

## Case Study

### IP VPN and Telephony for IBI Group



#### IBI Group

IBI Group's network of UK offices provides architecture, master planning, town planning, transportation, and systems services to public and private sectors. With a London hub as well as a number of regional offices around the country, the company prides itself on its collaborative and forward thinking consultancy.

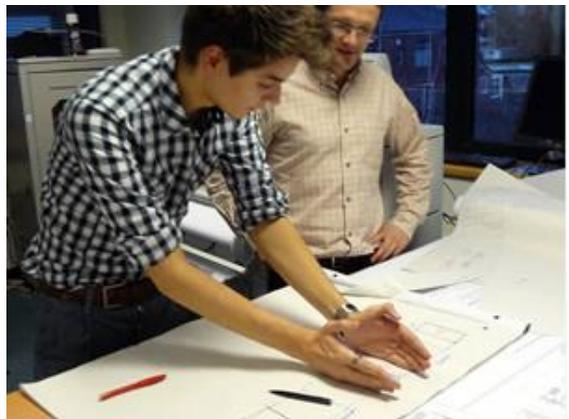
IBI's teams in the UK are also part of a global family with offices in Canada, USA, and the Middle East. Well used to handling projects on an international scale the company's London and Toronto offices worked together on the overall delivery of all transportation components for the 2015 Pan American Games.

In 2011 IBI Group decided to implement a new wide area network to serve its UK offices. As an existing supplier of broadband services, Cerberus worked with IBI to understand their requirements for connectivity, security and management across its UK network, as well as how they worked with their overseas offices. Cerberus proposed an IPVPN solution designed to deliver a simple but powerful architecture, that met all of the client's requirements but at a much lower price than their previous service.

Cerberus was chosen from a list of leading UK and international service providers to deliver the solution for IBI Group due to the design, flexibility, design and value for money of the proposal. Cerberus then project managed the roll-out of the new services and the transition from pre-existing services into the wide area network infrastructure.

Later in 2013, when IBI group was looking to upgrade the telephone systems at its regional offices, Cerberus recommended moving away from traditional ISDN services to use its SIP-based VoIP services, leveraging the high-quality data infrastructure to achieve significant cost savings and increased functionality with their new telephony infrastructure.

Since then, IBI has continued to rationalise its voice infrastructure, centralising services at its Glasgow office as offices have moved or needed bandwidth upgrades. This has allowed the company to simplify management and administration across its UK offices, giving staff flexible and adaptable communications with lower overall costs.



## Taking the complexity out of the network

One of the key features of the solution proposed by Cerberus was its simplicity, both in the design and the ongoing management. By using its flexible and WAN-optimised network, Cerberus was able to deliver the most power and flexibility while maintaining a design that minimised admin overheads and operational costs.

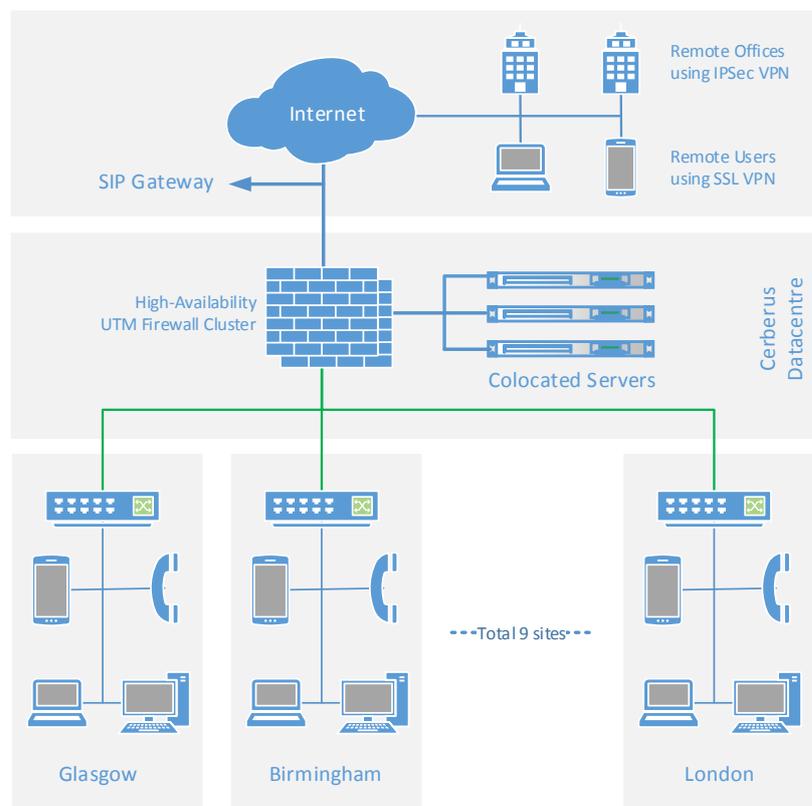
*"Our approach is to always find the most rational and elegant design that can be delivered cost-effectively"* comments Michael Rudge, Senior Consultant at Cerberus Networks.

Cerberus used Ethernet connections to each of IBI's locations around the UK to build the WAN and then a central, hosted, high availability cluster of firewalls at Cerberus' network core to connect sites and provide consolidated Internet access as well traffic security and management.

