



# FARM PLAN

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# FACILITY LAYOUT DESCRIPTION

THE LAYOUT CONSISTS OF A LARGE BARN, A CENTRAL OFFICE CONTAINING THE SERVER RACK, AN EQUIPMENT SHED, TWO STORAGE ROOMS, AND RESTROOMS.



## IP SECURITY CAMERA (CCTV)

- Surveillance: High-definition digital video monitoring of the premises.
- Night Vision: Infrared (IR) LEDs provide clear visibility in total darkness.
- PoE Powered: Receives power and data through a single network cable.
- Smart Alerts: Motion detection triggers notifications to the security system.
- Weatherproof: Housing protects against rain, dust, and temperature extremes.



## CISCO 2901 ROUTER

- **Edge Connectivity:** Serves as the primary gateway connecting the farm's local network to the internet (ISP).
- **Security Features:** Includes hardware-based encryption and firewall capabilities to protect data.
- **Integrated Services:** Handles voice, video, and data traffic efficiently within a single device.
- **Modularity:** Features expansion slots to add 4G/LTE backup cards if the main connection fails.
- **Durability:** Enterprise-grade hardware designed for continuous, long-term operation.



## CISCO C220M4S SERVER

- Central Processing: A high-density 1U rack server acting as the "brain" of the smart farm.
- Virtualization Ready: Powerful enough to run multiple virtual machines (databases, controllers, file servers).
  - Redundancy: Equipped with dual power supplies to prevent shutdown during a power module failure.
- Remote Management: Features Cisco IMC for remote troubleshooting without physical access.
- Storage Capacity: Supports multiple high-speed drives for processing IoT data streams.



## PC WORKSTATION (HIGH-END)

- **Command Center:** The primary interface for the Farm Manager to monitor operations.
- **High Performance:** Equipped with a fast CPU and ample RAM to render 3D maps and heavy data.
- **Multi-Tasking:** Supports multiple monitors for viewing CCTV feeds and sensor dashboards simultaneously.
- **Data Analysis:** Capable of running resource-intensive agricultural software.
- **Connectivity:** Gigabit Ethernet port ensures zero lag when accessing server data.



## CISCO 2960 SWITCH

- LAN Backbone: Connects all wired devices (PCs, cameras, printers) to the network.
- PoE+ Capability: Provides power over the ethernet cable to cameras and access points (no separate plugs needed).
- VLAN Support: Allows segmentation of the network (e.g., separating CCTV traffic from office data).
- Quality of Service (QoS): Prioritizes critical traffic to ensure smooth video streaming.
- Layer 2 Security: Port security features prevent unauthorized devices from connecting.



## ACCESS POINT (WI-FI OUTDOOR/INDOOR)

- **Mobility:** Provides wireless network coverage for tablets and phones across the facility.
- **Rugged Design:** Outdoor units are weather-sealed against dust and moisture (IP67 rated).
- **Dual-Band:** Operates on 2.4GHz (range) and 5GHz (speed) frequencies.
- **Roaming:** Allows users to walk from the barn to the office without losing connection.
- **IoT Bridge:** Connects wireless farm sensors that do not use cellular data.



## LASER PRINTER

- Documentation: High-speed printing for invoices, shipping labels, and reports.
- Networked: Accessible by all authorized computers on the LAN.
- Efficiency: Low cost-per-page using toner cartridges compared to inkjet.
- Volume: Designed to handle high-volume printing without overheating.
- Duplexing: Automatic double-sided printing to save paper costs.



## TV (SOCIAL AREA)

- Dashboard Display: Large screen for visualizing real-time farm stats or weather maps.
  - Training: Used for displaying instructional videos to staff.
  - Connectivity: HDMI and wireless casting support for laptops/mobile devices.
  - Information Hub: Displays news or market prices in the break room.
- Space Saving: Wall-mounted installation to keep floor space clear.



## HARDWARE FIREWALL

- **Cyber Defense:** Dedicated appliance to filter incoming and outgoing network traffic.
- **Intrusion Prevention:** Actively blocks hacking attempts and malware.
- **VPN Gateway:** Manages secure remote access for the IT specialist or manager.
- **Content Filtering:** Can restrict access to non-work-related websites.
- **Traffic Inspection:** Deep packet inspection ensures no sensitive data leaks out.



