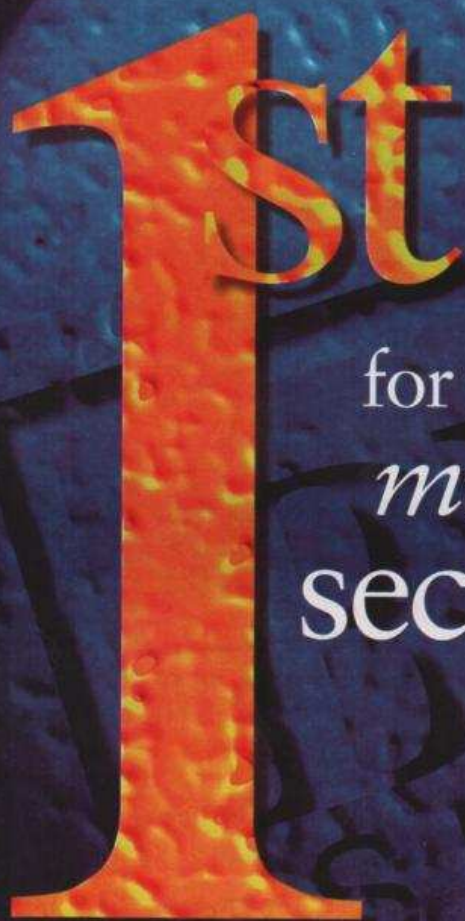


MAY/JUNE 1999

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LIVING HISTORY UNDER SURVEILLANCE

On the 24th of August AD79, Mt. Vesuvius erupted ... and created what is today one of the largest open air museums in Italy – Pompeii. With four million visitors expected in this jubilee year, security is being upgraded – Adalberto Biasiotti got the job...

After the eruption, the remnants of Pompeii were left largely undisturbed for centuries – only under the Bourbonis' rule was the systematic excavation begun that gradually exposed about 60% of the area within Pompeii's walls.

Today, typically, about two million visitors a year walk through the streets, enter the villas and shops, relax in the stadium and theatre. And to secure the site is quite a challenge.

The main problems are:

- The huge size of the site (approx. 70 hectares, within ancient city walls);
- Many areas not yet excavated and are prone to pilfering;
- Difficulties of transportation – emergency vehicles, ambulances and patrol cars cannot move freely and security officers can only reach many areas on foot (thanks to a 'ring road' that roughly follows the city walls).

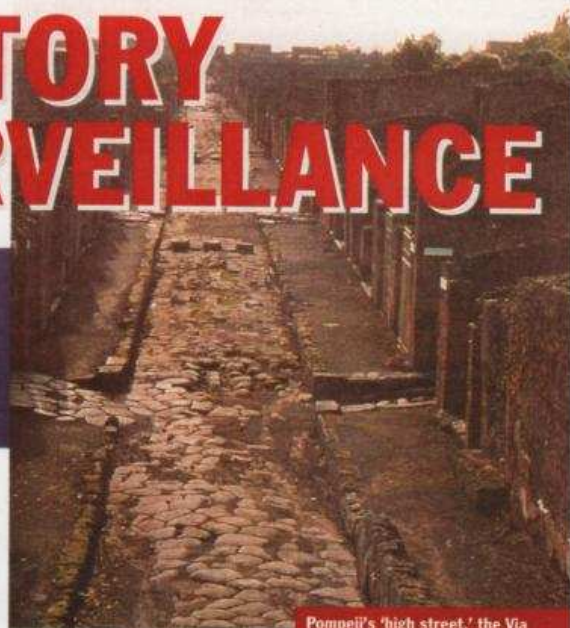
It's worth remembering that

the Romans had their own traffic control system and established pedestrian zones. Large stones were put in the middle of main streets, such as the famous *Via dell'Abbondanza*, in such a way that only carriages with a pre-determined wheelbase (unique to Pompeii) could pass through.

Problems

Salient points include:

- The perimeter is fenced with different types of barrier, some of it in a degraded condition. Yet inside it are archaeological artifacts depositories as well as restoration laboratories...
- Two main entrances are reserved for visitors, but there are many other portals – normally coincident with former city gates – that have to be manned at different times;
- A peculiar challenge is posed by the *Villa dei Misteri*, outside city walls, that requires a specific and permanently manned post. The villa is connected to the main archaeological site by a walkway;



Pompeii's 'high street,' the *Via dell'Abbondanza*, was blocked with stones in Roman times to control traffic – those same stones mean we can't use it for rapid intervention today!

- Visitors may encounter limits to their free movement, because of ongoing diggings, lack of toilet facilities within city walls (Romans were used to very limited facilities) and sheer people pressure – eg: when thousands of visitors per day want to visit a Roman *casa* (home) made to accommodate only a family and a few servants;
- To monitor and secure an area of approx. 2^okm, some 170 security officers and seven supervisors are on duty 24-hours a day, working variable length shifts;
- Many years ago two guard posts were created within the city, violating two Roman villas, and there are others scattered around the perimeter;

• Trade union constraints often reduce the overall efficiency of the available force.

As A Result...

