AFRIDYNE SYSTEMS · HOME IT & SECURITY GUIDE

Home CCTV Planning & Setup Guide

Choosing between PoE and Wi-Fi cameras, planning coverage, sizing storage, and locking down remote viewing.

Audience: Homeowners & Small Properties | Focus: Reliability, Power Backup & Network Privacy

1. PoE Wired vs. Wi-Fi Cameras

The single most important choice in a home camera system is how each camera receives power and transmits video back to your recorder.

Feature	PoE Wired (Cat6 Ethernet)	Wi-Fi / Wireless
Signal Reliability	Dedicated physical cable; immune to Wi-Fi congestion, interference, or signal drops.	Affected by thick brick/concrete walls, distance from router, and household bandwidth load.
Power & Outage Backup	Single Cat6 cable carries both data and power from one central UPS-backed NVR or PoE switch.	Requires a nearby wall plug (which drops during power cuts unless each spot has a mini-UPS) or solar/battery recharge.
Video Recording	Continuous 24/7 recording to a local Network Video Recorder (NVR) hard drive with zero monthly fees.	Typically records short motion-triggered clips to a microSD card or paid cloud subscription.
Best Suited For	Perimeter walls, driveways, gates, garages, and permanent homeowner installations.	Rental properties or spots where running ceiling or conduit cabling is impractical.

> **Afridyne Recommendation:** Wherever ceiling space or exterior conduit allows, choose **Cat6 PoE cameras** connected to a local NVR. Backing up the NVR and router with a single small UPS keeps every camera recording through power outages.

2. Camera Placement, Lenses & Weatherproofing

- **Optimal Mounting Height (2.5 m – 3 m):** High enough to stay out of easy reach without a ladder, yet low enough to capture faces clearly rather than only the tops of hats or hoodies.
- **Avoid Backlight & Infrared (IR) Glare:** Do not point lenses directly into the rising or setting sun. Keep eaves, gutters, walls, and nearby branches out of the frame edge—at night, infrared LEDs bounce off close objects and wash out the rest of the image.
- **Lens Focal Length (2.8 mm vs. 4 mm):** A wide **2.8 mm** lens (~100°–110° view) covers broad yards, patios, and side passages. A tighter **4 mm** lens (~80° view) concentrates pixels on narrow driveways, pedestrian gates, and front doors where facial or number-plate detail matters.
- **Coastal Weatherproofing (IP66 / IP67):** In coastal areas like the Helderberg, wind-driven winter rain and salt air quickly corrode exposed RJ45 plugs. Always use IP66/IP67-rated metal housings paired with sealed waterproof junction boxes.

3. NVR Hard Drive Sizing & Retention

Never install a standard desktop hard drive inside an NVR. Use surveillance-rated drives (such as **WD Purple** or **Seagate SkyHawk**) engineered for continuous 24/7 write cycles.

Camera Count (4MP / 2K @ H.265+)	Recording Mode	1 TB Drive	2 TB Drive	4 TB Drive
4 Cameras	24/7 Continuous	~10 – 14 days	~21 – 28 days	~42 – 56 days
8 Cameras	24/7 Continuous	~5 – 7 days	~10 – 14 days	~21 – 28 days

4. Locking Down Network & Mobile App Security

Internet-connected cameras and recorders are prime targets for automated scanners if configured carelessly.

- **Disable UPnP & Never Forward Ports:** Turn off UPnP on your router and never forward ports `80`, `554`, or `8000` to your NVR.
- **Isolate Cameras on a Separate VLAN:** Place cameras and the NVR on a dedicated IoT/Camera VLAN with outbound internet blocked for individual cameras, preventing them from reaching external servers or accessing your laptops and phones.
- **Secure Remote Viewing:** Connect remotely via a self-hosted **WireGuard VPN** on your router/server, or—if using the manufacturer's mobile app (such as Hik-Connect or DMSS)—enable **two-factor authentication (2FA)** and a strong, unique password.
- **Change Default Admin Credentials:** Set a unique administrator password on both the NVR and every individual camera during commissioning.

5. Pre-Installation Homeowner Checklist

- ☐ Map entry points, blind spots, and lighting conditions (daytime sun angles + nighttime street/security lights).
- ☐ Confirm cable routes (ceiling void, exterior UV-stabilised PVC conduit) and central lockable spot for the NVR.
- ☐ Verify UPS/inverter backup runtime for the NVR, PoE switch, and fibre ONT/router.
- ☐ Confirm strong Wi-Fi signal strength at any wireless camera locations before mounting.
- ☐ Test live view, motion alerts, playback scrubbing, and mobile app access on all household phones.

Need hands-on help with your home CCTV setup? Afridyne Systems assists Helderberg homeowners with NVR configuration, neat network cabling integration, UPS backup, camera VLAN isolation, and mobile viewing setup. Call/WhatsApp **062 509 8065** or visit **afridyne.co.za**.