*"We could see that the design from Cerberus was well suited for our requirements."* recalls Tomasz Nawarecki, IT Manager at IBI Group. *"It provided all the connectivity we needed over fast Ethernet connections and then a single place to manage the network. This was much simpler than our previous VPN infrastructure and we could see it would be much more capable than the alternatives and easier to look after."*

## Solution Summary

Ethernet Leased Lines to 9 Sites
200Mbps Aggregated Internet Connectivity
Hosted High-Availability Fortigate UTM firewall cluster
Traffic and Event Logging, Alerting and Analysis
Managed Ethernet Demarcation Devices at each site
Resilient SIP Trunks for public telephony
VPN tunnels to overseas offices and SSL VPN for remote users
Colocation at Datacentre for shared network services
End-to-End Management with 24x7 Monitoring and Admin



## A flexible and adaptable long-term solution

Now 5 years on from the initial installation, IBI has adapted and re-deployed the network multiple times as its needs changed, all handled seamlessly and cost effectively by Cerberus each time a change was needed. Tomasz Nawarecki recalls;

*"As well as several capacity changes, we have relocated 3 offices since the move to the IP VPN. Each went very smoothly and without any major additional expenditure. We just paid one-off charges for the re-installation at the new site, which is fair."*

Michael Rudge also notes that when an Ethernet installation at new premises was taking longer than anticipated, there was a ready interim solution to allow IBI to keep to their schedule.

*“New fibre can take a while to be delivered when there are roads to dig up and so on, but were able to provide interim WAN services using FTTC to make sure that the client would have an adequate working service while we waited for the main Ethernet connection to come in. We used QoS extensively to make sure that mission-critical applications continued to work even on the slower connection. When the new Ethernet service was ready, we simply delivered replacement hardware for the client to plug in at that office. From their point of view the network continued to work after the move just as before.”*

## Centralised UK security and remote access

Before deploying an IPVPN with consolidated hosted security, the client managed security and remote access separately at each of their 9 UK sites. This included management of critical VPNs to their Canadian head office, often a time-consuming task as configuration had to be carried out on 9 different firewalls. As well as the VPNs, all security and management policies from web access to application control had to be replicated on 9 separate firewalls.

Using a hosted firewall cluster, VPN and all site-to-site and Internet security is now managed centrally. This has dramatically reduced management overheads and also allows for firewall policies to be deployed consistently and with less scope for small but potentially hazardous errors. Tomasz is very positive about the assistance and management provided by the Cerberus support team,

*“The Cerberus support team are very competent, and responsive when we need support on the firewall. They do all the admin on our behalf, and usually deal with requests within an hour or so. They are even available out of hours to make and changes we need.”*

And with the hosted security being provided by a high-availability cluster of UTM firewalls, IBI benefits from more reliability than they would using single firewalls at each site.

## Leveraging Enterprise connectivity with Next Generation Telephony

Once the new network was in place, IBI saw the opportunity to rationalise their communications by deploying SIP telephony over the network. Using the rock-solid Ethernet IPVPN, the client was in an ideal position to update their telephony systems and save very significant sums by moving from ISDN to SIP. Tomasz Nawarecki observes,

*“We had a legacy of different systems and requirements at each site, and we also needed to be confident of the technology before rolling it out across the country so we started with one pilot site and switched from ISDN to SIP, using their existing PBX. That went really well and we immediately saw big cost savings, so since then we have been gradually moving offices over from ISDN to SIP with Cerberus. In fact, where we wanted to replace an old PBX, we have just consolidated services to our main PBX in Glasgow, so some offices don’t even have a PBX any more. Their phones just connect to our main site over the WAN. It works well.”*

Prior to moving to SIP, some in the business had concerns about call quality and had heard that IP-based telephony could result in poor quality calls and drop-outs. In practice, IBI found the opposite.

*“We noticed straight away that the call quality was really good for calls, especially internal ones.”*

Michael Rudge, Senior Consultant at Cerberus Networks, observes,

*“We were very confident in the voice quality over SIP. We have years of experience of moving clients from ISDN to SIP, and we have never had a complaint about call quality after the move. In fact, many clients notice improvements when calls are SIP to SIP only and don’t use the traditional public phone network at all, as the increased effective bandwidth makes the call sound clearer.”*

## Colocation as virtual comms room

Another major benefit of the simple hub-and-spoke model that the solution provided was the opportunity to site equipment in a central colocation facility that was accessed equally by all sites, directly over the WAN, and without dependence on any one of the hub sites. Michael Rudge explains the benefits of this design;

*"By using colocation in our datacentre, the client was able to cost-effectively deploy a VMware host right in the middle of their WAN, running multiple VMs and delivering services down to all their sites, and to some Internet users, without using up bandwidth on the link to their head office or being dependent on the facilities at the head office. That made access to those VMs from the other sites, and the Internet, faster and more reliable."*

Tomasz Nawarecki comments;

*"Having those VMs in the colo has worked really well. We are also looking at moving our offsite backup for the whole network to the same location as it makes it easier for us to maintain more efficient use of the network"*



## An effective long-term partnership

When asked if he had any advice for people considering how their company should approach making a decision on their network and communications strategy, Tomasz Nawarecki, IT Manager at IBI Group, offers some insight based on the experience that IBI Group had;

*"I would really recommend talking to Cerberus and seeing what they can offer. We have found that the solution and the service we have received from them has really worked for us."*

On the subject of whether Cerberus provided the right solution for IBI Group, Tomasz is clear,

*"The solution that Cerberus offered at the start wasn't exactly what we were looking for but it was a good deal more cost effective than the MPLS we expected to be using. It has turned out to be a great solution for us over the 5 years we have been working with them, and we don't have any plans to look elsewhere in the foreseeable future."*

*"They are always there to support us if we need any help and though our network has changed in the last few years, the solution has been able to adapt to our requirements. We're really glad we chose this solution and chose Cerberus to provide it for us."*