WORLDVUE®

TECHNOLOGY PLANNING FOR NEW CONSTRUCTION HOTELS

When building a new hospitality property, your planning should include the functionality, management, and future usefulness of your guest-facing technologies. This white paper provides some essential guidance derived from the expertise we have gained over decades of serving hospitality properties.

Before we address more specific questions, it is important to note a few overall considerations that should come into play:

- For the best long-term, cost-effective solution, you must consider more than the up-front cost. Sometimes, the “cheaper” solution can end up costing more because it’s harder to manage, and costs can increase even more over time when things need to be changed, updated, added to, repaired, etc.
- Rather than choosing the “cheapest” vendor, it is often more cost-effective in the long run to select a single expert vendor like WorldVue. We can provide and manage multiple technology solutions for better performance, easier maintenance, and greater accountability.
- When comparing solutions from different vendors and gathering input from your colleagues and competitors, keep in mind that costs will depend on many factors. These include your hotel’s construction, such as materials, number of buildings/floors, layout, etc. Be aware that no two hotels will have the exact same solution for the same cost.
- You do not want to leave these considerations up to your general contractor! Although they will understand the details of your hotel’s construction, they won’t understand all the other factors that go into your technology plan. For example, you will need to think about your business concerns and your guest experience to determine how best to implement guest-facing technology.

WorldVue recommends, designs, and installs total solutions to meet a particular property's needs, wants, budget, and specifics. The considerations we describe in this document are meant to provide general guidance. This will help you improve management, maintenance, cost-effectiveness, and future usefulness to start your new hotel on the right foot. Our goal is to help you provide the best possible guest experience that’s easier and more cost-effective to manage and maintain.

What infrastructure do I need to support the technologies in my hotel?

Our engineers recommend planning for proper conduits and core drilling from the beginning, including bigger pipes and more of them. More specifically:

- Consider the need for core drilling and conduit sleeves between floors. You don't want to have to drill through concrete & rebar if changes are needed later. A 3-inch pipe might seem to be overkill, but once your installers pull cable for Wi-Fi, cable, cameras, etc., that pipe will fill up quickly!
- You will need paths everywhere you need wiring. Think about how you will get wires from your equipment room(s) to every part of your hotel. Consider all areas that require wiring, including non-guest room areas, different floors/wings/buildings, etc.
- Once an installer has drilled the pipe, they should be sure to cover it and mark it as dedicated for its specific purpose. This will make maintenance and future changes easier.
- Post-installation, ensure the addition of fire-stop compound in the sleeve and 2-hour fire caulking for safety and fire prevention. If installers need to run more wire later, they can peel this back and then re-fill it.

How can I organize my main technology room as efficiently as possible to serve guests throughout the hotel while enabling my staff to monitor all systems easily?

It is essential to plan for your MDF (Main Distribution Frame room, where the mains come in for various services, aka your main equipment room) and your IDF (Intermediate Distribution Frames or other equipment rooms). Here are some items to consider:

- Consider the placement of the MDF and any IDFs. The layout should be logical and easily accessible to the areas receiving services. Vertical stacking of IDFs above/below the MDF is generally good, making installation and maintenance easier; horizontal layouts are generally less desirable.
- Equipment should be located in a cool area, e.g., not in a boiler room.
- For improved installation and maintenance, IDFs should be located in their own space – not, for example, in a broom closet or similar space that would hinder accessibility.
- Rack or wall mounts should be used to organize equipment, and ground wire should be used for all equipment.
- There should also be an isolated ground dedicated receptacle behind the rack, dedicated to one breaker ONLY for that purpose, so an electrical issue somewhere else doesn't take out all the equipment with it.
- A generator may be desirable for backup power in case of an outage.
- Patch panels should be organized and isolated for different uses (Wi-Fi, phones, TVs, etc.) for easier maintenance.
- Each equipment room should have at least four places to plug in for maintenance.

How can I provide guests with the fastest possible Internet connection at the most cost-effective price?

One key recommendation we make to improve speed and performance is to choose fiber to the MDF/IDFs. Fiber allows for essentially unlimited bandwidth; it can carry a significant amount of data for all services between endpoints.

