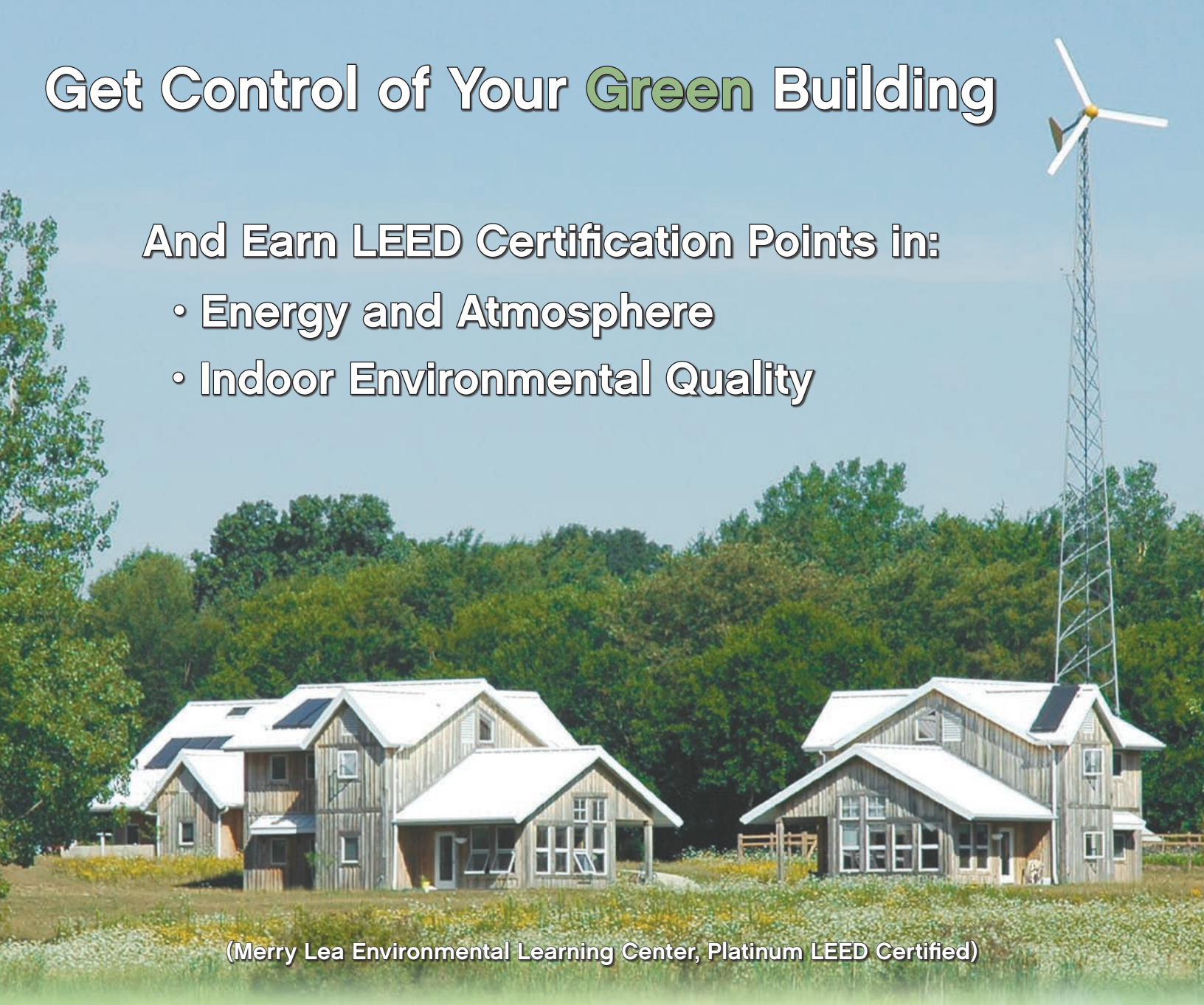
Get Control of Your Green Building

And Earn LEED Certification Points in:

- Energy and Atmosphere
- Indoor Environmental Quality



(Merry Lea Environmental Learning Center, Platinum LEED Certified)

Green is good for the triple bottom line (people, planet, and profit). Green buildings are good for **occupants** (healthier and more comfortable working space), good for our **environment** (reduced resource depletion and higher sustainability—helps preserve the earth for future generations), and good for **business** (higher employee productivity, lower energy and life cycle costs, higher client attraction/retention, higher resale value, and enhanced public relations).

