met for executing an overall asbestos removal program for the buildings of the VIC. It was also the basis for the main decisions made by both partners – the international organizations and the Austrian representatives – to enable the project to be realizable.

The elements of the Draft Masterplan were:

- detailing the general inventory of asbestos containing materials from the Status-Report to an asbestos register of the VIC on an individually created database;
- working out a priority model for removal of asbestos containing materials from the buildings of the VIC with respect to the outcome of the Risk Assessment from the Status-Report, technical requirements, e.g. due to expected maintenance intervals, and economical aspects;
- undertaking a pilot project of asbestos removal in one of approximately 100 regular floors in order to gather experience in the individual technical and logistical requirements, to verify the time scheduling estimates for implementation of additional upgrading works and to check the feasibility of the general project management approach;
- working out an outline for installing substitute materials depending upon the physics relating to the construction of each of the asbestos containing materials to be removed and substituted;
- analyzing all logistical options of asbestos removal and upgrading works arising from the fact that the VIC has to stay in operation for the whole period of the removal project, and proposing an optimal solution by taking into account all necessary and important parameters from the point of view of the users and the owner of the VIC; and
- setting up an estimate for the cost and time frame of the overall project.

3.3 Final Masterplans

The Final Masterplans are based directly on the Draft Masterplan and are developed in sufficient detail to make the project ready for realization. As a pre-condition, the project organization for the asbestos removal and upgrading works had to be developed, covering all relevant parties (users and the owner of the VIC, consultants and contractors for all the different tasks) as well as different project areas and sections according to the size and structure of the building concerned. For each of these project sections an individual Final Masterplan must be elaborated.

The elements of these Final Masterplans are:

- undertaking of detailed surveys of all areas within each section, where asbestos removal
 measures will take place, with respect to existing elements that need to be taken into
 consideration, like non-moveable furniture and installations, special requirements concerning
 security and technical issues, and the individual level of upgrading demands after the asbestos
 removal:
- defining all types of relevant works to be executed, like removal works and waste management services, substitution and upgrading works etc. to be done in conjunction with the asbestos removal works, and agreeing upon the technical standards with the users and the owner of the VIC;
- working out of detailed technical and logistical operational procedure plans for all of the works to be executed in each of the project sections;
- definitive elaboration of all work-flow plans and logistics regarding the moving of furniture and staff members during the time of occupation of each floor;
- approving of all the plans by the relevant authorities for occupational safety and health as well as for hazardous waste disposal;

- setting up standard specifications and bills of quantities for each of the required works in order to execute tendering procedures and to select the best bids for contracts and materials;
- implementing a site supervision and monitoring team to secure the quality of all works and services and the time and cost frame as fixed in contracts;
- implementing a cost and time management level within the project team.

4. Execution of the Asbestos Management Plan for the VIC

The execution of the asbestos management plan for the VIC – consisting of the Status-Report, the Draft Masterplan and the Final Masterplans – started in 1998 with realization of the proposals and recommendations given within the Status-Report.

The Draft Masterplan was an interim step; the next execution measure was completion of the first of the Final Masterplans in 2003, covering a part of the first project section.

The biggest project section, the asbestos removal from the four office-block towers, will start at the end of November 2004. According to the existing time schedules this project section should be finished by the end of the year 2007.

The buildings of the common services will be treated partly in parallel to the office towers, in the period 2008 to 2009.

Asbestos removal from the conference building will not start before the year 2008; this last project section should be finished in the year 2010.

The time-span from the first beginnings of the asbestos management plan for the VIC to the presumed state of an asbestos free environment in the VIC will be about 13 years. This period may seem relatively long, but it is to be taken into consideration the big size of the building, the execution of the asbestos removal exercise during full operation of the VIC, the execution of upgrading works in parallel to the asbestos removal works and a very careful preparation of all safety and security related work-flow plans. However, this would not be possible if there were even a slight health hazard for the VIC staff at large caused by the existing asbestos containing materials indicated in the regularly taken air measurements.

According to present plans, an average 150 to 200 workers, supervisors and consultants will be involved in this asbestos removal project for about 7-8 years. A laboratory equipped with two scanning electron microscopes is situated on site to undertake all measurements that are prescribed in Austria on a SEM-basis, with minimal delay.