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REAL LIVE STORIES

Building a house without planning the cabling — until the installers arrive after the renovation

A new house. The walls are still unfinished, the installations are going in, and cables can reach most rooms without demolishing half the building. It's the brief moment when preparing a network is easiest and least expensive. Marcin, an IT specialist, is walking through the rooms with Ms Beata. Then he asks a question that almost always gets the same answer.

— Ms Beata, where should we put the network outlets?
— What outlets?
— Ethernet. For computers, televisions and Wi-Fi access points. Perhaps cameras too.
— But Marcin, we don't need any of that right now.
— What about later?
— We'll see later.
— So I'm meant to plan locations for things nobody has chosen yet?
— Exactly. That's why we're not planning anything for now.

Marcin looks at the exposed walls. Walls that will soon be anything but exposed. And he begins to suspect that the biggest problem with this installation has nothing to do with technology.

We don't need it — which means we haven't bought it

— Will there be an alarm system? — Marcin asks.
— Probably, but maybe not until next year.
— Security cameras?
— Possibly.
— An automatic gate?
— Most likely.
— An intercom or video doorbell?
— We haven't chosen one.
— So there are four things that might need cables, and we're preparing for none of them?
— Because we don't know which models we'll buy!
— Do you wait until you've chosen a vacuum cleaner before deciding where to install a power socket?

Ms Beata smiles.
— All right, all right. Just don't turn my house into mission control.

Here's a common misunderstanding: **not having chosen a device doesn't mean you can't prepare for its installation**. Nobody needs to buy cameras, an alarm panel or a gate motor today. But it makes sense to identify potential locations, plan routes and leave a way to install the right cables later.

There is no single cable suitable for everything, either. Ethernet, alarm sensors, gate controls and the gate's electrical supply may all require different cabling and arrangements. The details are best discussed with the relevant installers *before* the walls are finished, rather than after the equipment has been ordered.

Wi-Fi is wireless. The house isn't

— But everything works over Wi-Fi now — Ms Beata points out.
— Phones do. TVs can too. But imagine a router at one end of the house and a room behind three walls.
— We'll buy a more powerful router.
— What if the walls, floors and distance are the problem?
— Two routers, then.
— Which brings us neatly to the cable we'd like to run between them.
— Marcin, do all your conversations end with cables?

Wi-Fi uses radio waves. Signals weaken with distance, and walls, reinforced concrete floors and interference can reduce performance. A more powerful router is not a guaranteed cure because wireless communication works in both directions: your phone has to be able to reply.

A larger house can use several access points. Connecting them by Ethernet means they don't have to relay traffic wirelessly between themselves. A wired connection provides a more predictable backbone than depending entirely on wireless hops. Mesh networks can also work well, but the results depend partly on how the nodes connect.

Ethernet isn't meant to replace Wi-Fi. It's meant to support it. Your phone can stay wireless while a cable ends discreetly near the ceiling, ready for an access point.

Build the roads before the neighbourhood

— Ms Beata, imagine we're building a new neighbourhood — Marcin suggests.
— All right.
— We build houses, gardens, pavements and lawns. But no roads.
— Why not?
— Because the residents haven't bought their cars yet.
— That's ridiculous. You'd have to dig everything up later.
— Exactly.
— Hold on. Is this about cables again?
— It's about making roads for future cables.

In a new home, those roads might be **planned cable routes, conduits or accessible pass-throughs**. Even when the actual cable is installed later, a prepared route can prevent unnecessary drilling and chasing into finished walls.

But an empty conduit isn't a magic tunnel. It needs a suitable diameter, sensible bends, accessible ends and a practical route. A narrow tube with a dozen tight turns may be useless when it's time to pull a cable through. A draw wire and a record of the route are worth keeping.

Data cabling must not simply be bundled indiscriminately with 230 V mains wiring. Appropriate separation, protection and electrical safety rules matter. Passages through walls and other building elements must also be handled properly. That's work for a competent installer, not a last-minute improvisation with a bucket of plaster.

