

Strengthening the Backbone of Your WMS:

10 Tips for Wired Infrastructure Design and Implementation

Many companies implementing a Warehouse Management System (WMS) are not aware that a wired infrastructure is an integral part of the WMS installation. This infrastructure allows the WMS to maximize data collection on the warehouse floor through the wireless network it supports.

Introduction

The project begins by designing a map of the wireless access points and then installing structured cabling throughout the distribution center (DC) to create the wired infrastructure. Wireless equipment is then installed, creating wireless signal capability throughout the DC.

Whether building a new DC or implementing a WMS in your existing DC, wired infrastructure is a critical component; without it, wireless signals cannot be properly conducted throughout the DC, which impacts data collection capabilities from the floor. Follow these 10 tips to optimize your wired infrastructure design and installation, shorten the project timeline, and avoid costly mistakes.

1.) Choose a system designer versus a hardware provider

The first step in beginning a wired infrastructure project is to select a partner. Importantly, it is the system design that determines the success of a wired infrastructure project, not the hardware used. Select a partner that is deeply experienced in system design, and rely on the designer's expertise to make hardware recommendations that fit your needs.

2.) Select a partner with the right expertise

Pick a designer that has expertise in wireless access point design, also known as a Local Area Network (LAN) Planner design, as well as structured cabling and scanning mobility. You should also choose a partner that has a strong understanding of material handling processes and

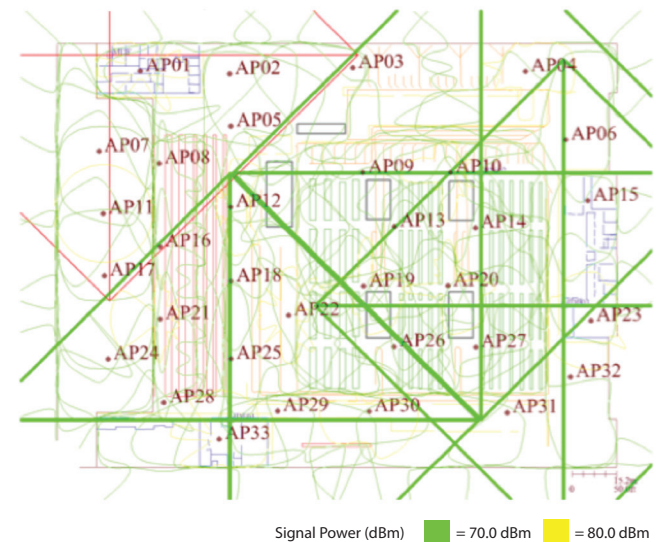


Figure 1: Access Point Location Map

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equipment. It is crucial that the systems implementer and the material handling team collaborate closely while outfitting the DC and throughout the project. The designer must be able to understand the needs of the material handling team, and everyone involved must understand and agree to the defined project goals and requirements, the specific project plan and related budget and deadlines.

3.) Do not select a partner based on the lowest cost

The adage, "You get what you pay for," holds true for wired infrastructure projects. The lowest cost provider may not always be the best choice. Often times, the provider with the lowest quote will not bring the same level of expertise. Failing to include key client requirements in the LAN planner or failing to identify all of the project components in the beginning can lead to costly changes or additions to the project that were not identified in the initial quote. Compare quotes from multiple vendors, see what additional components the highest cost provider has included, and determine if they are integral to your business needs. The right provider will prepare a quote based on your current and future operations, which will save you money in the long run.

4.) Have a detailed plan and stick to it

The element most important to the success of a wired infrastructure project is the LAN planner. This plan carefully and clearly details the locations of the Main Distribution Frame (MDF) and Intermediate Distribution Frames.

It's important that you work closely with your partner; ask questions about the plan and make changes if necessary. Be sure to give a final sign off on the proposed plan before the project begins.

5.) Involve all users in the planning process

The best plans result when all users within the four walls of the warehouse are included. Each person will have a different perspective and understanding of the requirements within the warehouse. Incorporating ideas from all users will identify often-overlooked needs and eliminate costly changes down the road.

For example, in one DC, pickers used golf carts to move throughout the facility. However, the access points were installed near the ceiling.

The signal from the high access points could not reach the carts, and as a result, the access points had to be lowered. An understanding of the warehouse employees' operations would have eliminated this error.