Although any building may be built or remodeled with various enhanced green characteristics, **significant advantages exist in obtaining building certification by one of the "green" organizations**, such as (among others) the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Green Building Rating System.® A building's certification provides proof of its triple bottom line.

When attaining (the highest) Platinum LEED certification, the **Merry Lea Environmental Learning Center of Goshen College** (shown above) chose controls supplied by KMC Controls. KMC direct digital controllers, sensors, and software work together to monitor and log building system performance factors such as heat pump fluid temperatures, current generated by photovoltaic arrays and a wind turbine (to get credit from the utility company), as well as other environmental conditions.

Whether your green building is small or large, **KMC products provide powerful tools toward achieving points for LEED certification in the two crucial categories of Indoor Environmental Quality and Energy and Atmosphere**. In many government, school, hospital, hotel, office, and other commercial buildings, our controls have been managing energy for decades—minimizing energy use while optimizing occupant comfort. Monitoring of air temperature, humidity, pressure, CO_2, and CO levels provides for the controlling of condition levels, sounding alarms, and recording trends. For energy metering and monitoring, we offer solutions that help provide data for certification submission. (See a sample installation and products on the following pages.)

At KMC Controls, people and the planet matter, and in the long-term, what's good for people and the planet profits everyone. **KMC can help you go green.** Join us in the green revolution!

