Why Most Wi-Fi Site Surveys Go Wrong (And How to Get Them Right)



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When people talk about Wi-Fi design, the focus usually lands on access points, controllers, or the latest standard.

But in reality, none of that matters if your site survey is wrong.

A poor survey doesn’t just create a few coverage gaps. It sets the entire deployment up to fail before a single access point is installed.

Over the years, I've seen the same mistakes come up again and again. Not because engineers don't know what they're doing, but because the fundamentals get rushed, skipped, or assumed.

Let's walk through where things go wrong and how to get it right.

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1. Starting Without a Clearly Defined Scope

This is the biggest one.

"Wi-Fi everywhere" sounds simple, but it means nothing without context.

Are we talking about full coverage, capacity-driven design, or just basic connectivity in key areas?

Different use cases demand completely different designs. A warehouse running AMRs is not the same as a hotel lobby or an office floor.

If you don't define:

- Coverage expectations
- Capacity requirements
- Application needs
- Deliverables

...then you're not doing a survey. You're guessing.

A simple questionnaire early on makes a massive difference. It forces clarity before you even step on site.

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2. Working With Poor Floor Plans

If your floor plan is wrong, your survey will be wrong.

It's that simple.

You want:

- As-built architectural drawings
- Correct scale

- Room names and structure
- Up-to-date layouts

Anything less creates problems. I've seen surveys done on outdated plans where entire sections of buildings didn't even exist anymore.

Even when the plans look good, always verify scale on-site. Never trust it blindly.

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3. Underestimating Site Access and Real-World Constraints

This is where theory meets reality.

You might have a perfect plan, but:

- You can't access certain areas
- You need an escort
- Access windows are restricted
- Safety requirements slow you down

In environments like healthcare or manufacturing, access can be tightly controlled. If you don't plan for it, you'll miss critical data.

And once you leave site, going back is never as easy as it sounds.

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4. Turning Up Unprepared

A proper survey isn't just a laptop and a tool.

You need to think practically:

- Identification and site credentials
- PPE where required
- Reliable survey device
- Laser measure for validation
- Backup copies of plans
- Spectrum visibility if needed

Even small things like battery life, screen visibility outdoors, or just having the right footwear start to matter when you’re on your feet all day.

Preparation directly impacts data quality.

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5. Skipping the Predictive Phase

A predictive survey is not optional. It’s your baseline.

It gives you:

- A starting design
- Expected coverage patterns
- Early visibility of problem areas

Walking into a site without a predictive model is like trying to troubleshoot blind.

You might still get results, but it won’t be efficient, and it won’t be consistent.

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6. Poor Survey Execution on Site

Even with good planning, execution matters.

Some of the most common mistakes I see:

- Inconsistent walking speed
- Skipping difficult areas
- Backtracking and creating messy datasets
- Not validating data during the survey

Good surveys are methodical.

You:

- Move consistently
- Start with hard-to-access areas
- Cover spaces sequentially
- Review data as you go

If something looks off, fix it there and then. Not later.

7. Ignoring the Real Environment

Wi-Fi doesn’t exist in isolation.

What’s happening on site matters just as much as what’s on your screen.

You need to understand:

- Existing infrastructure
- Interference sources
- Client behaviour
- Operational workflows

In environments like warehouses or hospitals, the RF layer is constantly changing. Materials move. Devices roam. Interference comes and goes.

If you rely purely on the data without understanding the environment, you’ll miss the bigger picture.

And that’s usually where the real issues are.

What a Good Survey Actually Looks Like

A solid site survey follows a clear flow:

1. Define scope and expectations
2. Validate floor plans
3. Prepare access and equipment
4. Build a predictive model
5. Execute the survey properly
6. Validate data on-site
7. Deliver against agreed outcomes

Nothing complicated. Just disciplined.

Final Thoughts

Most Wi-Fi problems don’t start with bad hardware or poor configuration.

They start with bad assumptions.

And those assumptions usually come from a weak or rushed site survey.

If you get the survey right:

- Your design improves
- Your deployment becomes smoother
- Your troubleshooting workload drops significantly

It’s not the most glamorous part of wireless engineering, but it’s easily one of the most important.

Because at the end of the day, Wi-Fi doesn’t fail in production.

It fails in design.

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