6.) Understand the current and future needs of your operation

The LAN planner should be designed to meet the current and future needs of your organization. It is important that your partner understands both your business and warehouse operations. For example, a signal may not be as strong in a cold storage facility, so the plan must be designed to surmount this potential issue. Or, tall racking may block the signal, and access points will need to be moved to accommodate the height.

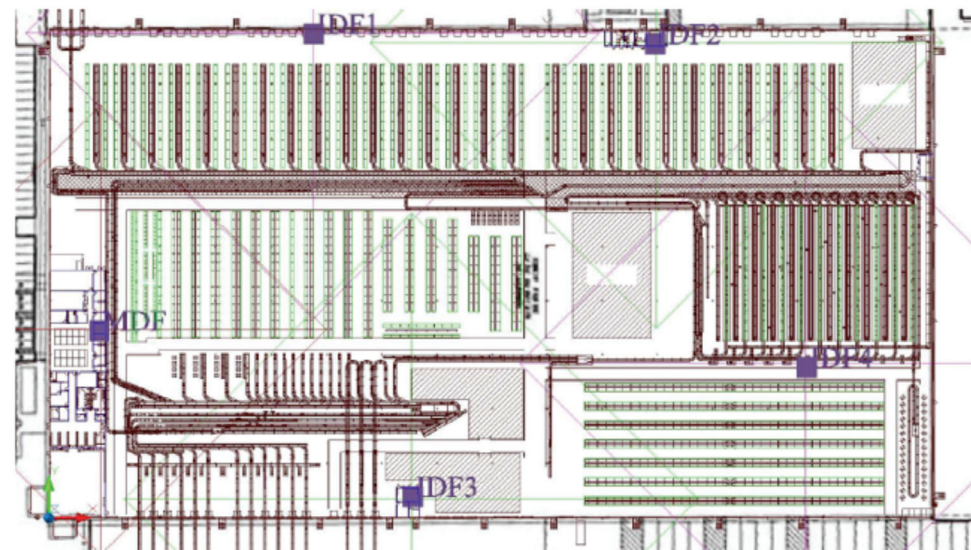


Figure 2: Main Distribution Frame and Intermediate Distribution Frames Map

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The future needs of your organization should also be considered when designing your plan to avoid additional changes down the line. For example, if your warehouse facility can currently accommodate 100 office workers, but you currently only have 30 office workers, it will save time and money to install the structured cabling for all 100 workers, rather than add the cabling as employees are moved to the facility over time.

7.) Consider additional components

The best time to install additional components in the DC, like cameras and security systems (such as door swipe cards), is during the initial implementation of the wired infrastructure. These items can be added to the LAN planner, and the infrastructure can be designed and built to accommodate these additional components. Adding these to the DC after the original project is complete is an expensive addition.

8.) Create a timeline

Once the plan is approved, make sure a timeline is developed and that the integrators follow the plan. The structured cabling and

access points should be installed before any of the material handling equipment. If the material handling equipment is installed first or simultaneously, it can cause lengthy delays in the project.

9.) Form should follow function

The LAN planner design should be based on the functional requirements of the infrastructure versus the ideal layout within the DC. For example, one client wanted the MDF to be located in the center of the DC so that less fiber optic cable could be used. However, the MDF must be kept cool, and this would have been more difficult with the MDF in the center of the warehouse, so the decision was made to locate the MDF at the side of the building for easier cooling.

10.) Test, test, test

One of the most important steps in wired infrastructure implementations is testing the system and making adjustments. The hardware should be tested at three points in time. The first test should occur once the structured cabling and access points have been installed but before the material handling equipment

is in place. This will provide a good idea if the equipment is working as planned. Next, test the equipment after all of the material handling equipment has been installed. Finally, and most importantly, test the system after all of the inventory and other facility items have been installed. This is the testing step where the most changes occur. Access points may need to be moved to accommodate for the height or density of all of these items.

Conclusion

Planning is the key to saving time and money when creating a wired infrastructure. A good partner will understand the current demands of your organization and future operations and include those in the system design. Incorporating the business model and input from DC employees will create a plan that will not necessitate significant changes after completion, and thorough testing will insure that the backbone of your WMS is secure for operation.

For more information, please contact us at 877-684-7700 or info@envistacorp.com.