## STRUCTURAL CABLING + RACK CABINET

- Organization: Centralizes all network equipment in a lockable, ventilated steel enclosure.
- Standardization: Uses Cat6 cabling to ensure gigabit speeds throughout the building.
- Protection: Protects equipment from physical tampering, dust, and accidental damage.
- Cable Management: Patch panels keep wires organized for easy maintenance.
- Scalability: Provides extra rack space for future equipment additions.



## UPS (BACKUP POWER FOR SERVERS)

- Continuity: Provides immediate battery power during electrical outages.
- Surge Protection: Filters out voltage spikes that could damage sensitive electronics.
- Graceful Shutdown: Gives the server time to save data and turn off safely.
- Monitoring: Reports battery health and power load status to the network.
- Critical Uptime: Essential for keeping security and alarm systems active during blackouts.



## NAS (DATA ARCHIVE & BACKUP)

- Storage Hub: Dedicated appliance for storing massive amounts of data.
  - Redundancy (RAID): Mirrors data across multiple drives; if one fails, data is safe.
- CCTV Archive: Stores weeks or months of security camera footage.
- Automated Backups: Automatically saves copies of PC files every night.
- Remote Access: Files can be securely accessed from outside the farm.



## TOYOTA HILUX (4X4 PICKUP)

- **Heavy Utility:** Primary vehicle for heavy lifting and towing trailers.
- **Off-Road:** 4x4 capability allows access to muddy fields and rough terrain.
  - **Payload:** Large open cargo bed for transporting tools, feed, or equipment.
- **Reliability:** World-renowned durability requiring minimal unexpected maintenance.
- **Safety:** High ground clearance and robust frame for field work.



## FORD TRANSIT (DELIVERY VAN)

- **Logistics:** Used for delivering produce to markets or distributors.
- **Capacity:** Large, enclosed cargo area protects goods from weather.
- **Efficiency:** Diesel engine optimized for highway mileage and range.
- **Accessibility:** Sliding side doors and rear barn doors for easy loading.
- **Branding:** Large exterior surface area perfect for applying farm logo decals.



## QUAD UTV (WORK VEHICLE)

- **Agility:** Small footprint allows navigation through narrow barn aisles and crop rows.
- **Quick Transport:** Faster than a tractor for checking fences or irrigation lines.
- **Versatility:** Can be fitted with small sprayers or spreaders.
- **Terrain Handling:** Low-pressure tires prevent soil compaction in the fields.
- **Utility:** Features a small dumping bed for moving dirt, feed, or debris.



## FUEL AND SERVICE (ANNUAL RESERVE)

- pEx Budget: Allocation for diesel, gasoline, and lubricants.
  - Maintenance: Covers routine oil changes, filters, and tire replacements.
- Emergency Fund: Reserve cash for unexpected mechanical breakdowns.
- Consumables: Includes AdBlue, hydraulic fluids, and brake pads.
- Availability: Ensures vehicles are always fueled and ready for work.



## **FARM MANAGER (ANNUAL CONTRACT)**

- **Leadership:** Responsible for overall strategy and daily operations.
  - **Decision Making:** Decides on planting schedules, harvesting, and sales.
  - **Staff Management:** Hires, trains, and supervises manual workers.
- **Compliance:** Ensures the farm meets legal and safety regulations.
  - **Financials:** Manages the budget, supply ordering, and profit margins.



## IT SPECIALIST/AUTOMATION (ANNUAL CONTRACT)

- Tech Support: Maintains the network, servers, and computers.
  - System Admin: Manages user accounts, passwords, and data security.
  - IoT Integration: Configures and calibrates sensors and automation logic.
- Troubleshooting: Rapid response to internet outages or software glitches.
- Optimization: Continuously improves digital workflows for efficiency.



