PRODUCT CATALOGUE

SynBA

ON-PREMISE • SERVER INSTALLED INSIDE THE BUILDING

Building automation. HVAC, lighting and water monitored, alarmed and scheduled on one screen.

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SynBA — Building Automation

Building Automation • PLC • On-premise

Building automation that talks to Delta and Siemens PLCs over TCP/IP. One server per site runs the whole system — polling, database, and dashboard — so HVAC, power, water, lighting and access can be watched and controlled from a single screen. Equipment templates and site configuration make the second building far cheaper than the first.

WHO IT IS FOR

Office buildings and industrial offices with central plant

Office buildings | Industrial offices

Chillers, air handlers, water pumps and common-area lighting each come from a different vendor, with their own box, their own software and their own password. Only once they share one screen can the person on duty take it all in at a glance.

Existing sites with mixed equipment brands

Delta and Siemens PLCs, BACnet HVAC and Modbus meters coexisting is the norm, not the exception. All five protocols run on one server, so a handful of odd devices does not justify a second system.

Buildings pursuing intelligent-building certification

The system is designed against the six indicators of the 2024 Intelligent Building Evaluation Manual — what gets monitored, how alarms flow, scheduling, and how long history is kept all line up with the assessment items.

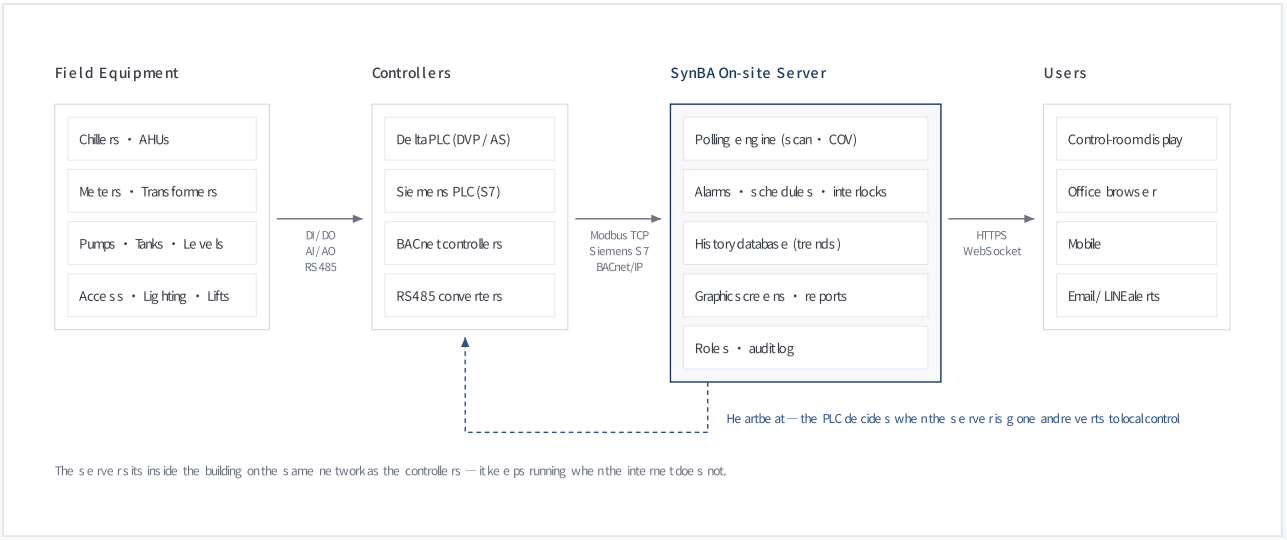
Integrators commissioning site after site

Points, alarms, schedules and every screen — background images included — export as one package, so a commissioned site can be cloned onto the next one. The second building costs far less than the first.

If you only need to watch a single machine — one chiller, say — the manufacturer’s own controller is usually cheaper and sufficient. SynBA earns its keep once the count of devices and brands grows past the point where anyone can say what the whole building is doing right now.

SYSTEM ARCHITECTURE

Field equipment is wired to the controllers as it always was. SynBA talks to those controllers over the site network, keeps the data, and serves the screens. Nothing in the control loop depends on our server staying alive.