About three years ago, the then Minister of Culture, Sr. Veltroni, realized that existing rules & regulations, together with bureaucratic constraints, were hampering a proper development plan. He put forward an innovative strategy, offering Pompeii's archaeological superintendent, Prof. Pietro Giovanni Guzzo, the assistance of Prof. Giuseppe

HISTOIRE VIVANTE SOUS SURVEILLANCE

Le 24 août 79 apr. J.-C., une éruption du Vésuve a créé ce qui est aujourd'hui l'un des plus vastes musées en plein air d'Italie: Pompéi. Quatre millions de visiteurs étant attendus cette année, la sécurité est actuellement renforcée. C'est Adalberto Biasiotti qui a été chargé de ce travail...

Une infrastructure entièrement révisée, fondée sur un réseau de fibres optiques accueillant la télévision en circuit fermé, l'éclairage, un système de détection d'intrusion et une installation de communications, et indiquant aussi la position de chaque gardien, est décrite par l'auteur, ainsi que les problèmes que représente l'installation d'un système moderne de sécurité sur un site archéologique de 70 ha, connu dans le monde entier.

LEBENDIGE GESCHICHTE UNTER BEWACHUNG

Am 24. August des Jahres 79 n.Chr. brach der Vesuv aus... und schuf das, was heute eines der größten Freilichtmuseen in Italien ist - Pompeii. Da in diesem Jubiläumjahr vier Millionen Besucher erwartet werden, wird das Sicherheitssystem ausgebaut - Adalberto Biasiotti erhielt den Auftrag...

Der Autor beschreibt eine vollständig überarbeitete Infrastruktur auf Grundlage eines faseroptischen Netzwerkes zur Unterstützung einer CCTV-Fernsehanlage, der Beleuchtung, der Einbruchmeldeanlage und des Kommunikationssystems, das auch die Standorte des Wachpersonals bestimmt - und das Problem, ein modernes Sicherheitssystem auf einer weltberühmten, 70 Hektar großen Ausgrabungsstätte zu installieren.

HISTORIA VIVA BAJO VIGILANCIA

El 24 de agosto del año 79 d.C., el monte Vesuvio entró en erupción, creando lo que en la actualidad es uno de los más grandes museos al aire libre de Italia: Pompeya. Con cuatro millones de visitantes esperados para este año de aniversario, la seguridad se está mejorando. Adalberto Biasiotti obtuvo la información...

El autor describe una infraestructura totalmente revisada, basada en una red de fibra óptica con soporte para CCTV, iluminación, detección de intrusos y un sistema de comunicaciones que también localiza cada ubicación de los vigilantes, y también explica los problemas de instalación de un moderno sistema de seguridad en un lugar arqueológico mundialmente famoso y con una extensión de 70 hectáreas.

STORIA VIVA SOTTO SORVEGLIANZA

Il 24 agosto dell'anno 79 A.D. il Vesuvio entrò in eruzione... e creò quello che oggi è uno dei più grandi musei all'aperto d'Italia - Pompei. Con quattro milioni di visitatori previsti in quest'anno del giubileo, la sicurezza è in fase di potenziamento - ne è stato incaricato Adalberto Biasiotti...

L'autore descrive questa infrastruttura completamente revisionata, basata su una rete a fibre ottiche che supporta TV a circuito chiuso, illuminazione, rilevamento dell'intrusione ed un sistema di comunicazioni che determina con precisione l'ubicazione di qualsiasi sorvegliante - assieme ai problemi legati all'installazione di un moderno sistema di sicurezza su un sito archeologico di 70 ettari famoso in tutto il mondo.

SECURITY AT POMPEII



◀ The rusty northern perimeter fence

- The perimeter fence is also being improved, but it's posing a major problem because security concerns have to complement aesthetic requirements. Archaeologists were unwilling to modify the structure of the fence and a difficult

Gherpelli as a 'city manager' - ie: an administrative director in charge of all activities not directly related to archaeological work. The team was also given the means and the powers to define a long term plan to improve accessibility, visitor reception facilities, work force conditions and, most importantly, site security.

And Now...

That plan is now achieving its first objectives with others hot on their heels - viz:

- The complete perimeter is now covered by a CCTV surveillance system with very good lighting;
- Cash handling - a major concern in view of the daily amount collected - has been dramatically upgraded: (i). the



▲ Stray dogs are a real problem, though attacks on guards or visitors are infrequent

installation of automatic ticket machines has cut queues and some cash collection problems; (ii). cashiers' armoured booths now have time-delay safe drawers (iii). an armoured car service has been contracted; (iv). as an example of how security may be improved by indirect means, the cashiers' booths are now air-conditioned - preventing doors being left open in the hot Pompeii summer!

compromise is now being worked out...