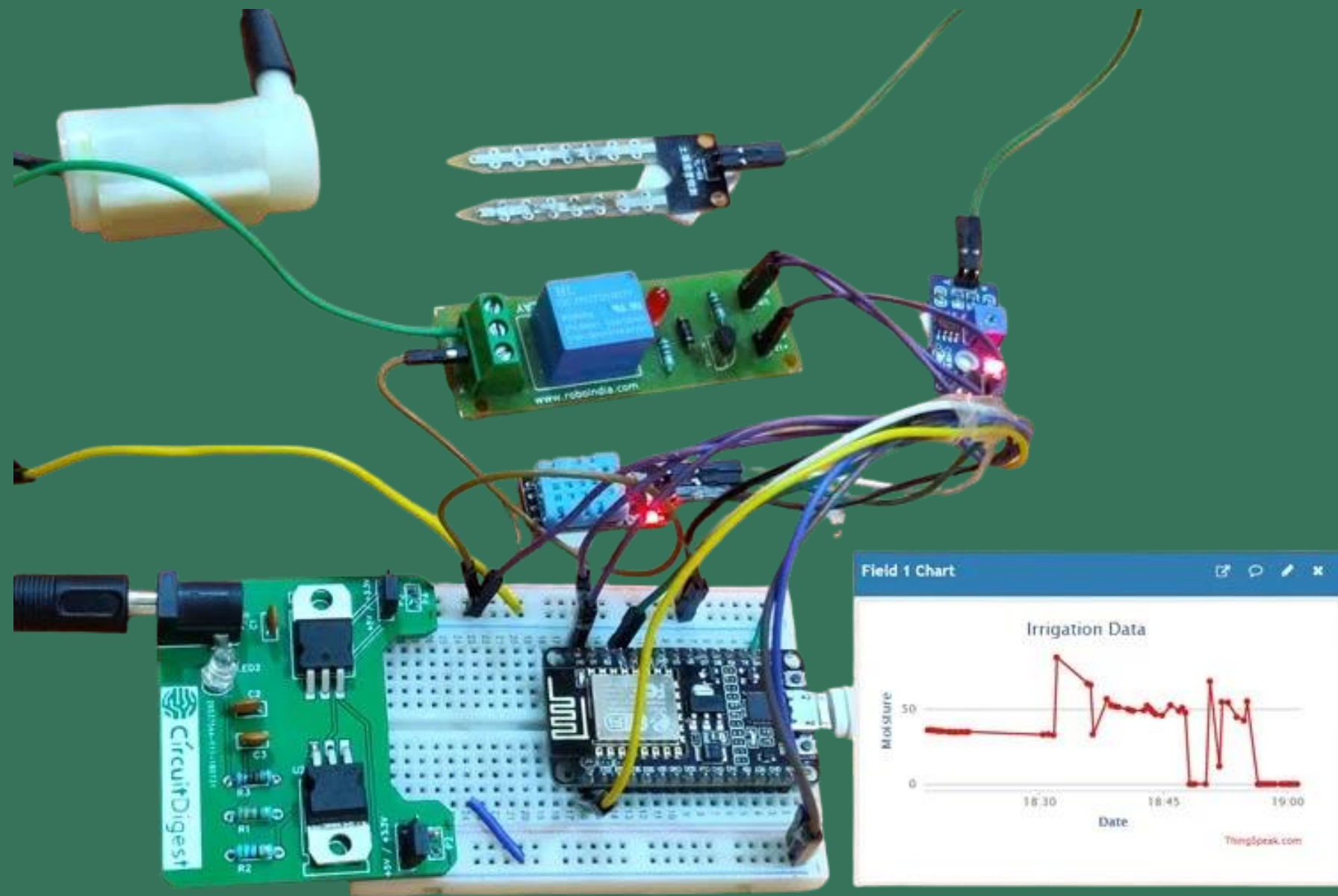
## MANUAL WORKER (ANNUAL COST PER PERSON)

- Execution: Performs physical tasks like planting, pruning, and harvesting.
- Livestock Care: Handles feeding, cleaning, and monitoring animals.
- Maintenance: Assists with repairing fences, cleaning barns, and basic repairs.
- Operation: Drives basic machinery under supervision.
- Flexibility: Adapts to seasonal demands and varying workloads.



## INSPECTION DRONE (THERMAL IMAGING)

- Aerial Mapping: Provides bird's-eye views of the entire property.
- Crop Health: Thermal sensors detect plant stress or disease before it's visible to the eye.
- Irrigation Checks: Identifies dry spots or leaks in the watering system.
- Automation: Can fly pre-programmed routes via GPS.
- Efficiency: Covers large acreage in minutes compared to hours of walking.