KMC CONTROLS

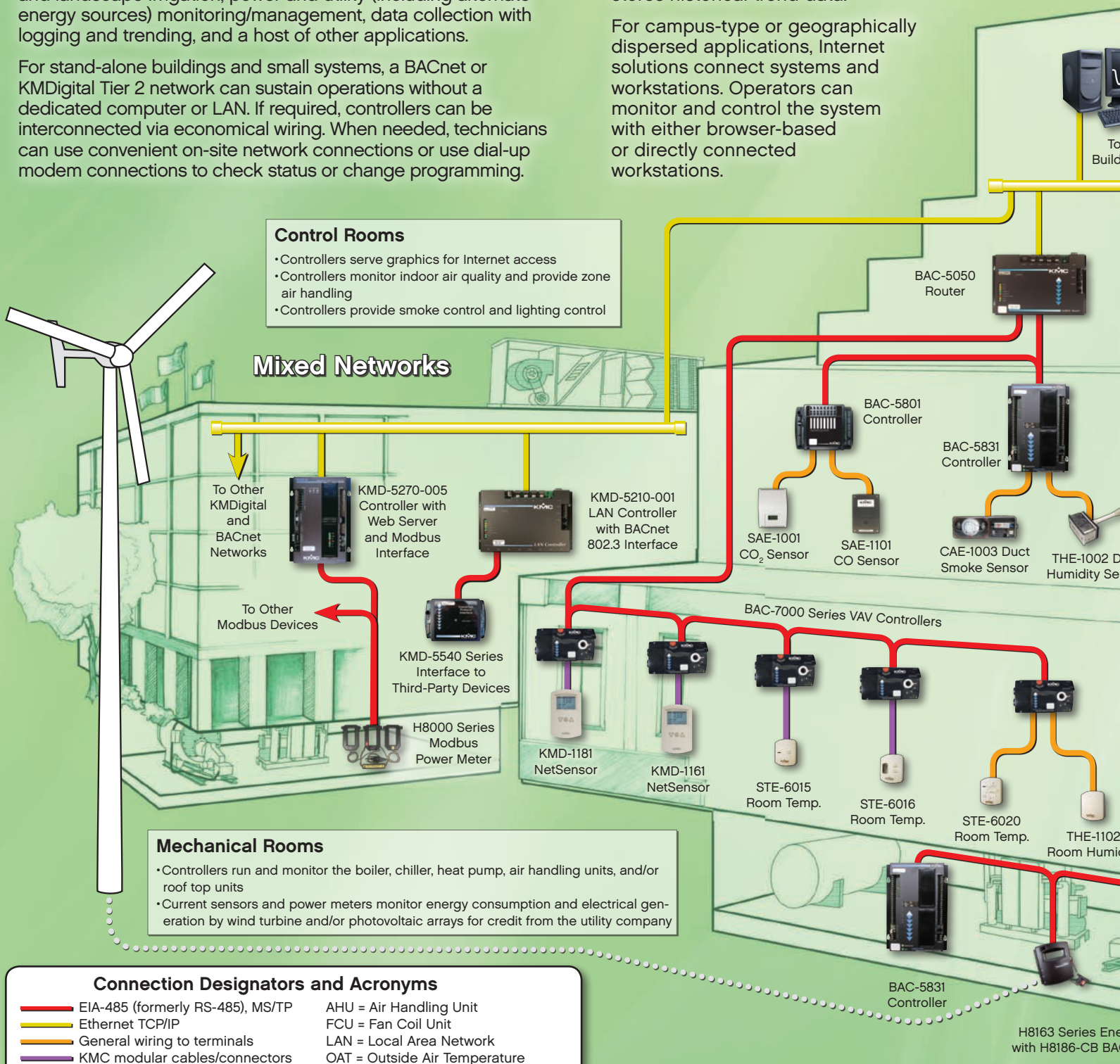
Green Building Automation with Scalable

To help you obtain green certification as well as ensure that your facility operates as it was initially designed, KMC provides a comprehensive approach to automating systems within commercial and institutional facilities. Our systems can manage heating, ventilation, and air conditioning as well as smoke control, lighting control, daylight harvesting, rainwater harvesting and landscape irrigation, power and utility (including alternate energy sources) monitoring/management, data collection with logging and trending, and a host of other applications.

For stand-alone buildings and small systems, a BACnet or KMDigital Tier 2 network can sustain operations without a dedicated computer or LAN. If required, controllers can be interconnected via economical wiring. When needed, technicians can use convenient on-site network connections or use dial-up modem connections to check status or change programming.

Standard commercial building installations typically use networks of Tier 2 controllers within each zone and also zones interconnected by Tier 1 controllers over the LAN. Although not required, an operator workstation provides full control and monitoring over the system and stores historical trend data.

For campus-type or geographically dispersed applications, Internet solutions connect systems and workstations. Operators can monitor and control the system with either browser-based or directly connected workstations.



Connection Designators and Acronyms

- EIA-485 (formerly RS-485), MS/TP
- Ethernet TCP/IP
- General wiring to terminals
- KMC modular cables/connectors
- Modem/EIA-232 (formerly RS-232)
- USB (temporary connection to PC)
- (Wind or solar power)

AHU = Air Handling Unit
FCU = Fan Coil Unit
LAN = Local Area Network
OAT = Outside Air Temperature
PID = Proportional, Integral, Derivative
RTU = Roof Top Unit
VAV = Variable Air Volume

For brief explanations of terms, see KMC's Green Buildings Controls Glossary (SB-046)