SUPPORTED PROTOCOLS

One server can run devices on different protocols at the same time — a single odd chiller does not justify a second system.

Modbus TCP

TYPICAL DEVICES

Delta DVP / AS PLCs, meters, inverters, I/O modules

FIELD NOTES

RTU over TCP is supported for devices behind RS485 converters. Picking the wrong mode connects fine but reads nothing — the most common field trap.

Siemens S7

TYPICAL DEVICES

S7-1200 / 1500, S7-300 / 400

FIELD NOTES

Enable PUT/GET on the CPU and turn off “optimized block access” on the data blocks; 1200/1500 use rack 0 slot 1, 300/400 rack 0 slot 2.

BACnet/IP

TYPICAL DEVICES

AHUs, chiller controllers, existing third-party building equipment

FIELD NOTES

Reads the device object list so points can be created in bulk. Device instances must be unique site-wide, and object numbering must come from the vendor’ s point list — never guessed.

MQTT 3.1.1

TYPICAL DEVICES

IoT sensors, gateways and cloud platforms. Raw values and JSON payloads both work, and one topic can feed several points

FIELD NOTES

The direction is reversed: we do not poll, the device publishes. So “never received anything” and “broker disconnected” are two different states and must not both read as a communication failure. Staleness detection is off by default — MQTT usually publishes on change, so a status point that changes twice a day would otherwise show red all day.

SOAP / Web Service

TYPICAL DEVICES

Web service interfaces on existing systems. Endpoint, SOAPAction, request template and value path are all entered in the settings page

FIELD NOTES

SOAP has no connection to speak of; the connection test means issuing one call to confirm reachability — otherwise a wrong endpoint or credential only surfaces on the first scan, and it looks like “every point is broken” rather than “the address is wrong”. One scan issues one request, not one per point.

SUBSYSTEMS

A graphic screen can be built on a photo of the plant room, a floor plan, or a schematic — whichever the on-site team reads fastest. These three come from our demo site.

Power | Photo

Switchgear room: transformers, main ACB, utility meter, total consumption and live demand — all pinned onto a photo of the actual room.

Access Control | Floor Plan

Lobby floor plan: card readers, door contacts, CCTV and lifts laid out in their real positions, so the duty officer knows which door is which.

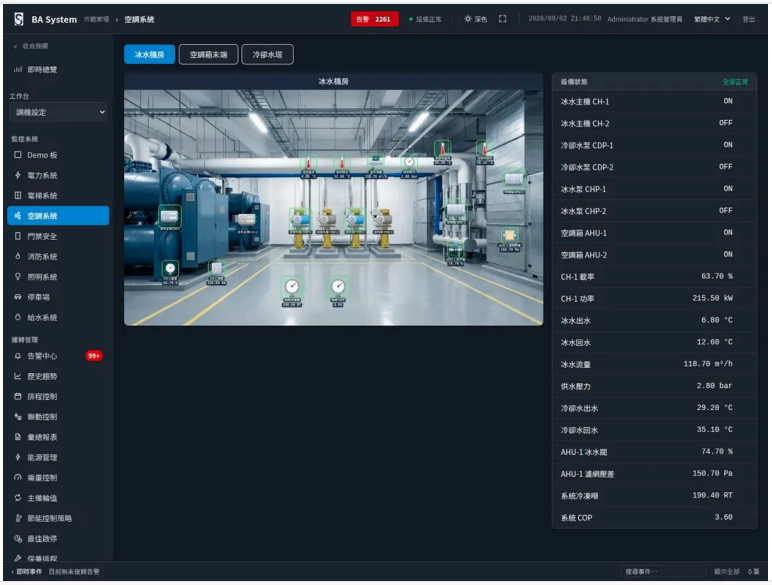
Water | Schematic

Waste-water schematic: sump levels for sewage, waste and storm water, six pump run states and discharge flow on a single diagram.

