



GRÜNE ANTWORT
#INTELLIGENTSOLUTIONS



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**YOUR INTEGRATED
BUILDING AUTOMATION
SOLUTION PARTNER**



#GRUNEANTWORT #BUILDINGMANAGEMENTSYSTEM





- Brand-independent integrated building automation
- Management of existing and new systems
- Efficient energy management solutions
- High-quality and operational safety
- Wide-range, comprehensive control and monitoring
- Multi-level user management
- User-friendly operating environment
- Digital twins for easy operation
- Customisable user interface
- Multi-level alarms
- Data browser with customizable statistics
- Web-based control panel
- Linux and Windows compatibility

SUSTAINABLE
building management

COMPREHENSIVE
integration

COST-EFFECTIVE
operation

FAST
return on investment

GRÜNE ANTWORT BMS MANAGEMENT AND MONITORING



The main product of our company is the Building Management System (BMS). The integrated building automation software allows the control and integration of existing equipment into one system.

Our aim is to improve the energy-efficient operation of buildings, facilitate the development of measurement processing areas, optimise maintenance, increase the life cycle of equipment, and provide the opportunity to fine-tune it, saving time, energy, and therefore money for our partners.

**RETURN
ON INVESTMENT
IN UP TO 10 MONTHS**

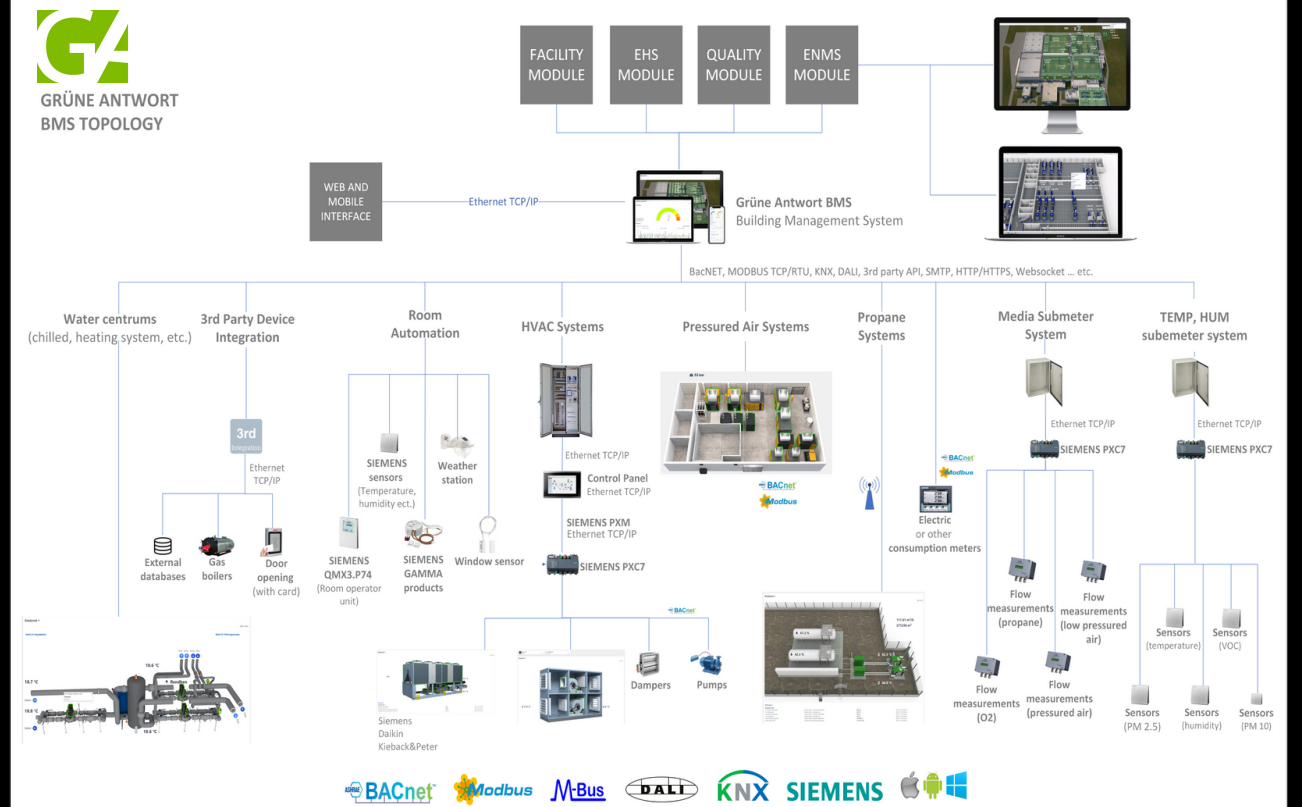
ROI CALCULATION



INTEGRATED BUILDING AUTOMATION

FUNCTIONS OF THE BMS MODULES

	FACILITY	ENMS	EHS
Schema controlling	✓		
Calendar-based scheduling	✓		
Responsive, compatible with mobile devices	✓	✓	✓
User management	✓	✓	✓
Multi-level alarm management	✓	✓	✓
Displaying statistics	✓	✓	✓
Displaying maintenance module	✓		
Displaying 2D/3D views	✓	✓	✓
Dashboard/building/zone/machine view	✓	✓	✓
Export of data	✓	✓	✓
Monitoring sub-meters	✓	✓	
Making reports	✓	✓	✓