## IOT SOIL & IRRIGATION SENSOR KIT

- Precision Ag: Measures soil moisture, temperature, and pH levels.
- Real-Time Data: Transmits readings wirelessly to the central server.
- Water Saving: Prevents over-watering by triggering irrigation only when needed.
- Alerts: Notifies the manager of critical conditions (e.g., frost risk).
- Low Power: Designed to run on batteries or small solar panels for years.



## PRO WEATHER STATION

- Micro-Climate: Measures conditions exactly at the farm, not a distant airport.
- Sensors: Tracks wind speed/direction, rainfall, humidity, and pressure.
- Forecasting: Helps predict local frost or storm events.
- Integration: Can automatically close automated vents or greenhouses based on wind/rain.
- History: Logs historical weather data for year-over-year yield analysis.

Item	Category	#	Quantity	Net Price (EUR)	Net Total (EUR)	% VAT Rate	Gross Total (EUR)	VAT Value (EUR)
Cisco 2901 Router	IT - Network	1	1	€250,00	€250,00	23%	€307,50	€57,50
Cisco c220m4s Server	IT - Server Room	1	1	€2 250,00	€2 250,00	23%	€2 767,50	€517,50
PC Workstation (High-End)	IT - Office	5	5	€1 500,00	€7 500,00	23%	€9 225,00	€1 725,00
Cisco 2960 Switch	IT - Network	2	2	€1 250,00	€2 500,00	23%	€3 075,00	€575,00
Access Point (Wi-Fi Outdoor/Indoor)	IT - Network	10	10	€130,00	€1 300,00	23%	€1 599,00	€299,00
Laser Printer	IT - Office	2	2	€300,00	€600,00	23%	€738,00	€138,00
TV (Social Area)	IT - Social	1	1	€400,00	€400,00	23%	€492,00	€92,00
IP Security Camera (CCTV)	IT - Security	16	16	€150,00	€2 400,00	23%	€2 952,00	€552,00
Hardware Firewall	IT - Security	1	1	€714,00	€714,00	23%	€878,22	€164,22
Structural Cabling + Rack Cabinet	IT - Infrastructure	1	1	€5 000,00	€5 000,00	23%	€6 150,00	€1 150,00
UPS (Backup Power for Servers)	IT - Infrastructure	1	1	€2 000,00	€2 000,00	23%	€2 460,00	€460,00
NAS (Data Archive & Backup)	IT - Infrastructure	1	1	€1 200,00	€1 200,00	23%	€1 476,00	€276,00
Toyota Hilux (4x4 Pickup)	Vehicles	1	1	€45 000,00	€45 000,00	23%	€55 350,00	€10 350,00
Ford Transit (Delivery Van)	Vehicles	1	1	€38 000,00	€38 000,00	23%	€46 740,00	€8 740,00
Quad UTV (Work Vehicle)	Vehicles	1	1	€12 000,00	€12 000,00	23%	€14 760,00	€2 760,00
Fuel and Service (Annual Reserve - Farm Rate)	Vehicles	1	1	€10 000,00	€10 000,00	13%	€11 300,00	€1 300,00
Farm Manager (Annual Salary)	HR	1	1	€60 000,00	€60 000,00	0%	€60 000,00	€0,00
IT Specialist/Automation (Annual Salary)	HR	1	1	€48 000,00	€48 000,00	0%	€48 000,00	€0,00
Manual Worker (Annual Salary per Person)	HR	3	3	€35 000,00	€105 000,00	0%	€105 000,00	€0,00
Inspection Drone (Thermal Imaging)	Smart Farming	1	1	€6 000,00	€6 000,00	23%	€7 380,00	€1 380,00
IoT Soil & Irrigation Sensor Kit	Smart Farming	1	1	€8 000,00	€8 000,00	23%	€9 840,00	€1 840,00
Pro Weather Station	Smart Farming	1	1	€1 500,00	€1 500,00	23%	€1 845,00	€345,00
Operational Reserve	Other	1	1	€7 664,78	€7 664,78	0%	€7 664,78	€0,00
<b>TOTAL</b>				<b>€286 308,78</b>	<b>€367 278,78</b>		<b>€400 000,00</b>	<b>€32 721,22</b>

**THANK YOU!**