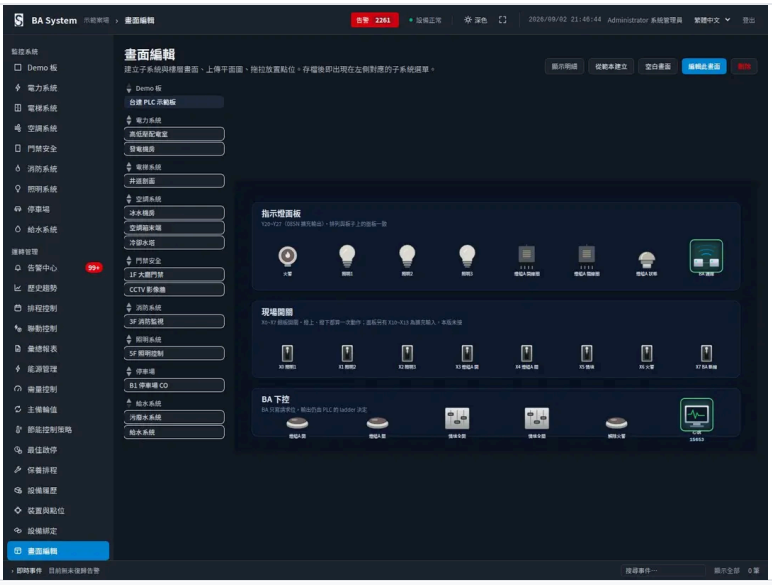
The same demo site also runs these subsystems, each with its own screens and points:

HVAC | Elevators | Fire safety | Lighting | Parking

PRODUCT SCREENS



HVAC graphic screen: point markers overlaid directly on the chiller room photo, with live equipment status and values on the right (supply temperature, flow, load, system COP).



Screen management: each subsystem gets its own screens — a dozen or more per site. Upload the background, drag the points, save, and it appears in the sidebar.

Trend history: compare up to six points at once. Different units default to independent axes, so temperature never flattens into a straight line.

CORE FEATURES

Multi-protocol

Modbus TCP (including RTU over TCP for RS485 converters), Siemens S7, BACnet/IP, MQTT and SOAP / Web Service on one server — no second system for the odd device.

Graphic Screens

Upload a photo, floor plan, or schematic, then drag point markers and charts onto it. A new site means new drawings, not new code.

Alarms & Notification

Debounced alarms so normal equipment cycling does not page anyone; raise / clear / acknowledge flow with email and LINE notification.

Schedule & Trend

Weekly schedules run in site-local time and never fire retroactively after downtime; long-term trend history with independent axes per unit.

PLC Heartbeat

The BA server writes a periodic heartbeat into the PLC; the PLC decides when the server is gone and falls back to local control — safe through network loss, crash, or power cut.

Site Package

Devices, points, alarms, schedules, and every screen (background images included) export as one package, so a dealer can clone a commissioned site onto the next one.

INTELLIGENT BUILDING LABEL

SynBA is designed against the six indicators of the 2024 edition of Taiwan’s Intelligent Building Evaluation Manual. This table maps each indicator to the corresponding system capability.

Infrastructure

WHAT THE LABEL ASSESSES

Open communication protocols and an integration platform

HOW SYNBA COVERS IT

BACnet/IP (ISO 16484-5), Modbus TCP, Siemens S7, MQTT and SOAP / Web Service running side by side on one server.

Operations and maintenance

WHAT THE LABEL ASSESSES

Full lifecycle facility management

HOW SYNBA COVERS IT

Equipment history (run hours, start/stop counts, fault counts) and maintenance scheduling triggered by whichever comes first: elapsed days, run hours or start/stop count.

Safety and disaster prevention

WHAT THE LABEL ASSESSES

Detect, display, interlock

HOW SYNBA COVERS IT

Alarm detection and on-screen display plus an interlock engine. In the manual, interlocking is a hard requirement rather than a bonus item.

Energy management

WHAT THE LABEL ASSESSES

Sub-metering and energy scoring, weighted more heavily in the 2024 edition

HOW SYNBA COVERS IT

Energy module: sub-metering, time-of-use pricing and energy use intensity.