Notifications (e-mail, SMS, push)	✓	✓	✓
Peak shaving (electricity peak control)		✓	
(Corrected) effective temperature data	✓		✓



HOMEPAGE - DASHBOARD

ZONE AND DEVICE VIEW

Zone	Temp	Humidity
CSOM BAU3	21.5 °C	54.4 %RH
F1	21.6 °C	57.5 %RH
F2	22.2 °C	53.1 %RH

DEVICE DATASHEET

CUSTOMISABLE VIEWS

- facility/building/zone/machine views
- web and mobile view

EHS MODULE

Environmental, Health, Safety

ENMS MODULE

Energy management

Module	Power	Temp	Status
PAC03 Összes aktív teljesítmény	8 W	15 °C	Inaktív
PAC02 Összes aktív teljesítmény	30 W	15 °C	Inaktív
PAC03 Összes aktív teljesítmény	63 W	15 °C	Inaktív
Üzemelési Homerséklet	22.4 °C	15 °C	Inaktív
Varo Homerséklet	19.8 °C	15 °C	Inaktív
Virtfogyasztas Gorgeletett	789 m³	15 °C	Inaktív

FACILITY MODULE

The building's mechanical and service systems

DIGITAL TWINS

- realistic device models
- active control option
- customised design
- machine status display

PEAK SHAVING

- Electricity peak control
- Control of groups of machines
- Intelligent intervention to improve energy management

MULTI-LEVEL ALARM CONDITIONS

LIMIT VALUE ALARM

Eszköz neve	Előredef. g	Típus	Riasztási érték
AMP3 csomagoló légtér	AMP3 befújt hőmérséklet	Hőmérséklet	15.0 °C
AMP4 csomagoló légtér	AMP4 befújt hőmérséklet	Hőmérséklet	15.0 °C
BAU4 V1 - Szombathely	Befújt hőmérséklet	Hőmérséklet	15.0 °C
BAU4 V2 - Szombathely	Befújt hőmérséklet	Hőmérséklet	15.0 °C
BAU4 V2 - Középg	Befújt hőmérséklet	Hőmérséklet	15.0 °C

STATUS VALUE ALARM

Eszköz neve	Előredef. g	Típus	Riasztási érték
AMP3 csomagoló légtér	Szűrés 1 állapota	Állapot	Állapot
AMP3 csomagoló légtér	Szűrés 2 állapota	Állapot	Állapot
AMP4 csomagoló légtér	Szűrés 1 állapota	Állapot	Állapot
AMP4 csomagoló légtér	Szűrés 2 állapota	Állapot	Állapot

MULTI-LEVEL ALARMS

- pre-defined multi-level alarm conditions
- limit and status value alarms
- automatic notifications
- alarm log

