

### Providing Wi-Fi to the world famous Cavern Club



**Client:**  
Cavern Club

**Partner:**  
Lansafe

**About the company:**  
The Cavern Club made famous during the 1960s by the iconic group The Beatles, is now rated in the top 10 UK most popular tourist destinations. With live music every day from 11:00 am and a modern bar/pub, the venue is always busy with up to 600 visitors per day.

The Cavern Club attracts visitors from all ages and demographic groups be they from the Cruise ships stopping off in Liverpool docks, holidaymakers or of course the many UK residents with an interest in the historic venue.

Not surprisingly many visitors are keen to snap shot and share their experiences across social media whilst enjoying the entertainment and immersing themselves in all the memorabilia.

#### The Overview

The Cavern Club faced Wi-Fi challenges due to its complex structure and high user density. Lansafe, with DrayTek technology, strategically placed 10 VigorAP access points to ensure seamless coverage. The solution extended to the Cavern Pub and head office, connected via a DrayTek VSP-2261 switch and Vigor 2860 router. The ACS-SI central management system streamlined configuration, monitoring, and control, providing reliable internet access for visitors and staff. The successful implementation ensures efficient connectivity, benefitting both patrons and artists at the Cavern Club.

#### The Requirement

*"We want visitors to be able to connect instantly to social media and share their experience but with no 3G/4G signal underground and multiple pillars with solid brick construction we had struggled to enable a reliable wireless internet service. We also wanted to take advantage of the higher broadband speeds available with VDSL so were considering a router group".*

George Guinness, IT Manager



*“When we started to investigate the requirements for the Cavern Club it quickly became clear that a highly robust and manageable wireless solution was required. Basic standalone access points just wouldn't cut it so we looked for a higher end option from a credible supplier that could address the Wi-Fi challenges, help with the associated LAN infrastructure and provide the VDSL router.”*

**Alex Baxendale, Lansafe's  
Commercial Director**



## The Requirement

From a technical perspective there were several challenges that needed consideration:

- With the brickwork labyrinthine construction of the Cavern Club, Wi-Fi signals can abruptly disappear for users that walk behind a pillar or move to a different part of the club.
- With such a high density of visitors all on social media, the access points in use can quickly become congested potentially causing bottlenecks and loss of service.
- Visitors want to be able to walk in, log on, and then move around the venue without losing connection.
- With so many different types of mobile devices in use it was important that all of the various Wi-Fi implementations were supported and that, where possible, the most efficient option was utilised when a device connected.
- Cavern Club staff also require access to office systems via the Wi-Fi, so two separate networks (SSIDs) with different security credentials needed to be provided throughout the new Wi-Fi network.
- It was important that network could be centrally managed as there was a multiple access point requirement in the Cavern Club plus the need for Wi-Fi in the associated Cavern Pub across the road and the head office just around the corner.
- The existing low speed routers needed replacing with VDSL capable devices approved for the usage on BT networks.

With such a mix of requirements George Guinness approached a specialist organisation local to the area called Lansafe that were trusted to scope out the requirement and be accountable for providing a reliable service that met the needs of the business.

Following contact with DrayTek at one of their technical roadshows Lansafe proposed a complete DrayTek solution.

### The Solution

The first step was to specify the right class of access point to handle the many requirements stated previously and the, following a site survey, to define how many devices would be required and precisely where they should be situated.

The key considerations were:

- Every area with the club needed to have a strong Wi-Fi signal.
- All of the major standards needed to be accommodated due to the diversity of mobile devices requiring access.
- Due to the high density of visitors and the likely peaks on usage, all points within the venue needed to be served by several access points.

With assistance from DrayTek's technical team Lansafe proposed using 10 devices made up of VigorAP 902 wall mounted and VigorAP 910c ceiling mounted (smoke alarm style) access points installed in strategic points throughout the club. With a DrayTek solution, access points can be mixed and matched according to the specific requirements.

Once installed all areas have Wi-Fi coverage and all users, wherever they are in the venue, can connect to one of a minimum of 4 maximum of 8 access points at any given location.

The VigorAP 902 and AP 910c both support wireless 802.11ac and all of the major previous standards including wireless "n" and dual band. This flexibility of standards support allows for all types of users to connect using whatever Wi-Fi capability is available with their mobile device.

All of the individual access points connect together within the network and broadcast the same network SSID. This means that users see only one network wherever they are, and can freely move around the venue moving from one access point to another automatically. Lansafe set up a visitor network SSID and an office SSID only available to the Cavern Club Staff.

The DrayTek solution further enhances the user experience by connecting all devices in an intelligent and highly effective way using a combination of the following features:

**Band steering** - Typically mobile devices also have flexibility of Wi-Fi standards. DrayTek Wi-Fi can take advantage of this and effectively "force" the Wi-Fi connection per device at the most efficient mutually compatible standard. This can help reduce congestion on the network.

**Airtime fairness** - This ensures that a user connecting on an especially slow Wi-Fi link perhaps limited by their mobile device, does not 'unfairly' slow down other users with faster connections available.

**Loading balancing** - By using DrayTek's load balancing feature users will connect to the nearest available access point that has the least concurrent connections at that time thus reducing potential bottlenecks. Furthermore each access point can be set a limit of concurrent connections aiding capacity management.



VigorAP 902



VigorAP 910c

### The Solution Continued

For the WAN and LAN connectivity Lansafe installed a DrayTek VSP-2261 PoE switch to both power and connect up all the access points to the main network and a Vigor 2860 router with full BT compliance both VDSL and ADSL connects the network to the Internet completing the solution set.

Once the Cavern Club managed wireless network was installed, this was extended to the Cavern Pub with 3 DrayTek access points and Vigor 2860 router, and also to the closely located head office with a further Vigor 2860 and access point.

The final stage was to implement DrayTek's central management system call ACS-SI, where all the networks can be managed, monitored and controlled.

ACS-SI is installed on a server and connects to every DrayTek device on the network that supports the TR069 management protocol. The essentially embraces all of DrayTek's routers, access points and modems.

For the Cavern Club, Lansafe can set up a standard configuration for all of the access points and then provision this to all devices in one action. This greatly speeds up the configuration set up and reduces risk of error. The provisioning tool is also useful for making network wide changes such as an SSID update etc. It also allows for control of three networks (Cavern Club, Cavern Pub and head office) from a central place.

*"We don't send a product out of the office without ACS control. This enables us amongst other things to monitor the network devices 24/7 and troubleshooting the extensive access to historical data is invaluable."*

Adam Baxendale, Lansafe's Commercial Director

### The Conclusion

Once complete, the installation was an immediate success. The multitude of visitors now have internet access wherever they are in the venue and when artists with their entourage suddenly arrive en masse, they can fine tune the set up and contact their office via the Wi-Fi network with their Laptops.

DrayTek Corp. was established in 1997 with a mission to design and build premium networking products to help business make their most of the online connectivity. DrayTek's product lines range from enterprise-level firewall security, VPN facilities for teleworking and branch-linking, versatile xDSL CPE, Switching, Voice-over-IP and wireless solutions:

- Complete range of WAN Security/ Routing products
- Headquarters, Taipei, Taiwan, ROC
- Specialising in innovative networking products Worldwide Distribution and offices
- Listed on Taiwanese Stock Exchange 2004
- 180 employees worldwide, 45% R&D
- ISO 9001 Certified

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