Health and comfort

WHAT THE LABEL ASSESSES

Indoor air quality, temperature and humidity

HOW SYNBA COVERS IT

Point templates for CO / CO_2, temperature and humidity, ready to connect to on-site environmental sensors.

Smart innovation

WHAT THE LABEL ASSESSES

Standard data formats, among others

HOW SYNBA COVERS IT

A TAICS TS-0054 building data interchange interface that assessors can call directly, without going through our UI.

ACCEPTANCE REPORT

The system includes a report written for the assessor rather than the operator: one printable page listing the real figures for protocols, points, alarms, history, resilience and audit records.

Two rules are deliberate. It shows only what is genuinely configured — unset items read “not configured” rather than being filled with defaults. And it never declares itself compliant: it presents evidence and numbers, because the pass-or-fail judgement belongs to the assessor, not to the vendor’s own software.

The 2024 edition of the Intelligent Building Evaluation Manual (Architecture and Building Research Institute, Ministry of the Interior) took effect on 1 December 2024: six indicators, 98 items, 240 points in total, with the silver threshold raised from 90 to 100.

HOW A SITE GETS BUILT

01 **Site survey and point list**

Inventory the equipment, controller models and communication interfaces, then compile the point list — what is status, what is a value, what must be controllable.

If the existing system is a third-party BA, this is when we obtain the vendor’s object list.

02 **Communication test on real hardware**

Connect to the controllers and verify every address reads and writes. Addresses are validated as they are typed, with error messages straight from the driver.

03 **Build the site**

Create devices and points, upload backgrounds and lay out the graphic screens, set alarm conditions and weekly schedules, then add interlocks where needed.

04 **Acceptance and training**

Verify alarms fire, schedules run, control writes land, and the PLC falls back to local control on disconnect — then walk the on-site team through it.

05 **Operation and expansion**

The whole site configuration exports as one package, so adding equipment or screens later never starts from scratch. Remote support and updates are agreed separately.

Will this system get us the Intelligent Building Label?

The label is awarded to a building by assessors; no system can substitute for that process. What the system can do is twofold: actually implement the items the manual examines — open protocols, interlock control, sub-metering, equipment history and maintenance scheduling, and a standard data interchange interface — and produce an acceptance report that lists the real figures for protocols, points, alarms, history and audit records on one printable page. That report deliberately shows only what is genuinely configured: unset items read “not configured”, and it never declares itself compliant, because that judgement belongs to the assessor.

What happens to the building if the network goes down?

No. The server sits inside the building on the same network as the controllers; losing the internet only means losing remote access. The server writes a periodic heartbeat into the PLC — if the server crashes or loses power, the PLC detects the silence and reverts to local control. The direction is deliberate: a system that has crashed cannot send an “I am down” message.

Our equipment is neither Delta nor Siemens — can you connect to it?

It depends on the interface. We support Modbus TCP (including RS485 converters), Siemens S7, BACnet/IP, MQTT and SOAP / Web Service, which covers most controllers, meters and existing system interfaces on the market. BACnet devices can have their object list read and points created in bulk. If none of these fit, adding a protocol means implementing five driver methods — nothing above the driver layer changes.

Does the data go to the cloud?

Not by default. One server per site runs the polling, the database and the screens locally. Remote viewing is an option we can enable, not a prerequisite.

Who can issue control commands, and is it traceable?

Three roles — admin, operator, viewer — enforced on every backend API; hiding buttons in the UI is only a convenience. Every write and every alarm acknowledgement is recorded in the audit log, including rejected attempts.

Does the second building start from scratch?

No. A site package carries devices, points, alarms, schedules and every screen including background images; you preview it on the new site, apply it, then adjust for the differences. Built-in screen templates are also available.

How is it priced?

Priced by the size of the site: how many controllers connect, how many points in total, and how many monitoring screens need building. Mixing the five protocols carries no surcharge. From the second building onward the configuration and screens clone across, so the cost drops noticeably. A quote always comes after the site survey and a confirmed point list — a price given before the points are counted always changes later.

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