MANAGEMENT OF CONTRACTED POWER

MANAGEMENT OF INTERVENTION POINTS

Intervention Point	Temperature	Status
BAU1 1-es gépészeti hűtőközpont	18.0 °C	Inaktív
BAU1 2-es gépészeti hűtőközpont	18.0 °C	Inaktív
BAU1 3-as gépészeti hűtőközpont	18.0 °C	Inaktív

INTELLIGENT MANAGEMENT

- Operation modes start from BMS
- Calendar-based scheduling
- Baseline and status-based control
- Control of groups of machines

NOTIFICATION BAR

Figyelmeztetés: 4 Riasztás 3 Kritikus 2

STATISTICS, DIAGRAMS

- export options (.pdf, .xls, .csv)
- optional data, time interval, measurement type, format
- statistics for each data point

HOURLY STATISTICS ON TEMPERATURE

OPERATING HOURS STATISTICS

DATA POINT STATISTICS

QR CODE

CUSTOM DATA BROWSING FEATURES

- detailed display of data points
- blocking and maintenance entries
- data browser
- structure view
- reports (scheduled and custom)

DETAILED DISPLAY OF DATA POINTS

ID	Előredef. g	Típus	Állomány	Utolsó érték	Működési mód
629	Fűtésienergia-érték	Egység	Csom.BAU4	10.4 %	2023-03-06 12:05:11
630	Gázolaj-érték	Egység	Csom.BAU4	22.7 %	2023-03-06 12:05:11
631	Hővesztés-érték	Egység	Csom.BAU4	1.3 %	2023-03-06 12:05:11
632	Befújt hőmérséklet	Hőmérséklet	Csom.BAU4	20.2 °C	2023-03-06 12:05:11
633	Hűtési energia-érték	Egység	Csom.BAU4	9.2 %	2023-03-06 12:05:11
634	Hővesztés-érték	Hőmérséklet	Csom.BAU4	18.4 °C	2023-03-06 12:05:11
635	Szűrés-érték	Hőmérséklet	Csom.BAU4	22.4 °C	2023-03-06 12:05:11
636	Árnyék-érték	Egység	Csom.BAU4	16.6 %	2023-03-06 12:05:11
637	Befújt hőmérséklet	Hőmérséklet	Csom.BAU4	15.3 °C	2023-03-06 12:05:11
638	Befújt hőmérséklet	Hőmérséklet	Csom.BAU4	20.2 °C	2023-03-06 12:05:11

STRUCTURE VIEW OF SUB-METERS

LET THE NUMBERS SPEAK FOR US

EFFICIENT OPERATION

According to the MSZ EN ISO 52120-1 standard, **an office building can be operated up to 50% more efficiently** with integrated automation than without BMS.

DETAILED BAC EFFICIENCY FACTORS FOR HEATING AND COOLING - NON-RESIDENTIAL BUILDINGS

Source: MSZ EN ISO 52120-1 Version 2, November 2022

NON-RESIDENTIAL BUILDING TYPES	DETAILED BAC EFFICIENCY FACTORS $f_{BAC,H}$ and $f_{BAC,C}$							
	D NON ENERGY-EFFICIENT		C STANDARD		B ADVANCED		A HIGH ENERGY PERFORMANCE	
	$f_{BAC,H}$	$f_{BAC,C}$	$f_{BAC,H}$	$f_{BAC,C}$	$f_{BAC,H}$	$f_{BAC,C}$	$f_{BAC,H}$	$f_{BAC,C}$
Offices	1,44	1,57	1	1	0,79	0,8	0,7	0,57
Lecture hall	1,22	1,32	1	1	0,73	0,94	0,3*	0,64
Education buildings (schools)	1,2	-	1	1	0,88	-	0,8	-
Hospital	1,31	-	1	1	0,91	-	0,86	-
Hotels	1,17	1,76	1	1	0,85	0,79	0,61	0,76
Restaurants	1,21	1,39	1	1	0,76	0,94	0,69	0,6
Service buildings	1,56	1,59	1	1	0,71	0,85	0,46*	0,55

*These values highly depend on heating/cooling demand for ventilation.