CAT6/CAT6a cable may be used as needed at the ends, e.g., for connections to guest rooms, but we recommend using fiber connections to carry more data.

In particular, we recommend multi-mode fiber, which is likely the most cost-effective for this application because of the technology used. Multi-mode fiber may also be more versatile in terms of future-proofing your infrastructure. Multi-mode fiber is easy to install and use and transmits data quickly over relatively shorter distances (even between buildings).

Since fiber is made of thin strands of glass, caution must be taken to use the right fiber for each application. For running fiber between the MDF and IDFs, your installer should use insulated, jacketed fiber. This type is not particularly flexible, so tight turns are not recommended.

For the more flexible fiber patch cords in the MDF and IDF rooms, we recommend keeping some extras on hand in case anyone working in those rooms damages one.

What is the most efficient way to run cabling, resulting in the least potential troubleshooting and finger-pointing?

We recommend using all home runs to the Main Distribution Frame (MDF) room or multiple intermediate distribution frame (IDF) rooms. A “home run” is a cable with a solid connection that goes from point A to point B.

We also recommend bundling cables from the guest room to the equipment room and only then splitting them out to separate patch panels for the various services needed. (This does not mean running a single cable and then breaking it out for different technologies because many newer technologies require all four pairs. Rather, this means gathering cables together if they’re going to the same place.)

How can I ensure that the cabling in my hotel is as forward-thinking as possible so that I don't have to rewire anytime soon?

We recommend using Cat6/Cat6a or (especially) fiber for cabling, and we advise strongly against using coaxial cable (aka coax).

Fiber provides essentially unlimited bandwidth, so it can carry all the traffic you need, whether for Wi-Fi, phones, key cards, TVs, or anything else. Fiber, particularly multi-mode fiber, is more versatile in terms of future-proofing your infrastructure, making it easier and more cost-effective to add new technology as it arises.

It is fine to use twisted pair cabling, aka CAT6 Ethernet, at the ends (e.g., to guest rooms) for the specific technologies, but fiber carries data quickly in between for all services. In fact, CAT6 and CAT6a are both good options. CAT6a may offer improved performance – "the tighter the twist, the faster the speed" – as it allows data to travel farther and faster, but it may also cost more than CAT6.

Coax cabling is obsolete. Converting away from coax can provide better bandwidth/speed performance and potentially save money. For example, with Ethernet and fiber cabling, you can move away from your local cable provider for in-room TVs and offer other options that are more flexible and less expensive.

How many cabling drops do I need in each guest room?

Because modern hotels use so many technologies – Wi-Fi, VoIP, TVs, etc. – we typically recommend making five CAT6 drops available per room. This should include two behind the TV, one by the desk, and one on each side of the bed.

We also recommend using a 4-square gang box with jacks for everything, potentially installed behind the guest room TV.

How many power outlets do I need in each guest room?

A common guest complaint is that there are never enough electrical outlets available in guest rooms. At a minimum, we recommend a full bank of 4 outlets behind the TV, another behind the desk, and one on each side of the bed.

In addition to meeting guest needs, you'll need to consider the services available in each room. Although access points (APs) and similar equipment will usually be driven by Power over Ethernet (PoE), other services, such as casting, might need outlets.

What is the most reasonable choice for Wi-Fi technology moving forward, and what else should I consider when planning?

Several factors must be considered for a great guest Wi-Fi experience now and in years to come. These include which version of Wi-Fi to implement, what type of equipment to use, and how to implement it.

Currently, the only Wi-Fi versions that should be considered are Wi-Fi 6, Wi-Fi 6E, and Wi-Fi 7. These numbers refer to generations of the Wi-Fi standard, and all have various pros and cons depending on your implementation's needs. Any version older than Wi-Fi 5 probably does not meet the requirements of a modern Wi-Fi installation for a hotel and is not well-prepared to meet future needs.

With each successive generation of Wi-Fi, the tendency is to offer significantly increased bandwidth but a lesser range at a higher cost.