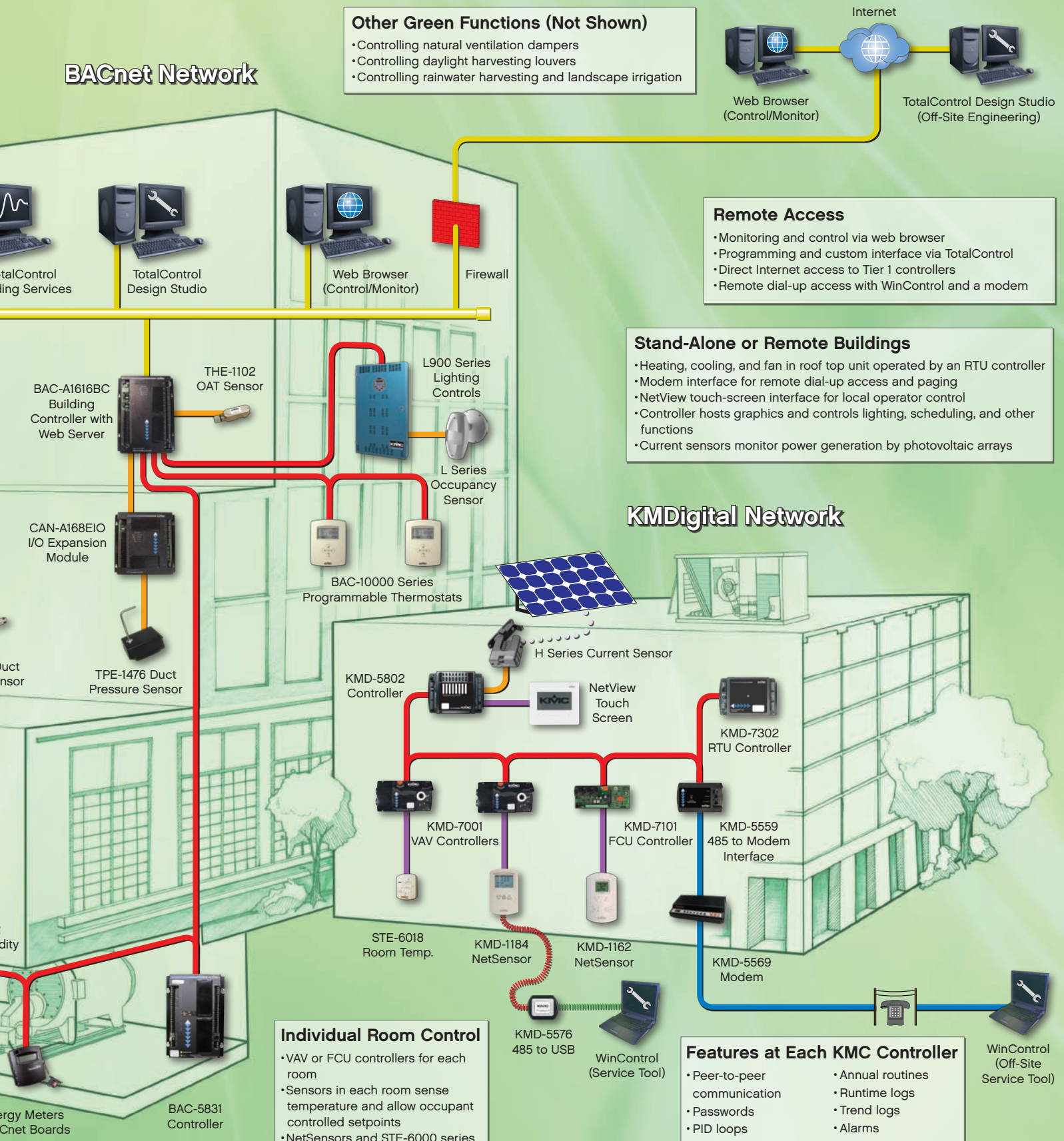
KMC CONTROLS 19476 Industrial Drive, New Paris, IN 46553-0518 Telephone: 877.444.5622 (574.831.5250), Fax: 574.831.5252

Solutions from KMC Controls

KMC CONTROLS

Other Green Functions (Not Shown)

- Controlling natural ventilation dampers
- Controlling daylight harvesting louvers
- Controlling rainwater harvesting and landscape irrigation



Remote Access

- Monitoring and control via web browser
- Programming and custom interface via TotalControl
- Direct Internet access to Tier 1 controllers
- Remote dial-up access with WinControl and a modem

Stand-Alone or Remote Buildings

- Heating, cooling, and fan in roof top unit operated by an RTU controller
- Modem interface for remote dial-up access and paging
- NetView touch-screen interface for local operator control
- Controller hosts graphics and controls lighting, scheduling, and other functions
- Current sensors monitor power generation by photovoltaic arrays

Individual Room Control

- VAV or FCU controllers for each room
- Sensors in each room sense temperature and allow occupant controlled setpoints
- NetSensors and STE-6000 series sensor models with data ports allow quick network access and control to service personnel using a laptop computer and a 485-to-USB interface

Features at Each KMC Controller

- Peer-to-peer communication
- Passwords
- PID loops
- Programming
- System groups
- Weekly schedules
- Annual routines
- Runtime logs
- Trend logs
- Alarms

(Some features may only be viewable or usable through a service tool)

(Output devices not shown include actuators, valves, relays, triacs, and variable frequency drives. Configurations shown are only a few of many possible options.)

