

Student Housing Internet Delivery

Design Best Practice: WiFi Management

The demand for ubiquitous, responsive WiFi in Student Housing is immense. If you can satisfy that demand, the rewards are also immense in terms of physical and economic occupancy and retention. In this, the third white paper in the Student housing WiFi Best Practice series, we explore the role of WiFi Management systems and their critical role in delivering adequate service.



By Andrew Marshall, Campus Technologies Inc, May 2016

In the previous two white papers in this series (*Student Housing Internet Delivery Design Best Practice: WiFi SNR and Student Housing Internet Delivery Design Best Practice: WiFi Density*) we focused on the most visible parts of a WiFi system, the Wireless access points, and understanding the principles of successfully deploying those access points. As we stated in those papers, Student Housing owners and operators rarely become directly involved in the details of WiFi deployment, and our objective is to provide those Student Housing owners and operators (and any other interested parties) with enough information to make informed decisions that affect the WiFi amenity at their properties.

The three key factors to Student Housing WiFi success are **coverage** (how much usable wireless signal is available, and where); **density** (how many resident devices are

served by a single wireless Access Point, or 'AP'); and **manageability** (making sure that the whole property WiFi system acts as a single, coordinated system and not just a sea of unmanaged islands of WiFi)

In this paper we are going to address the last subject, manageability.

Management, defined

WiFi Management has a very loose definition, and if you're installing a WiFi system at your property, it's very likely that if you ask the question "Is it managed?" you'll receive the answer "yes".

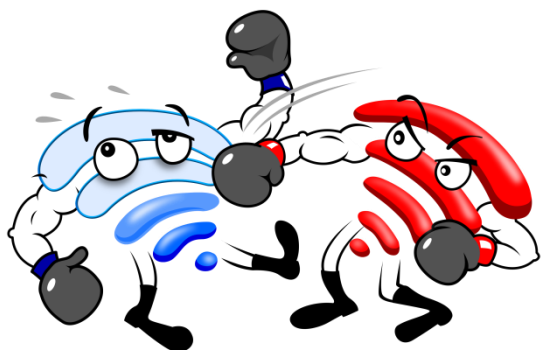
While in most cases that "yes" answer may be technically truthful, it could mean almost anything, so we will explain the standard that is required of a WiFi management system to meet the intensive needs of today's student housing.

Why have it?

Without WiFi management, any Access Points installed at the property will behave as if each of them is the only important AP, to the detriment of all the others.

This “noise” results in conflict, unreliable connections, long response times, and ultimately, resident complaints.

We call these installations JBAP¹, and these



are often seen where a local cable company has simply installed a cable modem with a wireless router in every unit. These routers (AP's) are not Enterprise Grade, and have no management capability that allows them to operate with many other AP's on the same network.

In a JBAP system, each AP (or Wireless router) will ‘shout’ loudly, interfering with any other AP that can hear it. In dense Student Housing, this can be a lot.

It's important to emphasize that just because AP's are all the same make and installed by the same provider does not make them managed. Similarly, having a technician go around to each AP and adjust the channel does not make them managed.

¹ Just a Bunch of Access Points

Managed

In a fully managed system, the Wireless management system knows about all the AP's at the property and changes the channels and signal strength (loudness) of every one in real time, to make sure the optimum balance of signal strength vs interference is achieved and the system operates as a cohesive, unified whole.

In a Student Housing, enterprise grade, managed WiFi environment, we take WiFi management to mean the capability of the WiFi at a property to act as a single, concerted system, with the system having knowledge of the capability, status and activity of every connected client and wireless access point. It is controlling the overall WiFi system to ensure that clients can connect, stay connected, and that they have the best possible user experience (response time and throughput) while using the WiFi system.

Ultimately, the WiFi management system is responsible for the reliability and availability of the WiFi as a whole at the property.

Physically, WiFi management is a combination of specialized hardware and software that can perform WiFi management on the network. As we have mentioned in previous white papers, Student Housing WiFi needs to be designed and operated as an ‘Enterprise Grade’ system, and WiFi management systems are usually only found working in concert with Enterprise grade Access Points.

The management system also provides other functions and capabilities to improve the reliability and operation of the system as a whole. Here's a few examples:

- Whole property roaming. Because the WiFi system is a single system, a resident can go anywhere in the property and stay connected.
- Band Steering and Load Balancing. The system will make sure each client is using the right band, and that the load is spread evenly between AP's.
- Reporting and monitoring. The system keeps track of all client devices, their connection quality and throughput, and reports on the system as a whole. This means problems can be identified and fixed proactively instead of having to wait for residents to complain.
- Unauthorized wireless devices. The management system will also look at any devices on your property that shouldn't be there, allowing you to identify and locate, say, residents installing their own equipment that will interfere with the property network.

This is a very high level list indeed, but it should serve to provide an insight into the necessary functionality of a WiFi management system.

Summary

A WiFi system at a student housing property that is designed to have adequate signal coverage, has adequate density, uses Enterprise grade components, and is fully managed will perform better than any other form of WiFi deployment available. It will result in a better resident User Experience,

reduce or eliminate complaints, and keep residents happy and renewing their leases.

This need not cost a fortune; if planned and designed properly it can be cost effective



when compared to the very real cost of resident dissatisfaction.

We hope these white papers have proved useful, and we would welcome the opportunity to discuss your individual project and needs with you.

If you have any questions about providing a great WiFi experience for Student Housing residents or the contents of this white paper, please contact us.

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Campus Technologies is a national vertically integrated managed network service provider designing, building and operating highly effective wired and wireless networks exclusively in student housing. See more at www.campustechnologies.com