- If you have a smaller property that isn't very spread out, with fewer guests that typically don't use a lot of bandwidth for uses such as streaming and teleconferencing, Wi-Fi 6 might suffice.
- For larger hotels that serve more guests who bring many devices and expect to stream video and make Zoom calls, you may want to upgrade to Wi-Fi 6E or 7. Wi-Fi 7 is the best choice overall, including implementation with CAT6 and fiber cabling, and will provide a good balance of cost and performance. However, implementing this new standard will cost more, as equipment that supports it has just started to be released.
- Wi-Fi 6E is a newer standard that is simply a variation on Wi-Fi 6 that enables faster speeds. With Wi-Fi 6E, devices can use more of the radio frequency spectrum. Not only does that open up more communication space for traffic, but the space it opens up cannot be used by older devices that don't meet the Wi-Fi 6 standard, thus significantly reducing congestion.

You will also need to consider various factors, such as the construction of your hotel, when deciding on what type of equipment (gateways, switches, access points (APs), etc.) to use, where to place the equipment, and exactly which items you'll need for a great guest Wi-Fi experience. For example:

- What are your walls and doors made of? Concrete walls and thick metal doors typically require different equipment than wood-frame walls and wood doors. Construction materials may also affect how many APs you need and how they will be placed so that walls and doors don't block the Wi-Fi signal.
- How big is your hotel? Larger hotels with more than 150 rooms will need a higher-capacity gateway than smaller hotels. We typically recommend the Radius Gateway RG-901h gateway for larger hotels and the RG-851h for smaller hotels; recommendations for other vendors' equipment will also vary by the property size and needs.
- For access points (APs), we now typically recommend installing in-room rather than in hallways for a better signal. This placement will accommodate more devices per room, as the average guest now brings multiple devices, and will also yield less interference. Also, since newer Wi-Fi technology tends to have a lesser range, this placement will bring the APs closer to where guests are using their devices for better performance.

What other technology considerations should I be thinking about for my guest rooms?

In addition to fast, reliable Wi-Fi, guests have come to expect a number of other technologies that should be available at a modern hotel. If your infrastructure and cabling have been properly planned (for example, using fiber cable), it will be easier to add services à la carte as they become available.

WorldVue can and does partner with other vendors of guest-focused technologies. This enables us to provide the best available technology solutions while establishing us as your single vendor for multiple services. One vendor is responsible, and there's better management and less finger-pointing.

Specific additional technologies that you may wish to consider include the following:

- **Casting/streaming/IPTV**
  - Cable or satellite TV is no longer the only option for hotels. More and more people are accessing content at home via streaming apps, and guests expect a similar experience when visiting hotels. Casting/streaming/IPTV solutions can be less expensive and more flexible than cable or satellite TV.
  - When choosing a casting or streaming solution, consider the security and privacy implications. The right solution will enable guests to cast their preferred content from their own devices securely to their guest room TV(s) without having to enter login information on the TV, so guests need not worry about logins being retained after their stay.

- **Guest room TVs**
  - The TVs you choose should be hospitality-grade, not just consumer-grade, as consumer-grade TVs are not made for constant use and thus won't last as long. Hospitality-grade TVs will include additional cooling components and other features intended to preserve longevity under high use.
  - Smart TVs will be more future-proof. We specifically recommend LG & Samsung TVs. Depending on your needs and budget, many options are available in terms of sizes, how they will be mounted, and other features.
  - Especially in the post-pandemic era, we recommend clean remotes, and guests typically expect them.

- **Phones**
  - Guest room phones aren't used as often anymore because most people use cell phones to place calls. However, in-room phones must be available for in-hotel services and emergency use, in compliance with requirements such as 911 laws, Kari's Law, and Ray Baum's Act.
  - Antibacterial phones don't allow the buildup of bacteria in the mouthpiece over time – again, a good choice in the post-pandemic era.
  - Options are available for both analog and IP phones. With modern equipment, even analog phones will typically have many features and benefits that are generally available at a lower price than IP phones, and many analog solutions can also use the Internet to transmit data, just like IP phones. Typically, the primary benefit of modern IP phones is the "premium" appearance.

- **CCTV**
  - CCTV solutions can help you improve the safety and security of your guests, employees, and property and keep an eye on your property even when you're not there. The security feed behind your front desk lets your guests, your staff, and any troublemakers know that your hotel is using security cameras with the latest technology to monitor lobbies, hallways, pools, and other common areas for deterrence and peace of mind.
  - Your CCTV solution should be commercial-grade and high-definition. A simple consumer-grade solution, while inexpensive, will not provide the capabilities and management functions needed for a hotel.