In the table, the BAC efficiency factors for thermal energy (heating, domestic hot water, and cooling) are classified according to the type of building and the efficiency class of the BAC/TBM system. Efficiency Class C factors are defined as 1, as this class represents the standard functionality of the BAC efficiency factors, in other words, the improvement in building performance.

ENERGY EFFICIENCY AND COMFORT: INNOVATIVE SOLUTIONS AT SZALETLY RESTAURANT AND GARDEN

Increasing energy efficiency, reducing energy costs



Building SIEMENS PXC automation with web server



Higher comfort, transparent operation, lower energy costs



In the case of the Szaletly Restaurant and Garden, the aim was to bring together the various mechanical systems under one central management system (boilers, air handling, guest area, temperature control, etc.). At the same time, the main objective was to increase energy and cost efficiency and monitor electricity consumption.

For the implementation, we used the Siemens PXC family of hardware with web server access, which allows the integration and joint management of different devices. With the installed room controllers and web server access, the installed system can be easily managed even remotely.

As a result of our work, the comfort level in the restaurant has increased significantly, and the operational process has been improved thanks to easy management and remote access, making the operation more transparent and energy efficient.

EFFICIENCY

BRAND-INDEPENDENT SYSTEM INTEGRATION COMPREHENSIVE CONTROL, MONITORING

ADVANCED CONTROL FOR THE FUTURE: STEPS TOWARDS SUSTAINABILITY AT OPEL HUNGARY

Brand-independent control of existing machinery



Custom BMS system development with optimised control



30% energy savings, contracted power optimisation, production stability

At OPEL Hungary our company has implemented and is implementing a customized BMS system development. Our aim is to link existing mechanical equipment into a network and to develop a brand-independent control system.

In addition to HVAC and other systems, we now monitor and control compressors, emulsion systems, and industrial water. The BMS serves operations to the extent that we match the building's energy use to production so that machines only consume when they are really needed.

In addition to the 30% energy savings achieved, we have not only optimised the peak shaving capacity, but also greatly improved production stability by achieving the right temperature control and, in summer, by ventilating at night.



CUSTOMISED, ENERGY-EFFICIENT CONTROL HIGH QUALITY OPERATIONAL SAFETY

OPERATIONAL SAFETY AND ENERGY EFFICIENCY: CUSTOMIZED BUILDING AUTOMATION PROJECT AT SCHOTT HUNGARY

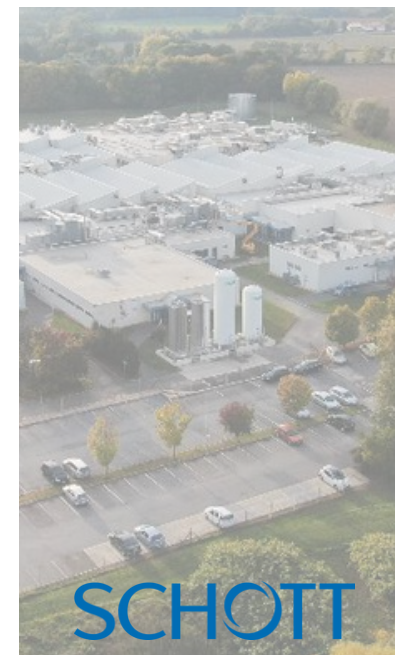
Unified BMS implementation with customised control



BMS system development, control and monitoring of equipment



10% reduction in energy consumption, adequate operational safety



In the Hungarian factory of SCHOTT Hungary, the goal was to install a unified Building Management System. With the delivered system (which is being extended even today), users can monitor and control their old and new equipment in a customized environment.

The integration not only gives the facility but also the finance, EHS, and manager teams access to statistical or real-time data in their own user environment, which greatly helps their work. Precise, schematic control of key energy consumers (HVAC, compressor, etc.) reduces energy consumption, while the monitoring and alarm of these systems improve operational safety.

The project has achieved a 10% reduction in energy consumption, improved the contracted power demand, and brought the plant closer to carbon-neutral operation.