- An electronic intrusion detection system is active, partly based on motion detection circuits connected to the cameras, partly, for aesthetic reasons, with buried radiating cable detectors;

- A major undertaking was the laying of a very comprehensive fibre-optic network, buried along ridge lines and under strict archaeological supervision. Junction boxes and distribution frames are scattered within city walls, in sites selected to be unobtrusive. We also took this opportunity to upgrade the electrical network and mains is now available almost anywhere, within city walls;

- Volumetric detectors and localized CCTV systems cover depositories and restoration labs, as well as other critical areas;

- Radio communications, on a dedicated frequency, are available to guards;
- All alarms and video signals are monitored from a

central station manned 24-hours a day which doubles as the main emergency command post. From here we can direct assistance to such minor emergencies as visitor accidents; to minor incidents such as vandalism or graffiti spraying, and to major emergencies.

We never forget why Pompeii became a dead city ... and the smoke clouds and rumblings from Vesuvius remind us there's no guarantee that the tragedy will not repeat itself. As

a result, the Ministry of Interior (which is responsible for civil protection) is now working on a large scale emergency project for the entire area.

The Staff

Security specialists will be happy to know that the effort put into improving the physical and electronic defences is matched by that now put into training all our personnel.

It's a sad fact that for too many years training was neglected, with very dire consequences for both morale and the skill level of our people. Now a budget of many thousands of training hours per year has been allocated and everyone will be enrolled in a continuous



▲ Information and help points are now positioned in the most crowded areas

training programme, covering such themes as first aid, visitor assistance, security and safety hazards, handling of unruly behaviour, emergency procedures and so on.

As part of this programme, and to improve control, the overall site has been divided in eight 'districts' - quite similar to



▲ High poles support lighting fixtures and CCTV cameras, some equipped with motion detection capability

the original Roman police areas - with control posts concealed within the ruins, where possible, along with first aid equipment, PA systems and other emergency and security supplies. These posts are manned 24-hours a day and from them guards make regular patrols.

Supervisors now benefit from automated guard tour devices that check labels at various points on guards' tours - and as you'd expect, the labels had to be fastened to Roman walls with special care, in order to preserve surface integrity.

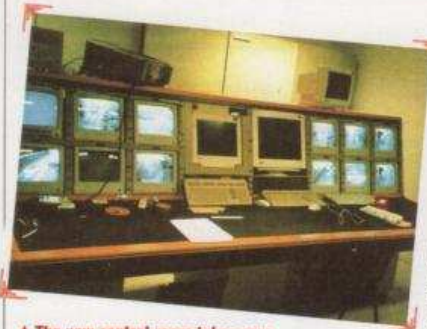
A further improvement in the pipeline includes substantial modifications to uniforms - designed to be more functional, more visible and to draw public attention - and to the equipment guards carry on duty. Basic equipment will comprise a powerful, portable searchlight, handcuffs and a two-way communication device with a silent alarm button that also lets the control room pinpoint any guard's position.

We're proud of the latter system, which is quite advanced and works via a number of low power transmitters scattered throughout



▲ All main entrances are now protected by barriers and card readers ▲

SECURITY AT POMPEII



▲ The new control room takes care of overall site security

Pompeii. Their coded signals are continuously and automatically monitored by guards' communication devices and whenever a guard sends a message, the coded signal is attached to it, displaying the guard's position on a topographic computer display in the control room.

Pompeii has a vast number of different locks which have been fitted in a random fashion over the years – guards' basic equipment includes a huge and heavy keyring! These will be gradually replaced as our

masterkey lock plan is implemented, though we can't change the entire lock set because some are of historical value, dating back to the XVII and XVIII centuries. We're also introducing

incident reporting & management system (IRMS) software. All security related events will be input directly to the IRMS database, a vast improvement on today's hand-written logs.

Apart from the obvious increase in efficiency and accuracy, the plan is to allow all terminals to access the database in real time and allow all control posts to monitor activity throughout the site. The objective is to give managers and shift supervisors not only a very useful monitoring tool, but also an accurate record of

events – vital, for example, in civil liability court cases.

Finally, the availability of statistically meaningful information will give us 'ammunition' to support possible future security improvements. As most security managers will be aware, those who hold the purse-strings are more easily convinced of the effectiveness of an investment if suitable data is available to support the proposal!

In Conclusion

The dramatic new approach to Pompeii's management is highlighted by a recent statement from Prof. Guzzo: "We shall not proceed with new excavations without first

securing and improving accessibility to present sites," he said. This involves a major rethink of visitor 'flow control...'

The pressure of so many visitors wanting to see the most famous buildings, such as the *Casa dei Vettii* and the *Casa del Lupanare* (brothel), has, in the past, meant guards having to manually restrict numbers, a quite irritating experience for visitors.

The introduction of a new flow control system, where groups may book visits and are kept informed of any possible delay, will be aided by the communications systems now in place, allowing guides to plot interesting routes and minimise frustration for visitors. ●



ABOUT THE AUTHOR

*Dr. Ing. Adalberto Biasiotti is an electronics graduate specializing in electro-acoustics and radio links. A former manager with both Siemens and Chubb in Italy, he's today a freelance security consultant (reach him at www.securcomp.com). Technical editor of the Italian security & banking technology magazine *Bancamatica*, he's also written books on alarm centralization, CCTV, and banking projects and is a member of many security and tele-communications standards associations*

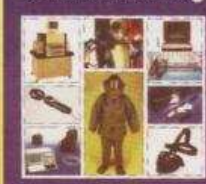
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