

Zurich Opera House uses dog-leg link



Two PAV SkyNet 100 Mbps Fast Ethernet systems work in tandem at the Zurich Opera House, Switzerland

Speedy communication network requirements are usually seen as the domain of large corporate organisations; but when the Zurich Opera house approached PAV Data Systems' resellers, about purchasing a state of the art system, it soon became clear why their need was just as acute.

Located in the heart of the picturesque city of Zurich, the Opera house needed to link up its theatre with offices and rehearsal rooms located on different sites within the city centre. Although the distances were not far between buildings, the Opera house was limited in its choice of connectivity solutions.

Due to its location in the old and historic part of the city, digging up the cobbles to lay cable was out of the question. Not only would the council not allow it, laying cable is an expensive and time-consuming exercise. Given that the Opera house, like most centres of art and culture have limited funds together with the fact that it was looking for a more immediate solution to its communication needs, the cable option was not viable.

An alternative available to the Opera house, but not open to it either, was a microwave radio solution. Again this proved too costly and was subject to long drawn out negotiations associated with the purchasing of a radio spectrum license.

The Zurich Opera house had to be more creative about the choices open to it. Beat Marbach, Head of IT for the Opera house decided to look for optical networking solutions. This is a technology that works in exactly the same way as transmission over fibre optic cables by using low-powered lasers, but instead of requiring cable installation, it is wire free and can be installed instantly and unlike a radio wave solution, it does not require any licensing.

It was through researching the wireless marketplace that the Zurich Opera House was informed of the all-optical wireless system from PAV Data Systems. PAV eventually provided the Zurich Opera with a Skynet 100 Mb/s Fast Ethernet system. Deployed in a matter of hours the optical wireless systems require only a clear line of sight between buildings. Infrared signals are sent from a transmitter located on the roof of a building and beamed to a receiver on the roof of the site being connected or an external office wall.

Dog-leg connection

In the case of the Opera house, a direct link was not possible since the rehearsal rooms and its offices were situated behind another building that blocked a direct line of sight. In such a situation, PAV engineers use what is known as a "dog-leg" connection where a beam is transmitted from building A to building B and is regenerated in a separate link from another transmitter on building B. This second beam is then sent onto its destination and final receiver.

"This was an extremely interesting project for us," said the Business Development Manager at PAV. "It was absolutely incredible to stand on the roof of the theatre and look down on the beautiful surroundings and it made a change from the usual corporate project. One of the challenges was to make sure the transmitters were not obtrusive, ruining the external appearance of such a historic and stylized building. We had to colour code the transmitters in shades that matched the stonework around them and it has worked very well. If you don't know where to look, they are invisible. Our systems are often used on buildings or areas that are protected by heritage bodies, so we were prepared for this type of requirement and it was a real pleasure to install."

Beat Marbach said, "As the solution requires little infrastructure and because there is no requisite for a license to transmit data-carrying lasers, the set up time and cost of the technology were relatively small. In addition to this the PAV engineers worked speedily and responded to all of our needs including that of keeping with the look of the building. I am delighted with the results, as are the theatre goers, because it is thanks to our communication system, our directors, producers and set designers can continue to make stunning productions and be in constant contact with each other throughout."