CE MADE IN USA ISO-9001

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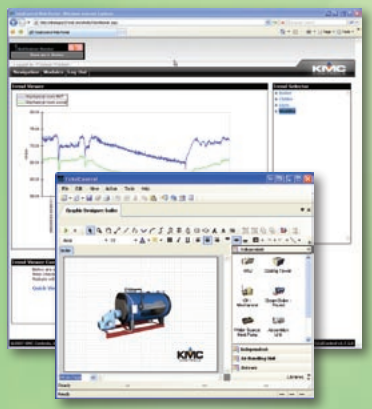
building your comfort zone™

KMC "Green" Tools

KMC Controls, an ISO-9001 registered company, is the only privately held manufacturer of a full line of HVAC and building automation controls. Just a few samples of our powerful hardware and software tools that help minimize operating costs, maximize comfort and productivity, and help gain "green" certification are shown here.

Controls

For building automation applications, our digital hardware controls include our proprietary KMDigital and our interoperable, open-systems BACnet controllers. For support of older systems, we also offer analog electronic controllers and pneumatic controllers. Software for the digital control systems includes WinControl® for our proprietary line of controllers and BACstage® for the BACnet controllers. Our TotalControl software integrates control and monitoring of these and other systems.



Accessories, Documentation, and Other Resources

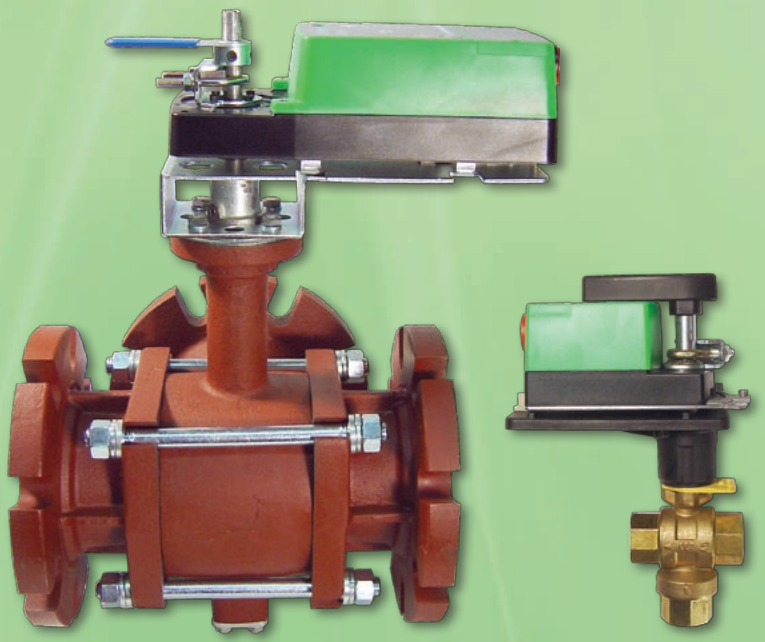
Other tools include routers, repeaters/isolators, surge suppressors, web servers, computer interfaces, transformers, power supplies, enclosures, wiring, data sheets, installation guides, application guides, catalogs, brochures, and a wealth of other resources.

Input Devices

Switches and sensors detect temperature, humidity, pressure, air flow, carbon dioxide, carbon monoxide, smoke, occupancy, and electrical current for monitoring thermal comfort, air quality, lighting requirements, and energy usage.

Output Devices

Actuators, valves, relays, and other output devices perform necessary electronic, electrical, and mechanical actions (as directed by the controllers). These actions control the flow of air or hot/chilled water, or they control external electrical circuits such as for lighting, fans, pumps, compressors, boilers, and chillers. (VAV controllers, such as the BAC/KMD-7000 series, often incorporate a controller, actuator, and flow sensor into one combined unit.)



Cover image is courtesy of Merry Lea Environmental Learning Center of Goshen College, Indiana (http://www.goshen.edu/merrylea/)

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