A cabinet? It's only the internet!

— Where would all those cables end up? — Ms Beata asks.
— Ideally in one sensible place, with the router, switch and cable terminations.
— Please don't tell me I need a server room.
— You don't. You need room for a few devices and enough space to work on the cables.
— Why not hide everything behind a wardrobe?
— Because when a power supply fails next year, I'd rather not start by emptying your clothes cupboard.

Not every house needs a rack cabinet. But **a well-chosen central network location** makes maintenance much easier. Think about power, space for a modem or router, a switch, cable terminations, service access and ventilation where the equipment needs it.

For fixed network points, separate cable runs back to a central location are usually more useful than a random chain of extenders and devices. Clear labels, documented endpoints and a little spare cable can be worth more than yet another blinking LED.

Cameras, alarms and gates have their own rules

— Cameras can use Wi-Fi too — Ms Beata says.
— They can. But they still need power.
— Battery cameras exist.
— They do, but then you need to manage charging and accept the limitations of how they operate.
— What if I want permanent cameras instead?
— Ethernet with PoE is often a convenient option.
— Another cable.
— This time one cable can carry both the data and the power.
— Do you get commission on every metre you recommend?

PoE, or Power over Ethernet, can power compatible devices such as certain IP cameras and wireless access points through an Ethernet cable. The devices, available power, cable length and cable quality still matter. PoE doesn't mean you can run a gate motor or an arbitrary alarm system from a network cable.

Alarm systems, video intercoms and gate motors have their own requirements for wiring, power and control. Some solutions are wireless, some are wired and some combine both. That's why planning possible locations and installation routes now — then checking the details with the future contractors — is worthwhile.

Internet through a power socket: the backup plan

— What if we don't run those cables after all? — Ms Beata asks.
— There are Powerline adapters. They send data over the existing electrical wiring.
— Problem solved!
— Maybe. They can work beautifully in one socket and much worse in another.
— Even in the same house?
— Even on the same circuit.

— We have three phases, too.
— Communication across phases can work, but I wouldn't promise a particular speed.
— So you're really not going to guarantee that everything works?
— Not before we've measured it.

Powerline (PLC) carries data over electrical wiring using high-frequency signals. Connection quality depends on the cables, distance, circuits, interference and appliances plugged into the system. Communication across electrical phases is sometimes possible, but performance isn't guaranteed.

Advertised AV1000 or AV2000 rates aren't the same as real application throughput. If PLC is going to replace a cable run, test actual speed and stability at the intended sockets. It's useful where installing Ethernet is no longer practical, but it isn't an equivalent substitute for a properly planned wired network.

The most expensive cable is the one you need after renovating

A year passes. The house is finished. The walls are painted, the flooring is laid and the garden looks perfect. Marcin's phone rings on Monday morning.

— Hello, Marcin. It's Beata.
— Hello, Ms Beata. How's the house?
— Beautiful. But the alarm installers are here, and they're asking about cables.
— I see.
— And the automatic gate needs connecting somehow.
— Yes.
— And the camera above the garage gets terrible Wi-Fi.
— That happens.
— Do you know what I was about to ask?
— I think I can guess.
— Is there a way to do all this without drilling?
— Of course, Ms Beata. There was. Last year.

That's the joke, of course. A house without network cabling isn't necessarily doomed to another renovation. Surface-mounted wiring, wireless equipment, existing conduits and other workarounds can help. But the later you make the decision, the more often you must compromise between appearance, cost and technical performance.

The takeaway: you don't have to predict every device you'll ever own. You only need to think about where equipment might go and leave sensible ways to reach those places with cables. Today, that's a little planning. Tomorrow, it could mean leaving those freshly painted walls untouched.

Nobody needed cables while the house was being built. A year later, everyone needed a solution that involved no drilling.

The cable itself wouldn't have cost much. The expensive part was deciding there was no need to plan for one.