- **Additional options and locations**
  - There are many other ways that guest-focused technologies can be implemented throughout your hotel. Some are becoming "must-haves," while others make for a more pleasant guest experience.
  - Key cards and similar access technologies are now expected by many guests at most hotels. Not only are they standard in modern hotels, but they also enable improved security, as it's much easier to reprogram a key card lock between guests or when a card is lost. A number of vendors offer programs to offset the cost of key cards with on-card advertising.
  - Some premium hotels are beginning to offer technology to improve the atmosphere, such as soft music playing in hallways, which can improve privacy by making it harder for passers-by to hear conversations from nearby rooms.
  - Consider also what to make available for other spaces such as meeting rooms, F&B spaces, entertainment spaces, pool/fitness areas, etc. What technology is needed to make those spaces more usable/desirable for guests while still being cost-effective and easy to manage? WorldVue can help you set up those spaces to achieve a great guest experience.

What about security?

You don't want your new hotel to make headlines for the wrong reasons. Too many properties have found themselves the victim of security breaches. You can avoid this by including security measures, including encryption, as part of your network design.

WorldVue's Connected Security solution can help you implement security as a fundamental aspect of your technology ecosystem. This solution enhances data protection by integrating global threat intelligence and advanced security controls. It also supports edge computing while safeguarding against evolving cyber threats.

How can I fully leverage my PMS system to monetize each guest-facing technology solution while making things more efficient for my staff?

PMS integration with other hotel technologies is typically a good way to incorporate monetization options, such as tiered logins. It also tends to simplify management and make it easier for guests to access various technology options. PMS integration can also integrate with rewards programs to offer personalization for an enhanced guest experience.

As long as we know which PMS solution your hotel intends to use, we can typically do the integration for you. WorldVue works with many popular PMS vendors and can tie in Wi-Fi, phones, POS, casting, and other technologies so related devices will work with our equipment/services. Please note that this may require an additional cost for the integration, as it's not simply a plug-and-play operation but will need to be customized for your hotel, your PMS solution, and the technologies you choose to incorporate.

How can WorldVue help with my new construction hotel project?

WorldVue offers services designed for every phase of new construction, from inception to operation.

Conceptual / Planning Phase

The WorldVue team will discuss your blueprint electrical planning to design a fully custom wiring solution.

Feasability Phase

- **Low voltage wiring:** Deliver a network infrastructure that can easily scale for higher bandwidth demands.
- **Surveillance cameras:** Create a safe environment through cloud video surveillance.
- **Structured cabling:** Design and installation of a cabling system that will support multiple hardware uses and be suitable for today's needs and those of the future.
- **Cellular boosting:** Ensure a robust cellular connection throughout the building.
- **Network design:** Plan for property-wide Wi-Fi coverage.

Procurement Phase

- **Network design:** Obtain equipment for fast, reliable Wi-Fi coverage.
- **Building intelligence:** Smart room and networking gear
- **TV programming:** Customized channel lineups
- **WorldVue HUB™:** An advanced solution with streaming, casting, and mobile remote
- **Evolve:** A cost-effective solution with casting and streaming enabled

Construction Phase

- Install access points, cameras, and head-end rack; add any additional cabling.
- At this time, our team will conduct a detailed site survey to guarantee all technology is installed correctly and working.

Operational / Asset Management Overtime Phase

- 24/7/365 IT Support coverage and remote monitoring
- Dedicated Client Success Team
- One centralized point of contact for all technology

WorldVue offers advanced solutions that are right for your brand, your property, and ultimately your guests and residents. We work with you from development and implementation to ongoing support and remote monitoring 24/7/365. We are your trusted advisor for new developments and property improvement plans, your single source for a wide range of technology products, and your ONE point of contact for installation, service, and support nationwide.

WorldVue remains dedicated to providing our properties with exceptional products and services, prompt support, and a partnership built on trust and reliability. Our motto remains:
We deliver. Every time. No exceptions.™

WORLDVUE®

Contact us today!

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